

The management of people, processes and places in the virtual workplace

by

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ABSTRACT

The traditional workplace evolved over time, moving through different waves or phases of change. The phases, although prevalent in different stages in different countries, have been characterised by various technological developments. The virtual workplace evolved as part of the Information Age or Fifth Wave, bringing with it its own unique characteristics and requirements. These unique characteristics, such as the speed at which information is communicated, crossing of time and space boundaries, social networks and requirements, such as sustainable high speed internet connectivity, are evident in the relationship between people, processes and the virtual workplace.

This study explored the manner in which virtual workers executed their activities through the use of technology, the type of business processes supporting them and the challenges experienced by them. The proposed framework for the management of people, processes and places in the virtual workplace was subsequently derived. The framework has as aim to represent the relationship between people, processes and places components in the virtual workplace and in doing so providing a management framework supporting the virtual workplace. The people, processes and places components have been incorporated in the management, technology and practice sections of the framework, thereby providing a framework based on the relationship between people, processes and places.

This study also developed the Extended Hermeneutic Circle of Learning which was used as guideline for the research conducted as part of this thesis. The deeper understanding created through the use of this research guideline assisted in providing structure to the research, thus enabling the researcher to derive the proposed framework for the management of people, processes and placed in the virtual workplace.

KEYWORDS

People, Process, Place, Virtual Workplace, Time, Space, Extended Hermeneutic Circle of Learning, Management Framework



DECLARATION

I, Ilse Geldenhuys, declare that

THE MANAGEMENT OF PEOPLE, PROCESSES AND PLACES IN THE VIRTUAL WORKPLACE

is my own work and that all sources used and/or quoted have been indicated.

All the sources are acknowledged by means of a complete bibliography.

The thesis was language edited by MMJ Gerber, Language practitioner at the Directorate: Language Services, University of South Africa, with qualification BA (Lang) (THOD).

Ilse Geldenhuys

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To

Theo, our children, grandchildren and Kobie,

I love you dearly. I am because of you.

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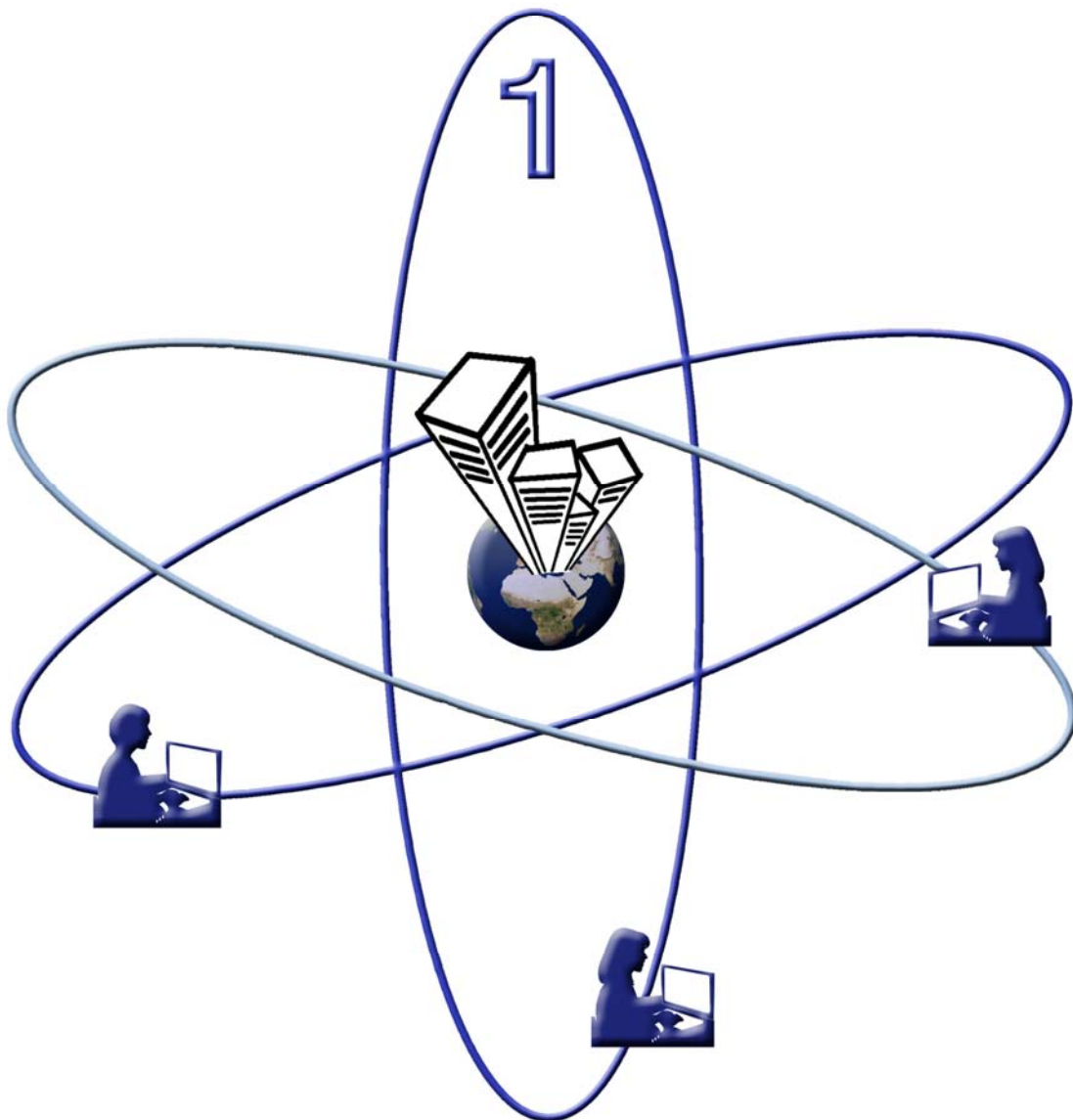
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The management of people, processes and places in the virtual workplace

INTRODUCTION



CHAPTER 1: INTRODUCTION

“The business of business is not only business.”

The Fourth Wave: business in the 21st century
(Maynard Jr. & Mehrtens, 1996:48)

1.1 BACKGROUND

1.1.1 People, processes and places

“The business of business is not only business” (Maynard & Mehrtens, 1996:48) as it involves more than just executing transactions. Being profitable and making money is one component of business. Business is about people (its biggest asset), processes, places and connecting these **people**, **processes** and **places** in the most efficient manner. People, processes and places are key elements and although these elements are separate and different, a distinct overlap exists, connecting people, processes and places. An effective **process** involves **people** and their relationships to their surroundings or **place**. Process is therefore intimately linked to people and in addition linked to place (Campbell, MacKay & Kelly, 2004:1, 2).

Business has evolved over time, moving towards the virtual environment through the use of technology and the internet to offer, amongst others, on-line shopping, such as the well-known amazon.com, Kalahari.net and various retail businesses. Due to rapidly developing technology, the workplace has been subjected to the same type of transformation with a significant movement from the traditional workplace towards the virtual workplace, which is a workplace with the ability to move quickly and easily. A workplace’s ability to adapt to the changing environment relates to its swift reaction towards demands, leading to reconfiguring of resources and activities (Wright & Snell, 1998:758).

The development in technology has not only transformed the way in which business is conducted and work is executed, it has also led to the explosion of

social networking, that is the way in which **people** interact through the use of technology. A vast number of networking sites exist on the internet, to mention a few – Facebook, Friendster, Xanga, Bebo and Cyworld (Sellers, 2006:35). The social networking site, MySpace, was developed by Tom Anderson and Chris DeWolfe to promote local arts, music and to “*connect friends and fans who connected friends and fans*”. A site, such as MySpace, is home to thousands of filmmakers, musicians and comedians. MySpace has grown from a small music site promoting local music into a cultural powerhouse with more than 100 million registered users of which the majority is eighteen years and older (Sellers, 2006:36). With Twitter, a unique social media tool, being added to the world of social networking family, friends and colleagues are instantly linked through the use of messaging. Microblogging with Twitter links social networks, other blogs and websites thus expanding social networking as used by many individuals (Oliveri, 2009). Social networking obtained through these networking sites, stretch across continents, leading to the expansion of our boundaries, leaving us to be influenced by and be receptive to other cultures. These social networks are available thanks to internet technology which enables access to many different websites (Zemliansky & Amant, 2008:440) through millions of computers and thousands of connected, entangled networks (Rayport & Jaworski, 2002:33–34).

Modern communication technologies enabling cross-continental connectivity has not only changed the way in which people interact, but also the manner in which business is conducted, together with the processes supporting business activities.

“The business of business is not only business” (Maynard & Mehrtens, 1996:48) as business **processes** are an integral part of business. Organisations have a tendency to be process unfriendly resulting in processes being structured around departments focusing on single tasks (Hammer, 2001:55). The detrimental effect of this approach is that organisations lose sight of the end-to-end process as the organisation is dealing with isolated pieces of the whole, resulting in employees or people

becoming disconnected and not aligned to a one common goal (Hammer, 2001:1, 53, 56). An effective process, on the other hand, assists people to function in harmony with their workplace and surroundings as they understand the bigger context, that is the what, why, where and when, they are performing in (Hammer, Leonard & Davenport, 2004:16).

“*Suddenly, business is not so easy anymore ...*” Hammer (2001:55) because the traditional work environment (**place**) as it has been known over decades has changed in various ways due to the opportunities provided by technological development. Place consists of more than one component, namely the physical environment, the landscape and cultural component, with the cultural component partially overlapping with people and their unique interaction with their environment (Campbell et al, 2004:3).

Activities (**process**) that used to be executed manually have been automated, mail pouches have been replaced with fax machines and email, and teleconferencing allows for employees to meet irrespective of their location, bridging time differences. Employees (**people**) no longer need to work from a traditional office, but can work from remote locations, such as airports, hotels and restaurants (**place**) using wireless technology. The nature of work has gradually started to change and with that the management of the people, the workplace and its processes.

The relationship between people, process, place and technology is depicted in figure 1.1 below. **People** are connected to their workplace through the use of technology, executing processes supporting the organisation and its business activities. **Processes** are executed by people from different workplaces, which are the traditional or virtual workplaces using technology. The workplace can be seen as that **place** from where people execute certain processes and functions through the use of technology to support the organisation. For the sake of illustrating this relationship in figure 1.1 general reference is made to the workplace as place.

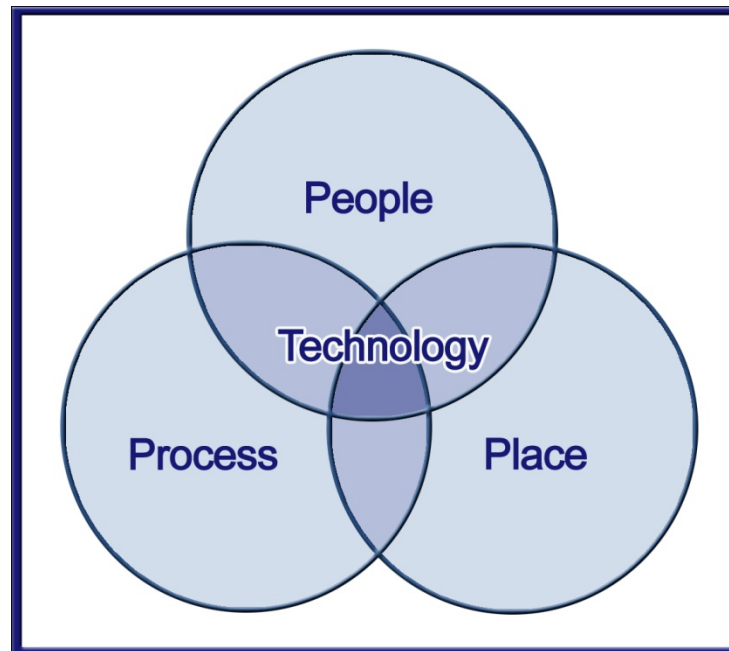


Figure 1.1: Relationship between people, process, places and technology

Technology can be seen as an enabler for business process management (BPM) through the use of workflow systems for the automation of manual business operations, thereby simplifying and streamlining existing business processes, but BPM does not equate to a technology (Jeston & Nelis, 2009:9,404). BPM is a structured, management discipline with skilled **people** who first improve **processes** before automating it thereby achieving the **organisation's** objectives through the improvement, management and control of essential business processes (Jeston & Nelis, 2009:3, 6, 11)

Thus, BPM is a manner in which interaction between **people**, **processes** and the **place** is established and depicted below in figure 1.2 below.

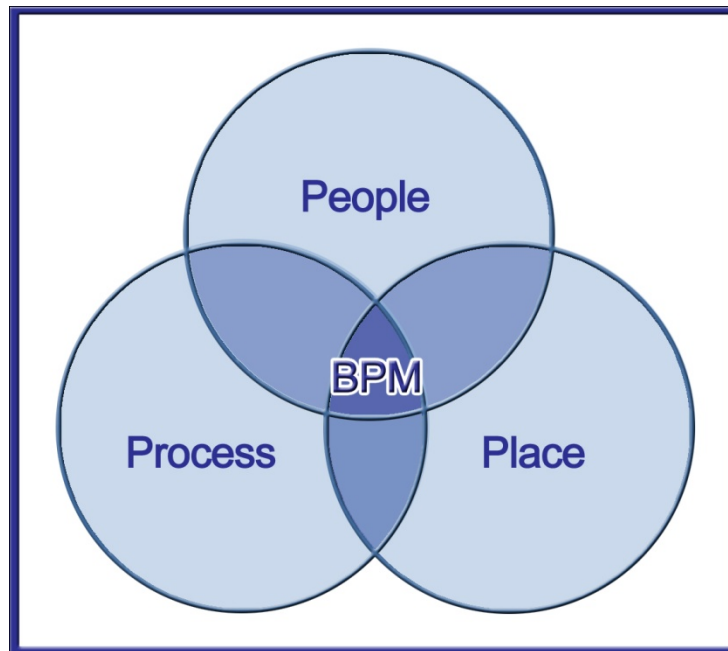


Figure 1.2: BPM–Relationship between people, process and places

1.1.2 Changing nature of work

Before we explore the virtual workplace, we should review the changing nature of work as this will allow us to gain some appreciation for the many advantages offered by the virtual workplace.

The Agricultural Revolution was known as the First Wave, followed by the Industrial Revolution (Second Wave) and then the Post-industrial era known as the Third Wave (Toffler, 1980:13–14). The Fourth Wave was characterised by nuclear power and basic electronics. Development of information and telecommunication technology characterise the Information Age, alternatively known as the Fifth Wave. This development has “*made the world a smaller place that is less geographically dependent*” (Wymbbs, 2004:700), with Devezas, Linstone and Santos (2005:917) adding networking and the existence of the virtual office to this era. Business process re-engineering followed by business process management is also embedded in this era (Smith & Fingar, 2002:56–57). Development is taken a step further with the Sixth Wave or Nanotechnology Age emerging (Wonglimpiyarat, 2005:1350).

These eras started off in different countries at different times (Miller, 1967:221). Russia embarked on transforming from an almost entirely agricultural state to an industrial state during the late nineteenth century, whilst America accomplished this much earlier. India would also only enter the Industrial Era at a later stage.

The same phenomenon is evident when investigating the emergence of the Information Age with special reference to ICT access (Keniston & Kumar, 2003:7). Significant and overwhelming inconsistencies exist between *“the so-called “North” (industrialized and wealthy nations like the U.S., West Europe, and Japan) and the “South” (virtually all developing nations)”*. Another crucial trend relating to the speed of development was also identified. The industrial revolution with its factory production, steam engines and railways as well as chemical and electrical industries changed life forever. Even more so was and is our lives changed by the speed of the Information Technology (IT) communication revolution as *“... it took at least a century before the printing press touched 50 million individuals. It took 38 years for radio to reach the same number, and thirteen years for television. But the World Wide Web, in only four years, exceeded the 50,000,000 mark”* (Keniston & Kumar, 2003:6).

The Information Age and IT go hand in hand. As part of the evaluation of this era we need to bear in mind that information technology is not and will not be neutral as noted by Du Plooy and Roode (nd:2). It impacts on societies, communities, families as well as individuals. The impact is not restricted to individuals' work lives but also to their social lives as boundaries between work and social life become more blurred and vague. According to Giddens, as cited by Walsham (2001:14–5) the key features of contemporary society relate to *“time-space distanciation”*. Traditional societies were linked through **place**; however, information technology enables the existing world to bridge time zones and space through email and embark on email communication and interaction when needed. Giddens also argues that increasing trust is being placed on information technology and systems as face-to-face interaction is being replaced by technology enabled interaction, such as email and facsimile. The impact of place on traditional societies is interpreted as

traditional societies having previously been linked through a place, such as a bank. They do not necessarily have this link any more due to technology enabled banking that can be done at any time any place, thus moving the traditional society towards becoming a contemporary society.

Through the use of information technology and its various applications, time and space have been bridged. This bridging of time and space has changed the way people conduct their business and related activities, resulting in irregular or extended working hours and changes from the traditional working place to the virtual workplace as can be found in telecommuting and hotelling. Zemliansky and St Amant (2008:2) refer to the virtual workplace as working at a distance through the use of technology.

Bridging of time and space has also resulted in our boundaries being expanded beyond our control. This relates not only to our working boundaries, but also to our awareness of the universe as a whole. The whole world has become “much smaller” as a result of information technology’s reachability (span distance) and speed of connectivity, but it has also become “much bigger” since we can now obtain immeasurable volumes of information from all over the world.

People are frequently connected for personal and business purposes through the use of Skype and email, demonstrating the insignificance of time and space in 21st century activities. Time has become an instance in space. When observing our own time zone, that is South Africa, at the present instance of time, namely 12:00 noon, the Australian time zone will be in our future (that is 20:00 still to come) and the Canadian time zone is in our past (that is 06:00 has already passed) as depicted in figure 1.3 below. These instances of time exist concurrent, although it may not be experienced as such due to the bridging of time and space.

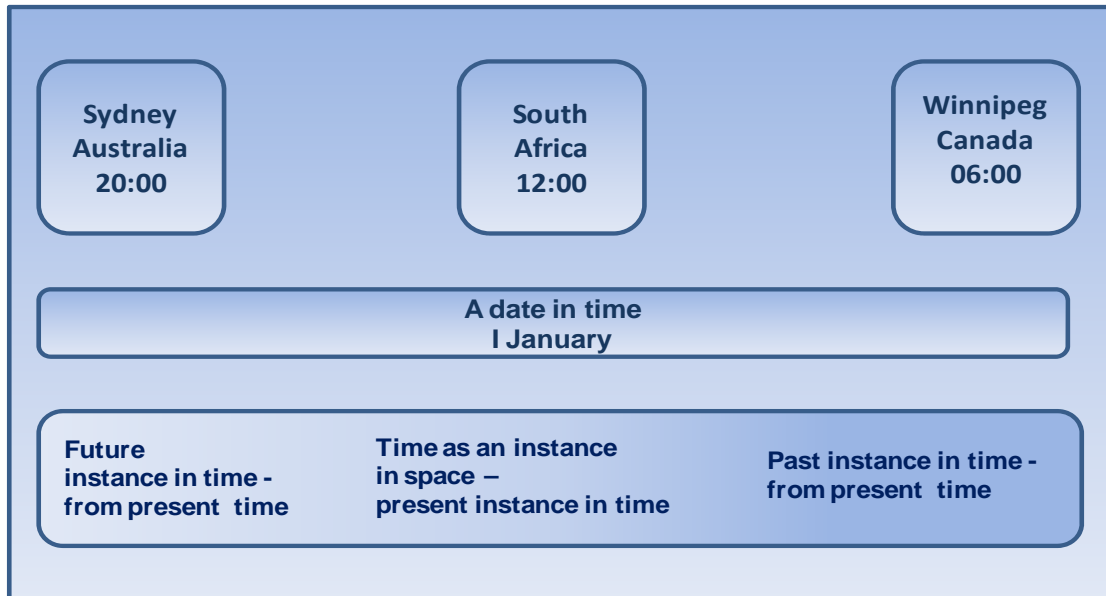


Figure 1.3: Time as an instance in space

The management and leadership perspectives needed for optimal functioning in the virtual workplace (that is the Fifth Wave), differ comprehensively from those required in the preceding waves (Bennis, 1993:13-16), with the emphasis moving from bureaucracy to collaboration and more specifically collaboration of specialists in a project driven environment which is about the managing of contracted deliverables within agreed-upon time frames.

1.2 PROBLEM STATEMENT

1.2.1 Problem 1: Organisational structure change (people)

In order for businesses to survive in rapidly changing internal and external environments, they need to be able to adapt effectively and efficiently (Bennis, 1993:13) with organisational structure becoming “temporary” and rapidly adaptive with the aim of solving problems, increasing profits and elevating productivity. People are no longer only working in a traditional workplace with fixed structures, but they are becoming virtual workers with constantly changing support structures.

1.2.2 Problem 2: Change in social structure (people)

This changing environment brings with it a new or different way of interacting with employees, partners and allies (Bennis, 1993:16) and social structures

need to change from mechanisms of domination to structures allowing imagination and freedom of inquisitiveness and thought to address the problem of adaptability and exploit the pleasure of work. The social structure of the people working in the traditional workplace may differ from that of the people working in the virtual workplace.

1.2.3 Problem 3: Increase in information (process)

Businesses are empowered through the increase in quality and volume of information, which is information regarding business processes supporting the core activities of the business, customer preferences, new production methods and demographic changes, as well globalisation. The speed at which this information becomes available, also requires a swift response in order to survive in a challenging business world. Business processes supporting the virtual workplace may also be impacted by information, thus the unique business processes supporting the virtual workplace needs to be understood.

1.2.4 Problem 4: Change in workplace (place)

Due to technological development, such as email, video- and telephone-conferencing, the workplace changed over time from a traditional, fixed and specific location to one that is virtual and decentralised. The characteristics unique to the virtual workplace need to be understood in order to determine how people, processes and places management in the virtual workplace is executed and supported.

The problem statements above are summarised as follow: ***How can virtual workers be supported given the changing nature of work, structures and workplaces?***

This changing work environment and accompanying globalisation which also relates to the bridging of time and space, impact on our culture with our culture being exposed to other cultures. This naturally leads to questions being asked about our culture and existence. This research acknowledges the existence of culture as part of the work environment; however, culture as a feature topic will not be covered by the research of this thesis. However,

organisational culture will be reviewed as part of the research into the workplace.

1.3 RESEARCH OBJECTIVE

The aim of this study is to create an understanding of the interaction between the **people, processes and places** components and management thereof in the virtual workplace. This entails the development of a framework for the management of people, processes and places in the virtual workplace.

1.4 RESEARCH QUESTIONS

In order to obtain an understanding of people, processes and places and the management thereof in the virtual workplace as part of Fifth Wave, a descriptive, interpretive approach will be followed as discussed in chapter 2. An attempt will be made to create an understanding of the management of people, processes and places in the virtual workplace by obtaining answers to the following main research questions.

1.4.1 Place

What characteristics unique to the virtual workplace distinguish it from the traditional organisation?

1.4.2 Process

What characteristics are unique to business processes in the virtual workplace, distinguishing them from business processes in the traditional organisation?

1.4.3 People

What is an appropriate framework or structure to support the management of people, processes and places in the virtual workplace?

To assist in answering the main research questions, the sub-questions as indicated in table 1.1, will be addressed:



RESEARCH SUB-QUESTIONS	
WHAT IS: Investigates the core or essence of the research problem and strives to describe the structure of the problem and its associated concepts. According to Roode, JD (nd) the assumption is namely that universally accepted description or definitions exist.	
1.1	What research approach will be followed?
1.2	What is learning?
1.3	What is hermeneutics?
1.4	What is a virtual workplace?
1.5	What characteristics are unique to the virtual workplace?
1.6	What is a business process?
1.7	What is business process management (BPM)?
1.8	What management characteristics are unique to the virtual workplace?
HOW DOES: Describes the problem through direct observation as it unfolds in reality.	
2.1	How does the virtual workplace impact on business?
2.2	How does business processes differ between the virtual workplace and the traditional workplace?
2.3	How do management characteristics differ between the virtual workplace and the traditional workplace?
2.4	How does business processes and technology impact on an individual's activities/performance in the virtual workplace?
WHY IS: Describes the real-life behaviour and features or characteristics of the research problem in order to establish relationships between the different variables within the area of research. Roode, JD (nd) notes that the assumption can be made that revealing these relationships can lead to generalisation of the research area and its contributory or underlying consequences.	
3.1	Why does the virtual workplace need different business processes?
3.2	Why does the virtual workplace need a different management style?

3.3	Why does the individual working in the virtual workplace require different business processes?
<p>HOW SHOULD: Focuses on conclusions, implications and insights obtained during research as well as norms or standards set by the research results. It can have various outcomes, such as prescriptive or regulatory conclusions or redefining of the problem area.</p>	
4.1	How should people, processes and places interact in the virtual workplace?
4.2	How should people, processes and places be supported in the virtual work place?
4.3	How should training and development be done in the virtual workplace?

Table 1.1: Research sub-questions

1.5 RESEARCH METHODOLOGIES

The research framework is defined through the use of research questions which assist in defining the problem or subject to be investigated. The areas of research mentioned by Du Plooy (nd:10) correspond to Burrell and Morgan's (2000:1–4) sets of assumptions. In search of a research framework conceptualisation in social science is done in terms of four sets of assumptions, namely ontology, epistemology, human nature and methodology. These four sets are mutually exclusive, each providing its own distinctive analysis of social science.

The assumptions of an ontological nature “*concern the very essence of the phenomena under investigation*” (Burrell & Morgan, 2000:1). The basic ontological questions which are at stake are: *Should reality be investigated as external to the individual, and: Is reality part of the individual's mind or mindset?* The ontological nature is therefore seen as the individual's view of reality which could be external to the individual, that is “out there in the world” or “*a product of his own mind*” (Burrell & Morgan, 2000:1).

Assumptions about the epistemological nature, which is the nature of knowledge, relate to the format in which knowledge can be obtained as well

as what knowledge should be regarded as “true” and what should be regarded as “false” (Burrell & Morgan, 2000:2). Describing knowledge as true beliefs incorporating preferred relations between the believer and the facts began with Plato’s *Theaetetus*, in which he postulates knowledge being a true belief including an aspect of our own reasoning (logos). Epistemology, or the theory of knowledge, is described as “*its central questions include the origin of knowledge; the place of experience in generating knowledge, and the place of reason in doing so; the relationship between knowledge and certainty, and between knowledge and the impossibility of error ...*” (Oxford dictionary of philosophy, 1996:123, 225,289).

The assumptions relating to human nature focus on relationships between human beings and their environment. The human nature assumption views human beings and their experiences either as products of the environment with human beings conditioned by external circumstances (controlled by the environment) or as creators of their own environment, that is the controller of the environment. These sets of assumptions require different research methodologies and therefore have implications of a methodological nature.

It is important that the most appropriate methodology be selected for the type of research to be done (Cryer, 1996:45). Information Systems (IS) “*have introduced interpretivism to the study of richness in managerial communication that uses information technology*” (Ngwenyama & Lee, 1997:150). According to these authors “*interpretivism gives explicit recognition to the lifeworld*” which correlates with Heidegger’s “*lived experience*”, also referred to as *Erlebnis* (Introna, 1997:64, 67).

One of two views can be taken on the social world (Burrell & Morgan, 1994:2–3), namely a “*hard external objective reality*” with the scientific focus on analysis of relationships and uniformity between different components; or a “*subjective experience of individuals in the creation of the social world*”. When applying “*subjective experience*” in their search for understanding, individuals focus on different issues and approaches. The main objective is to obtain an understanding of the way in which individuals create, adjust to and interpret the world in which they are functioning with the emphasis on what is “*unique*

and particular to the individual” rather than “*general and universal*”. This creation of understanding closely correlates with Heidegger’s *Erlebnis* or “*lived experience*” as well as conceptualisation of the part (text) and context (whole) as used by Introna (1997:64,67). *Erlebnis* is also seen as the individual’s awareness of the assumptions or experiences which formed the basis of his or her perspectives, viewpoint and understanding the boundaries within which these perspectives have been created (Burrell & Morgan, 1994: ix).

1.5.1 Qualitative versus quantitative

Research approaches can be divided into two main types, namely qualitative and quantitative. These can be combined or used separately. Careful consideration must be given when combining these methods (McEvoy & Richards, 2006:66) as it can become a “*methodological minefield*” as it will provide significant scope for confusion and misunderstanding. Quantitative research is used to understand and explain social phenomena (Myers, 1997a:241) that is more highly formalised and more explicitly controlled (Mouton & Marais, 1994:57,155). Quantitative research focuses on amounts and numbers, compared to a qualitative research approach that explores the creation of meaning, thus it focuses on “*what*” (Cooper & Schindler, 2001:139).

The traditional distinctions between quantitative and qualitative research as provided by McEvoy and Richards (2006:67–68) have been expanded to include Myers (1997b:2–5) and is provided in table 1.2. The purpose of the expanded table is to provide a summarised view of the differences identified by the authors.



Traditional distinctions associated with quantitative and qualitative methods		
Subject	Quantitative	Qualitative
Paradigm	Positivist, identify universal laws, based on identification of statistical relationships between dependent and independent variables. Focus on numbers, amounts.	Interpretivist, emphasise understanding the way in which the world is socially constructed and understood, non-numerical. Explore creation of meaning, the “what”.
Tools	Structured interviews, questionnaires, randomised control trails, systematic reviews, statistical analysis, laboratory experiments, surveys.	Focus groups, unstructured interviews, textual analysis, ethnographic case studies, observations and participant observation, documents, text, researcher’s impressions and interactions.
Ontology	Tangible reality	Intangible reality
Epistemology	Regularities established via empirical research and deductive/inductive reasoning.	Knowledge constructed via social interaction/hermeneutics understanding.
Methodology	Hypothesis testing	In depth field work
Data analysis	Verification/falsification	Interpretation of meaning
Other differences	Objective Discover general laws (nomothetic) Aim is prediction and control. Outsider (etic) perspective	Subjective Interest in uniqueness of participants (ideographic) Aim is explanation and understanding Insider (emic) perspective

Table 1.2: Traditional distinctions that are associated with quantitative and qualitative methods

Based on McEvoy and Richards (2006:67–68) and Myers (1997b:2–5)

The question as to whether quantitative and qualitative research methods should be used together, has been challenged by two opposing schools of thought, namely the purists and pragmatists. The purists' viewpoint is to use either quantitative or qualitative whereas the pragmatists' viewpoint is to use the method that will provide optimal results. The anti-conflationists argue that although there are general differences between quantitative and qualitative research methods, the researcher needs to distinguish between the "logic of justification" and the specific method that is employed, since the same method can be used by researchers from different ontological and epistemological starting points (McEvoy & Richards, 2006:68-69).

The alternative viewpoints of the purists, pragmatists and anti-conflationists with reference to distinctions between qualitative and quantitative methods have been summarised in table 1.3. The purpose of this table is to show the differences in viewpoints in a summarised manner.

Alternative positions			
Subject	Purist	Pragmatist	Anti-conflationist
Methodological standpoint	<p>Absolute standpoint to use either quantitative or qualitative.</p> <p>Leininger: Interpretive view: Quantitative and qualitative too fundamentally different to be reconciled</p>	Use method best for optimum results	<p>Differences between quantitative and qualitative not an absolute separation between qualitative and quantitative (dichotomy). Only use quantitative and qualitative methods if universal ontological and epistemological position exists. Distinguish between logic</p>

			rationalisation and method to be used.
Differences between qualitative and quantitative	Quantitative and qualitative are mutually exclusive	Quantitative and qualitative could complement each other	Qualitative description used in introduction to quantitative
	Quantitative and qualitative have almost no common ground	Researchers struggle with methodological tension on which approach to use	Qualitative test theoretical hypothesis
	Quantitative and qualitative are incommensurable – not judged by the same standards	Difficulty experienced: to understand “dissonant data”, using methods based on inconsistent epistemological assumptions, for example linking contextual findings to quantitative findings	Quantitative use statistics as descriptive narrative

Table 1.3: Alternative positions related to distinctions between quantitative and qualitative methods
Based on McEvoy and Richards (2006:68–69)

It should be noted that qualitative research and interpretivism are not synonymous as qualitative research may not be interpretive depending on the underlying philosophical assumptions of the researcher (Myers, 1997b:3). Following on this, is “...*the interpretive, critical and positivist epistemologies related to qualitative research. These epistemologies are philosophically distinct, but in social research the differences are not always clear*” (Myers, 1997b:3). Orlikowski and Baroudi (1991:4–5) state that they follow Chua’s classification of research epistemologies into positivist, interpretive and critical

studies. The differences between the interpretive, critical and positivist studies are summarised in table 1.4 below (Orlikowski & Baroudi, 1991:5–8, 12–19; Myers, 1997b:3–4; Kaplan & Maxwell, 1994:33–34; Chua as well as Lincoln & Guba in Orlikowski & Baroudi, 1991:7, 9).

Qualitative research epistemology			
Subject	Interpretive	Critical	Positivist
Methodological standpoint	Start with an assumption as a given. It is socially constructed and reinforced by humans through their actions and interaction.	Start with assumption that social reality is historically constituted. Knowledge grounded in social and historical practices.	Dominant in information systems research. Reality and our knowledge thereof are social products that cannot be understood without the social actors.
Construction	Construction through language, consciousness, shared meanings. Use researcher's questions and categories and not those of the participants.	Construction can consciously be done through changing economic or social circumstances. Conscious change can be hampered by cultural, political and social domination.	Phenomenon is single, tangible, and fragmentable. Research techniques encourage "deterministic explanations" as derived from interaction between researcher and subject. Researcher and subject are independent with clear differentiation between observation reports and theory statements.
Interaction	Subjective and inter-subjective meaning created through interaction with the world.	Focus on oppositions, conflicts and contradictions	Research passive and neutral role and does not intervene with phenomenon. "Discover" an objective social



			reality.
Creation of understanding	Understand phenomenon through assessing of the meaning assigned by participants, i.e. participant's perspective in natural settings.	Understanding created through social critique of status quo, hence highlighting restrictive and alienating conditions.	Understand phenomenon through modelling and measurement, i.e. construct a set of measurements and instruments to capture core of phenomenon. Test theory. Increase predictive understanding of phenomena.
Review	<p>Dependent and independent variables not pre-defined.</p> <p>Advantage: Seek "relativistic, albeit shared understanding" of phenomena. Focus on full complexity of human understanding as situation emerges. Interpretation of social reality. Reject possibility of "factual" or "objective" events.</p> <p>Disadvantage: Neglects to explain historical change in social order. Omits to explain unintended consequences of actions. Does not address</p>	Elements to be viewed in totality and not as isolated components.	<p>Rooted in natural science. Disregard historical context of phenomena. One-to-one association between constructs of researcher's model and objects in the world. Conflict seen as dysfunctional to social system.</p> <p>Advantage: Researcher focuses on validity and control towards phenomena under investigation.</p> <p>Disadvantage: Not conducive to understanding non-deterministic, shared relationships. Only get answers to questions asked. Laboratory subjects react mechanically to research stimulus.</p>

	structural conflicts in society and organisations. Does not examine external conditions that may give rise to meaning.		
Tools	Case study research, open-ended interviews, observational description, documentation, ethnography.	Social critique.	Large scale surveys and controlled laboratory experiments.

Table 1.4: Qualitative research epistemology

Based on Orlikowski and Baroudi (1991:5–9, 12–19), Myers (1997b:3–4) and Kaplan and Maxwell (1994:33–34).

This thesis will be exploring the management of the **people, processes and places** components related to the virtual workplace. Together with a case study and a weblog, the researcher will use focus group discussions and interviews as qualitative methods. The latter methods emphasise the one characteristic which distinguishes human beings from the natural world – their ability to talk and express themselves (Myers, 1997b:2). The research methods to be used correlate with Kaplan and Maxwell (1994:32) who indicate that qualitative methods employ data in the form of words such as those in interviews, observational descriptions of activities, conversations and documents. Qualitative research methods have been developed to assist researchers understanding people together with the social and cultural context they live and work in (Kaplan & Maxwell, 1994:31, 32). The research methods of choice support the research conducted for this thesis as it assists in obtaining meaning of the people, processes and places components in the context of the virtual workplace.

A quantitative approach to research in the social sciences is more highly formalised as well as more explicitly controlled, with defined ranges (Mouton & Marais, 1994:57,155). This correlates with quantitative research focussing on numbers as stated by Cooper and Schindler (2001:139). Thus, it is not the research method of choice for this thesis.

1.6 RESEARCH DESIGN

1.6.1 Design method

Qualitative research starts with a reasonable clear statement of the problem as the point of departure. The procedures are not necessarily strictly formalised and are therefore likely to have a philosophical mode.

A qualitative survey will be done through the use of a case study, focus group discussions, interviews and a weblog, following the Extended Hermeneutic Circle of Learning depicted in figure 2.4. These qualitative research methods were chosen to assist in the creation of meaning, thus understanding the “what” (Cooper & Schindler, 2001:139). In the research conducted for this thesis it provided the opportunity to conduct research in different scenarios ranging from focus groups with a number of participants to online participation through the use of a weblog. Quantitative research methods are not appropriate for this thesis as this thesis is not focussing on the interpretation of statistical data.

1.6.2 Population

The focus is on business process management (BPM) specialists and analysts from the telecommunications, financial and consulting industries in South Africa and research industries from the USA, Germany and Australia. Team leaders as well as repository and quality managers were also included as can be seen in Appendix B. This selection provided opportunity for participants from different levels and with different responsibilities to participate in the research.

- Time: 2010
- Sample frame: BPM specialists and process analysts, managers and team leaders working in the traditional and virtual workplaces.

- Sample size: 4–6 people per focus group discussion
- Sample size: Individual interviews

1.6.3 Data collection method

Data will be collected through a case study, focus group discussions, interviews and through the use of a weblog. The emphasis is on the **people, processes and places** components and the management of the challenges related to the virtual workplace.

A weblog or blog, as it is commonly known, will be used for online participation to demonstrate the bridging of time and space through the use of technology.

1.6.4 Data analysis

A qualitative data analysis will look for themes and categories within the words and images used by people (Oates, 2009:38). The data as obtained through the case study, focus group discussions, interviews and weblog will be analysed and categorised according to the **people, processes and places** components. The data will be presented with descriptive text and figures.

1.7 DISCUSSION OF RESULTS

The results will be discussed based on the findings of the case study, focus group discussions, interviews and weblog from the different business process specialists in the traditional and virtual workplaces.

1.8 PROPOSED CHAPTER PLAN

The chapters in this document will be presented as follows:

1.8.1 Chapter 1

Chapter 1 contains the background and introduction to the dissertation, firstly dealing with the context, intended research and the problem statement. Secondly, the research approach is covered, summarising the methodology and the research method as well as the research questions.

1.8.2 Chapter 2

Chapter 2 discusses the developed Extended Hermeneutic Circle of Learning as well as the multi-method research methodology that will be used, namely case study, focus group discussions, interviews and a weblog.

1.8.3 Chapter 3

Chapter 3 consists of a detailed literature survey reflecting on the changing nature of work or waves of change and it will be displayed graphically through the use of a time scale. The following elements will be addressed:

- Organisational structure
- Nature of work
- Business processes development

Further focus will be placed on elements specific to the Fifth Wave or Information Age, namely the virtual workplace.

Defining and grouping of the different virtual workplaces with its advantages and disadvantages are covered. Business process management will be defined and be differentiated from business process improvement. Business process levels and business process characteristics will be discussed followed by business process maturity.

1.8.4 Chapter 4

Chapter 4 covers the discussion and interpretation of the results obtained related to the people, processes and places management in the virtual workplace. The discussion is based on the three components mentioned earlier, namely ***people, processes and places***.

1.8.5 Chapter 5

This chapter discusses the proposed framework for the management of people, processes and places in the virtual workplace based on the research results discussed in chapter 4.

1.8.6 Chapter 6

This chapter covers the conclusion, evaluation of the research principles, recommendations and limitations as well as suggestions into other areas of research.

1.9 CONCLUSION

Business evolved over time moving towards the virtual workplace together with an explosion in social networks which enabled cross-continental connectivity between people, irrespective of time or place. Process execution changed over time from manual to more automated, thereby changing the nature of work, including management practices.

The change in the nature of management and its related challenges to people, processes and places in the virtual workplace is explored through the research conducted for this thesis.

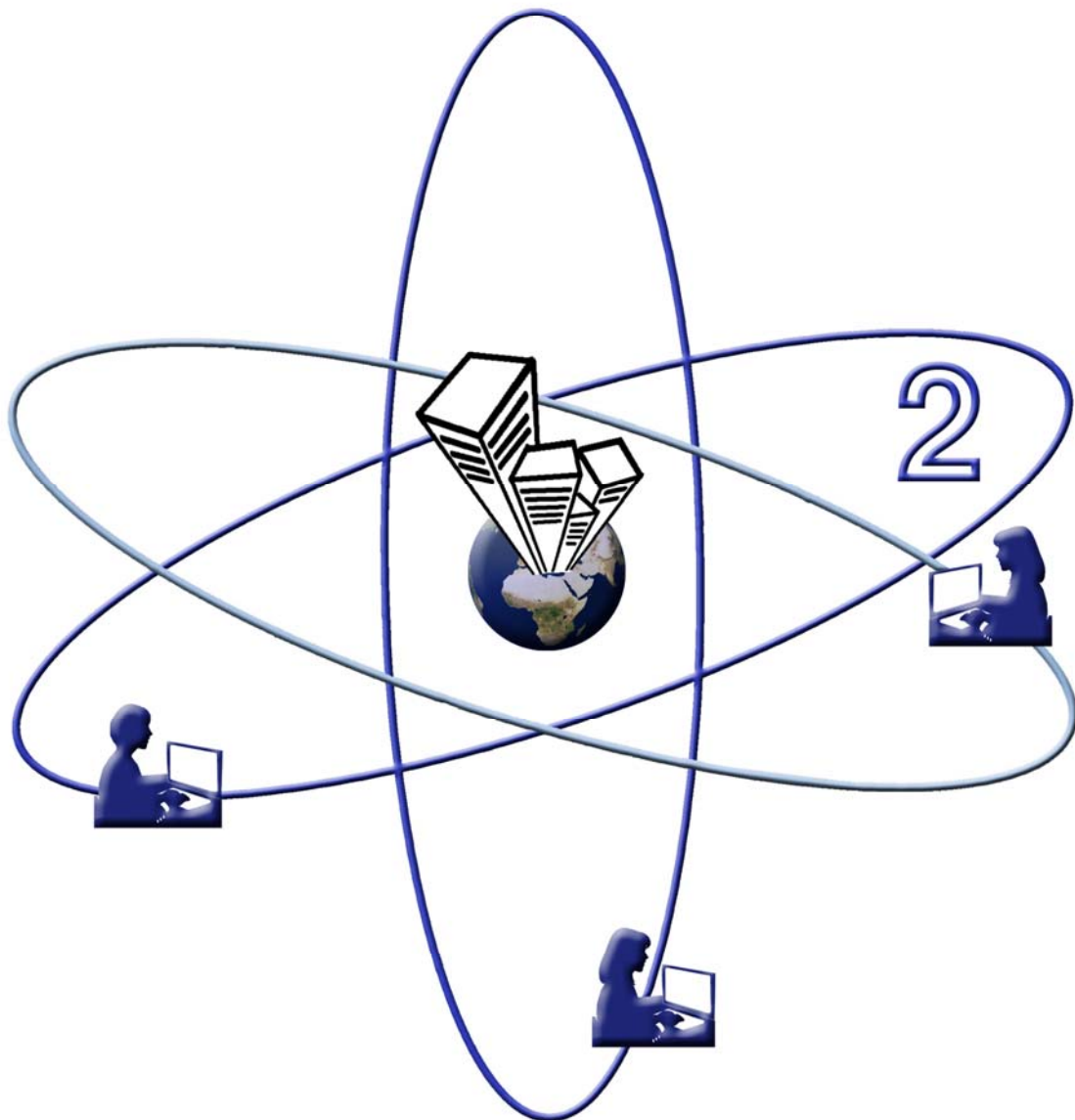
Different research approaches exist aiming to support different types of research. Quantitative and qualitative research approaches were reviewed resulting in a qualitative, interpretivist research approach that will be followed for the research conducted for this thesis. This approach has as objective to create an understanding of the way in which individuals experience, create and interpret the world they are functioning in. In the context of this thesis the world they are functioning in, relates to the virtual workplace.

The developed Extended Hermeneutic Circle of Learning as discussed in chapter 2 will form the framework for research into the people, processes and places components and its management in the virtual workplace.



The management of people, processes and places in the virtual workplace

RESEARCH METHODOLOGY



CHAPTER 2: RESEARCH METHODOLOGY

Interpretivism uses participant observation and hermeneutics, all of which give explicit recognition to the world of consciousness and humanly created meaning. Central to the hermeneutic approach is the creation of a mutual understanding, meaning “one person reaching an understanding of what another person meant”.

Ngwenyama & Lee (1997:150)

2.1 INTRODUCTION

A wealth of research methodologies exist to assist researchers in their quest to explore unknown territories, thereby enriching their experiences to learn and obtain knowledge. The quest to explore management of **people, processes and places** as part of the virtual workplace will be conducted in a qualitative, descriptive and interpretive manner using a case study, focus group discussions, interviews and an online survey or blog as instruments. This is the research approach of choice as derived from the discussion related to quantitative and qualitative research methodologies in section 1.5.

2.2 RESEARCH METHOD

Research in the information systems (IS) domain can be regarded as interpretive when our knowledge of reality is gained only through social constructions such as a language, consciousness, shared meanings and documents (Klein & Myers, 1999:69). As indicated in chapter 1 qualitative research will be done for the research conducted for this thesis. The research method will be interpretive, referring to the interpretation of qualitative data collected through the focus group discussions and interviews (thus language and shared meanings) and documentation provided. The qualitative approach to do research for this thesis has interpretivism as the philosophical basis with the hermeneutic circle as method of analysis to create meaning of the text (table 1, Cole & Avison, 2007:821).

The learning experience with its different phases resulting in the creation of meaning and understanding is discussed in the following section. Learning,

hermeneutics and the derived Extended Hermeneutic Circle of Learning will be covered.

2.2.1 Learning

Learning, whether formal or informal, is a key element of our existence and growth. The understanding created through learning could refer to learning being personal experience, academically supported through literature or spiritual. Handy (1991:46) offers a very concise example of how learning is achieved. His Wheel of Learning portrays the four phases of learning, namely:

- Learning starts with a **question** or problem that needs to be solved or a challenge that needs to be met with the emphasis on the question being the researcher's own and not that of someone else.
- Once the question has been defined, theory development commences and the emphasis of this phase is the **investigation** of possible ideas through free-thinking, re-framing and speculation.
- The next step is the **testing** of the theories in reality, that is to determine what will work and what not.
- Through **reflection** we know why and by understanding what works, we have learnt. Meaning is built through learning and learning leads to understanding.

The four steps of Handy's wheel of learning as discussed above are depicted in figure 2.1 below.

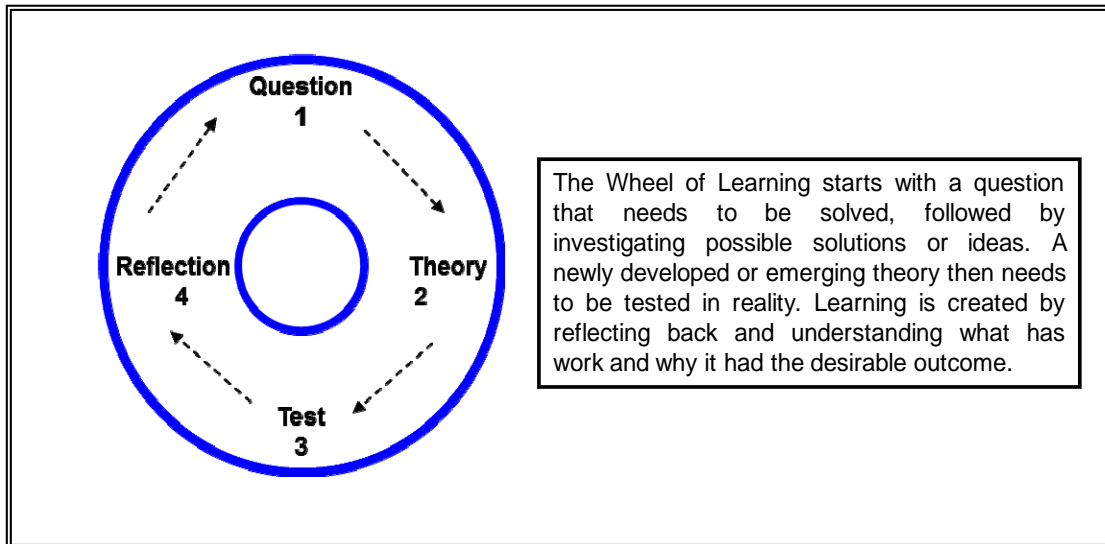


Figure 2.1: Wheel of learning
Handy (1991:46)

As stated above, meaning is created through learning with learning leading to understanding. Following the hermeneutic philosophy, understanding is promoted through interpretation, thereby “rendering what is unclear clear”, allowing people to make sense of and obtain an understanding of the information being conveyed (Bauman in Butler, 1998:86). This notion of interpretation shows a relationship with interpretivism followed for the creation of understanding as part of this thesis.

2.2.2 Hermeneutics

Hermeneutics has Greek origins, meaning the art and science of interpretation and understanding (Delius, Gatzemeier, Sertcan & Wünschler, 2000:114; Runes, 2001:221). According to Gadamer the process of interpretation moves from an initial understanding of the parts in terms of the whole, back from a global understanding of the whole to an improved understanding of the parts (Klein & Meyers, 1999:71,72). Hermeneutic understanding thus comes into being through active interpretation (Introna, 1997:70) providing the real means of “*engaging in transcendental interpretations with the prospect of future application*” instead of resolving immediate practical problems. Simply put, hermeneutics is a theory of interpreting text with an interpreter rendering words understandable and meaningful (Cole & Avison, 2007:820, 821).

Active interpretation leading to understanding is reflected in the hermeneutic circle which starts off with the interpreter's initial understanding and prejudgement or *Erlebnis*, that is *lived experience* to establish a preliminary understanding of the text or part he or she is confronted with (Introna, 1997:56, 67). Prejudices are grounded in two places, namely our world and our lived experiences (or *Erlebnis*) and are passed on in language and images relevant to our existing time and our generation's experience of the world (Cole & Avison, 2007:822). When this is related to the interpreter's current situation or form of life a new understanding of the context or whole is born. Moving between the part and whole creates an opportunity for understanding, provided the interpreter is open to this interaction and the opportunities that may be presented (Introna, 1997:65-67). The more the process is repeated, the more logical the part becomes and the better the interpreter understands the part and an understanding of the whole comes into existence. This circle of understanding does not necessarily seek to create new knowledge, but to understand existing knowledge better, thereby suggesting that we come to a better understanding of a complex whole from preconceptions about the meanings of its part and its interrelationships (Cole & Avison, 2007:823; Klein & Meyers, 1999:71). The interactive process of creating understanding, as discussed by Introna and Klein and Meyers above, correlates with theory development through continuous iteration between data collection and analysis as cited by Myers (1997b:6). Should this interactive process of creating understanding however be terminated too early or hastily, understanding will be incomplete, giving rise to confusion.

The greatest benefit offered by hermeneutics is the freedom to explore unusual comments and findings, thereby offering the researcher the opportunity to put his own interpretation on the data being analysed. Thus, a platform for future discussion is established (Cole & Avison, 2007:820).

In context of this thesis the parts, namely people, processes and places need to be understood in terms of the whole, that is in terms of the virtual workplace. This translates into moving between people, processes and places and interpreting it in the context of each other and in the context of the virtual

workplace. The understanding created related to the virtual workplace then needs to be interpreted in terms of the people, processes and places parts to obtain an improved understanding of the parts. With repetitive movement between the parts and the whole, the more logical the parts become and the better the understanding of the whole is created. Thus, the opportunity is created to understand the whole, that is to understand the people, processes and places relationship in the virtual workplace. This can be summarised as each of the parts being understood in terms of the others, thereby creating understanding of the whole (Blackburn, 1996:172).

The hermeneutic circle depicting interpretation with the movement between the part and the whole can be seen in figure 2.2 below.

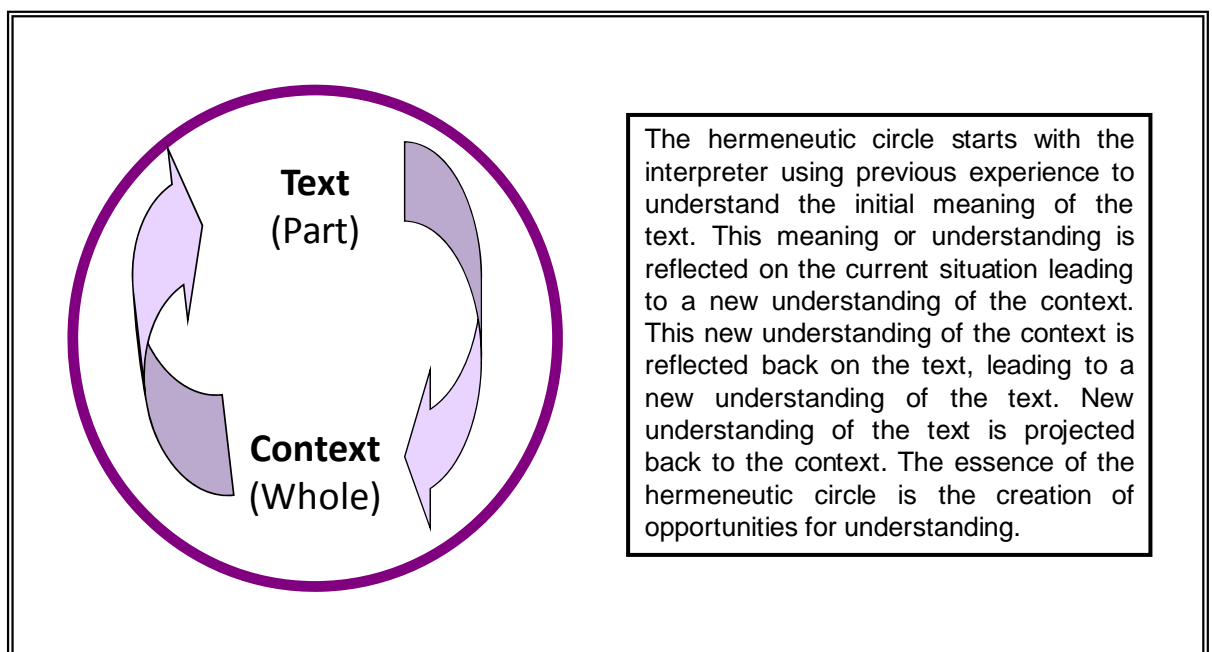


Figure 2.2: Hermeneutic circle
Introna (1997:65-67)

2.2.3 Hermeneutic circle of learning

“Each individual, through personal experience of the ‘give and take’ of interacting with others, and through the hermeneutic circle, builds his/her own ongoing knowledge” (Chalmers, 2004:212). Interpretation and learning through the hermeneutic circle of learning encompasses firstly, interpretation as the interaction between activity (part), context (whole) and the prejudice or

“horizon” of the interpreter and secondly the content, context and background of the information or “horizon” provided by the text. Meaning is given to text through every act of reading or hearing thereby creating the “fusion of horizons” (Gadamer in Chalmers, 2004:212).

The learning cycle (section 2.2.1) relates to hermeneutics (section 2.2.2) with understanding created through learning. Following on this, there is a close correlation between hermeneutics and the hermeneutic circle of learning with understanding embedded in the hermeneutic circle (Introna, 1997:65–67). Understanding is achieved through the hermeneutic dialogue which develops between the interpreter of the data (part or text) and the provider of the data (Introna, 1992:2,13). Data (part or text), when analysed and examined becomes information. Interpreting the information leads to understanding. Thus, turning data (part or text) into information becomes the first step in the process of gaining understanding.

In the context of this thesis, the researcher has a pre-understanding of the people, processes and places parts related to the virtual workplace. Through a process of discourse with various groups and individuals, the researcher will investigate the virtual workplace and the parts associated with it. Each of the parts will be interpreted in relation to each other and to the whole, and its meaning be integrated to obtain an understanding of people, processes and places in the virtual workplace as a whole (Cole & Avison, 2007:823). This process of “*subjective reflex*” as it is described by Gadamer, is adopted by the researcher toward the phenomena under investigation. “*Subjective reflex*” means the researcher’s “*intuitive anticipation of the whole and its subsequent articulation in the parts*” (Cole & Avison, 2007:823).

Combining the principles of Handy’s wheel of learning and Heidegger’s hermeneutic circle provides the “Hermeneutic circle of learning” in figure 2.3 below. This figure illustrates for example that the text or part in the inner circle relates to Question 1 which again relates to an initial understanding of the text or part.

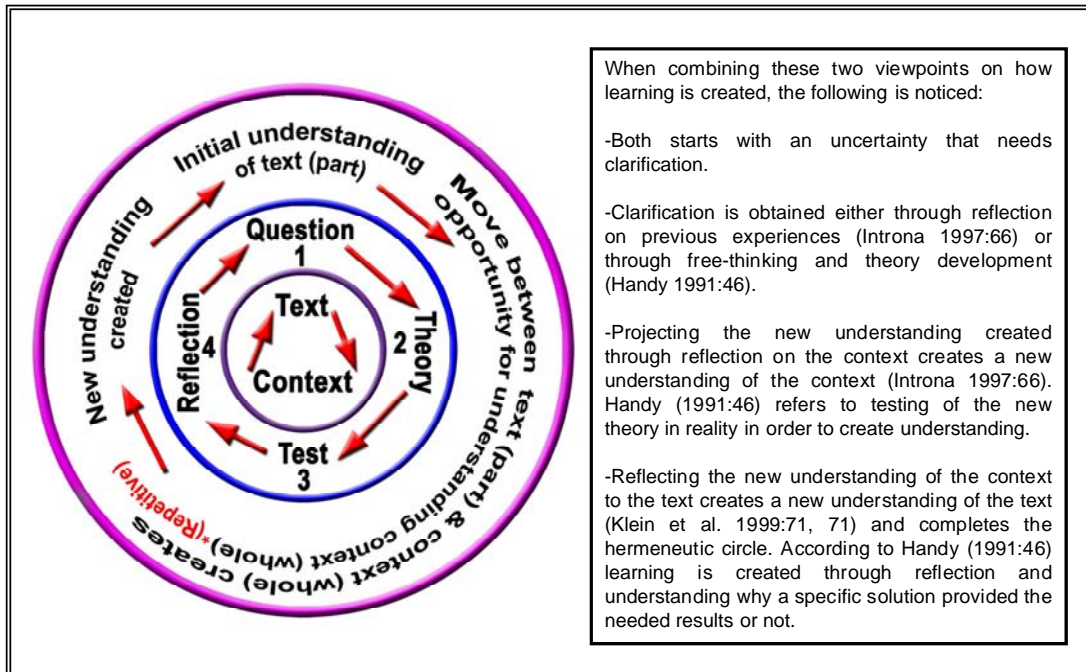


Figure 2.3: Hermeneutic circle of learning

Handy (1991:46), Introna (1997:65–67), Klein and Meyers (1999:71, 72)

Gaining understanding through learning as explained in the discussion reflecting on the hermeneutic circle of learning will be conducted following a set of steps which are incorporated into the hermeneutic circle of learning.

2.2.4 Theory building

Pandit (1996:2–5) uses a specific approach to theory building which includes grounded theory as defined by Corbin and Strauss (1990:3–21). Acknowledgement is given to Pandit’s application of grounded theory. However, the author of this thesis is applying the five steps and nine phases as identified by Pandit for the creation of the Extended Hermeneutic Circle of Learning and not as grounded theory. Adding the different phases for theory building to the hermeneutic circle of learning as depicted in figure 2.3, assist in obtaining a structured guideline for exploring **people, processes and places** as part of the virtual workplace (Pandit, 1996:2–5).

These phases do not necessarily follow a specific sequence. Within the five phases, nine different steps have been identified as indicated below each phase. The details reflected below are according to Pandit’s identification thereof. The researcher’s application of these steps is discussed in chapter 6.

- **Phase 1: Research design**

- Step 1: Review of literature

- Research effort is focussed through defining of the research question. The research question should be narrow enough to focus, yet broad enough for flexibility.

- Step 2: Selecting cases¹

- Purposive and not random sampling assisted in focussing the research effort on useful cases or units of data. Purposive sampling allowed the researcher to “hand-pick” the sample that would produce valuable data for the research (Oates, 2009:98).

- **Phase 2: Data collection**

- Step 3: Develop a rigorous data collection protocol

- This step focuses on the creation of a data collection protocol to increase reliability and construct validity. Triangulation of evidence in qualitative research relates to directly observed relationships whereas quantitative research relates to understanding rational and underlying relationships.

- Step 4: Enter the field

- This step has as activity the collection of data and adjustment of data collections in order to take advantage of emerging themes.

- **Phase 3: Data ordering**

- Step 5: Data ordering

- This step encompasses the chronological arrangement of events for easier data analysis.

- **Phase 4: Data analysis**

- Step 6: Analyse data relating to first case

¹ The cases used as part the research conducted for this research do not refer to case studies. Cases are used as described by Pandit (1996:2–5).

Various types of coding can be used to analyse the data of the first case, such as open, axial or selective coding. Coding is used for the development of concepts, categories and properties.

Step 7: Theoretical sampling

Literal and theoretical replication across units of data (cases) is done to confirm and extend the theoretical framework.

Steps 2 to 7 are repeated until theoretical saturation is achieved.

Step 8: Reaching closure

Closure is reached when improvement margins have decreased and theoretical saturation becomes possible.

○ **Phase 5: Literature comparison**

Step 9: Compare emergent theory with existing literature

Comparison with conflicting and similar frameworks is done leading to improved construct definitions as well as improvement of internal and external validity. Findings can be generalised.

These five phases and nine steps are depicted in the Extended Hermeneutic Circle of Learning below and will be used for theory building related to the management of people, processes and places in the virtual workplace.

2.2.5 Extended Hermeneutic Circle of Learning

Mapping these five phases and nine steps to the already defined hermeneutic circle of learning as seen in figure 2.3, provides us with the **Extended Hermeneutic Circle of Learning** as can be seen in figure 2.4. Moving back and forth between the parts and the whole (Introna, 1997:65); or investigating new ideas, testing those ideas and reflecting on it (Handy, 1991:46); or following the nine steps of theory building (Pandit, 1996:2–5) all have the same purpose – creating new understanding. New understanding is therefore created through interpretation, reflection and analysis. Importantly, realising and understanding the difference between the parts as it was originally, the

changes brought about through reflection and the impact of the changes on the parts and understanding the parts in terms of the whole is the key to learning.

The phases and steps as indicated above provide a structure or framework which will be used as guideline for this research project to create an understanding of the parts, namely people, processes and places in terms of the whole, that being the virtual workplace.

When reflecting on the Extended Hermeneutic Circle of Learning the following correlations between the different frameworks as discussed above are observed. The text in the inner circle correlates with the question which is the starting point in the next circle. The question correlates with the problem or dilemma in the third circle referring to the research problem that requires investigation. The research design reflects on how the problem will be investigated with steps one and two indicating the activities related to the research design. Text, the question, problem and research design culminates in obtaining an initial understanding of the part or text.

This is followed by moving between the part (text) and the whole (context) which correlates with theory. Investigation is done through data collection and data ordering with steps three, four and five indicating the activities involved. Understanding the whole, testing and correlating theory are obtained through data analysis as indicated in steps six and seven. Moving back and forth between the parts and the whole, that is between steps two to seven assists in obtaining an understanding of the parts in the context of the whole and vice versa. This translates into obtaining an understanding of the people, process and place parts in terms of the whole, namely in terms of the virtual workplace; and the virtual workplace in terms of people, processes and places.

Interpretation and reflection relates to learning and understanding achieved reaching closure with the new understanding that has been created.

These nine steps relate to learning and moving towards a new understanding by obtaining an initial understanding of the parts, followed by movement between the parts and the whole until closure is reached, resulting in new understanding of the parts in relation to the whole and the whole in terms of the parts.

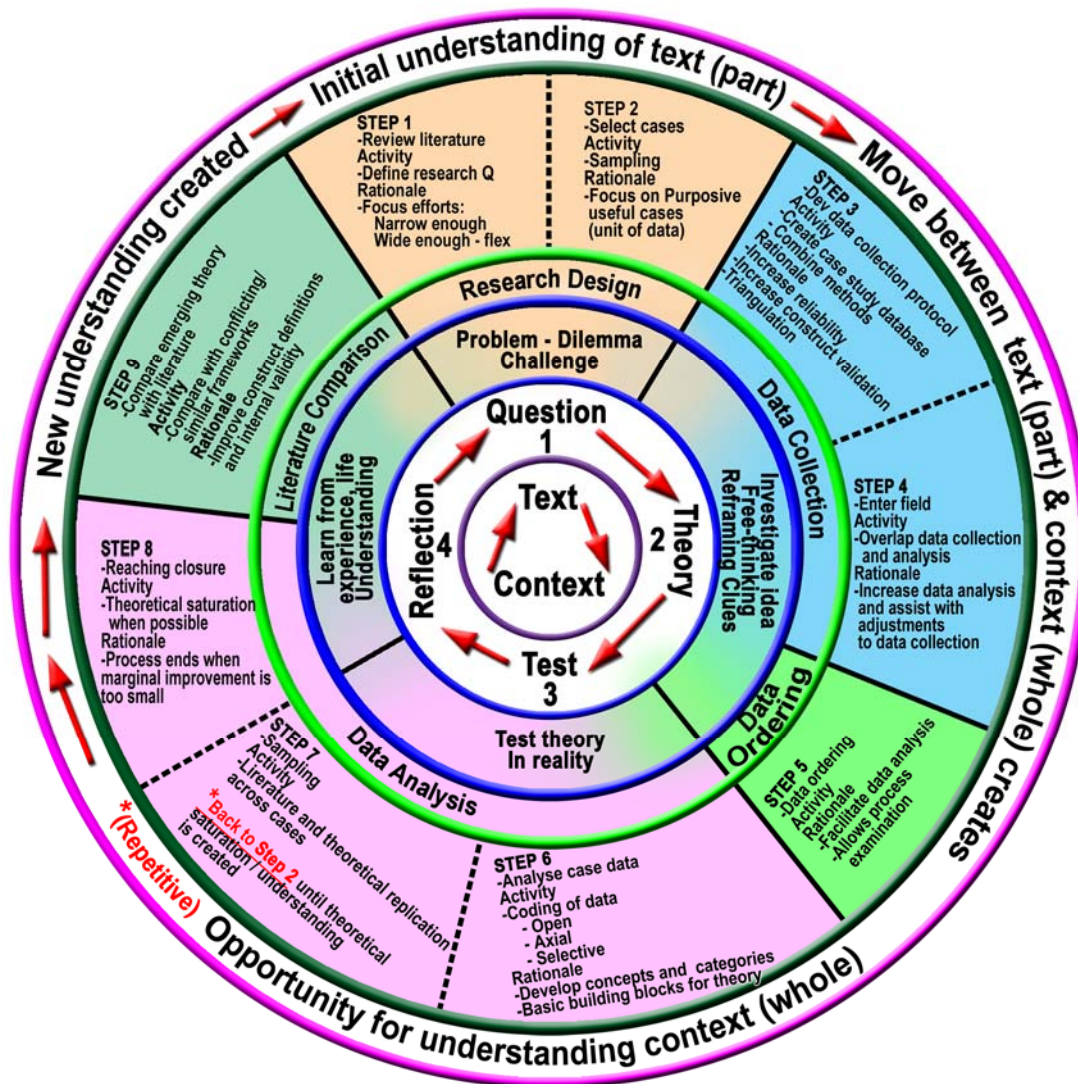


Figure 2.4: Extended Hermeneutic Circle of Learning
Derived from Handy (1991:46), Introna (1997:65) and Pandit (1996:2–5)

The qualitative, interpretivist research approach as mentioned earlier will be used for learning and to obtain knowledge on **people, processes and places** as part of the virtual workplace. This approach and the usage of The Extended Hermeneutic Circle of Learning are discussed in chapter 6.

2.3 RESEARCH APPROACH

2.3.1 Research design

The literature survey distinguishing between qualitative and quantitative research approaches (section 1.5) was done to select the most suitable

research approach. Through the literature survey an understanding was gained that a qualitative approach would be the appropriate choice.

For the purpose of this research a qualitative and descriptive method will be followed to gain insight into the virtual workplace, reflecting on people, processes and places. A multi-method research approach with different instruments will be used, namely focus group interviews, structured interviews and a weblog as discussed in sections 2.3.1.1 and 2.3.1.2 respectively, and data generation in section 2.3.2. Using a multi-method approach enables us to look at the research area in different ways. The advantage of using a multi-method approach is that a larger volume of data can be generated, thereby improving the quality of the research. However, the disadvantage is that it could be more time consuming and expensive to analyse the data. The findings from one method can be compared with the findings of another method, such as comparing the findings of the focus group discussions with the interviews or the case study. Corroborating the findings of the different methods enhances the validity and is called method triangulation. Method triangulation relates to the using of two or more data generation methods (Oates, 2009:36–37)

The multi-method approach is useful to obtaining insight into business process ideas (**process**) relevant to the two different workplaces (**place**) and obtains insight into the opinions and experiences of the participants (**people**).

Focus group interviews will be conducted with groups from different industries working in both the traditional and virtual workplaces within South Africa as discussed in section 1.6.2, population for research. Structured interviews will be conducted with participants outside the borders of South Africa and a weblog will be used for online interaction.

Research findings will be presented in the thesis reflecting on the people, processes and places relevant to the virtual workplace.

2.3.1.1 Focus groups

Focus group interviews are conducted with a small homogenous group of people, usually three to six (Oates, 2009:194) or six to eight participants, on a specific topic (Patton, 1987:135), who meet for 90 minutes to 2 hours (Cooper & Schindler, 2001:142). Different focus groups are conducted for different topics emphasising homogenous group dynamics. During focus group interviews participants reflect on questions posed and not problem-solving or decision-making. Participants therefore do not necessarily agree or disagree (Cooper & Schindler, 2001:142; Patton, 1987:135; Patton, 2002:236). The qualitative data collected during focus group interviews enriches all levels of research questions and comparisons (Cooper & Schindler, 2001:142). Recording of all group interviews and structured interviews will provide opportunity for the researcher to be actively involved in discussions in addition to having a second researcher to assist with making notes (Oates, 2009: 195; Patton, 1987: 136; Cooper & Schindler, 2001:145).

Focus group interviews offer the advantages of being a flexible, relatively inexpensively method (Cooper & Schindler, 2001:145) to gather qualitative data from more than one person at a time, thereby increasing the volume of data collected during one interview. Additional to receiving more varied responses to questions, consensus can be obtained regarding the subject at hand and the opportunity can arise to do brainstorming of the subject (Oates, 2009:194). False or extreme views can be weeded out as participants tend to provide checks and balances which contribute to keeping the focus on the topics at hand (Patton, 1987:135).

The disadvantages of focus group interviews relate to a limited number of questions, usually not more than 10 questions in two hours, which can be discussed. Caution needs to be exercised to prevent discussions from being dominated by individuals as part of their play for power, thereby diverting discussions. Confidentiality and anonymity

could pose a problem when participants know each other (Oates, 2009:195; Patton, 1987:135,136). As focus group interviews relate to a qualitative research and data collection method with limited sampling it should not be used as a replacement for quantitative analysis (Cooper & Schindler, 2001:145).

For the research as part of this thesis, focus group interviews were conducted with homogenous groups of four to five participants within a company, within an industry, for example, a homogeneous group of four participants from Company A, with Company A being in the consulting industry. The focus group participants in the different industries were selected based on their exposure to business processes (process), their workplaces (place) and their experiences (people). Care was taken to obtain a diversity of traditional and virtual segments. Examples of the roles performed by individuals identified for this research are business analysts, business process analysts or architects, business process owners and BPM consultants.

2.3.1.2 Online groups – weblog (blog)

Weblogs, also known as blogs, originated as a social online writing tool used by bloggers or users who maintain a blog (Duffy & Bruns, 2006:32) to keep chronologic dated records (Herring, Scheidt, Bonus & Wright, 2004:1) of their published material on any topic as discussed on a website. Blogging, which is the online participation on a blog, changed the traditional way of communication through writing, as written content is instantaneously available through the use of the internet, enabling the sharing of knowledge.

Apart from allowing bloggers to quickly and easily create and share written content, that is called blogging, they can also incorporate images, videos and hyperlinks. A blog typically consists of the following components (Duffy & Bruns, 2006:32) that assist to add structure to the blog and online journals posted to the blog:

- post date depicting the date and time entries were posted on the blog
- category indicating the type of content posted on the blog
- title of the record posted
- body or content of the record posted on the blog
- trackbacks which are links back to other sites
- comments added by readers and bloggers
- permalink which is the full URL of an individual article posted to the blog
- footer at the bottom of the page which contains the components listed above, that is the posting date and time, category, author and statistics, such as the number of reads or hits in the blog and comments received

A blog can have three usages, firstly that of a social writing tool, secondly for the sharing of information instantaneously over the internet and thirdly for research and to stimulate thinking, which links to the educational component and its use as part of research conducted for this thesis (Richardson, 2006:20).

Online participation in a blog has the disadvantage that the researcher is not able to conduct in person interviews with bloggers. However, blogging, and its unconventional way of expressing opinions, provides flexibility benefits as bloggers' participation is not dependent on time and places.

The use of this type of technology (**process**) will provide invaluable inputs from participants (**people**) across the globe (**place**).

2.3.1.3 Case study

Yin (2003:13) defines a case study as “*an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*”. Various methods of data generation, such as

interviewing, observation and documentation analysis can be used to study a case and a case study has the following characteristics, according to Oates (2009:141, 142):

- Focus on depth rather than breadth, thus obtaining as much possible details of the phenomenon under investigation.
- Use natural settings and not laboratory or artificial settings.
- It is a holistic study thereby focussing on complexity of relationships and its interrelatedness.
- It uses multiple sources and methods, such as interviewing, observation, departmental meetings and briefing notes.

Oates (2009:142) further discusses different types of case studies, namely explanatory, historical and contemporary case studies, with a descriptive case study containing a detail analysis of the particular phenomenon and its context.

Advantages offered by case studies include dealing with complex situations where it is difficult to study a single factor in isolation; that it fits situations where the researcher has little control over events; that it is suitable for theory building and testing and allows the researcher to show the complexities of life and explore alternative meaning. It also produces data that is close to people's experiences (Oates, 2009:150).

The disadvantages in case study research include that it can be perceived as lacking rigour leading to generalisation with poor credibility; there is difficulty in getting access to people and documentation; the presence of the researcher can affect people and their behaviour and there are no set rules for the researcher to follow to determine quality in advance (Oates, 2009:150).

The descriptive case study fits with the research conducted for this thesis. The case study information is used as data in this research as discussed section 2.3.2.3. Thus, it is used as a data generation method.

Following on this discussion of the research design is the data generation method used for this thesis.

2.3.2 Data generation method

The data generation methods for the research conducted as part of this thesis are discussed in the following section. The focus group discussions, interviews and weblog latched onto the case study forming a multi-method data generation, exploring the people, processes and places and its relationship in the virtual workplace. The focus group interviews and other interviews focussed on a specific subset of people as indicated in section 1.6.2. This could be seen as a limitation and has been addressed in Limitations (section 6.11) and Future Research (section 6.12).

2.3.2.1 Focus groups

All focus group interviews were recorded to ensure recording of quotations from participants. The population of the focus groups is discussed in section 1.6.2. Table 2.1 indicates the focus group discussions with participants working virtual within South Africa. A total number of nine interviewees participated in the focus group interviews.



INDUSTRY	WORK RELATED ENVIRONMENT	LOCATION
Consulting		
Company A	Virtual	South Africa
Consulting		
Company E	Virtual	South Africa
Total number of interviewees: 9		

Table 2.1: Focus groups

The agenda for the focus group sessions was compiled in order to provide structure to the focus group discussions with the questions grouped according to the people, processes and places components. The agenda is represented in table 2.2. Company profiles were compiled of the participating companies focussing on the companies' heritage, values, mission, vision, business reason and the reason for selection as part of this research. The company profiles are presented in table 2.3: Profile Company A: Consulting and table 2.4: Profile Company E: Consulting.



AGENDA FOR FOCUS GROUP SESSIONS	TIME ALLOCATION (minutes)
General orientation	
Welcome and introduction of participants	2
Motivation for research	2
Data collection conversation	
People	
Q1: What challenges do you experience with regards to BPM in the workplace?	10
Q2: What challenges do you experience with regards to BPM in the virtual workplace?	10
Q3: What management style is needed In the virtual workplace?	10
Q4: What management principles are needed in the virtual workplace?	10
Process	
Q5: Identify business processes unique to the virtual workplace	10
Q6: What characteristic make these business processes unique?	10
Q7: What change control process is followed for the management of business processes in the virtual workplace?	5
Place	
Q8 What unique challenges do you have working virtual?	10
Q9 How does business processes help you working virtual?	10
Q10: What is the most common way you work virtual?	5
Closure	2
TOTAL TIME ALLOCATION	90

Table 2.2: Agenda for focus group discussions



PROFILE COMPANY A: CONSULTING	
HERITAGE	Company A was founded in 2008 after like-minded individuals and leaders in Business Process Management (BPM) and Enterprise Architecture (EA) decided to join forces and establish an identity that communicated their activities, strengths and values. They established a reputation as providers of world-class BPM and related solutions and their client base includes many large and well-known South African corporate clients with their global subsidiaries. Firm on their foundations they expanded to include a stake from a 100% black-owned technology provider and enterprise resource planning specialist company. Today Company A has approximately 50 employees specialising in BPM, working virtual while supporting their clients.
VALUES	At the core of Company A's corporate values are integrity, collaboration, learning and growth and, most importantly, sharing in success. The founders are all value-driven individuals who want to deliver tangible benefits to their clients. These characteristics form the cornerstones of their belief system. They believe that these values and belief systems will give life to their mission.
MISSION	Company A's mission is to be recognised as a leader in delivering real, tangible business benefits for their customers.
VISION	Company A will achieve their mission through the delivering of sustainable, value adding-solutions based on business process management (BPM), value engineering (VE) and enterprise architecture (EA) related products and services. Company A strives to provide sound foundations for sustainable outcomes by building on architectural integration, proven methods, innovative meta constructs, model driven architecture and people focussed mentoring.
BUSINESS REASON	Company A delivers value-adding solutions to their clients that is a considered blend of expertise in understanding business strategy, the role business processes fulfil, skilled design thereof through the application of BPM techniques and many years of experience in facilitating process-oriented analysis and design. Company A is a specialised provider of world-class business process management (BPM) and enterprise architecture (EA) solutions with a wealth of experience, expertise and product knowledge who delivers strategic business application solutions that creates value for their clients by helping them to implement their strategic visions.
REASON FOR SELECTION	Company A was selected for participation in this research based on their expertise and passion for business processes and their belief in the value that business processes have for the organisation and its clients. Company A also has a large number of virtual workers with

	many years of experience in the virtual workplace. Their wealth of knowledge relating to people, process and the virtual workplace is deemed invaluable for the research conducted for this thesis.
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Table 2.3: Profile Company A: Consulting

PROFILE COMPANY E: CONSULTING	
HERITAGE	Company E gained recognition as the complete Information and Communications Technology (ICT) partner to a considerable client base of large technology users in the public as well as private sectors and is listed on the Johannesburg Stock Exchange (JSE). This company renders services to almost 90% of the top 100 JSE-listed companies, including nine of South Africa's leading corporations. The company aims to address its own business growth and competitive imperatives, enterprise development and the improvement of its corporate citizenship through its National Partnership Network. Company E's position as the leading listed empowered ICT company delivering a complete range of professional services and solutions is of great value to their clients, shareholders and staff. The company obtained a "AA" Empowerdex rating (Level 3 contributor to BBBEE) which is the best in the ICT industry for listed services and solutions companies and serves as testimony for their commitment. The company has partners in Australia and future endeavours could include partners in South America. The company currently employ more than three thousand eight hundred professionals.
VALUES	Company E's value statement is as follows: <ul style="list-style-type: none"> • The client is the key: No clients mean they have no business. Respect clients, treat them with dignity and provide excellent service at all times. • Esteem through growth: Growth is essential to maintain a healthy organisation that is profitable, adding value to its employees, shareholders and communities. • We love what we do: Happy and satisfied employees are of the utmost importance and they will make every effort to ensure that the work environment is pleasant, challenging and conducive for growth, health and happiness. • Dedication to delivery: They demonstrate their loyalty by sticking to their promises, encouraging open and honest dialogue between the company and its employees. Teamwork and commitment serve as the strengths of this company.
MISSION	The company's mission is to continually improve its client centeredness by focussing on improving its efficiency and competitiveness through the offering of world-class, innovative and affordable service, premier client care, commercial acumen and

	proven technological leadership.
VISION	Company E's vision is be the most respected company in the ICT industry in their target markets by striving for unparalleled value for their clients, staff, shareholders and communities. The company strives to achieve its vision through the development of its staff, its intellectual property, its communities and with investment in its technology and service based partnerships and resources.
BUSINESS REASON	Company E has specialised knowledge in the financial, retail, mining, manufacturing and telecommunications industries. This specialised knowledge base enables them to provide comprehensive, integrated solutions to their clients throughout Southern Africa. Delivering large and complex ERP implementation on time and within budget is their mantra and these implementations are supported with one of the largest SAP support service centres in Southern Africa, functioning sixteen hours a day, seven days a week.
REASON FOR SELECTION	This company's activities are supported through the implementation of standardised processes thereby supporting the staff functioning in the SAP support hub as well as those working from distributed locations, including Australia. The company's experience in providing support for and the management of virtual workers provides invaluable insights into people and processes in the virtual workplace.

Table 2.4: Profile Company E: Consulting

2.3.2.2 Interviews

The interview participants as indicated in table 2.4 were from different industries with virtual workers or from the traditional environment. Interview participants were from South Africa as well as abroad, thereby providing the opportunity to broaden the perspective on people, processes and places and its relationship in the virtual workplace. A total number of ten participants were interviewed. Company profiles were compiled of the participating companies following the same structure as previously discussed in section 2.3.2.1, to promote consistency in the presentation of the companies. The company profiles are presented in table 2.6: Profile Company B: Financial institution, table 2.7: Profile Company C: Telecommunications and table 2.8: Profile Company D: Financial institution. Research participants are presented in table 2.9: Research G. A full list of the participants can be seen in Appendix B.



INDUSTRY	WORK RELATED ENVIRONMENT	LOCATION
Research (G)		
Interview	Virtual	Australia, Germany
Financial Company (B)		
Interview	Virtual	South Africa, Africa
Telecommunications (C)		
Interview	Traditional	South Africa, Africa
Financial Company (D)		
Interview	Traditional	South Africa
Total number of interviewees: 10		

Table 2.5: Interviews

PROFILE COMPANY B: FINANCIAL INSTITUTION	
HERITAGE	Company B is one of the largest financial institutions in South Africa, serving personal, commercial and corporate customers in South Africa and Africa. The financial institution interacts with its customers through a combination of physical and electronic channels offering a comprehensive range of banking services. The company was ranked first as a company with a strong employee involvement in community development. Company B employs approximately thirty seven thousand employees.
VALUES	Company B values its people and invests in them to ensure that they are able to deliver on organisational goals. The company's value offering to its customers includes service, affordability, choice, convenience and security.
MISSION	Company B's mission is to be the leading practitioner and thought leader in corporate social investment as informed by global trends,

	and to build strength and capabilities through collaborative partnerships. Linked to Company B's mission is its Corporate Social Investment (CSI) with projects in the following areas: education, entrepreneurship, health, employee community involvement, group-wide community initiatives, environment as well as heritage, arts and culture.
VISION	Company B strives to deliver the best possible service and financial supportive products to its customers.
BUSINESS REASON	Company B delivers basic banking products and services for the low-income personal market up to customised solutions of the commercial and corporate markets as well as wealth management products. Business process management (BPM) with supportive business process standardisation sustains business operations within African subsidiaries as well as thirteen business units in South Africa, of which seven are client facing business units.
REASON FOR SELECTION	Business process management (BPM) is crucial for the effective functioning of the financial institution, especially in view of their expansion into Africa with subsidiaries in Angola, Tanzania and Mozambique. In order to ensure compliance to legal and financial legislation, processes are 95–96% generic. Company B has business process experts working remotely, that is from countries outside the borders of South Africa. These experts are responsible for the defining, designing, implementation and monitoring of the business processes relevant to the subsidiaries. Their wealth of knowledge relating to people, processes and places, including the standardisation of business processes across subsidiaries while functioning from a virtual workplace is deemed invaluable for the research conducted for this thesis.

Table 2.6: Profile Company B: Financial institution

PROFILE COMPANY C: TELECOMMUNICATIONS	
HERITAGE	Company C was founded in 1991 and listed on the Johannesburg Stock Exchange (JSE) in March 2003. In February 2007 the company made its first acquisition outside South Africa in the form of Africa Online, the largest Pan-African Internet Service Provider in Sub-Saharan Africa. Company C expanded its footprint into West Africa in May 2007 when it acquired 75% in Multi-Links, Nigeria's second largest private telecommunications operator. This acquisition grew to 100% or fully owned in January 2009. The company's expansion into Africa was furthered when it acquired a 100% interest

	<p>in MWEB Africa Limited on 21 April 2009. On home soil, the company launched its data centre operation, branded Cybernest, in Bellville, Cape Town on 19 November 2009. As part of the company's transformation drive, a new organisational structure came into being on 1 April 2009, consisting of three major business units, namely the South African, International and Data Centre Operations business units. Company C is Africa's largest, integrated communications company, thus providing integrated communications solutions to a wide range of customers.</p>
VALUES	<p>Company C's value statement is as follows:</p> <ul style="list-style-type: none"> • Inspired to deliver value to customers Meeting the needs of customers is their core inspiration • Dedicated to agile and excellent performance Diverse, positive, aligned and passionate people • Determined to continuously improve Learning, changing and innovating to own the future • Committed to act with integrity Honesty, empathetic and approachable in all that they do
MISSION	<p>Company C focuses on long-term profitability through growth in existing and new markets by:</p> <ul style="list-style-type: none"> • Providing differentiated high quality fixed, wireless and converged products and services directly or through their subsidiaries and partners • Striving for excellence in serving their valued domestic retail and wholesale, as well as international customers • Achieving unprecedented organic growth of existing assets • Targeting acquisitions and new partnerships to achieve core strategies • Acting as a responsible and caring corporate citizen
VISION	<p>Company C strives to become Africa's Information and Communications Technology (ICT) service provider of choice with employees regarding it as the preferred employer in the ICT industry; shareholders viewing Company C as a company offering competitive returns, including Government considering the company as trustworthy and a respectful enabler of the economy; suppliers recognising Company C as a partner in delivering world-class ICT services and the company being seen as a caring and responsible South African corporation.</p>
BUSINESS REASON	<p>Company C delivers integrated communications services which include integrated solutions such as internet services, managed data networking, data hosting, IT security and virtual private network (VPN) service with future endeavours including expansion into the mobile market.</p>
REASON FOR	<p>Company C's drive towards business process management originated when a standardised set of business processes for the</p>

SELECTION	roll-out of 2Meg lines were developed, thereby aligning the activities in the different regions. In doing this, the company used a standardised business process methodology, capturing the business processes in a central repository. The company is currently investigating opportunities for enterprise-wide business process management. Thus, exploring the company’s understanding of the interaction between people, processes and places will provide valuable inputs for this research.
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Table 2.7: Profile Company C: Telecommunications

PROFILE COMPANY D: FINANCIAL INSTITUTION	
HERITAGE	British Company D was founded in 1862 with a holding company established in South Africa in 1969 followed by it being listed on the Johannesburg Stock Exchange (JSE) in 1970. During 1988 Company D established links in Botswana and Swaziland and expanded its operations over the years to countries such as Kenya, Uganda, Zaire, Zambia and Zimbabwe. Investment banks were established in Russia and Brazil in 2003 and Company D took control of BankBoston in Argentina on 1 April 2007. Company D expanded its shareholding in other financial and investment institutions including emerging markets in China and Turkey. Company D values its socio-economic contribution as it sustains a large number of jobs, locally and internationally.
VALUES	Company D’s people is its key differentiator with the following eight values providing its behavioural framework, namely serving its customers, growing its people, delivering to its shareholders, being proactive, working in teams, guarding against arrogance, respecting each other and holding the highest level of integrity.
MISSION	Company D’s mission is to offer full financial services and to have the most satisfied customers.
VISION	Company D aspires to be a leading emerging market financial organisation by using all of its competitive advantages to the full and by focussing on delivering superior, sustainable shareholder value in serving the needs of its customers, connecting them globally where appropriate.
BUSINESS REASON	Company D is an established leader in the banking industry in South Africa. The company as a group is represented in thirty three countries of which seventeen are in Africa and sixteen in five other continents. The company offers its customers the benefits from its

	knowledge and expertise in emerging markets, coupled with a global outlook. Company D has three main pillars of business, namely personal and business banking, corporate and investment banking and wealth.
REASON FOR SELECTION	Providing emerging markets with the knowledge needed and guiding them to become proper functioning units requires appropriately defined, documented and managed business processes. Company D has business process experts working from various locations. These experts fulfil functions related to the defining, designing, documenting, implementing and monitoring of the processes relevant to its business. The company has a wealth of knowledge related to the people, processes and places components identified earlier. Activities include working from various locations or distributed workplaces, thus making its contribution invaluable for the research conducted for this thesis.

Table 2.8: Profile Company D: Financial institution

RESEARCH G	
PARTICIPANT	DESCRIPTION
7	BPM Consultant with four years professional experience across Europe, Asia, Africa and Australia. Involved in large scale BPM initiatives and process improvement activities. Industry sectors: aluminium, mining, automotive, capital goods, government, armed forces.
8	Senior SAP Researcher: SAP BPM, BPM technologies and future trends.
9	Research assistant at European Research Centre for Information Systems. Area of expertise: Collaborative BPM, ICT and E-Government.
10	Research assistant and PhD student at the Department of Information Systems Engineering and Financial Management. University of Augsburg. Area: Business Process Flexibility.
11	Post-doctorate fellow and BPM project manager.

Table 2.9: Profile Research G

2.3.2.3 Case study

The case study conducted with Company F was done during 2009 and 2010 in face-to-face interviews complemented with documentation provided by the company. The descriptive case study focussed on a research company in Alabama, USA, its virtual work experience including its organisational, management and business process related components.

INDUSTRY	WORK RELATED ENVIRONMENT	LOCATION
Research Company F		
Interviews	Virtual	Alabama, USA

Table 2.10: Case study: interview

The descriptive case study covered the organisation’s structure and the virtual workplace including the advantages and disadvantages experienced. The manner in which business processes supported the organisation was also included. The reason for selecting this company is its extensive experience related to people, processes and places in terms of the virtual workplace. The documented case study is included in appendix A.

2.3.2.4 Online groups – weblog (blog)

A blog which contains postings exploring people, processes and places in the virtual workplace together with comments and opinions received from bloggers will be fully archived in order to ensure correct use and reference of bloggers’ material posted. The blog will contain chronological postings with the most recent postings appearing on the

front page. In this manner bloggers will be acquainted with the latest postings on the blog.

The blog was created using Google's blogger and bloggers could participate anonymously or provide their name. Full details explaining the purpose of the blog were provided on the website as well as in the emails sent to prospective participants. The blog was updated with new postings on a weekly basis and checked regularly (almost daily) for comments. Bloggers participated by providing comments on trust and culture in the virtual workplace, the need for business processes, the type of business processes and on business process maturity. Blog statistics reflecting on the number of visitors, the countries from which the visitors were and the number of visits to the blog can be seen in appendix F. The blog statistics are included for information purposes reflecting on the user traffic related to the blog. Pure, statistical analysis of the blog statistics is not relevant to this thesis due to a qualitative, interpretive research approach being followed.

2.3.2.5 Documentation

Documentation relevant to business processes reflecting on methodologies, standards, governance and business process change control as used by the participating organisations have been indicated and referenced accordingly in chapter 4, such as the defined roles and responsibilities and governance documentation as well as the documentation in help file format available from the ARIS Method Help as part of the ARIS BPM Suite.

2.3.3 Data analysis

A qualitative and interpretive approach as discussed in section 1.5.1 will be followed to analyse of the data generated using the multi-method approach of case study, focus groups, interviews and weblog with the Extended Hermeneutic Circle of Learning as guideline as discussed earlier. Concepts and categories reflecting on the people, processes and places components related to the virtual workplace will be described.

2.4 CONCLUSION

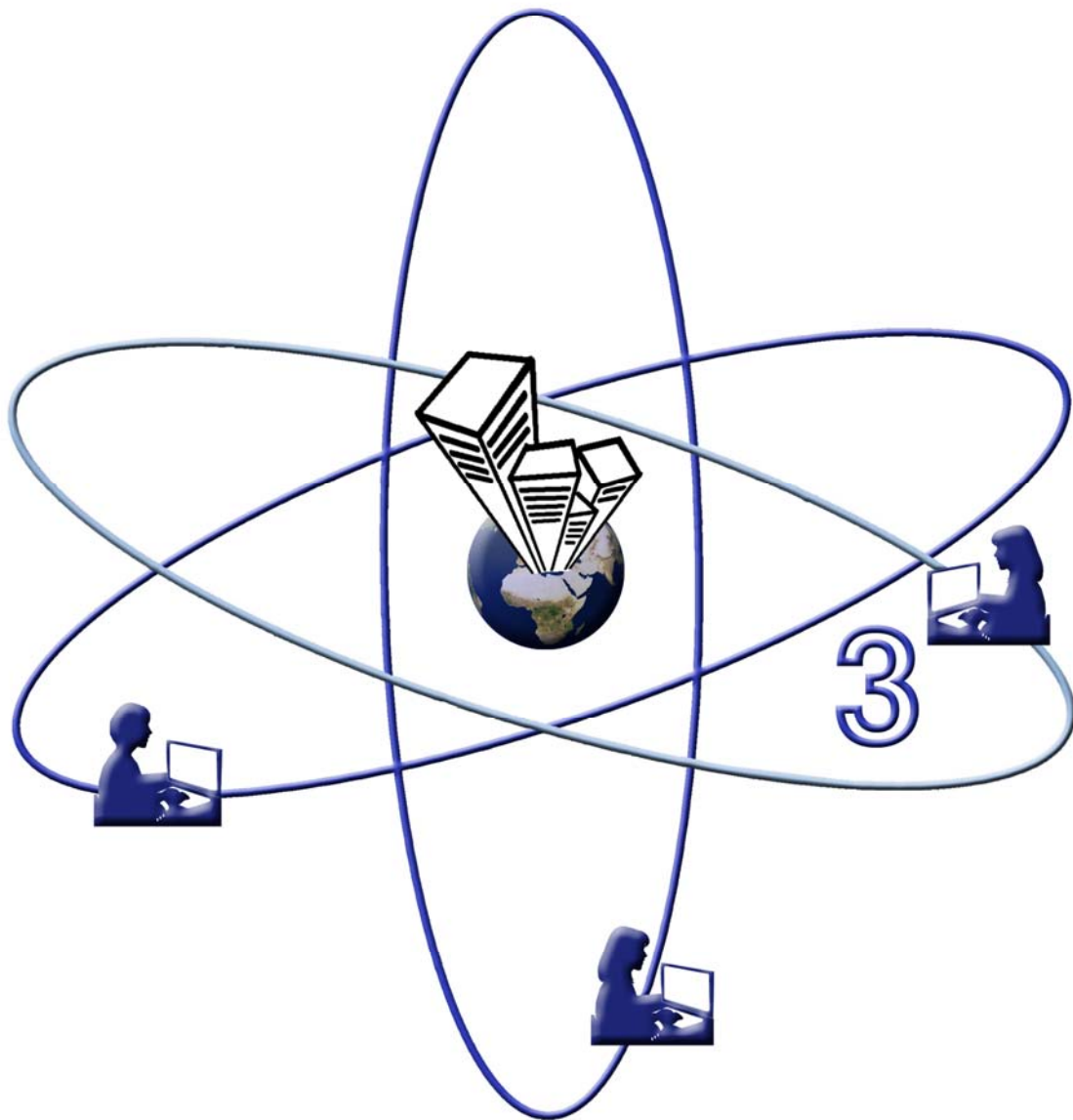
The Extended Hermeneutic Circle of Learning was developed as part of creating an understanding of the research approach that will be followed for this thesis. The research tools, namely a case study, interviews, focus groups, weblog and documentation will be used for data generation regarding people, processes and places as part the virtual workplace. The generated data will then be analysed based on a qualitative, interpretive approach. The conceptualisation and an interpretive description of the concepts and categories relating to the people, processes and places components as obtained from the data collected during the case study, focus group discussions, interviews and blog are discussed in chapter 4.

In order to obtain an understanding of the manner in which work changed over time leading to the establishment of the virtual workplace is explored in the literature overview covered in chapter 3. The literature review will also cover business processes, including business process levels, business process characteristics and business process maturity.



The management of people, processes and places in the virtual workplace

LITERATURE OVERVIEW



CHAPTER 3: LITERATURE OVERVIEW

“... stressed the need to focus on “intellectual capital” in a business environment where ideas are “currency”, information and customers are money, and vision is valued.”

Walter Wriston in
Maynard Jr. & Mehrtens
The Fourth Wave: business in the 21st century

Man is the animal that can direct and control his own evolution.

Bennis
Beyond bureaucracy: essays on the
development and evolution of human organisation

3.1 INTRODUCTION

Economic growth enabled development that left us with a legacy of invaluable innovations, which not only changed the nature of work, but also the way in which people lived, communicated and travelled. These developments occurred in cycles, referred to as waves of change, which is covered in the following part.

The literature review explores the waves of change with the “*transition from the Industrial-Bureaucratic Age to the Information-Network*” (Lipnack & Stamps, 2004:29), also referred to as the Information Age or Fifth Wave, of which the virtual workplace forms part. Irrespective of the type of workplace (**place**), that is traditional or virtual, both utilise business processes (**process**) to transform inputs into outputs. Managing the business processes in the virtual workplace may require a different management style (**people**) from that in the more traditional workplace, as the challenges faced in the virtual workplace differ from those in the traditional workplace. The literature review covers **people-process-place** with a review of the changing nature of work (section 3.2). **People-process** covers business processes and business

process maturity (sections 3.4.1 up to 3.4.7 and 3.7.1). The virtual workplace is discussed with the focussing on **people-place** (sections 3.3.1 to 3.3.6). Process is also discussed in sections 3.5.1 and 3.6.1 respectively. Figure 3.1 depicts the literature overview including the gap between **process-place**.

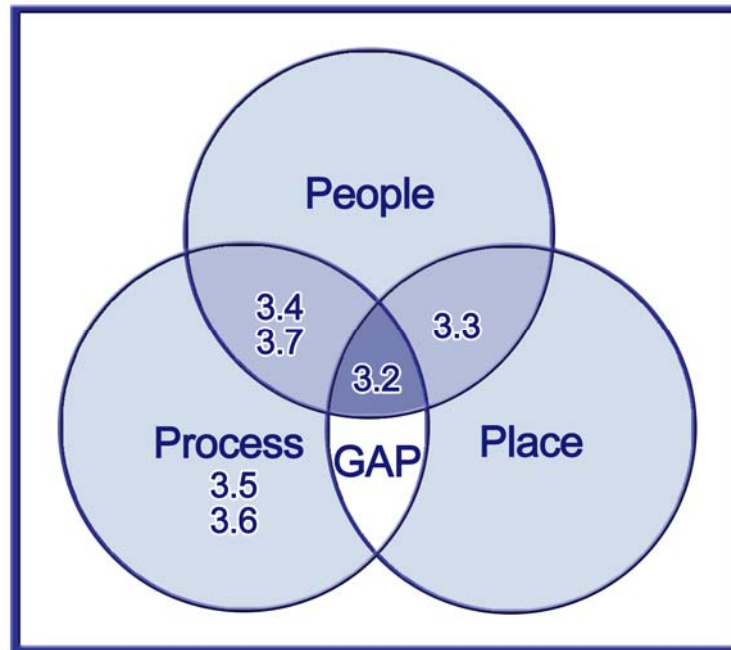


Figure 3.1: Literature overview

The literature review conducted as part of step 1 of the Extended Hermeneutic Circle of Learning is depicted in figure 3.2. This step is also discussed in chapter 6 as part of the application of the Extended Hermeneutic Circle of Learning.

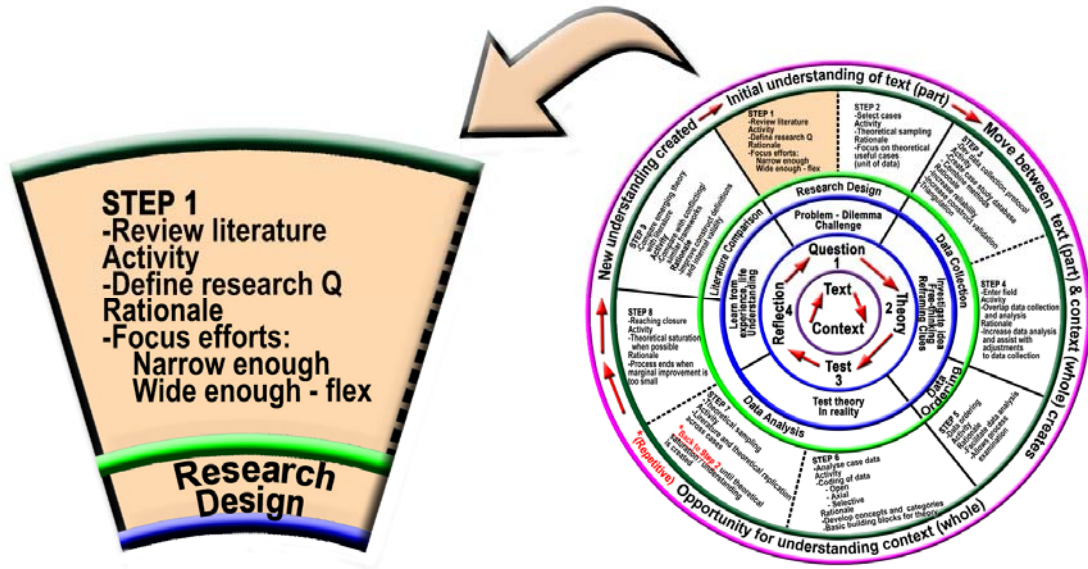


Figure 3.2: Step 1 – Literature review

3.2 THE CHANGING NATURE OF WORK

This section covers *people-process-place* as seen in figure 3.1, as part of the literature review depicted in figure 3.2.

3.2.1 Waves of change

The Kondratieff cycles or long waves of economic development were discussed by the Russian economist, Nikolai D Kondratieff, and today these are known as the K-waves. These economic cycles last between 48 to 55 years with the floor or base of the cycle having a high correlation with worldwide depressions (Volland, 1987:123). This is consistent with Kondratieff who did not provide an explanation for the waves, but speculated that they were the result of periodic overexpansion in large industrial capital projects and infrastructure. Each wave makes use of new, unique technologies (Lynch, 2003:1), which assist in solving problems once thought impenetrable. Although the long cycles or waves of economic development are well defined, research into the relationships between stock markets and leading innovation cycle industries has not yet been done (Hilmola, 2007:393). The lack of such research is noted and will not impact on this research as it is beyond the scope of this thesis.

Economic growth is stimulated by the development cycles of industries (**process**), aided by capital investment as speculated by Kondratieff, and these development cycles are characterised by key innovations (Wonglimpiyarat, 2005:1350), such as:

- cotton in the K1-wave
- coal and iron for industries relying on steam power as well as the railways in the K2-wave
- steel for industries using electrical power and chemical manufacturing in the K3-wave
- oil (energy) for industries manufacturing electronics, synthetic materials and pharmaceuticals in the K4-wave
- integrated circuits and microchips for Information and Communication Technology (ICT) in the K5-wave
- nanotechnology entering the K6-wave

3.2.1.1 First Wave: Industrial Revolution

The era preceding the First Wave or K1-Wave, which is before 1780, was characterised by agriculture being the largest production sector (**place**) in the world (Volland, 1987:131). Finlay (2002:2) takes the era preceding the First Wave or Agricultural Revolution back to about 10 000 years ago. During this period inhabitants (**people**) exchanged their nomadic life style and hunting for cultivating the earth and the development of farming techniques as well as taming animals (**process**). Toffler (1980:14) places the First Wave in the same time frame as Finlay, namely from 8000 BC until 1650–1750 AD. This era was also characterised by goods produced for the survival of the inhabitants (**people**), implying that the producer of the goods was also the consumer (Toffler cited in Tjaden, 1995:4).

The term “Industrial Revolution” was first used by Arnold Toynbee (1852–1883) to describe the development of England’s economy during the period **1760–1840**. There is a contradiction in the timelines used by Toynbee and Lynch with the First Wave (**1770–1830**) also described as the water mechanisation age, as water powered

production replaced hand crafted (**people, process**) production (Lynch, 2003:1).

Technological innovations (**process**) characterising this period include the use of new basic materials, namely iron and steel as well as the invention of new machines, such as the spinning jenny (*Encyclopaedia Britannica*, 2002) and canal transportation (Lynch, 2003:1) which relates to water mechanisation as described earlier.

Iron and steel, as invaluable new basic materials, paved the way for the expansion of railroads, which became the most significant quality of the Second Wave.

3.2.1.2 **Second Wave: Railroadisation**

The word “railroadisation” (Lynch, 2003:1) perfectly describes the K2-wave (**1820–1880**). The Second Wave is dominated by extensive iron railroad expansion (**process**) improving the distribution and delivery of goods and services to remote markets (**place**). Markets also include the consumer (**people**) of goods and services. This is supported by Volland (1987:134) with the development of the world’s largest railroad transportation infrastructure as sixty-eight percent of the steel produced in 1880 was sent to Bessemer steel rails. New sources of energy, such as coal and the steam engine (*Encyclopaedia Britannica*, 2002), as well as locomotives (Lynch, 2003:1) form part of the inputs shaping the global economy.

3.2.1.3 **Third Wave: The Second Industrial Revolution (electrification)**

The Second Wave was followed by another significant development, namely electricity (**process**). The second industrial revolution occurred during the late 19th and early 20th centuries (**1870–1920**). Electrification led to the production of inexpensive types of steel, transforming railroads and ultimately laying the foundation for (**place**) modern cities (Lynch, 2003:1). Electric infrastructure led to the

development of skyscrapers, electric lifts, light bulbs and telephones, consequently becoming core to modern day man's existence (**people**).

3.2.1.4 Fourth Wave: Motorisation

The **1910–1970** is known as the motorisation wave, or alternatively the K4-wave (Lynch, 2003:1). High on the list of developments for this period (Volland, 1987:136) is new iron reserves found in China and South America, which pushed steel production to new heights in 1925 and 1926 with stainless steel being produced in 1927. A combination of the development of tools, machinery and computers lead to the establishment of the automatic factory (**place and process**).

Developments in transportation and communications, such as the development of the automobile, aeroplane, telegraph and radio (**process**) is also central to this era (*Encyclopaedia Britannica*, 2000).

One of the most significant developments during the second half of this period is the development of the assembly line (**process**) in 1913 to 1914 by Henry Ford in the production of his Model T Ford. Human power (**people**) was replaced to some extent in these factories (**place**) by machine power (**process**) (*Compton's interactive encyclopaedia*, 1995).

Henry Ford developed a system that was able to deliver parts, subassemblies, as well as assemblies built on subsidiary assembly lines, thus establishing the first production line. Precise and accurate timing lead to the constant moving of the major assembly line, which lead to huge gains in productivity. Davis and Brabänder (2007:2) elaborate on the work done by Henry Ford in that decomposing a bulky piece of work into small, quantifiable and the most beneficial, optimised tasks, such as a production line, significantly reduces manufacturing costs. The sequencing of tasks and the allocation of resources (people and material) to execute the defined tasks, lead to what we today know as a **process**.

Another well-known scientist from this era is Frederick W Taylor whose time and motion studies had a huge influence on the way **people** worked. Productivity was enhanced through the elimination of waste time and limitation of motion in the execution of activities. Time and motion studies centred on the key elements of a specific job and the way in which these elements could be put together best for maximum efficiency, in other words the best method to perform a task in the shortest period of time (*Encyclopaedia Britannica*, 2002).

The aim of the scientific approach (Schönberger, 1985:509–510) was to standardise the labour component of production as non-standard labour was expensive. Standardisation in this context refers to standard *methods/motion (process)* and standard *times*. Taylor re-worked the five steps found in the scientific method into a procedure for use in methods studies and this is summarised in table 3.1 below.

Methods	
Scientific method	Method studies
Define problem	Select a present task for method improvement or select a new task for method development.
Collect data	Flowchart present method (the before chart), or create a flowchart for a new task.
Generate alternatives	Apply questioning attitude, principles of motion economy, etc to arrive at an alternative method and flowchart this new method (after chart).
Evaluate alternatives and choose	Evaluate new method via savings in: cost, delays, time, transportations, effort, transportation distances and storages. Choose best method.
Implement	Implement – in training and in job planning.

Table 3.1: Methods study and scientific method
(Schönberger, 1985:515)

Taylor's Scientific Management Principles still influence the work environment today (Davis & Brabänder, 2007:2) in the sense of:

- Develop the “one best way” to perform a task (**process**).
- Select the best skilled person to perform the job (**people**).
- Train, teach and develop workers.
- Provide monetary incentives for workers adhering to the defined methods.
- Divide work with the approach of managers being responsible for planning work methods and workers for the executing of the job according to the defined methods, that is process as we know it today.

Another characteristic of this era is the time it took to circulate written correspondence because of the time it took for written correspondence to travel back and forth as technology, such as email and the internet, did not exist.

Work in the Second Wave businesses, (K4-wave according to Kondratieff's waves), were repetitive and specialised, that is with very little variance (**process**) and under tight schedules (Toffler, 1980:384–386, 407). Workers (**people**) were obedient and punctual with a willingness to perform routine work, without questioning it. Authority resided with the “boss” and each employee had only one supervisor and a visible status distinction existed. Roles and responsibilities were very clearly defined. The primary role of workers (Tjaden, 1995:5) was to operate machines and keep them running at peak performance. Thus, the role of workers (**people**) was to serve the needs of the tools of production (**process**) instead of the process supporting the people. This goes hand in hand with economics being focussed on mass production with large capital investments and relates to the establishment of the assembly line (mass production) and accompanying specialisation.

3.2.1.5 **Fifth Wave: Information Age**

The Third Wave (Daly, 2001:19), relates to the current knowledge age, driven by information technology and demands for freedom. This wave started off in the mid-1950s and leads the way to the transition to the Information Age. Note the overlap in the time frame as Lynch (2003:1–2) states the K5-wave to be the Informational Wave **(1960–2020)**.

Given the capabilities provided by the information technology wave, countless opportunities and methodologies exist to collect, analyse, disseminate and transform data into information for use by business management, scholars and tutors. Thus, the Information Age is the primary generator of social and economical change due to the speed at which data can be processed and communicated (Lynch, 2003:2).

The growth of Industrial Age businesses was driven by capital as it needed to achieve economies of scale through mass production. Information Age businesses are driven by data, information, knowledge and technology.

3.2.1.6 **Sixth Wave: Nanotechnology**

Nanotechnology is entering the K6-wave, bringing revolutions in the research arena as nanotechnology deals with the nanometer scale, which is one-thousandth of a micrometer or one-billionth of a meter. *“Nanotechnology represents interdisciplinary research since it requires interdisciplinary education, networked research and improving human performance”* (Wonglimpiyarat, 2005:1350).

Cognisance is taken of nanotechnology as part of the Sixth Wave, but it will not be explored in detail as it falls beyond the scope of this research.

3.3 **THE VIRTUAL WORKPLACE**

“Virtual” can be seen as relating to the changing work environment with many of the changes in the work environment manifesting as the boundaries of

time, space and organisations are surpassed (Watson-Manheim, Chudoba & Crowston, 2002:191).

Various definitions relating to the virtual office environment have been developed by researchers and the following were found in the literature. This section covers **people-place** as depicted in figure 3.1.

3.3.1 Defining the virtual workplace

The virtual workplace is a series of loosely coupled workplaces, including the home office, remote offices and hotel rooms (Caldwell & Gambon, 1996:32).

The virtual workplace covers a variety of mobile and remote work environments (**place**) translating into working from a distance with the emphasis that any company considering moving in this direction should have clear company objectives and requirements (Davenport & Pearlson, 1998:51). It is furthermore important that an organisation has knowledge of the types of virtual workplaces in order to address the specific requirements of such a company.

This theory is supported by Pasternak (1994:20) who expresses the opinion that a virtual workplaces relates to a hotel-style, check-in workplace where few, if any workers have a permanent desk.

The definition by Baker (2000:51) states that virtual workplaces exist in all kinds of locations varying from satellite offices, telecommuter locations, home offices and shared office “hotels” (**place**). However, the central characteristic is the network of connections that is created between co-workers (**people**) through the use of various types of technology, such as laptops, personal digital assistants (PDAs), modems, dedicated phone lines, software support, cell phones, fax, printers, video- and teleconferencing as well as intranet and internet. Therefore people need not be physically located in the same space/location, but are joined together through technology (**process**). Thus, the virtual workplace is the synergy of minds meeting and exchanging information electronically.

The definition as provided by Zemliansky and St Amant (2008:2,3) corresponds closely with that of Baker, as the virtual workplace is viewed as a knowledge society with **people** working closely and successfully together using technology (**process**) to work from a distance (**place**) to transfer knowledge (implicit and explicit) in order to achieve specific goals. Specific reference is made to having the relevant knowledge as a vital resource. This supports the statement made earlier that we are showered by immeasurable volumes of information from across the globe with undifferentiated information being of little value. Information is distributed effortlessly within the virtual workplace, thus increasing its value while also saving time and money. Therefore analysing relevant information, building explicit (technical) and implicit (managerial) knowledge is of key importance to having the appropriate knowledge. This also supports Handy's perspective on knowledge and learning as discussed in section 2.2.1.

The virtual workplace (Travica, 2005:46) is in essence a temporary association of various constituencies consisting of groups, individuals and firms who come together to jointly take advantage of a sudden emerging market opportunity. Further clarification is also given with regard to the meaning of "virtual" as "virtually" describes basically or effectively existing, although not formally and tangibly. This meaning of "virtual" is supported by the *Oxford advanced learner's dictionary* as it describes virtual as "*almost or nearly the thing described ... invisible*". The virtual workplace therefore is not the same as the traditional workplace, as the virtual workplace exists where and when needed with flexible or permeable boundaries.

There is harmony between Travica (2005:46) and Watson-Manheim et al (2002:192) as virtual work is identified as work being done by telecommuters (individuals) on the one hand and virtual organisations (groups), such as user communities on the other hand (**people**). Hence, virtual relates to "*work environments (place) where individuals (people) are physically and temporally dispersed*". The element of virtual teams which are formed is based on skill and not location (Townsend, De Marie & Hendrickson, 1998:23) can be seen from the example of the of B-1 bomber development team being

located in different countries (**place**) (Boudreau, Loch, Robey & Straub, 1998:120,122).

The virtual workplace can also be viewed more from a social perspective (Allenby & Fink, 2005:1035) in that a decentralised workforce (**people**) is more protected against disruptions caused by disease and disasters, such as the 11 September 2001 attack on the World Trade Centre in New York. However, they also state that organisational structures are moving away from rigid, fixed structures to more fluid and changeable structures.

When analysing these different opinions or descriptions of the virtual workplace, certain similarities can be seen, namely flexibility, quicker adaptability of the organisation to changes in the environment, employees working off-site, that is not at the organisation's premises and the opportunities offered by technological development.

The above-mentioned characteristics are combined, which emphasise the difference between a traditional workplace and a virtual workplace (Watson-Manheim et al, 2002:192), as follows:

- *“the location of workers;*
- *where and how work is accomplished; and*
- *the basis of relationships between workers and organisations and between organisations.”*

For the purpose of this research the definition as provided by Baker (2000:51) will be used in conjunction with the social perspective as stated by Allenby and Fink (2005:1035).

The virtual workplace can therefore be described as a **decentralised workforce (people)** with locations varying from satellite offices, telecommuter offices, home offices as well as hotels and airports (**place**). Of cardinal importance to the virtual office is a **network of connections** created to link co-workers. Connections are created through the use of technology, such as laptops, personal digital assistants (PDAs), modems, dedicated ADSL phone

lines, software support, cell phones, fax, printers, video- and teleconferencing as well as intranet and internet (*process*). The emphasis is on ***co-workers being joined***/linked together, not by being located at a central location, but ***through technology***. A fluid and flexible structure allows for the virtual office to ***quickly adapt to changes*** in the environment. Workers are ***protected against disruptions*** caused by disasters, such as the attacks on the Twin Towers in New York on 11 September 2001, thereby enabling the organisation to act on its ***social responsibility*** towards its employees.

The definitions and description given above refers to a selection of virtual workplaces of which can exist with each fulfilling a specific purpose. In the section below these different virtual workplaces (Davenport & Pearlson, 1998) will be reviewed in order to provide a more comprehensive perspective of the virtual workplaces.

3.3.2 Grouping of virtual workplaces

Although a grouping of virtual workplaces is provided below, it should not be seen as cast in stone, as these virtual workplaces evolve over time to adjust to the specific requirements of organisations implementing them. It is therefore apparent that certain aspects that have initially been identified as shortcomings by one author, can be shown as advantages by another. The following section covers telecommuters, tethered (joint) workers, home workers and fully mobile workers who work from a variety of places, such as hotelling, hot desk, telework centre or from home

3.3.2.1 Telecommuters

This is the most common and stationary agreement referring to occasions where workers with fixed, traditional offices occasionally work from home (Davenport & Pearlson, 1998:5). Hill and Miller (1998:667) define teleworkers as those with a fixed substitute worksite at home.

In close correlation with the above description is the definition provided by Illegems and Verbeke (2004:319) in which they define “*telework as*

paid work from home, a satellite office, a telework center or any other work station outside the main office for at least one day per workweek.”

This definition also shows a close relationship with telecommuting being the reduction of commuting distance by working at home; in a non-traditional satellite office which houses employees from different functional areas; in a telecottage situated in a rural area or in a neighbourhood office where employees from different organisations share facilities (Shin, Sheng & Higa, 2000:86).

The shortcomings posed by telecommuting relate to it being a low-risk, low-reward technique as no office space is saved with the consequence of very little cost savings for the company and no real transformation in management as the state of affairs basically stay the same.

Zemliansky and St Amant (2008:113) on the other hand offers an almost opposite view of telecommuting than that stated by Davenport and Pearlson. Individual rewards are found in greater job satisfaction obtained through enhanced balance in work and family lives, forestalling of office politics, lower absenteeism and higher morale. Company rewards relate to significant space saving, the opportunity to recruit employees from a greater geographical area as well as a reduction in support staff. Another important perspective added is the social benefits obtained through pollution reduction due to fewer vehicles using roads during peak hours.

3.3.2.2 Hotelling

Hotelling as term is used to refer to a “hotel room” or cubicle, also known as a workstation, where the employee can make and receive phone calls along with linking his or her laptop computer to the organisation’s network. This workstation can be a traditional or open plan office that became redundant or can be located at a suburban office. This category of office is well-liked with firms rendering professional services as their consultants often working on-site with

clients. The firm Ernst and Young in Washington DC, who makes use of this model, has found that workers focus less on the office and more on the client (Cascio, 2000:85).

This type of virtual workplace has limitations in that employees do not get the same working station (cubicle) every time they visit the office, counteracting the advantages offered by a fixed traditional office. Workers may prefer to work from home or off-site rather than going into a “hotel room” or cubicle.

3.3.2.3 Hot desk

This idea relates to hotelling and is for the most part relevant to individuals in sales and service, where four people on average share an office. This has been put into practice by amongst others, IBM and Cisco Systems (Cascio, 2000:85).

3.3.2.4 Telework centre

Miniature corporate office environments, which offers more technology than what may automatically be accessible from home, such as videoconferencing facilities, is another alternative that can be considered. This miniature office can be located in a residential area, accommodating employees residing nearby saving commuting time and maximising productive time. Ontario Telebusiness Work Centre near Los Angeles is one example where this concept has been applied. (Cascio, 2000:85). This can be compared with Zemliansky’s (2008:112) term “telecenters” which encompass shared office space, a compressed work week, satellite centres, as well as mobile offices. South African examples of mobile offices can be found in the Business Express train operating between Pretoria and Johannesburg, as well as the business busses with internet technology provided by ABSA. Baker’s telecommuter locations also match up with Zemliansky’s “telecenters”.

3.3.2.5 “Tethered (joint) worker”

This type of virtual workplace is not commonly found. Employees have little mobility and are expected to report to their office on a regular basis, such as checking in every morning, receiving their call cards and hand held computers. They are then free to spend their time in the office complex as needed. This could possibly lead to increased creativity (perceived creativity) as moving around the working environment could expose employees to other stimuli.

However, the shortcomings associated with this concept relate to some employees finding it distracting to move around in the working area, therefore preferring to return to a specific office or workstation on a daily basis to attend to work in progress. Managers at Chiat Day expressed their concern “... We didn’t want people thinking that they didn’t have to come to the office anymore ...” when office space became limited (Davenport & Pearlson, 1998:54).

3.3.2.6 Home workers

These workers have no other office than a room at home and this arrangement is appropriate to employees who do not have distractions such as children at home, small lodgings or at-home-spouses. It should be ensured that adequate office space is available for office equipment needed such as fax machines, computer, desks and filing cabinets together with extra high speed telephone lines. ATandT assisted their employees in equipping home offices with the needed office equipment (Davenport & Pearlson, 1998:55).

The shortcomings as explained by Davenport and Pearlson (1998:54) corresponds with those stated by Zemliansky and St Amant (2008:113–117) in that employees become disconnected from their jobs and fellow employees, have a lack of office support services, along with reduced social interaction or direct communication, supervision and possible lack of career advancement.

3.3.2.7 Fully mobile worker

These workers rely heavily on mobile technology such as the Third Generation mobile (cellular) phone communication standard, also known as 3G connectivity, as they may not even have an office at home. They are unremittingly on the move, either assisting a client on site or being on the road. This is typical of representatives, including field sales and customer care. Consultants and IT representatives typically fall into this category.

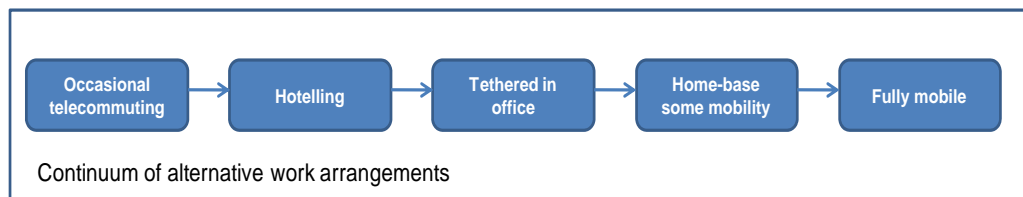


Figure 3.3: Continuum of alternative work arrangements
(Davenport & Pearlson, 1998:53).

Although the different types of virtual workplaces as described above are very similar and often overlapping in nature, the ones at either end of the continuum are quite distinct, moving from least mobile or flexible (occasional telecommuting) to most or fully mobile (fully mobile).

Any organisation considering a virtual workplace needs to evaluate the type of workplace that will suit its operations best, taking cognisance of the advantages and disadvantages identified as part of the virtual workplace, thereby limiting “romanticising” of working in a virtual workplace.

A summary of the grouping of the virtual workplaces can be seen in table 3.2, followed by a discussion on people in the virtual workplace and the types of work suitable for the virtual workplace.

Type of office	Advantages	Disadvantages
• Telecommuting	• Low risk	• Low reward • No space saving • Low flexibility
• Hotelling	• Increased customer satisfaction due to employee often being located on client's premises, eg consultants	• No specific cubicle allocated to employee • Advantage of traditional office negated
• Hot desking	• Relates to hotelling, but mostly to those in sales	
• Telework centres	• Almost unlimited access to technology • Located in residential area	• Overheads to maintain premises
• "Tethered workers"	• Control over job and assignments delegated • Increase creativity due to external stimuli	• Distractions from moving around in the working area
• Home workers	• Ideal for those employees who do not have distractions at home, eg children	• Becomes disconnected from the organisation and the bigger picture over time
• Fully mobile workers	• High flexibility • Low overheads	• Specific type of person needed who can adapt to being "on the road"

Table 3.2: Grouping of virtual workplaces

3.3.3 People in the virtual workplace

The virtual workplace led to companies having employees around the globe with the daunting task of managing a diverse workforce, including components such as recruitment, selection, compensation, training and development (Nelson & Quick, 2000:43). Davis and Khazanchi (2006:93) state that team work and collaboration are further complicated due to the dispersed nature of work and teams, particularly in terms of geography, time and culture, which are inherently part of the virtual workplace. Trust, culture, management, recruitment and development and technology aspects can each be seen as expert fields on its own. The aim is not to discuss each of these fields in detail. The aim of this thesis is to discuss the management of people, processes and places in the virtual workplace (chapter 5) based on the relationship between people, processes and places in the virtual workplace. Thus, the purpose of the following section is to reflect on aspects related to people.



Lipnack and Stamps (1997:227) suggest that “In the networks and virtual teams of the Information Age, trust is a ‘need to have’ quality in productive relationships.” The Information Age is enabled by information technology.

Staples and Ratnasingham (1998:128)

3.3.3.1 Trust

Remote or distant workers are people working in a different geographic location from their co-workers and managers. These virtual workers can be telecommuters working from home, that equates telecommuting, or be nomadic workers who regularly work for multiple clients at different sites and may not have a permanent office. They can also be working out of their car (Davenport & Pearlson, 1998:53; Zemliansky & St Amant, 2008:346,347; Staples, 2001:3).

Telecommuting is just one form of a work arrangement resulting in remote management, meaning that workers and management need to get accustomed to working with and managing those they do not see except on a pre-arranged occasion (Staples, 2001:3; Handy, 1995:40). At the heart of such a management endeavour is trust, because if “*we want the benefits of the virtual workplace we will have to rediscover to run organisations more on trust than on control*” since virtuality requires trust to work (Handy, 1995:44). Trust is the belief or confidence in a person or an organisation’s integrity, fairness and reliability (Lipnack & Stamps, 1997 in Staples, 2001:4). Trust is seen as a psychological state, that is the “*the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control the other party*” (Mayer, Davis & Schoorman, 1995:712; Webster & Wong, 2008:44). The emphasis is on the willingness to take a risk and accepting the vulnerability associated with it. Lewis and Weigert’s (1985:968) risk and potential

doubt as elements of trust corresponds with risk and vulnerability as described by Mayer et al (1995:712).

Staples (2001:11) has found trust to significantly impact on perceptions of performance, job satisfaction and job stress for both remote or virtual and non-remote workers. According to Iacono and Weisband (1997:1) high levels of trust were achieved among people working in virtual teams as they were focussed on work content and moved more efficiently between work tasks. There is also a component of value instilled as trust is created by “leaders who follow and support organisational values”.

There are two forms of interpersonal trust, namely cognition-based trust and affect-based trust. Cognition-based trust focuses on what is deemed to be “good reasons” providing confirmation of trustworthiness, responsibility and competence, thus trust is the cognitive choice of whom we will trust, in which respect and under which circumstances (Lewis & Weigert, 1985:970). Affect-based trust consists of the emotional bond created between people who indisputably care for each other and include components such as a willingness to help and to listen (Webster & Wong, 2008:45; Lewis & Weigert, 1985:970; McAllister, 1995:26; Staples, 2001:11; Staples & Ratnasingham, 1998:137). Managers of virtual employees should aim at building cognition-based trust through frequent, unambiguous communication and through focussing of “*activities that lead to employees trusting managers based on their demonstrated competence, responsibility and professionalism*” (Staples, 2001:12, 13). This viewpoint corresponds with Hammer’s (2001:145) who refers to strong and dynamic leadership fostering cohesion. This translates into managers leading by example. It also has a correlation with the enacted values as discussed as part of culture in section 3.3.3.2.

“Managers have often relied on assessing behaviours, through direct observation, as their coordination and control mechanism. Observing

behaviours is no longer a feasible coordination and control mechanism in a virtual workplace; trust can be used instead. From the virtual employees' perspective interpersonal trust is very important since the potential of isolation is high. The informal communication and information-gathering opportunities for employees in virtual work environments are typically less than in non-virtual settings. The employees rely on their managers to keep them informed of necessary information and to support their activities with effective feedback and recognition" (Staples & Ratnasingham, 1998:128). The potential of isolation correlates with the disadvantages of the virtual workplace discussed in section 3.3.6.2.

Seven rules of trust reflecting on mutual trust, freedom created through the setting of boundaries thereby creating trust and recruiting the right people for the virtual workplace are covered in table 3.3. For the whole (virtual workplace) to work, the units (people and process) have to gel with the goals of the whole, thus matching the discussion on the hermeneutic circle in sections 2.2.2 and 2.2.3. Building of trust though face-to-face interaction with the emphasis on the person and not the job is important, as trust is not and can never be an impersonal commodity. Multiplicity of leadership, that is having the right leader for the job at hand is included in the rules of trust. The seven rules that need to be kept in mind are presented in table 3.3 (Handy, 1995:44–47).



Rules of trust	
Rule	Description
Trust is not blind	It is unwise to trust people you do not know well, have not observed over time and are not committed to the same goal. Larger organisations need relatively constant, smaller groups.
Trust needs boundaries	Unlimited trust is unrealistic. Energy and effectiveness is released by freedom within boundaries. Trust means confidence in someone's competence and commitment to goals. Define goal, assess results.
Trust demands learning	Change is the only constant. Keep abreast of change by exploring new ideas. Individuals capable of self-renewal key. Recruitment and placement along with choice of group leaders important.
Trust is tough	If you cannot trust, you become a checker. If employee does not live up to expectations and can not be relied upon to do what is required, the person needs to go. Then trust becomes ruthless.
Trust needs bonding	Self-contained units responsible for delivering results are building blocks of an organisation based on trust. For the whole to work, the units have to gel with the goals of the whole. Vision, mission. Trust is not and can never be an impersonal commodity.
Trust needs touch	Balance high tech with high touch to build big trust organisations. Paradox: The more virtual, the more people need to meet in person. Meetings different – more about process than task, more about person that deliverable. Get-togethers are the lubricant for virtuality. Reinforce corporate goals, strategies. Watch culture grow.
Trust requires leaders	Best trust-based organisations need multiplicity of leaders. Perfect formula for a team is communication, total confidence in each other to get job done, passion for the same goal. If anyone does not pull his weight, he does not deserve the confidence of the others. Leadership is a team effort based on job to be done.

Table 3.3: Seven rules of trust
(Handy, 1995:44–47)

3.3.3.2 Culture

“Cultural diversity in the workplace is growing because of the globalization of business” (Nelson & Quick, 2000:43). Inherently part of each organisation is its culture which is *“the set of shared, taken-for-granted, implicit assumptions that a group holds and that determines how it perceives, thinks about and reacts to its various environments”*. The given definition highlights three important elements of organisational culture, namely that organisational culture is passed on to new employees through a socialisation process, influences employee behaviour and consists of visible (dress code, special parking spaces) and invisible (value system) components. The invisible value system is part of organisational culture with values being *“(1) concepts or belief, (2) pertain to desirable end-state or behaviour,*

(3) transcend situations, (4) guide selection or evaluation of behaviour and events, and (5) ordered by relative importance.” These values are made up of adopted and enacted values. Adopted or espoused values relate to the preferred values and norms explicitly stated by the company, such as trust, loyalty, integrity. Enacted values, such as responsibility, accountability are exhibited in employee behaviour (Kreitner & Kinicki, 2001:68, 69). The adopted values of trust, loyalty and integrity correspond with the discussion on trust in section 3.3.3.1 and are vital components supporting the virtual workplace as described by the case study participant (Appendix A). According to the case study participant it translates into an “*enabling culture*” that is required for the virtual workplace.

Zemliansky and St Amant (2008:557) acknowledge cultural differences between co-workers in the virtual workplace in that low-context cultures and high-context cultures exist. Low context cultures are results oriented, heterogeneous and use explicit forms of communication, such as written or spoken communication sharing specific intentions. High-context cultures value relationships, are homogeneous and use implicit forms of communication, such as body language (Zemliansky & St Amant, 2008:557).

This thesis has as focus organisational culture supporting the virtual workplace and thus has included cultural differences in section 6.12, on future research.

Crucial to creating sustainable success in the establishment of an enabling culture with process based thinking is a comprehensive and active change realisation programme (Snabe, Rosenberg, Moller & Scavillo, 2009:232–234).

3.3.3.3 Active change realisation

Active change realisation is an expertise on its own and although it cannot be covered in detail, it is included, as it is crucial as part of

establishing a culture supportive for the virtual workplace. Change realisation consists of two components, namely a hard and a soft component (Snabe et al, 2010:232). The hard component relates to processes, organisational structures and technologies, whereas the soft component has as essence staff behaviour, organisational culture and a process-oriented thinking.

The recommended approach for change realisation is the implementation and execution of a comprehensive change realisation program which addresses information, communication, training and support (Snabe et al, 2009:233).

The following business enablers for change realisation need to be taken into account (Snabe et al, 2009:233–234):

- Clear and visible support for business process management by the organisation's top management together with practicing of process-oriented thinking and action.
- Transparent and open, unambiguous communication.
- Training of all role-players in the appropriate methods, standards, tools and procedures.
- Structured, programmatic approach.
- Promotion of process-oriented thinking together with the creation of trust.
- Promoting initiative and personal responsibility among all involved parties.

Bilodeau (2004:5) links successful change to an unbroken leadership chain from top to bottom and this has a close resemblance with management (section 4.3.2). According to Bilodeau (2004:5) an unbroken leadership chain consists of:

- the leadership team being the first link, namely the process architecture framework
- middle management being second link, namely the process maps

- frontline employees being the third link in the action leadership chain, that is with procedure and work instructions

The Unbroken Leadership Chain Top to Bottom (Bilodeau 2004:5) depicted in figure 3.4 also includes the process components related to each link. This is followed by a discussion on managerial barriers and management aspects related to the management of people, processes and places in the virtual workplace.

Successful change needs...

...an Unbroken Leadership Chain Top to Bottom

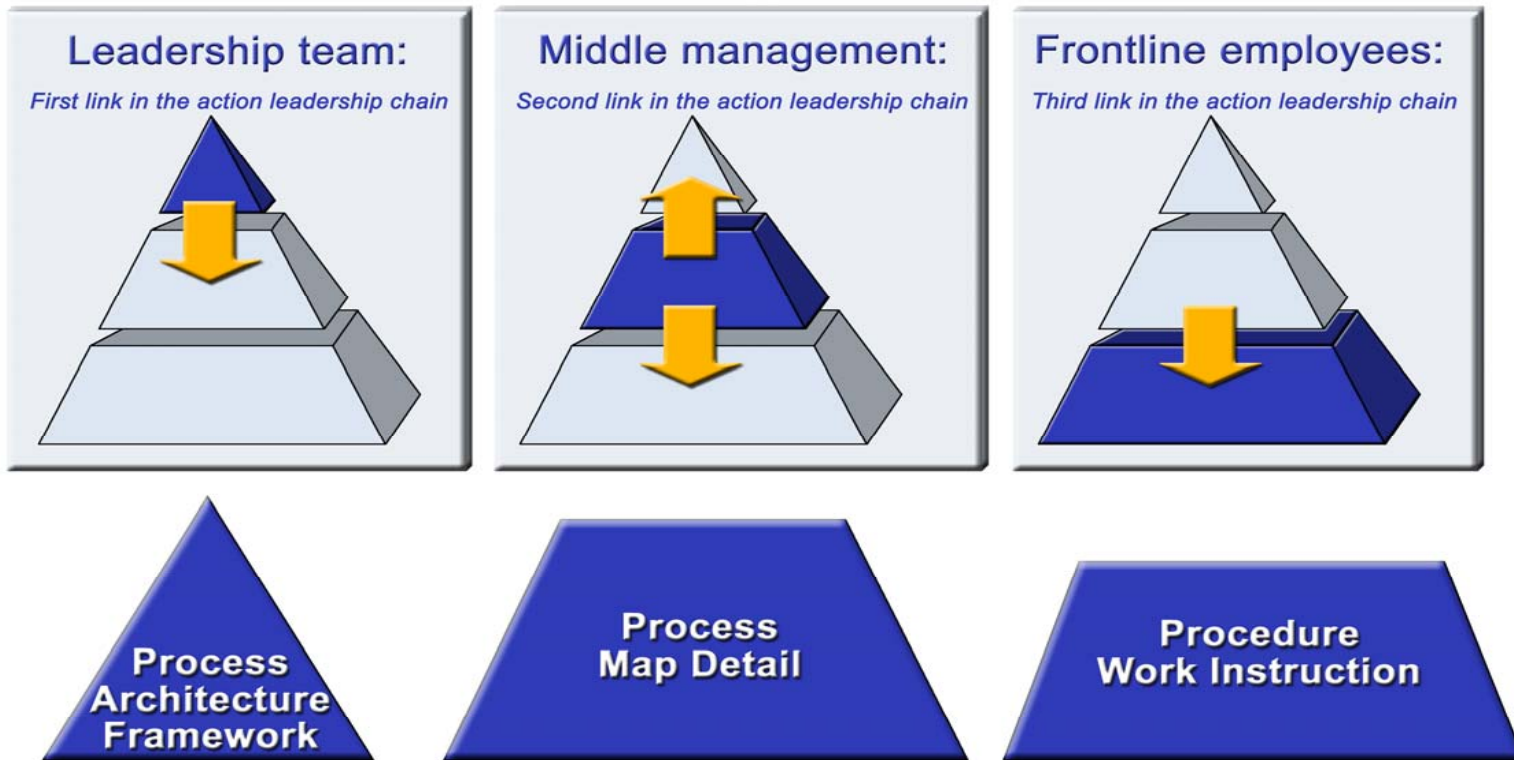


Figure 3.4: Unbroken leadership chain top to bottom
(Bilodeau, 2004:5)

3.3.3.4 Management

Gilberg (1998:110–111) recognised the shift in management style, that is a shift from the traditional and hierarchical to more participative and supportive management styles. He also identified certain barriers, namely:

- Organisational barriers
Higher value is placed on tradition than on innovation; uniformity, consistency and control enforced by top management rather than individual initiative and freedom; there is rigid adherence to a formal bureaucratic authority structure.
- Situational barriers
This is the physical constraints experienced due to the lack of time as well as decision-making being influenced by the interaction between tasks and specialised knowledge.
- Subordinate barriers
This refers to resistance to change when subordinates do not see the direct benefit they gain from the proposed change in work and work structure.
- Managerial barriers
More participative and supportive management translate into less control over operations and deliverables management are accountable for.

A shift over time from a bureaucratic management style to a more participative and collaborative management style led to organisational change. The identified barriers show a relationship to what is experienced today, as the nature of work have changed with global, economic and organisational change dictating flexibility from management with technology being one of the distinguishing features in the modern workplace (Nelson & Quick, 2000:487). In the context of this thesis the modern workplace refers to the virtual workplace with the job fitting the people. The need to recruit the right person with the

right personality traits fitting the job, that is a person suitable to work in the virtual workplace, is discussed in section 3.3.3.5.

Management and decision-makers face many complex problems and barriers today which require collaborative efforts and partnerships from individuals covering many different areas of expertise (Davis & Khazanchi, 2006:93). This statement has a matching link with the barriers and collaboration identified by Gilberg (1998:110–111). McCormack et al (2009:795) has the viewpoint of moving across old functional silos thereby enabling enterprise-wide, horizontal thinking with support structures that include horizontal teams, partnerships and shared ownership or also referred to as collaboration. His viewpoint matches that of Hammer (2001:224) who refers to this as organisational structures loosening up. Hammer (2001:224) states *“The days of the proudly independent manager running a sharply defined unit are over. Collaboration and teamwork are now as necessary in the executive suite as on the front lines. Teach managers how to work together for the good of the enterprise rather than stab each other in the back for narrow gain.”*

Clear and Dickson (2005:220) distinguishes between a *“Fordist”* and *“Post-Fordist”* management style of which the *“Post-Fordist”* management style is described as decentralised decision-making with greater discretion over work-related activities, more flexibility and less bureaucracy, hence supporting telecommuting and virtual workplace. A *“Fordist”* management style encompasses strict, prescribed tasks executed under the supervision of a hierarchy of managers, with very limited discretion and decision-making opportunity, thus it is in complete opposition to the virtual workplace.

As mentioned earlier, recruiting the right person for the job and workplace is crucial, as not everyone can function in a flexible workplace, such as a virtual workplace. The following section discusses recruitment and personality traits.

3.3.3.5 Recruitment and personality traits

There is a relationship between fitting the job to the people and employing suitable people to work in a virtual workplace as can be seen in the case study conducted with Company F. It is important to identify people who want to work in a virtual environment and who can benefit from the flexibility it offers, thus recruiting the right people. Recruitment can be described as those activities in human resource management, which are undertaken in order to attract sufficient job candidates who have the necessary potential, competencies and traits to fill job requirements and assist the organisation in achieving its objectives (Swanepoel, Erasmus, Van Wyk & Schenk, 2000:291). Another crucial component of recruitment is the retaining of critical, scarce skills with telework, or the virtual workplace, offering the advantage of attracting, motivating and retaining employees, who represent the organisation's human capital resource base (Illegems & Verbeke, 2004:321).

The case study stated employing suitable people for the virtual workplace and this correlates with what Swanepoel et al (2000:291) and Illegems and Verbeke (2004:321) say about identifying suitable people with the right traits fitting the job.

Linked to this are the personality traits of those people who can work successfully in the virtual workplace, since the virtual workplace is not suitable for all people. According to Nelson and Quick (2000:82–83), personality traits is one component of personality theory. The other components relate to psychodynamic, humanistic and integrative theories. The psychodynamic theory has as essence the unconscious determinants of behaviour based on the work of Sigmund Freud. The humanistic theory focuses on individual growth and self-actualisation whereas the integrative theory aims to describe personality on the basis of psychological processes. With the focus on personality traits the authors state that in order to understand individuals, their behaviour patterns must be broken down into observable traits and care should

be taken not to ignore the influence of situations on personality and personality traits (Nelson & Quick, 2000:82). Their specific mentioning of observable traits corresponds closely with the enacted values (Kreitner & Kinicki, 2001:69) which were discussed as part of the cultural aspect in section 3.3.3.2.

The personality traits identified as part of conscientiousness, as found in the “Big Five” personality traits (Kreitner & Kinicki 2001:148; Nelson & Quick 2000:82) in table 3.4 below correspond with the personality traits identified during the research.

The “Big Five” personality traits	
Extraversion	The person is gregarious, assertive, talkative, outgoing and sociable (as opposed to reserved, timid and quiet)
Agreeableness	The person is cooperative, trusting, warm, soft-hearted, and agreeable (rather than cold, disagreeable, and antagonistic)
Conscientiousness	The person is hardworking, responsible, organised, achievement-oriented, persistent and dependable (as opposed to lazy, disorganised, and unreliable)
Emotional stability	The person is calm, self-confident, relaxed, unworried and cool (as opposed to insecure, anxious and depressed)
Openness to experience	The person is creative, curious, imaginative, broad-minded and cultured (rather than practical with narrow interest)

Table 3.4: The “Big Five” personality traits
(Kreitner & Kinicki, 2001:148; Nelson & Quick, 2000:82)

Appendix D (Geldenhuys 2002:46) contains an extended list of personality traits grouped according to relationships with people, reporting style, feelings and emotions and thinking style.

3.3.3.6 Development and training

Development and training as discussed in this section, address the people component as part of the virtual workplace. Training and development serves a dual role in that it helps management to meet its human resource requirements and it equips the workforce with the necessary skills to perform their activities and increase their marketability (Nel, Gerber, Van Dyk, Haasbroek, Schultz, Sono & Werner, 2001:163). Training and development can have many forms due to technological advances and two types of learning are distinguished, namely distance learning, which is often more informal and formal learning which is classroom-based. Time constraints and the cost of attending on-site (formal) training make distance training through the use of the internet and other electronic interfaces a good option (Zemliansky & St Amant, 2008:331). This is supported by Rayport and Jaworski (2002:607) who state that the internet as training or education medium offers education at lower cost compared to classroom-based training. Distance learning is also known as e-learning and is defined by Elliot Masie as “*the use of technology to design, deliver, select, administer, support and extend learning*” (Sinnert, 2002). The flexibility of on-line training enabled by advanced technology provides internet users and employees with the freedom, flexibility and mobility to access the internet anytime, anywhere and any place (Zemliansky & St Amant, 2008:402, 403). A further distinction is provided related to synchronous and asynchronous training. Zemliansky and St Amant (2008:274) distinguish between synchronous learning technologies which enable real-time collaboration and interaction contributing to community building and which help to “*stave off feelings of isolation*”. In contrast to this asynchronous technologies enable anytime, anyplace collaboration.

Facilitators may not necessarily be online and interacting with students at the same point in time.

A study was conducted by Staples and Webster (2007:90) to identify potential best practices for individual team members. They found training that informs team members of the best practice activities necessary for high performance in a virtual team environment, including how to perform those activities well, is needed. Skills that were reported to be very important include the ability to organise effectively, competency in an individual's area of responsibility, adequate technical skills to use the information technology tools available as well as good time management skills (Staples & Webster, 2007:72). These skills show a correlation with personality traits and communication as discussed in sections 3.3.3.5 and 3.3.3.8. This translates into development and training not only to be viewed in the light of what technology offers, but also that appropriate training is needed, in other words informative training enhancing performance.

3.3.3.7 Performance management

Informative training supporting high performance goes hand in hand. As part of performance management employees should be given accurate descriptions of the tasks they have to perform. This will enable them to judge their abilities against demands. In addition to this they should be provided with clear objectives and standards against which they can measure their levels of performance accomplishment (Staples & Webster, 2007:90). Clear goal-setting as part of effectiveness in the organisation is paramount for performance management (Nel et al, 2001:68). In their discussion on people's time visions, which is the manner in which they experience time, Saunders, Van Slyke & Vogel reflects on the matching of technology to time visions as part of performance measures, such as automated scheduling tools (asynchronous media) making priorities and deadlines visible, assisting in the scheduling and synchronising of activities thereby creating a work rhythm with monitoring and tracking of

activities across time zones, (Saunders, Van Slyke & Vogel, 2004:25). This correlates with clear objectives and goals as discussed by Staples & Webster (2007:90).

Structuring of formal and informal communication and interaction around sound communication pointers is recommended as it helps to convey clear messages. These communication pointers can relate to performance management as well as setting clear, accurate goals and communicating it unambiguously. They are essential for enhanced performance.

3.3.3.8 Communication and communication pointers

Staples and Webster (2007:71, 72) refer to effective communication as the transferring of ideas, sharing of information, listening and internalising ideas of others. Advising team members of problems is also included in effective communication. Communication is essential in virtual teams and virtual employees as face-to-face communication and spontaneous interaction happen occasionally. Segerstad and Ljungstrand (2002:155) describe face-to-face communication as multimodal with the sending and receiving of messages in visual and vocal modalities. Zemliansky & St Amant (2008:471) describes synchronous communication as communication happening in “real time” with two or more people being connected simultaneously. This “real-time” communication can be done through a face-to-face meeting, a telephone call or a telephone conference. This correlates with face-to-face coordination meetings allowing synchronous dialogue among all its members (Maznevski & Chudoba (2000:480) Using communication tools that can make up for the loss of face-to-face communication and assist in having interaction was suggested. Responsiveness with regard to the prompt answering of phone calls and emails, even if an employee or team member does not have sufficient information to share at that point in time, should be noted (Staples & Webster, 2007:72). This links back to the skills mentioned in section 3.3.3.5. Email communication or asynchronous communication

is usually informal. Informal communication does not require a recipient's immediate presence and participation (Zemliansky & St Amant, 2008:471). Table 3.5 in section 3.3.3.9 depicts the different synchronous and asynchronous virtual work tools and methods of communication as defined by Zemliansky & St Amant (2008:349).

Different communication media are appropriate for different messages and the aim is to use the media most appropriate for the situation (DeKoven in Lipnack & Stamps, 1997:99 -100). He expands on this when he uses the example of email being the middle step between fax and phone. Although an email is more informal than a fax it still carries accountability in context of the written text, but not as concrete as a fax. The presence of paper as output when using a fax brings a sense of permanence and formality with it. Due to the more informal nature of email it can take longer to reach conclusion. Lipnack & Stamps (1997:100 -101) use the following examples to illustrate the different types of communication media used by virtual teams. In context of this thesis reference is made to virtual workers:

- Email which is more informal and continuous
- Telephone and telephone conference calls which occur as frequent as required
- Voicemail as an indispensable part of a project
- Face-to-face meetings at intervals as determined by the team members and workers
- Real-time video conferencing followed by participants on their desktops irrespective of their location

The media as mentioned above need to be evaluated based on the virtual workers' product and process media. Product media relates to the manner in which work is being presented, such as documentation, presentation, reports and plans. Process media relates to the communication methods required to get the work done including the process of interacting across boundaries (Lipnack & Stamps, 1997: 85, 86,208, 209). Maznevski & Chudoba (2000:481, 486, 487) found that

workers or team members may have a preference with regard to communication media, such as having preference of telephone calls above email or fax and conference calls to resolve complex matters. They also has as viewpoint that effective virtual teams and virtual workers in context of this thesis, have distinguishing strong, repeatable, sequential patterns, that is a “basic rhythm” which is set by face-to-face meetings. These face-to-face meetings create the heartbeat that support workers while working remotely. The frequency of face-to-face meetings is determined by task complexity, required level of interdependency and members’ ability to communicate effectively over a distance. This has a strong colleration with clear, unambiguous communication as discussed as part of communication pointers below. Individual coordination meetings fulfill the role of assisting in decision-making and relationship building, thus the rhythm created by these meetings provide continuity and long-term stability to the workers enabling them to work efficiently and confidently remotely (Maznevski & Chudoba 2000:487). The concept of rhythm is also discussed by Lee (1999:21) with him referring to it as the alteration in the intensity of being busy within a cycle, that is alternating cycles of being very busy and being less busy. Thus, a cycle can be repeated daily with a rhythm of being very busy in the mornings.

Following on the technology, such as email mentioned above, is the development of instant messaging (IM) which is becoming increasingly popular for informal communication. IM allows employees and social communicators to send and receive short text-based messages in real-time and to see who else is online. The sending and receiving of instant messages is much faster than traditional email and usually shorter than email messages. IM can also be used to communicate one-on-one and with small groups of people who know each other (Cameron & Webster, 2005:86, 87). In the South African context this is known as the short message system (SMS).

Cameron and Webster (2005:91, 100) further reflect on communication in terms of appropriate types of media and the richness thereof, for example face-to-face meeting or communication might convey caring while an official memo might convey legitimacy and formality. This correlates with DeKoven's example of a fax being more formal as well as the different media as discussed by Lipnack & Stamps (1997:100 - 101). Communication via IM may suggest a light and informal tone and non-authoritative conversations, breaking down hierarchical barriers. Rich media are thought to be best for communicating vague ideas or concepts. Face-to-face communication would rate high on richness and email based communication would be considered lower in richness with IM being a combination of face-to-face and email, thus placing IM in an intermediate scale of richness (Segerstad & Ljungstrand, 2002:150). According to Cameron and Webster (2005:100) IM is perceived to be much less rich than face-to-face communication, symbolising informality. Language used as part of IM display characteristics associated with the spoken word, is steno-typed, that is shorthand and includes specific features such as "smileys" (Segerstad & Ljungstrand, 2002:153, 158)

Due to technological advancements computer-mediated communication is done today. Although technologically advanced, the impersonal nature of computer-mediated communication resulted in interpersonal skills such as tact and graciousness being diminished and rudeness in the use of the computer increasing. People who conduct face-to-face discussions in a quiet and polite manner may become impolite and unrestrained when communicating using computer conferencing or electronic mail (Nelson & Quick, 2000:270). Many examples of computer-mediated communications can be found today, such as the voice prompts that callers need to follow when phoning a financial institution or an insurance company, for example to follow the voice prompts to select "new or existing customer", "private or business client", "updating of existing details", and so forth.

The following communication pointers from Bilodeau (2004:22) deal with communication in a structured manner. These pointers are helpful in assisting to communicate clear, unambiguous messages:

- *Who*, that is an informed spokesperson or influencer, such as business owners and project sponsors.
- *Says what*, relating to the business process message that is being communicated, including the management strategy and roadmap (Snabe et al, 2009:105, 237).
- *To whom*, that is the audience being addressed, such as new employees, business process modellers, business analysts, project teams and support staff. Grouping of people with the same requirements per session is advantageous as it helps to provide the audience with a focussed message. Other audience members include steering committees, business managers, system users, suppliers and customers (Snabe et al, 2009:227).
- *How*, that is the type of communications channels being used, such as road shows for project overview and sensitisation, video conferencing, written communications in the form of pamphlets, posters and flyers and posting to the intranet and electronic news system. The latter can be seen as a central communication area (Snabe et al, 2009:239).
- *When*, that is the timing and frequency of communication, such as creation of project awareness including continuous information on business transformation. This is followed by specific information related to training. All audiences need to be involved when communication related to the implementation phase is done, with continuous feedback to the business and project sponsors (Snabe et al, 2009:238).
- *With what effect*, meaning measuring the effectiveness of the communication effort in terms of *output*, that is how well the selected media reached the audience (numbers reached); *out-takes* referring to the degree in which the audience understood and recognised the message and *outcomes*, namely the extent

to which the desired outcome and behavioural change were achieved.

These communication pointers have relevance to active change realisation (section 3.3.3.3 and 3.3.3.8) with its associated communication and is also useful when communicating using the virtual work tools as discussed below.

3.3.3.9 Virtual work tools

The different virtual work tools covering communication, conferencing and collaboration as listed and discussed by Zemliansky and St Amant (2008:349–350) are depicted in table 3.5: Representative virtual work tools. Each of these tools has its own usage fulfilling different needs of workers, namely:

- Communication tools

These tools are available to practically all organisations and individuals, and are the least sophisticated technologies when compared to the conferencing tools. Most workers and individuals use these communication tools when at the office or at home.

Examples of such tools are: telephones, mobile phones, facsimile, email, email attachments, Microsoft Office, intranets, web browsers, search engines, voicemail notification and instant messaging services.

Segerstad and Ljungstrand (2002:154) see email as being an asynchronous messaging system that does not require visual confirmation of the receiver's presence at the time of sending the message. Dialogue suffers less due to less time delays when compared to traditional or "snail mail".

- Conferencing tools

Conferencing tools, such as those listed in table 3.5 as part of representative virtual work tools are more sophisticated and support the real-time meetings between remote workers as well as those meetings between remote and office workers. Conferencing facilities require strong infrastructure, making the establishment of such facilities more expensive. Employee training in the proper, effective use of the different conferencing tools is also required.

Examples of such tools are: audio-conferencing using different telephony devices, video-conferencing with full motion video and audio, conference bridges adding audio participants to a video conference and web casts.

- Collaborative tools

These tools are the most sophisticated virtual work tools which provide functionality to include project and document management functions in communication and conferencing tools. Collaborative tools are expensive to acquire and maintain; require ongoing management and employee training and often require integration with organisation applications.

Examples of such tools are: workflow systems integrating email, facsimile and telephone messages, participant directories, centralised documentation systems and project management systems.

Representative virtual work tools		
Virtual work category	Representative tools	Applications
Communication	Telephony	Synchronous voice
	Voicemail	Asynchronous voice
	Facsimile	Asynchronous text
	Email	Asynchronous text and graphics
	Office productivity suites	Knowledge documentation
	Enterprise file storage	Knowledge storage
	Web sites	Access to documents and processes
	Web browsers and search engines	Knowledge location
Conferencing	Audio conferencing	Synchronous audio
	Video conferencing	Synchronous audio and video
	Webcasting and streaming	Synchronous and asynchronous audio and video
	Web conferencing	Synchronous audio, video and documents
Collaboration	Project management	Collaboration and control
	Unified communications	Audio, text and documents
	Shared product and documentation development	Synchronous and asynchronous collaboration
	Knowledge management	Document repositories and retrieval

Table 3.5: Representative virtual work tools
(Zemliansky & St. Amant, 2008:349)

3.3.4 Type of work for the virtual workplace

Information technology, that is the level of internet connectivity, was suggested as important enablers needed for effective remote or virtual work (Staples, 2001:11). The types of work suitable for the virtual workplace relate to “*tacit*” tasks which can be project- and program-oriented, and done by persons such as system programmers, program analysts, documentation writers, sales staff and research associates (Zemliansky & St Amant, 2008:351; Roderick & Jelly, 1991:40). Saunders et al (2004:19) state that asynchronous work enable virtual teams to effectively bridge time zones thus enabling them to be more productive over more than one time zone, This is illustrated by the example of code being written by a team in London. In the evening (London time which is day-time in the USA) the code is tested by the USA team members. Upon completion of testing the code it is forwarded to the Tokyo based team for debugging. This results in the London team having

tested and cleaned-up code the following day. The notion of time zones is also included in paragraph 1.1.2.

The dimensions and attributes of virtual work as can be seen in table 3.6.

Dimensions and attributes of virtual work		
Dimension	Attributes	
	Less challenging	More challenging
Definition	Structured Defined Static	Unstructured Ad hoc Dynamic
Complexity	Single task Repeatable	Project or program Single use
Talent	Individual Generic skills Homogeneous skills	Team Specialised skills Heterogeneous skills
Constraints	Not time sensitive Not budget sensitive Not mission critical	Time critical Budget critical Mission critical

Table 3.6: Dimensions and attributes of virtual work
(Zemliansky & St Amant, 2008:351)

Accessibility to the various networks and systems is also determined by the type of work being done, as different employees fulfil different roles, requiring different profiles and access. These different roles are clear from Stair and Reynolds (1998:512,513) who state that employees, managers and customers are users or individuals, who regularly access the systems to perform their activities, whereas system analysts specialise in analysing and designing business systems. Programmers are individuals who modify or develop programs to suit specific user requirements. This also relates back to roles and responsibilities as reflected upon in section 3.4.6.

Work in the virtual workplace is done through the use of internet and other supporting infrastructure. This infrastructure is reviewed in the following section. It should be noted that this discussion is not technical in nature, but focusses on the technology supporting work in the virtual workplace.

3.3.5 Infrastructure

The telephone enabled telework, also known as telecommuting, enabled workers to work away from the office, which could be at home. The virtual workplace was created through the introduction of the internet as the internet enabled workers to connect to servers and other networks of data and real-time communication. This was further expanded through the use of local area networks (LAN), virtual private networks (VPN) and wireless technology, all of these being modern information and communication technologies. These technologies provided internet users and workers with the freedom, flexibility and mobility to access the internet anytime, anywhere and any place (Zemliansky & St Amant, 2008:402–403).

The internet is not just *one “single, giant network to which many computers are attached”*, but it is a *“consortium of networks”*, meaning a *“network of millions of computers and thousands of intertwined networks”*, thus *“overcoming physical boundaries providing efficient long-distance technology that connect many sites”* (Rayport & Jaworski, 2002:33–34). This relates back to the bridging of time and space as discussed in section 1.1.1.

The intranet is a powerful business tool used by organisations. The intranet is distinguished from the internet in that the intranet is *“the internal network using internet-like infrastructure and protocols which efficiently facilitates communication, collaborative work, information exchange and a strong knowledge development platform providing incontestable competitive advantage”* (Zemliansky & St Amant, 2008:440). The internet is seen as the enabler to obtain access to many different websites whereas the intranet is seen as the organisation’s knowledge hub, both being essential to the traditional and virtual workplaces. The intranet usually presents a closed

network with content accessible by identified users only (Zemliansky & St Amant, 2008: 441).

Without these technologies the virtual workplace would not have existed. The discussion of the virtual workplace concludes with the advantages and disadvantages as identified in the literature.

3.3.6 Advantages and disadvantages of the virtual workplace

The virtual workplace has unique challenges along with advantages and disadvantages which need careful consideration in order to create a strong, productive environment. The advantages and disadvantages as obtained from the literature overview are discussed below.

3.3.6.1 Advantages

Certain advantages found within the virtual workplace show a relationship with information technology as discussed as part of chapter 1 (Zemliansky & St Amant, 2008:3–5,113–117).

The primary advantage offered by the virtual workplace is the crossing of boundaries and the bridging of time and space, thus establishing a less centralised and more independent, empowered workforce. This workforce benefits from complementary market forces in that they can capitalise on their efficacy, becoming more affluent. Location and the restrictions it places on a workforce do not apply to the virtual workplace, for instance, as is the case with a centralised workplace. Cost normally associated with the relocation of employees is reduced. The advantage of this is that less time and money is spent travelling to and from a centralised office. Time, the scarcest resource in all contexts can be utilised more effectively for professional as well as personal and family purposes, thereby allowing for higher overall satisfaction and a sense of well-being and empowerment (Cooper, 1995a:6).

Advantages, such as increased efficiency and productivity in the “anytime-anyplace” office together with enhanced job satisfaction due to increased flexibility in location and time of work have been identified (Hill & Miller, 1998:678; Kepczyk, 1999:16; Zemliansky & St Amant, 2008:8; Roderick & Jelley, 1991:38). Davenport and Pearlson (1998:55) found that valued, skilled and distant employees are retained by accommodating specific needs, such as reducing long daily commuting to head office. Kepczyk (1999:16) furthermore indicates that more flexible work schedules allow employees to work when they are most productive, such as late at night or early in the morning, thereby supporting greater productivity due to fewer interruptions and a more focussed environment.

The advantage of having access to highly skilled workers who are not interested in dealing with the traditional office environment are noted by Kepczyk (1999:16) and Zemliansky and St Amant (2008:4) and importantly, allows access to the labour pool of the disabled opening many new opportunities for them. Employees have the further advantage of savings on corporate clothing and the accessories associated with that (Cooper, 1995a:6).

Davenport and Pearlson (1998:54) and Cooper (1995a:6) note organisational advantages which are derived through the virtual workplace, namely a reduction in real estate (less office and parking space) due to fewer real estate requirements. Additional organisational advantages are found in increased knowledge of high-tech equipment due to communications being done through the use of technology (Davenport & Pearlson, 1998:54; Cooper, 1995a:6). This correlates closely with “...Connections are created through the use of technology...” in section 1.2, describing the virtual workplace.

Hill, Erickson, Holmes and Ferris (2010:349) states that the benefit of working from home increased when combined with a flexible work schedule and this perceived schedule flexibility translated into less

work-life conflict. This supported the case that “*workplace flexibility is beneficial both to individuals (in the form of reduced work-life conflict) and to businesses (in the form of capacity for longer work hours)*”.

The advantages as described above correspond with advantages discussed and provided by the research participants, including the method of working, pace of work, procedures, scheduling, work criteria, work goals, the workplace, work evaluation, work hours, kind of work and amount of work mentioned by Clear and Dickson (2005:220).

3.3.6.2 Disadvantages

Disadvantages need to be managed to minimise the negative effects and therefore we need to take a closer look at what the possible disadvantages may be.

According to Cooper (1995b:14) a tendency to overwork can manifest itself when the “traditional clock” does not monitor the employee, such as reading emails before bed-time. Hill (1995:2) states “*Giving a workaholic an electronic briefcase may in some ways be like giving an alcoholic a bottle of gin.*”

A feeling of isolation, not only from social interaction but also from advancement within the organisation can occur, that is employees can become disconnected from their jobs and fellow employees (Cooper, 1995b:14; Zemliansky & St Amant, 2008:113–117; Roderick & Jelley, 1991:39). This corresponds with Hill and Miller (1998:669) referring to detachment from corporate culture together with a failure to realise career growth, which correlates with Zemliansky and St Amant and Cooper’s viewpoints. Forfeiting opportunities of being involved in high-ranking projects can be seen as going hand in hand with the failure to realise career growth. Staples and Webster (2007:85) also reflect on isolation in that virtual employees and virtual team members become more reliant on technology for communication, thus becoming isolated. The author indicates that virtual team members are less likely to know

colleagues' status unless explicitly shared with each other. The options for interaction in the virtual workplace are limited, thereby emphasising the point of quick responses as discussed in section 3.3.3.8.

Negative influences with regard to teamwork and peer-relations with co-teleworkers and telemanagers have also been identified by Hill and Miller (1998:669), with Cascio (2000:84) highlighting lack of trust in co-workers. Hill and Miller (1998:670) is furthermore of the opinion that a tendency to procrastinate can develop, with a blurring of boundaries between work life and private life disrupting the balance. This shows a relationship with Cooper (1995b:14) pointing out that those households tend to suffer added stress when deadlines draw closer.

Set-up and maintenance cost is a possible disadvantage (Cascio, 2000:82) as the virtual workplace is dependent on technology working flawlessly. There is more than one viewpoint to this, since technology can become less expensive over time, such as laptops, with new technology being more expensive when initially launched.

A further disadvantage, from an employer's as well as employee's perspective, is security and the safeguarding of information as well as documentation against possible leaking.

The disadvantage as mentioned by Hill and Miller (1998:680) of having to carry out administrative functions adding to the workload, is in line with Zemliansky's viewpoint that home workers have a lack of office support services.

The advantages and disadvantages for both employee and employer, as summarised in table 3.7, amongst others that may be identified, need to be recognised and considered by management as it will have an influence on the successful functioning of people in the virtual workplace.

ADVANTAGES/DISADVANTAGES FOR THE EMPLOYER		ADVANTAGES/DISADVANTAGES FOR THE EMPLOYEE	
ADVANTAGES	DISADVANTAGES	ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> • Reduced cost in relocation/transfers of employees • Saving in office space and related cost, eg parking space • Reduced labour turnover, relating to highly skilled employees • Increase contact with clients promoting higher customer satisfaction • Reduced absenteeism • Access to a labour pool of the disabled • Higher productivity 	<ul style="list-style-type: none"> • Loss of control over work load assignment • Fear a reduction in productivity • Performance management can become problematic • Initial cost in setting-up of the virtual work place 	<ul style="list-style-type: none"> • Better quality family, work life • Less time spent on daily commuting • Less commuting/travelling • Reduced stress due to less commuting • Decreased travel expenses • Flexibility - Fit work schedule to personal preference, i.e. early mornings/late at night. • Decreased absenteeism • Higher productivity due to less interruptions • Higher productivity due to less time wasted in traffic • More focussed work atmosphere • Save on corporate clothing • Capitalise on efficacy, becoming more affluent • Work opportunities for disabled employees • Higher over-all sense of well-being • Own time management • More freedom • More relaxed due to comfortable environment • Pace own day • No routine • Independent 	<ul style="list-style-type: none"> • Tendency to procrastinate • Allowing family to interfere • Concerns over career growth and promotions • Becoming detached from the organisation culture • Alienated from organisation • Perform own administrative duties – less office support • Forfeit certain benefits, eg subsidised parking • Can experience a decrease in empowerment • Overwork • Isolation from social interaction • Loneliness due to less social interaction • Technology not supportive or unavailable - slow internet • Remote access to servers • Very early or late hours due to time zones • Miscommunication • Language problems – other language than mother tongue • Expected to work longer due to working virtual • Two bosses – remote and at home base • Limitation in email size • Availability of information
ADVANTAGES FOR EMPLOYER AND EMPLOYEE Crossing of boundaries, bridging of time and space Enhanced utilisation of time – scarcest resource worldwide Less centralised and more independent, empowered workforce Increased knowledge of supporting technologies Reduced pollution due to less harmful emissions—fewer vehicles		DISADVANTAGES FOR EMPLOYER AND EMPLOYEE Problems in securing and safeguarding information Lack of trust in co-workers and telemanagers Initial start-up cost relating to equipment	

Table 3.7: Advantages and disadvantages of the virtual workplace for employees and employers

Irrespective of the type of workplace, that is the traditional workplace or virtual workplace, both require business processes that take inputs and transform it into outputs (Chase, Aquilano & Jacobs, 2001:92) creating value for the organisation and its customers.

Hence, the next section will focus on defining business processes together with business process management and improvement as found in the literature.

*Processes are not just something your business does;
Processes are your business.*

Davis & Brabänder (2007:2)
ARIS design platform: getting started with BPM

3.4 BUSINESS PROCESSES

“Process is not about the routinisation and bureaucratization of work but about positioning all individual activities in the larger context in which they are performed. A process specifies which steps must be performed, by whom, where, in what order, and so on ...” (Hammer et al, 2004:16).

The following review of business processes has relevance due to business processes’ supportive action in the virtual workplace.

Definitions for business processes as found in the literature are reviewed in the following section. This section covers **people-process** as depicted in figure 3.1.

3.4.1 Defining business process

When the concept of transforming inputs (resources) into outputs (products) is applied to a commercial organisation the term “business process” is used (Adesola & Baines, 2005:38).

Rummler and Brache (1990:45) state that a business process consists of a sequence of steps intended to produce a product or service. A comprehensive definition for a business process can be found in Hammer (2001:53, 54) where he describes a process as “*an organised group of related activities that together create a result of value for the customer.*” This definition is structured in such a way that it gives precise detail of what a process and its outcome is. When unpacking the definition the following is learned:

- “*Group of activities*” states that no one single task alone can obtain the desired result of value, but that more than one activity is needed.
- “*Related and organised*” relates to activities that are interrelated and need to be executed in an explicit, unambiguous sequence in order to obtain the desired result. There is no room for unrelated activities.
- “*Together*” refers to the different, related activities having a common goal in mind and personal agendas are expelled.
- “*Create a result of value*” relates to the value created for the customer and this emphasises that a process is not an end in itself, but a means of creating the desired value.

It is important to understand that value is created through the execution of the whole process and that all the different, defined tasks have been grouped together to obtain synergy and assist in the systematic and orderly execution of the activities, paving the way towards one clear, common, agreed-upon goal. The goal is to get more out of the entire organisation (and not the individual) and this is obtained by improving the performance of the end-to-end business process to which individual workers contribute (Hammer et al, 2004:14).

Becker, Kugeler and Rosemann (2003:4) make a clear distinction between a process and a business process. A process is viewed as a “*closed, timely and logical sequence of activities*” executing actions related to a process-oriented object, such as an invoice. A business process, on the other hand, is driven by the organisation’s business objectives and the business environment, such as order processing within a factory. A similarity is observed as Becker et al

(2003:4) and Hammer (2001:53, 54) refer to a process as related, sequenced activities.

The definition for a business process as provided by Davis and Brabänder (2007:6) shows a close correlation with Becker et al (2003:4) as well as Hammer (2001:53, 54) in that a business process is classified as “*the definition of the tasks, and the sequence of those tasks, necessary to deliver a business objective.*” Not only is reference made to the aim of delivering a specific business objective, but also that the tasks should be executed in sequence.

The tasks executed, irrespective of the type of process (Hunt, 1996:116–118; Conti, 1993:40) require building blocks, namely an input, output, control and mechanism. Inputs are required to produce outputs using different mechanisms, such as people and equipment with controls governing the activities of the process.

The following generic statements (Hunt, 1996:118) show a correlation with Becker et al (2003:4) and Davis and Brabänder (2007:6) and relate to a business process as:

- *The steps and decisions involved in the way work is accomplished;*
- *A process can be either an operational activity or a decisional activity and should be described using a verb;*
- *A series of related activities that take an input, add value to it, and produce an output for an external or internal customer;*
- *A sequence of repeatable, value-adding activities, characterized as having measurable inputs and outputs; and*
- *A description of how work gets done.”*

These building blocks, including the characteristics reviewed in section 3.4.4 are reflected as the attributes of a process (Myburgh, 2007) as can be seen in figure 3.5.

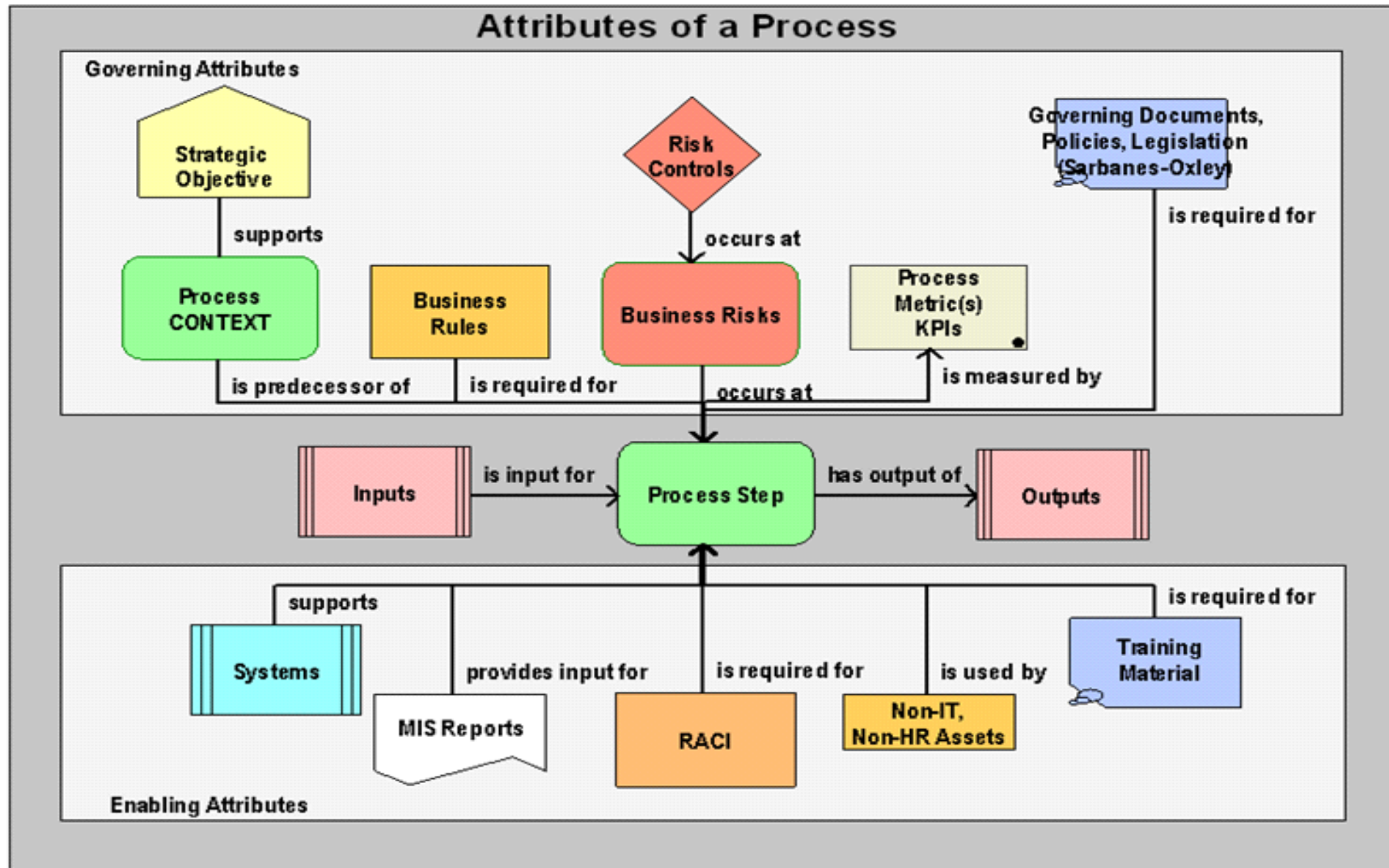


Figure 3.5: Attributes of a process (Adapted from Myburgh 2007).

Earl (1994:13) provides a broader view of processes stating that a process is a lateral or horizontal organisational form, which summarises the interdependence of tasks (responsibilities), roles, people, departments and functions (activities) needed to provide a customer with a product or service. In correlation with Earl (1994:13) and with the changing workplace and the evolvement of organisations, Galbraith (1995:14) states that *“if structure is thought of as the anatomy of the organization, processes are its physiology or functioning. Vertical processes allocate the scarce resources of funds and talent. Horizontal or lateral processes are designed around the work flow.”*

3.4.2 Types of business processes

Different types of processes are required to support an organisation holistically and Earl and Khan (1994:21) distinguish between the following four types of processes, namely:

- *Core processes* supporting the primary value chain activities with the focus on external customers. The order fulfilment process is typically part of an organisation’s core processes as well as insurance underwriting as part of the services industry.
- *Support processes* act as *“backup”* for the core processes with primary focus on internal customers. These processes deal with secondary administrative activities within the value chain, such as the processing of accounts payable. The administrative processes as discussed in the next section relate to the support processes.
- *Management processes* aim at planning, organising and controlling resources, such as people, technology and capital as cited by Davenport (1993:285–295).
- *Business network processes* extend beyond the boundaries of the organisation into suppliers, customers and allies. Integration of inventory, distribution and logistics processes is typical of these business processes. These processes relate to the customer and production processes as discussed below.

Different kinds of work as performed in the workplace require different types of business processes (Rummler & Brache, 1990:45, 46, 188; Harrington, 1991:9; Davenport, 1993: 285–295), namely:

- *Administrative processes* are invisible to the external customer but necessary for the effective management of the organisation. Typical examples of such processes are budgeting, training, recruitment and facility management.
- *Customer processes* that have as result a product or service received by an external customer. Marketing and sales, billing, order processing, loan processing and food preparation are examples of customer processes.
- *Management processes* specifying the managerial actions needed to support the business processes. Management processes relate to the activities performed by senior management with strategy formulation and strategic decision-making being the least structured of the different management processes. Planning and budgeting processes are more tactical and structured than the strategy processes. Performance management and reporting processes can depend heavily on management and administrative resources. Resource allocation (skilled workers, technology and capital) is a major responsibility of senior management. Human resource management and infrastructure building processes also form part of management processes (Davenport, 1993:285–295).
- *Production processes* as defined by Harrington (1991:9) correlates to Customer processes (Rummler & Brache, 1990:45, 46, 188). The production processes relate to any of the processes that come into physical contact with hardware, software or materials used to produce goods or services to an external customer, excluding packaging, shipping and delivery.

Dividing processes in primary (core or main) and supporting processes is difficult and incorrect according to Lind (2003:133) due to “... a lack of solid foundation for determining what is core and what not ...” as activities

performed by an organisation are aimed at adding value to potential or specific customers.

These different types of processes can be summarised using the typology of processes provided by Earl and Khan (1994:25).

Core processes are well defined, *highly structured* with its focus on how the organisation is conducting business with external customers who in turn can influence the organisation's competitiveness and positioning within the marketplace. The *core*, as well as *network processes*, are *primary processes* as it relates to business execution with external customers and suppliers. However, due to process integration across boundaries, *network processes* tend to be *less structured* therefore posing more uncertainty and risks.

Support and management processes are *secondary processes* supporting the primary processes. *Support processes* (administrative activities) are *highly structured*, whereas the management processes (decision-making) can be structured or unstructured.

The typology of process as discussed is depicted in figure 3.6.

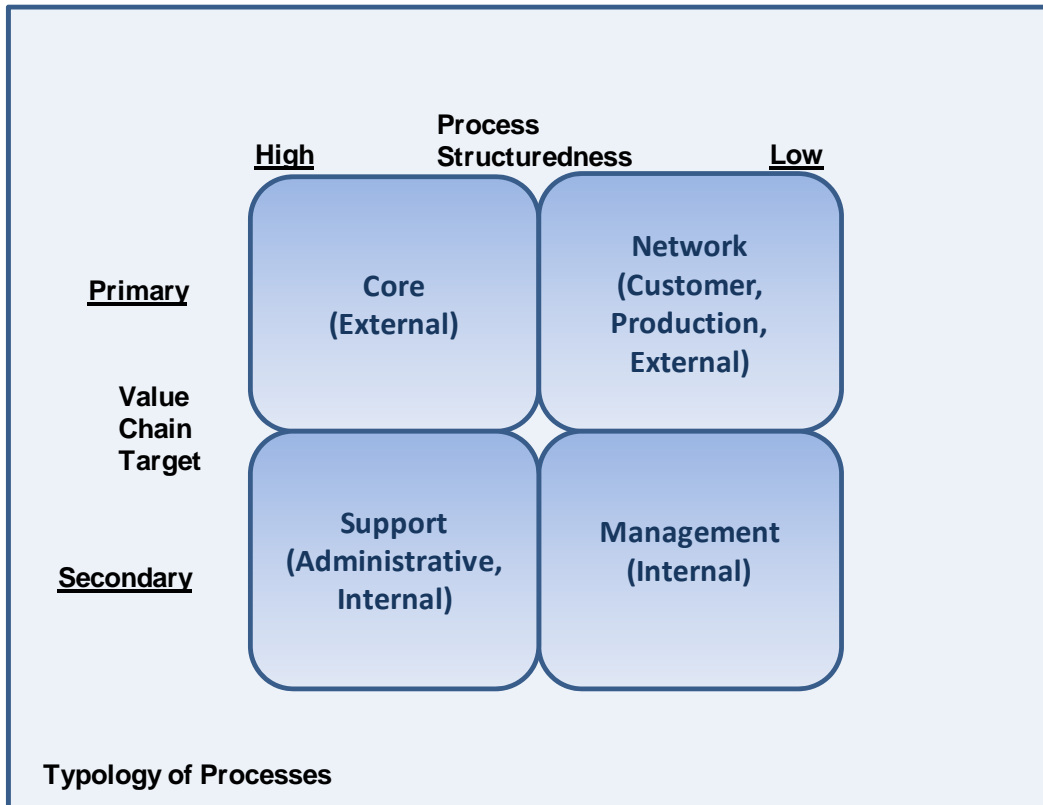


Figure 3.6: Typology of processes
(based on Earl & Khan, 1994:25)

Brown (2008:249) states that “*Business processes rarely live in isolation*”. In order to ensure proper process execution you need to understand process interaction and process dependencies. Brown (2008:260–264) therefore distinguishes between independent, dependent and event-driven processes:

- *Independent processes* are autonomous and require no interaction with other processes during its execution. Hence, the independent process is not depending on triggering events from other processes. All activities within the process are determined by the process itself. Brown (2008:263) states that “*Completely independent processes are relatively uncommon in practice.*”
- *Dependent processes* require inputs or triggers from other processes, which are inputs that are generated as part of another process. “*Every process that depends upon human participation is a dependent process.*” (Brown, 2008:263)
- *Event-driven processes* relate to completed activities within a process serving as the triggering event for the next activity.

Brown (2008:264) also states that the execution of activities within an independent business process can be controlled as each execution of the business process is viewed as an independent unit. Management of independent business processes is therefore “*relatively straightforward*”. Management of dependent business processes are more complex and requires a service-level agreement (SLA) to assist the process manager in determining whether a problem exists or not.

3.4.3 Business processes levels

An understanding needs to be created of the way in which business processes support the organisation’s value chain or value stream and the associated end-to-end business activities. Hammer (2001:64) indicates that this understanding of the manner in which the business processes support the organisation in contributing to achieving the goals of the end-to-end or super process is done by asking the “what” and “how” questions, such as what is its purpose, what product, how does the process create value for customers, what do you measure in the process and what do other people contribute to the process? Hammer’s “how” and “what” is in correlation with Davenport in Smith and Fingar (2003b:47) who state that the “how” focus on the work done in the organisation and the “what” on products.

Business process levels relate to the level of detail that can be included in a specific process, such as value chains with no details portraying enterprise level with the expansion of these processes to the lower levels to include unique processes and activities applicable to specific areas (Hunt, 1996:52–54). The level of detail captured within each of these process levels fulfils a specific requirement, such as the enterprise value chain providing top management and executives with an organisational view; end-to-end processes (value streams) providing complete sets of activities; sub-processes providing details on activities executed by different role players followed by individual activities done by a single person and the lowest level consisting of single tasks (Hayden & Draft, 2004:19). At the lowest level,

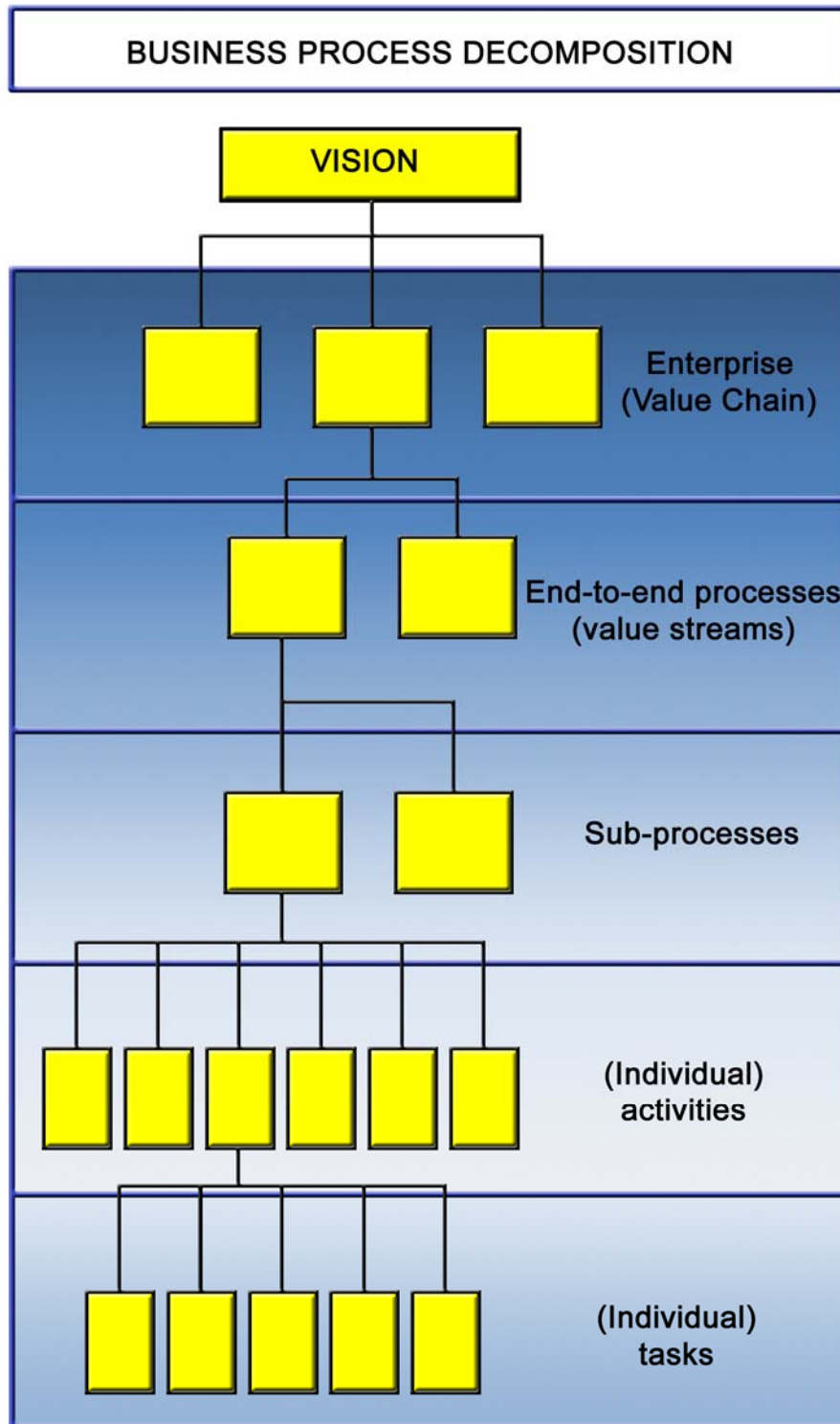
system development and configuration for workflow is being done by system developers.

Defining business process levels, also called decomposition (Hunt, 1996:3) relates to the partitioning or breakdown of a business process map's functions into its different components (horizontal or vertical) and levels (enterprise level, main process level, sub-process level, activity level and task level). This also relates to Earl and Khan (1994:13) and their perspective of interdependence of tasks. Table 3.8 below is an example of how a transport company in South Africa defined its business process levels with strategy governing process at all levels.

Business process levels	
Level	Content
Level 0	Transport Company Value Chain : What (Groups of Macro Processes)
Level 1	Decomposition of each value chain activity into a set of business areas, each with a specific accountable process owner: What (Macro Process)
Level 2	High level process per business area: What (Process)
Level 3	Sub-process detail per business area: How (Sub-process)
Level 4	Detail process information: How - with what (Activities)

Table 3.8: Defining business process levels
(Myburgh, 2007. ARIS Business process day conference)

The decomposition of the different process levels as used by a financial institution is depicted graphically below in figure 3.7, showing the interdependence of tasks.



The different levels of process decomposition can be described as:

- the enterprise value chain level being the highest level description of the organisation's processes
- the end-to-end processes, also referred to as value streams as being the complete set of activities, across organisational boundaries, that deliver fulfilment to the customer
- the sub-processes as being the level where generally all or most of the activities are executed by different role players within one organisational department/division
- the individual activities level relating to activities performed by a single role player
- the individual task level which relates to individual tasks making up a single activity. A task is usually executed without interruption and does not pause for the arrival of additional information (Hayden & Draft, 2004:19).

When reviewing the two approaches (Myburgh, 2007; Hayden & Draft, 2004:19) the following similarities are observed:

- both start at enterprise level
- both have a macro or end-to-end process view
- both have sub-processes which relate to the business processes in an organisational unit
- both include activity level

The main difference observed is the inclusion of tasks level in the decomposition of processes as used by the financial institution.

Structuring business processes in different levels is one component of well-defined, well-managed processes. Such processes have other general characteristics as described by Harrington (1991:15, 16) in the section below.

3.4.4 Characteristics of business processes

Common characteristics of well-defined and well-managed processes (Harrington, 1991:15, 16) are part of the actual managing of business processes, namely:

- a process owner who is accountable for the process performance
- the process scope or focus defining the boundaries of the process
- well-defined interfaces linking processes and responsibilities
- documented work instructions, procedures and training material
- measurements and feedback controls as close as possible to the point of activity
- customer related measurements and targets
- known cycle times
- formalised change control procedures governing process maintenance

Smith and Fingar (2003b:47–48) has as viewpoint that business processes are a set of coordinated, collaborative and transactional activities that deliver value to a customer and that business processes have the following characteristics:

- *“large and complex*, involving the end-to-end flow of materials, information and business commitments
- *dynamic*, responding to demands from customers and changing market conditions
- *widely distributed and customised across boundaries* within and between businesses, often spanning multiple applications on disparate technology platforms
- *long-running*, that is a single instance of a process such as “order to cash” or “develop product” may run for months or even years
- *automated*, at least in part (Routine or mundane activities are performed by computers wherever possible, for the sake of speed and reliability.)
- *both business and technical in nature* with IT processes being a subset of the business process, thus providing support to larger processes which involve people and machines

- *end-to-end processes are transactional and collaborative* and are dependent on distributed computing systems
- *dependent on and supportive of the intelligence of humans* (This relates to processes executed by humans that are too unstructured for a computer or that requires face-to-face interaction and problem-solving skills.)
- *difficult to make visible* as many organisations' business processes are not documented, incomplete or embedded in their history

Smith and Fingar (2003b:47–48) provide a more detailed description of business process characteristics than Harrington (1991:15, 16), but there is a correlation as both Harrington and Smith and Fingar refer to the boundaries of the business processes as well as the human component for business process ownership and decision-making. Reference is also made of the documenting of business processes with Harrington emphasising the importance of having documented instructions and Smith and Fingar reflecting on the lack of having documented processes.

In Hammer (2001:62–63) Pierre Leroy describes four distinct features of business processes which summarise the above discussion on business process characteristics:

- Processes are *teleological* in that the process focus on the outcome of work rather than on the work itself, thus emphasising the “what” and the “why”.
- Processes are *customer-focussed*, thus seeing the work from the customer's perspective. Instead of focussing on marketing and selling, rather focus on building a partnership with customers to solve their problems.
- Processes are *holistic* as it transcends individual activities, thereby concentrating on the fitting of activities to create the best outcome for all parties involved.
- Processes are *well-designed ways of working*, therefore creating sustainability and seeking to institutionalise success by designing high-performance ways of working.

To complement and add completeness to the discussion on business processes, business process modelling is reviewed in the following section, section 3.4.5.

3.4.5 Business process modelling

Davis (2001:2) describes business process modelling as the documentation, analysis and design of the structure of business processes, its relationship with the resources required to implement it and defining the environment it will be used in.

Process modeling is an area where artists (heavy right brain utilisation) meet scientists (heavy left brain utilisation), internal knowledge workers meet external knowledge workers, business meets IT. It is not only about the final artefacts (the models), which represent the outcome of these modelling sessions, but it is the process of modeling itself and its impact on subsequent activities and projects, which deserves attention.

Rosemann (2006:251)

Process modelling is the approach used to visibly present existing (as-is) as well as future (to-be) processes as part of process improvement projects. Process modelling stems from flow diagrams which was one of the first systematic approaches developed by Goldstine and Von Neumann in 1946. Nowadays business process analysts prefer to use the term “process modelling” instead of “flowcharting” or “flow diagrams” as “*process modelling claims a more disciplined, standardised, consistent and overall more mature and scientific approach*” (Rosemann, 2006:249, 250). Over time there has been an increased focus on business process modelling, thus leading to the prefix “business” being added to process modelling. This encourages the “*community of business representatives, end-users, and most of all, potential process owners not only to understand process models, but also to more actively model their own business processes*” (Rosemann, 2006:250). The reasoning behind this is that it could be easier for a business process owner to pick up on business process modelling techniques than to articulate the complexities of the business domain to a business process analyst

(Rosemann, 2006:250). This expression of business process ownership correlates with the distinction being made between processes and business processes discussed in section 3.4.1 which focuses on defining business processes (Becker et al, 2003:4).

In the modelling of business processes different business process model types are used. Different business process model types provide different views and information to different audiences such as the following:

- Organisational charts are used to document organisational structures, which depict organisational units, positions and its relationships for use by management and human resource divisions.
- Entity relationship models are used to model logical data structures and various dataflow diagrams for use by system administrators and information technology divisions.
- Event-driven process chains are used to display the practical sequence of functions that forms the business processes for use by the business people, including their training (Scheer, IDS, 2006:4:21,76, 98).

Taking note of the pitfalls related to business process modelling is important in order to create an understanding of difficulties experienced in the business process domain, such as management, governance, business process modellers and their skill base and sources of information. It means then understanding the difficulties related to people and processes as part of business process modelling.

3.4.5.1 Business process modelling pitfalls

The following business process modelling pitfalls have been identified (Rosemann, 2006a:251–254; Rosemann, 2006b:378–384):



Business process modelling pitfalls	
Strategy and governance	
Lack of strategic connections (1)	<ul style="list-style-type: none"> - Business process modelling connected (direct or indirect) to critical business matters especially where business process maturity is low, competing for corporate attention and funding. <p><i>“Establish and maintain a clear and widely shared understanding of the contribution being made by process modelling to the better execution of corporate strategy” (Rosemann, 2006a:251).</i></p>
Lack of governance (2)	<ul style="list-style-type: none"> - Lack of governance renders questions such as accountability for business process modelling, business process tools, methods, procedures, reporting lines and funding. - Governance distinguishes between business areas being responsible for the content of their business processes and a central process management group being responsibility for consistency in modelling conventions. <p><i>“Governance, i.e. accountability and decision processes related to process modelling requires a clear specification and has to be adapted with changes in the objectives, scope or size of the modelling initiative” (Rosemann, 2006a:252).</i></p>
Lack of synergies (3)	<ul style="list-style-type: none"> - Different drivers for business process modelling exist, namely documenting, costing, or simulating of business process for improvement purposes. - Re-use of already modelled business processes for different purposes and different audiences. <p><i>“Be aware of all stakeholders with potential interest in modelling, and try to migrate them to one platform” (Rosemann, 2006a:252).</i></p>
Stakeholders	
Lack of qualified modellers (4)	<ul style="list-style-type: none"> - Skills needed by business process analysts enabling them to facilitate business process workshops and translate information and documentation into structured and suitable business process models. - Not just modelling of a business process in a tool but understanding the business process. <p><i>“Business process modelling requires specific skills, which are different to the classical profile of a business analyst” (Rosemann, 2006a:253).</i></p>



<p>Lack of qualified business representatives (5)</p>	<ul style="list-style-type: none"> - Firstly have people with detailed knowledge of the as-is business processes. These people will also be ambassadors for business process change and therefore have a crucial role in active change realisation as organisational change realisation is business process based. - Secondly, people who know the project direction, timeframe, responsibilities and project objects, thus, involving the right people at the right time. <p><i>“The right mix of business representatives is crucial for the project success” (Rosemann, 2006a:253)</i></p>
<p>Lack of user buy-in (6)</p>	<ul style="list-style-type: none"> - Collaborative business process modelling effort between the business process representative and the business process analyst needed to align expectations and perceptions. <p><i>“Make sure that the way you visualise your models is liked, intuitive and well-accepted by your users” (Rosemann, 2006a:254).</i></p>
<p>Tools and related requirements</p>	
<p>Lack of realism (7)</p>	<ul style="list-style-type: none"> - Companies tend to underestimate the number of business processes that need to be designed. Be realistic. <p><i>“Do not under-estimate the number of models which you will have to maintain in your repository over the next three years” (Rosemann, 2006b:378).</i></p>
<p>The chicken and egg problem (8)</p>	<ul style="list-style-type: none"> - The chicken is the modelling tool and the egg the modelling language or framework. On the one hand it is the desire to model business processes in a specific manner, not having a tool supporting the desired modelling method, leading to tool customisation. On the other hand business process modelling tools are acquired based on recommendations leading to the methodology being adapted to suit the tool. The latter works better in case of low business process maturity and a lack of capability to do tool customisation. <p><i>“Be aware of the Catch 22 related to selected tools and methods” (Rosemann, 2006b:378).</i></p>
<p>Lack of details (9)</p>	<ul style="list-style-type: none"> - Constraints related to what portion of a business process can be modelled, eg the constraints of the Business Process Management Notation (BPMN) and the modelling of risks associated with Sarbanes-Oxley; or Unified Modelling Language (UML) originally developed for system analysis and design. - Select the tool and methodology best suited to the requirements of the organisation, acknowledging



	<p>limitations beforehand. <i>“Be aware of the limitations of the selected modelling language and tool”</i> (Rosemann, 2006b:378).</p>
<p>Lost in translation (10)</p>	<ul style="list-style-type: none"> - Translation of business processes into system processes. The different purposes of these processes require different levels of detail and thus different ways of modelling. <p><i>“While an automated translation of business models to system models is a nice feature, the capabilities of related interfaces but also the actual opportunities for a 100% translation are often (still) limited”</i> (Rosemann, 2006b:378).</p>
<p>Practice of modelling</p>	
<p>Lost in a drawing tool (11)</p>	<ul style="list-style-type: none"> - This point reviews drawing tools, such as Visio. This type of tool is suitable for single processes with a limited life span. More advanced solutions, such as ARIS, offer functionality related to an advanced repository, analysis and reporting capability. This links back to having a tool suitable for the business process initiative. <p><i>“Drawing tools have their raison d’être; however they might just not be appropriate for larger business process modelling activities”</i> (Rosemann, 2006b:379).</p>
<p>Lack of complementary methodologies (12)</p>	<ul style="list-style-type: none"> - Find a methodology which supports the entire business process lifecycle and together with the modelling tool facilitates sound model lifecycle management, including modelling conventions, quality assurance, etc. <p><i>“Complementary methodologies are required to fully utilize the capabilities of modelling tools and techniques”</i> (Rosemann, 2006b:379).</p>
<p>L’art pour l’art (13)</p>	<ul style="list-style-type: none"> - Distinguish between “modelling just-in-case” and “modelling just-in-time”. - Modelling “just-in-case” relates to business process modelling done on enterprise-wide level with completeness featuring higher than relevance. Business process models are done just-in-case someone needs it. - Modelling “just-in-time” is having a business process model available when required, that is for a specific purpose. <p><i>“Process models have to be relevant, not necessarily complete”</i> (Rosemann, 2006b:380).</p>
<p>Lost in syntactical correctness (14)</p>	<ul style="list-style-type: none"> - Obtain synergy in the selection and customisation of modelling techniques, taking current and future objectives into account. <p><i>“Customizing of the modelling technique should strive towards</i></p>



	<i>applicability, not perfection</i> ” (Rosemann, 2006b:380).
Focus on models and not on modelling (15)	<ul style="list-style-type: none"> - The experiences relate to stimulating discussions and learning that occur during business process modelling, creating a change reaction and increasing business process awareness. <p><i>“The experiences during the journey are part of the overall outcomes of process modelling”</i> (Rosemann, 2006b:380).</p>
Lost in detail (16)	<ul style="list-style-type: none"> - A common problem is delving into too much detail. The more detailed the model, the longer it takes to design, review and maintain it and the quicker it becomes outdated. - Different levels of detail are visible in high level business processes, such as value chains, compared to executable processes. <p><i>“Define an appropriate level of detail in light of the underlying objectives”</i> (Rosemann, 2006b:381). This links to having and using the right level of detail for the right audience as discussed earlier.</p>
Design to-be models	
Lack of imagination (17)	<ul style="list-style-type: none"> - Address the classic three step methodology of business process improvement, that is firstly to understand the as-is business process, secondly to find ways to improve it and thirdly to take action. This has the danger of focussing on overcoming shortcomings rather than realising inspirational, new strategic goals through “out-of-the-box thinking”. <p><i>“A good understanding of the existing process is important, but it should never be the only source of ideas for the new process”</i> (Rosemann, 2006b:381).</p>
Lost in best practice (18)	<ul style="list-style-type: none"> - Take caution when using best practices which consolidate features from existing “good cases” as it may not provide the required results. Best practice is about applicable best practice and its wider use. <p><i>“So called best practice models can be useful in terms of structure, content, overall guidance and opening up more possibilities. The notion of best practice is, however, typically over-rated</i> (Rosemann, 2006b:382).</p>
Design to-be models solely centred on new IT (19)	<ul style="list-style-type: none"> - Resolve problems within process improvement and do not necessarily implement new IT. It could be “quite healthy” to ask for process improvements that explicitly do not make use of IT changes. <p><i>“Business process models stimulate an integrated organisational and IT view on process change. An exclusive focus on IT</i></p>

	<i>solutions ignores other potentials resulting from non-IT improvements” (Rosemann, 2006b:382).</i>
Modelling success and maintenance	
Modelling success is not process success (20)	<ul style="list-style-type: none"> - The to-be process it is still only a process and has not been implemented, and therefore not yet changed anything. <p><i>“Appreciate the ideas which went into the new process design, but be aware that only the implementation matters” (Rosemann, 2006b:383).</i></p>
Lost in model maintenance (21)	<ul style="list-style-type: none"> - Sound practices for model life-cycle and review management as part of quality assurance is crucial as model repositories are becoming bigger. This responsibility resides with the centralised business process group whereas the responsibility for the correctness of the business processes is with the business process representative. This responsibility includes business process ownership which resides with business. <p><i>“Establish sound, but appropriate procedures and ownership for maintaining an increasing model repository” (Rosemann, 2006b:383).</i> This relates to governance and the defining of role and responsibilities.</p>
Lack of measuring modelling performance (22)	<ul style="list-style-type: none"> - Have a clear understanding of what parameters need to be changed, the measurements and the nature of the change. This means not simply changing a business process for the sake of change, but to execute well thought through changes. <p><i>“If you can’t measure it, you can’t manage it – and, more importantly, you can’t claim it as a success” (Rosemann, 2006b:384).</i></p>

Table 3.9: Business process modelling pitfalls
(Based on Rosemann, 2006a:251–254; Rosemann, 2006b:378–384).

Additional viewpoints on business process governance include business process governance being seen as the creation of the right structure, metrics, roles and responsibilities needed to measure, improve and manage the performance of an organisation’s end-to-end business processes (Spanyi, 2008) which correlates with the process of keeping everything under control (Hamaker & Hutton, 2003:1). Zemliansky and St Amant (2008:518) state that in support of business

process governance process standardisation may be achieved through joint modelling and design approaches which will also ease the modelling effort amongst different divisions where process integration is needed.

As mentioned in table 3.9 governance is accountability and defining of roles and responsibilities related to the business process domain establish accountability. Defining roles and responsibilities are crucial for the execution and support of the business process domain. This also has a bearing on the type of work done in the virtual workplace (section 3.3.4) and the subsequent access to systems, since different roles have different profiles.

3.4.6 Business process roles and responsibilities

This section highlights roles and responsibilities as discussed by Bilodeau (2004:15–16), Scheer et al (2002:135), Hammer (2001:65–70) and Hunt (1996:56–57).

Roles and responsibilities	
Role	Responsibilities
Business process owner Bilodeau (2004:16)	<ul style="list-style-type: none"> - Define business process cope. - Document business process. This point differs as it is listed as part of the responsibilities of the business process modeller. - Provide business process training, communication and support. Business process training is done by the business process owner, whereas business process modelling training resides with the business process support office. - Monitor, manage and improve business process performance. - Manage Sarbanes-Oxley risks and controls. - Ensure accurate documentation with processes reflecting current practice. - Plan and manage business process change. - Liaise with other business process owners to ensure

<p>Scheer et al (2002:135)</p>	<p>integration of business processes.</p> <ul style="list-style-type: none"> - Comply with audit activities. <p>The role of the business process owner is further expanded by Scheer et al (2002:135) with specific reference to the institutionalisation of business process management and continuous improvement principles:</p> <ul style="list-style-type: none"> - Continuously improve process. - Develop new concepts to be used for optimisation purposes. - Explore to find new solutions. - Cooperate in development and improvement of business process management principles. - Provide directives to employees who participate in owned processes. - Supervise the execution of directives given with additional support to their managers. - Obtain resources needed for execution of owned processes - Review proposals for business process changes. - Create inter-functional teams needed for analysing and optimising of business processes.
<p>Hammer (2001:65–70)</p>	<p>Hammer (2001:65–70) describes the following responsibilities of the business process owner which has a matching relationship according to Scheer et al (2002:135):</p> <ul style="list-style-type: none"> - Every process needs to have a process owner who manages the process end-to-end, that is from start to finish. This includes managing changes to the process, building the supporting tools, roll-out into the organisation and monitoring of the process performance. - Deploying the measurement system, evaluating process performance, publishing the performance levels to all relevant role-players and introducing steps to improve process performance. - Support and educate all people involved in the process execution. This involves local representatives in the case of dispersed processes. - Act as steward of a key business asset, namely the business processes that determine how well the organisation functions in creating value for its customers. - Business process owners are the visible evidence of a company's commitments towards processes.
<p>Hunt (1996:56–57)</p>	<p>Business process ownership resides with top management and must be a selected person:</p>

	<ul style="list-style-type: none"> - within the business process structure of the organisation - who is responsible for the output performance of the business process - who has the power to manage the business process and sub-processes assigned to him or her - who has credibility within the business domain - who has excellent management and communication skills - who assists in establishing critical, strategic business processes that need to be improved - who chooses, supports and provides business process teams with them with the deliverables they are accountable for - who are involved in the finalisation of the newly designed (to-be) business process - who is involved in ensuring cross-functional integration and clarify and integration matters
<p>Business process modeller Davis & Brabänder (2007:342); Davis (2001:224)</p>	<ul style="list-style-type: none"> - who does business process modelling - who does business process verification - who complies with business process standards
<p>Business process custodian and support office Bilodeau (2004:15)</p>	<ul style="list-style-type: none"> - who owns the business process management process also referred to as the change control process - who defines and enforces business process standards - who provides business process modelling training and support - who facilitates process alignment and integration - who maintains the business process architectural framework - assesses business process maturity level - reports on business process objectives and business process performance - provides business process management governance

**Table 3.10: Business process roles and responsibilities
(Based on Bilodeau, 2004:15–16; Scheer et al, 2002:135;
Hammer, 2001:65–70; Hunt, 1996:56–57; Davis, 2001:224;
Davis & Brabänder, 2007:342)**

As mentioned in table 3.9 as part of the measuring of model performance, an understanding of the nature of business process changes and the reason for the business process change is vital in order to execute well thought changes

(Rosemann, 2006b:384). This was followed by clarifying that business process change control forms part of the roles and responsibilities of the business process owner in that the business process owner manages the process end-to-end and therefore reviews proposed changes to the business process. The following section will review some of the factors that could lead to business process changes.

3.4.7 Business process changes

Changes that can influence business processes necessitating changes to the business processes as Scheer, Abolhassan, Jost and Kirchmer (2003:3) showed are indicated below. Examples have been included for illustration purposes:

- New or changing customers, suppliers or other market partners
 - Example: New suppliers due to new business operations in the mobile telecommunications industry.
- New or changed market offerings (goods, services, information, others)
 - Example: A fixed line telecommunications company moving into the mobile phone market.
- Mergers and acquisitions
 - Example: A telecommunications company acquiring another telecommunications company in Nigeria or a financial institution acquiring another financial institution in Angola.
- Changing legal regulations
 - Example: A telecommunications company being listed on both the Johannesburg Stock Exchange and New York Stock Exchange thereby making Sarbanes-Oxley compliance mandatory.
- Availability of new or modified technologies like application systems
 - Example: Wireless and 3G-technologies.
- Outsourcing of specific activities

- Example: Outsourcing of an information technology division and warehousing.
- New business models
 - Example: A fixed line telecommunications company embarking on a new business model to penetrate the mobile telecommunications industry.
- Cultural differences in various locations
 - Example: A financial institution having business partners in Mozambique, Nigeria and Angola.

It is important to note that sound practices for the sustaining of the model life-cycle and review management is needed as has been indicated in table 3.9 as part of the modelling success and maintenance portion (Rosemann, 2006b:383).

The following sections review business process management (section 3.5.1), business process improvement (section 3.6.1) and business process maturity (section 3.7.1) as part of the business process discussed and a literature review. The purpose of these sections is to distinguish between the relevant concepts and create an understanding in terms of their management positioning.

3.5 BUSINESS PROCESS MANAGEMENT

“Process management provides the means to discover and describe exactly how a company operates, and the process tools for controlling and analysing the business. It enables companies to control the lifecycle of business processes and enables them to put new process into practice without writing software or producing new applications.”

Smith et al (2003:116-117)

Business process management and its definitions as found in the literature are reviewed in the following section. This section covers the **process** portion as depicted in figure 3.1. As part of the literature review conducted for this thesis business process management is viewed from a high level or managerial level and not from an operational perspective. This positioning is portrayed in figure 3.8.

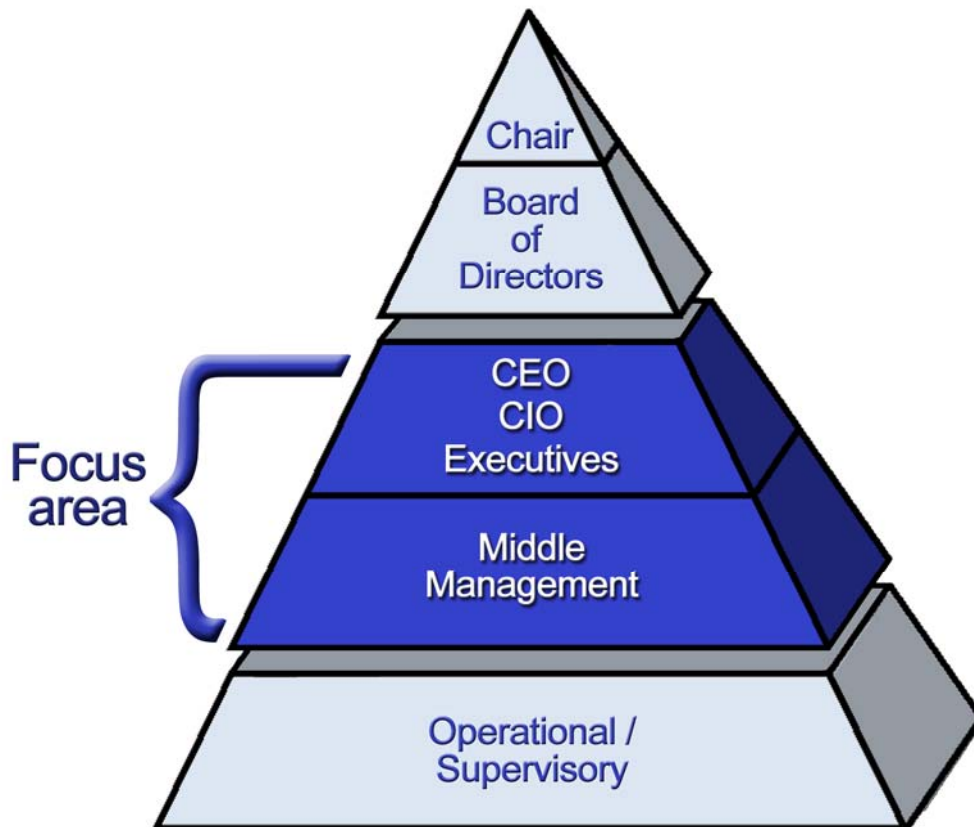


Figure 3.8: Positioning of business process management

3.5.1 Defining business process management

Wang and Wang (2006:179) postulate that businesses have been adapting to swiftly changing environments, including changing from “*centralised and closed to distributed and open with the business processes displaying more complexity because of interaction between their internal components and interaction of the processes with the environment. As a result, organisations are paying more attention to supporting business process management able to adapt to the new complex environment.*”

Processes vary from rigid, high-volume production processes to more flexible office processes – the key being analysing and optimising processes as everything that is done within an organisation is process driven (Davis & Brabänder, 2007:2).

In order to understand Business process management (BPM) we need to take cognisance of the different elements it consists of. Scheer et al (2002:11) state that BPM consists not only of designing and documenting business processes, but also includes the functional procedures and feedback mechanisms needed to process results, enabling an organisation to establish a continuous improvement process assisting with business process improvement. Such supporting procedures, feedback mechanisms, inputs and outputs are graphically displayed in figure 3.7. The viewpoint of BPM consisting of different elements as expressed by Scheer et al (2002:11) above, is supported by Davis and Brabänder (2007:3) who emphasise that BPM is about the most efficient way of bringing resources together, supporting an end-to-end cross-functional process that provides the customer with the value required.

The following core BPM definition is provided by McCoy, Sinur, Rosser, Kerremans and Melenovsky (2007:2).

“Business process management is a management practice that provides for governance of a business process environment towards the goal of improving agility and operational performance. Business process management is a structured approach that employs methods, policies, metrics, management practices and software tools to manage and continuously optimise an organisation’s activities and processes.”

McCoy, Sinur, Rosser, Kerremans and Melenovsky (2007:2)

It is important to note the two areas covered by the definition, namely:

- the intent of business process management, which is governance of the business processes environment, and secondly
- a structured approach consisting of various practices to continuously optimise process-based performance.

McCoy et al (2007:2) continue by stating that apart from the above-mentioned areas covered by the definition of BPM, it is also important to take note that organisations have the desire to close gaps between strategic vision and goals as well as operational execution and achievement of goals. BPM is therefore a set of managerial practices and methodology offering direct, visible results.

The definition for BPM as provided by Melão and Pidd (2000:121) corresponds with McCoy et al (2007:2) stating *“BPM can be seen as a collection of methodologies, techniques and tools supporting the analysis and improvement of business processes.”*

Melão and Pidd (2000:111) also provide a theoretical view of BPM in the context of software engineering, thereby placing business processes in four positions, namely:

- o functional, indicating the functions or activities executed as part of the relevant business process flow
- o behavioural, relating to how and when the functions or activities are executed
- o organisational, relating to where and by whom the functions or activities are executed as well as physical components, such as storage and communication methods
- o informational, that is describing units flowing through the processes including its structure and relationships

The *theoretical view* of Melão and Pidd (2000:111) can also be found in Weske, Van der Aalst and Verbeek (2004:2) who cite that a Workflow Management System (WFMS) is required for interpretation of a process

instance, including the process participants, where and how the process activities are executed. Weske et al (2004:2) focus on “*enactment, i.e. the use of software to support the execution of operational processes.*” Therefore BPM is defined from a technology perspective as “*supporting business processes using methods, techniques and software to design, enact, control and analyse operational processes involving humans, organisations, applications, documents and other sources of information.*”

When viewing BPM from a *system perspective* it can be seen as the routing of tasks (workflow) within a predefined set of business rules, governing the execution of the activities (*TIBCO Education Services, 2006:13*). The system supporting the automated business process is only developed once the business process has been defined and approved.

BPM can be viewed from a *modelling perspective* with business process modelling being used widely within organisations “*as a method to increase awareness and knowledge of business processes, and to deconstruct organisational complexity*” and a “*large number [of] graphical process modelling languages has been developed to aid organisations in the documentation of their processes*” (Recker, 2010:182–183). The Business Process Modelling Notation (BPMN) represents the much needed standardisation in business process modelling languages, which are standardised graphical constructs and rules on how to combine these constructs. BPMN is supported by free as well as commercial modelling tools (Recker, 2010:182–183). Acknowledgment is given to fact that there are many business process modelling tools and languages in use, however, the BPMN standard is emphasised as a “*de facto* standard for process modelling (Recker, 2010:194).

Jeston and Nelis (2009:11) place emphasis on the managerial component of BPM when they state that BPM is:

- “*more than just software*
- *More than just improving or reengineering your processes – it also deals with the managerial issues*

- *not just hype – it is an integral part of management*
- *more than just modelling – it is also about the implementation and execution of these processes, which requires analysis.*

As a management discipline, BPM requires an end-to-end organisational view and a great deal of common sense, both of which can often be in short supply.”

According to Zairi (1997:78) BPM is a more general approach to organisational improvement and the definition provided by the author summarise many of the elements mentioned in the preceding discussion, namely:

“...an approach which is all-encompassing and is dependent on strategic elements, operational elements, use of modern tools and techniques, people involvement and, more importantly, on a horizontal focus which will best suit and deliver customer requirements in an optimum and satisfactory way” (Zairi, 1997:78).

BPM is further governed by a set of seven rules (Zairi, 1997:65) as BPM is involved in the main aspects of business operations focussing on value add. These seven rules address requirements related to customer focus, documented procedures, measurement of performance, a continuous approach, proper systems and structures and are in correlation with the definitions provided in the preceding portion. These seven rules are:

- *“Major activities have to be properly mapped and documented;*
- *BPM creates a focus on customers through horizontal linkages between key activities;*
- *BPM relies on systems and documented procedures to ensure discipline, consistency and repeatability of quality performance;*
- *BPM relies on measurement activity to assess the performance of each individual process, set targets and deliver output levels which can meet corporate objectives;*
- *BPM has to be based on a continuous approach of optimization through problem solving and reaping out extra benefits;*

- *BPM has to be inspired by best practice to ensure that superior competitiveness is achieved, and*
- *BPM is an approach for culture change and does not result simply through having good systems and the right structure in place.”*

The BPM definition provided by Davis and Brabänder (2007:7) summarises the discussion on BPM, stating that BPM is *“...a systematic approach to managing and improving an organisation’s business by the active, coordinated management of all aspects of the specifications, design, implementation, operation, measurement, analysis and optimisation of business processes in order to effectively and efficiently deliver business objects.”*

The research done as part of this thesis acknowledges the value added by the different types of BPM software tools; however, evaluation of BPM software is beyond the scope of this research. This limitation has been noted as part of limitations in section 6.11.

In conclusion of the business process management literature review acknowledgement is given to strategic, tactical and operational issues related to business process management (Indulska et al, 2006:6–10; Bandara et al, 2007:3–8).

Business process management issues		
Strategic	Tactical	Operational
<ul style="list-style-type: none"> •Change management •Lack of governance •Lack of top management support •Lack of employee buy-in •Lack of support for process owners •Lack of common mind share of BPM •Broken link between BPM efforts and organisational strategy 	<ul style="list-style-type: none"> •Lack of expertise •Lack of measurable returns •Lack of coordination •Lack of standardisation •Lack of BPM understanding •Lack of visibility •Lack of performance measures •Lack of progress in process maturity •Lack of clear starting point •Lack of linkage in external business partners •Lack of standards •Weaknesses in process specification •Lack of BPM education •Lack of methodology 	<ul style="list-style-type: none"> •Lack of tools for holistic BPM •Lack of technology capability •Lack of process monitoring •Lack of integration •Lack of tool support for process visualisation •Perceived gaps between process design and process execution •Miscommunication of tool capabilities

Table 3.11: Business process management issues
(Based on Indulska et al, 2006:6–10; Bandara et al, 2007:3–8)

Although table 3.11 is structured around strategic, tactical and operational issues it still corresponds with detail indicated in table 3.9: Business process modelling pitfalls. Both tables reflect on matters, such as the need for change management, governance, support from top management and expert skills. Performance measures, standards, as well as integrated tools are also covered in both tables. The corresponding matters listed from business process modelling and business process management perspectives show the relatedness of the business process matters.

Business process management however differ from business process improvement and hence business process improvement needs to be reviewed.

3.6 BUSINESS PROCESS IMPROVEMENT

There is a clear distinction between business process improvement (BPI) and BPM. Business process improvement is reviewed in the following section as part of the **process** portion depicted in figure 3.1. This is to clarify the difference between business process management and business process improvement.

3.6.1 Defining business process improvement

Business process improvement (BPI) differs from BPM as BPI has as focus to repair “*broken processes*” (Madison, 2005:55) whereas BPM refers to the management approach including policies, methods and metrics (section 3.5.1).

Harrington, Esseling and Van Nimwegen (1997:3–5) states that the BPI effort is focussed on defining, understanding and improving the activity flow within major business processes with the aim of reducing cost, cycle time and error rates. They also distinguish between BPI for product processes and BPI for administrative processes. BPI for product processes focus on the improvement of production processes used for producing delivered goods or services, such as “processing a cheque at a bank” or “manufacturing of a boat”. BPI for administrative processes has as aim to improve the support processes, such as ordering processing and accounts payable. This distinction between production and administrative processes correlates with types of processes (section 3.4.2).

The following formal definition for BPI is provided by Harrington et al (1997:5), namely “*a methodology that is designed to bring about step-function improvements in administrative and support processes using approaches, such as FAST, process benchmarking, process redesign and process reengineering.*” The step-function improvements match McCormack et al (2009:794) who state that business process improvement is based on many small evolutionary rather than revolutionary steps.

Recognising the symptoms of a “*broken process*” is vital before embarking on a BPI initiative and these symptoms include the following (Madison, 2005:55–59):

- unhappy customers complaining about service, response times and poor quality
- a long time to get things done, such as long turnaround time on customer requests
- the process is done incorrectly and produces errors, such as incomplete information on reports
- management throw people at the problem without resolving it, for example even with employing more people, the bottleneck remains and staff turnover increases (five managers for one division in five years)
- employees experience high frustration levels while working due to confusing processes
- processes span multiple departments causing finger-pointing and blaming, such as sales blaming service representatives to solve missing customer data
- processes are not measured or controlled, such as different people performing the same process each following their own method
- inventory buffers are idle meaning that continuous flow of products is absent
- data redundancy due to no integration between multiple data bases
- too many reviews and sign-offs
- complexity and special cases falling outside the set routine causes chaos
- circumvention of established procedures to expedite work meaning that the regular process is too slow or cumbersome
- no one manages the whole process leading to pieces of the process being managed by different departments
- management throws money at the problem without solving it, such as trying to solve the problem by adding technology
- management doing fire-fighting or crisis management without addressing the problem in the process

These symptoms have a close correlation with Smith et.al, (2003b:22, 54,63, 90–94) and their identification as reasons for BPI, namely:

- Detect bottlenecks.
- Detect deadlocks and business process inconsistencies.
- Detect duplications of and within business processes.
- Detect variants of the same business process, meaning more than one version of the same business process.
- Detect work not finalised on time resulting in overtime.
- Detect customer complaints and dissatisfaction.
- Detect multiple (repeating) activities, such as approvals, hand-overs and inspections.
- Detect if there is a noticeable gap between actual and desired business process results.
- Detect frequent occurrence of the same problems or dilemmas.

Seethamraju and Marjanovic (2009:922) state that BPI is often reduced to a process modelling problem with process modelling done by a process analyst whose “*experience is limited to the explicit knowledge expressed by process models.*” They argue that BPI is a complex, knowledge-intensive and collaborative process that requires a set of co-ordinated, contextualised knowledge management processes supported with a BPI methodology. This notion of having a supportive BPI methodology is evident in the definition of Harrington et al (1997:5) of BPI stated earlier. Business process modelling is then the enhancement and documenting of processes as part of the BPI initiative, which is one component of BPM (Seethamraju & Marjanovic, 2009:922).

We need to take cognisance of business process maturity as it plays a role in the organisation's view of business process management and business process improvement initiatives. Business process maturity may influence the strategy and approach to people and processes in the virtual workplace and has been included as a specific area of future research (section 6.12).

3.7 BUSINESS PROCESS MATURITY

Business process maturity is defined in the following section, including the different levels of business process maturity and the identification of business process maturity components. This section covers *people-process* as depicted in figure 3.1.

3.7.1 Defining business process maturity

McCormack et al (2009:794–795) view business process maturity as a four-step path which advances business process maturity in a systematic manner, as each step builds on the achievements of the previous step, thereby guiding an organisation to become business process oriented. These four steps are:

- *Ad hoc*, with business processes unstructured and undefined. Business process measures are not in place. Jobs and organisational structure are focussed on traditional functions and not on horizontal processes.
- *Defined*, meaning basic business processes are defined, documented and available in a business process map with change control in place to manage business process changes. Jobs, as well as the organisational structure however remains functional with representatives from the different functional areas, such as sales, or manufacturing meeting regularly to align and coordinate processes.
- *Linked*, referring to the breakthrough level achieved. Management employ process managers with strategic intent and results. Jobs and organisational structures stretch outside the traditional functions.
- *Integrated*, meaning that the organisation's vendors and suppliers cooperate on process level. Jobs and organisational structures are based on processes with the possibility that traditional functions can become subordinate to the actual process. Process measures and process management are deeply embedded in the organisation.

The business process maturity levels as defined by Bilodeau (2004:4) correspond with McCormack et al (2009:795), although different terminology is being used. The levels referred to by Bilodeau (2004:9) are:

- *Initial* or ad hoc, and sometimes chaotic with only a few business processes defined. Success is dependent upon individual efforts.

- *Repeatable*, with the basic business process being defined, including output and cycle time, thereby allowing repeatable success.
- *Defined (or linked)*, relating to business processes being documented, standardised and integrated into an architectural framework.
- *Managed (or integrated)*, allowing data collection to monitor the business processes performance as well as the quality of the business process. Business processes are understood and controlled.
- *Optimised*, relating to continuous improvement through quantitative feedback, piloting innovative ideas and technologies.

McCormack et al (2009:795) expand on these steps through the identification of maturity components, namely process view and process job, followed by process management and measurement. These components are described as follows:

- *Process view*, referring to the documenting of business processes steps, activities and tasks in visual and written format, thereby enabling people in different job functions to communicate via the same process vocabulary, including having broad understanding of the processes spanning the organisation and not only documentation. This correlates with the viewpoints on the need for process standardisation as part of the business process management methodology.
- *Process jobs* include horizontal rather than vertical responsibility with people taking ownership of the end-to-end process, such as the order fulfilment process owner. This shows close correlation with the defining of business process management (section 3.5.1) with business process management requiring an end-to-end organisational view (Jeston & Nelis, 2009:11) with the focus on horizontal linkages between key activities (Zairi, 1997:65).
- *Process measurement and management systems* include integrated process measurement systems, rewards for business process improvement, outcome measures as well as customer- and team-driven measures.

These maturity components are supported by sub-components which provide the structure and culture needed for the maturity components to become functional:

- *Process structure* or a process management team which stretch across old functional silos, thus enabling enterprise-wide, horizontal thinking with support structures that include horizontal teams, partnerships and shared ownership.
- *Customer-focussed process values and beliefs*, which strengthen the organisation. This may include trust in the customer's sales forecasts and the belief that all team members are fully committed to business process improvement.

These components show a strong correlation with ownership, trust and a collaborative partnership as discussed in chapter 4.

Appendix F is an example of typical questions that can be asked in order to determine business process maturity.

3.8 CONCLUSION

According to Dastmalchian (2001:1) organisational survival and success depend on the level and quality of flexibility an organisation has and the degree in which flexibility is being incorporated in the organisation, allowing for effective and efficient adaption to change in the environment. This quest for flexibility leads to increased development in technology. The reduction in time and space as barriers of trade result in increased market activity as well as the integration of spatially separate markets. Bell in Dastmalchian (2001:1) states that the Industrial Era (Second Wave) businesses are organised around labour and the production of goods whereas Post-industrial (Third Wave) organisations are focussed on the creation of knowledge and the use of information. The latter also includes flatter hierarchies, increased horizontal communication, as well as the disappearance of boundaries between functional areas. Bell in Dastmalchian

(2001:1) notes “*The prototypical post-industrial forms of organisations are networks, joint ventures, strategic alliances and virtual organisations.*”

The nature of work changes as organisations transform from one era to the next. In order to get an understanding of what this transformation comprises of, we need to understand how work changed over time and how it impacts on our culture as well as the impact it has on our social experiences or *Erlebnis*. Creation of understanding can be achieved through the Extended Hermeneutic Circle of Learning as discussed in chapter 2.

The estimated timelines relevant to the waves of change with its overlap in time frames as covered from approximately 1780 until 2020 have been summarised by the researcher in figure 3.9. The innovation highlights (**process**) of the individual waves are displayed in figure 3.10 and organisational change (**people**) and the establishment of the virtual workplace (**place**) are depicted in figure 3.11.

Changes in the nature of work can however not be viewed in isolation, as they have impacted on and are still impacting on management approaches and the business processes supporting the work place. The literature review covered the changing nature of work as it evolved during different phases. This was followed by a review of the different types of virtual workplaces, people in the virtual workplace, as well as the types of work for the virtual workplace and infrastructure. The advantages and disadvantages of the virtual workplace conclude the virtual workplace review. Following on this is a review of business processes, business process management and business process improvement, including the difference between business process management and business process improvement. Business process maturity and its different components are included in the latter part of the chapter.

This is followed by research into people, processes and places in the virtual workplace in chapter 4.

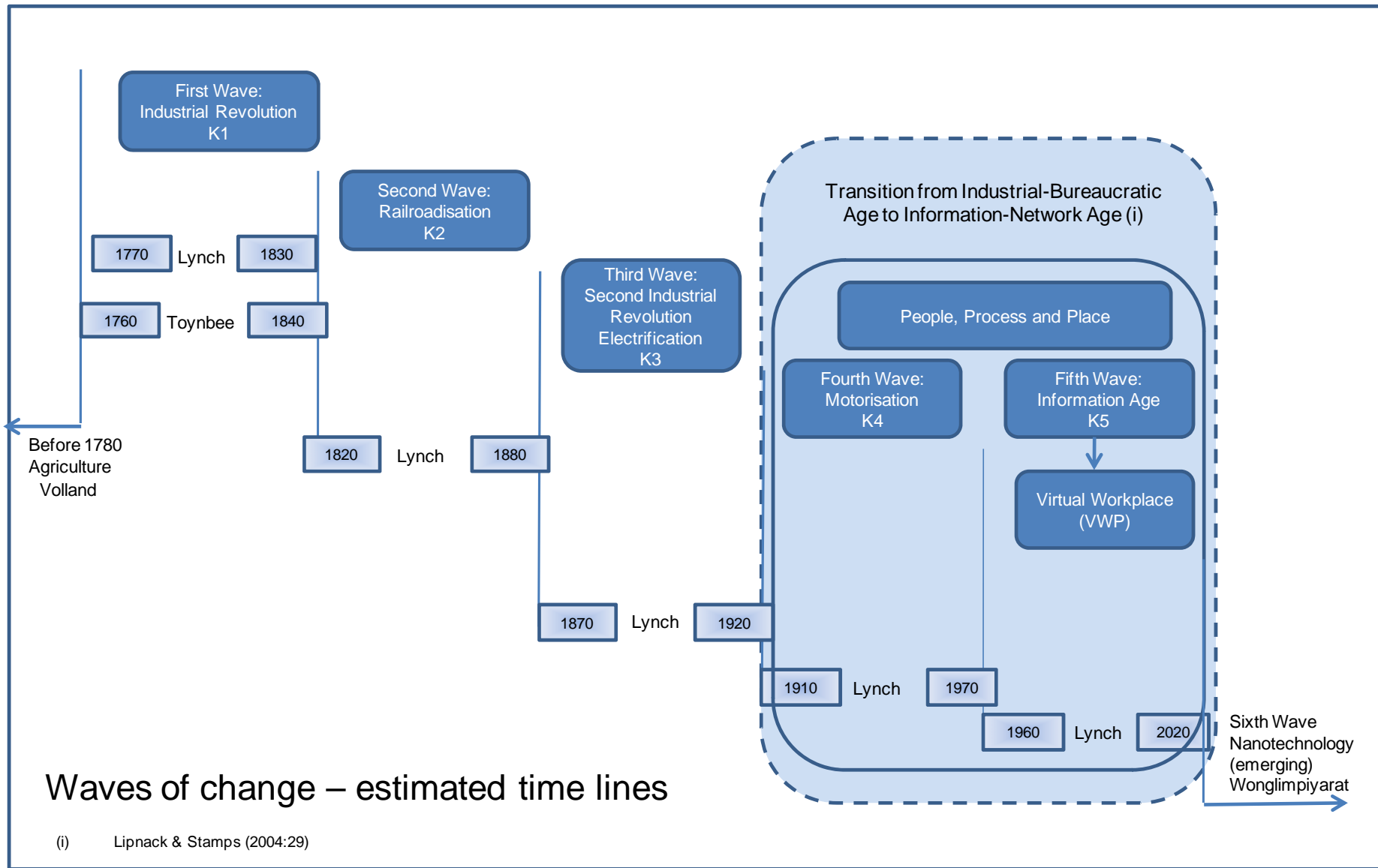


Figure 3.9: Waves of change – estimated time lines

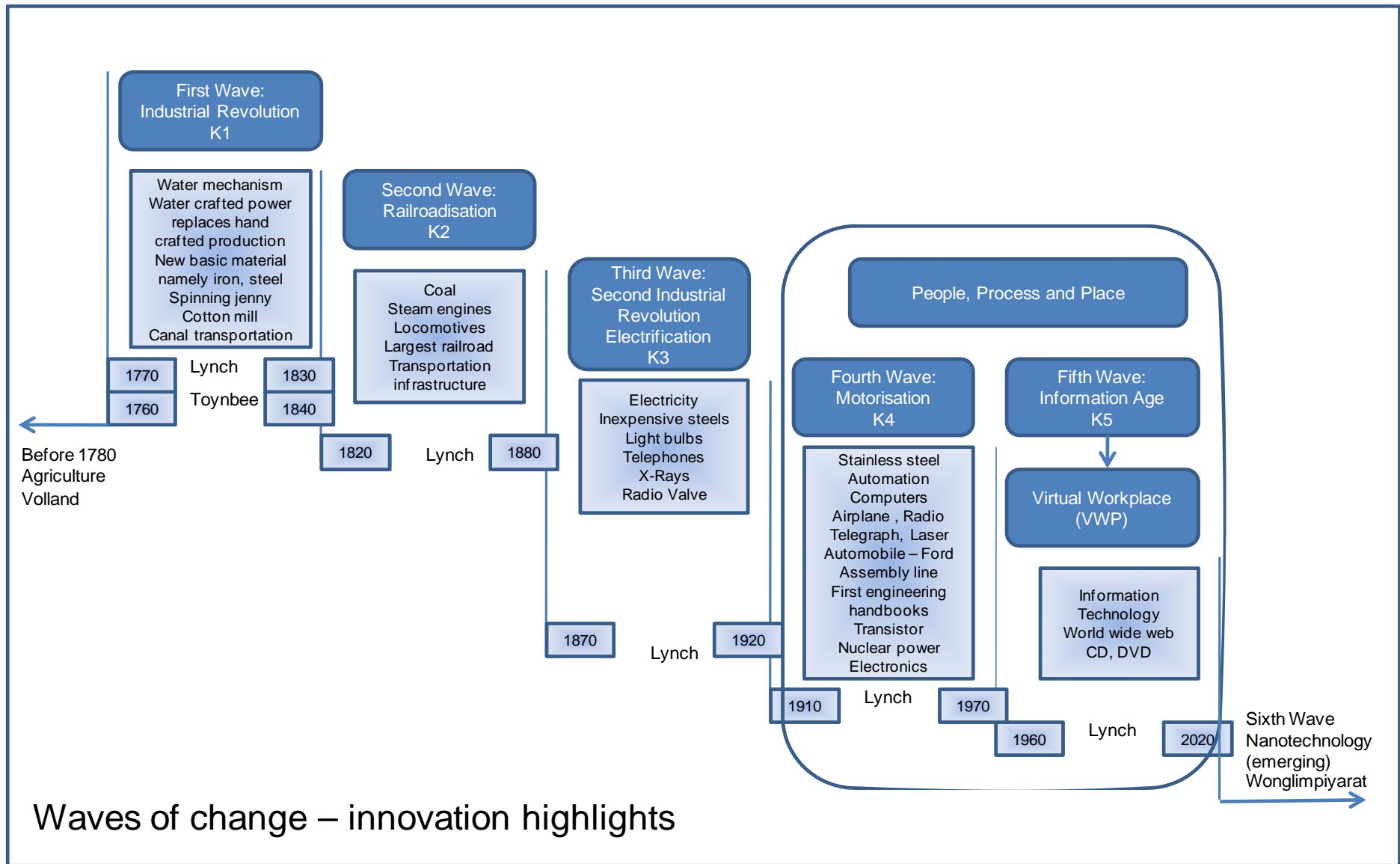


Figure 3.10: Waves of change – innovation highlights

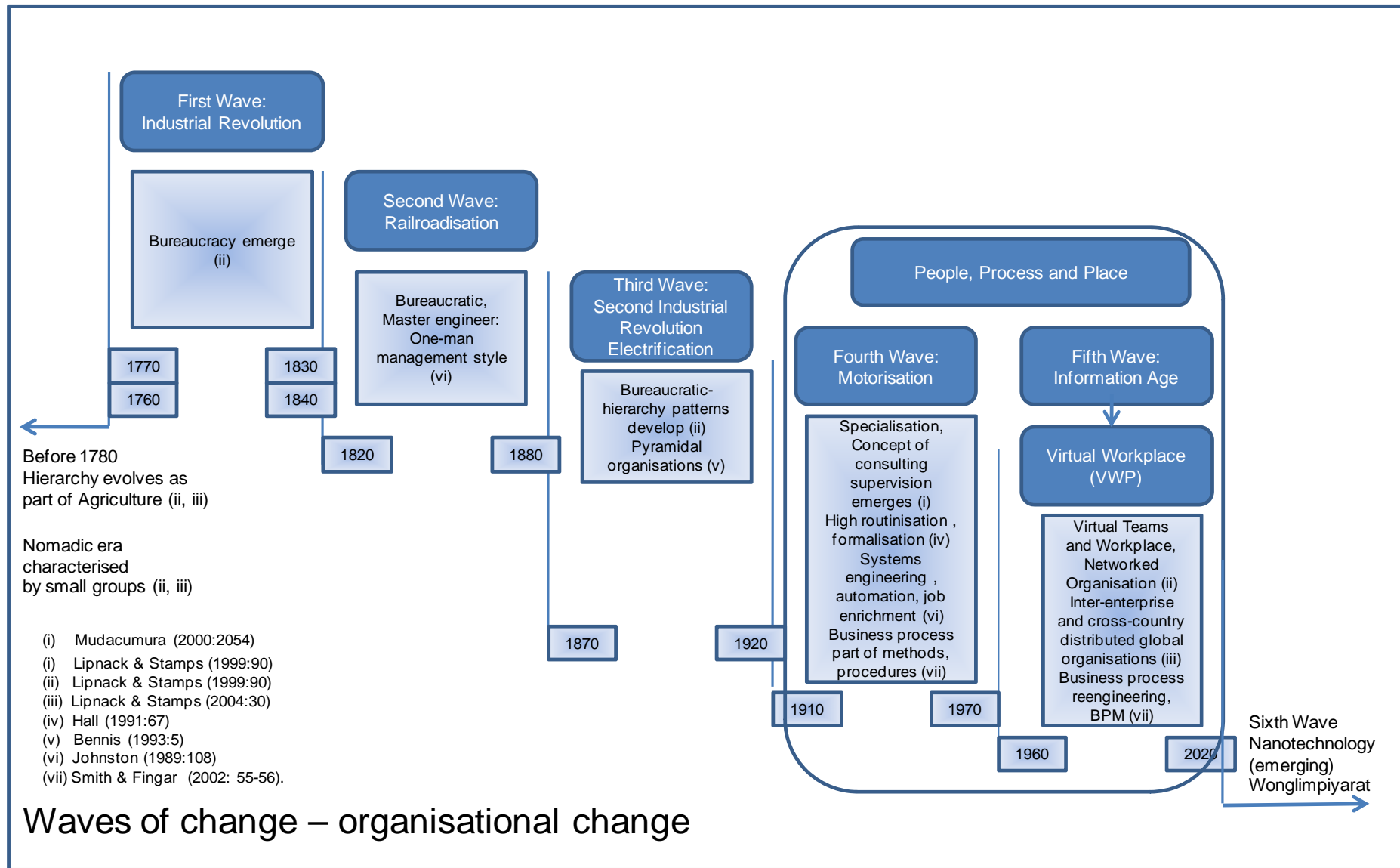
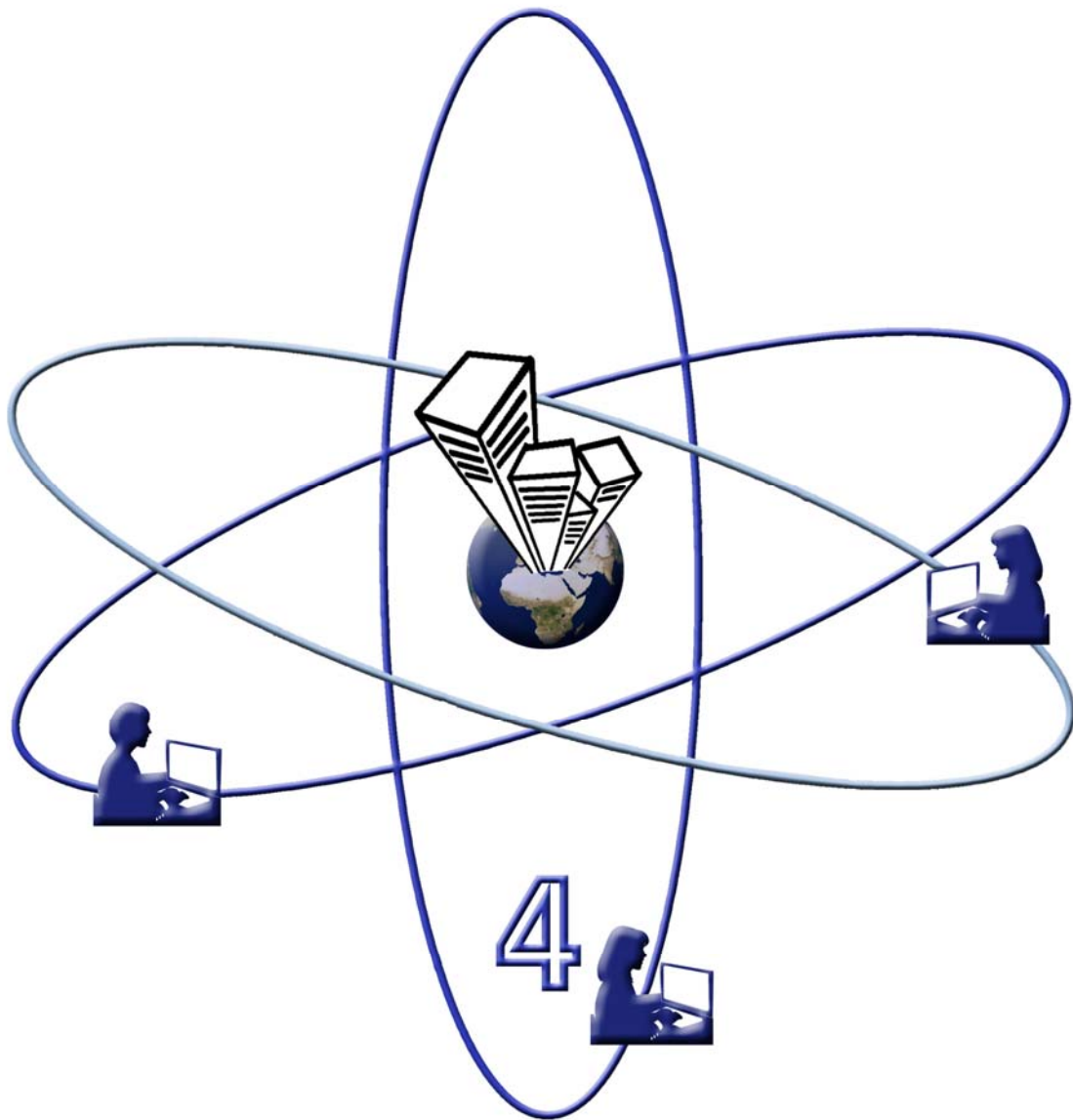


Figure 3.11: Waves of change – organisational change



The management of people, processes and places in the virtual workplace

PEOPLE PROCESSES AND PLACES



CHAPTER 4: PEOPLE, PROCESSES AND PLACES

“Virtual is ongoing, continuous,
has no beginning and has no end.”

Participant 3

4.1 INTRODUCTION

The literature overview conducted and discussed in chapter 3 covered the changing nature of work through the different waves of change leading to the evolvement of the virtual workplace, including the types of virtual workplaces, people in the virtual workplace and the advantages and disadvantages of the virtual workplace. This was followed by a discussion of the types, levels and characteristics of business processes and business process modelling. The waves of change relating to business process management are included in the latter part of chapter 3.

This chapter covers the individual discussion of the **people, processes and places** components with its categories, thereby following the structure set for this thesis. The objective of this chapter is to discuss the management of the **people, processes and places** components related to the virtual workplace, supported with graphical presentations of the different categories within each of these components. Steps 2 to 6 of the Extended Hermeneutics Circle of Learning as depicted in figure 4.1 was followed as guideline. The discussion will be structured around the **people, processes and places** components as presented in figure 4.2 below.

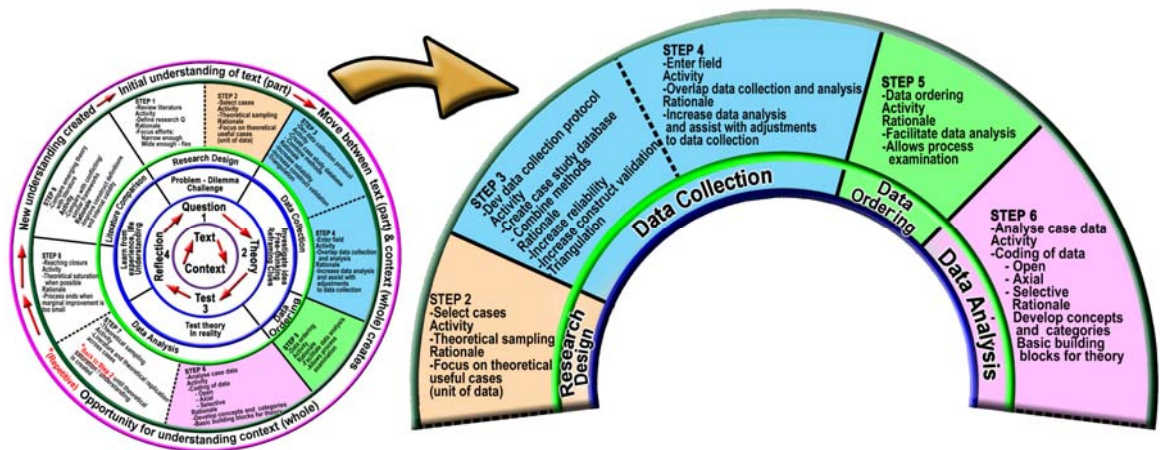


Figure 4.1: Steps 2 to 6: research design, data collection, data ordering and data analysis

Resulting from this discussion is the creation of an understanding of the people, processes and places challenges experienced in the virtual workplace. A framework for the management of people, processes and places in the virtual workplace is consequently derived and the interaction between these components is discussed in chapter 5.

Steps 2 to 6 as indicated in figure 4.2 is discussed in chapter 6 as part of the application of the Extended Hermeneutic Circle of Learning used as guideline for research conducted for this thesis. It should be noted that this thesis refers to people, processes and places components, although the discussion in chapter 6 on data analysis and triangulation refer to these components as categories with its underlying concepts.

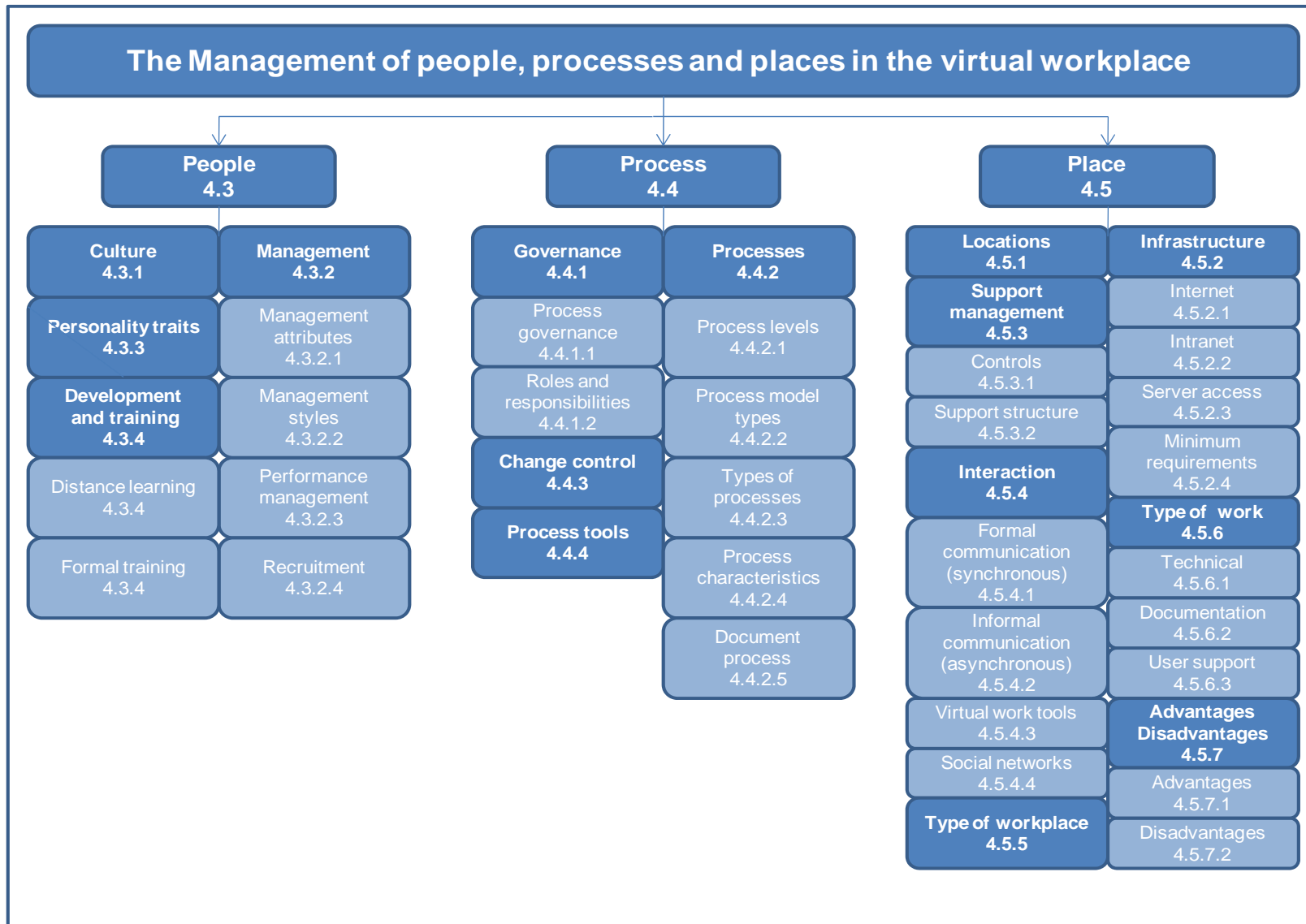


Figure 4.2: Management of people, processes and places in the virtual workplace

4.2 PEOPLE, PROCESSES AND PLACES

The trio, people, processes and places each consist of a number of concepts as can be seen in figure 4.2: Management of people, processes and places in the virtual workplace. The concepts related to each of the components or categories, when referring to triangulation of data, were derived from analysing the data obtained during the focus group discussions, interviews, weblog and case study. This was followed by grouping of the concepts according to their relationship to people, processes and places. The relatedness of the concepts became evident and this paved the way to the development of the framework for the management of people, processes and places as discussed in chapter 5.

The discussion of people (section 4.3), process (section 4.4) and place (section 4.5) follow below. The profiles of the participating companies and research participants can be seen in chapter 2 and the tables are listed here for explanatory purposes.

Table 2.3: Profile Company A: Consulting

Table 2.4: Profile Company E: Consulting

Table 2.6: Profile Company B: Financial institution

Table 2.7: Profile Company C: Telecommunications

Table 2.8: Profile Company D: Financial institution

Table 2.9: Profile Research G

Appendix A: Case study: Company F

Appendix B: Participant list

4.3 PEOPLE

As mentioned earlier, business is about people, its biggest asset, process and places and the relationship between these components. The virtual workplace requires people with specific personality traits (section 4.3.3) that enable them to function effectively. Cultural, managerial and developmental aspects form building blocks of the people component related to the management of people, processes and places in the virtual workplace.

Companies have the challenge of managing a diverse workforce often located around the globe. Management aspects relate to amongst others recruitment, selection, compensation, training and development. The dispersed nature of the teams complicate team work and collaboration, especially in terms of geography and time as discussed in sections 1.1.1 and 3.3.3. The impact of geography or location and time with the bridging of time zones leading to our boundaries being expanded beyond our control impacting on working hours, are also discussed in sections 1.1 and 4.5.1, including figure 1.1.2 depicting time as an instance in space. The crossing of boundaries, thereby the bridging of time and space, enables a less centralised and more independent, empowered workforce as reflected in sections 3.3.6.1 and 4.5.7.1 (Advantages of the virtual workplace).

This also relates back to the **people, processes and places** components of this thesis.

4.3.1 Culture

“Align to company culture. It is risk averse”

Participant 7

The adopted and enacted values as part of culture as discussed in section 3.3.3.2 relate to the preferred values and norms explicitly stated by the company, such as the following stated by participating Company C:

- Inspired to deliver value to customers
 - Meeting the needs of customers is our core inspiration
- Dedicated to agile and excellent performance
 - Diverse, positive, aligned and passionate people
- Determined to continuously improve
 - Learning, changing and innovating to own the future

- Committed to act with integrity
 - Honest, empathetic and approachable in all we do

The enacted values are those explicitly exhibited by employees and can be seen in the case study conducted with participating Company F, and quotes below. The enacted values (explicitly exhibited values) of responsibility and accountability portray the cultural attributes valued and instilled in participants 1 and 3 (Company A) as well as participants 10 and 11 (Research G). It is expressed as the most important values needed to get a job done and survive in the virtual workplace.

Treasuring family was encouraged through the culture established in the company Company F recognises that family comes first, happiness and job satisfaction come second and Company F third.

Case study

“Responsibility is most important point, most important value. It helps us to get on really good.”

Participant 11

“The culture – we get our tasks and it is expected of us that it is done.”

Participant 10

“Take responsibility to be online at 22:00 at night to get the job done.”

Participant 1

“Real people who are going to survive in a virtual environment are those who take individual responsibility 100% for everything they do.”

Participant 3

These values have an associated link to recruitment and personality traits as discussed in sections 3.3.3.5, 4.3.3 and 4.3.2.4, as it is important for an organisation to identify and employ people who appreciate, encourage and share the same values (participant 7, Research G) as the organisation.



“... it is the company culture, because it does not matter if it is trust or integrity, it is kind of a shared value in between the persons which are in there ...”

Participant 7

For the virtual workplace to become successful, companies need to, through a stringent hiring process, identify employees whose culture and values will fit the organisation as expressed by the case study participant as well as participant 1 from Company A. As already stated, this is also coupled to recruitment (section 4.3.2.4) as well as personality traits identified in sections 3.3.3.5 and 4.3.3.

“Organisations working virtually have employees of the same personality type, same core values in them that drive them to enable them to work virtually.”

Participant 1

Core values identified, latching onto the desired management attributes (section 4.3.2.1) in the next section, are responsibility, trust and an understanding of a multi-cultural composition. Group structures that determine existence in the organisation are changing from rigid to fluent and the manner in which social networks support virtual workers is part of the new culture, new behaviour and new socialisation process as reflected by participant 3 from Company A.

“It becomes a behavioural thing because of the transition between virtual, traditional.”

Participant 3

An organisation supporting the virtual workplace needs to have an “enabling culture” as discussed in culture as part of the virtual workplace (section 3.3.3.2) and as described by the case study participant below. This also has a

relationship with the family life composition (“trailing spouse”) aspect of those who work virtual as discussed in the case study (appendix A), as well as the advantages of the virtual workplace (sections 3.3.6.1 and 4.5.7.1) with reference to flexibility allowing for family activities.

Organisations need to have an “enabling culture”, i.e. a culture that enables as well as supports employees who work virtual, for example, this “enabling culture” can provide day care assistance for mothers; need to recognise the changing structure of households with men becoming more and more the “trailing partner”.

Case study

This “enabling culture” has trust, loyalty and comfort as vital components as can be seen from the quote below. Trust and loyalty are discussed in section 3.3.3.1 as part of people in the virtual workplace and section 4.3.2.1 as part of the management attributes with its associated link to management style (section 4.3.2.2) as identified by participants 1, 5, 7, 9, 12, 13, 14, 16 as well as a blog participant. These components, together with the culture component (section 4.3.1) have a close correlation with performance management (section 4.3.2.3).

Trust, loyalty and comfort are essential components of an “enabling culture”. This means trusting that employees will deliver quality outputs on time, loyalty towards the organisation and its objectives and comfort that the organisation value its employees.

Case study

Hand in hand with the establishing of an enabling culture is establishing “*process-based thinking as a key component of a process culture*” which is crucial for the “*sustained success of comprehensive change management*” with communication and training (sections 3.3.3.6, 3.3.3.8 and 4.3.4) as the foundation for all of those affected. Active change realisation is discussed in sections 3.3.3.3 and 4.3.5 and is recommended to support the organisation.

4.3.2 Management

“Management portion is where everything starts and end. This will determine if you are successful or not. ”

Participant 12

The shift from traditional and hierarchical to more participative and supportive management styles was recognised by Gilberg (section 3.3.3.4) and can be seen in the expression of their organisational structure by participants 10 and 11 (Research G).

“We like to think of us as a network and not a hierarchy. Team leader is responsible for all the tasks that happen in the team.”

Participants 10, 11

The barriers identified by Gilberg (section 3.3.3.4) still apply today, irrespective of the workplace as has been found during the research. Participants 7 and 8 (Research G) and participant 1 (Company A) echoed the organisational barriers of rigid control enforced from top management as discussed in section 3.3.3.4.

“... start with BPM where everything is process driven and do not have hierarchy anymore.”

Participant 7

“I found management systems being too static – they do not reflect reality. So by the time it reaches the individual, the goals became too abstract. They do not drive, they rather limit it.”

Participant 8

“Management cannot be rigid Is the organisation willing to be flexible?”

Participant 1

This is followed by participant 17 (Company E) who shared the constraint of time and on quick decision-making. This corresponds with the situational barrier describing constraints experienced due to the lack of time and decision-making and it being influenced by the interaction between tasks and specialised knowledge (section 3.3.3.4).

“Decisions related to work and turn around time must happen quickly.”

Participant 17

Resistance to change is evident from the experiences shared by participants 7 and 9 (Research G) and participant 12 (Company C). This shows a matching link to the subordinate barrier stating resistance to change is encountered when the subordinate does not see the direct benefit of a proposed change (section 3.3.3.3 and 4.3.5).

“... Needs lot of change realisation intervention ... explain the value it can add ...”

Participant 12

“You change the way things were done. People do not want to change.”

Participant 9

“...involves change and usually people tend to resist change if there is no intermediate benefit. Biggest challenge is to overcome people’s resistance to change.”

Participant 7

Managerial barriers (section 3.3.3.4) relating to more participative and supportive management translating into less control as management cannot monitor what people are doing when not at work, is echoed by participants 2 and 4 (Company A) as well as participant 10 (Research G).



“Management feel they do not have control over you when you are not at the workplace.”

Participant 2

“Management cannot monitor what you are doing.”

Participant 4

“Expectations of the professor or boss as he does not necessarily control you if you work virtually. You cannot be controlled in a way.”

Participant 10

The identified barriers as discussed in section 3.3.3.4 show a relationship to what is experienced today as it has been expressed by the different participants.

The nature of work has changed with global, economic and organisational change dictating flexibility to support the contemporary workplace, that is the virtual workplace. This also links to the job fitting the people with an additional link to employing suitable people to work in a virtual workplace. This is evident in the discussion on management (section 3.3.3.4) and recruitment (sections 3.3.3.5 and 4.3.2.4). This link unites people fitting in with the values of the organisation (section 4.3.1) and having the personality traits fitting the virtual workplace with its demands. These personality traits are discussed in sections 3.3.3.5 and 4.3.3 and is emphasised by participant 1 from Company A.

“Need to identify exactly the personality type that is going to fit the BPM job (no 1) and process analyst and (no 2) the cultures and values of that person.”

Participant 1

Many difficult problems and barriers today require collaborative efforts from individuals (section 3.3.3.4) covering many different areas of expertise. This is

discussed as part of management attributes and management style. Trust and support for decisions taken is expressed by participant 19 (Company E).

“A lot of trust relationships between individuals and management and client. Creates support for decisions made – even when it was the wrong decision at that point in time.”

Participant 19

The active leadership chain as discussed in section 3.3.3.3 as part of successful change and depicted in figure 3.4: Unbroken leadership chain top to bottom, links to participative and supportive management styles in section 3.3.3.4. It also is reflected in the opinion of participant 12 (Company C) in that management is where everything starts and ends, which will determine if you are successful or not.

4.3.2.1 Management attributes

“... management support has to be there; trust must be there - trust that employee will deliver on what they say they will. This fundamental has to be in place. My manager must trust me. Work will be done up to standard.”

Participant 1

Trust between parties working together, as depicted in the quote, was identified by the majority of the participants as the most important management attribute needed in order to function effectively in the virtual workplace. Participants from Australia and Germany (participants 7 and 9, Research G) referred to trust as a collaborative partnership and shared value, which is working together, with the acceptance of responsibility and accountability as the key elements, whereas participant 13 from Company C viewed a collaborative partnership as a management style. Acceptance of responsibility and accountability form part of the cultural component (sections 3.3.3.2 and 4.3.1) as well as personality traits (section 4.3.3).



“Trust very important. Trust between the parties working together. Part of a collaborative relationship, i.e. working together. Difficult to work together if you cannot trust other parties. Belief in collaborative relationship.”

Participant 9

“I see it (trust) more as shared value – how I select someone based on best for my requirements.”

Participant 7

Trust as discussed in section 3.3.3.1 described trust as a willingness to accept risk and the vulnerability associated with it. In view of the virtual workplace it translates to the willingness to risk giving tasks to people you cannot necessarily control and accepting the vulnerability created through lesser control and dependence on delivery from another party. Trust as described by participant 5 from Company A shows the direct link with management style as discussed in section 4.3.2.2.

“Trust has a direct link with management style – trust that the person will deliver on time, with quality and allow person to continue.”

Participant 5

Trust and the value instilled as trust is created by leaders who follow and support organisational values and that goes hand in hand with leading by example, thus referring to strong and dynamic leadership fostering cohesion (sections 3.3.3.1 and 3.3.3.4).

“Accepting responsibility shows reliability which creates trust.”

Blog participant

“...leading by example, participation, involvement, engagement and support...”

Participant 13

Negotiation skills are regarded as an important management attribute (participant 13) in order to negotiate trade-offs against extra steps in a process and added advantage for the user.

“.... can compliment negative side. Provide records of work done as an advantage. Negotiate trade off - an extra step in process. Look at gain, not from process perspective only, but a holistic point of view...”

Participant 13

A passion for processes, a process-oriented approach is an essential management attribute as that is vital for the encouragement of a process culture and appreciation of a process based manner of working.

4.3.2.2 Management style

The management attribute of trust as discussed above links to the management style as described by participants 1 and 5 (Company A).

“...Manager that trusts his people. Manager who does not trust, who looks over your shoulder the whole time will not work...”

Participant 5

“...management support must be there; trust must be there – trust that the employee will deliver on what they say they will. These fundamentals have to be in place. My manager must trust me. Work will be done up to standard.”

Participant 1

Below is a description of the management style practised by company E as given by participant 16, which shows close correlation with that described by participant 14 from Company D.



“We are a new economy organisation where we have the management style of collaboration and discussions and participation.... It is part of a high performance team.”

Participant 16

Company D’s management team uses their Triple C management principle as part of their collaborative management style. Triple C refers to the Company, Customer and Consultant. This means that decisions taken should have a positive outcome for the company, client and consultant. This type of collaborative management style is embraced by Company D, as it is vital in supporting the virtual workplace. Company D also places a high premium on trust as part of their collaborative management style (section 4.3.2.1). A collaborative partnership encompasses more than just the virtual workplace. Such a relationship consists of the work component as well as the connectedness to the organisation, that is a “*connectedness to something bigger, the mother-ship*” (participant 14), to which the employee is adding value. This connectedness is relevant irrespective of the traditional or virtual workplace, but this element is underplayed in the virtual workplace (participant 14), leading to alienation from the organisation. This collaborative partnership or relaxing in organisational structure moving towards horizontal thinking is discussed in section 3.3.3.4.

Alienation is discussed in section 4.5.4 as part of the interaction needed in the virtual workplace and also forms part of the disadvantages related to the virtual workplace as in sections 3.3.6.2 and 4.5.7.2, including table 3.5 which summarises the advantages and disadvantages of the virtual workplace for employees and employers.

Hence, the impact of management style on **people, processes and places** is perceptible.

Hand in hand with a collaborative partnership goes networking, involvement and flexibility (participants 12 and 13, Company C) as the virtual workplace is more fluent due to amongst others, varying working hours, remote locations (as discussed in section 1.1.2) and the type of work being done, such as programming, documentation and help desk support (sections 3.3.4 and 4.5.6).

The “*Post-Fordist*” management style as discussed in section 3.3.3.4 fosters decentralised decision-making and established a higher level of flexibility, thus reflecting on the collaborative partnership as indicated by the participants.

Setting clear goals support the output-driven approach which is important for efficient functioning in the virtual workplace. Although the setting of clear goals is relevant to the traditional workplace as well, it is essential for the virtual workplace, as the virtual workplace is often linked to a project environment which is driven by deadlines and deliverables as was expressed by participant 14 (Company D), participant 7 (Research G) and participant 4 (Company A) thereby providing the link to performance management (section 4.3.2.3).

“...clear planning, timelines, milestones, checkpoints...”

Participant 14

“I think it is important that you go for the rules, no extension of deadlines. Deadline is (a) deadline.”

Participant 7

4.3.2.3 Performance management

Clear goal setting as part of effectiveness in the organisation is paramount for performance management. Performance needs to be measured based on the objectives, goals and quality achieved (section 3.3.3.7).



“Telework requires setting clear performance objectives and measures for employees and managers.”

Illegems & Verbeke (2004:325)

In the case study conducted with Company F, the participant indicated that provision for individual circumstances were made in that employees could work at the time best suited to them and their circumstances with the clear understanding that deadlines had to be met.

... thereby enabling employees to work at times best suited to their individual circumstances with the understanding and commitment that timelines had to be met.

Case study

Performance management can be viewed from two different perspectives, with the exact opposite outcomes, depending on whether an organisational (client) or contracting view is taken.

When viewed from the client's or organisation's perspective (when working on a project), quality of work, delivered within the agreed-upon timelines and within budget is crucial. This translates into the organisation wanting to pay as little as possible, for the best possible deliverable within a given timeline.

When viewing performance management from a contracting house perspective, the principle of quality applies, however, making money is part of the contracting house's aims. Consequently the contracting house would want to add as many resources to the project as possible with extended timelines, leading to increased cost for the organisation and a bigger profit for the contracting house (participant 7, Research G).

“Good quality deserves bonus. Not good quality place negative connotation on you. Makes that you cannot be trusted to do good job.”

Participant 9

Clear performance management criteria are needed, especially in a project environment as virtual employees, often contractors, function in a project environment most of the time. Performance must be measured according to the output or deliverables contracted. Linked to the output is the quality of work done as well as deadlines met (participants 4 and 5, Company A). These deliverables need to be specified in clear, unambiguous terms with defined measurements for objective review (participant 12, Company C).

“...want to be measured on quality of work, deadlines met and whether you gave more than the client asked for...”

Participant 5

“Responsibilities and deliverables need to be clear.”

Participant 4

Accepting of responsibility as part of culture (sections 3.3.3.2 and 4.3.1) and its associated link with performance management was expressed by participants 10 and 11 (Research G). Their performance management is done informally, although resting heavily on responsibility as that is strongly embedded in their culture, emphasising quality and good work.

“Performance management is dual and informal. Main thing is - Did you get your responsibility right; is the quality of the work good enough? Does it fit the requirement?”

Participant 10, 11

Rewards should be based on quality of deliverables, timelines met and additional value added as mentioned above. This is in close correlation with the modus operandi of case study participant (Company F).

The organisation needs to have a reward system that supports the virtual workplace, i.e. a reward system that is “results based and not activity based”. This means rewarding employees for quality outputs / outcomes achieved.

Case study

The reward system furthermore needs to be fair, acknowledging work well done by individuals as well as teams as indicated by case study participant (Company F).

Bonuses were calculated on both individual and team efforts with individual efforts tied to those job aspects that the individual can control. Team bonuses were tied to achieving and exceeding the financial budget

Case study

Limitations, such as a lack of technical knowledge and training required needs to be acknowledged and attended to in order not to hamper executing of activities. This has relevance to development as discussed in sections 3.3.3.6 and 4.3.4.

“Chat with manager every half year to decide on your next goals.”

Participant 7

Crucial to performance management is the satisfaction of both the client and employee, that is to say, the client is satisfied the work was done on time, to agreed-upon quality within budget. Hence, the employee or contractor needs to be rewarded accordingly.

The following statement made by Bilodeau (2004:4) reflects on the discussion of management attributes and style (sections 4.3.2.1 and 4.3.2.2), ownership as part of personality traits as well as business process modelling (section 4.3.3 and table 3.9), support structure (section 4.5.3.2) and performance management above, namely *“An organisation needs to provide a structure in which process ownership is reinforced, valued and supported, as well as monitor process performance and reward continuous improvements”*.

4.3.2.4 Recruitment

Recruiting employees whose values correlate with that of the organisation links to the discussion on culture (section 4.3.1) and can be seen from the statement below (participant 1, Company A). It has a further connection to the management portion (sections 3.3.3.4 and 4.3.2) and recruitment (section 3.3.3.5) in employing people suited for the job and virtual workplace.

“Organisations working virtually have employees of the same personality type, same core values in them that drive them to enable them to work virtually.”

Participant 1

As discussed in the case study conducted with Company F, the virtual environment is suitable for people who want to work virtual and who can benefit from the flexibility it offers, such as students and mothers.

“...consisted mostly of women with small children who preferred to work from home having the freedom to attend to their children’s needs. The virtual workplace therefore suited women who preferred to work from home allowing them to attend to small children matters.

Case study

It is important that you choose people who want to work in a virtual office environment. Recruiting and employing suitable people for the

virtual workplace is crucial as the virtual workplace requires of people to have specific personality traits.

These personality traits are discussed in sections 3.3.3.5 and 4.3.3 respectively, and it also refers to section 4.3.1 as part of the discussion on explicit cultural values needed, namely responsibility and accountability. There is also an interrelationship between recruitment, management (section 4.3.2) and personality traits in that management have a responsibility to recruit people exhibiting the personality traits for working in the virtual workplace and supporting organisation values.

The retaining of scarce skills was mentioned by participant 15 from participating Company E, which correlates with the discussion in section 3.3.3.5.

“Retain scarce skills is crucial”

Participant 15

4.3.3 Personality traits

The personality traits and specific observable traits are in close correspondence with enacted values as part of culture discussed in section 3.3.3.2. The personality traits listed below were identified by the participants and in the case study conducted as those needed for effective functioning in a virtual workplace. Many of these personality traits can apply to different workplaces, thus it is not regarded as limited to the virtual workplace only. This section on personality traits links up with the cultural aspect in section 4.3.1, as well as responsibility and accountability examined in the recruitment portion discussed in sections 3.3.3.5 and 4.3.2.4. The personality traits are:



“Person should be driving own career. Not driven by a structure or a profile. It is about individual ownership.”

Participant 3

“Activities therefore need to be planned and organised carefully to ensure quality outputs are met.”

Case study

- Trustworthy
- Self-discipline
- Self career driven
- High sense of responsibility
- Personal ownership
- Output driven
- Commitment to performance
- Accountable
- Passion for processes
- Self-motivated
- Focussed
- Organised
- Time management
- Communication
- Flexibility
- Professionalism

“That is nice of a virtual workstation, because you manage your own time.”

Participant 5

“Taking ownership of what you have to do and deliver it in quality and on time.”

Participant 3

The personality traits identified as part of conscientiousness, as found in the “Big Five” personality traits in table 3.4, show strong correlation with the personality traits identified by the different participants.

When reviewing these personality traits based on business process modelling, which is one of the perspectives related to business process management (section 3.5), it can be viewed based as discussed in the quote below.

“...ability to facilitate a group, handle conflict, work with people, understand different people’s views and standpoints, and from that derive actual business process. Take that verbal feedback and translate it into a business process, present it in a tool, and explain it to people in simple language that makes sense.

Participant 12

Appendix D (Geldenhuys 2002:46) contains an extended list of personality traits grouped according to relationships with people, reporting style, feelings and emotions and thinking style.

4.3.4 Development and training

“You rather empower, educate the individual teams.”

Participant 8

Training and development as discussed in section 3.3.3.6 indicate the dual role it has in that it assists management in meeting its human resource requirements and it equips the workforce with the necessary skills to perform their activities. Training specific to business process modelling and business process management in the virtual workplace is not covered, thus indicating an identified gap.

Management's role in the provision of proper training as well as the importance of identifying and providing training relevant to the job that needs to be done, were evident from the discussions with participants 1, 7 and 12 from Company A, Research G and Company C respectively. They also mentioned that training should include features, such as clarifying what business process management and business process management governance mean, business process modelling and business process analysis. It is also vital that training material needs to be standardised. Business process methodology and modelling training is part of the function fulfilled by the centralised business process office function as documented by Company C (section 4.4.1.2). Training requirements are also reviewed in the stakeholders' portion of table 3.9.

“Management to ensure that they give proper training to their staff. Cannot throw someone in at the deep end and expect them to swim especially if you are on a virtual site.”

Participant 1

“Lots of activities involved in training. What is BPM, what is process modelling, what is BPM governance, how do I analyse a process, what is important when I document a process, not from a modelling perspective only, guideline for a modelling notation.”

Participant 7

“... Also important is, that this function is responsible for identifying relevant training. Everyone involved in BPM, process modelling goes through standard training...”

Participant 12

This thesis covers the identified features as follow:

Business processes, business process management, together with the difference between business process management and business process improvement (sections 3.4, 3.5.1 and 3.6.1) emphasise the difference with regard to the management approach compared to the rectification of broken business processes. Business process governance as reviewed in section 4.4.1 focuses on the need for business process modelling standards,

modelling notations together with the organisation's policies and procedures. Business process levels, types and characteristics (section 4.4.2.1 up to 4.4.2.4) explain the different components related to business processes.

The flexibility of on-line or informal training as brought about by the internet corresponds with the availability of advanced technology as discussed in section 4.5.2. Personal development through on-line training as assisted by advanced technology is discussed in section 3.3.3.6. Informal learning is conducted through reading, computer controlled exercises, chat rooms and on-line testing as indicated by participant 9 (Research G). Literature, such as text books on software and programming provides digital versatile disks (DVD) and computer disks (CD) to be used during learning and acquiring knowledge.

“I believe that for most of e-learning. Very little you cannot teach without direct teacher- student or without face-to-face contact. Learning by reading, watching videos, computer controlled exercises, chat room. Also works well for learning new programmes or software, new methods.”

Participant 9

Although participant 9 referred to e-learning or distance learning as being feasible in many instances, such as the virtual workplace, he is also of opinion that formal learning is more appropriate for obtaining specialist knowledge.

“Easier to learn specialist things formally.”

Participant 9

Formal classroom training is relevant where facilitator intervention is required. Participants 1 and 4 from Company A and participant 9 (Research G) indicated that they prefer distance training and e-learning as it was easier to fit into their schedule and could be done at a time convenient to them.



“...Online training. New software – get training online anywhere in the world. Not formal classroom training. Get online material, figure stuff out and continue. Part of internal motivation is to find out for yourself how things work...”

Participant 1

“Prefer online training instead of classroom.”

Participant 4

Participant 8 from Research G highlighted that personal preference with regard to the type of learning preferred, that is educating yourself or using a classroom setting is important when considering training.

“...is really what learning type you prefer, educate yourself, or do you want a classroom setting...I do not think there is a company who does not have a performance management programme and links that to a catalogue of educational courses in order to improve skills...”

Participant 8

In section 3.3.3.6 a distinction is made between synchronous and asynchronous learning with synchronous learning technologies assisting to help “*stave off feelings of isolation*”. These feelings of isolation correspond to the disadvantages of the virtual workplace (sections 3.3.6.2 and 4.5.7.2) as well as sections 4.5.4.1 and 4.5.4.2 reflecting on synchronous and asynchronous interaction and communication and the need for synchronous interaction to lessen feelings of isolation.

It is important that training and the development of skills should have a bearing on the performance of the employee, meaning training relevant to the job that will assist the employee to perform better needs to be undertaken and his or her performance needs to be monitored accordingly as discussed in sections 3.3.3.6 and 3.3.3.7 on training and performance respectively. This type of training empowers an employee to take ownership of his or her work and performance.

4.3.5 SUMMARY: PEOPLE

Acknowledgement is given to change realisation (also known as change management) and people change aspects as part of the people component. BPM is about change and about people as expressed by a weblog participant:

...BPM is about change, change is about people ...

Weblog participant

Active change realisation and the accompanying organisational change affecting the culture of the organisation are fields of expertise on their own and are therefore not covered in detail. However, the following aspects are highlighted, including Company E's reflection on change management.

"... projects can only be successful if the organisation is prepared to change. Our implementation methodology incorporates world-class change management processes."

Company E

The business enablers for change realisation as discussed in section 3.3.3.3 need to be taken into account, namely clear and visible support by top management, clear communication, training and promoting process-oriented thinking together with creating trust. These enablers have relevance to the discussions on culture (section 4.3.1), communication (sections 3.3.3.8, 4.5.4.1 and 4.5.4.2), trust (sections 4.3.1 and 4.3.2.2), personal responsibility (sections 4.3.2.3 and 4.3.3) and governance (section 4.4.1). The unbroken leadership chain from top to bottom as discussed in section 3.3.3.3 and these enablers have a close resemblance with management (section 4.3.2) and the reflection on management being the start and the end of everything (participant 12, Company C). The unbroken leadership chain top to bottom is depicted in figure 3.6.

The people component of the virtual workplace consists of various building blocks, namely cultural, managerial and developmental. Although these building blocks are relevant to the traditional workplace, it has been found that the emphasis differs from that in the traditional workplace. A new organisational culture is created as a result of new behaviour and new socialisation processes being established. Hand in hand with this new culture goes a fluent, collaborative management style with trust, responsibility and accountability as crucial elements. Recruiting employees who instil the enacted values of the organisation and who are suitable candidates for the virtual workplace is important, as the virtual workplace is not suitable for everybody. Performance management needs to be output driven and this has a relationship to the personality traits of those working in the virtual workplace. Training as and when required by the virtual worker is preferably done informally and from a distance. This also links to accountability and responsibility as part of the personality traits, in that the virtual worker does it at his or her own convenience.

A process oriented management approach with a passion for processes, both from management and from people working in the virtual and traditional workplaces form part of the people component for the management of people, processes and places in the virtual workplace.

Figure 4.3 summarises the people component as discussed above.

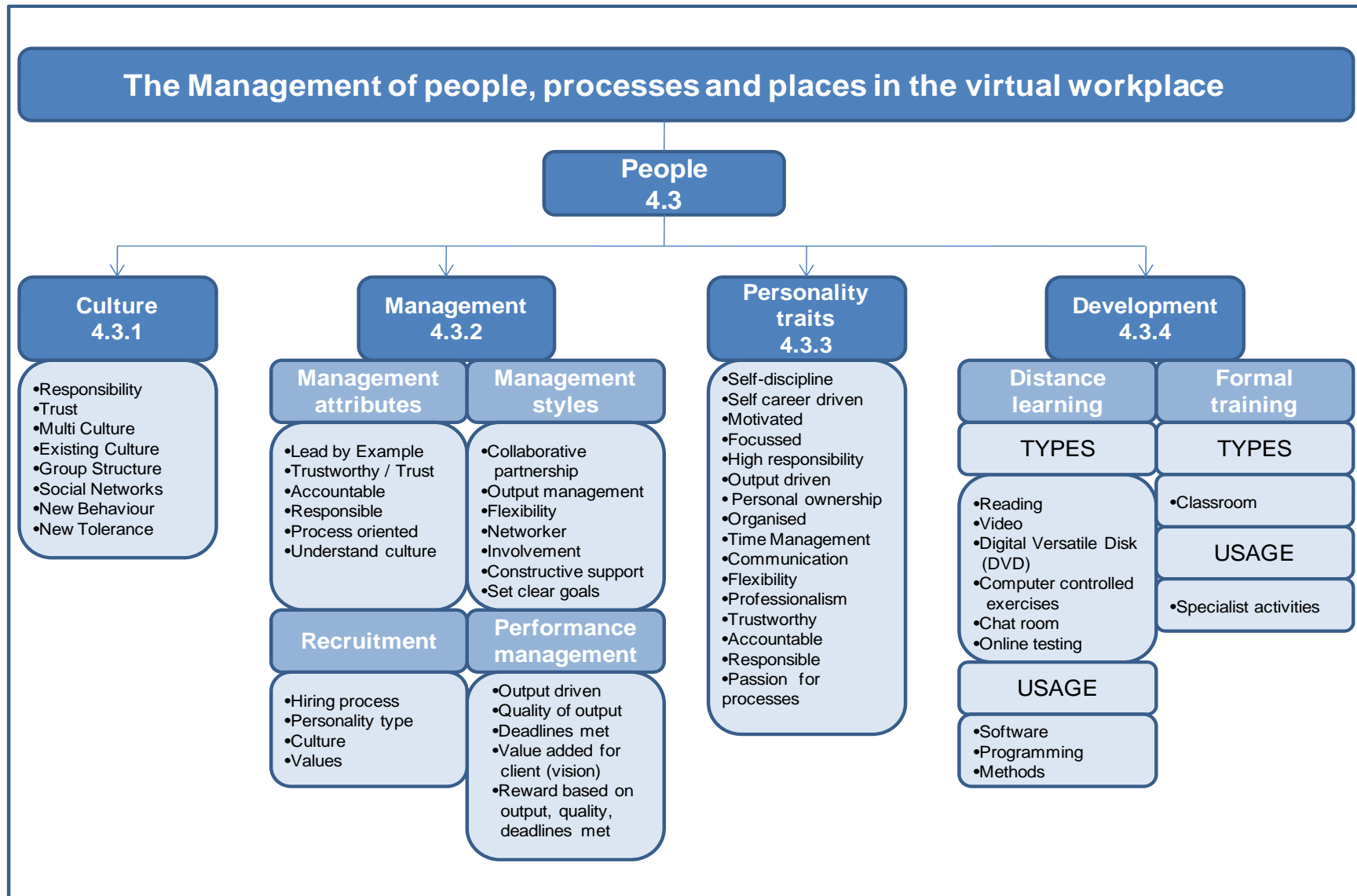


Figure 4.3: Management of people, processes and places in the virtual workplace – people

4.4 PROCESS

Business processes are vital in its support to the virtual worker irrespective of the manner in which it is presented (weblog participant) thereby providing the only structure to the virtual workplace (participant 6 from Company B).

Process as discussed in this section relates to the processes supporting the virtual worker and not specifically to core business processes.

Business processes play a huge role in the life a mobile worker. Whether these processes are formally documented and managed as per BPM or not, the truth is that you are part of an organisation, but are working remotely; processes for communication, timesheets, reporting, etc. are crucial...

Weblog participant

“Process is the only permanent work structure ... Process is the only structure to the virtual workplace.”

Participant 6

As discussed as part of the literature overview and more specifically defining business processes in section 3.4.1, it is important to understand that value is created through the execution of the whole process and that all the different, defined tasks have been grouped together to obtain synergy and assist in the systematic and orderly execution of the activities, paving the way towards one clear, common agreed-upon goal. The goal is to get more out of the entire organisation (and not the individual) and this is obtained by improving the performance of the end-to-end business process to which individual workers contribute (Hammer et al, 2004:14). This translates into a change in work style as described by participant 8, Research G, below and has a bearing on the comments by Watson-Manheim et al (2002:191) that changes related to the work environment become apparent as boundaries of time, space and organisations are expanded with the virtual workplace becoming part of the changing environment (section 3.3).



“Work style environments will change. Organisational boundaries become porous, from business alliances and networks, move towards a work style that is less transactional oriented and more collaborative, problem-solving oriented.”

Participant 8

Governance, the process itself, process tools and process change control form the building blocks within the process component as part of the management of people, processes and places in the virtual workplace. A discussion on these building blocks follows below and is summarised in figure 4.4.

4.4.1 Governance

Governance can be discussed from different perspectives, such as corporate governance and financial governance, but for the purpose of this thesis governance is discussed from a business process perspective, including the roles and responsibilities associated with the business process environment, namely that of business process owners, business process modellers and centralised business process custodian (sections 4.4.1.1 and 4.4.1.2). Governance is also discussed in the strategy and governance as well as modelling success, practice of modelling and maintenance portions of table 3.9, covering business process modelling pitfalls.

Business process governance is responsible for setting business process standards, including adherence to the standards as stated by participant 12 (Company C).

“Management is important in terms of governance, establishing standards but also making sure that standards are adhered to.”

Participant 12

Business process governance also links to the unbroken chain of leadership as discussed as part of people (section 3.3.3.3), business process management (section 3.5.1) and table 3.11.

4.4.1.1 Business process governance

Business process governance relates to the establishing of appropriate structures, measures, roles and responsibilities needed to measure, improve and manage the performance of the end-to-end business as reflected on in the strategy and governance as well as maintenance portions of table 3.9 which covers business process modelling pitfalls. Participant 12 from Company C reflects on adherence to standards as part of business process governance.

Ensuring data integrity is a crucial part of business process governance as expressed by participant 6 from Company B, who used the example of many business process modellers using abbreviations related to the short message system (SMS language) which is inappropriate for formal business process modelling. This destroys the integrity of data when using a single source for business process models. The use of stenographic or shorthand language as part of short message system (SMS) usage is discussed in section 3.3.3.8.

In order to perform and support these activities specific business process governance is needed, namely business process modelling standards, modelling notations, the organisation's policies and procedures documenting the business rules applicable to the business process as well as simple, unambiguous process language (participant 6, Company B and participant 12, Company C) thereby providing the better management option (participant 13, Company C). The notion of standardisation in support of business process governance is also echoed by Zemliansky and St Amant (2008:518) as can be seen in section 3.4.5.1.



“Standardisation not always a criteria – but I believe it is the criteria you manage better with.”

Participant 13

“We have standards for everything...the only things you are allowed to use. On what level you will map it. Standards of process modelling, naming conventions. We have a customised template.”

Participant 6

“...inputs and outputs from each process and decisions involved clearly indicated in a standard methodology that is clearly communicated.”

Participant 12

The importance of having business process governance covering these aspects is emphasised (participant 12, Company C) as a lack of business process governance results in dissimilar processes modelled according to different standards, in different tools, thereby obstructing the endeavour to have a repository with an end-to-end view of the organisation’s business processes.

“... but if not applied throughout the company then BPM as a value add to your organisation fails, because you have disparate processes modelled and implemented throughout the company using different standards, different criteria, different priorities – ending with a disparate set of processes, modelled in different tools according to different standards. Cannot have a repository with end-to-end view of business processes.”

Participant 12

Business process governance has a further management component latching onto training and development (section 4.3.4) as training should cover business process governance and more specifically business process modelling standards and business process analysis (participants 1, 7 and 12 from Company A, Research G and Company C).

Documenting of the business processes including business process levels and business process decomposition, business process tools and business process change control have governance features of their own and are therefore discussed separately in sections 3.4.7 4.4.2, 4.4.2.2, 4.4.2.5 and 4.4.3. Business process levels are also reflected upon in table 3.9 as part of the practice of modelling and sections 3.4.3 and 4.4.2.1.

These governance aspects relate to the traditional and virtual workplaces and are vital in order to obtain a standardised, end-to-end business process view. However, technology, that is business process modelling tools and its accessibility over the internet and other networks, have been identified as a challenge for those working in a virtual workplace (section 4.5.2). These aspects are discussed as part of the place component related to the management of people, processes and places in the virtual workplace.

4.4.1.2 Business process roles and responsibilities

Defining the roles and responsibilities within the business process environment, as in any other environment, is crucial, as it provides guidance and clarity on expectations. Table 3.9 reflects on roles and responsibilities as part of the modelling success and maintenance portion. Business process roles and responsibilities as part of the literature review can be seen in section 3.4.6, with table 3.10 covering business process roles and responsibilities.

The roles of the business process owner, business process modeller and centralised business process custodian have different responsibilities and were documented by participating Company C.

Roles and responsibilities	
Role	Responsibility
Business process owner	<ul style="list-style-type: none"> - Business process management to ensure validity and accuracy of business processes. - Liaise with business process modellers on the design and mapping of business processes for the relevant area. - Ensure validity and accuracy of supporting business process documentation (work instructions, business control points, methods and procedures). - Performance auditing on processes to verify accuracy of business practice being displayed, i.e. what is being done should be the same as what is being displayed in the business process. - Deployment and implementation of the business processes. - Establish training requirements for business process modellers and communicate such training needs to the modelling support office. - Establish Service Level Agreements (SLA) and measurements. - Benchmark business processes against best practices. - Monitor and review business process and process performance to facilitate continuous improvement. - Liaise with all relevant stakeholders to facilitate acceptance of new and revised business processes.
Business process modeller	<ul style="list-style-type: none"> - Update repository with new and changed models. - Define and document processes through the BPM life cycle. - Facilitate and design as-is business processes. - Compile to-be business processes. - Provide an integrated end-to-end business process design. - Adhere to modelling standards set. - Conduct business process impact analysis on proposed changes before actual business process changes are executed. - Provide approved business processes for development of training material. - Facilitate and align business process changes with other impacted domains to ensure integration of business processes. - Adherence to quality standards.

	<ul style="list-style-type: none"> - Adherence to documentation standards, that is obtaining of business process identification number and version number. - Facilitate and arrange workshops to review models. - Provide business process owner with graphic reports and other reports, such as work instructions by generating the reports from the central repository.
<p>Business process custodian and support office</p>	<ul style="list-style-type: none"> - Develop and document business process modelling methodology, that is business process model types, business process levels, objects and their associated relationship to be used by business process modellers. - Conduct business process modelling methodology training. - Arrange and conduct business process tool training as identified by the business process owner. - Facilitate business process change control. - Quality assurance conducted on all documented business processes, including semantic check and spell check. - Version step the business process as part of change control - Merge new and updated business process models in the business process repository. - Consolidation of objects in the business process repository. - Coordinate publishing of the documented business processes to the intranet. - Create users on the server. - Act as single point for business process changes. - Investigate new business process tool enhancements. - Resolve business process tool error log files. - Manage business process modelling tool licences. - Investigate requests for changes to business process methodology and modelling standards. - Updating of weekly project progress report and other relevant reporting.

Table 4.1: Roles and responsibilities – Company C

The responsibilities related to centralisation of business process support (Company C) correlate with those defined by Bilodeau (2004:15), except for the assessment of business process maturity. The training feature included in the centralised business process support office portion above closely correlates with the training and development of the business process resources (section 4.3.4) through

standardised business process modelling and process analysis training (participant 1, 7 and 12 from Company A, Research G and Company C).

4.4.2 Processes

As indicated above the documenting of business processes has process governance features of its own which are essential when aiming to establish a general, widespread understanding of business processes. This can be seen as the starting point when moving towards the establishing of a business process centric culture.

Hand in hand with the documenting of the business processes goes adherence to the business process standards to assist in ensuring uniformity and training to understand the business process methodology, standards and levels (participant 12, Company C).

“Obvious understanding of process modelling, levels, standards and how it relates to each other.”

Participant 12

4.4.2.1 Process levels

As discussed earlier (section 3.4.3), defining different levels of business processes assist in creating an understanding of the way in which the organisation is structured. These process levels usually start off with the enterprise value chain, followed by the end-to-end value streams depicting activities across organisational borders. Next, the end-to-end value streams are broken down into sub-processes which include the different role-players. A further decomposition of the sub-process leads to individual activities performed per single role-player. At the lowest level, these activities can be broken down into tasks that are performed without interruption (Hayden & Draft, 2004:19). The latter, usually the lowest level, is often executed through workflow and is therefore semi- or fully automated. Decomposition of business

processes and the levels can be seen in tables 3.8 and 3.9 reflecting on defining business process levels and business process decomposition respectively. Business process levels are also covered in table 3.10 as part of the tools and related requirements as well as practice of modelling.

The viewpoints shared by participants 7 and 12 (Research G and Company C respectively) correlate with the levels of business processes above, in that board members are interest in knowing that the business is running thus focussing on and understanding of the high level process without necessarily knowing what is happening in the detail process. The opposite of this, meaning knowing the detail process would be applicable to a clerk executing invoice payment as this person needs to know the detail steps to be followed. Hence, understanding the audience's needs is important for providing an understandable process, such as the use of level 3 processes for training (participant 6, Company B).

“Then you are talking on level of business analyst who is doing execution level. Manager looks at execution level once in a while. He needs to understand on high level what we are doing. Senior Manager or Board Member perspective does not care about all twenty different views. Want to know business is running.”

Participant 7

“If Executive wants to invoice processes show it at the relevant level that will make sense. If it is the clerk who executes transactions give level 4 or 5 – detail level. Depending on who is targeted will you give a business view or IT view.....Understand different audiences' needs and translate that in an understandable process.”

Participant 12

“Use level 3 processes for training.”

Participant 6

Applying these levels consistently across organisational divisions assists in creating a uniformed view and understanding of the organisation's business processes (participant 12, Company C).

Hand in hand with process levels go the consistent use of process model types pertinent to the specific process level, audience and usage of the process. This is relevant to business process models as well as system models.

4.4.2.2 Process model types

Acknowledgement is given to different process modelling tools having different process model types. The emphasis is placed on the consistent usage of process model types to display a required level of detail for a specific audience as described by participants 6, 7 and 12 above and participant 13 (Company C) below. This matter is also reflected upon in the strategy and governance portion of table 3.9.

“For a process to add value it should be able to be read and understood by the target audience.”

Participant 13

Different business process model types as discussed as part of sections 3.4.2 and 3.4.4 provide different views to different audiences. This was documented by Company C as:

- organisational charts for documenting organisational structures representing organisational units or positions
- value chain diagrams for representing high level business processes

- event-driven process chains to display the actual sequence of functions that forms the business processes (This was for use by the business people, including a training requirement.)
- various dataflow diagrams and case diagrams for us by system administrators

This correspond with the use of specific process model types as expressed by participant 6 from Company B.

“... also have workflow diagrams, activity diagrams, dataflows ...”

Participant 6

Evaluating and deciding on the appropriate model types to be used, is a fundamental part of the development of the process modelling standards which is part of process governance within the organisation.

4.4.2.3 Types of processes

The collection of processes within an organisation consists of different types of processes of which the following main types of processes were identified during discussions (participants 2, 3 and 4 from Company A, participant 7 from Research G and participant 14 from Company D):

- manual processes which require human action to be executed
- semi-automated processes which require human interaction or handover before the automated portion can continue
- automated processes which require no human interaction

Activities within the virtual workplace were for the most part supported through semi-automated processes, supported through workflow (participants 2, 3, 4 Company A; participant 7, Research G and

participant 14, Company D), with only manual forms being done at the office (participant10, Research G.)

The submission of timesheets provided the following details with regard to the types of processes mentioned above:

- A manual process is followed where office time is derived from a clock-card system, meaning that the clock-card system is “clocked” personally each time a person leaves the office and returns. Timesheets are not electronically compiled and routed via workflow for approval. The data collected through the clock-card system is manually extracted and provided for approval to the individuals involved.

In the exceptional event that a person would work from home, approval needs to be obtained from the supervisor ahead of time. Upon return to the office, exact detail of time worked and activities performed need to be handed in writing to the supervisor. Once approved these details are added to the person’s records for inclusion in remuneration (participant 2, Company A).

“If not working at office but remotely, had to get special permission to be paid for those hours as time was not recorded on server.”

Participant 2

- A semi-automated process is followed where timesheets are completed in Excel, saved and emailed to the relevant supervisor for approval. The approved timesheet is provided electronically to the finance division for arrangement of payment (participants 1 and 3, Company A).

- An automated process with workflow components is followed where the timesheets are captured on an ERP system, whereafter it is routed to the supervisor for approval. Upon approval, it is routed to the financial division where remuneration is arranged (participant 18, Company E) with participant 17 from the same company adding that support personnel book their time on a daily basis, whereas consultants working on projects book their time on a weekly basis.

Automation of business processes and thus the standardisation thereof is part of business process support in the virtual workplace as can be seen from the quotes below (participant 7, Research G).

“Execution level – workflow plays a big role in virtual environment. Workflow is the technical part of it. Real detail is on execution level. Workflow is automatically executed. We have a standard process for certain countries, certain divisions; depending on their characteristics you have a different workflow – a variation of the standard with more or less detail.”

Participant 7

The type of processes and the characteristics portrayed by these processes, as discussed below, form a combined unit to support the virtual workplace.

4.4.2.4 Process characteristics

“Characteristics of processes for traditional and virtual should be the same for example timesheet system.”

Participant 9

Various business process characteristics have been listed as part of the literature review in section 3.4.4 of which routine or mundane tasks

are performed by computers wherever possible, for the sake of speed and reliability (Smith & Fingar, 2003b:47).

The dominant characteristics of business processes supporting the virtual workplace relate to process that are computer supported, thus workflow and semi-automated processes as reflected in the discussion in section 4.4.2.3 (participants 1 and 3, Company A and participant 17, Company E).

“Workflow and computer controlled processes.”

Participant 17

“...try to do is to maintain a 95-96% similarity. If you touch any generic process and it has something to do with compliance there will be a problem.”

Participant 6

Uniform processes, independent of infrastructure or location, are the answer to supporting the virtual workplace as can be seen from the quote below (participants from Germany).

“Business process is the same. We do at home what we do at the office completely independent of infrastructure of location.”

Participant 10

This corresponds with the case study conducted (Company F) as a standard process for both the traditional and virtual workplaces applied and meetings were not scheduled for 14:00.

In order to accommodate employees in both the traditional and virtual workplaces the same business processes and rules applied with reference to flexible working schedules, i.e. that no meetings were held at 14:00.

Case study

The notion of generic processes was also expressed by Company E who indicated that they have generic processes. Differences in processes were encountered with the different clients, such as differences in payments and invoice dates.

“Process the same. Generic. Standardised. Same system, same approval. Differences will be client based. Different cut-off dates.

Participant 18

4.4.2.5 Documenting processes

Documenting of business processes is more than just the drawing of pictures. It is about a central repository with business process information, linked to the supporting documentation (participant 6, Company B). This statement corresponds with Smith and Fingar (2003b:21–23) in section 3.5.1 with business process management providing a shared, integrated platform of business processes and business process information. Documenting of business processes is also reflected upon in the strategy and governance portion of table 3.9 as a driver for business process modelling and it is part of the responsibility of the business process modeller (tables 3.10 and 4.1).



“Every map on the system is linked to the policy, system, any other documentation, training material. If you go into the repository and go into one specific process you can see the link and if you click on the link it will take you to the policy...Behind the process map is a lot of information.”

Participant 6

Apart from knowing and understanding the business process methodology that needs to be followed when documenting business processes, which is part of the business process modeller’s responsibilities (section 4.4.1.2), the business process modeller and business analyst also need to understand the following (participants 6, 7 and 12, 13 from Company B, Research G and Company C respectively):

- the purpose and focus of the business process (*why*)
- the usage of the business process (*what*)
- the process audience that will be using the business process (*who*)
- the as-is business process (*what is currently done*)
- the to-be business process (*future mode of operation*)

When an existing business process (as-is business process) is being reviewed, it needs to be done in consultation with the business process owner and business experts. Cognisance needs to be given to the role and responsibilities of the business process owner who is ultimately responsible for the business process and its execution as discussed in section 4.4.1.2, table 4.1, as well as table 3.10. Part of business process review is also ensuring adherence to the business process methodology that sets the standards for business process compilation and documentation. This is also stated as part of governance and the practice of process modelling in table 3.9.

Only once an existing business process has been taken through the formal change control process, that is the written request for a business process to be changed which allows for version control, can the business process be changed.

These are crucial check-points as part of delivering quality and usable business processes (participant 6, Company B) and these check-points apply to the traditional and virtual workplaces. The impact from a change control perspective on the virtual workplace is discussed below.

4.4.3 Process change control

“...changes due to improvement of customer service and changes due to compliance changes and from senior stakeholders..”

Participant 6

It is important to understand what business process change is about as stated in table 3.9 as part of the modelling success and maintenance portion. Business process changes can arise due to a number of factors, such as mergers, legal regulations and outsourcing (section 3.4.7). This leads to changes in the genetics of the organisation as stated by participant 9 from Research G.

“If you change business processes you change the genetics of an organisation. You change the way things were done.”

Participant 9

Although any combination of the changes mentioned in section 3.4.7 will have an impact on various organisational aspects, such as culture, work

procedures and training, it is not addressed in this specific discussion of change control. The reason for this is that it is part of organisational change realisation (participant 12 and 13, Company C) or organisational change management, which has as focus communication, information and training (section 3.3.3.3).

Process change control requires a formal process which requires well documented change requests as business process changes may lead to system changes. The change control process followed by participating Company C is system based and the documentation covers the following fields:

- change request number as generated by the change control system
- sequence number/s related to the change
- priority of the change, that is high, medium or low
- transport numbers and sequence in which change is taken to the production system
- change request title
- business reason necessitating the change, for example legislation
- business risk associated with the change, for example non compliance to legislation
- back-out plan if change is unsuccessful, for example revert back to previous version
- type of change, for example master data, reporting, new development
- Identification of cross module impact if more than one module is impacted
- SAP module impact
- business process impact
- name of person responsible for updating of the business process

- date specifications, namely date change was requested on; date change was created; date change is required by; date change was received by IT; date work on the change commenced and date the change was completed
- name and details of change requestor or initiator
- name and details of person responsible to investigate the change
- names and details of all role-players involved in approving the change, namely team leads; support manager; senior manager; change control forum chairperson.
- business processes impacted by the change
- name of person responsible (developer) for executing the change
- name of testers

All signatories and the sign-off page are generated by the same system when logging of the change request and included the following sign-offs:

- tested successfully in Development
- tested successfully in QA
- tested successfully in Production
- master data verified and data integrity check completed on production
- master data changes communicated to all affected parties
- business process change request registered with business process team
- business process changes done and verified by business process owner
- training material change request registered with process owner and training team
- training material change done and verified with process owner and training team

- change communication to all involved parties completed
- close change after post evaluation

Changes in business processes are key as input into the whole change realisation and training perspective.

Participant 12

The change control documentation as generated by the system serves as trigger for the updating of the impacted business processes, thus aligning the business process change with the system change. This emphasises that business process changes are also dependent on a formal process, which include:

- a formal request to change the business process
- a motivation and explanation of the required business process changes
- version control on the business process

Once approval has been obtained and the business process has been provided, meaning the business process has been moved from the business process production group to the development group, the specified changes can be done. These business process changes are work-shopped with the business process owner to his (or her) satisfaction, which is in line with the responsibilities of both the business process owner and -modeller. Once the business process changes have been completed, quality assurance is done to ensure adherence to the company's business process methodology and standards. Sign-off is obtained from all the relevant stakeholders whereafter the updated business process is booked into the applicable business process repository. Only approved processes are used for system development (Companies B and C, participants 6 and 12).

Business process change control is more complex and cumbersome in the virtual workplace, as all communications related to business process changes are done via email. The following high level process is followed by the virtual workers of Company B:

- Request business process via email.
- Receive business process via email.
- Execute business process changes, including version control of the business process, the name of the person responsible for executing the business process changes and the date changes were done.
- Conduct workshops with business process owner until process is to his or her satisfaction.
- Do quality assurance to ensure adherence to company's business process standards.
- Obtain business process owner's physical sign-off on changed business process.
- Scan the business process in order to obtain a soft copy for email purposes.
- Email scanned copy of updated business process to be sent to business process repository in South Africa.
- Retain paper copy of approved business process on site (Angola).
- Person in charge of the business process repository updates the business process in the system with the relevant changes.
- Quality assurance is done to ensure compliance to the organisation's business process methodology and standards.
- Business process status is updated in the system.

From the above-mentioned procedure it is evident that duplicated work is being done due to the business process changes being done on the project site and again when the centralised business process repository is updated.

Quality assurance is also done twice, that is at the project site before the business process is signed off by the business process owner as well as when the business process repository is updated.

The reason for this way of working is the limitations with regard to online accessibility, given that it is crucial for the financial institution to protect its business and customers. The sending and receiving of business processes via email can be problematic, especially when a large number of business processes (sometimes up to seventy processes) are requested due to the limitations on email attachment capacity (participant 6, Company B). The infrastructure limitations and difficulties experienced are discussed in more detail in section 4.5.2.

Although it is an extensive process that is being followed, it has the advantage of a formal audit trail which is crucial to Company B. It furthermore ensures that the business process repository, which is the single source where all business processes are kept, stays valid, providing users with the latest approved business processes.

...Single source, single repository, audit trail...

Participants 3, 6, 17, 18

“All the training material, everything is already done, signed-off and then implementation will take over.”

Participant 6

4.4.4 Process tools

Various process tools with a mixture of process models and added functionality exist in the market today, such as the Architecture of Integrated Information Systems (ARIS) and Enterprise Architect (EA). Business process modelling tools are also covered in practice of modelling in table 3.9. Key to

supporting the business process domain, whether it is in the traditional or virtual workplace, are integrated business process tools. This means tools encompassing a single repository or source for business processes, which allows for re-use of business processes and objects according to an approved methodology. The matter of a single repository and using of an appropriate business process modelling tool are also stated in the strategy and governance as well as tool and related requirement portions of table 3.9.

“... You need to do a proper selection of the tools you want to implement. Make sure process implementation requirements match the tool you want to use. Make sure you select the right tool for the job you want to implement.”

Participant 12

Business process modelling tools supporting the collaborative management style as considered in sections 4.3.2, 4.3.2.1 and 4.3.2.2, as well as the specific skills required in section 4.3.3, are summarised by the participant 8 in his expression of people, skills and tools moving towards collaboration and networking. This also links to Smith and Fingar (2003b:21–23) in section 3.5.1 where it is stated that BPM enables the collaborative design of business processes among partners as well as providing the tools needed for management of business processes supporting virtual organisations.

“It is about moving away from assembly line but rather creating networks of people with certain skill sets in order to solve a specific problem. Toolsets supporting BPM are also moving in this direction. You will see more collaborative type environments than transactional type oriented environments.”

Participants 8

From a more technical perspective, hand in hand with the selection of the appropriate business process modelling tool is the availability of adequate and appropriate licences for the business process consultants as expressed by participant 9 (Research G).



“No toolset available to help them manage business processes.... This organisation had three Visio licences for 600 computers. No.”

Participant 9

This is also fundamental in the establishment of a business process centric culture in the organisation, as the unavailability of business process modelling tools or licences are a sure way of hampering the initiative of moving towards business process buy-in.

4.4.5 SUMMARY: PROCESS

Business processes are vital to obtain synergy and assist in the systematic and orderly execution of the activities, paving the way towards one clear, common agreed-upon goal and this holds for the traditional as well as virtual workplaces.

Understanding and embracing the building blocks of business process governance, business process change control and process tools are crucial to move towards a business process centric organisation in supporting the virtual workplace.

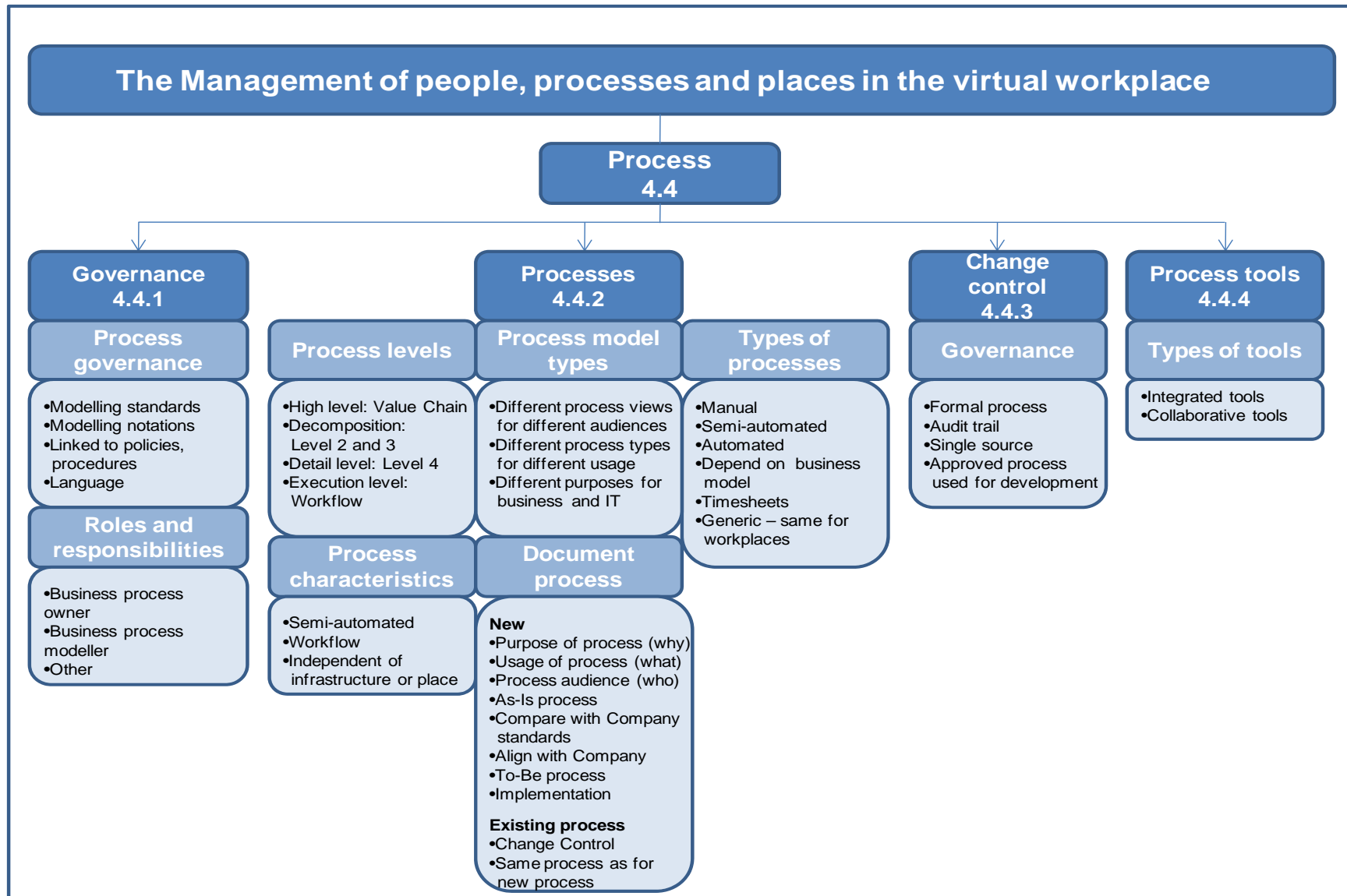


Figure 4.4: Management of people, processes and places in the virtual workplace – process

4.5 PLACE

The virtual workplace covers a variety of mobile and remote work environments, such as telecommuting, hotelling, telework centres and home workers translating into working from a distance (Davenport & Pearlson, 1998:51). The virtual workplace is viewed as a knowledge society with **people** working closely and successfully together using technology (**process**) to work from a distance (**place**) to transfer knowledge (implicit and explicit) in order to achieve specific goals (Zemliansky & St Amant, 2008:2, 3). Defining the virtual workplace, including the stated references is covered in section 3.3.1.

This definition clearly indicates the trio of people, processes and places as the central theme of this thesis. Place, the third component of the trio is discussed in the following section.

The place component consists of building blocks covering locations and infrastructure as well as managerial support aspects. In addition to this, the type of work, workplace and interaction are discussed.

4.5.1 Locations

In the virtual workplace location is the distributed place from where work or research can be done. Location has a definite impact on working hours as time zones influence the hours worked, for example Sydney in Australia is roughly eight hours ahead of time for a worker located in Johannesburg. Thus, the worker in Johannesburg will be able to contact a colleague or client in Sydney at 08:00 South African time. At that point it will be 16:00 in Sydney. This means that the South African employee will either have to start working earlier or alternatively, the Australian employee will have to work later. The same principle will apply if workers or clients are based in South Africa and South America. Irrespective how it is viewed, someone will be inconvenienced due to the time zone.

This links back to the discussion on time zones with time as an instance in space in section 1.1.2 as well as figure 1.3 depicting time as an instance in space.

Participants 8 and 9 (Research G) and participant 15 (Company E) shared their views on time zones which correlate with time zones and the bridging of time and space resulting in their boundaries being expanded beyond their control (section 1.1.2) impacting on working hours, family life and the manner in which business is being conducted.

“Classic problem of distribution of time and place. Different time zones with people not working at the same point in time.”

Participant 9

“Only trouble is time zones. Tends to be difficult when you work from Australia with the USA and Europe. General meetings take place at 1am in the morning or get up at 5am to return a call.”

Participant 8

“Australian time zone is challenge. Established support structure with ex-colleagues. Meet each other half way.”

Participant 15

In figure 4.6, which presents the place component of the management of people, processes and places in the virtual workplace, the locations relevant to the research conducted have been listed. This includes physical locations as well as virtual locations or weblog locations.

Technology and the infrastructure associated with it enabled distributed work and the establishment of the virtual workplace with participant 10 (Research G). He stated that he could execute all the processes supported by the computer. Such infrastructure also enabled the use of a weblog as part of the research conducted.

“We access our machine at the office and work on it remotely. Can do all the processes that are supported by the computer itself.”

Participant 10

4.5.2 Infrastructure

Technology enablers, such as wireless technology, broadband and virtual private networks (VPNs) assisted individuals in managing their emails, and diaries.

Case study

Section 3.3.5 discusses infrastructure, reflecting on local area networks (LAN), virtual private networks (VPN), internet and intranet. The advantage of VPN access was also highlighted by participant 4 (Company A) as it provided the participant with acceptable access when working remotely.

Obtaining on-line training at a time and place convenient to the worker (section 4.3.4) is a further advantage offered by technology.

4.5.2.1 Internet

Having sustained internet connectivity and high internet capacity or speed is crucial to the virtual workplace as identified by all the participants.

....Limitations on the speed of the internet, sustained internet connectivity...

All participants

In the South African context the high cost involved in internet connectivity and downloads was raised as a challenge (participant 14, Company D). Technology such as 3G makes wireless connectivity possible, but the cost of such connectivity and the benefit obtained from using it needs to be balanced. Video-conferencing as communication media is also deemed as expensive as discussed by participant 14 (Company D), but needs to be evaluated against time and cost involved in travelling.



“The Internet tends to disperse and decentralise human activity....”

Wilcocks, et al (2000)

Moving to e-business: the ultimate practical guide to effective e-business.

4.5.2.2 Intranet

The intranet is used by Companies B, C and E for the publishing of supporting documentation and business processes internally, thus correlating with the responsibilities of the centralised business process support office (section 4.4.1.2). The business processes are published to the intranet and not the internet, therefore it is accessible for identified users within the organisation, therefore corresponding with the views of Zemliansky and St Amant (2008:441) in section 3.3.5.

“...everyone that can access the intranet can see the published maps, that is the signed-off process maps.”

Participant 6

Business processes are not published to the internet as an organisation’s business processes is its only differentiator providing the organisation with its competitive advantage as reflected upon by participant 6 (Company B).

“Processes are not published on the internet, because the only differentiator is not product, but process. Your product can be cloned within 3 weeks, but they cannot clone your process.”

Participant 6

The internet and the intranet each has its own place in the infrastructure supporting the virtual workplace and it is clear from the

usage of these technologies that the virtual workplace will not exist without these technologies.

4.5.2.3 Server access

Server access related challenges are a given when working virtual or remotely as was conveyed by the participants.

.... Technical challenge that you do not have access to the server ...

Participants 5, 6, 7

The number of user identifications, also referred to as user ids, and passwords needed to access the various servers translate into an administrative challenge. However, it is essential given the security measures needed to protect organisations, especially financial institutions. The use of single sign-on for users has been identified by the participants as a possibility to streamline server access, but needs to be evaluated by each organisation individually for usability, such as feasibility in terms of protecting a financial institution's customers (participants 6 and 14, Companies A and D).

“Single sign-on. One password, one user id ... difficult if you use different internet platforms. High complexity, e.g. remembering all the passwords, user ids...”

Participants 10, 11

“...a different profile you get when you work off-site. Go in via different route into system, because of the firewall, have a password or two more to go in. Will not be able to access remotely if you do not have that ..Firewalls and profiles needed to protect institution...”

Participants 6, 14

Network accessibility is also impacted by the different user profiles assigned to permanent employees and contractors. User profiles

assigned to permanent employees offer more accessibility than those assigned to contractors, resulting in constraints for contractors when servicing a client as expressed by participants 1 and 5 (Company A) and participant 16 (Company E) below. This equates to the different sets of authorisations as referred to by participants 4 and 5 from Company A. This also relates to the discussion on network accessibility as part of the types of work done in the virtual workplace in section 3.3.4.

...It is difficult to help people without access to the client's server ...
Participant 1, 5, 16

Two different sets of authorisations. First one set for contracting house and then one set for client. Authorisations according to company requirements.

Participants 4, 5

In view of business process management, access to an integrated business process modelling tool is important as that constitutes using a single source as previously discussed (section 4.4.4). Accessibility to such a system will however be determined by the security measures put in place by the organisation.

4.5.2.4 Minimum requirements

The bare minimum requirements for a person to be able to work virtual are internet connectivity via fixed telecommunications line or 3G connectivity, compatible laptop, mobile phone and electricity as discussed by participant 18 (Company E). These requirements do not provide for photocopiers and other office equipment which may be available at a telework centre or head office.

.... Basics for a virtual workplace is 3G, ADSL, computer, electricity, cell phone, telephone ...

Participant 18

4.5.3 Support management

Support management in the virtual workplace consist firstly of the controls needed to ensure active completion of quality assignments or outputs, as commonly referred to by participants and secondly, the support structure.

4.5.3.1 Controls

Controls in this context refer to control measures and prescribed actions put in place to guide and regulate the activities and deliverables of the virtual worker. These measures and prescribed actions relate to the business process environment and are relevant for the traditional workplace as well. These controls, in addition to the change control process discussed earlier, are:

- Obtain physical sign-off on completed business process models from the relevant business process owner.
- Retain physical signed-off business process models and supporting documentation within a properly structured document management system.
- Compile weekly core team meeting and bi-weekly meeting minutes stating all action items, names of those accountable for the action items and due dates for actions assigned.
- Compile monthly status reports for submission to the project sponsor and Executive Committee (EXCO).
- Compile project work breakdown structure, clearly stating business process deliverables, role-players (business process owner, business process modeller, business process analyst, business analyst), due dates and other relevant details.
- Obtain approval for business process changes through a change control forum before actual execution of those changes.

- Manage critical business process changes as and when they occur, supported with detail documentation for future reference and lessons learned.
- Clear audit trail of actions taken and stakeholders involved (participants 6, 13, 18, Companies B, C and E).

Acknowledgement is given to detail documentation that can be done in support of the project environment, such as scope changes, time management, financial reporting, quality control and risk management. However, it is not included in that level of detail in this discussion.

4.5.3.2 Support structure

The support structure has to have clearly defined roles and responsibilities as discussed as part of governance in the business process component (sections 4.4.1, 4.4.1.1 and 4.4.1.2). Hand in hand with these roles and responsibilities is the virtual worker's reporting structure.

Many contractors working virtual support more than one client as indicated by participants 5, 6 and 18 from Companies A, B and E respectively, resulting in multiple reporting and support structures and the challenge of "*having two bosses*". Having had "*two bosses*" translates into having a boss at the organisation's headquarters as well as a project boss on the remote site. Close alignment of project deliverables and expectations with both parties through the application of the controls mentioned in the previous section are crucial for success (participant 6, Company B).

"Big problem if it is in a virtual office is that you have two bosses. You have your boss here and new your boss there....It is not that easy... Both of them approved the project plan and I could do my work."

Participant 6

Organisational support relates to general management matters whereas project support focuses on project deliverables. Organisational support need to include help desk support for the virtual workers to assist them with matters such as assistance with business process modelling tools, since user manuals do not have all the answers (participant 1, Company A).

A fundamental element in the support structure of the virtual workplace constitutes mutual trust, which is created through the acceptance of responsibility which shows reliability (weblog participant) and is expressed by participants 5 and 6 (Companies A and B) in that “*they come to a point where they just trust you*”. This matches up with trust as discussed earlier as part of the people component reflecting on trust as a management attribute in section 4.3.2.1.

4.5.4 Interaction

Interaction in the broader sense is made up of face-to-face and interpersonal communication as well as verbal and written communications. Different types of communication exist as discussed in sections 3.3.3.8, 4.5.4.1 and 4.5.4.2. Formal communication can have a paper based output such as reports, minutes and project documentation. Formal documentation may therefore have a notion of being asynchronous as it is not happening in “real-time”. Synchronous interaction, that is “real-time” interaction relates to face-to-face meetings, teleconferences, telephone calls and so forth. Although the interaction may not be face-to-face the emphasis is on “real-time”. Meetings can be formal such as Steering Committee meetings or informal when team building is being done.

The importance of having interaction is clear from the statements below, emphasising support for the human aspect in the virtual workplace (case study, Company F) and the need for clear, verbal communication (participants 7 and 10, Research G) as well as participants 8 and 10 (Research G) as part of formal, synchronous communication (section 4.5.4.1).



Face-to-face meetings were mixed with social interaction to assist in embracing the human aspect within the virtual workplace.

Case study

“What I realised is very, very, very clear communication.”

Participant 7

“...Important to talk to people – on phone, not necessarily face-to-face. Big difference between calling someone and writing an email. Email goes back-and-forth and still not clear what is in it. Verbal communication is important – can ask questions and have the same understanding...”

Participant 10

Participants 5, 6, 14 and 19 from Companies A, B, D and E respectively indicated that alienation from the organisation is experienced due to less interaction with office located co-workers. Frequent telephone calls, even on a daily basis help to combat loneliness and alienation (participant 19, Company E). Participants 6 (Company B) also experienced that *“they tend to forget about you”*, especially when you are working outside the borders of South Africa.

“They tend to forget about you. Trust you to do your work. Become alienated. From a virtual perspective you are alienated.”

Participant 6

This participant also linked alienation back to trust (section 4.3.2.1), explaining that the quality of work done by the participant is known and respected and therefore the organisation knows and trusts that project deliverables will be done on time, within budget to agreed-upon quality. Less interaction is required due to the trust relationship that was established. This translates into a positive element in that a trust relationship exists, but a negative element also transpires in that less interaction takes place.

Participant 6 (Company B) took photographs of the off-site project manager and team leads which were emailed to “*the boss*” at head office in order to put a face to a name and improve interaction between remote and local “*bosses*”.

Interaction and communication in the virtual workplace can take on different forms as discussed below.

4.5.4.1 Synchronous and formal communication

“Synchronous communication is done face-to-face.”

Participant 10

Synchronous communication as highlighted by participants 8 and 10 (Research G) matches “*real-time*” communication as stated by Zemliansky and St Amant (2008:471) in sections 3.3.3.8 and 3.3.3.9. Synchronous communication is conducted face-to-face, such as project core team meetings, management meetings, group sessions and individual sessions (participants from Companies A, B and Research G). These meetings are held at the organisation’s premises and are scheduled using the Outlook calendar. Minutes are compiled of the meetings and action items listed, including the responsible person’s details and due dates. These minutes are booked into the official document management system for record purposes and retrieval when needed (participant 18, Company E). The project documentation as mentioned correlates to formal communication as discussed in section 3.3.3.8. Section 4.5.4 also reflects on synchronous interaction being formal or informal based on the audience.

“I do like working virtual as long as you have face-to-face contact before you start. From this viewpoint works very well for me.”

Participant 8

4.5.4.2 Asynchronous and informal communication

Informal and asynchronous communication as discussed in sections 3.3.3.8, 3.3.3.9 and 4.5.4.

The participants indicated that electronic mail (email) and text messages received via their mobile phones are used for non-verbal communication. Verbal communication is done via telephone and teleconferencing. In the event of having an online meeting, technology such as Net Meeting is used. Email and text messages can be more informal and since it may not require immediate action can it be seen as asynchronous. However, telephone calls will relate to synchronous interaction as already discussed.

“Asynchronous communication based on email. We use basic infrastructure – net meeting, email, shared folder, working on same document at different times”

Participant 11

Communication methods frequently used were SMS (short message system) via mobile phones, emails and web portals.

Case study

Participants from Germany indicated that they use a shared folder on a server for access to shared documentation. Although the documentation is shared by the different users, version control is kept on the documents and a document can be changed by only one person at a time. This links back to infrastructure enabling distributed work as discussed in section 4.5.2.

“... Colleagues working together we have a shared folder. Same with clients. No other way of collaboration...”

Participant 11

Structuring communication and interaction around sound communication pointers (section 3.3.3.8) is recommended as it helps to convey clear messages. The communication pointers aim at creating clear and unambiguous messages through the structuring of the message according to who, says what, to whom, how, when and with what effect.

These communication pointers have relevance to change realisation with its associated communication as discussed as part of the people component (sections 3.3.3.3, 3.3.3.8 and 4.3.5) and are also useful when communicating using the virtual work tools as discussed below.

4.5.4.3 Virtual work tools

This relates to the different virtual work tools covering communication, conferencing and collaboration as discussed in section 3.3.3.9, Virtual work tools. Each of the tools has its own usage, fulfilling different needs of workers, such as:

- **Communication tools**

All participants indicated that they use combinations of telephones, mobile phones, email, email attachments, internet, intranets and instant messaging services as communication tools.
- **Conferencing tools**

Conferencing tools require strong infrastructure, thus making the set-up of such facilities more expensive. This also links back to section 4.5.2.1 where participant 14 (Company D) indicated that video-conferencing is expensive.

- Collaborative tools

These tools are the most sophisticated virtual work tools, providing project and document management functions, such as centralised documentation systems and project management systems. Examples of such systems are Document Management System (DMS) used by Companies C and E as well as Project Management Tool (PMT) used by Company C.

4.5.4.4 Social networks

Social networks (section 1.1.1) are part of the internet and mobile phone space and a myriad of these networks exist today as can be seen from figure 4.5: Social networks. Social networks such as Face Book, Twitter, YouTube and LinkedIn are frequently used by the participants for communication in a less structured manner (case study) and having conversations (participant 8, Research G) and is part of the new generation entering the workplace (participant 14, Company D). Social networks are available thanks to technology such as the internet as discussed in sections 1.1.1, 3.3.5 and 4.5.2.1.

As stated, social networks revolve around social interaction and the extent to which is could be used for official work purposes need to be determined.

...technology, such as Twitter, Face Book and iPods, enabling them to communicate in different, less structured manner...

Case study

“People across organisation boundaries start working together using Twitter as a tools to stay in touch and exchange ideas, have conversations.”

Participant 8

“...new generation entering workplace grew up with social networks, such as Twitter, Face Book...”

Participant 14



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Figure 4.5: Social networks

(http://www.adrants.com/images/social_networks.jpg)

4.5.5 Type of workplace

Participants indicated that they worked from home when working remotely. Participants from Germany included working from hotels, especially when they were working on projects outside their home town.

4.5.6 Type of work

Not all types of work are suitable for the virtual workplace as was expressed by the case study participant and discussed section 3.3.4.

It is important to recognise the type of work suitable for a virtual workplace. HR, documentation, finances and marketing can be done from a virtual workplace...

Case study

The type of work performed from a virtual workplace often relates to asynchronous work, meaning work that does not require face-to-face interaction, such as research and statistical analysis done by the case study participant (Company F). The marketing element mentioned in the case study relates to telemarketing which also does not require face-to-face interaction. However, it does have relevance to “real-time” or synchronous communication via telephone.

All research and statistical analysis were done using virtual teams...

Case study

The types of work as pointed out by the case study participant and the other participants have been grouped into three main groups, namely technical, documentation and user support.

4.5.6.1 Technical

Work of a technical nature comprises of business process modelling using an integrated business process modelling tool or other tool as prescribed by the client. System programming and script writing are often done from a remote location as it does not require any other human interaction (participants 3, 5 and 6, Companies A and B).

4.5.6.2 Documentation

Documentation per definition does not require interaction from other workers and can therefore be done remotely. This shows a correlation with asynchronous communication (section 4.5.4.2) and more specifically the German participants’ explanation of them using shared

folders for documentation. Examples of documentation given relate to compiling and consolidation of lecture material, writing of functional design specifications and convention manuals, meeting minutes and various other documentation of general nature (participants 5,10,11,14 and 18 from Company A, Research G and Company E respectively).

4.5.6.3 User support

User support relates to resolving user problems or errors as logged by the users. Users can be assisted from anywhere, meaning the calls are either routed via a help desk or are received per email. Examples of such support are the help desk numbers provided by the financial institutions for internet banking, housing loans, credit card support, theft of bank cards and fault reporting related to interrupted telephone services to a telecommunications company (participants 1, 5 and 15 from Companies A and E). User support goes hand in hand with the management style as discussed in section 4.3.2.2, in that user and client expectations need to be managed through the setting of clear goals and directives in order to ensure that all parties are in agreement with time frames needed to attend to errors logged.

From a helpdesk perspective the virtual environment sometimes is a pain because if people are logging calls at all hours of the day. With certain agreements you can stipulate South African time, 8 to 5.

Participant 1 and 5

4.5.7 Advantages and disadvantages of the virtual workplace

The advantages and disadvantages of the virtual workplace were discussed in sections 3.3.6.1 and 3.3.6.2 and are depicted in table 3.5: Advantages and disadvantages of the virtual workplace for employees and employers. Below is a collection of quotes from the participants reflecting on the advantages and disadvantages of the virtual workplace based on their experiences.

4.5.7.1 Advantages of the virtual workplace

The virtual workplace offers advantages to both the employee and employer. From a monetary perspective the employee saves on fuel, parking and corporate clothing expenses, whereas the employer saves on a lower salary bill and a reduction in the cost of “fitting out the office” (case study, Company F). These are referred to as the economic drivers. In addition to these economic drivers is the quality of live drivers. The quality of live drivers encompasses work and family components and the following were highlighted by the participants, namely flexible working hours allowing for attending to family matters, less commuting and time wasted due to traffic, less disturbances providing a more focussed work environment which supports higher productivity. Advantages relating to flexibility of working hours can also lead to longer working hours as reflected upon in advantages and disadvantages in sections 3.3.6.1 and 3.3.6.2 as well as the quotes below.

Quality of live drivers go hand in hand with economic drivers in that flexibility of working hours enabled mothers to take care of children and their school related activities. Less commuting time also meant less time away from home....working from home fuel, parking, vehicle maintenance, suitable clothing can be reduced hugely... Working virtual had a direct impact on corporate expenses as it meant a lower salary bill and a reduction in the cost of “fitting out an office.”

Case study

...address biggest problem of travelling. Wasting time – 4 hours a day...

Participants 1, 4, 5

...more productive working form home...

Participants 1, 5, 6

...less disturbances, can work more focussed...

Participants 3, 5, 15

..like flexibility, prefer flexibility...

Case study, participants 1, 2, 4, 5, 6, 18

4.5.7.2 Disadvantages of the virtual workplace

As mentioned above, case study participant (Company F) indicated extended working hours as the biggest drawback of the virtual workplace and this has a link to time management capabilities as discussed as part of section 4.3.3. Internet capacity and sustainable connectivity were highlighted by the participants in addition to alienation due to less personal interaction.

The biggest drawback experienced by employees working in the virtual workplace was “no start or end to a work day”. Employees tend to work 24/7 reading emails even before going to bed.

Case study

...Body language cannot be read over a teleconference...

Case study, participant 7

...do have capacity issues with internet in SA not being the fastest...

Participants 1, 3, 5, 6, 14, 18

...personal interaction is missing...

Participants 4, 5, 8, 9, 19

4.5.8 SUMMARY: PLACE

The place component as discussed covers a number of mobile and remote work environments, although participants indicated that they work mostly from home or hotels when working remotely. They make extensive use of the internet and various work tools when working from a distance (Davenport & Pearlson, 1998:51). The virtual workplace is viewed as a knowledge society with **people** working closely and successfully together using technology (**process**) to work from a distance (**place**) to transfer knowledge (implicit and explicit) in order to achieve specific goals (Zemliansky & St Amant, 2008:2, 3) as discussed in chapter 1.

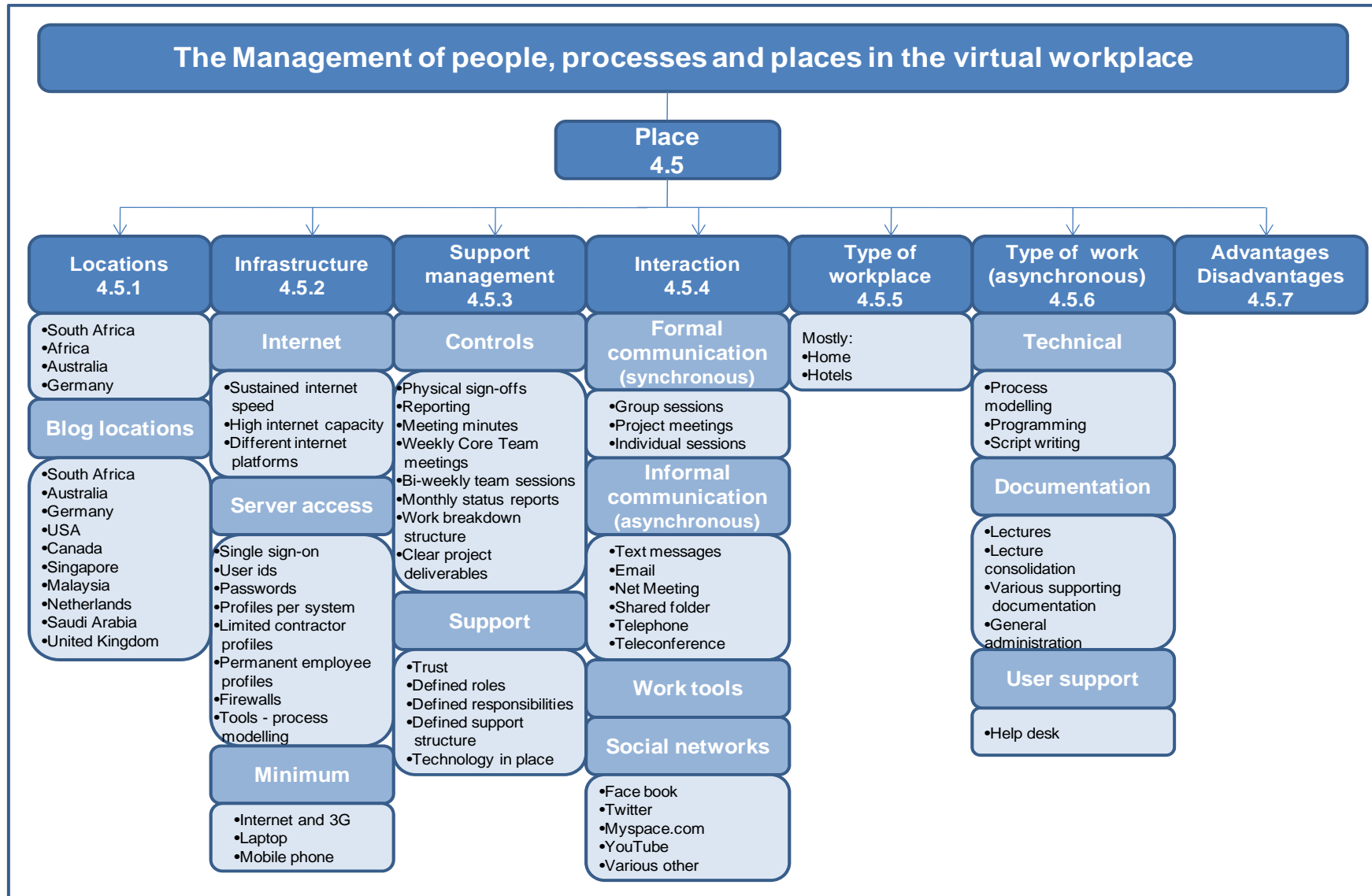


Figure 4.6: Management of people, processes and places in the virtual workplace – place

4.7 CONCLUSION

The management of people, processes and places in the virtual workplace have various related touch points emphasising that the components cannot be viewed in isolation. The organisation's maturity is a definite contributor which needs to be considered when the organisation's strategy towards business process management is developed. This maturity level is linked to an enabling culture with trust, loyalty and support which is associated with a collaborative and flexible management style. Employing the right person for the job is crucial when employing people to work in the virtual workplace, as it is not suited for all personality types. Managing remote or virtual workers' outputs as well as those in a traditional workplace require clearly defined deliverables, timelines and quality measures which have been agreed upon by all role-players. Business process modellers (**people**) and analysts need to have a passion for processes, be trained in the client's methodology and standards (**process**) and have accessibility to networks and tools (**place**) enabling them to deliver on a job well done.

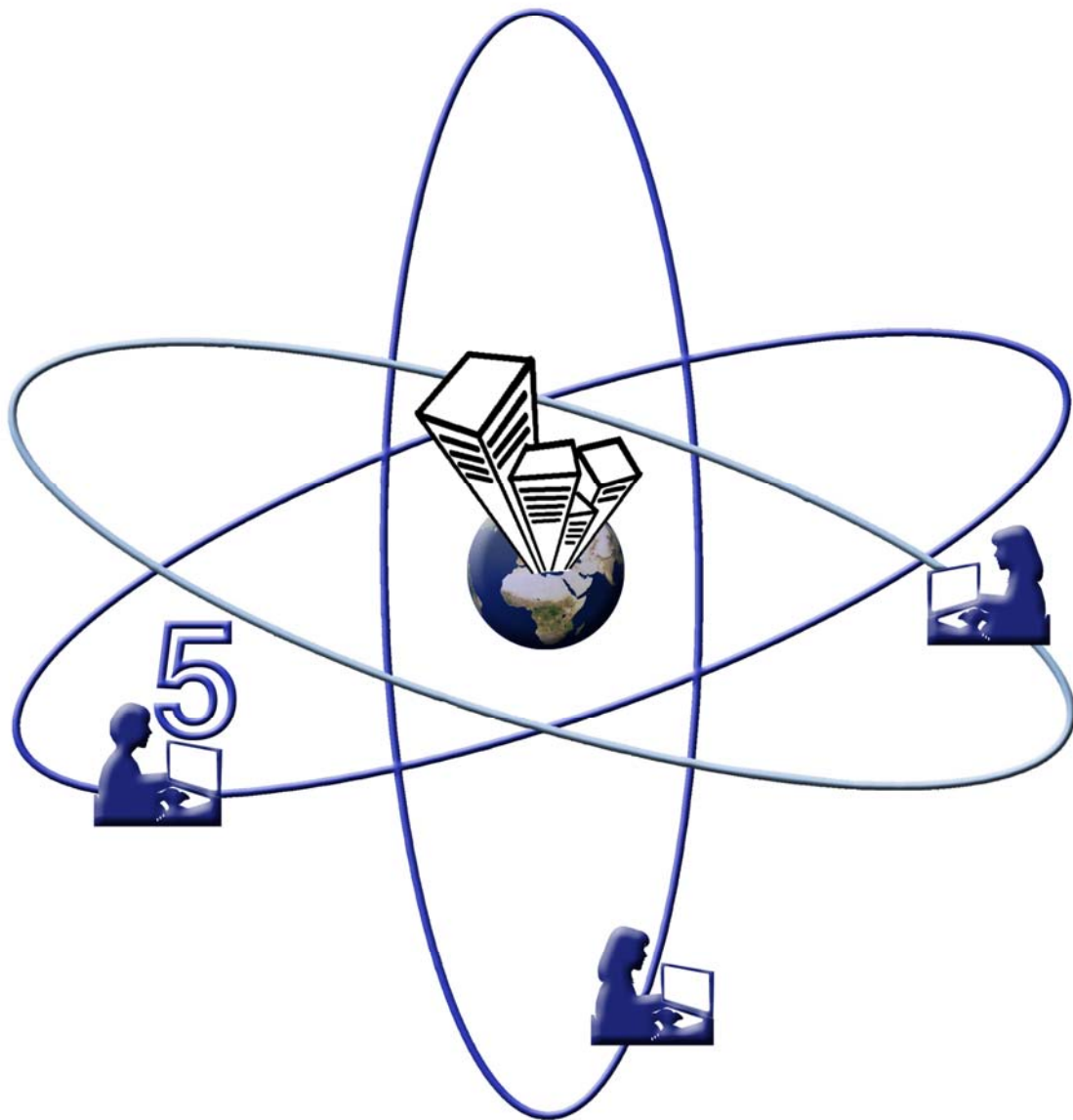
The trio of people, processes and places as part of the management of people, processes and places in the virtual workplace were discussed based on the experiences shared by the various participants and organisations while writing the case study and conducting the focus group discussions and interviews.

A framework assisting with the management of people, processes and places in the virtual workplace as derived from the shared experiences is discussed in the following chapter.



The management of people, processes and places in the virtual workplace

MANAGEMENT FRAMEWORK



CHAPTER 5: MANAGEMENT FRAMEWORK FOR PEOPLE, PROCESSES AND PLACES IN THE VIRTUAL WORKPLACE

“This is why Gadamer tells us that to understand is always to understand *differently*.”

Bernstein (1983)

Beyond objectivism and relativism: science, hermeneutics, and praxis

5.1 INTRODUCTION

The *people, processes and places* components were discussed individually in chapter 4. The objective of this chapter is to discuss the proposed framework as derived for the management of people, processes and places in the virtual workplace based on the relationships identified.

Experiences shared by the participants and virtual workers and covered in the preceding chapter exposed different matters of concern within the people, processes, place components, such as the management style, performance management, business process governance and standards as well as network accessibility and its limitations.

The discussion of the management framework is structured around the management approach, technology and practice components thereby structuring people, processes and places into a framework. This discussion framework is depicted in figure 5.1. The detail related to each component and the reasons for including it in the framework will be discussed according to the section numbers indicated and summarised with a corresponding figure.

Although this thesis focuses on the management of people, processes and places and the relationship between these components, associated links with technology, as an indispensable part of the virtual environment, and process modelling components are also included.

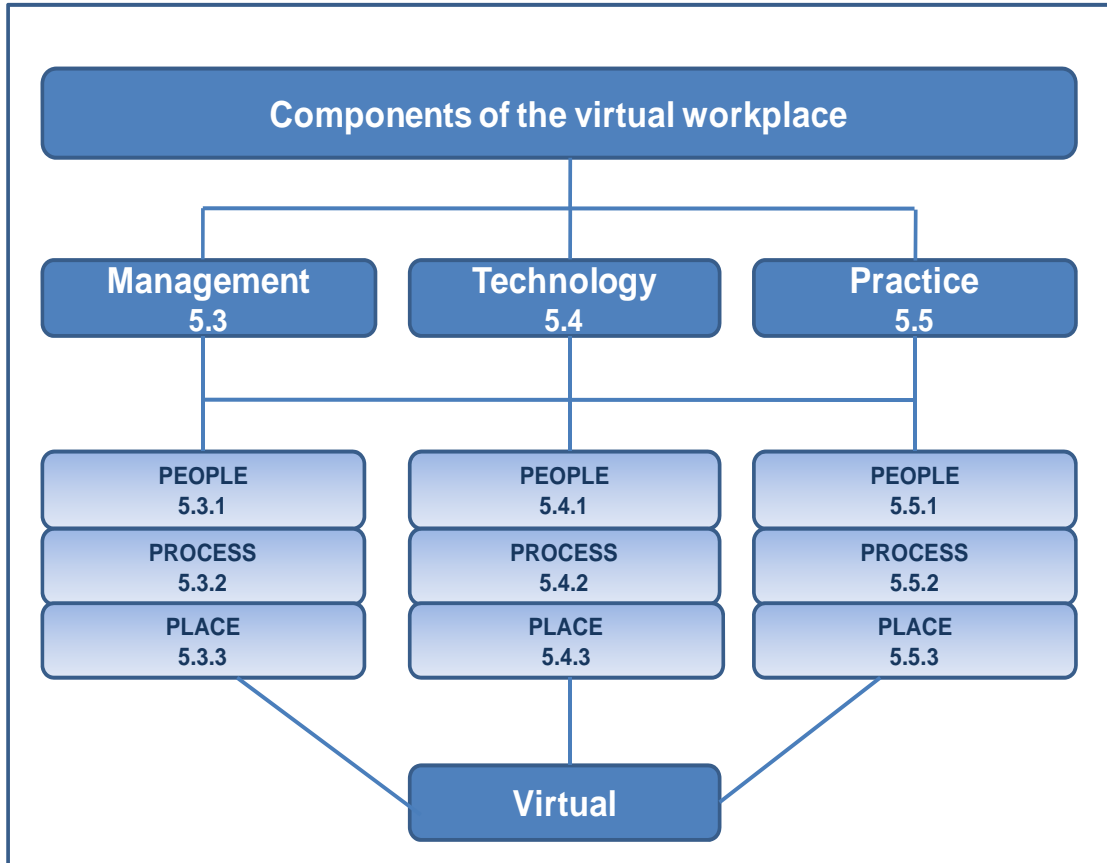


Figure 5.1: Components of the virtual workplace

This chapter will be followed by the concluding chapter, reflecting on the application of the Extended Hermeneutic Circle of Learning as developed in chapter 2, including recommendations, limitations and future topics for research.

Steps 7 to 9 of the Extended Hermeneutic Circle of Learning as depicted in figure 5.2 form the basis for this chapter's discussion. These steps are also covered in chapter 6 in the discussion on the application of the Extended Hermeneutic Circle of Learning which was used as research guideline in this thesis.

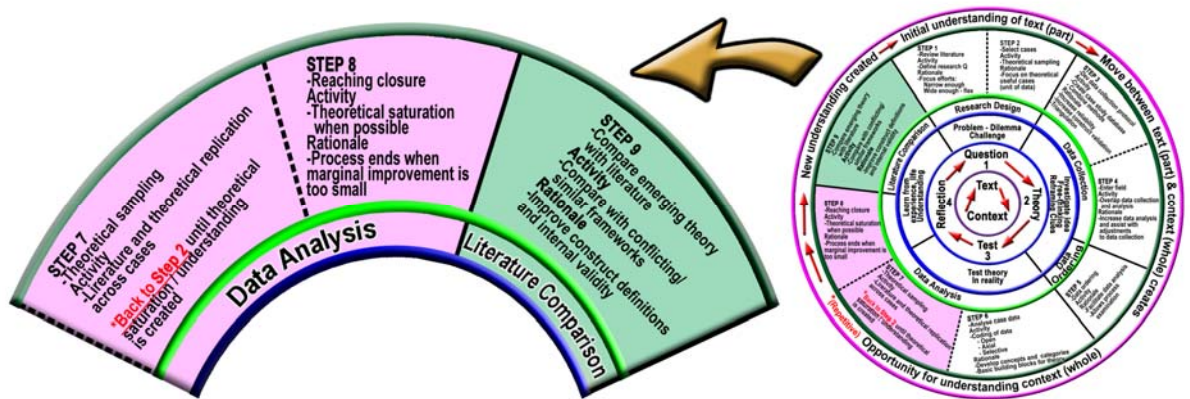


Figure 5.2: Steps 7 to 9: Data analysis, literature comparison

Throughout this chapter the literature as discussed in chapter 3 and the research findings as discussed in chapter 4 are compared and combined to formulate the framework for the management of people, processes and places in the virtual workplace, including technology.

5.2 PEOPLE, PROCESSES AND PLACES

The relationship between people, processes, places and technology as discussed in chapter 1 and depicted in figure 1.1 illustrated that processes are executed by people from different locations or workplaces using technology. This was expanded in figure 1.2 to show business process management as a manner in which people, processes and places interact.

The relatedness of the management, technology and practice components as seen in figure 5.1 expand figures 1.1 and 1.2 and serve to provide structure to the people, processes and places categories. Managing people, processes and places in context to the virtual workplace and incorporating technology as a necessity is discussed in this chapter and depicted in figure 5.3.

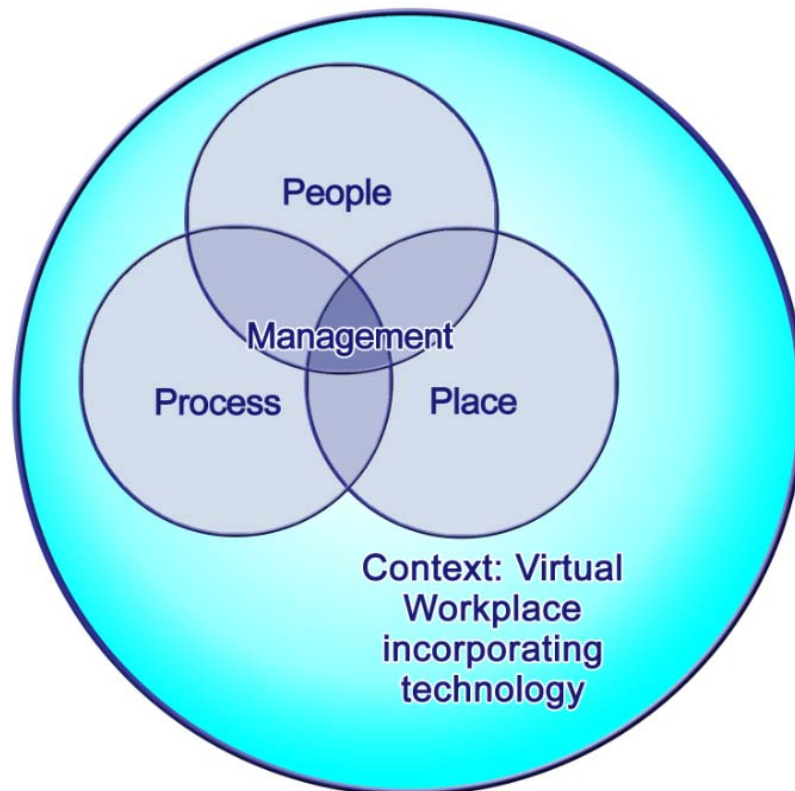


Figure 5.3: Management – people, processes and places in context of the virtual workplace

5.3 MANAGEMENT

The management component relates to the structured approach as defined in section 3.5.1 and is discussed in the following section following the central theme of this thesis, namely people, processes and places. This can be seen in figures 5.1 and 5.3.

5.3.1 Management: people

The areas of attention related to business process maturity, understanding of business process management, active change realisation and the establishing of an enabling culture and support structure are discussed. It is part of the management component and is discussed in the section below.

5.3.1.1 Determine business process maturity

For an organisation to move towards supporting business process activities in the virtual workplace, it needs to determine its business

process management maturity level. A business process management maturity assessment needs to be done as discussed in section 3.7.1. Such an assessment is essential as it will provide invaluable inputs into determining the organisation's strategy towards business process support in the virtual workplace. This translates into alignment with and supporting business process support in the virtual workplace as well as growth in business process maturity.

In the context of this thesis business process maturity relates to people's experience of business processes in the organisation, their awareness and their business processing skills.

Different business process maturity assessment tools are available in the market. It is important to investigate and evaluate the different business process maturity assessment tools, instead of randomly selecting a tool. Appendix F is an example of an online business process maturity assessment tool.

Business process maturity is a specialised field on its own and the execution of a business process maturity assessment as such cannot be covered in detail in this thesis (section 3.7.1). It is however important to recognise the different levels of business process maturity and the need to establish the organisation's level of business process maturity. This translates into organisations displaying different management strategies matching their needs in line with their business process maturity level, such as *ad hoc* or *initial* levels of business process maturity which consist of undefined and chaotic processes compared to an organisation with *integrated* or *optimised* business processes which may include *process measurement and management systems* (section 3.7.1). This shows a relationship between process and management. The people aspect is also incorporated as the business process maturity level has a close correlation with the business process skills, roles and responsibilities of the business process owners and business process modellers as well as

development (sections 3.3.3.6, 3.4.6, 4.3.4 and 4.4.1.2), as defined roles and responsibilities and well-trained resources could possibly be indicative of the higher business process maturity level. Business process maturity has a link to integration of business process tools as discussed in sections 3.7.1, as well as 5.4.1.2 and 5.4.2.3.

5.3.1.2 Create an understanding for business process management

A clear understanding of the difference between business process management and business process improvement (sections 3.5.1 and 3.6.1) needs to be created through suitable communication and training channels (sections 3.3.3.6, 3.3.3.8, 4.3.4, 4.5.4.1 and 4.5.4.2). Business process management is the structured, management approach which includes policies, methods and standards, whereas business process improvement involves the step-by-step rectification of “*broken processes*” (section 3.6.1). Uniform, unambiguous communication and training which conveys the same business process message to all people involved will assist in creating a common business process management understanding within the organisation and align the development of business process resources (sections 3.3.3.6, 3.3.3.8 and 4.3.4).

A defined communication plan is recommended as it deals with communication in a structured manner (section 3.3.3.8). This communication function should be done by the communication and a change realisation expert with the support of the change agents with the emphasis on the relationship between clear-cut communication and active change realisation. Appendix E is an example of a high level communication framework followed by a software company.

People will resist business process management if they do not know what it is or what benefits it brings (sections 4.3.2 and 4.3.5). The need for communication (sections 3.3.3.8 and 4.5.4.1), information and training (section 4.3.4) is echoed by Scheer et al (2003:5) as part of organisational change management (sections 3.3.3.3 and 4.3.5) as

well as business process change (sections 4.4 and 4.4.3) as the genetics of the organisation is changed when business process changes occur.

5.3.1.3 Active change realisation

Changes within the organisation and its business processes can occur as a result of new market offerings, mergers and acquisitions, legal requirements and outsourcing (section 3.3.3.3). Changes related to where people work also occur, as the workplace changes from office-bound to virtual. Active change realisation or change management, as it is also known, focuses on communication and interaction, information (sections 3.3.3.8 and 4.5.4) and training (sections 3.3.3.6 and 4.3.4) and has business processes as its foundation.

Change realisation is the comprehensive management approach implemented by an organisation as an ongoing process to smooth the progress of change (section 4.3.5), which is very closely linked to people management and business process management (sections 3.5.1, 4.4.1 and 4.4.1.1), as high maturity with regard to business process assists change management initiatives. It relates to the organisation's unique transformation to obtain sustainable, long-term success. It also contributes to the ongoing improvement of the organisation's business processes as discussed in sections 3.6.1 and 4.4.3. The communication provides guidance on the communication needed to support information sharing as part of change realisation and training pointers (section 3.3.3.8 and appendix E).

Active change realisation and its enablers (section 3.3.3.3), together with the discussions on communication and interaction (sections 4.5.4, 4.5.4.1 and 4.5.4.2), support for and understanding of business process management (section 3.5.1), trust (sections 4.3.1 and 4.3.2.2), personal responsibility (sections 4.3.2.3 and 4.3.3) and governance (section 4.4.1) need to be addressed. Active change realisation links

to the establishing of an enabling culture which will be discussed below.

5.3.1.4 Establish enabling culture

An enabling culture supports employees who work in a virtual environment in explicit ways, such as day care assistance for mothers. An enabling culture also has trust, responsibility, loyalty and integrity as essential components (sections 3.3.3.1, 3.3.3.2 and 4.3.1) and is heavily influenced by management attributes and style (sections 3.3.3.4, 4.3.2.1, 4.3.2.2 and 5.3.1.5).

New behaviour and socialisation processes are formed in the virtual workplace, as the structure is fluent and change impacts on the culture of the organisation (section 4.3.1).

The establishing of an enabling culture requires active change realisation (sections 3.3.3.3, 4.3.5 and 5.3.1.3), straightforward communication (section 3.3.3.8 and 4.5.4.1) and needs to be supported by means of partnerships and a collaborative management style. This also has a connection to performance management, as the focus needs to be on output management and not people management (sections 3.3.3.7 and 4.3.2.3). Leading by example (section 4.3.2.1) with passion for processes (sections 3.3.3.5, 4.3.2.1 and 4.3.3) are also crucial for the establishing of an enabling culture.

5.3.1.5 Establish business process support structure

The active leadership chain is discussed in sections 3.3.3.3 and 4.3.5 as part of successful change and depicted in figure 3.6 and links to a participative and supportive management style displaying trust, responsibility and accountability (in sections 4.3.2, 4.3.2.1 and 4.3.2.2). These are essential components for the establishment of a business process support structure as part of the framework for the management of people, processes and places in the virtual workplace.

The structure supporting employees in the virtual workplace (section 4.5.3.2) has to have clearly defined roles and responsibilities (sections 3.4.6 and 4.4.1), thus providing clear reporting lines. Controls as seen in section 4.5.3.1 can assist in aligning people and business process activities. Help desk support for virtual workers is also required (section 4.5.3.2).

Crucial to the business process management structure is business process governance and a defined business process methodology (sections 3.4.5.1 and 4.4.1.1) that enables a common and unified understanding of business processes. Included in the business process support structure are infrastructure components (sections 3.3.5, 4.5.2, 4.5.2.1, 4.5.2.2, 4.5.2.3 and 5.3.3.4), as well as infrastructure requirements as part of the place portion within the technology component (section 5.4.3.1) and practice (section 5.5.3.1).

5.3.1.6 Involve the right resources

Firstly, involving the right resources relates to a stringent recruiting process (sections 3.3.3.5 and 4.3.2.4), identifying and employing those people whose culture and values are discussed in section 4.3.1 who fit the organisation and secondly, involving people with a passion for processes (section 4.3.2.1). Cognisance needs to be given to the personality traits (sections 3.3.3.5, 4.3.3 and appendix D) of those people working in the virtual workplace and that this includes a passion for business processes. It is also important to note that the virtual workplace is not a suitable environment for everybody as discussed in sections 4.3.2 and 4.3.2.4. This translates into the virtual workplace, the people and the job having to fit together. Involving the right resources also means having the right stakeholders on board (section 3.4.5.1, table 3.9, stakeholders).

5.3.1.7 Develop skilled resources

Proper designed training empowers and equips employees with the necessary skills and can take on different formats, namely informal

when training is done at a person's own pace and is assisted via the internet using electronic courses, computer-controlled exercises or formal, being classroom and facilitator-based. It is important to select the appropriate type of training and acknowledge personal preference.

The following subjects need to be included in standardised training material, namely clarification of business process management, the need for business process management governance, business process modelling and business process analysis (sections 3.3.3.6, 3.4.5.1, 4.3.4, table 3.9, practice of modelling and table 3.11). Development of resources also links to performance management (sections 3.3.3.7 and 4.3.2.3). Resources require training that is relevant to aid them in the execution of their job and to increase their job performance.

5.3.1.8 Retain skilled resources

Telecommuting and different types of virtual workplaces (sections 3.3.2 up to and including 3.3.2.7) offer the opportunity to retain critical, scarce skills. This can also be seen in the discussion of the advantages offered by the virtual workplace (sections 3.3.6.1 and 4.5.7.1). This refers specifically to retaining already employed employees with critical skills. This correlates further with recruitment (sections 3.3.3.5 and 4.3.2.4) in the identification of motivated, responsible and accountable employees with a passion for processes according to the discussion on personality traits (sections 3.3.3.5 and 4.3.3). Recruiting of people with scarce skills is possible when they are offered the flexibility of the virtual workplace. Existing scarce skills can thus be retained by offering the necessary staff members the opportunity to work remotely with flexible hours and other scarce skills can be obtained in the same manner.

5.3.2 Management: process

Following on the people component as discussed above is the process portion related to management. The process portion has a correlation with business process maturity (sections 3.7.1 and 5.3.1.1), understanding

business process management (sections 3.5.1, 5.3.1.2 and 5.3.2.1) and the business process support structure as discussed in section 5.3.1.5.

5.3.2.1 Determine business process maturity

Within this context, business process maturity relates to the level to which business process governance (as discussed in section 4.4.1.1) has been defined, including the process level, process model types and process characteristics as can be seen in sections 3.4.1 up to 3.4.4 as well as section 4.4.2 up to and including sub-sections 4.4.2.5. The level to which business processes have been defined and documented has relevance to the level of process maturity as mentioned in section 3.7.1. The different levels of business process maturity are also included in section 3.7.1. The business process maturity level has a close correlation with the business process skills, roles and responsibilities of the business process owners and business process modellers as discussed in sections 3.4.6 and 4.4.1.2, as well as development (sections 3.3.3.6 and 4.3.4) since defined roles and responsibilities translate into a higher level of maturity (section 3.7.1). Defined business process change control governance and procedures are also indicative of the level of business process maturity (sections 3.4.7 and 4.4.3).

Different business process maturity assessment tools are available in the market and a proper analysis of the available tools needs to be done in order to select the most appropriate business process maturity assessment tool for the specific organisation (section 3.7.1). It is essential to determine the business process maturity, as the strategy forward may be impacted on by the business process maturity level. Part of this assessment will be to establish the extent to which existing process tools can, and are integrated. This relates to section 5.4.2.3 reflecting on an integrated business process management tool.

5.3.2.2 Create an understanding for business process management

This links to the difference between business process management and business process improvement (sections 3.5.1, 3.6.1 and 5.3.1.2). Creating an understanding for business process management through uncomplicated communication and training (sections 3.3.3.6, 3.3.3.8, 4.3.4, 4.5.4.1 and 4.5.4.2) is required. This will assist in creating and supporting a uniformed business process understanding within the organisation and its people working remotely. It will also align the focussed development of business process resources (sections 3.4.5.1, 3.3.3.6 and 4.3.4).

5.3.2.3 Establish business process support structure

The business process domain requires a business process support structure to support and grow it. In this context the term “business process support structure” translates into business process governance (section 4.4.1.1) and the defined business process methodology or standards which are discussed in sections 3.4.1 up to 3.4.4 as well as sections 4.4.2.1 up to and including 4.4.2.5. This is necessary in order to establish a common understanding and consistent approach to business processes management, including business processes management in the virtual workplace. The business process management structure and business process governance link to ongoing business process improvement (section 3.6.1) as well as active change realisation (sections 3.3.3.3 and 5.3.1.3), since active change realisation supports the business process domain in its various activities through communication and information sharing (sections 3.3.3.8, 4.5.4.1 and 4.5.4.2).

5.3.2.4 Sustainability of business processes

Sustainability of business processes relates to processes being well defined and documented including inputs, outputs and cycle times (sections 3.4.1 up to 3.4.5, 4.4.2.5 and figure 3.7), which in turn relates to the maturity of the business processes (section 3.7.1). Sustainability further translates into business processes being transparent and

constantly providing repeatable results (sections 3.4.4 and 3.7.1). Sustainability of business processes can be seen as the spin-off result of a defined and structured business process structure and methodology (sections 3.4.1 up to 3.4.4, 4.4.2.1 up to and including 4.4.2.5) which facilitates growth and high-performance ways of working (section 3.4.4), thus supporting business process management in the virtual workplace.

5.3.3 Management: place

The virtual workplace has specific management challenges as the workplace is off-site or remote and sometimes outside the borders of the country. The discussion below focuses on establishing an enabling culture, the types of virtual workplaces, the types of work appropriate for the virtual workplace and infrastructure requirements.

5.3.3.1 Establish an enabling culture

An enabling culture fostering trust, responsibility and accountability is crucial for effective functioning in the virtual workplace, simply because of its remoteness (sections 3.3.3.1, 3.3.3.2 and 4.3.1). This corresponds closely with the management attributes which have been identified (trust, constructive support, involvement, and so forth) and collaborative management style (sections 4.3.2.1 and 4.3.2.2) including the business process support structure as reviewed in sections 5.3.1.5. This enabling culture is crucial as employers have less control over virtual workers and employees should be assessed on output as discussed as part of performance management (sections 3.3.3.7 and 4.3.2.3).

5.3.3.2 Virtual workplace

The distributed or virtual workplace can have distributed locations, such as at home, a hotel or an airport (sections 3.3.1 and 4.5.1), with section 4.5.5 reflecting on the type of workplaces used by participants.

Due to the distributed nature of the virtual workplace, bridging of time and space occurs as discussed as part of the changing nature of work (section 1.1.2), including the people component (in section 4.3) and the time zone examples (given in section 4.5.1). The bridging of time and space with time as an instance in space is depicted in figure 1.3. The advantages offered by the virtual workplace, such as flexibility, decentralisation and time saving due to less commuting can be seen in sections 3.3.6.1 and 4.5.7.1. The disadvantages relating to irregular and longer working hours due to time zones, alienation from the organisation and internet capacity problems are reviewed in sections 3.3.6.2 and 4.5.7.2. Infrastructure related details, namely internet capacity, intranet and server access including the minimum requirements for efficient functioning in the virtual workplace are discussed in sections 3.3.5 and 4.5.2, up to and including section 4.5.2.4. This also has a bearing on feasibility of infrastructure (section 5.3.3.4).

In order to facilitate working in the virtual workplace, cognisance needs to be given to the impact of time zones and the extended working hours that translate from it. Arrangements facilitating the establishment of a support structure that enables employees to meet each other half way needs to taken into account to limit extended working hours due to time zones (section 4.5.1).

Management also needs to consider the type of virtual workplace suitable to its activities as there are a number of viable options, such as those discussed in section 3.3.1.

5.3.3.3 Determine types of work

The virtual workplace suits asynchronous types of work, which is work that does not require face-to-face interaction such as computer programming, technical work, desk support, documentation and business process modelling (sections 3.3.4, 4.5.6 up to and including section 4.5.6.3). Thus, care needs to be taken that the right type of

work is selected for execution in the virtual workplace. The virtual workplace is also viable for synchronous work, which is work with “real-time” interaction although not face-to-face, such as telemarketing.

5.3.3.4 Feasibility of infrastructure

The virtual workplace is heavily dependent on sustained internet capacity as discussed in sections 3.3.5 and 4.5.2.1, as well as access to network servers, with access limitations often imposed on contractors (section 4.5.2.2). Included in the network accessibility challenges are the number of user ids and passwords needed (section 4.5.2.2). The possibility of single sign-on to streamline server access could be investigated, but its feasibility in terms of protection measures needs to be evaluated by every organisation individually. Providing acceptable server access relates back to the support structure as discussed earlier (section 5.3.1.5), as well as to sections 5.3.3.2 and 5.4.3.1 reflecting on the infrastructure requirements and the virtual workplace.

5.3.4 SUMMARY: MANAGEMENT

The management challenges related to the management of people, processes and places in the virtual workplace have a multiple relationship, thus emphasising that the components cannot be viewed in isolation. This connectedness is evident in the establishing of an enabling culture, understanding business process management and the need for a business process support structure together with the infrastructure component. Figure 5.4 gives a summary of this discussion.

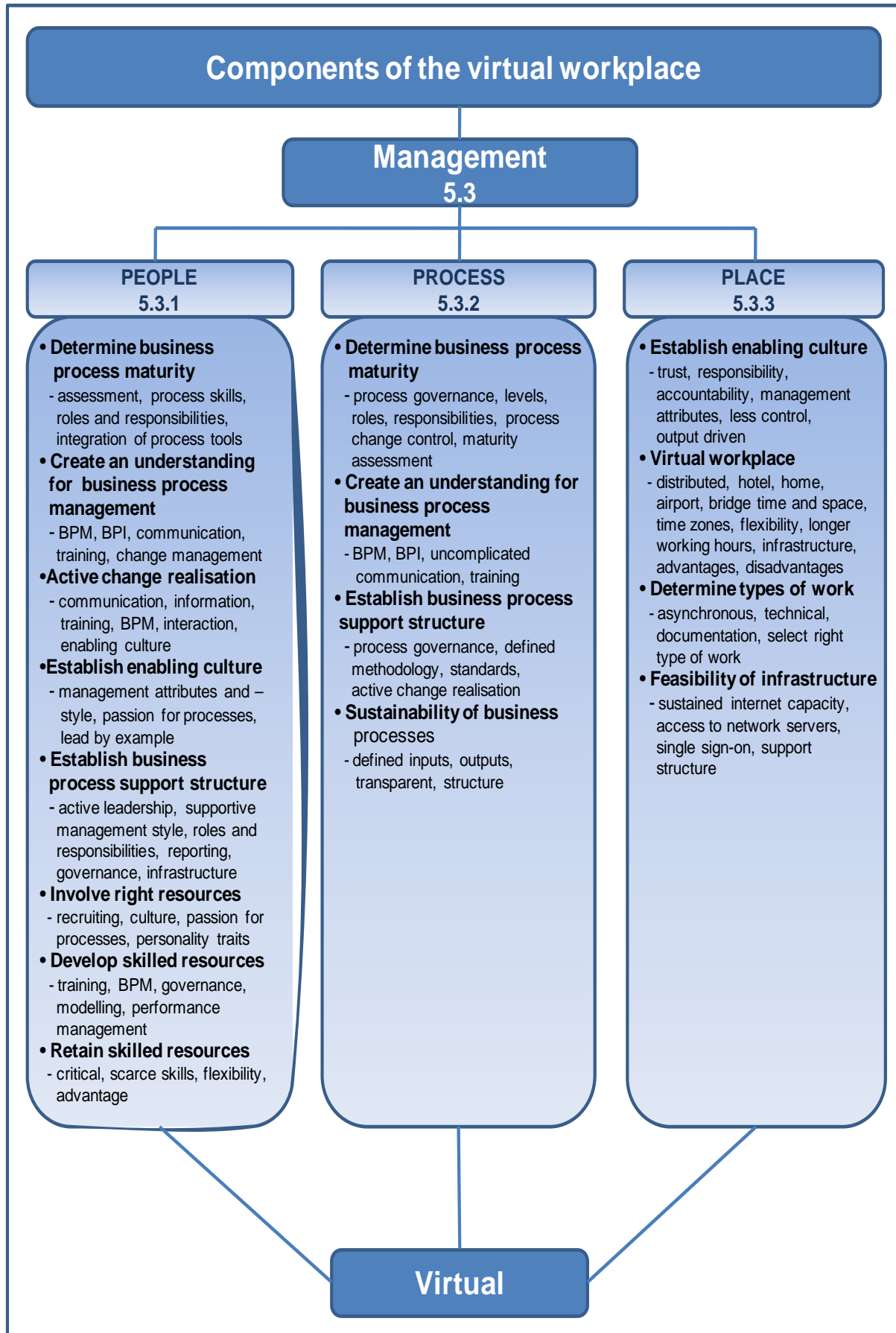


Figure 5.4: Components of the virtual workplace – management summary

5.4 TECHNOLOGY

The following discussion focuses on the technology component related to the management of people, processes and places in the virtual workplace as depicted in figures 5.1 and, 5.3. Technology is covered as an essential part of the virtual environment. The discussion follows the people, processes and places structure according to the central theme of this thesis.

5.4.1 Technology: people

Streamlined network accessibility and the need for integrated business process tools were identified as areas requiring attention and are discussed in chapter 4. It is discussed as part of the people portion related to technology in the section below.

5.4.1.1 Determine streamlined network accessibility

The possibility of streamlining network accessibility through the use of single sign-on, thereby minimising user ids and passwords as reviewed in sections 4.5.2.2 and 5.3.3.4 could be investigated. Part of the management responsibility in this instance relates to the evaluation of security related matters, such as firewalls (sections 3.3.5 and 4.5.2.2). This responsibility is related to section 5.3.1.5, namely the business process support structure. This also has a bearing on the limitations experienced by contractors in comparison to permanent employees with specific reference to accessibility of documentation. The availability of, and access to documentation can be facilitated through the use of shared folders on shared servers (section 4.5.2.2). This corresponds to the need for integrated tools (sections 3.7.1, 4.4.4 and 4.4.2.5) and has a corresponding link to section 5.4.1.2 below. It is also covered in table 3.9 as part of practice of modelling.

5.4.1.2 Determine standardised integrated tools

The need for integrated business process tools is discussed in section 3.7.1 as well as sections 4.4.2.5 and 4.4.4 which reflect on the documenting of business processes and the use of integrated business

process tools. This has a matching link to the proper selection of business process modelling tools as it facilitates standardisation of business process modelling tools (section 4.4.4). This has a further link to section 5.4.2.1, establishing of a single source. The use of integrated business process tools and a single source are also covered in sections 3.4.5 and 3.4.5.1, table 3.9 as part of the strategy and governance, as well as tools and related requirements segments. Table 3.11 also reflects on integrated tools. Shared folders on shared servers aid asynchronous work done in the virtual workplace (sections 3.3.4 and 4.5.4.2) which has relevance to documentation (section 4.5.6.2), as well as the discussion related to network accessibility (sections 3.3.5 and 5.4.1.1). This needs to be read in conjunction with section 5.3.1.1 (which reflects on business process maturity) and section 5.4.2.3 related to the integration of business process management tools.

5.4.1.3 Usage of virtual work tools and social networks

Various virtual work tools which enable synchronous and asynchronous interaction are available today, such as tele- and videoconferencing, email, facsimile and mobile phones as discussed in sections 3.3.3.9, 4.5.4.3 and 4.5.4.4 and table 3.5, depicting representative virtual work tools. The cost associated with some of these tools, such as videoconferencing can be high and it is, therefore, important to get a balance between interaction or the communication required and the cost involved. Low cost social networks, as reviewed in section 4.5.4.4 and portrayed in figure 4.5 are important to today's younger generation employees. The extent to which these networks can and may be used for official purposes in the virtual workplace needs to be evaluated.

5.4.2 Technology: process

The process portion of technology relates to process technologies, such as single source and process support, including data integrity as will be discussed in the following section.

5.4.2.1 **Establish single source**

Establishing single sources of information for documentation, such as a document management system (DMS) and a business process repository, assist in keeping documentation and business processes valid and aid in the distribution of the required documentation as discussed in sections 4.4.2.5, 4.4.3 and 4.5.2.3. Generating documentation from the single business process source for training purposes (section 4.3.4) and information purposes and as part of active change realisation (sections 3.3.3.3, 4.3.5 and 5.3.1.3), is a necessity as it ensures the alignment of training with business activities and change realisation initiatives.

Business process change control (sections 3.4.5, 3.4.7 and 4.4.3, table 3.9, modelling success and maintenance) is supported and streamlined when using a single business process source. This also offers the organisation the opportunity to move towards obtaining an end-to-end view of its business processes as reviewed in section 3.5 as part of business process management. This has a corresponding link with business process maturity, processes, as well as process governance (sections 3.7.1; 4.4 and 4.4.1.1). The topic of a single source for documentation and business processes needs to be reviewed in conjunction with server access (section 5.4.1.2 and 5.4.3.1), including the need for integrated tools (sections 3.4.5, 3.4.5.1, 3.7.1, 4.4.4 and 4.4.2.5), including table 3.9 as part of the strategy and governance, as well as tools and related requirements portions. Table 3.11 can also be seen for the need for the integration of tools. This has a further link to the enabling of distributed work processes which is assisted through shared server access and shared folders (section 4.5.2.2), including distributed communication and workflow as discussed in section 4.5.2.3. The roles and responsibilities supporting business process management is discussed in section 4.4.1.2 with specific reference to the updating and maintenance of the business process repository and the generation of documentation from this single business process source.

5.4.2.2 Determine computer-supported processes

The development of technology over time has led to the development of computer-supported processes, thereby changing the nature of work, as routine, mundane activities became automated. The changing nature of work and the waves of change are discussed in sections 3.2.1 up to and including 3.2.1.6. Computer-supported processes are discussed in terms of the different types of processes, namely manual, semi-automated and automated processes (sections 3.4.1 and 4.4.2.3) as well as process characteristics (sections 3.4.4 and 4.4.2.4). Computer-supported processes go hand in hand with standard processes which assist in streamlining activities and are thus essential for business process support in the virtual workplace (section 4.4.2.4).

5.4.2.3 Integrated business process tools

Integrated business process management tools have relevance to business process maturity as discussed in section 3.7.1. Integrated business process tools are covered in the business process strategy and governance in table 3.9, as well as in sections 3.4.5, 3.4.5.1 and 4.4.1.1. Section 4.4.1.1 also has a bearing on standardisation. Standardisation and integration of tools are also covered in table 3.11 under the tactical and operational columns. Standardisation and integration of business process tools are crucial to business process support in the virtual workplace. Business process tools embracing a single repository of business process information are discussed in sections 4.4.4 and 5.4.2.2 and covered in table 3.9 as part of strategy and governance. This has a linkage to sections 5.3.1.1 and 5.3.2.1 which reflect on the relationship between management, technology and practice.

5.4.2.4 Ensure data integrity

Process governance (section 4.4.1.1) assists in ensuring data integrity when using a single source or single business process repository. Data integrity is further supported through quality assurance, as executed by the business process custodian related to the roles and responsibilities

(section 4.4.1.2). Ensuring data integrity is mandatory, irrespective of the environment. Although data integrity is aided by quality assurance, it has not been covered specifically in the literature. Data integrity has been listed in section 6.12 as part of future research topics.

5.4.3 Technology: place

Technology supporting the virtual workplace relates to the feasibility of infrastructure and has a bearing on the management component discussed in section 5.3.3.4.

5.4.3.1 Feasibility of infrastructure

Feasibility of infrastructure supporting the virtual workplace relates to stable internet connectivity (sections 3.3.5 and 4.5.2.1), including remote accessibility of business process tools discussed as part of server access (section 4.5.2.3) and standardised integrated tools (sections 5.4.1.2 and 5.4.2.3). A supportive infrastructure has different technologies, such as 3G and video-conferencing. The cost involved in obtaining and using these technologies needs to be balanced with the benefit obtained as reflected upon in section 4.5.2.1. This is also addressed in sections 4.5.4.4 and 5.4.1.3 in the discussion related to virtual work tools. This also has a corresponding link to the type of workplaces as discussed in section 3.3.2.

5.4.3.2 Type of workplace

Different types of virtual workplaces have been discussed (section 3.3.2), such as telework centres which can address infrastructure related matters.

5.4.4 SUMMARY: TECHNOLOGY

The technology component's challenges related to the management of people, processes and places in the virtual workplace refer to streamlined network accessibility and establishing of an integrated, single source of information accessible from remote locations. There is a connection with the people, processes and places portions. This link emphasises that this topic

cannot be viewed in isolation The technology component is summarised in figure 5.5.

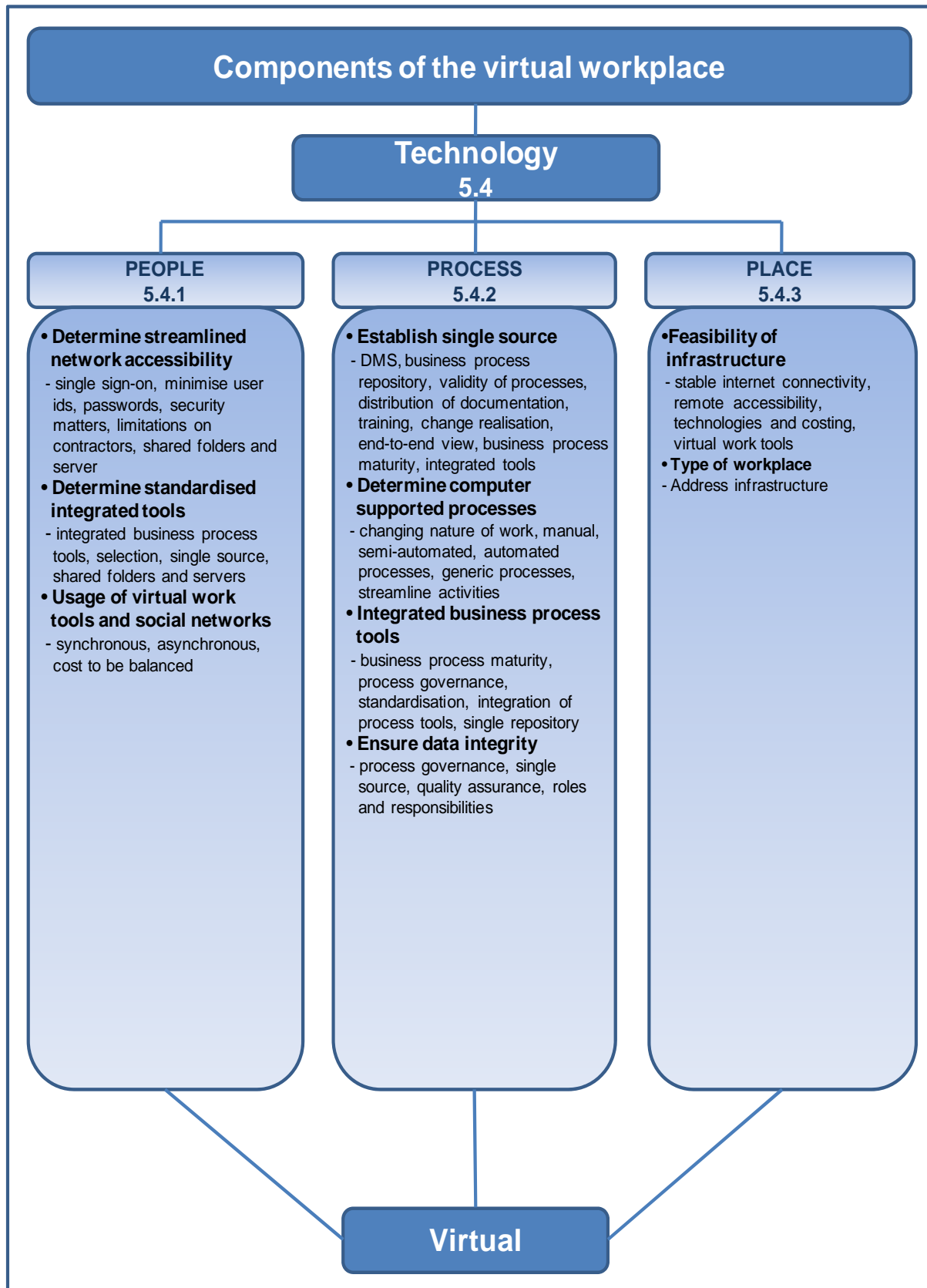


Figure 5.5: Components of the virtual workplace – technology summary

5.5 PRACTICE

The discussion in the next section focuses on the third component of the management of people, processes and places in the virtual workplace, namely practice and is depicted in figures 5.1 and 5.3. The discussion follows the central theme of this thesis, namely people, processes and places.

5.5.1 Practice: people

Creating an understanding of business process management, developing skilled resources and having clear communication have been identified as areas requiring attention (chapter 4). These areas are discussed as part of the people portion embedded in the practice component below.

5.5.1.1 Create an understanding for business process management

Creating an understanding for business processes, business process management and business process improvement (sections 3.4.1, 3.5.1 and 3.6.1) is required in order to empower people to understand the business process domain, its requirements and how it is supported through business process methodology and governance (sections 3.4.5 and 4.4.1.1). It also links to sections 5.3.1.2 and 5.3.2.2 as part of the management component. Empowering of employees as part of creating an understanding for business processes is done through training and development (sections 3.3.3.6 and 4.3.4) and structured communication (section 3.3.3.8).

Creating an understanding for business processes also has a bearing on business process levels and business process model types as discussed in sections 3.4.2, 3.4.3, 4.4.2.1 and 4.4.2.2 respectively. This also has a relationship with the understanding of the different audiences and their business process needs (sections 3.4.1, 3.4.5, 3.4.5.1, 4.4.2.1 and 4.4.2.3). Table 3.9 reflects on different audiences' requirements as part of the strategy and governance as well as practice of modelling sections. Understanding business processes in the virtual workplace is essential, since a lot of work is done remotely

through asynchronous interaction (sections 3.3.3.8 and 4.5.4.2). Thus, the better the understanding, the better the results can be.

5.5.1.2 Develop skilled resources

In this context skilled resources refer to people possessing business process modelling and analysis skills, including an understanding of the business process methodology used by the organisation. This is covered in the discussions on development (sections 3.3.3.6 and 4.3.4), process governance (section 4.4.1.1), as well as the developing of skilled resources (section 5.3.1.7). The development of skilled resources can be done formally through classroom facilitated training or informally through the internet with electronic courses and computer controlled exercises (sections 3.3.3.6 and 4.3.4). The issue of skilled resources is also covered in table 3.9 under stakeholders. Skilled expertise is also covered as part of business process management issues in table 3.11.

5.5.1.3 Encourage clear communication

Clear-cut communication is crucial for effective management of people, processes and places in the virtual workplace touching on all levels and on all activities (sections 4.5.4.1 and 4.5.4.2). The communication pointers (section 3.3.3.8) can be used for synchronous communication, that is face-to-face or real time communication and for asynchronous communication or indirect communication which is via electronic media such as email. The different types of synchronous and asynchronous communication methods are also indicated in table 3.5 reflecting the different types of virtual work tools. The essence is very unambiguous communication.

5.5.2 Practice: process

The follow section covers process technology, licensing and governance requirements as identified.

5.5.2.1 Integrated business process management tools

The integration of business process tools is helpful to support business process activities. It recounts business process maturity as discussed in section 3.7.1, including section 5.4.2.3. This also has a link to standardisation and business process governance (sections 3.4.5, 3.4.5.1 and 4.4.1.1), emphasising a single repository or source for business processes (section 4.4.4 and 5.4.2.2). It is also covered in the strategy and governance portions of table 3.9, as well as in table 3.11 as part of operational matters. Reviewing and managing of business process licences has an impact on business process activities in the virtual workplace (section 5.5.2.2). This can be read in conjunction with having a business process modelling tool suitable for the organisation's requirements as covered in table 3.9, tool and related requirements.

5.5.2.2 Need for business process tool licences

Hand in hand with the availability of business process tool licences is the evaluation and selection of a proper business process modelling tool fitting the organisations needs as reviewed in section 4.4.4 as part of process tools. It is vital for an organisation to have the correct selection of business process tools and licences available, as it is part and parcel of working towards a single repository containing business processes modelled according to a standardised methodology. The extent to which business process management tools will be integrated relates to the business process maturity as discussed in sections 3.7.1 and 5.4.2.3. Table 3.9, tool and related requirements, also reflects on having the appropriate business process modelling tool fitting the organisation's needs, including table 3.11. This means that a higher level of maturity will be evident in a standardised, integrated architectural framework.

5.5.2.3 Need for business process governance

Business process governance as discussed in section 4.4.1.1 focuses on the necessity of business process standards, including the roles and responsibilities of business process owners and business process

modellers (sections 3.4.6 and 4.4.1.2). It is essential that a business process methodology be established that defines business process levels, business process model types, business process characteristics and the manner in which business processes need to be documented. This can be seen in sections 3.4.2 up to 3.4.5.1 and section 4.4.2 up to and including section 4.4.2.5. The lack of such a methodology will result in disparate business processes defeating the aim of having a uniform end-to-end view of the organisation's business processes. The lack of business process governance is covered in table 3.9, strategy and governance, as well as table 3.11 as part of strategy. Adherence to the business process methodology is crucial and should be mandatory as part of business process governance as discussed in sections 4.4.1 and 4.4.1.1, as well as business process change control (section 4.4.3) and table 3.9 in practice of modelling. Not adhering to the standards and methodology negates the effort of establishing business process management.

5.5.2.4 Need for business process change control

Formal business process change control needs to be in place as changes to business processes resulting from activities such as mergers, acquisitions, and so forth (sections 3.4.7 and 4.4.3) impact on work procedures, training (sections 3.3.3.6 and 4.3.4) and active change realisation as discussed in sections 3.3.3.3, 4.3.5 and 5.3.1.4 respectively. This emphasises the relationship between people, processes and places. It also has a close link to the continuous, structured approach to improving the organisation's business processes (sections 3.5.1 and 3.6.1).

5.5.3 Practice: place

Feasibility of infrastructure and help desk support as identified is discussed in the following section.

5.5.3.1 Feasibility of infrastructure

Feasibility of infrastructure and difficulties experienced relate to different matters, such as sustainable internet connectivity (sections 3.3.5 and 4.5.2.1), and accessibility of the intranet and remote servers (section 4.5.2.2).

Although sustainable internet connectivity is beyond the control of the employee and management, providing acceptable server access can be addressed as part of the support structure discussed in 5.3.1.5, which also links to single sign-on in section 5.4.2.1. Infrastructure requirements are also discussed in sections 3.3.5 and 5.4.3.1. This links to section 5.3.3.3 in the type of work that can be done.

5.5.3.2 Help desk support

Virtual workers require a help desk to support them with business process modelling tool related problems (section 4.5.3.2) as user manuals do not provide all the answers. This also has a link to the support structure as discussed in section 5.3.1.5. Help desk support relating to people, processes and places as such has not been covered in the literature.

5.5.4 SUMMARY: PRACTICE

The practice portion discussed the need to understand business process management and addressed the need for business process governance and a standardised business process methodology. The relationship with business process management tools, licences and the help desk support is also evident. Figure 5.6 depicts and summarises the discussion above.

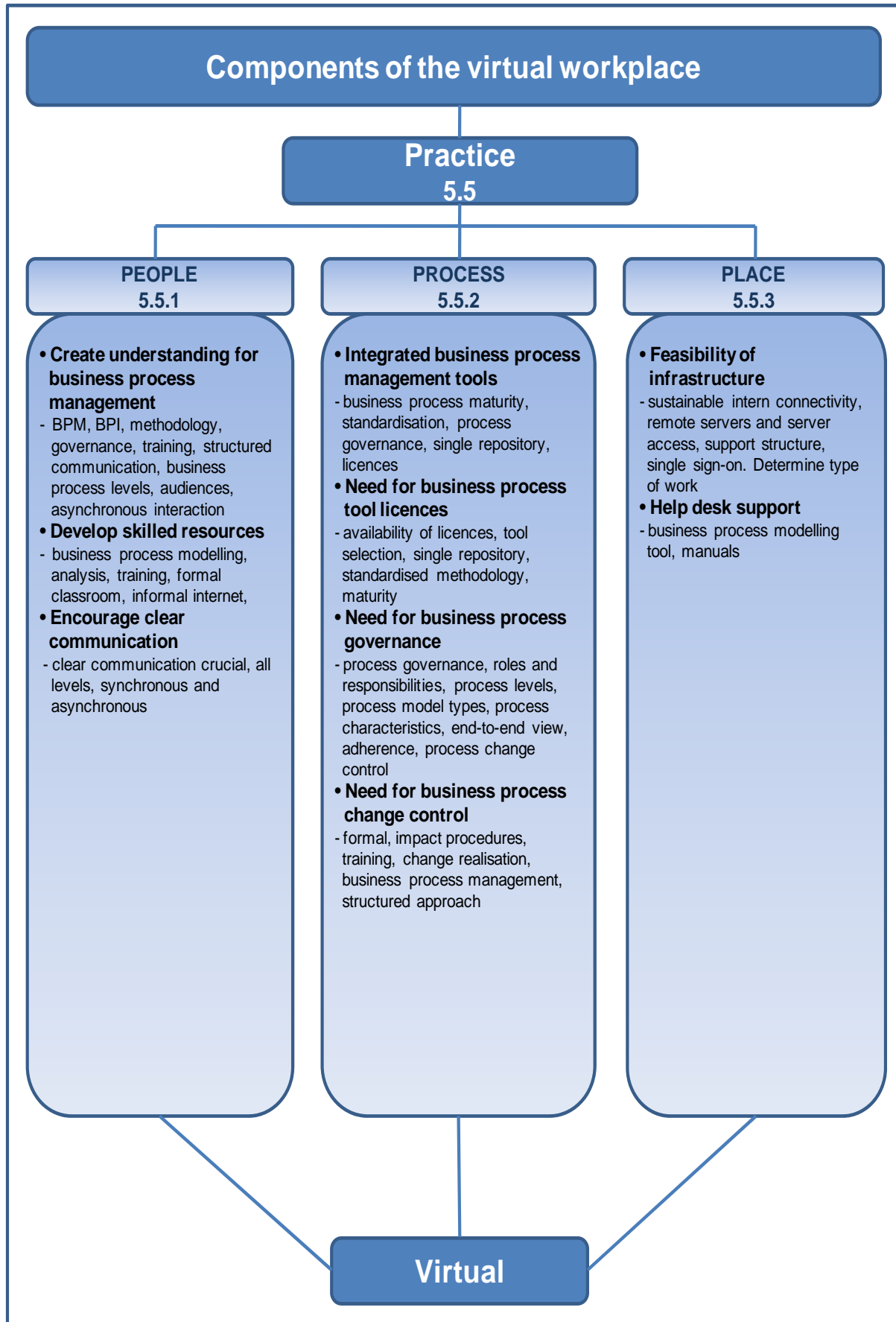


Figure 5.6: Components of the virtual workplace – practice summary

5.6 REFLECTING ON THE MANAGEMENT FRAMEWORK

The proposed framework for the management of people, processes and places in the virtual workplace has been developed based on the management, technology and practice components, thereby providing structure to people, processes and places as part of the virtual workplace. This framework addresses the requirements and concerns related to people, processes and places identified in the literature and research conducted. The relationship between people, processes and places components forms the core of this framework, thereby emphasising the fact that the components are not viewed in isolation.

The management, technology and practice components are also known as categories when referred to in terms of data triangulations. Data triangulation is discussed in section 6.6.6, data analysis. The management, technology and practice categories were developed and discussed with the focus on the relationship between the people, processes and places concepts (according to section 6.6.6) within each of the categories. Within each of the people, processes and places concepts, certain areas of concern were identified based on the research conducted. These areas of concern formed the building blocks of the people, processes and places concepts. The building blocks and concepts relevant to each of the categories, namely management, technology and practice have been discussed and are summarised in figures 5.3, 5.4 and 5.5.

This management framework was developed following the Extended Hermeneutic Circle of Learning as developed and discussed in chapter 2. When viewing this proposed framework for the management of people, processes and places in the virtual workplace from a hermeneutic learning experience the following can be stated. An initial understanding of the parts (people, processes and places) and the whole (virtual workplace) was formed through the literature study. The research questions were formulated and research was conducted into the people, processes and places components related to the virtual workplace. Through a constant movement between the parts (people, processes and places) an understanding of the relationship

between the parts has been obtained. By reflecting on this new understanding of the relationship between the parts on the whole, that is the virtual workplace; a deeper understanding of the whole in terms of the parts and the parts in context of the whole has been created. Thus, a deeper and new understanding of the relationship between people, processes and places and the management thereof in the virtual workplace has been created. This new understanding led to the development of the proposed framework for the management of people, processes and places in the virtual workplace as discussed in this chapter. The understanding created with reference to the relationship between the people, processes and places categories as derived from the discussion in this chapter is depicted in figure 5.7. The gap identified and depicted in figure 3.1 has now been covered.

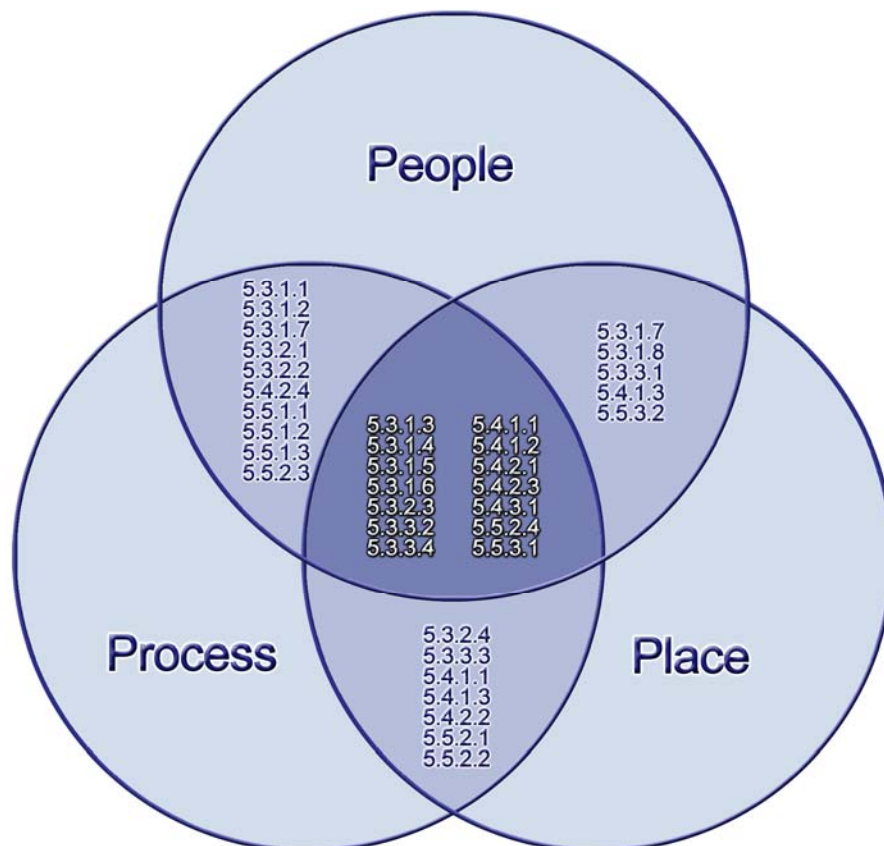


Figure 5.7: Relationship between people, processes and places in context of the virtual workplace

A detailed discussion on the application of the Extended Hermeneutic Circle of Learning is covered in chapter 6.

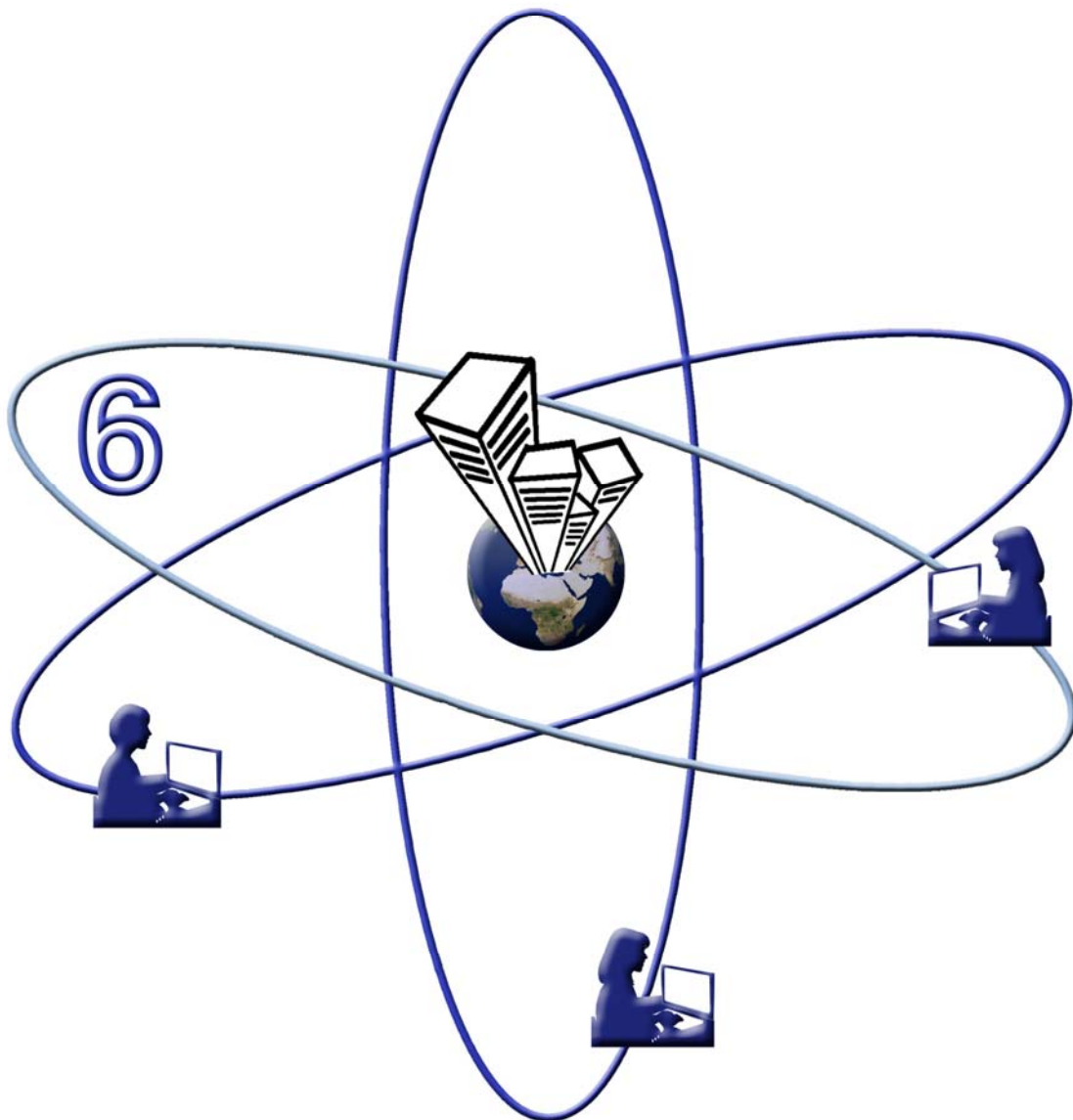
5.7 CONCLUSION

The newly developed framework for the management of people, processes and places in the virtual workplace was discussed based on the management, technology and practice components as depicted in figures 5.1, 5.3, 5.4, 5.5 and 5.6. Each component was discussed following the central theme of this thesis, namely people, processes and places. The relationships identified and discussed, such as business process maturity, understanding of the difference between business process management and business process improvement, governance, support structure, integration of business process tools and feasibility of infrastructure is evident from the discussion and can be seen in figure 5.7. The framework covered the people, processes and places components, thus providing structure to the management of people, processes and places in the virtual workplace.



The management of people, processes and places in the virtual workplace

CONCLUSION



6.0 CONCLUSION

6.1 INTRODUCTION

The evolvement of the workplace towards the virtual workplace led to its own unique challenges, challenges relating to people, business process and workplace management.

The literature overview conducted and discussed in chapter 3 covered the changing nature of work through the different waves of change leading to the evolvement of the virtual workplace, people in the virtual workplace, including the types of virtual workplaces, its advantages and disadvantages. This was followed by a discussion of the types, levels, characteristics, modelling and roles and responsibilities related to business processes. The waves of change relating to business process management, business process improvement and business process maturity are included in the latter part of chapter 3.

The Extended Hermeneutic Circle of Learning was developed and used as guideline for the research conducted into the **people, processes and places** components of the virtual workplace. The research conducted is discussed in chapter 4, followed by the proposed framework to support the management of people, processes and places in the virtual workplace in chapter 5.

This chapter brings to a close this thesis and covers the application of the different phases of the Extended Hermeneutic Circle of Learning, namely the literature review, selecting of the cases and data collection. This is followed by data ordering, data analysis and completed with the literature comparison. This is followed by an evaluation of the research based on the seven principles for interpretive field studies and the answering of the research questions. The research questions are answered in chapter 5 and listed in table 6.1, including the sub-questions. The research is also evaluated against Klein and Meyers (1999:67–94) and Walsham and Sahay (1999:39–66). The contributions made by this study, its limitations and future research topics conclude this chapter.

6.2 THE EXTENDED HERMEUNETIC CIRCLE OF LEARNING

The Extended Hermeneutic Circle of Learning as discussed in chapter 2 was developed as research framework. Its application and results are discussed as the concluding chapter of this thesis.

6.3 PHASE 1: RESEARCH DESIGN

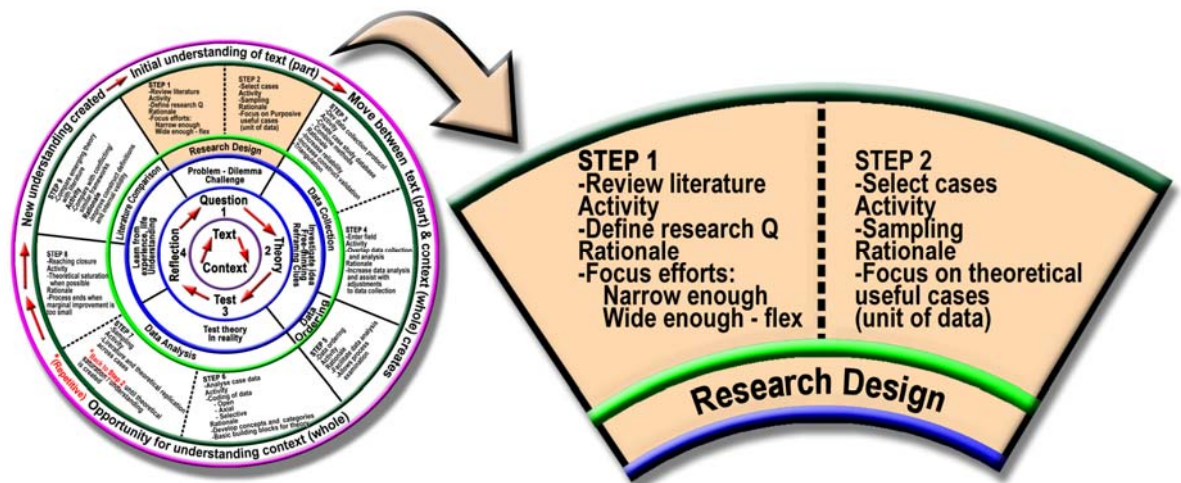


Figure 6.1: Extended Hermeneutic Circle of Learning – research design

6.3.1 Step 1: Review of literature

The research effort was focussed through an extensive literature study in chapter 3 as required in step 1 of the Extended Hermeneutic Circle of Learning. It covered the changing nature of work that led to the establishment of the virtual workplace. This was followed by a discussion on the types of virtual workplaces, people in the virtual workplace, including the advantages and disadvantages of the virtual workplace. Business processes, including its levels and characteristics, business process modelling, business process management as well as business process improvement and maturity were covered in the latter part of chapter 3.

This literature review provided background to enhance the understanding of the main and sub research questions. The three main research questions were defined with the emphasis on the three components related to the

management of people, processes and places in the virtual workplace. The interview questions each focussed on these components, thus providing structure to the sub research questions.

The interview questions were narrow enough to focus on the areas of research within the three components. The questions related to the people component focussed on the experiences in the virtual workplace with regard to business processes, management style required and management principles. Questions related to business process characteristics and business process change control was included in the process component. The place component's questions addressed unique challenges, defining supporting business processes and the most common virtual workplace used by the participants. The questions were also broad enough, thereby providing flexibility for invaluable discussions and sharing of experiences.

The interview questions are included in chapter 2, table 2.2.

6.3.2 Step 2: Selecting cases

Purposive sampling assisted in focussing the research effort for this thesis. The literature overview covered the changing nature of work with the evolvement of the workplace through its different waves including the virtual workplace, business processes and business process management.

The cases (footnote 1) used in this research were structured as follows:

6.3.2.1 Literature overview

The literature overview in chapter 3 constituted the first case, providing background on the changing nature of work followed by the evolvement of the virtual workplace, people in the virtual workplace and the types of virtual workplaces. The advantages and disadvantages of the virtual workplace were also covered. Business processes, its levels and characteristics, business process modelling, business process management, including business process improvement and maturity, were included in the literature review.

6.3.2.2 Case study

This was followed by a case study conducted with a research company in Alabama, USA. This company is referred to as Company F in chapter 4 and is included in appendix A. The case study focussed on management in the virtual workplace including the organisational structure. Business process management and the business processes supporting the virtual workplace were included in the case study. Performance management, recruitment, training, communication and interaction were also covered. The advantages and disadvantages concluded the case study. The purpose of the case study was to obtain the knowhow and experiences of an international company.

Advantage

The advantage of the case study used is that it provided structured detail related to the research for this thesis, that is the virtual workplace including its advantages and disadvantages experienced, organisational culture and structure and business process details. Thus, this case study supported the qualitative research conducted and provided rich information on experiences in the virtual workplace. This correlates with the advantage stated by Cooper and Schindler (2001:138).

Disadvantage

The possible disadvantage of a case study that it can be “*scientifically worthless*” as it may not meet minimal design requirements is noted, although it still has a significant scientific role (Cooper & Schindler, 2001:138). The case study used as a data collection method in this research provided significant detail and therefore fulfilled a significant role. This stated disadvantage is thus not considered.

6.3.2.3 Focus group discussions

The third case comprised of the focus group discussions. The focus groups consisted of four to five participants who shared their experiences and challenges related to management, business

processes and challenges in the virtual workplace. The participants were business process experts, business process analysts and modellers working virtual. The questions as referred to in section 6.2.2.1 and included in chapter 2 were used during the focus group discussions.

Advantage

The advantage of gathering qualitative data from a number of participants at the same time was evident from the focus group discussions. It was a relative inexpensive method of research as the only direct cost involved related to travelling. This correlates with the advantages as discussed in section 2.3.1.1 as part of focus groups. The enthusiastic group discussions provided a wealth of information, thus supporting the qualitative research done for this thesis.

Disadvantage

The disadvantage of focus group discussion relate to a limited number of questions, usually not more than 10 questions in no more than two hours, translating into focused time management. This correlates with the disadvantage stated in section 2.3.1.1 which reflects on focus group discussions. Power play was not evident due to assistance rendered by the participating companies with the selection of participants.

6.3.2.4 Interviews

Interviews were conducted with individual business process experts, business process analysts and business process researchers. The individuals worked in both the virtual and traditional workplaces. The same set of questions was used during the interviews. The interviews constitute the fourth case.

Advantage

The interactive interviews provided detailed information, thereby supporting the qualitative research in the same manner as that of the focus group discussions.

Disadvantage

The disadvantage experienced in terms of interviews was the time involved to obtain the same volume of qualitative data as what would have been obtained as part of a focus group discussion. However, it still provided invaluable qualitative data.

6.3.2.5

Weblog

A weblog, also known as a blog, was used to demonstrate the use of technology to cross time and place boundaries. The weblog posts and comments correlated with the people, processes and places components of the research.

Advantage

The weblog was quick and easy to create and did not require expenses other than a computer and internet connectivity. As bloggers' participation is not time and place dependent it provided flexibility benefits as discussed in section 2.3.1.2. The comments posted to the weblog were concise and of good quality, thus making it a usable tool.

Disadvantage

The disadvantage experienced was first and foremost the time it took to get the weblog in circulation. It can take several weeks for the weblog to generate user traffic. Constant effort is needed to distribute the weblog and encourage participation. It also does not provide face-to-face interaction as is the case with focus groups and interviews. Questions posted to the weblog need to be kept short (having no more than five words) as was suggested by a research participant.

6.3.3 SUMMARY

The literature overview, case study, focus group discussions and interviews supported the qualitative research conducted for this thesis. The selection of a weblog needs to be considered carefully due to the uncontrollable nature of participation and the time it takes to generate user traffic.

The combination of detail discussions in the focus groups and interviews, the descriptive case study, as well as the weblog comments assisted in obtaining a high level of information richness, thereby contributing to the research conducted for this thesis.

6.4 PHASE 2: DATA COLLECTION

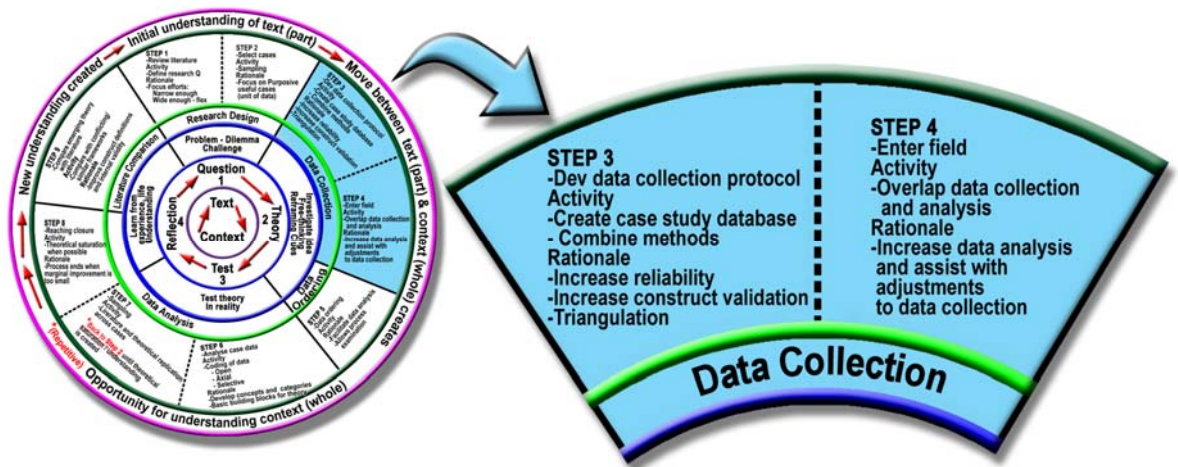


Figure 6.2: Extended Hermeneutic Circle of Learning – data collection

6.4.1 Step 3: Develop rigorous data collection protocol

This step involved the creation of a structure for the participants and organisations contributing to the research. The structure provided guidance with regard to research ethics. It also assisted in ensuring anonymity of the participants and the companies they represented. Participants were allocated numerical numbers which was used for transcribing purposes. An alphabetical letter was assigned to the organisations represented, thus ensuring anonymity for the organisations.

Participation in the focus groups discussions and interviews was voluntary. Participants were ensured that no personal details would be made available to any other party at any point in time and any references to any participants would be anonymous. Participants were also assured that, should they want to discontinue their participation in the focus group discussion or interviews, they would be free to do so.

The questions used during the focus group discussion and interviews have been structured and grouped according to the defined components, namely **people, processes and places** which is in correlation with the central theme of this thesis. The questions have been listed in chapter 2, table 2.2 and are also discussed in section 6.3.1.

A weblog was created and used for online participation and data collection. Participants could post comments anonymously or use a name of their choice. Data collected through the weblog would also be referenced, excluding any names and other references of personal nature. The weblog was created using standard software available from Google. The weblog featured the purpose of the weblog on the home page. All email invitations for participation included the purpose of the weblog, namely that research was conducted into the management of people, processes and places in the virtual workplace as part of meeting the requirements towards obtaining a PhD degree. The statement also included the name of the university and the researcher's details.

Weblog statistics covering various aspects of the weblog is available in Appendix C. Standard weblog analytics as provided by Google were used for the generation of the weblog statistical reports. The statistics are provided for information purposes and to demonstrate how the boundaries related to time and place became irrelevant. The reports reflect on the number of visitors, the countries from which the visitors were and the number of visits on the site. No other statistical analysis will be done, therefore the statistical detail would not be impacting on the qualitative nature of the research.

A qualitative approach would be followed with triangulation of evidence according to the people, processes and places components. Keeping to these components is in correlation with the theme of this thesis and assisted in creating an understanding of the relationships in the collected data.

Advantage

The advantage of having a defined data collection protocol is that it provides structure and guidance to the researcher and the participants, thereby minimising possible misunderstanding. The protocol defined for this research set the structure for the focus group discussions and interviews clarifying expectations and minimising confusion.

Disadvantage

The researcher did not experience disadvantages as part of developing and using of proper protocol.

6.4.2 Step 4: Enter the field

The activity of data collection consisted of focus group discussions and interviews conducted with business process experts, business process analysts and business process researchers from the telecommunications, financial, consulting and research industries. Focus group participants were identified by the organisations and the sessions were scheduled at venues convenient for the companies and research participants. Tables 2.3, 2.4, 2.6, 2.7, 2.8 and 2.9 contain the profiles of the participating companies and research participants. The complete list of participants is included in appendix B.

Before the focus group discussion and interviews commenced, the data collection protocol, purpose and focus of the research were explained to the participants. The participants' consent on the recording of the focus group discussions and interviews were obtained before the digital tape recording and video recordings commenced.

This was followed by discussions based on the related components, namely people, processes and places following the questions stipulated in table 2.2. The sound and visuals of the recordings were checked as soon as the discussions were concluded. Backup material was created of all the focus group discussions and interviews. Transcripts were done directly after completion of the discussions, as that provided the best opportunity to reflect on the discussions. Participants and organisations were referenced according to the numerical and alphabetical numbers allocated to them.

The weblog was used for online participation. Themes corresponding with the research components were posted on the blog. Comments received on these themes were archived and printed before being used in combination with the data collected during the focus group discussion and interviews. The weblog was used during the period 16 April to 31 July 2010.

Advantage

The focus group discussions and interviews were conducted in a focussed and structured manner following the questions formulated earlier. This ensured consistency, which was important for the gathering of data relevant to the management of people, processes and places in the virtual workplace. The focus group discussions facilitated the gathering of qualitative data from a number of participants at the same time. Due to the interview, participants were more flexible and the interviews were arranged with more ease. The use of a weblog has the advantages of being inexpensive and allowing participation at any time from any place as discussed in section 2.3.1.2, covering weblogs. Focussed and to the point comments were received on the weblog. Information richness was obtained through the combination of detail discussions in the focus groups, interviews, the descriptive case study and the weblog comments. This richness of the information assisted in creating meaning and understanding of the people, processes and places relationship.

Disadvantage

The use of a weblog needs to be reviewed based on the time and effort it takes to get the weblog into circulation and generate user traffic.

6.4.3 SUMMARY

The research protocol assisted in defining the structure and provided guidance to the researcher with regards to research ethics. This was important, as all the participants involved needed to understand the intended research, research method and their role in the research. The focus group discussions and interviews were conducted after the research intent was explained and all the discussions were recorded with the consent of the participants. Backups were made of the recordings, including the transcripts. This was followed by the data ordering as discussed below.

6.5 PHASE 3: DATA ORDERING

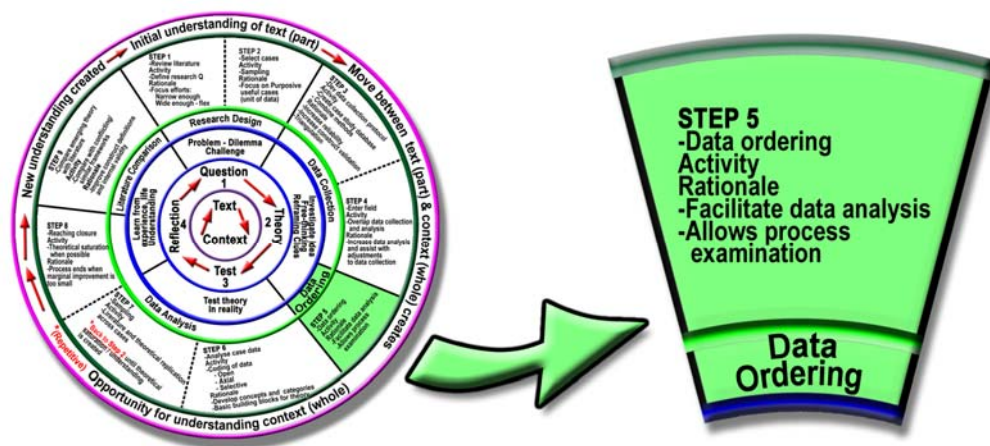


Figure 6.3: Extended Hermeneutic Circle of Learning – data ordering

6.5.1 Step 5: Data ordering

In this step the recorded focus group discussions and interviews were transcribed in the same sequence it was conducted. A separate transcript was made for each focus group discussion and interview conducted. The participants were referenced in the transcripts according to the numerical number allocated to them and the organisation according to the alphabetical number.

The case study conducted with participating Company F was endorsed. This endorsement including the case study was printed for record purposes and

further use during the data analysis. The case study has been included in appendix A.

The weblog comments were collated and printed for record purposes as well as data analysis. Weblog statistics were generated using standard software available from Google analytics. These statistics have been included for information purposes as discussed in section 6.4.1. See appendix C for weblog statistics.

Email communications related to the arrangement of the focus group discussions and interviews were printed for record purposes. A list of the participants was compiled and has been included as appendix B. Company profiles were completed for each of the participating companies and are available in tables 2.3, 2.4, 2.6, 2.7 and 2.8 respectively.

This activity was followed with the data analysis as discussed in section 6.6.1.

Advantage

This structured approach assisted in facilitating data analysis in a consistent manner. Transcribing of recording is a time consuming process, but deemed a vital part of data ordering, since it provides data in a written format which was important for data analysis. The written format enabled the researcher to categorise the concepts identified. The result of the data ordering activity was to have all the data sources in written format.

Disadvantage

Data ordering as such can be seen as a time consuming task although it is crucial for data analysis. Thus, time constraints need to be taken into account.

6.5.2 SUMMARY

Properly recorded focus group discussion and interviews were transcribed, ensuring anonymity of participants and organisations through the use of

numerical numbers and alphabetical letters. Weblog comments were collated and the case study that was conducted, was endorsed. Supporting documentation, such as the company profiles and participation list have been compiled. The data ordering activity resulted in having the data sources and supporting documentation in written format.

6.6 PHASE 4: DATA ANALYSIS

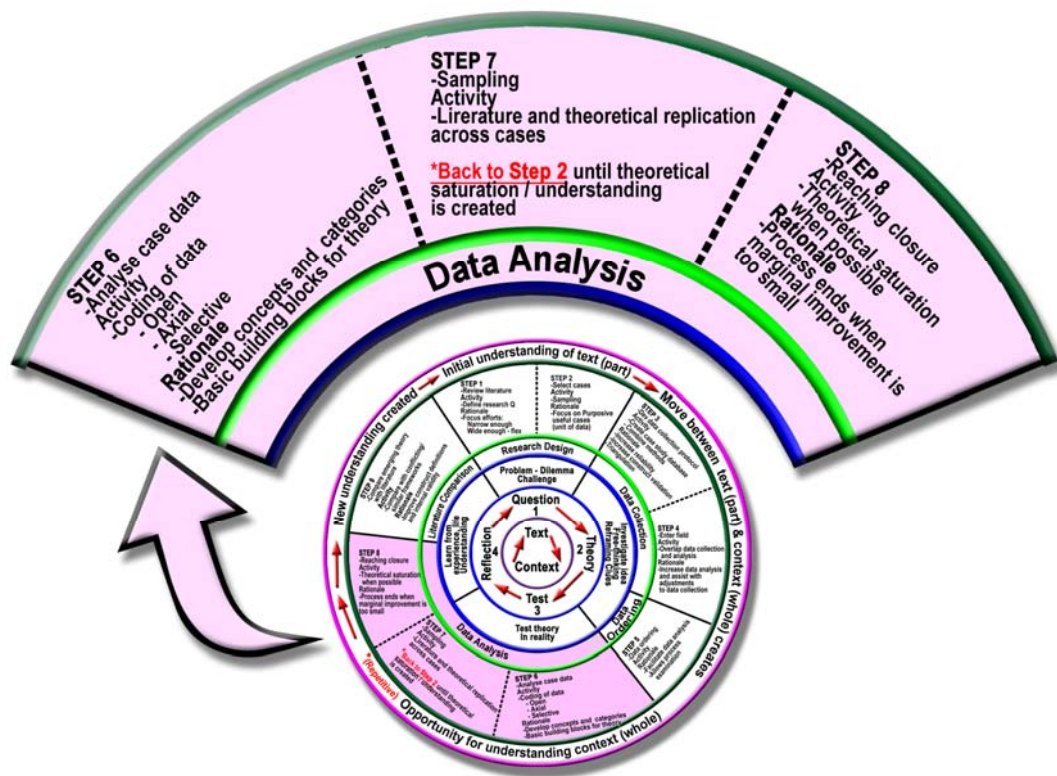


Figure 6.4: Extended Hermeneutic Circle of Learning – data analysis

6.6.1 Step 6: Analyse case data

The transcriptions of the recorded focus group discussions and interviews were coded following an open coding approach. This relates to questions being asked, answers being provided and the answers being compared. Data analysis commenced as follows:

- The data obtained from the case study conducted with a research company in Alabama, USA, was analysed. The case study is referenced as case number two in section 6.3.2.2,
- the data compiled as part of the focus group discussions was analysed (case number three in section 6.3.2.3),
- the data accumulated during the interviews was analysed (case number four in section 6.3.2.4), and
- the data generated by the weblog, as discussed in section 6.3.2.5, was analysed.

During the coding process the data was broken down into concepts related to the three components, namely people, processes and places. These components were identified per data source, namely the case study, transcripts and weblog. It should be noted that throughout the thesis reference has been made to people, processes and places as components; although in terms of triangulation of data it is called categories. Thus, for the purpose of this discussion reference is made to categories and concepts. The people, processes and places categories with its concepts have been summarised in figure 4.2.

The people, processes and places categories with its related concepts became the first set of building blocks of the framework for the management of people, processes and places in the virtual workplace. The people, processes and places categories and its concepts were discussed in chapter 4 and have been summarised in figures 4.3, 4.4 and 4.6 respectively.

The relationship between the three categories became evident which led to the deriving of the management, technology and practice categories. The people, processes and places categories as initially defined now became the concepts upon which the management, technology and practice categories were defined. Thus, the development of the management, technology and practice categories structured the people, processes and places concepts into the management framework for people, processes and places in the virtual workplace.

The management of people, processes and places in the virtual workplace framework consisting of the management, technology and practice categories have been summarised in figures 5.5, 5.7 and 5.9.

6.6.2 Step 7: Purposive sampling

The concepts and categories as identified during the coding of the transcripts and weblog were compared with the case study as stated in step 2, section 6.3.2. This comparison was done to confirm and extend the concepts related to the people, processes and places categories. The relationship between these categories became evident and formed the initial framework for the management of people, processes and places. The relationship of these categories as discussed in section 6.6.1 led to the construction of the management, technology and practice categories, thereby establishing the framework for the management of people, processes and places in the virtual workplace.

The conceptualisation and description of the management framework is discussed in chapter 5, including graphical presentations of the concepts and categories. These graphical presentations also support the core theme of the research, namely people, processes and places.

Steps 2 to 7 were repeated until theoretical saturation was achieved as described below:

- Listening during focus groups discussion and interviews. Bullet notes of key concepts were made.
- This was followed by the transcribing of the focus group discussions and interviews. Key concepts were highlighted by underlining it.
- The transcripts were analysed to identify the concepts and categories, including referencing to the initial concepts identified.

- The concepts related to the people, processes and places categories were identified and grouped together. These are displayed graphically according to the figures indicated in section 6.6.1.
- Further analysis of these people, processes and places categories led to the deriving of the management, technology and practice categories. The people, processes and places categories initially defined, now became the concepts underpinning the management, technology and practice categories. These categories formed the basis from which the management framework for the management of people, processes and places in the virtual workplace was derived. The management, technology and practice categories with its related concepts are depicted the figures listed in section 6.6.1.

Repeating of these steps translates into moving between the parts (people, processes and places) and the whole (management in the virtual workplace) thereby interpreting it in context of the parts and the whole. Thus, understanding has been created, using interpretivism as the philosophical basis with the hermeneutic circle as discussed in chapter 2.

6.6.3 Step 8: Reaching closure

Closure was reached when the concepts and categorisation became saturated and improvement margins decreased. This point of saturation was reached when the identified concepts were integrated into the management, technology and practice categories, thereby providing the management framework for the people, processes and places in the virtual workplace.

Advantage

The process of identifying concepts and categorisation provided a structured approach for data analysis. It facilitated in identifying the relationship between concepts enabling the creation of categories. This structured approach enabled the researcher to construct the framework for the management of people, processes and places in the virtual workplace with the focus on the relationship between the different concepts.

6.6.4 SUMMARY

The concepts that emerged from the structured data analysis were firstly categorised according to the people, processes and places categories. Based on the relationship between the initially defined categories the management, technology and practice categories were defined with the people, processes and places concepts as basis. The data analysis phase was concluded with the deriving of the people, processes and places management framework.

6.7 PHASE 5: LITERATURE COMPARISON

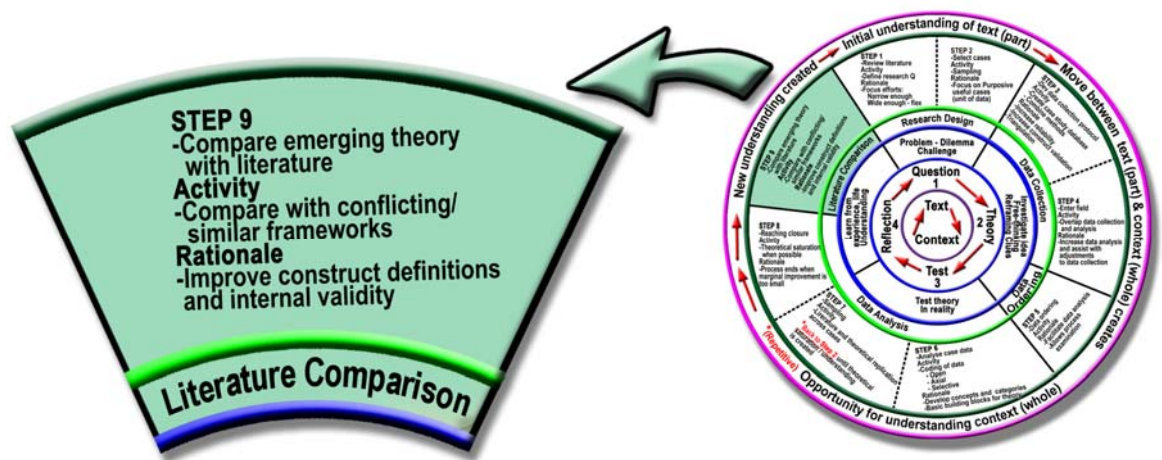


Figure 6.5: Extended Hermeneutic Circle of Learning – literature comparison

6.7.1 Step 9: Compare emergent theory with existing literature

During this step the people, processes and places management framework was compared with the literature related to the virtual workplace and its types, people in the virtual workplace, infrastructure, business processes, business process management and business process management improvement. Roles and responsibilities were also covered. Areas of concern which were identified and which are addressed by the people, processes and places management framework, such as organisational culture, management, business process governance, business process levels, integration of business process tools and infrastructure were covered in the literature. The people, processes and places management framework is thus supported by the literature.

6.7.2 SUMMARY

The research conducted was concluded with the literature review and it was found that the areas of concern addressed with the people, processes and places management framework were covered in the literature.

6.8 EVALUATION OF RESEARCH

This section covers the research conducted and its evaluation based on a set of principles for conducting and evaluating interpretive field studies in information systems as described by Klein and Meyers (1999: 67–94). This set of principles' usage "*applies mostly to the conduct and evaluation of interpretive research of a hermeneutic nature.*" These principles are interdependent and interrelated and do not apply equally to all field studies. However, the manner in which the principles are applied is left to the discretion of researchers, reviewers and authors (Klein & Meyers, 1999:68, 71). This will be followed by an evaluation of the research based on authenticity, plausibility and criticality as discussed by Walsham and Sahay (1999:39–66).

6.8.1 The fundamental principle of the hermeneutic circle

"The most fundamental principle of hermeneutics is that of the hermeneutic circle". Interpretation is a process of moving between the parts to create an understanding of the whole, and then back from an overall understanding of the whole to an improved understanding of the parts (Klein & Meyers, 1999:71). The relationship between the whole and the parts is understood in terms of its shared meaning. The hermeneutic circle suggests that understanding is created through moving between the parts and the whole (Klein & Meyers, 1999:71) and this correlates with the discussion of the hermeneutic circle in sections 2.2.2 and 2.2.3, including figures 2.1, 2.2 and 2.3.

The researcher conducted a literature review related to the changing nature of work and how it led to the evolvement of the virtual workplace. This literature review included people in the virtual workplace, business processes with its

characteristics, levels and modelling. Business process management with its waves of change were also covered. Business process improvement was included in order to provide for distinguishing between business process management and business process improvement. The literature overview covered learning and the creation of understanding which led to the development of the Extended Hermeneutic Circle of Learning used as guideline for the research conducted for this thesis. The Extended Hermeneutic Circle of Learning is discussed in section 2.2.5 and is depicted in figure 2.4.

This was followed by a case study done with a research company in Alabama, USA, which substantiated the virtual workplace, organisational, management and business process related components. The case study also covered the advantages and disadvantages of the virtual workplace. The focus group discussions, interviews and weblog latched onto the case study in exploring the people, processes and places components related to the virtual workplace. These people, processes and places components are discussed in chapter 4. This created a deeper understanding of the relationship between these components, which led to the deriving of the management, technology and practice categories as part of the virtual workplace. Absorbing this deeper understanding led to the development of people, processes and places management framework discussed in chapter 5.

6.8.2 The principle of contextualisation

The contextualisation principle refers to the researcher taking cognisance of the social and historic context of the research subject. Interpretivist research observes organisational patterns as constantly changing, thus *“the relationships between people, organisations, and technology are not fixed”* (Klein & Meyers, 1999:73).

This study is seen in the context of the virtual work environment and the experiences of virtual workers with the inclusion of experiences from abroad. This study elaborated on the changing nature of work from the traditional to the modern, technologically enabled virtual workplace. The changing

relationship as referred to by Klein and Meyers (1999:73) above was evident from the research. The experiences are described in detail in chapter 4. The people, processes and places management framework related to the virtual workplace was derived from the experiences shared by the participants.

6.8.3 The principle of interaction between the researchers and the subjects

This principle relates to the interaction between the researcher and the research participants and cognisance needs to be given to the possibility of facts being produced due to the social interaction of the researcher and the participants (Klein & Meyers, 1999:74).

The researcher was not socially involved, employed or in a working relationship with any of the participants, meaning that the researcher was not closely involved with the participants.

6.8.4 The principle of abstraction and generalisation

This principle indicates that abstraction and generalisation should be carefully related to the study details as it was experienced and collected by the researcher. This enables readers to follow how the researcher arrived at the theoretical results (Klein & Meyers, 1999:75). This translates into the researcher showing how the theoretical insight was obtained (chapter 4).

In this research the study details relate to the management of people, processes and places in the virtual workplace. The case study was used to obtain insight into the virtual workplace and the challenges experienced. This was followed by the focus group discussions, interviews and weblog which had the same focus. The qualitative results obtained were categorised and used to gain a deeper understanding of people, processes and places in the virtual workplace. It is difficult to state to what extent the results would be generalised, since organisational maturity may influence the management of people processes and places related to the virtual workplace. This limitation is addressed in section 6.11.

The deeper understanding created by this study resulted in the identification of the management, technology and practice categories with its related concepts. This enabled the researcher to derive the people, processes and places management framework (chapter 5).

6.8.5 The principle of dialogical reasoning

The principle of dialogical reasoning relates to the researcher's sensitivity to possible disagreements or oppositions between the theoretical preconceived notions (prejudices) and the results obtained from the research. Hermeneutics recognises prejudice as the necessary starting point, as that represents initial understanding. Understanding created in one stage of the research can become a prejudice for the next stage and it is important that the researcher takes cognisance of such prejudices (Klein & Meyers, 1999:76).

The researcher was previously involved in business process management in a traditional organisation. This translates into the researcher's subjectivity being recognised in the compilation of the research questions. The researcher did not work virtually, but was aware of the challenges posed by the virtual workplace. She was exposed to the challenges related to people, processes and infrastructure in the virtual workplace due to contractors having worked virtually for the traditional organisation. The researcher was convinced that a framework for the management of people, processes and places in the virtual workplace will support the fluent and constant changing workplace by addressing the challenges faced in the virtual workplace.

This framework is discussed and graphically presented in chapter 5 of this thesis.

6.8.6 The principle of multiple interpretations

This principle relates to the researcher studying the influence that social context has upon the field of study and documenting of the perspectives shared by the participants. The researcher also needs to be sensitive to differences in perspectives among the participants. In the case of

contradicting perspectives, the researcher needs to gain an understanding of these contradicting perspectives (Klein & Meyers, 1999:77).

Participants from different types of organisations were involved and no restriction was placed on the gender or race of participants. Although the same concerns and challenges were raised by the participants, difference in interpretation of concepts, such as trust, was identified. This could be attributed to differences in the South African and German cultures. This difference in interpretation was indicated in chapter 4. The limitation this could impose is addressed in section 6.11.

6.8.7 The principle of suspicion

The principle of suspicion emphasises that the researcher needs to be aware of possible twisted or bias (favouritism) in the experiences shared by the participants. This could be due to the participants' social world of belief and the manner in which they lived their experiences in the virtual workplace (Klein & Meyers, 1999:78).

The case study, focus group discussions and interviews were conducted in an organised manner with a general positive attitude. The focus group and interview participants shared their experiences voluntarily and with enthusiasm. Cultural differences led to a different interpretation of trust and were noted in chapter 4.

A meaningful level of information richness was obtained through the combination of detailed discussions in the focus groups and interviews, the descriptive case study, as well as the weblog comments. During the focus group discussion and interviews participants enthusiastically shared and discussed viewpoints. The case study provided structured information and the weblog focussed and summarised comments. Thus, the information richness obtained assisted in creating deeper meaning and understanding of the research topic.

The following three points will focus on authenticity, plausibility and criticality as discussed by Walsham and Sahay (1999:39–66).

6.8.8 Authenticity

Authenticity refers to proving the researcher being “*there in the field*” (Walsham & Sahay, 1999:59). The researcher used direct quotes in the text (chapter 4) based on the transcripts made of the focus group discussions and interviews. These quotes reflect upon the experiences of the participants in context of the people, processes and places components.

The researcher indicated how the people, processes and places management framework was developed from the data obtained in the case study, focus group discussions, interviews and weblog.

6.8.9 Plausibility

The essence of plausibility is the manner in which the text makes sense to the reader, thus connecting to the reader’s personal and social experience, as well as the contribution it is making to the field of study (Walsham & Sahay, 1999:60).

The researcher used figures to organise the data into the people, processes and places components, which is the central theme of this thesis. This was followed with the identification of the management, technology and practice categories, based on the people, processes and places components. These categories were also presented in figures thereby organising the thoughts and theory leading to the development of the framework for the managing of people, processes and places in the virtual workplace.

The researcher organised the thesis through proper structuring of the different chapters. This was done from the setting of the background and the development of the research methodology, followed by the literature study (chapters 1, 2 and 3 respectively). The Extended Hermeneutic Circle of Learning as developed in chapter 2, was used as guideline for the research conducted and discussed in chapter 4. Based on the research conducted the

people, processes and places management framework was developed and presented (chapter 5) followed by the conclusion of the thesis.

The research is providing something unique and distinctive in the form of the framework for the management of people, processes and places in the virtual workplace underpinned by the relationship between people, processes and places. As part of the multi-method research approach the researcher used a weblog, commonly known to be a social network tool, for research. This is discussed in sections 2.3.1.2 and 2.3.2.2, including the results in section 6.4.2.

6.8.10 Criticality

According to Walsham and Sahay (1999:61) criticality is “*concerned with whether the text activates readers to re-examine assumptions underlying their work*” and to reflect upon it. The researcher hopes that readers of this thesis will reflect upon their work activities and workplace when working virtual and how they can use this management framework to assist them in minimising some of the challenges identified.

Imagining new possibilities is also a way in which criticality can be stimulated with the reader and is done through the use of metaphors or images (Walsham & Sahay, 1999:62). This was not done in this thesis although other areas of research are covered in this chapter.

6.9 RESEARCH QUESTIONS ANSWERED

The sub research questions identified and listed in table 1.1 were answered in the chapters as indicated in the table 6.1: Sub research questions answered. From this, the main research questions were answered.



RESEARCH SUB QUESTIONS			
<p>WHAT IS: Investigates the core or essence of the research problem and strives to describe the structure of the problem and its associated concepts. According to Roode, JD (nd) the assumption is namely that universally accepted descriptions or definitions exist.</p>			
1.1	<p>What research approach will be followed?</p> <ul style="list-style-type: none"> • Qualitative, interpretive 	✓	Chapter 1
1.2	<p>What is learning?</p> <ul style="list-style-type: none"> • Learning 	✓	Chapter 2
1.3	<p>What is hermeneutics?</p> <ul style="list-style-type: none"> • Hermeneutics • Hermeneutic circle of learning • Extended Hermeneutic Circle of Learning • Application of the Extended Hermeneutic Circle of Learning as guideline for research conducted as part of this thesis 	✓ ✓ ✓ ✓	Chapter 2 Chapter 6
1.4	<p>What is a virtual workplace?</p> <ul style="list-style-type: none"> • Waves of change • People in the virtual workplace • Types • Define and derive own definition • Advantages • Disadvantages • Infrastructure 	✓ ✓ ✓ ✓ ✓ ✓ ✓	Chapter 3 Chapter 4
1.5	<p>What characteristics are unique to the virtual workplace?</p> <ul style="list-style-type: none"> • Specific differentiators 	✓	Chapter 3 Chapter 4
1.6	<p>What is a business process?</p> <ul style="list-style-type: none"> • Define • Type of business processes • Levels of business processes • Characteristics of business process • Business process governance, roles and responsibilities 	✓ ✓ ✓ ✓ ✓	Chapter 3 Chapter 4
1.7	<p>What is business process management (BPM)?</p> <ul style="list-style-type: none"> • Define and derive own definition • Waves of change • Difference between BPM and business Process Improvement (BPI) • Business process maturity 	✓ ✓ ✓ ✓	Chapter 3
1.8	<p>What management characteristics are unique to the</p>		



	virtual workplace? <ul style="list-style-type: none"> Trust, culture, manage over a distance, manage outputs 	✓	Chapter 4 Chapter 5
HOW DOES: Describes the problem through direct observation as it unfolds in reality.			
2.1	How does the virtual workplace impact on business processes? <ul style="list-style-type: none"> Improve agility, performance Type of business processes that support the people in the virtual workplace 	✓ ✓	Chapter 4 Chapter 5
2.2	How does business processes differ between the virtual workplace and the traditional workplace? <ul style="list-style-type: none"> Type of business processes Methodology/approach 	✓ ✓	Chapter 4
2.3	How do management characteristics differ between the virtual workplace and the traditional workplace? <ul style="list-style-type: none"> Specific differentiators – autocratic versus collaborative partnership 	✓	Chapter 4
2.4	How does business processes and technology impact on an individual's activities/performance in the virtual workplace? <ul style="list-style-type: none"> Integrated tools, workflow, internet capacity, server access 	✓	Chapter 4 Chapter 5
WHY IS: Describes the real-life behaviour and features or characteristics of the research problem in order to establish relationships between the different variables within the area of research. Roode (nd) notes the assumption can be made that revealing these relationships can lead to generalisation of the research area and its contributory or underlying consequences.			
3.1	Why does the virtual workplace need different business processes?	✓	Chapter 4
3.2	Why does the virtual workplace need a different management style?	✓	Chapter 4
3.3	Why does the individual working in the virtual workplace require different business processes?	✓	Chapter 4
HOW SHOULD: Focuses on conclusions, implications and insights obtained during research as well as norm or standard set by the research results. It can have various outcomes, such as prescriptive or regulatory conclusions or redefining of the problem area.			
4.1	How do people, processes and places interact in the virtual workplace? <ul style="list-style-type: none"> Relationship 	✓	Chapter 5
4.2	How should people, processes and places be		

	supported in the virtual work place? <ul style="list-style-type: none"> • Framework for the management of people, processes and places in the virtual workplace 	✓	Chapter 5
4.3	How should training and development be done in the virtual workplace?	✓	Chapter 3 Chapter 4 Chapter 5

Table 6.1: Sub research questions answered

The main research questions are answered as follows:

Place: What characteristics unique to the virtual workplace distinguishes it from the traditional organisation?

The virtual workplace is decentralised and can exist anywhere at any time. It could be an office at home, at an airport and could exist for a specific purpose, such as a project. It is a flexible environment allowing for structuring of working hours to suit personal requirement. Due to its fluency it has no formal structure and it crosses the boundaries of time and space. The traditional workplace is mostly centralised with a formal structure and fixed office hours, thereby dictating time and place to work.

Process: What characteristics are unique to business processes in the virtual workplace, distinguishing it from business processes in the traditional organisation?

Business processes in the virtual workplace are often computer supported and standard in nature. Computer supported business processes relate to business processes that are workflow-oriented, sustaining asynchronous activities. Manual activities still need to be performed at a centralised office leading to the creation of a rhythm supporting the remote worker. Business process combinations exist in the traditional workplace, such as manual, semi-automated (email) and automated business processes with workflow components.

People: *Can a framework or structure to support the management of people, processes and places in the virtual workplace be developed?*

The framework for the management of people, processes and places in the virtual workplace was developed, consisting of the management, technology and practice categories identified. This framework incorporates the people, processes and places components and the manner in which they interact in the virtual workplace, in a structured, holistic framework. The reference to holistic in this context relates to the three components, namely people, processes and places not being viewed in isolation.

6.10 CONTRIBUTION OF THIS RESEARCH

The contribution of this research is evaluated in the following section based on the principles proposed by Introna (1992:5.31– 5.33).

- **Does the theory raise problems previously not perceived, for example problems of an increasing depth, and does it display an ever-increasing fertility in suggesting new problems?**

People, business processes and virtual workplaces are covered in detail in the literature, but limited theory for the management of people, processes and places in the virtual workplace could be ascertained. This research explored the people, processes and places components and its relationship relevant to the virtual workplace. The management framework for the management of people, processes and places in the virtual workplace was developed based on the management, technology and practice categories as identified. This framework incorporates the people, processes and places components based on their relationship into a holistic structure.

New ideas that originated from this research are discussed in the section on future research in the latter part of this chapter.

- **Does the theory anticipate novel facts and auxiliary theories?**

People, processes and places in the virtual workplace were explored using an interpretivist, qualitative approach with the Extended Hermeneutic Circle of Learning as guideline. Understanding of the parts (people, processes and places) in terms of the whole, which is

the virtual workplace, was created. The framework for the management of people, processes and places in the virtual workplace was developed as a result of the learning achieved. The framework identified management, technology and practice categories with the people, processes and places concepts related to each. It is important that these concepts are to be viewed taking cognisance of their relationships to one another.

- **Is the theory more precise in its assertions and in the facts it explains than previous theories?**

Yes, it has. Limited theory for the management of people, processes and places in the virtual workplace was ascertained. Thus, the framework for the management of people, processes and places in the virtual workplace and its theory is new to the business process and virtual workplace domains.

- **Has the theory unified or connected various hitherto unrelated problems, or concepts?**

This theory has unified previously seemingly unrelated concepts with regard to management and the virtual workplace. These concepts were unified through the development of this management framework based on the relationship between the people, processes and places components in the virtual workplace.

- **Does the theory have positive and negative heuristic power?**

The Extended Hermeneutic Circle of Learning was developed by the researcher and used as guideline for the research conducted for this thesis assisted in providing a positive learning opportunity. The researcher obtained a deeper understanding of the challenges related to the virtual workplace, leading to the development of the framework for the management of people, processes and places in the virtual workplace.

- **Has the theory produced a new perspective on existing problems and thus created a new understanding of these existing problems?**

This theory produced a new perspective on the relationship people, processes and places have and more specifically with regard to the virtual workplace. A new understanding of the challenges related to the virtual workplace was obtained through the use of a case study, focus group discussions, interviews and a weblog. This new understanding assisted in the development of this management framework.

The new understanding created includes that the virtual workplace needs computer-supported process to enable easier functioning. Automated processes and workflow processes were identified as types of computer-supported processes needed in the virtual workplace.

- **Has this theory produced unconventional ideas, ideas that radically challenge current conceptions?**

It is difficult to discern if the framework developed as part of this thesis radically challenges current conceptions. Even so, this framework suggests that the people, processes and places components related to the virtual workplace cannot be viewed in isolation due to their relationship with one other. The extent to which an organisation may be able to use this framework will depend on an organisation's maturity. This is addressed in the section covering future research.

Based on the evaluation as described above it is stated that the contributions made by this thesis are threefold, namely:

- Firstly, the researcher developed figures 3.9, 3.10 and 3.11 depicting the estimated timelines relating to the waves of change, the innovation highlights related to the individual waves and the organisational change leading to the establishment of the virtual workplace. These three figures follow the central theme of this thesis with innovation highlights relating to **process**, organisational change referring to **people** and the virtual workplace having relevance to **place**.

- Secondly, the Extended Hermeneutic Circle of Learning (figure 2.4) as developed by the researcher suffice as guideline for the research conducted for this thesis. The Extended Hermeneutic Circle of Learning assisted the researcher in obtaining a deeper understanding of the people, processes and places components in the virtual workplace. Thus an improved understanding of the parts (people, processes and places) and the whole (virtual workplace) and its relationships was obtained.
- Thirdly, the results obtained from the research led to the development of the framework for the management of people, processes and places in the virtual workplace. This newly developed framework provides structure to the people, processes and places components, based on its relationships. This new management framework therefore represents progress in the people, process and virtual workplace domains.

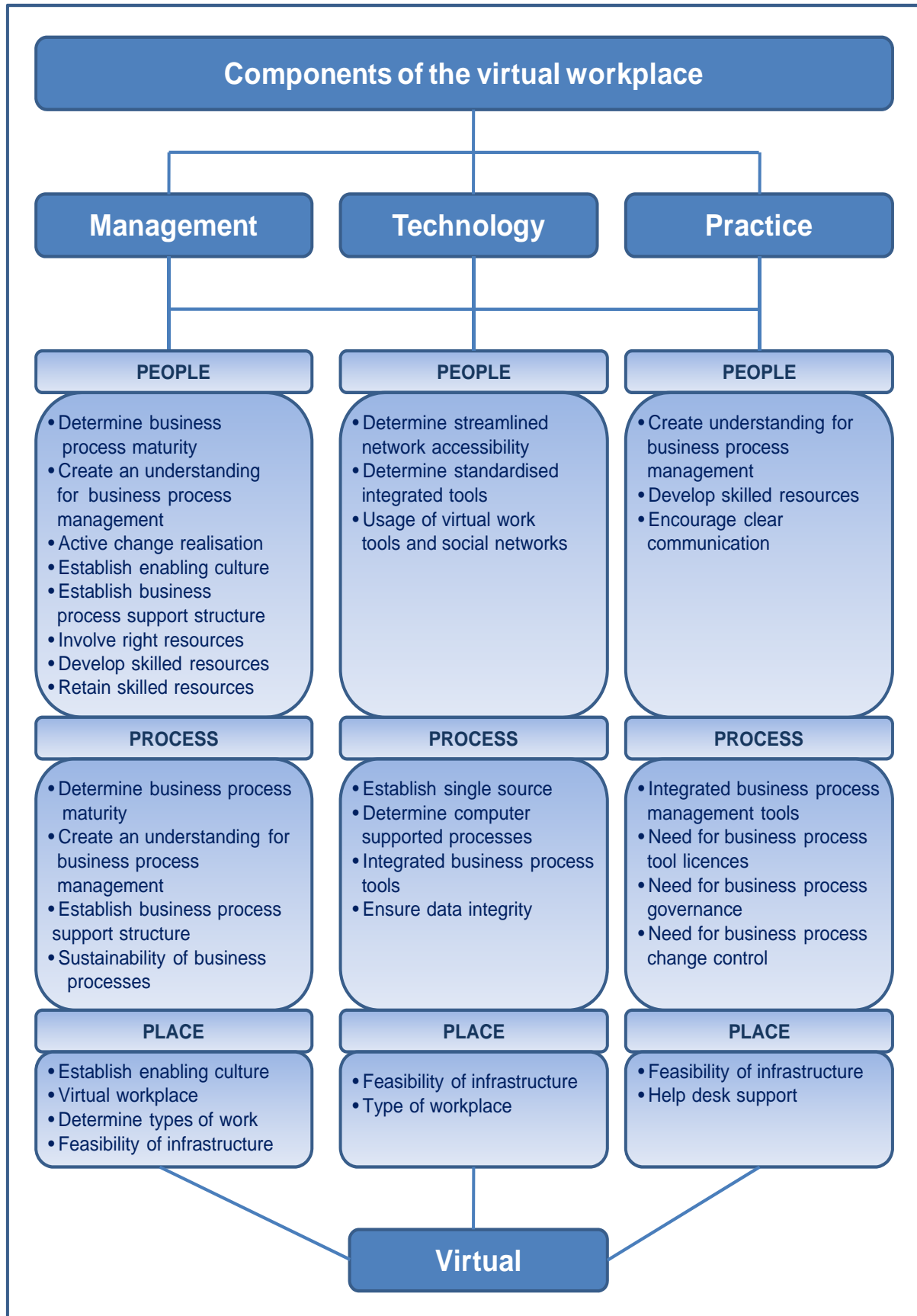


Figure 6.6: Management framework for the components of the virtual workplace

6.11 LIMITATIONS

This research was done to develop a framework integrating the people, processes and places components in the virtual workplace. Limitations could be possible in the application of the framework for the management of people, processes and places in the virtual workplace based on organisational maturity. Organisational maturity in terms of the organisation's culture and management may also influence the application of this framework. Operational matters, such as remote server access, have been identified during the research. As technological assessments have not specifically been addressed by the research conducted for this thesis, it could be seen as a limitation. The limitation related to this type of technology assessment goes hand in hand with the positioning of BPM as part of this research, as can be seen in figure 3.8. The focus for the research has been on a specific subset of people as identified in section 1.6.2 and this could be seen as a limitation. These limitations are incorporated in areas for future research (section 6.12).

Acknowledgement is given to the value added by the different types of BPM software tools; however, evaluation of BPM software is beyond the scope of this research.

Generalisation of findings may become apparent as the management framework is being used.

6.12 FUTURE RESEARCH

Future areas of research have been identified and are indicated in this section.

- Research into the impact on a company and its job structure when moving towards a virtual workplace. This relates, for example, to the structure of IT related jobs.
- Research into the assessment of business process maturity, specifically relating to the virtual workplace and the development of such an assessment model or tool.

- Research into organisational readiness for moving towards the virtual workplace. This latches onto an enabling organisational culture and organisational maturity.
- Information is distributed effortlessly through technology and the internet. This effortless distribution can be seen as positive or negative. In a positive light it reflects on the ease with which information can be obtained. In a negative light it reflects on spam and overload. Research into experiences related to both the positive and negative can shed light on the impact it has on the effective functioning of people.
- The influence of cultural differences in the virtual workplace.
- The influence of instant messaging (IM) on corporate language and the conveyance of corporate messages.
- Findings from the research conducted highlighted challenges to ensure data integrity specifically related to the business process repository and in the influence of steno-type or short hand style of data capturing.
- Research into reviewing and addressing technological limitations, such as remote server access problems experienced by virtual workers. This correlates with the operational level of BPM.
- Expand the research to include other groups of people or people who fulfill different types of functions while working remotely.

6.13 CONCLUSION

This chapter discussed the Extended Hermeneutic Circle of Learning used as guideline for research conducted for this thesis. The advantages and disadvantages were included in each phase. The Extended Hermeneutic Circle of Learning provided a structured approach assisting in the analysis of the data obtained. By following the hermeneutic circle of learning a deeper understanding of the parts, namely people, processes and places in context of the virtual workplace was obtained. The understanding created reflected on the relationship between people, processes and places in the virtual workplace and the management of the people, processes and places. The researcher derived the management framework for the management of people, processes and places in the virtual workplace based on the concepts and categories identified. This was followed by an evaluation of the research

conducted based on the principles identified by Klein and Meyers (1999:67–94) and Walsham and Sahay (1999:39–66). This evaluation is indicative of the structured approach that was followed which assisted the researcher in the development of the framework for the management of people, processes and places in the virtual workplace. The research contribution based on Introna’s (1992:5.31–5.33) principles, limitations and future ideas for research are discussed in the latter part of this chapter.

In conclusion, the nature of work changed over time leading to the establishment of the virtual workplace. This decentralised workforce functions from various locations through the use of technology. The workforce requires processes and a supportive management corps to support them in the execution of their activities. The framework for the management of people, processes and places in the virtual workplace sets guidelines to support employees in the virtual or distributed workplace.

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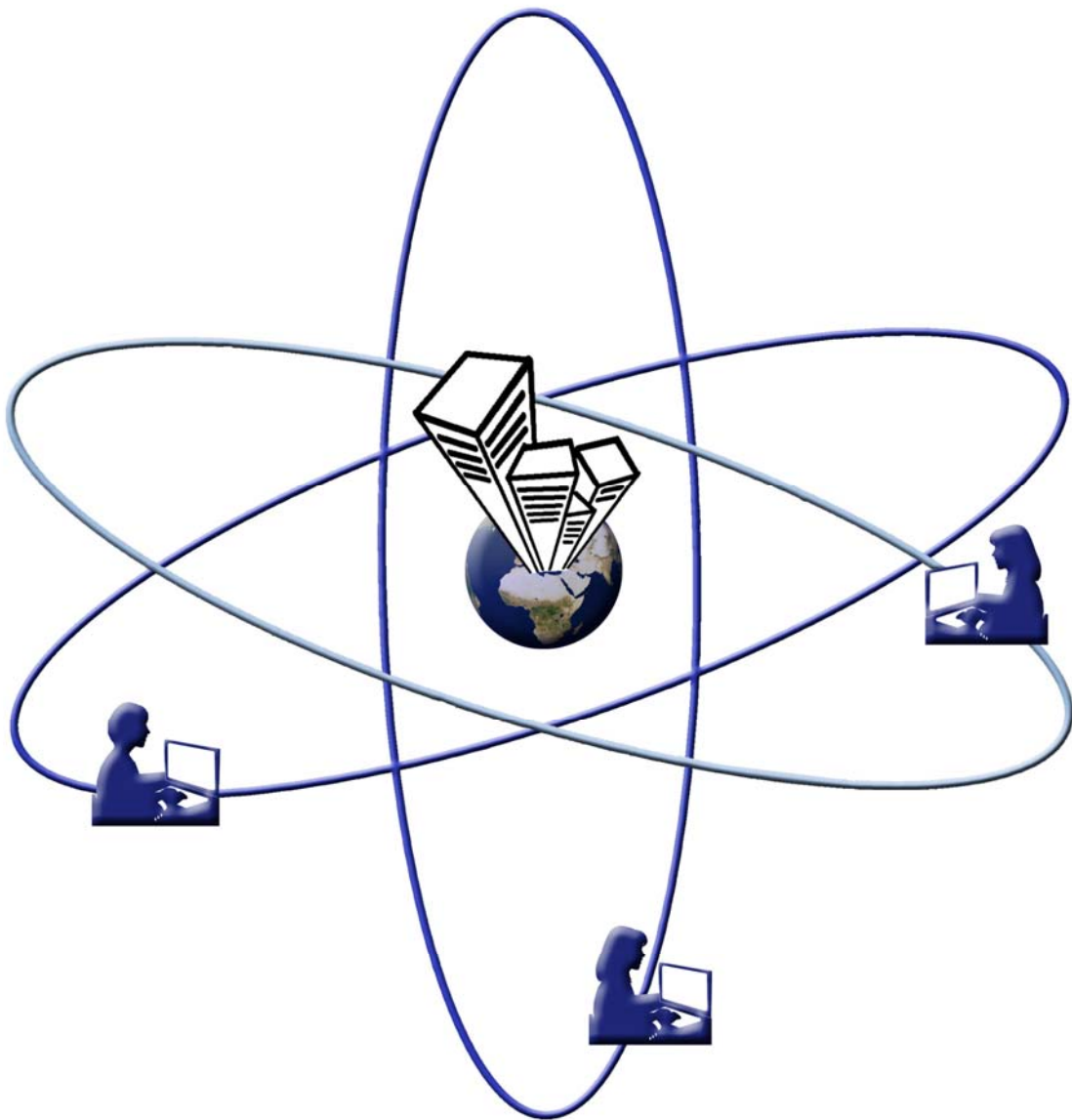
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The management of people, processes and places in the virtual workplace

APPENDICES





APPENDIX A: CASE STUDY – COMPANY F

1.0 Background

Company F, a research company located in Alabama, USA, was founded in 1996.

Company F established an unparalleled research team whose expertise covered various specialist areas, for example marketing, customer relationships and field research. Research was conducted for various industries, such as the automotive industry, financial institutions (banks) and the health care industry (hospitals). Clients in the telecommunications industry included the second largest telecommunications company, Bell South who was later acquired by the largest telecommunications company, namely AT&T.

In order to maximise returns on a client's investment, Company F adapted their research capabilities to their client's needs. Company F paid thorough attention to their client's individual requirements by working through each phase of the research project with the client. These phases consisted of:

- assessment of the strategic research needs
 - creation of the research design
 - selection of an appropriate research technique
 - evaluation of the sampling procedure
 - collection and analysis of the data
 - interpretation thereof and presentation of the research results
- (Geldenhuys, 2002:69)

Accuracy, flexibility and speed characterised the services offered by Company F. *Accurately* identifying and understanding a client's needs were vital to the creation of the research design and selection of an appropriate research technique. As each client presented individual needs, research designs were adapted (*flexibility*) to suit each client's needs. *Speedy* presentation of results, such as customer delight and failure analysis provided to bank management within 24 hours, afforded bank management with the ability to praise an employee for excellent service or to take corrective actions where needed.

Company F's competitive advantage was entrenched in providing clients with the research results faster than the competition and put them ahead of the competitors through the use of web portals to communicate research results.

The above-mentioned was aligned with Company F's vision, namely "Company F will be the preferred research company in the Southeast. We will consistently have the fastest turnaround, have the highest standards of objectivity and integrity, be the most flexible when dealing with our customers, and be the best cost provider. We will use the latest methodology and technology to ensure our vision becomes a reality. Our customer service will fulfil even the unexpected wishes and needs of our customers." (Geldenhuys, 2002:69)

The company had a "total focus" on its clients and that resulted in Company F being successful. The research and analysis services offered to their clients as part of Company F's "total focus" aimed at providing their clients with the best possible management information, assisted them in achieving a competitive lead in the ever-changing business world where quality of service, customer satisfaction, trust and commitment are fundamental for survival (Geldenhuys, 2002:70, 71). This "total focus" also formed the foundation for Company F's BPM practice.

1.1 Services offered by COMPANY F

As Company F had a "total focus" on their clients they strived to provide clients with a first-class one-stop service, covering research design, data collection, analysis of research results and reporting of such results using the latest technology available. Research capabilities were adapted to a client's specific needs, selecting an appropriate method, such as:

- telephone surveys done by the centralised call centre
- focus groups used for product related research
- mail-, web- and email surveys handled by the centralised workplace
- Interactive Voice Response (IVR) (This method was research was later abandoned due to very low response rates.)

Company F's research expertise, as stated by Geldenhuys (2002:70), covered multiple disciplines, thereby providing them with supreme research capabilities, such as:

- customer/employee satisfaction studies to establish which specific element (segment) of a customer's experience led to customer satisfaction
- customer perception studies to assess a customer's perception of assistance rendered by a company or firm, such as the quality of service a customer received

These above-mentioned studies focussed on customer satisfaction and often involved the banking and health care industries. These studies were the following:

- Preference studies aimed at providing a detailed analysis of the client's products/service against that of a competitor. Specific product attributes were analysed to determine its preference.
- Possession studies intended to establish the reach of the client's own and its competitor's product availability.
- Usage studies to obtain answers on some critical questions pertaining to the usage of the client's product and its competitor's product. Questions related to expansion of market share, value the customer received from using a specific product, as well as unsatisfied needs that offered a potential growth opportunity.

These studies centred on product preference and availability and were relevant to the automotive and banking industries.

- Marketing strategy research assisted clients in defining and formalising their marketing and positioning strategy, as well as the implementation of marketing strategies.

Combining these multiple research disciplines with fast turnaround times provided Company F with the edge to be the research firm of choice.

2.0 Organisational structure

Company F started off with five people who worked in a virtual workplace. The organisation expanded over time to have 20 managers and 200 employees. The call centre consisted of 120 permanent employees who worked from 16:00 until 20:00, as that was the time clients preferred telephone surveys to be done. Only about 20 percent of telephone survey calls were made during the 09:00 until 17:00 time slot when businesses were called.

The call centre consisted of 120 workstations which allowed for interaction with co-workers, supervisors, quality control staff, as well as trainers. Human Resource (HR) functions were executed and managed from the call centre according to recommendations from the HR director. The strategy component of hiring was part of the centralised functions. The Human Resource division was also in charge of training, therefore being on-site was an improvement in organising on-site training classes.

Data centre leadership and IT functions also formed part of the call centre's centralised office. Consideration was given to having a virtual call centre, however this idea was discarded as it would have complicated IT requirements, supervision and quality measurements. This environment was very high-tech and highly supervised.

Procurement Services and General Management were handled via the virtual workplace. Marketing and Financial management were initially managed via a virtual workplace but was moved to the centralised workplace as preferred by the new chief financial officer (CFO) whose portfolio included large management responsibilities. This happened during the last two years of the organisation's existence.

The organisational structure and work processes were developed to support the virtual workplace, for example no meetings were held at 14:00, as that was the time women fetched their children from school. All research and statistical analysis were done using virtual teams, thereby enabling employees to work at times best suited to their individual circumstances with the understanding and commitment that timelines had to be met.

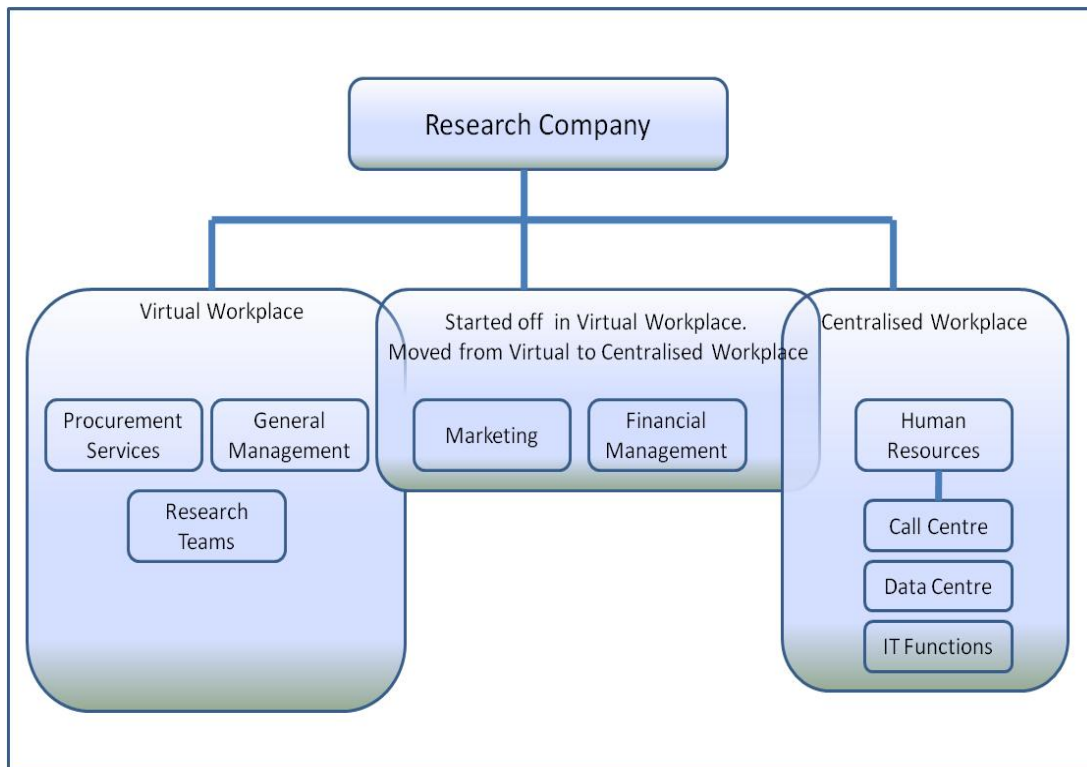


Figure 1: Organigram depicting virtual and centralised workplaces

3.0 Virtual workplace

From its inception Company F placed a high premium on the virtual workplace. Employees used conference calls as a communication medium, as technological features, such as Facebook and Skype did not exist thirteen years ago. Face-to-face business meetings were mixed with social interaction to assist in embracing the human aspect within the virtual workplace.

Company F placed a very high premium on healthy family life and regarded it as one of the cornerstones of life. Treasuring family life was encouraged through the culture established within Company F, as can be seen from the following statement: “Company F recognises that family comes first, happiness and job satisfaction come second and Company F comes third. Company F is committed to the concept that the work environment can be organised in such a manner that each person will be able to fulfil their family needs, their happiness and job satisfaction, as well as implementing the Vision and Objectives of Company F” (Geldenhuys, 2002:71).

The original employee teams, which is the marketing, finance and analysis teams formed when Company F was founded, preferred a virtual workplace. As these employees left Company F, either for better positions or to pursue other opportunities offering more free time, new employees were given the choice of working from a central or virtual workplace. The initial team consisted mostly of women with small children who preferred to work from home having the freedom to attend to their children's needs. The virtual workplace therefore suited women who preferred to work from home, allowing them to attend to small children matters. A time-off policy also catered for students who wrote examinations.

It is also important to recognise the type of work suitable for a virtual workplace. HR, documentation, finances and marketing can be done from a virtual workplace, meaning that almost anything, except work requiring an assembly line such as the mining or automotive industries can be done virtual.

A co-founder of Company F, identified characteristics or driving forces unique to the virtual workplace during an unstructured interview conducted on 20 May 2009. These driving forces are:

- economic drivers
- quality of life drivers
- technology drivers or enablers
- enabling culture

3.1 Economic drivers

Economic drivers can be viewed from different perspectives, such as the actual monetary value of income received in relation to the expenses incurred to be able to work, for instance fuel, parking, vehicle maintenance, lunch, suitable clothing and day care for children. When working from home, as in virtual, these "expenses can be reduced hugely". It was also found that employees were willing to work for a lower salary, as they had less of the expenses mentioned above related to working in a corporate or centralised workplace. This had a direct impact on corporate expenses, as it meant a lower salary bill and a reduction in the cost of "fitting out an office". Flexible

working hours allowing employees to set their own pace, assisted in increasing productivity and retaining good employees.

3.2 Quality of life drivers

Quality of life drivers go hand in hand with economic drivers, in that flexibility of working hours enabled mothers to take care of children and their school related activities. Less commuting time also meant less time away from home, for example, an employee working at a centralised workplace could spend two hours a day commuting. When adding these two hours to the eight hours spent at the centralised workplace, it meant being away from home for a total of 10 hours. The economic implication of this is that an employee is not paid of the two hours on the road.

3.3 Technology drivers or enablers

Technology enablers, such as wireless technology, broadband and virtual private networks (VPNs) assisted individuals in managing their emails and diaries. Secretaries were used far less, leading to a reduction in salaries. Social networks such as Skype, Twitter and Facebook are essential to help people keeping social contact. However, face-to-face contact is still needed.

3.4 Enabling culture

Organisations need to have an “enabling culture”, that is a culture that enables as well as supports employees who work virtual, for example, this “enabling culture” can provide day care assistance for mothers and needs to recognise the changing structure of households with men becoming more and more the “trailing partner”. Woman moved higher on the salary scale, earning more than men, resulting in men often becoming the caretaker at home.

Trust, loyalty and comfort are essential components of an enabling culture. This means trusting that employees will deliver quality outputs on time, loyalty towards the organisation and its objectives and comfort that the organisation values its employees. “It is impossible for an employee to be worker, parent, housekeeper and spouse”.

The organisation furthermore needs to have a reward system that supports the virtual workplace, which is a reward system that is “results based and not activity based”. This means rewarding employees for quality outputs/outcomes achieved. Time spent is not of the essence, but the quality of the results or outputs are vital. Employees working in the virtual workplace are responsible for time management, whereas the organisation rewards them for quality outputs. Activities therefore need to be planned and organised carefully to ensure that requirements for quality outputs are met. This also goes hand in hand with BPM as BPM is results-driven.

During the unstructured interview, reference was also made to “fiercely independent youths” in the labour market. These individuals set their own standard and function very well in a virtual workplace. They have a different culture from the traditional chief executive officers (CEOs) and managing executives (MEs). Many of the youth of today grew up with technology such as Twitter, Facebook and iPods, enabling them to communicate in different, less structured ways, resulting in them not “being cubicle people”, or not relating to a structured or centralised workplace. Quality of life and time spent with family and friends are also of cardinal importance. Although this could be seen as a generalisation, it is noted to illustrate how different the youth of today relate to their work environment when compared to the older generation who follow the structures as prescribed by corporate life.

3.5 Communication methods

Communication methods frequently used were SMS (short message system) via mobile phones, emails and web portals. This was in an endeavour to use the newest technology available to support customers and make information available within the shortest possible timeframe, which is within 24 hours.

3.6 Performance management

Company F conducted regular weekly or two-weekly progress meetings with supervisors where constructive and positive feedback was shared. Team members were rewarded on the basis of performance in implementing the company’s vision and objectives. Bonuses were calculated on both individual

and team efforts, with individual efforts tied to those job aspects that the individual could control. Team bonuses were tied to achieving and exceeding the financial budget. As bonuses had no upper cap, it became a major portion of individuals' compensation. Performance contracting was done quarterly or annually.

3.7 Development

Training matters were co-ordinated by the centralised HR division based on requirements identified.

3.8 Recruitment

Recruitment was handled by the centralised HR division. The virtual environment is suitable for people who want to work virtual and who can benefit from the flexibility it offers. First of all you need to choose people who want to work in a virtual office environment. The following personality traits were previously identified by Company F as relevant to the virtual environment:

- Self driven
- Possess high self-motivation
- Trustworthiness
- Self starter with a high sense of responsibility
- Being organised
- Have self-discipline and time management skills
- Commitment to performance
- Flexibility and good communication skills

3.9 Difficulties experienced

According to the participant, difficulties were experienced in the virtual workplace when settling in new employees into the organisation, as social networking is crucial to create a sense of belonging for new employees. This relates to knowing co-workers, knowing where to fit into the organisation and understanding the organisational structure.

Body language cannot be read over a teleconference and the use of Skype and video conferences can act as substitute to some extent.

The biggest drawback experienced by employees working in the virtual workplace was “no start or end to a work day”. Employees tend to work 24/7 reading emails even before going to bed. Company F tried to introduce a cut-off time of 20:00 for email responses in order to keep to reasonable time limits. “This was not successful”.

The advantages and disadvantages related to the virtual workplace are covered in section 3.3.2.

4.0 Business process management (BPM)

Company F’s understanding of BPM is the process of being “focussed on aligning organisations with the wants and needs of its clients”. As mentioned earlier, Company F has a “total focus” on their clients and the services offered forming the foundation of their BPM practice.

Company F’s BPM practice translated into backward planning, that is starting with identifying the needs and wants of clients working backwards in order to ensure that the desired results were obtained.

In order to accommodate employees in both the centralised and virtual workplaces, the same business processes and rules applied with reference to flexible working schedules, for instance that no meetings were held at 14:00 as that was the time women collected their children from school. The most significant difference between the business processes followed in the centralised and virtual workplaces related to flexibility in working hours. Call centre agents were required to work (make calls) at times specified by the client whereas analysts and report generators could work at any time provided deadlines were met. The window during which call centre agents were required to work, left them with little opportunity for flexibility with the opposite being relevant for research teams.

The call centre consisted of 120 permanent workstations which were centrally located, managed and maintained with the assistance of IT and data centre support. IT and data centre support formed part of this centralised workplace. Employees used mostly standardised software that simplified IT and data support with the added advantage of the integration of activities.

5.0 Summary

During its existence of thirteen years Company F functioned successfully in the virtual workplace. Company F established itself as the research company of choice with flexible services and excellent turnaround time, providing research results using the latest technology available.

The **people, processes and places** components applicable to this research are reflected in that people worked traditional or virtual, depending on the type of work being performed. The company's enabling culture instilled and reflected trust and responsibility, with activities that did not require supervision being done virtually supported through business processes allowing flexibility and fast turnaround times.

The company's ability to adapt their research activities to their client's needs irrespective of location served as a prime example of their **people, processes and places** adaptability.

6.0 Conclusion

Company F was used as a case study due to its invaluable experience in the virtual workplace. Company F lived their vision, of being the preferred research company in the Southeast of the USA, with the fastest turnaround time (24 hours); had the highest standards of objectivity and integrity, was the most flexible when dealing with their customers and was the best cost provider.

They used the latest methodology and technology, such as SMS, email and web portals to ensure that their vision became a reality. Their customer service fulfilled even the unexpected wishes and needs of their customers.

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APPENDIX B: PARTICIPANT LIST

PARTICIPANT	TYPE OF SESSION	COMPANY	ROLE
1	Focus group	Consulting Firm A	Business Process Repository Manager: Responsible for management and governance of technical and business process tool services and application, mentoring and training of technical services resources according to methods and standards, business process quality assurance and compliance to methods and standards.
2	Focus group	Consulting Firm A	Business Process Analyst: Formulate and document business, data and systems requirements and processes according to methods and standards; identification, investigation and analysis of business processes, procedures and best practices. Use process modelling techniques and tools to create clear business process and related specifications.
3	Focus group	Consulting Firm A	Business Process Quality Manager: Responsible for all business process methods and standards as part of project initiation to ensure that deliverables adhere to business process quality. Compile business process quality plan; monitor, control and provide quality compliance report. Business process training for consultants and contractors. Update and maintain QA Governance documentation and version control.
4	Focus group	Consulting Firm A	Business Process Analyst: Formulate and document business, data and systems requirements and processes according to methods and standards; identification, investigation and analysis of business processes, procedures and best practices. Use process modelling techniques and tools to create clear business process and related specifications.
5	Interview	Consulting Firm A	BPM Tool Suite Expert: Responsible for helpdesk, integrated prioritised scripting requirements; compliance to quality, time and communication standards, design, development and testing of BPM tool scripts. Develop training material; conduct training in accordance with standards.
6	Interview	Financial Institution Company B	Senior Business Process Analyst: Certified business process analyst, business analyst and project manager. Responsible for business processes development and alignment of subsidiary's business processes with enterprise policy, quality and business process standards.



7	Interview	ECIS 2010 Conference (G)	BPM Consultant with 4 years professional experience across Europe, Asia, Africa and Australia. Involved in large scale BPM initiatives and process improvement activities. Industry sectors: Aluminium, Mining, Automotive, Capital Goods, Government, Armed Forces
8	Interview	ECIS 2010 Conference (G)	Senior SAP Researcher: SAP BPM, BPM technologies and future trends
9	Interview	ECIS 2010 Conference (G)	Research assistant at European Research Center for Information Systems. Area of expertise: Collaborative BPM, ICT and E-Government
10	Interview	ECIS 2010 Conference (G)	Research assistant and PhD student at the Department of Information Systems Engineering and Financial Management. University of Augsburg. Area: Business Process Flexibility
11	Interview	ECIS 2010 Conference (G)	Post-doctorate fellow and BPM project manager
12	Interview	Telecommunications Company C	Senior Specialist: Responsible for Enterprise Architecture Governance including integration of system and BPM tools; BPM Governance
13	Interview	Telecommunications Company C	Senior Specialist: Business Process Analysis and Enterprise BPM Project Manager.
14	Interview	Financial Institution Company D	Business Process Specialist: Responsible for the defining, improvement and implementation of processes for different organisations.
15	Focus group	Consulting Firm E	HR Team Lead: SAP Support Center and Support Hub in Australia
16	Focus group	Consulting Firm E	Resource Management: Talent Development and Placement. Member of ERP Management Board
17	Focus group	Consulting Firm E	Team Lead: SAP BPM Support Hub
18	Focus group	Consulting Firm E	Team Lead: Remote Virtual Employees – Services, Logistic and Finance
19	Focus group	Consulting Firm E	Team Lead: Remote Virtual Employees – Cross Applications
Total Focus Group Participants: 9			Total Interview Participants: 10



APPENDIX C: WEBLOG STATISTICS

WEBLOG STATISTICS as obtained from Google analytics for VirtualBPM.blogspot.com

Details	Date created	Date		Date		Date		Date discontinued		TOTAL	
Dates	16 April 2010	30 April 2010		31 May 2010		30 June 2010		31 July 2010		31 July 2010	
Unique visitors	0	10		17		63		20		94	
Site visits	0	56		336		289		108		789	
Countries	0	4		6		10		9		18	
Names of Countries	0	Australia	20	Australia	100	South Africa	45	South Africa	22	Australia	154
		South Africa	17	Malaysia	82	Australia	33	UK	2	South Africa	151
		USA	3	South Africa	67	Germany	10	Germany	2	Malaysia	82
		Canada	2	Singapore	4	USA	4	Australia	1	Germany	13
				Germany	1	Saudi Arabia	4	Sweden	1	USA	8
				UK	1	Netherlands	4	Austria	1	Singapore	7
						Singapore	3	USA	1	Netherlands	4
						UK	1	Brazil	1	Saudi Arabia	4
						Spain	1	Turkey	1	UK	4
						Norway	1			Austria	2
						Denmark	1			Sweden	2
						Austria	1			Canada	2
						Finland	1			Norway	1
						Sweden	1			Denmark	1
										Turkey	1
										Brazil	1
										Finland	1
										Spain	1
Page views	0	42		255		110		32		439	

USA – United States of America; UK – United Kingdom



APPENDIX D: PERSONALITY TRAITS



GENERIC PROFILE: PERSONALITY TRAITS/CHARACTERISTICS

RELATIONSHIPS WITH PEOPLE				
Description	Left	Characteristic	Right	Description
Happy to let others take charge, dislikes telling people what to do, unlikely to take the lead		Controlling		Likes to be in charge, takes the lead, tells other what to do, takes control
Accepts majority decisions, prepared to follow the consensus		Independent minded		Prefers to follow own approach, prepared to disregard majority decisions
Prepared to make decisions without consultation, prefers to make decisions alone		Democratic		Consults widely, involves others in decision-making, less likely to make decisions alone
THINKING STYLE				
Favours changes to work methods, prefers new approaches, less conventional		Conventional		Prefers well-established methods, favours a more conventional approach
Prefers to deal with practical rather than theoretical issues, dislikes dealing with abstract concepts		Conceptual		Interested in theories, enjoys discussing abstract concepts
More likely to build on than to generate ideas, less inclined to be creative and inventive		Innovative		Generates new ideas, enjoys being creative, thinks of original solutions
Prefers routine, is prepared to do repetitive work, does not seek variety		Variety seeking		Prefers variety, tries out new things, likes changes to regular routine, can become bored by repetitive work
Behaves consistently across situations, unlikely to behave differently with different people.		Adaptable		Changes behaviour to suit situation, adapts approach to different people
More likely to focus upon immediate than long-term issues, less likely to take a strategic perspective		Forward thinking		Takes long-term view, sets goals for the future, more likely to take a strategic perspective
Sees deadlines as flexible, prepared to leave some tasks unfinished		Conscientious		Focuses on getting things finished, persists until the job is done



FEELINGS AND EMOTIONS				
Tends to feel tense, finds it difficult to relax, can find it hard to unwind after work		Relaxed		Finds it easy to relax, rarely feels tense, generally calm and untroubled
Feels calm before important meetings, less affected by key events, free from worry		Worrying		Feels nervous before important occasions, worries about things going wrong
Concerned about the future, expects things to go wrong, focus on the negative aspects of the situation		Optimistic		Expects things will turn out well, looks at the positive aspects of a situation, has an optimistic view of the future
Difficult to trust people, wary of others' intentions		Trusting		Trusts people, sees them as reliable and honest, believes
Openly expresses feelings, finds it difficult to conceal feelings, displays emotions		Emotionally controlled		Can conceal feelings from others, rarely displays emotion
Sees career progression as less important, looks for achievable rather than highly ambitious targets		Achieving		Ambitious, and career-centred, likes to work to demanding goals and targets
Tends to be more cautious when making decisions, likes to take time to reach conclusions		Decisive		Makes fast decisions, reaches conclusions quickly, less cautious
REPORTING STYLE				
Prefers to work without constraints. Has own ideas and enjoys the opportunity to develop them with minimal intervention				



APPENDIX E: COMMUNICATION FRAMEWORK

COMMUNICATION FRAMEWORK

COMMUNICATION FRAMEWORK	
<i>What do you want to say?</i>	
The message	Communicate the BPM Strategy and BPM Roadmap
	BPM deliverables in each step of the transformation process
	Clear and simple message enabling collaboration and active participation
<i>When will you say it?</i>	
The timeline	Awareness: BPM Strategy, building blocks creation of process communities, information on progress and future plans.
	Pilot: Inform all audiences of pilots and BPM Roadmap. First transition results available.
	Implementation: BPM transition completed. Continuous communication plan for all audiences.
	Continuous feedback: Feedback mechanisms in place to measure progress.
<i>How will you say it?</i>	
The channel	Channel to fit audience
	Intranet, newsletters, board updates, internal magazines, passive media data on posters and flyers, testimonials, workshops, committees, blogs
<i>To whom will you say it?</i>	
The audience	Senior management: Overall transparency, decision-making, high level interest.
	Team leaders: Align vision, strategy, collaborate with business process owners.
	Business process owners: Process transparency, collaborate with IT, business process measurements.
	Project managers: Tools, methods, training.
	Employees: Job performance, transparency, responsibilities

Snabe, Rosenberg, Moller & Scavillo. (2009:237–242).



APPENDIX F: ONLINE BUSINESS PROCESS MATURITY ASSESSMENT QUESTIONS EXAMPLE

BPM Maturity Check Questions

The following questions relate to an online BPM Maturity Check powered by IDS Scheer at <http://www.bpmmaturity.com/bpm.aspx?lang=en-US>

The BPM Maturity Check consists of sixteen questions which have been grouped into the Strategy, Design, Implementation and Controlling components. Each question has a choice of five possible answers. The maturity assessment rating is based on the answers selected.

Its inclusion in this thesis serves as an example of a BPM Maturity Check Tool.

STRATEGY
What is your organisational “readiness” for BPM?
Who are your BPM strategy and objectives aligned with the business strategy?
How do you manage your BPM?
Are BPM standard methods and tools defined for BPM initiatives?
DESIGN
How well are your business processes documented?
How far do you integrate other aspects of the enterprise with your process architecture?
What level of process analysis are you doing?
What are you doing in terms of process optimisation?
IMPLEMENTATION
How are required changes in the processes managed?
How much do BPM efforts currently affect the organisation structure of the company?
How structured is the collaboration between BPM and IT?
How are business processes communicated and how is the BPM knowledge communicated?
CONTROLLING
How are implemented processes measured?
How well is a target system for the BPM objectives defined?
How are the implementation of BPM knowledge and the communication of BPM achievements measured?
How are suggestions for improvements and related process changes managed?