Enablers and Moderators of Telework: Assessing the Maturity of Telework Practices in Organisations

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By:

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'For the Lord grants wisdom! His every word is a treasure of knowledge and understanding'

Proverbs 2:6

To my Mom, who has always believed in me and encouraged me.

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Abstract

Telework has been a subject of interest for many years to researchers and policy makers as it has the potential to benefit individuals, organisations and society. Enabled by information and communication technologies, telework has been in existence for over 35 years and even with significant technological improvements, telework has not achieved wide spread adoption. Of the many aspects of telework investigated, few studies have examined the effect of organisational features, which affect telework success. This research study examines the role of the organisation in telework adoption and explores the organisational factors that may positively or negatively influence telework diffusion.

The research study began with a literature review of telework related research which included similar subjects such as telecommuting, e-work, virtual teams, home-based working and mobile work. Many studies took the approach of examining a single dimension of telework success, such as productivity, whilst few studies addressed telework success as a multidimensional concept. This research study approaches telework success as a multidimensional concept and draws from this body of knowledge, a set of organisational factors identified as being potentially able to affect telework adoption and diffusion.

The set of organisational factors were compiled into a model which was explored by means of a dual case study of the IS personnel of two organisations. The comparative case study is a cross-sectional examination at a single point in time, of telework in two organisations. These organisations were chosen as polar types of telework adoption in order to examine the effect of the organisational factors in extreme opposites of telework maturity.

An analysis of the case studies reveals that the measurement of the organisational factors are affected by the adoption process and assessed values will change as telework practices mature. In addition, the relative contribution of each organisational factor is not equal and this changes over time so that the contribution of a factor such as *Management Control* will vary depending upon the maturity of telework practices in the organisation. Several organisational factors that were not included in the original model that should form part of future studies include national culture, the effect of industry type of the organisation and the effect of sub cultures within the organisation.

Table of Contents

List of Figures

List of Tables

List of Abbreviations / Special Terms

CEO	Chief Executive Officer
CIO	Chief Information Officer
CMC	Computer Mediated Communication
ERP	Enterprise Resource Planning
HR	Human Resources
IATA	International Air Transport Association
ICT	Information and Communication Technology
KPI	Key Performance Indicator
LCA	Life Cycle Assessment
Lotus Live	Business networking and collaboration cloud-based services hosted by the Lotus Software division of IBM
PBC	Personal Business Commitment
RFP	Request For Proposal
RST	Relational Signalling Theory
Sametime	Unified communications and collaboration software, a product of the Lotus Software division of IBM
SAP	Systems, Applications and Products, a German software corporation commonly known as SAP AG
Siebel	A customer relationship management application, a product of Oracle corporation
SMS	Short Message Service
VMT	Vehicle Miles Travelled
VPN	Virtual Private Network
Web 2.0	Web applications which facilitate participatory information sharing
Wiki	A website where users can modify content

Chapter One: Introduction

Much has been written about telework, the benefits to be derived, as well as the difficulties and obstacles to its successful implementation (Campbell & Heales, 2008; Haddad, Lyons & Chatterjee, 2009; Peters, Tijdens & Wetzels, 2004). Teleworking has been a subject of interest to researchers, policy makers, organisations and individuals for many years as it has the potential to benefit individuals, organisations and society (Haddad et al., 2009). The term telework can refer to many different forms of activities, such as telecommuting, virtual work, e-work, nomadic work, distance work, home-based work and mobile work to name but a few (Mihhailova, 2009). The original term telecommuting was established by Jack Nilles who is the lead author of the first academic book on telecommuting and whose research showed notable productivity improvements resulting from telecommuting (Westerfall, 2004).

Telework has since had a chequered history where the expectations of robust adoption by organisations did not materialise and adoption rates have in fact been much lower than expected (Peters & Heusinkveld, 2010; Perez, Sánchez, & de Luis Carnicer, 2002). However, there has been a renewed interest in telework of late with improvements in Information and Communications Technologies (ICTs) combined with environmental concerns and the potential of cost savings that have led to increased telework adoption (Turetken, Jain, Quesenberry, & Ngwenyama, 2011). The recent global financial crisis together with natural events such as the Eyjafjallajokull volcano eruption, which shut down air travel for several days across Europe and affected an estimated 10 million travellers worldwide, may have also created a renewed interest in telework as an alternative form of work.

Advantages and Disadvantages of Telework

Telework has many potential benefits and can be considered from the perspectives of the individual, the organisation and society. Viewed from the perspective of the individual benefits include greater autonomy, improved work-life balance, greater job satisfaction and reduced expenses (Nicholas & Guzman, 2009; Salazar, 2001).

Organisational benefits can be wide ranging and telework is seen as a means to achieve greater organisational agility to meet the increasing demands in a changing and complex business environment. Organisational agility can be achieved through means such as the compilation of virtual teams, empowered alliances and virtual organisations (Abuelmaatti & Rezgui, 2008; Felstead, 2009).

However, these are not the only means of achieving benefits for organisations, examples of direct benefits of telework include increased productivity, reduced employee turnover, reduced expenses and increased customer service (Hill, Ferris, & Märtinson, 2003; Pérez et al., 2002). According to Andreev, Salomon and Pliskin (2010) telework has the ability to change travel patterns, and has been a subject of attention in transportation literature, which has examined how telework could impact society. The primary effects of reduced traffic volumes and associated carbon emissions have been examined, as well as secondary effects such as land use and travel supply (Andreev, Salomon, & Pliskin, 2010; Haddad et al., 2009).

As with most forms of work there are obstacles and challenges which need to be addressed and telework is certainly no different in this regard. Some negative impacts for the individual include greater feelings of isolation, concerns over career advancement, management of boundaries between work and home life as well as tendencies toward "over work" (Golden, 2006; Haddad et al., 2009).

Similarly, organisations face many potential challenges in implementing and managing telework. These include management concerns of opportunistic behaviour by employees, potential difficulties in intra-organisation communication and greater management effort to monitor employee performance (Abuelmaatti & Rezgui, 2008; Harrington & Ruppel, 1999; Mayo, Pastor, Gomez-Mejia, & Cruz, 2009).

Macro or societal level issues are primarily the failure of telework to produce the expected benefits, where commute related travel is replaced with other forms of local travel. In some cases, telework has a modification effect as opposed to a substitution effect on travel, resulting in little or no overall reduction in the total travel effect (Andreev et al., 2010; Lehmann & Hietanen, 2009).

Telework and the IS Professional

Telework has been shown to be effective in facilitating recruitment, reducing staff turnover intentions and increasing loyalty to the organisation (Golden, 2006; Pyoria, 2009; Sharit, Czaja, Hernandez, & Nair, 2009; Thompson & Aspinwall, 2009). One group commonly associated with high turnover intentions, is that of IS professionals and according to Messersmith (2007), the IT occupation is considered to face greater turnover challenges than any other occupation. IS professionals are defined in the broader sense as a generic term to cover multiple occupational categories in which people create and produce ICT products and services. Messersmith (2007) further argues that IS professionals experience higher instances of burnout and work-life conflict

than co-workers in other functional areas, and may be more prone to these effects. The consequences of work-life conflict are well documented by the academic literature and include decreased job satisfaction, increased turnover intentions and decreased organisational commitment (Hill, Hawkins, Ferris & Weitzman, 2001; Messersmith, 2007). Work exhaustion occurs when employees feel they cannot meet the demands placed upon them and the emotional and mental energy required to do so has been depleted (Golden, 2006).

An examination of the motivation factors of IS professionals to telework found that the primary reason given was the ability to spend more time at home with families and in particular with children whilst flexible work hours, and the reduction of travel time were the next most important motivational factors (Beasley & Lomo-David, 2000). According to Golden (2006) telework offers highly valued benefits of improved flexibility and autonomy, greater ability to handle family demands and increased job satisfaction. Telework also provides a means of saving emotional energy by providing physical and psychological distance from others in the workplace as well as the ability to better manage interactions, thereby improving the stress resistance capacity of the individual (Golden, 2006).

Telework Adoption and Maturity

Technology is the enabler that not only makes telework possible, but also forms the backbone of any telework program (Siha & Monroe, 2006). ICT innovation adoption research provides a useful lens through which telework adoption can be considered. IT innovation research aims to understand the factors which either facilitate or inhibit adoption and diffusion of IT innovations by individuals and organisations (Fichman, 2004). Adoption theory examines the choices made in the acceptance or rejection of a specific innovation, whereas diffusion theory examines how the spread of an innovation occurs over time in a given community (Straub, 2009; Surry, 1997). The adoption process itself has to be considered as it progresses from the assessment through the actual adoption of the practice and finally matures as diffusion into the organisation. This forms the basis for the term Telework Maturity used in this study.

The Research Gap

Given the potential advantages that telework provides and the specific challenges of the IS professional in terms of work exhaustion and maintaining job satisfaction, the examination of telework as experienced by IS professionals is a good research foundation with which to begin.

The majority of academic literature has approached the subject from two broad viewpoints, that of the employee and that of the employer (Hunton & Harmon, 2004; Siha & Monroe, 2006). Viewed

through the lens of the employee, the foci of research have been on issues such as scheduling difficulties, work-life balance, motivations for wanting to telework, job satisfaction, communication, employees' attitudes to telework as well as some of the negative consequences of telework (Hunton & Harmon, 2004; Siha & Monroe, 2006). When viewed through the lens of the employer, studies have tended to focus on issues of adoption factors such as cost, improved productivity, decreased staff turnover and being good corporate citizens (Hunton & Harmon, 2004).

However, of the many aspects of telework which have been investigated, few studies have examined the effect of organisational features which affect telework adoption and the subsequent diffusion of telework as it matures within the organisation (Pérez et al., 2002). An understanding of these conditions or factors within an organisation, and how they affect telework adoption and diffusion, will potentially give greater insight into identification of the pertinent actions required to improve telework maturity in organisations.

The Research Question and Objectives

The purpose of the research is to explore the factors that affect diffusion of telework within organisations. The research focuses upon the following question and research objectives:

Which factors enable or hinder the diffusion of telework practices within an organisation?

Several predetermined factors have been identified in the literature as significant in successful telework diffusion, which are discussed in the following section. The objectives of this research are:

- To confirm if the previously identified factors enable or hinder telework diffusion within organisations.
- To identify additional factors that may influence telework diffusion.

Relevance of the research

This study has relevance to both researchers and IS professionals. The study may assist researchers in gaining a better understanding of the effect of organisational factors on telework diffusion and the identification of which factors have a positive or negative effect. Furthermore, the potential interaction of these factors with each other, as they affect and in turn are affected by telework diffusion, may give future researchers the opportunity to explore how the organisation shapes, and is in turn shaped by, telework.

IS professionals may find the study a useful aid to assessing an organisation's readiness to

implement telework and give insight into which aspects of the organisation may require greater change management focus to improve the adoption and the subsequent diffusion of telework as it matures in the organisation. IS professionals may also be able to use this study as an aid in diagnoses of situations where telework diffusion is poor. It is by no means a comprehensive checklist of items that will achieve telework success, but can potentially act as a guide to examining those factors, which go beyond the obvious items of technology, candidate selection and job selection, when implementing telework.

Chapter Summary

Telework has many potential benefits as well as difficulties and has not achieved the widespread adoption that was originally anticipated. ICT innovation adoption research provides a useful lens through which to examine telework maturity as a process of adoption from the acceptance of the innovation to the widespread diffusion of telework as it matures within the organisation. Telework has been found to be effective in reducing staff turnover intentions and IS professionals are a group commonly associated with high turnover intentions. Few studies have examined the effect of organisational features upon telework maturity and success and the purpose of this study is to examine which organisational factors could enable or hinder the diffusion of telework within an organisation. The following chapter provides a brief review of the current literature on telework research.

Chapter Two: Literature Review

This chapter will begin with an examination of the possible definitions for telework, followed by an examination of telework from the perspective of the individual, the organisation and society. The role of technology will then be considered, with a brief review of some of the current and future Information and Communication Technologies (ICTs).

What is telework?

There is little agreement in research literature about the meanings and definitions of Telework, and whether terms such as home-working, remote working, virtual work or mobile work refer to the same activity. Telecommuting appears to be the term most used by American researchers whilst telework is used primarily by European researchers (Andreev et al., 2010; Helminen & Ristimäki, 2007), yet they refer to essentially the same thing i.e. the use of ICT to enable workers to access their work activities from a remote location. Similarly, many of the terms such as home-working, mobile work and virtual work can be found in literature associated with telework. A clearer understanding of telework can be gained through the examination of some of the attributes ascribed to it in the literature.

According to Campbell and Heales (2008), telework is defined in terms of three components; the use of ICT to support work activities, performance of these work activities away from the office environment, and that the completion of the work activities can occur during or outside of normal working hours. Campbell and Heales (2008) do not include in their definition the type of relationship that the teleworker has with the organisation, i.e. whether the teleworker is an employee of the organisation or not. Campbell and McDonald (2007) draw on definitions from the Australian Telework Advisory Committee which categorised telework in terms of location from which the work is performed (home-based or mobile worker), duration of the work (full-time, part-time, after hours) and the relationship of the teleworker to the organisation (employee or self-employed).

According to Helminen and Ristimäki (2007), some definitions of telework consider the degree of formality of the telework arrangement between the worker and the organisation, in terms of whether a contract or specific permission is given to telework. Too strict a definition can exclude occasional telework, or telework activity which occurs within an informal arrangement between the organisation and worker (Helminen & Ristimäki, 2007).

Another dimension to be considered in the definition of telework is that of the frequency of work

undertaken, where the amount of time spent teleworking has to be considered (Helminen & Ristimäki, 2007). The number of hours or days per week spent teleworking may affect the classification of the activity as telework, but the literature does not reach a consensus in terms of a minimum value to be ascribed. However, Pyoria (2009) found that a part-time work distribution, between full-time work and telework had a less disruptive effect on intra-organisational communication. Pérez et al. (2002) argue that telework can encompass different intra-organisational functions (e.g. telecommuting, mobile work) as well as intra-organisational relations such as intra-organisational teamwork.

When considering the aspect of distributed work as a component of telework, the role of virtual teams must also be examined. One definition of a virtual team is a team whose members are geographically dispersed and whose work is coordinated primarily by means of ICT (Hertel, Geister, & Konradt, 2005). Hertel et al. (2005) make a distinction between telework, virtual groups and teams in terms of the number of persons involved and their interaction. Based on Hertel's definition, telework is performed by an individual and several teleworkers can work together to comprise a virtual group or virtual team.

One of the aspects previously mentioned is location of telework activity, namely that it occurs at a different location to that of the traditional place of work, a typical example being home-based work. Yet does the aspect of location not require further definition? Abbott and Yoong (2005) explore the aspect of satellite offices and neighbourhood work centres, where such telecentres are used to alleviate the need for employees to commute, as well as provide a fully equipped office environment for employees. The reference to satellite offices is quite common in the literature in terms of telework definitions, and tends to include the aspect of location, both in more formal environments and less formal locations, such as work done from home or even on a customer's premises (Abbott & Yoong, 2005; Golden, 2006; Higa & Shin, 2003; Hunton & Harmon, 2004).

The advances in ICT have enabled an increasing flexibility of choice as to when and where work is performed, and have facilitated changes in the temporal-spatial structure of organisations (Campbell & Heales, 2008; Pyoria, 2009). As such, ICT forms a key aspect of any definition of telework due to its ability to enable communication, collaboration and reduce the need for face-to-face contact. Technology trends of increased processing power and constant innovation, decreasing communications costs, together with environmental concerns have also renewed both interest in and adoption of telework (Turetken et al., 2011; Williams, Procter, & Dalziel, 2008).

New technologies will continue to provide new means of performing work and enabling collaboration, yet no technical interface can replace the depth of communication provided by face-to-face interaction (Pyoria, 2009). It can also be argued that collaborative technologies enable a level of co-operation and interaction to produce results which would not be possible by smaller co-located workgroups; examples are Wikipedia and the news-ranking site Digg (Institute For The Future, 2007). The workforce of today is changing with a new generation of techno-literate workers entering the work place and the appropriate use of technology may make the teleworker far more effective, enabling a greater level of interaction and collaboration.

As the different aspects of telework are considered, some common themes emerge from the research literature that will assist in reaching a definition of telework. These common features are the use of ICT to support work activities, that the work activities themselves relate to the day-to-day labour activities and that the labour activities are performed from different and remote locations (i.e. away from the traditional place of work) (Pérez et al., 2002). To complete the definition, the categorisation of the worker has been included to limit the scope and prevent the definition from becoming too broad. The categorisation of the worker has therefore been defined as a full time employee of the organisation, not a part time worker, sub-contractor or self-employed person.

For the purposes of this research review, the term telework will be used and will be defined as:

> "The use of ICT by full time employees of an organisation to perform their day-to-day work activities whilst being physically located offsite from the standard workplace."

Telework from the individual's perspective

Telework can be considered from two perspectives, the employee's desire to telework and the organisation's willingness and readiness to allow and support the employee wishing to telework. This section will deal with those factors, which could influence the employee's choice to telework. The following section on the organisational perspective of telework will deal with the factors influencing the employee's opportunity to telework.

For the individual or employee, telework has many potential benefits such as improved work-life balance, greater autonomy, increased job satisfaction, cost savings and greater flexibility (Golden & Veiga, 2008; Haddad et al., 2009; Hunton & Harmon, 2004; 2004; Pérez et al., 2002). These are some of the many reasons given for choosing to telework. Other reasons include being able to reduce unwanted work interruptions and probably the most cited reason being the ability to reduce the daily commute time to and from work (Golden & Veiga, 2008; Hunton & Harmon, 2004). Upon

closer examination, it becomes clear that benefits are counter-balanced with other ramifications, an example of which is the concept of work-life balance.

Work-Life Balance

Autonomy

Work-life balance has been the focus of much research and is closely linked to autonomy. Individual control over how a job is done is linked to higher well-being and telework allows greater choice of how work is performed (Golden, 2006; Kossek, Lautsch, & Eaton, 2006). Although telework enables greater autonomy, it has the effect to blur the boundaries between home and work. To better understand this effect, a brief examination of Boundary Theory is required.

Boundary Theory

Boundary Theory shows that individuals create boundaries to separate and order their environment into social domains which have relevance for the individual; an example is separating "work" from "home" (Ashforth, Kreiner, & Fugate, 2000). Boundaries are further delimited by roles where a person enacts a role such as "employee" at work and "mother" at home (Ashforth et al., 2000). This is important from two aspects, firstly from the view of how individuals transition from one domain to another and secondly from the view of the permeability of the boundary.

Transition is the process by which the individual disengages psychologically and physically from one role and re-engages in another role. The daily commute to the workplace in traditional forms of work could form part of the transition ritual that individuals use in preparing themselves for work (Ashforth et al., 2000). So wanting to remove the "wasted time" of the daily commute could have a negative effect as it serves as an important transition ritual. Individuals will tend to minimise the amount of effort and difficulty to transition from one role to another (Ashforth et al., 2000).

In the case of home working, telework brings the workplace into the home, which creates a permeable boundary between work and home. This can result in unintended side effects, such as the inability to buffer negative events from one domain spilling into the other, as well as creating greater role conflict as the individual struggles to balance work and home role demands (Haddad et al., 2009; Hill et al., 2003). This requires the individual to develop boundary management strategies in order to reduce the potential for conflict.

An example of boundary management strategies is segmentation where boundaries between work and home are reinforced by some means, such as physical separation of the area used for telework or time, such as not checking email on weekends (Kossek et al., 2006). Thus boundary management,

the transition rituals used and the boundary management strategies to be employed, make up important considerations when looking at potential benefits of telework, and how these are to be effectively realised for the individual.

Socialisation

Feelings of social and professional isolation have been associated with telework, and concerns over the potential negative impact on career advancement and professional development are often cited by employees (Beauregard & Henry, 2009; Kurland & Cooper, 2002; Mello, 2007; Pyoria, 2009). Telework places a much greater reliance upon Computer Mediated Communication (CMC) which cannot convey the same rich cues that are possible with face-to-face communication (Blue, Serva, Baroudi & Benamati, 2009). This results in the loss of the *human moment*, which is achieved when participating individuals occupy the same physical space, and emotional as well as intellectual attention exists between them, even if it is for just a brief moment (Blue et al., 2009).

An important aspect of the *human moment* is that a shared understanding (conveyance and convergence) must be achieved between participants. The loss of these human moments is associated with feelings of increased emotional distance, isolation and increased levels of stress (Blue et al., 2009). Career anxieties in teleworkers can arise due to their not being part of the informal political network due to their spending less time in the office (Hill et al., 2003). Added to this is the premium that supervisors and middle managers place on the socialisation aspects of the workplace (Sharit et al., 2009).

Blue et al. (2009) argue that conveyance and convergence can be achieved through CMC thereby creating a *virtual moment*, which has the same benefit as the human moment in decreasing emotional distance, albeit not as powerfully. The use of CMC enables the potential for a greater frequency of virtual moments to occur and this greater frequency can be as effective, and in the right circumstances, a more preferable means of communication than face-to-face interaction (Blue et al., 2009).

Teleworker Demographics

What is the demographic profile of a teleworker? This has been viewed from many aspects including gender, age, disability status, health, occupation, parental status and education (Haddad et al., 2009). Two aspects, which bear further examination, are those of gender and age.

Gender

Telework has been found to be typically more attractive to females, who perceive greater benefits, and research has shown reduced absenteeism amongst female employees with access to flexible

work arrangements such as telework (Beauregard & Henry, 2009; Haddad et al., 2009; Pérez et al., 2002). It is generally argued that women bear the primary responsibility for family care and therefore seek flexible work arrangements such as telework; however, this gender stereotype can be misleading, because a 2005 Labour Force Survey found that two-thirds of teleworkers in the United Kingdom were men (Ruiz & Walling, 2005).

Age

Telework would seem to be more attractive to certain age groups, specifically when it comes to new job entrants. Work-life balance is increasingly important to young personnel and a study by Thompson and Aspinwall (2009) examined job choices by students as to whether or not the provision of work-life benefits influenced job choice. According to Thompson and Aspinwall (2009), sixty-eight percent of respondents were drawn to job offers providing work-life benefits. However, telework was ranked only third of the four benefits sought by respondents (childcare and flexitime were ranked ahead of telework).

This would indicate that, although work-life benefits are of value, telework on its own is not a strong determiner of choice. Viewed through the lens of generational theory, millennials (born 1981 – 1999) do not show a preference for teleworking, regardless of how important they view autonomy or work-life balance (Nicholas & Guzman, 2009). The growth of teleworkers in the UK between 1997 and 2005 was much greater in older age groups than the youngest age group of 16 to 24 year olds as shown in Figure 1.

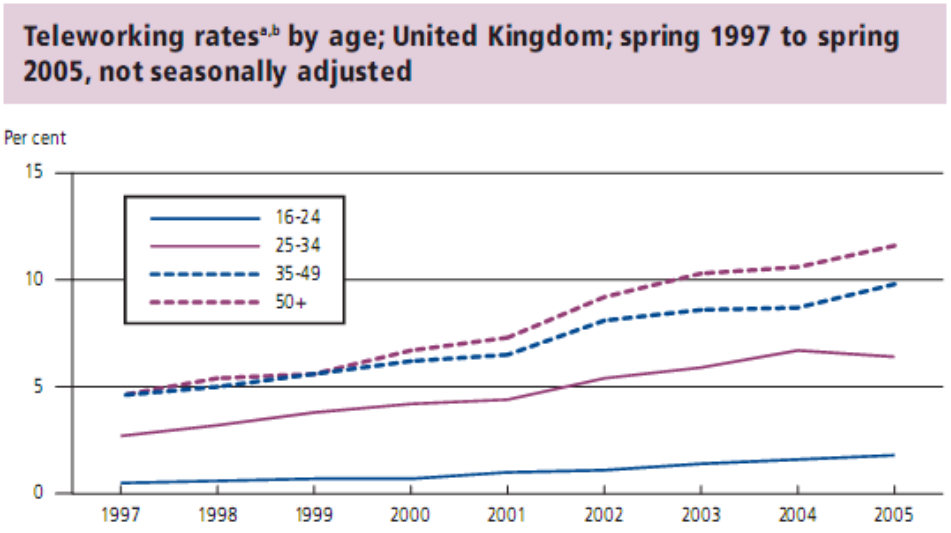

Figure 1 Teleworking rates by age (Nicholas & Guzman, 2009)

According to Sharit et al. (2009) the reduced socialisation brought about by telework can be of benefit to other groups such as older workers or marginalised workers, where the focus on the

visible aspects of work are removed and greater emphasis placed on the work output. This can help to overcome negative perceptions of older workers by managers. Older workers have many attributes which make them valuable employees such as trustworthiness, accountability, ability to work independently, experience, as well as a long term view which balances risks and long term commitments in decision making (Hawley, 2009; Sharit et al., 2009). Telework can provide a means by which some practical difficulties experienced by the older worker in the workplace can be addressed, such as difficulty with the daily commute, reducing distractions and accommodation of mobility problems or disabilities (Sharit et al., 2009).Other concerns identified in the research literature include; increased job uncertainty, being viewed as unprofessional by non-teleworking colleagues, distractions in the home, lack of access to resources, perceived loss of status and reduced promotion opportunities (Hill et al., 2003; Sharit et al., 2009).

Telework from an organisational perspective

Viewed from an organisational perspective there are different aspects of telework, which act as potential drivers or moderators to telework adoption. Telework benefits include, but are not limited to: increased employee productivity, increased employee morale, a reduction in staff turnover, less absenteeism, reduced costs of maintaining office space, better customer service and the ability to recruit experts (Harrington & Ruppel, 1999; Lee, Shin, & Higa, 2007; Pérez et al., 2002; Salazar, 2001).

Just as there are organisational benefits to teleworking, potential disadvantages must also be considered. These typically take the form of organisational changes required to accommodate telework, such as: the correct identification of suitable jobs, changes in human resource policies and procedures, investment in supportive technologies, greater effort in co-ordination of telework and non-telework team members, potential negative effects on organisational culture, and security concerns (Haddad et al., 2009; Harrington & Ruppel, 1999; Hunton & Harmon, 2004; Sharit et al., 2009). The different considerations applicable to organisations are discussed in more detail in the following sub-sections.

Personnel Perspectives

According to Dychtwald, Erickson and Morison (2006) the population age distribution has become far more evenly distributed across all age groups in many countries. When considered in conjunction with falling birth rates, increased longevity and the current practice of many organisations to encourage early retirement, the implications are that a shrinking younger workforce may have to support an increasing number of non-working older people (Dychtwald, Erickson, & Morison, 2006; Sharit et al., 2009).

This could develop into a severe skill shortage and forecasts have already been made by the European commission that a shortage of approximately 20.8 million people of working age will occur by 2030 (Sharit et al., 2009).

Staff turnover

Organisations are finding themselves in an increasingly complex and competitive environment and will face increasing competition for skilled workers. Any measure which would help to attract or retain employees is going to become of increasing importance. Telework has been shown to be effective in facilitating recruitment, reducing staff turnover intentions and increasing loyalty to the organisation (Golden, 2006; Pyoria, 2009; Sharit et al., 2009; Thompson & Aspinwall, 2009). One explanation for the reduction of staff turnover can be found in social exchange theory and reciprocity. The autonomy given to the employee to conduct work at a time and place of their choosing (through telework) is in turn reciprocated by increased loyalty, reduced turnover intentions and lower absenteeism (Beauregard & Henry, 2009; Golden & Veiga, 2008; Harrington & Ruppel, 1999; Mello, 2007).

Productivity

In addition to increased commitment, reciprocation from the employee also takes the form of increased effort and in the case of telework, employees have tended to work longer hours (Haddad et al., 2009; Peters et al., 2004; Williams et al., 2008). This forms one of the arguments for the productivity gains associated with telework. Productivity gains are not just a case of additional hours being worked; the quality, intensity and efficiency of work has been found to increase by using telework arrangements (Butler, Aasheim, & Williams, 2007).

Organisational Perspectives

Management Control

Telework brings many management challenges, such as the difficulty of managing employees that cannot be physically observed and the associated resistance by supervisors and managers to telework (Kurland & Cooper, 2002). Management control, as it pertains to human resource management can be viewed in terms of control theory (Snell, 1992). Control theory describes three forms of control mechanisms in organisations; *input control*, aimed at obtaining the right people and skills, *behaviour control*, aimed at controlling behaviour on the job and *output control* which aims to set targets for individuals and allows discretion for the individual as how to achieve the targets (Virick, Da Silva & Arrington, 2010).

Telework requires that traditional management methods of assessing performance through direct observation have to change to a management style focussed on objectives and outcomes (Peters et al., 2004; Staples & Ratnasingham, 1998; Turetken et al., 2011). Whilst telework is enabled by information technology, it is primarily a workplace and organisational innovation (Dimitrova, 2003), which requires a significant investment in changing work practices and policies used to co-ordinate staff. Research shows that managers fear the loss of control over employee's behaviour as they gain autonomy through telework and that employees will engage in opportunistic behaviour when not observed (Harrington & Ruppel, 1999, Kurland & Cooper, 2002)

These factors are often attributed to management resistance to telework, which is one of the common obstacles to telework success (Chung & Hossain, 2008; Harrington & Ruppel, 1999; Hill et al., 2003; Pérez et al., 2002). In many cases supervisors are the gatekeepers who decide whether employees will have access to telework arrangements (Lautsch, Kossek & Eaton, 2009). Teleworkers may receive additional training or be selected for telework because they are the most productive employees and non-teleworkers may resent the perceived special privileges being granted to teleworkers (Butler et al., 2007). The management of blended workgroups comprising teleworkers and non-teleworkers can be more difficult in the coordination and motivation of employees as the different groups are very aware of each other's status and treatment (Lautsch et al., 2009).

Communication

The changes in day-to-day work affect intra-organisational communication in terms of how superiors, managers, subordinates, colleagues and clients communicate when part of the workforce is teleworking (Harrington & Ruppel, 1999; Hertel et al., 2005). Managing the availability of telework employees and co-ordinating with non-teleworking colleagues (Hill et al., 2003; Kossek et al., 2006; Pérez et al., 2002) are also cited as reasons for management resistance due to the extra effort required and potential loss of management control (Peters et al., 2004).

Informal communication, which normally occurs as part of the social aspect of work, can be lost and may contribute to the teleworker's sense of isolation (Duxbury and Neufeld, 1999; Erickson, 2001). Physical proximity promotes spontaneous interaction that aids the creation and communication of tacit knowledge. Many organisational theorists argue that a technical interface cannot fully replace the richness of face-to-face interaction that forms the basis of both informal organisational culture and the communication of tacit knowledge (Pyoria, 2009). Media richness theory has been used to examine the importance of communication cues in virtual teams and telework, in terms of the effectiveness of the communication medium's ability to eliminate ambiguity (Hill et al., 2003; Turetken et al., 2011). Viewed from the perspective of media richness, a greater reliance on face-

to-face communication will potentially make telework more difficult to implement in order to overcome the reduced communication effectiveness introduced by electronic media.

In order to overcome some of the challenges created by telework, managers and employees have developed new relationships based on trust and autonomy, enabling employees to become more effective and reduce employee uncertainty (Staples & Ratnasingham, 1998; Tietze, Musson, & Scurry, 2009).

Trust

> "Trust is a psychological state comprising the intention to accept vulnerability to the actions of another individual (a trustee), based upon the expectation that the other will perform a particular action that is important to the trustor." (Six and Sorge, 2008, p 859).

Trust is founded on the expectation that it will not be taken advantage of and is commonly seen as dependent upon the behaviour of the individuals involved, namely the trustee and trustor (Six & Sorge, 2008). Relational Signalling Theory describes signs, referred to as *relational signals* that trustors look for in behaviour from the trustee, that show both competence to meet the expectations as well as behaviours that indicate the maintenance of a mutually rewarding relationship (Six & Sorge, 2008). The character of the relational signal (positive or negative) is determined not by the sender but by how the receiver perceives the signal (Six & Sorge, 2008).

Trust in virtual teams has been the focus of much research, particularly the formation of trust and is an important consideration for organisational and team success when it comes to telework (Kurland & Cooper, 2002; Pérez et al., 2002; Staples & Ratnasingham, 1998). Trust between the manager and the employee is an essential factor to telework success through the reduction of uncertainty, increased job satisfaction and employee commitment (Staples & Ratnasingham, 1998). Trust forms a core component of high quality superior-subordinate relationships, which in turn result in higher levels of commitment, job satisfaction and performance whilst the converse was true of low quality relationships in virtual teams (Golden & Veiga, 2008). Telework can also affect team identity and relations, where work related jealousy by non-teleworking colleagues and feelings of guilt by teleworkers has been experienced (Harrington & Ruppel, 1999; Hill et al., 2001; Tietze et al., 2009).

Relational Signalling Theory (RST) explicitly links individual action and organizational conditions, thus an organisational context exists in the generation and sustainment of trust (Six & Sorge, 2008). By allowing a greater amount of teleworking, the organisation not only enables greater personal benefit for the employee but also demonstrates the organisation's trust and supportiveness

(Golden, 2006). The examination of trust in relation to telework should examine trust at the superior-subordinate relationship level as well at an organisational level.

Organisational Culture (Value Compatibility)

Organisational fit has been studied in relation to telework, specifically the impact on organisational culture, norms and values (Harrington & Ruppel, 1999; Tietze et al., 2009), as well as the effect of national culture on telework (Mayo et al., 2009). An innovation such as telework can be compatible or incompatible with the socio-cultural values and beliefs of an organisation where a potential match or mismatch exists between the values of the organisation and the value assumptions embedded in the innovation (Bunker, Kautz and Nguyen, 2007). An example would be an innovation being implemented that forces isolation whereas teamwork is highly valued within the organisation.

The greater the compatibility of the innovation such as telework with the cultural values of an organisation, the greater the potential adoption success (Bunker et al., 2007). Organisational values are expressed in the structure and operations of the organisation and how the culture is articulated to members (Bunker et al., 2007). According to Belanger and Collins (as cited in Harrington & Ruppel, 1999) this can include attitudes toward activities such as monitoring employee behaviours, rewarding employees for what is produced, encouraging group behaviours and outcomes, or enabling employee autonomy.

Many aspects of telework have been examined in order to try to identify which factors positively or negatively affect telework adoption. These include organisation size, organisation age and the degree of innovation within the organisation (Hill et al., 2003; Mayo et al., 2009; Pérez et al., 2002).

Value Compatibility thus considers the congruence of telework to the norms and values of the organisation in terms of organisational values, group values and individual values of the teleworker. Value Compatibility examines attitudes towards control mechanisms, peer group attitudes to telework, and individual attitudes to telework.

Organisational Support (Practical Compatibility)

Organisational support for telework extends to the degree of organisational resources available to support telework (Haddad et al., 2009), such as technical and ICT resources, HR policies, training, job design and planning (Hertel et al., 2005; Kossek et al., 2006; Pérez, Sánchez, de Luis Carnicer, & Vela Jiménez, 2005). The organisational support extends to the practical compatibility or suitability of telework to the current practices of the organisation, such as work practices or reporting structures, in other words the formal mechanisms in place for management of the organisation (Bunker et al., 2007).

Practical compatibility in terms of telework must extend this definition to include all forms of organisational support. The extended definition could consider the mechanisms required to support telework in day-to-day work such as provision of ICT equipment, ICT support, policies and procedures for telework, training and job design. The adaption of policies to cater for specific telework requirements such as compensation, performance management, liability (workers compensation), discipline and security could also be considered.

Job Characteristics

One important characteristic for telework success is the degree of diffusion which exists within the organisation in terms of identifying which job characteristics are suitable for telework (Hill et al., 2003; Peters et al., 2004). Thus important success factors for telework are that management identify the correct jobs, select the best candidates and create the best organisational conditions to support telework (Turetken et al., 2011).

Numerous factors affect employee job satisfaction, two of the main factors being the worker and that of work itself (Chen, 2008; Cougar & Smith, 1992). Work has different attributes that influence job satisfaction such as autonomy, feedback and goal orientation that are associated with telework (Kossek et al., 2006; Pérez et al., 2002). Autonomy relates to the discretion an employee has in scheduling his/her work and is defined by the degree to which an individual feels personally accountable and responsible for their work (Nicholas & Guzman, 2009). Feedback is an essential factor for telework success and relates to the degree to which the employee obtains information about their effectiveness or performance. Some researchers and practitioners have argued that supervisors should increase the amount of feedback and output-based evaluation for teleworkers (Lautch et al., 2009)

Top Management support

In cases where telework adoption has been successful, top management support was found to be an important factor as senior management is in a position to support the adoption of a formal telework program and associated start-up costs (Higa & Shin, 2003; Peters & Heusinkveld, 2010). Senior management attitudes affect an organisation's approach and attitude to telework and are considered some of the greatest moderators of work-life benefit programs (Mayo et al., 2009; Peters & Heusinkveld, 2010). Top management also plays an important role in supporting the change to management practices away from observation-based management to goal-orientated management by objectives (Mihhailova, 2009).

Top management support is contingent upon the attitudes of senior managers and can affect adoption intentions and behaviour; CEO's attitudes are also influenced by the use of teleworking in other organisations (Peters & Heusinkveld, 2010).

Telework from a societal perspective

Telework has been viewed from a macro level perspective in terms of its effect on society. Benefits cited in the literature include a reduction in traffic volumes and congestion with an associated reduction in pollution and carbon emissions. Secondary benefits are related to eco-efficiencies achieved from energy savings through the reduction of office space (Lehmann & Hietanen, 2009; Nelson, Safirova, & Walls, 2007; Nicholas & Guzman, 2009).

Travel

Telework was first examined by Nilles (1975) from an organisational decentralisation perspective and the potential effect on transport and pollution. The original term of telecommuting was established by Nilles (1975) and of interest is that Nilles did not consider that telecommuting would occur in the home, but rather at offices in regional centres close to people's homes. The main promise of telework to reduce transportation and associated pollution remains both valid and increasingly important, as people become more environmentally aware and there is a demand for sustainability, responsible business practices and green products.

Telework has the potential to affect travel patterns through substitution (eliminating the travel requirement), complementation (which generates new travel) and modification where the type, frequency and duration of travel is changed or has a neutral effect (Andreev et al., 2010; Helminen & Ristimäki, 2007). Second and third order effects of telework have also been examined in terms of energy savings, changes of land use, environmental policy and workplace design (Andreev et al., 2010; Helminen & Ristimäki, 2007; Lehmann & Hietanen, 2009; Nelson et al., 2007). Several studies have examined the reduction in travel in terms of Vehicle Miles Travelled (VMT) and found that telework reduced work related travel by between 60 percent and 77 percent on home-working days (Andreev et al., 2010).

The travel substitution effect can be moderated in changed travel behaviour where vehicles used by household members increase which offsets the savings achieved by reducing commute travel (Andreev et al., 2010). This was evident in a study done in Finland where distance workers were found to have greater commute distances, tended to use private vehicles and were more mobile during the day even though they were not commuting to the office (Lehmann & Hietanen, 2009).

Another factor which has been observed to moderate the travel saving potential of telework has been an increased desire for people to meet face-to-face which results from people's ability to connect and communicate globally through the internet, a trend supported by current travel and air transport statistics (Lehmann & Hietanen, 2009). A review of transport related studies show that short term effects of telework are a reduction in travel but long term benefits are less definitive (Andreev et al., 2010; Lehmann & Hietanen, 2009).

Energy consumption

A secondary benefit expected from telework is the redistribution of power requirements where the energy requirements for commercial buildings would decrease and residential energy requirements would increase as more people made use of telework to reduce the time spent at the office (Lehmann & Hietanen, 2009). Moving the energy requirements from a centralised to a decentralised model also provides an opportunity to leverage local renewable energy generation (Mattern, Staake, & Weiss, 2010).

The energy sources required to support telework would be much smaller and it can be argued that, by distributing the energy requirement, optimal use can be made of small generating capabilities. When considering environmental impact from a Life Cycle Assessment (LCA) perspective the traditional office worker has a greater impact in terms of the collective energy, heating and paper consumption than that of the teleworker (Lehmann & Hietanen, 2009).

The changing nature of work

The core of the telework debate is that the nature of work is changing and telework is essentially one of the outcomes from this change in work patterns. An example of this is how work patterns changed in Finland where 12 percent of workers were classified as information workers in 1998 and by 2000 this had grown to 39 percent of employees (Lehmann & Hietanen, 2009). In the United States of America (USA) the number of information workers was estimated at over 50 percent by 1980 (Hoang, Nickerson, Beckman, & Eng, 2008).

A second trend has been the increase in the prevalence of distance work where the percentage of distance workers ranged from 18.7 percent in Sweden to 26.4 percent of workers in the Netherlands by 2002 (Lehmann & Hietanen, 2009). This trend was also found in the USA where the Department of Labour stated that 14 million Americans worked at home by 1990 (Hoang et al., 2008). A third trend relating to the changing nature of work is the establishment of a creative sector of the economy where workers are engaged in creative work activities such as research and development, arts, design related work and technology based industries, to name a few (Lehmann & Hietanen,

2009).

Government Policy

Telework has been the focus of government regulation and policy makers where programs were created to stimulate interest in telework using different economic incentives such as tax credits or tradable emissions credits (Nelson et al., 2007). State governments have implemented telework programs for government employees as well as provided training and education programs to promote the use of telework. Similarly, the literature shows that a UK government campaign with the focus of work-life balance was launched in 2000 and was later followed up with legislative measures in 2003 (Tietze et al., 2009).

However, some of these initiatives have not been particularly successful. In the United States, regulations were developed requiring Federal Government to establish a telework policy for Federal employees; a target was set for 25 percent of the workforce to be able to telework by 2001 (United States Office of Personnel Management, 2002). By December 2008, only 5.24 percent of employees were actively teleworking and only 8.67 percent of employees were eligible for telework (United States Office of Personnel Management, 2009). The telework debate has recently come to the fore in the United States with announcements by the Federal government to increase the use of telework options for employees to reduce office space and energy costs (*Presidential memorandum to slash federal government real estate costs,* 2010).

Crisis Management

Government policy on telework can be driven by many factors such as a need to reduce pressure on transportation infrastructure or a need to reduce air pollution. Telework as a crisis management strategy gained greater prominence at the turn of the century. Telework can form part of a viable strategy for ensuring continued operations in crises such as hurricanes, terrorist attacks, earthquakes, severe weather conditions or even threats such as pandemic flu (Hoang et al., 2008).

The previous British Prime Minister, Gordon Brown, brought teleworking to the fore in a speech after severe weather conditions were experienced in the UK in January 2010 (Brown, 2010). The Eyjafjallajokull volcano eruption, which spread a volcanic ash cloud across Europe, shut down air travel for several days, affected an estimated 10 million travellers worldwide and cost the airline industry an estimated 1.8 billion USD in lost revenue according to the International Air Transport Association (IATA) (Profit forecast for worldwide airline industry, 2010).

Although travel was extensively disrupted, communications technologies were still operational, but

tools such as videoconferencing were not in wide enough use to overcome the disruption to business at the time of the incident (Gartner Research, 2010). Telework as a remote work program for the future can act as a proactive measure for business continuity and may gain a renewed focus as a means of reducing future risk.

Telework and Technology

There have been many dynamic and innovative developments in ICT, which have added to the mobility and flexibility of work (Pyoria, 2009). Common technologies used in telework have been teleconference tools such Audio Tele-Conference devices, Voice Over IP services and email. Personal video conferencing has become a common technology through the use of applications such as iChat and Skype and according to Tsui, Desai, Yanco and Uhlik (2011), there were 145 million Skype users by December 2010.

Other tools used include video conferencing, webinars and group decision support systems.
Webinars are online seminars held on the internet and essentially provide one-way communication from the presenter to many attendees. Group decision support systems are electronic meeting systems, which use collaborative technology to provide computational support in collaborative decision-making (Adla, Zarate, & Soubie, 2010).

Physical proximity promotes spontaneous interaction that aids the creation and communication of tacit knowledge. Many organisational theorists argue that a technical interface cannot fully replace the richness of face-to-face interaction that forms the basis of both informal organisational culture and the communication of tacit knowledge (Pyoria, 2009). Video-mediated communication (VMC) systems have attempted to replicate face-to-face meetings since the early 1970's based on the importance of non-verbal behaviour in communication interactions (Kirk, Sellen & Cao,2010).

VMC systems have focussed on increasingly richer forms of VMC and examples of these high resolution systems are Cisco's TelePresence ad HP's Halo systems which strive to achieve increasingly life-life high fidelity video communication (Kirk et al., 2010). According to Kirk et al. (2010) research literature shows that little advantage is gained through the use of these systems over simpler audio connections and interactional limitations actually undermine the value of VMC technologies. This has not deterred the search for improving computer mediated communication and to try and meet the desire for closeness between people using VMC. A recent technology that is being used to recreate the closeness of a remote person is the use of telepresence robots where the aim is to create a sense of the person being physically present (Tsui et al., 2011).

Other technologies not often associated with telework are augmented reality and virtual world games such as Second Life. Augmented reality is a combination of real world and computer-generated data blended into a real-time display where information about the user becomes interactive and usable, and has been used in the design of the MINI in the car industry (Babulak, 2010). Second Life was used to deliver virtual courses to students by Universities such as Harvard Law School and the FF University Jana Palacha (Babulak, 2010).

Future technology trends that will influence the workplace as proposed by Institute For The Future include: proactive contextual computing, amplified collaboration tools, sense making and visualisation technologies, device webs, sensor webs and ubiquitous displays (Institute For The Future, 2007). Technology is the enabler that not only makes telework possible, but also forms the backbone of any telework program (Siha & Monroe, 2006). Innovations in ICT will continue to provide new means of working and collaborating, to enable people to transverse spatial, structural and temporal boundaries. Due to the important role that technology plays in telework, both from an enablement and an innovation perspective, a better understanding of telework diffusion can be gained through a brief examination of ICT innovation adoption research.

ICT Innovation Adoption Research

According to Jeyaraj, Rottman & Lacity (2006) a wide body of empirical and theoretical work has covered ICT innovation adoption research over the last 20 years. A list the relevant theories as identified by Jeyaraj, Rottman, & Lacity (2006) is shown in Table 1.

Theory of Reasoned Action
Innovation Diffusion Theory
Innovation Diffusion theory for organisations
Social Cognitive Theory
Technology Acceptance Model
Theory of Planned Behaviour
Perceived Characteristics of Innovating
Technology Acceptance Model 2
Unified Theory of Acceptance and Use of Technology
Diffusion/Implementation Model
Tri-Core Model

Table 1 ICT Innovation Adoption Research Theories (Jeyaraj et al., 2006)

Qualitative and quantitative methods have been used to study ICT adoption such as field surveys, event studies, case studies or a combination thereof (Jeyaraj et al., 2006). Adoption theory examines the choices made in the acceptance or rejection of a specific innovation, whereas diffusion theory examines how the spread of an innovation occurs over time in a given community (Straub, 2009; Surry, 1997). The adoption process can be considered the individual's decision to assimilate the innovation, and diffusion to be the collective adoption process over time (Straub, 2009). Telework maturity can be considered as the process of telework adoption as it progresses from the assessment through the actual adoption process to diffusion of telework practices through the organisation over time.

IT innovation research aims to understand the factors which either facilitate or inhibit adoption and diffusion of IT innovations by individuals and organisations (Fichman, 2004). In a review and analysis of research on the adoption and diffusion of ICT innovations, Jeyaraj et al. (2006) found that the best predictors of IT adoption by individuals are Top Management Support, Computer Experience, Perceived Usefulness, Behavioural Intention and User Support, which are displayed in Figure 2.

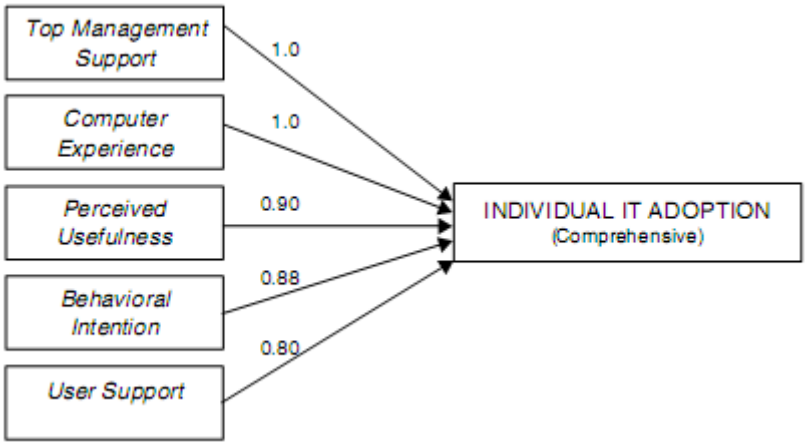

Figure 2 Best predictors of IT adoption by individuals (Jeyaraj et al, 2006)

The work by Jeyaraj et al. (2006) provides a unique and useful lens through which to view ICT innovation adoption, as it considers both qualitative and quantitative studies and identifies a valuable set of predictors of IT adoption, which are applicable to telework. Predictors of IT adoption by organisations were found to be External Pressure, Professionalism of IS Unit, External Information Resources and Top Management Support, which are displayed in Figure 3.

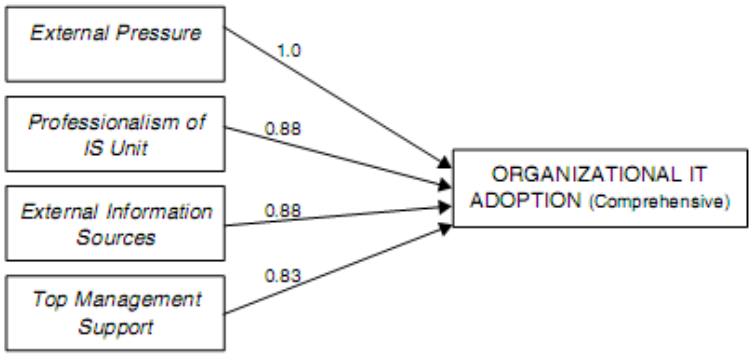

Figure 3 Best predictors of IT adoption by organisations (Jeyaraj et al, 2006)

Although predictors of IT adoption may give insight into possible influences of telework diffusion, it is important to examine theoretical models specifically developed for telework. The following section will discuss these models in more detail.

Telework Research Models

The Telework Behavioural Model developed by Hunton and Harmon (2004), shown in Figure 4, is motivated by Expectancy Theory, which posits that motivation is the product of three variables, expectancy, instrumentality and valence. In terms of telework, *expectancy* is the belief by employees that they are able to perform the prescribed functions outside of the office environment; *instrumentality* is the perception of the linkage between performance and rewards; *valence* is perceived value to be derived from telework (Hunton & Harmon, 2004).

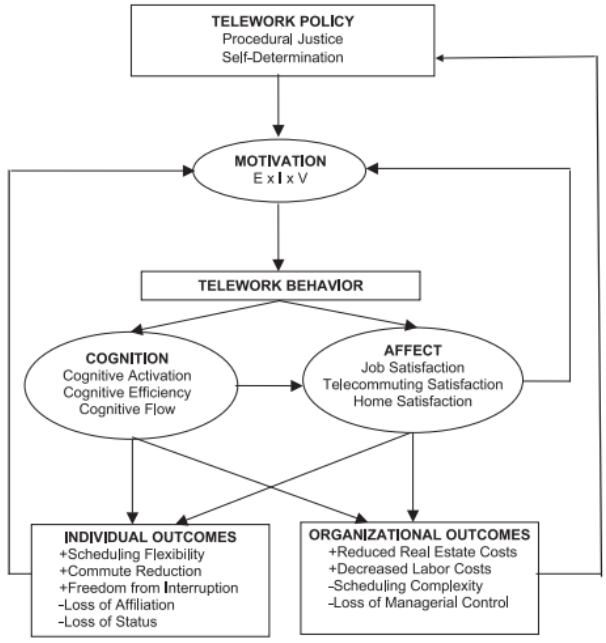

Figure 4 Telework Behavioural Model (Hunton and Harmon 2004)

The telework behavioural model uses the elements of motivation in combination with telework policy and telework behaviour to explain individual and organisational outcomes. The telework policy established by the organisation defines the allowable set of telework options. Employees choose which options to exercise (telework behaviour) and this yields both cognitive effects and affective factors such as telework satisfaction, home satisfaction and job satisfaction.

Cognitive effects are *cognitive activation* (state of mental alertness and excitement of the individual), *cognitive efficiency* (ease of concentration on a task) and *cognitive flow* (ability to refocus on a task after being interrupted). The choices made by employees influence various cognitions and effects, which elicit individual outcomes such as reduced commute time, which in turn influences motivation. Similarly, there are a set of outcomes for the organisation, such as reduced turnover or less managerial control, and the employer can adjust the telework policy accordingly. The employees are also able to adjust their choices until a state of equilibrium is reached (Hunton & Harmon, 2004).

The Telework Success Model developed by Siha and Monroe (2006), shown in Figure 5, takes a top down approach, where competition and government regulation provide the catalyst for organisations to consider telework strategies. This is then moderated by employee and management support for telework, based on the premise that suitable technologies exist to support telework.

The success of the telework adoption is measured in terms of how well the organisation performs against the criteria of *regulatory compliance*, *positive environmental impact*, *productivity increases* and *cost reductions*, and finally employee related criteria of *worker satisfaction*, *flexibility* and *work/life balance* (Campbell & McDonald, 2007).

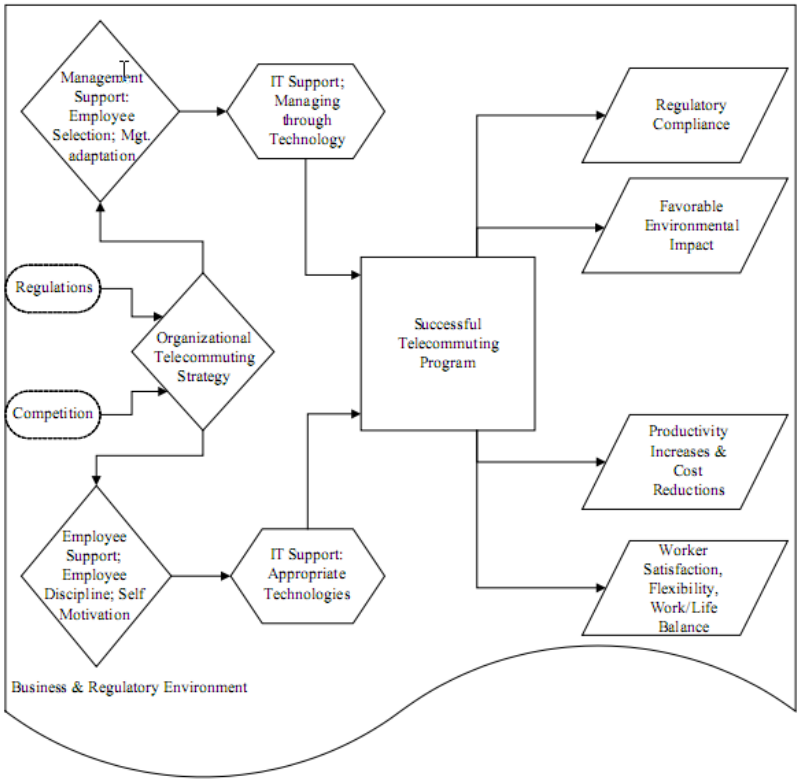

Figure 5 Telecommuting Success Model (Siha and Monroe, 2006)

A Systems-Based Telework Framework (see Figure 6) has been proposed by Campbell and McDonald (2007) which comprises three structural elements of telework practice: *Telework Drivers*, *Telework Processes* and *Telework Outcomes*.

- Firstly, **Telework Drivers** are the interrelated motivating factors for adopting telework and are identified as organisational factors, such as strategic direction or regulatory obligations, industry work practices, and employee preferences.
- Secondly, **Telework Processes** are the telework activities performed within or for the organisation and require support from both management and employees. Telework processes also assume that appropriate ICT exists for the management and support of telework, as well as the necessary governance mechanisms.
- Finally, **Telework Outcomes** are the impacts of telework adoption on society and can be categorised as societal impact, organisational impact, and employee impact (Campbell & McDonald, 2007).

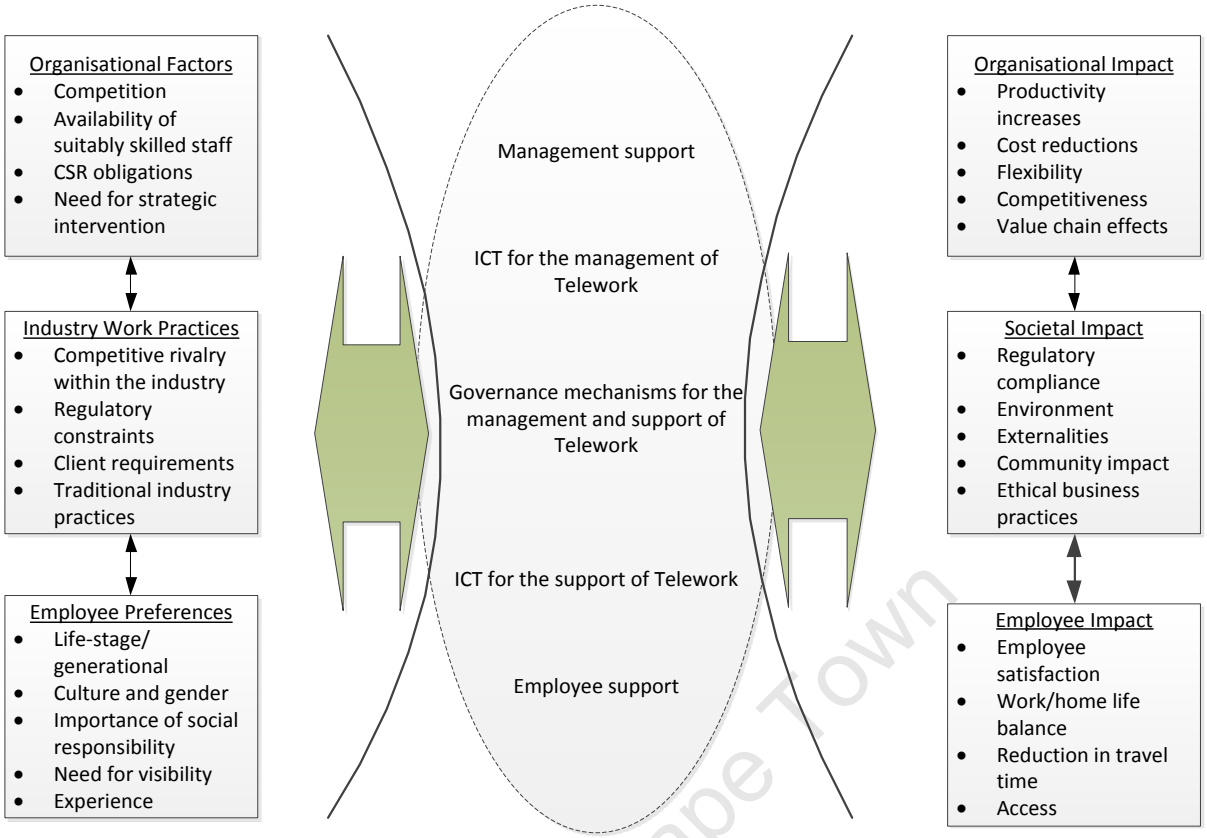

Figure 6 System Based Telework Framework (Campbell and McDonald, 2007)

The Systems-Based Telework Framework describes Telework Processes as being the activities performed within or on behalf of the organisation. However, there is no description of organisational factors or conditions, which can affect these processes and outcomes.

Telework is a complex subject due to the many types of telework activities and organisational configurations that exist and the socio-technical nature of telework is shaped and re-shapes human actions and social structures (Campbell & McDonald, 2007). Since the inception of telework, a large number of articles have been written about the subject which examine the many promises and issues associated with telework, yet few published papers have attempted to thoroughly review the available telework literature (Siha & Monroe, 2006).

The research models developed to date provide useful guidance in understanding telework adoption. However, Campbell and McDonald's (2007) argument remains, that no single model provides a sufficient theoretical basis for understanding telework adoption, despite extensive efforts to develop such a research model.

Chapter Summary

The research literature covers many aspects of telework and can be grouped into three broad categories, namely research pertaining to the individual, the organisation and society as a whole. From the perspective of the individual, telework promises many benefits however the challenge of work-life balance is an important consideration for the teleworking individual. Organisational benefits associated with telework are reduced staff turnover and improved productivity, however telework brings with it a number of organisational impacts that have to be considered. These include the management of employees (management control), effects on day-to-day communication, trust as it relates to superior-subordinate relationships, cultural fit (value compatibility), organisational support for telework (practical compatibility), the job characteristics and top management support.

Telework has been examined in relation to its ability to change travel patterns and affect the power consumption as businesses decentralise. Telework has also been considered in terms government policy and the effect that policy decisions are able to influence telework adoption patterns. Telework has also been considered in terms of crisis management to ensure continued operations during times of crisis such as hurricanes, pandemic flu and terrorist attacks. There have been many advances in technologies associated with telework and these continue to evolve yet technological innovation has a limited impact on telework adoption success. Telework research models have examined different organisational aspects of telework such the relationship between motivation and organisational policy as well as the effect of external factors such as regulatory compliance. The following chapter describes the research methodology used for this study.

Chapter Three: Research Methodology

The following chapter describes the research methodology used for this study and includes an explanation of the research gap, the research question as well as the research approach. The theoretical model that was used to evaluate the data is explained, together with an explanation of how ethical and confidentiality concerns were addressed and concludes with a description of the potential limitations of the study.

The Research Gap

Siha and Monroe's (2006) exploration and classification of the literature on telework groups published articles into four issue categories: workforce (employee), organisational, environmental and technical. The majority of literature has approached the subject from two broad viewpoints, that of the employee and that of the employer (Hunton & Harmon, 2004; Siha & Monroe, 2006). Viewed through the lens of the employee, the foci of research has been on issues such as scheduling difficulties, work-life balance, motivations for wanting to telework, job satisfaction, communication, and employees' attitudes to telework, as well as some of the negative consequences of telework (Hunton & Harmon, 2004; Siha & Monroe, 2006). When viewed through the lens of the employer, studies have tended to focus on issues of adoption factors such as cost, improved productivity, decreased staff turnover and being good corporate citizens (Hunton & Harmon, 2004).

Many of these studies have taken the approach of examining a single dimension of telework success, such as productivity, whilst few studies have approached telework success as a multidimensional concept (Turetken et al., 2011). The Systems-Based Telework Framework, previously discussed, aids the understanding of telework success through adopting a multidimensional approach. The framework makes an important separation of drivers, processes and outcomes, and is further enhanced by the use of different perspectives to examine drivers and outcomes. The drivers describe three perspectives, namely the employee, organisation and industry. Similarly, the outcomes are viewed from three perspectives, namely the employee, the organisation and society. Examination of telework from these different perspectives indicates that the desired outcomes for an organisation could potentially differ to that of the employee. Consequently, the organisation may have different reasons or drivers for adopting telework to that of the employee. This may give new insight to previous research, an example being the reluctance of management to adopt telework, as they perceive it would benefit the employee more than the

organisation (Pérez et al., 2002).

Whilst the framework describes *Telework Processes* as being the activities performed within or on behalf of the organisation, there is no description of organisational factors or conditions, which can affect these processes and outcomes. According to Turetken et al. (2011) past research has examined the management challenges of identifying the best organisational conditions conducive to telework success, such as identification of the correct jobs, candidates, development of policies, etc. This falls clearly within the description of the *Telework Processes*. However, a distinction should be made between the organisational processes or activities to be performed, and the organisational conditions or factors that influence telework diffusion.

An understanding of these conditions or factors within an organisation, will potentially give greater insight into identification of the pertinent actions required to improve telework diffusion and success. Furthermore, the different organisational conditions or factors will not necessarily have a binary state of either existing or not existing. Certain organisational conditions will exist in a continuum that may have different ranges from high to low, or strong to weak. Although prior research has identified a number of these factors or organisational conditions as having an influence upon telework adoption, a multidimensional examination of the different factors does not appear to have been attempted.

Research Question and Research Objectives

The purpose of the research is to explore the factors that affect diffusion of telework within organisations. The research focuses upon the following question and research objectives:

Which factors enable or hinder the diffusion of telework practices within an organisation?

Several predetermined factors have been identified in the literature as significant in successful telework diffusion and resulting maturity, which are discussed in the following section. The objectives of this research are:

- To confirm if the previously identified factors enable or hinder telework diffusion within organisations.
- To identify additional factors that may influence telework diffusion.

The Research Approach

Overview

The research approach used a comparative case study of two organisations, one that has used telework for many years and one that does not use telework. Telework is not restricted to a particular industry or organisation type and is applicable to any organisation wishing to make use of flexible work arrangements. For this reason, the two organisations chosen were from different industries. However, by restricting the focus to IS professionals it provided a common basis of comparison.

The organisations examined in the case studies are two commercial organisations; Company A is an international retailer based in South Africa that does not have a formal telework program whilst Company B is an international ICT technology and services company with local representation in the South African market and has been using telework for a number of years. The organisations were selected partly for reasons of convenience as well as for the purposes of theoretical sampling in order that they represent opposite extremes of telework maturity, in other words, polar types in the use of telework.

A set of themes derived from the literature provided a conceptual framework with clearly established factors that had been found to influence telework practices in organisations. These factors were used as constructs in a theoretical model where each factor was described in terms of a continuum ranging from low to high. This model was then used to gather and analyse data in a systematic and focussed manner. Triangulation was made possible by using multiple data sources, which included semi-structured interviews, observation and document sampling.

Data analysis was approached by examining by performing within-case analysis and cross-case analysis in order to search for evidence that support the constructs of the theoretical model as well as search for additional factors which are new constructs, concept or factors which had not been anticipated.

Research Method

Telework is a multi-dimensional and complex subject due to the many types of telework activities, organisational configurations and possible success phenomena (Turketen et al., 2011). Dube and Pare (2003) argue that the case study research method is well suited to a phenomenon that is broad and complex, requiring in-depth and holistic investigation, and cannot be studied outside of the context in which it occurs. Eisenhardt (1989) describes the case study as a research strategy that focuses on understanding the dynamics present within a single setting and can involve multiple levels of analysis.

The research examines organisational factors or conditions that influence telework adoption and

diffusion, which may or may not exist to a greater or lesser degree. These factors are best examined within the context in which they occur; in other words, that of the organisation. Case study research is particularly well suited to this type of research focus (Dube and Pare, 2003) and therefore the research approach uses a comparative case study of two organisations, one that has used telework for many years and one that does not use telework.

The focus of research is at the organisational level and examines IS professionals in the two organisations. The work content of IS professionals appears to be a good fit to telework methods and telework is found to reduce staff turnover which tends to be more prevalent with IS professionals (Chen, 2008). Telework is not restricted to a particular industry or organisation type and is applicable to any organisation wishing to make use of flexible work arrangements. For this reason, two organisations have been chosen from different industries. However, by restricting the focus to IS professionals, it provides a common layer of comparison between the organisations.

Selection of polar types is used to look for differences, to try to disconfirm the theoretical constructs as described by Pettigrew (as cited in Eisenhardt, 1989) so that the selection of the case study candidates does not only look for confirmation but challenges to the theoretical constructs. The organisations have been chosen as they represent opposite extremes in terms of their adoption of telework and the success of its use and subsequent diffusion within the organisation, thus representing polar types of telework success.

Research Dimensions

The following research dimensions further describe the research method used for this study.

Research Philosophy

The study adopted an interpretivist philosophy which assumes an intersubjective world and social construction of reality where shared meanings are constructed by people in their interactions with each other. An interpretivist philosophy allows a more flexible research plan and seeks a contextual understanding of the phenomenon being examined.

Research Purpose

The research purpose of the study is exploratory and did not seek to test a finite theory but explored the research question in a structured and focussed manner.

Approach to Theory

Data analysis was done using a general inductive method (Thomas, 2006) that approached the data from both a deductive perspective as determined by the theoretical model as well as an inductive

perspective where multiple readings of the text were used to identify additional themes and possible relationships.

Types of Data and Analysis

A qualitative approach and an analytical as opposed to a statistical generalisation of results was used for the purposes of this study.

Research Timeframe

A cross-sectional view of the data was taken by means of a single data collection period for the semi-structured interviews. This gave a view of the organisations at a single point in time as opposed to a longitudinal study of the two organisations over a period, which was out of the scope of this research project.

Theoretical Underpinning & Questionnaire Development

According to Eisenhardt (1989) the a priori specification of constructs as it permits the researcher to measure constructs more accurately and improve the empirical grounding for the emergent theory. Andreev et al. (2010) and Shia and Monroe (2006) describe a widely accepted approach to exploring telework along individual, organisational and society dimensions. Following the approach the literature survey of 175 academic articles on telework, virtual work, virtual teams and e-work were grouped into three major categories, namely articles that focussed on the telework and society, telework and the organisation, telework and the individual. As this research examines telework from the perspective of the organisation, published papers and articles that dealt with telework in organisations were further examined. A set of constructs were derived where the literature clearly established specific determinants or factors that had been found to influence telework practices in organisations.

The question set was defined to test for specific indicators of these a priori constructs and a series of “open questions” were included to explore emergent themes and take advantage of new insights not previously identified in the a priori constructs. The use of the open questions was used to improve empirical validity. The interviews that were conducted were semi structured in nature and the questionnaire used is listed in Appendix C. The mapping of key literature sources of telework diffusion factors to source articles is shown in Appendix D.

Sample Selection & Size

The unit of analysis was the organisation where the aim was to evaluate the factors that can influence or inhibit telework within the organisation. Telework is not restricted to a particular industry or organisation type and is applicable to any organisation wishing to make use of flexible work arrangements. Certain job attributes are well suited to telework, such as autonomy, task

identity, goal orientation, and the use of ICT is also found in many IS related jobs (Chen, 2008). IS personnel are believed to be well suited to telework for these reasons, as well as the relative independence of their tasks (Harrington & Ruppel, 1999).

The research therefore examined IS professionals in the two organisations for the above reasons. An additional motivation for focussing on IS professionals is that IS professionals tend to exhibit higher job turnover than other fields, and job satisfaction has been found to be the main driver of turnover among IS professionals (Chen, 2008; Cougar & Smith, 1992). Telework has been shown to increase job satisfaction and reduce turnover intention (Beasley & Lomo-David, 2000; Golden, 2006).
The organisations examined in the case studies are two commercial organisations; Company A is an international retailer based in South Africa that does not have a formal telework program and follows a traditional approach in terms of work arrangements. Company B is an international ICT technology and services company with local representation in the South African market. Company B makes extensive use of Alternative Work Arrangements (AWA) for their employees and has been using telework for a number of years. Both organisations have offices in Cape Town, where the interviews for the research were conducted. The organisations were selected partly for reasons of convenience as well as for the purposes of theoretical sampling in order that they represent opposite extremes of telework maturity, in other words, polar types in the use of telework.

The population sample used for the semi-structured interviews, focussed on IS professionals and included senior managers, middle managers, employees and HR professionals within the organisations who function as IS professionals. The sample from Company A comprised six managers and two employees, one of the eight interviews was with an HR professional and all respondents were from the IS department. The respondents were drawn from different functions of the IS department including support, project management, governance, and IS-business interface managers. The sample from Company B comprised five IS professionals made up of two managers, three employees, one of the respondents was an HR professional, and the respondents were drawn from different functions in the business including sales, professional services, strategic outsourcing, and administration.

The interview approach used a combination of a theoretical sampling strategy supplemented with snowball sampling strategy. Theoretical sampling was used to select common points of reference across the two case studies so that at minimum senior management, middle management, employees and an HR professional formed part of the sample in each case study. Three other points of reference were chosen in the functions of a business customer-facing function, project

management and operational support. This done to facilitate cross-case comparison of the data due to the wide range of information collected. A snowball sampling strategy was then used to identify additional candidates and interviews were conducted until data saturation was achieved.

Data Collection

Data collection comprised a combination of qualitative data collection methods which comprised semi-structured interviews, field notes, direct observation and document sampling. The triangulation of multiple data collection methods was used to provide stronger substantiation of the constructs defined in the theoretical model as well as to explore additional factors that arise as emergent themes not previously identified in the theoretical model.

The interviews were audio recorded and transcribed soon after the interview to prevent information decay. The duration of the interviews was typically 60 to 70 minutes per interview. Field notes were taken during the interviews to capture the reactions of the interviewee by noting body language, voice inflection, pauses in answers and where emphasis was placed in the answer. The field notes were recorded in Microsoft excel next to the question being dealt with to aid analysis. Observations and document samples were noted separately and pertained to the use of ICT tools, HR and IS policies, work norms and practices.

Data transcription was done using a computerised tool, Voicewalker, which allowed segments of the audio recording to be repeated during transcription of the interview. Use of and protection of information gathered was managed as set out below in the section entitled *Ethics, Confidentiality and Privacy Concerns.* Additional data were gathered by means of observation of meetings, company policies, the work environment, and tools used to support telework.

Data Analysis

Data analysis was done using a general inductive method (Thomas, 2006) that approached the data from both a deductive perspective as determined by the theoretical model and research objectives, as well as an inductive perspective where multiple readings of the interview transcriptions were used to identify additional themes and possible relationships.

Within-case analysis was done by performing a detailed case study write-up for each company which explained the company and the context of telework within that company. Multiple readings of the interview transcriptions together with the evaluation of field notes were used to identify

evidence which confirmed or denied the validity of the theoretical model and to identify new constructs for inclusion as "additional factors" in the research results. Quotation examples were used to demonstrate evidence supporting the findings resulting from the analysis of the data. Further triangulation of the data was achieved through observations of the ICT tools used, work procedures followed and document samples were used to further validate the analysis of the data and the researcher's findings. Pattern matching of evidence to the theoretical model provided for literal replication of the findings.

A cross-case analysis was performed to further enhance validity and by using polar types in the selection of the companies. A process of pattern matching of the data to the theoretical model was used to examine within-case similarities, cross-case differences as well as systematic differences between the case studies. This was done in order to provide for theoretical replication to improve generalisation of the results. The data was examined for evidence of new or emergent themes or constructs which had not been previously identified in order to meet the research objective of identifying "additional factors".

Theoretical Model

The following a priori constructs were identified from the literature as being significant in telework maturity and success that can potentially enable or hinder telework adoption and its subsequent diffusion within an organisation.

Practical Compatibility

Practical compatibility can be viewed as the congruence of an innovation, with existing practices of the adopter, in terms of the formal mechanisms created to support a climate for the innovation's implementation (Harrington & Ruppel, 1999). Practical compatibility, when applied to telework, could consider the mechanisms required to support telework in day-to-day work, such as provision of ICT equipment, ICT support, policies and procedures for telework, training and job design. It could also extend to the adaption of policies to cater for specific telework requirements, such as compensation, performance management, liability (workers compensation), discipline and security.

Management Control

According to Snell (as cited in Virick et al., 2010), control theory proposes three types of control systems in organisations: behaviour, input and output. Telework requires that traditional management methods of assessing performance through direct observation have to change to a management style focussed on objectives and outcomes (Peters et al., 2004; Staples & Ratnasingham, 1998; Turetken et al., 2011). Telework is enabled by information technology but is

primarily a workplace and organisational innovation where managers expect higher productivity yet employees are attracted by the promise of greater autonomy (Dimitrova, 2003). The theme *management control* therefore examines the degree of output control used by managers when assigning work to subordinates as well as any other supervisory procedures used to compensate for the lack of direct observation.

Job Characteristics

One of the primary benefits of telework for the employee is that of increased job satisfaction which has been associated with greater organisational commitment and reduced turnover intention (Beasley & Lomo-David, 2000; Golden, 2006; Kossek et al., 2006). Numerous factors affect employee job satisfaction, two of the main factors being the worker and that of work itself (Chen, 2008; Cougar & Smith, 1992). Work has different attributes that influence job satisfaction, such as autonomy, feedback, and goal orientation that are associated with telework (Kossek et al., 2006; Pérez et al., 2002).

Top management Support

In cases where telework has been successful, top management support was found to be an important factor, as senior management is in a position to support the initial adoption of a formal telework program and associated start-up costs (Higa & Shin, 2003; Peters & Heusinkveld, 2010). Top management support is contingent upon the attitudes of senior managers and can affect adoption intentions and behaviour, which in turn influence the subsequent diffusion success of telework. CEO's attitudes are also influenced by the use of teleworking in other organisations (Peters & Heusinkveld, 2010). Top management also plays an important role in supporting the change to management practices away from observation-based management to goal-orientated management by objectives (Mihhailova, 2009).

Communication

The changes in day-to-day work affect intra-organisational communication in terms of how superiors, managers, subordinates, colleagues and clients communicate when part of the workforce is teleworking (Harrington & Ruppel, 1999; Hertel et al., 2005). There is also a loss of informal communication which occurs as part of the social aspect of work (Erickson, 2001) and media richness theory has been used to examine the importance of communication cues in virtual teams and telework (Hill et al., 2003; Turetken et al., 2011).

The communication aspect of teleworking examines the communication media, importance of communication modes, and frequency of communication (upward, downward and lateral communication) that occurs relative to the potential teleworker.

Trust

Drawing on social exchange theory and lead-member exchange theory Golden and Veiga (2008) show how superior-subordinate relationships affect commitment, job satisfaction and performance of teleworkers. Telework arrangements require a display of trust and confidence in employees due to the lack of direct supervision. Trust between the manager and the employee thus becomes an essential factor to telework success through the reduction of uncertainty, increased job satisfaction, and employee commitment (Staples & Ratnasingham, 1998).

Value Compatibility

Organisational fit has been studied in relation to telework, specifically the impact on organisational culture, norms and values (Harrington & Ruppel, 1999; Tietze et al., 2009). Value Compatibility thus considers the congruence of telework to the norms and values of the organisation in terms of organisational values, group values, and individual values of the teleworker. Value compatibility examines attitudes towards control mechanisms, peer group attitudes to telework, and individual attitudes to telework.

Construct Range

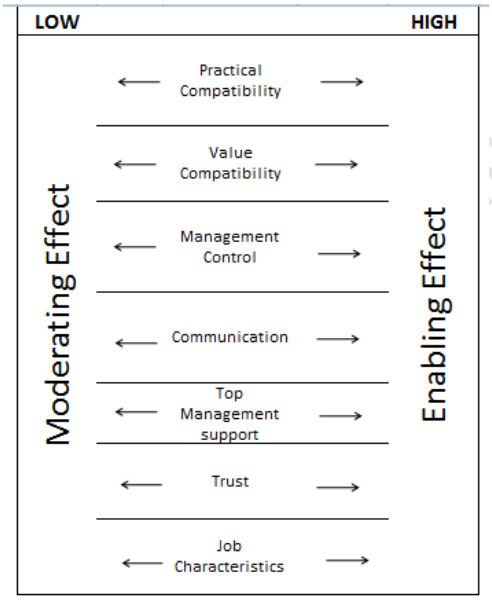

Figure 7 Theoretical model of organisational factors affecting telework diffusion

The factors shown in Figure 7 have been derived from the literature as being significant in telework diffusion, and can either enable or hinder telework success. When viewed from an organisational perspective, it is proposed that specific interventions can be made to positively influence how these factors affect telework diffusion. The different organisational conditions or factors are described as constructs within the proposed model and will not necessarily have a binary state of existing or not

existing. Certain organisational conditions will exist in a continuum that may have different ranges from low to high. A low value indicates that the specific organisational condition acts as an inhibitor whilst a high value indicates that it acts as an enabler of telework diffusion.

Clean Theoretical Slate

Each of the identified constructs was used to develop the semi-structured interview questionnaire to be explored during the interview and data gathering process. Eisenhardt (1989) argues that theory-building research should begin as close as possible to the ideal of a clean theoretical slate with no theory under consideration and no hypothesis to test. This research obviously does not achieve the ideal of a clean theoretical slate due to the use of the theoretical model but approaches this ideal in three ways. Firstly, that each construct is measured individually and will only remain as part of the resultant framework if supported.

Secondly, no attempt has been made to define relationships or linkages between the constructs prior to the interview so as not to bias or limit the findings. This principle is supported by Eisenhardt (1989) who argues that the researcher should avoid thinking about specific relationships between variables and theories as much as possible. Thirdly, the scale of measurement has purposely avoided further refinement of the continuum, other than from 'low' to 'high' as this may exclude findings which do not neatly fit into a specific measure. Low values upon the continuum describe an inhibiting effect to telework diffusion, whilst high values describe an enabling effect.

Validation of Research Method

A validation of the interview questions was performed by conducting two interviews using the interview questions. These interviews were recorded, transcribed, and analysed to assess the relevance and effectiveness of the questionnaire. Based upon the analysis the questionnaire adjustments were made. The candidates of the interviews were specifically selected as polar types and to be as representative of the case study targets. The first interview was conducted with a senior manager who had worked for Company A (the retail company) for many years and is several months from retirement. The manager works as an IT professional in the IS department and manages a team, as well as relationships with external vendors. All work is done from the corporate office and the manager has a very good understanding of the company, its culture and history. The manager prefers direct face-to-face communication for mentoring his team members.

The second interview was conducted with an IS professional who is employed by a global IT vendor and performs specialist technical work in multiple projects. The IT vendor is not Company B, but a competitor to Company B, which operates in a very similar fashion to Company B. The global IT

vendor has recently been taken over by another IT company and the culture of the company itself is undergoing change. The interviewee is a team member of a technical team that supports global customers from South Africa. The interviewee works entirely from home on a full time basis, does not have face-to-face contact with any of the teams, colleagues, project managers and seldom his line manager. All work is done using electronic tools to communicate such as instant messaging and email, but video conferencing is not used. The results from the validation sample were excluded from the final data analysis. These validation interviews tested several diametrically opposed differences, which are expected to be found in the case study of the two companies. These differences include, but are not limited to, role i.e. (manager vs. team member), tenure (long vs. short), stability of company culture (stable vs. evolving), and work methods (traditional work paradigm vs. new work paradigm).

The framework for the analysis and interpretation of the data was based on the research framework as previously described, as well as the research objectives.

Ethical, Confidentiality & Privacy Concerns

The Faculty of Commerce Ethics in Research Committee approved this project; a copy of the letter of approval is included in Appendix A. In order to guarantee the confidentiality and integrity of information collected the following measures were undertaken. Written consent was obtained from the respective organisations prior to the commencement of the research, and a covering letter was then sent to each participant when requesting the interview. A copy of the covering letter is included in Appendix B.

Prior to the commencement of the interview, the nature and scope of the interview was explained and that participation was voluntary. The safeguarding of the recorded interview and transcription was explained, and any privacy concerns were discussed. It was also emphasised that data collected was only to be used for the purpose of this research. Interview questions that cover sensitive and private information were avoided, and participant answers were voluntary.

The data of the individual's answers to the questions was identifiable in their raw format. Precautions were taken to safeguard identifiable records by replacing company and individual names with codes that were stored separately. All information gathered was kept strictly confidential, and only the researcher had access to the raw data collected, which will be destroyed after use. The research findings will be provided to participants that request it as a condition of their participation in the survey.

Study Limitations

Although the two companies chosen for the case studies were selected for theoretical sampling purposes to improve transparency using polar types and to provide theoretical replication, they also form an important limitation of the study. Company A is a retail company with a core focus on serving the customer through the stores which are then supported by other departments and divisions, of which the IS department is one. The sample drawn from company A is a support function of the business. Company B is an IS services company where IS professionals participate in the core function of the business and not as a support function and the sample from company B is taken from the core business function.

It is reasonable to expect that systems and resources will be deployed in support of core business functions before focussing on support functions and thus is not necessarily an equal comparison. Some constructs may be affected by this, an example being practical compatibility where the core operations of company A will have much greater automation and systems support of the retail business than the IS department.

Other potential limitations of the study exist due to the cross sectional nature of the study, as changes within an organisation's telework practices will not be observed over time. This could form the basis of a future longitudinal study. Additionally, telecommunications in South Africa are constrained by high tariffs and limited bandwidth availability that may have a moderating effect on the telework practices within an organisation, as well as the consideration of telework by potential adopters.

The researcher is employed by Company A in the IS department and this does create bias in that the researcher will have a deeper understanding of the company culture and values than he would of Company B.

Chapter Summary

Although prior research has identified a number of these factors or organisational conditions as having an influence upon telework adoption, a multidimensional examination of the different factors does not appear to have been attempted. The purpose of the research is to explore the factors that affect diffusion of telework within organisations and poses the question: Which factors enable or hinder the diffusion of telework practices within an organisation? The research objectives are to confirm if a set of a priori constructs enable or hinder telework adoption and to identify any additional factors that may influence telework adoption.

The research approach used a comparative case study of two organisations, one that has used telework for many years and one that does not use telework. As telework is not restricted to a particular industry or organisation type the two organisations chosen were from different industries. However, by restricting the focus to IS professionals it provided a common basis of comparison. The set of a priori constructs identified in the research literature were compiled into a theoretical model which was examined by means of a set of semi-structured interviews. Data collection comprised a combination of qualitative data collection methods which included semi-structured interviews, field notes, document sampling and observation.

Data analysis was done using within case and cross-case analysis and by using a general inductive method to analyse the data. The theoretical model examined seven constructs value compatibility, trust, top management support, management control, job characteristics, communication and practical compatibility. An important limitation of the study is that the sample drawn from Company A is a support function of the business whilst the sample from Company B is from the core business. The following chapter is a write-up of the Company A case study and associated within-case analysis of the data.

Chapter Four: Company A Case Study

The following chapter provides a general introduction of Company A that has been derived from several sources, which include direct observation, samples from documents, information from the company Web Site as well as data from the interviewees. The chapter continues with an analysis of the data from the semi-structured interviews arranged according to each of the constructs of the theoretical model and concludes with a discussion of the results.

Data Collection and Analysis for Company A

Gathering of data was done over a six-week period, consisting of a series of semi-structured interviews, observations and document sampling. The interviews were audio recorded and transcribed soon after the interview to prevent information decay. The duration of the interviews was typically 60 to 70 minutes per interview. Field notes were taken during the interviews to capture the reactions of the interviewee by noting body language, voice inflection, pauses in answers and where the interviewee placed emphasis in their answer.

The sample from Company A comprised six managers and two employees, one of the eight interviews was an HR professional and all respondents were from the IS department. The respondents were drawn from different functions of the IS department including support, project management, governance, and IS-business interface managers. The CIO was one of the respondents and considered part of the IS function for the purposes of this study. The average tenure of the interviewees was eight years nine months and the sample contained two female employees and six male employees. Table 2 shows the role of the different respondents in Company A, in terms of their being a manager or employee.

Respondent	Role
A1	Manager
A2	Manager
A3	Manager
A4	Employee
A5	Manager
A6	Manager
A7	Employee
A8	Manager

Table 2 Role of respondents in Company A

Multiple readings of the interview transcriptions together with the evaluation of field notes were used to identify evidence, which confirmed or denied the validity of the theoretical model and to identify new constructs for inclusion as "additional factors" in the research results. Quotation examples are used to demonstrate evidence supporting the findings resulting from the analysis of the data. The triangulation of multiple data collection methods was used to provide stronger substantiation of the constructs defined in the theoretical model as well as to explore additional factors that arise as emergent themes not previously identified in the theoretical model. ICT tools used for remote access to ICT systems and productivity tools were examined and policy documents were reviewed for evidence of support for Telework.

The Company

Company A is a multi-brand retail business based in South Africa with international operations in seven countries with its head office in Cape Town. The company operated in-house IT solutions in support of the business, largely developed and supported by in-house IT staff with limited use of external contractors. In response to an increasingly competitive business environment, Company A has undergone and continues to undergo significant strategic and organisational change. A strategic level review of business strategy prompted organisational wide change from a "coalition of companies", where most decision-making authority resided in the various business units, to an "integrated company", based on a far more centralised business model. This prompted many changes in organisational structure of business units and their day-to-day operations. During this period, the company also underwent several changes of top management structures, which included a new CEO, a new Chairman and a restructuring of the board of directors.

As part of a strategic move to enhance operations and reduce IT costs, a decision was made to discontinue development of in-house IT systems and use externally sourced package solutions. The inability of in-house developed systems to keep pace with the strategic business initiatives and slow delivery by the IS department prompted this change from a build to a buy strategy for IT systems. Several key IT projects, the largest being the company wide implementation of SAP, were initiated and led by the business, leaving the maintenance of legacy systems to the IS department.

The IS department

The IS department of Company A is a centralised department providing IS solutions for the different divisions within the company, and is based at the Head Office in Cape Town. The change from a build to a buy strategy fundamentally altered the structure and focus of the IS department. In the 8 year period from 2003 to 2011, the IS department had four different CIO's and IS management teams. New management team members had to gain familiarity with legacy systems and operations

whilst attempting to support and absorb new high impact projects that had very aggressive project time lines. The high level of change of solutions, management focus and management teams, together with a strong reliance upon external consultants, significantly altered the culture and identity of the IS department.

Several key IS projects, such as the ERP implementation were initiated by the business, funded and staffed outside of the IS department, whose mandate was to continue with the operations of the legacy systems. The new ERP system and solutions were introduced in a phased approach by geographic region, which required the integration to and parallel operation of the custom built legacy systems. Many decisions which typically fell within the domain of the IS department were now being determined by the projects, which conflicted with established procedures and decision-making processes. This resulted in confusion about roles, responsibilities and accountability for decisions.

The transition of IS staff from legacy operations to the new package solutions was slow, due to the need to maintain the legacy systems, and often resulted in only critical staffing levels being maintained for certain functions. The opposite was true for the project resourcing, where the size of the ERP project implementation team was at one point greater than that of the IS department itself. IS personnel who had transferred to the project team were referred to as the 'A' team which prompted a degree of resentment by staff who were not part of the project. As these projects neared completion and were handed to the IS department to run, there was a need to integrate the project teams with the IS department. As the integration proceeded, there were many resource gaps in the IS department which were filled by contract staff. In several cases, project team members who were contract staff were making decisions on behalf of Company A that had long-term implications and who lacked the necessary organisational and strategic context. Once the contractor had left the project, these decisions were often questioned, as no one from within the company had provided oversight of the decision.

Work Practices.

The integration of the SAP project team and the IS department later took place and brought with it many different and sometimes competing philosophies and work practices. External consultants and contractors would change over time, bringing with them new expertise but often great variation in work methods and standards. In the absence of company-determined work practices and standards, the many different methods, work practices and philosophies created confusion, duplication of work and affected the quality of solutions. Various projects would approach work in different ways

and a silo focus of working within the confines of a project was common, often resulting in scheduling, resource or technical conflicts. Change management and project management in this environment was particularly difficult due to the lack of documentation of legacy systems, the rapid rate of change, the reluctance of consultants to share knowledge and the lack of a common standard or implementation approach. An example of these different approaches is the implementation of a new point of sale solution based on an agile development method, whilst having to work with the back end SAP systems that follow a more traditional waterfall approach to customisation and implementation.

Results and Analysis: Company A

The following section describes the different findings resulting from the analysis of the data, and is structured according to the constructs of the theoretical model followed by a description of additional factors. Each construct is described in a separate section and comprises a definition of the construct, followed by contextual information supported with quotation examples to demonstrate evidence of the findings resulting from the analysis of the data. The contextual information was drawn from the triangulation of interview data, document samples, observation and field notes.

Value Compatibility

The organisational values, norms and culture relate to the degree of organisational fit that telework has within an organisation. The greater the congruence of telework with the norms and values of the organisation, the greater the potential telework success. Value Compatibility examines whether the organisational values, culture and daily norms of the organisation are able to support telework.

Company A is a retail company with a core focus on serving the customer through the stores which are then supported by other departments and divisions, of which the IS department is one. This is important from two perspectives. Firstly, unlike Company A, Company B is an IS services company where IS professionals participate in the core function of the business and not as a support function. This is discussed in further detail in Chapter Five.

Secondly, the management of Company A make a clear distinction between the retail (core) business and the support functions of the business, of which the IS department forms part. Within the IS department there is commonly reference made to the ‘store culture’ where certain activities, expected behaviour, actual benefits and work patterns are determined by what would or would not be applicable in the retail stores of the business.

The IS department is seen as being different to the rest of the business in a number of aspects. Examples include the twenty four hour nature of operations where stores and other admin departments operate set hours, the remuneration requirements for IS staff are much greater than the typical remuneration profile of a store, and the nature of the work is not visible or tangible to the average employee. Respondents identified a very clear, distinct and separate 'IS culture' to that of the wider company and would often refer to the incongruence of applying the 'store culture' to the IS department.

> "The guy that was inducting us said literally every second sentence 'well this is not applicable to IT [the IS department] …you don't wear the corporate wear, you don't do this and you don't do that." (A5)

> "There's a lot of culture in this company that comes directly from the store." (A4)

This incongruence is demonstrated in the following example described by several respondents. The 'store culture', as it applies to working hours requires IT staff to work one Saturday morning per month. The original reason for this was that 'support' functions (which included IT) would be available to assist stores on a weekend by being in the office. Given the extended trading hours that stores operate on weekends, there is limited practical value in having staff in the office for only the Saturday morning and not for the remainder of the weekend trading hours. The expectation that staff work Saturdays extends beyond the job status and job function. IS staff are expected to work a Saturday morning regardless of whether they fulfil a direct support role or not. Furthermore, contractors who often provide key knowledge and skills are not required to work Saturdays, as this is only a requirement for employees. IT staff perform their Saturday 'duty' on a roster basis and are typically less productive, as a quarter of staff are present on a given Saturday and are not able to interact with colleagues and business people due to non-availability of the rest of the team on the given Saturday.

The expectational norms of the 'store culture' would appear to ignore the actual job functions and characteristics when determining the working hours. Based upon the example of the Saturday work, many roles in the IS department do not form part of daily operational IT support and do not directly support the ability of stores to trade on a weekend. However, the expectational norm remains that all staff who are not in stores must work a Saturday per month.

The values and norms applicable to stores has prejudiced the opportunity for IS personnel to

telework. An important criterion of jobs in stores is that of physical presence in the store, which is required to service customers and fulfil the functions of the store. A critical check for a store manager is that at the beginning of the trading day he/she has determined that enough staff is present to manage all the different departments and functions of the store. In other areas of the business such as the support offices and IS department, the 'store culture' is applied with emphasis being placed on having staff members in the office.

This was a constant theme identified in the interviews:

> "So we [the IS department] are judged in the eyes of the retailers, and if the retailers have to be in stores every day, which is their office, then there is an expectation that we are in 'the stores' every day, which is our office." (A3)

> "There's close supervision of 'is the person here? Did they come to work on time? How long did they have for lunch?' ... so the measurement of actual work ... is bums on seats basically." (A4)

> "I think it's too much to do with bums on seats these days ... and this means there's an element of distrust somewhere." (A3)

The 'element of distrust' was another major theme identified by the respondents where the organisational culture was seen as not promoting trust of employees, and is examined in further detail in section *Trust*.

> "I think there is a bit of a suspicious culture ... definitely more suspicious than what I am used to." (A6)

The published values of company A strongly promote the development and nurturing of people within the company as a core value. The 'element of distrust' is thus in stark contrast to the espoused values and highlights a possible gap between espoused values and actual practice of these values. The perceived gap was described by some respondents:

> "I would bet good money that if you walked around this building and gave every person R 100 that could say out loud all the values, you wouldn't be giving anyone R 100 today." (A8)

"[people] will also tell you that it's a major irritant [to them] that the organisation's real values are so vastly different from the stated values." (A4)

"they [employees] know the values that suit them better than some of the values that don't suit them ... they pick and choose." (A3)

Trust

Trust between the manager and employee is an essential factor for telework success through the reduction of uncertainty, increased job satisfaction and employee commitment (Staples & Ratnasingham, 1998). Trust was explored at two levels within Company A, namely at an organisational level where the perception of the company as a trusting organisation was examined, and the superior-subordinate relationship level. Low levels of trust were evident at an organisational level in Company A and this held true for the organisation as a whole and the IS department itself.

"There's very little institutional trust here. So you could have a situation where your manager trusts you and allows you certain latitudes but his manager may find that unacceptable and tell him to stop extending that trust."(A4)

"I think the problem we have at the moment is the values look wonderful, we've put them up all over show, but we do not live them. I don't think we're working in an environment of trust ... the gatekeepers of the values are just not living the values. They are paying a lot of lip service to it." (A8)

Short-term temptations or pressures can result in decisions contrary to the company values or stated management intentions aimed at building trust. This will result in negative relational signals, as was evident within Company A, such as the focus by senior management on time and attendance, the 'blame culture', and the tendency by management to micro-manage.

"I do think there is a bit of a distrusting culture. I think there is very much a sit under my nose and let's see what you're doing ... we're not measured on output but on actual physical time spent in the office." (A2)

> "Even if I'm trusted, I am not trusted ... it depends upon the day, today trusted, tomorrow you might not be ... then ... you make them look good again, then you are ... trusted again."(A5)

> "I think there is a big lack of trust between senior management to staff and staff to senior management. I think that it is overall an environment of a total lack of trust ... the minute the pressure comes on, trust flies out of the window." (A8)

Some managers within the IS department demonstrated high quality superior-subordinate relationships and high levels of trust with their subordinates. There was strong support for the concept of telework by these managers who had allowed informal ad-hoc opportunities for the odd staff member to telework but this was constrained by the fear that senior managers would veto the arrangement and discipline the manager concerned.

> "My previous manager and I had huge arguments because I allowed one of my [staff members] to work from home one day ... and I was in serious trouble." (A5)

> "I do have some people who do some work at home, particularly if children are sick or something like that."(A3)

> "I will say ... work from home, but it is an informal arrangement between me and that person ... but that again, is with a senior person."(A1)

Top Management Support

The top management of Company A use Blackberries for remote connectivity to email and allow communication with business managers whilst not in the office. This is primarily used when they are traveling or for working after hours, and demonstrates that, in their individual work capacities, they are aware of the potential value and productivity that can be gained by being able to communicate and work whilst not in the office. Despite this, the use of such technologies in the wider company is limited, with only 130 Blackberry users in the whole company.

The top management of Company A have not demonstrated an awareness of telework as a business tool. This has been absent as a topic in subjects such as productivity, employee benefits, values, and

cost reduction in views expressed by top management, as well as formal communications on these subjects. The majority of interviewees were of the opinion that top management were completely unaware of telework and the benefits or challenges associated with it.

> "I don't think they have a clue [of the advantages/disadvantages of telework]." (A3)

> "In the time that I've been here they have never pronounced on it [remote work]." (A4)

This is further supported when seeking possible evidence, such as formal communications, that the top management have actively supported the concept of remote work.

> "No there is no support for it whatsoever. I have never heard it discussed though I have heard it brought up by people often." (A8)

> "It is also a historical thing, this is the way we did things and this is the way we will always do things." (A7)

The lack of top management support could be attributed to a lack of knowledge or understanding and may not be a topic relevant to the mainstream retail business. IS personnel would appear to be well aware of the topic and all interviewees were able to relate the potential applicability either to themselves or to their staff members. Top management on the other hand have been noticeably silent on the topic, but this would appear to extend further to active opposition of the practice. The consensus of interviewees was that in special circumstances such as a family crisis or protracted illness, a person may be allowed to work from home as a special exception for a short period. However, all examples given were of informal 'off the books' arrangements between the manager and their staff members. Failing a formal policy for remote work, these arrangements would fall under the ambit of "manager's discretion", which has drawn strong criticism from previous CIO's once it came to their attention.

Several examples were given by interviewees where requests were denied by the incumbent CIO at the time. Organisational opposition to the concept was evident where a formal request was passed through the HR channels for review, and the request was denied. These examples show that top management have actively opposed the concept of remote work within IS department and the as well as the wider organisation.

Management Control

Management control examines the degree of output control used by managers when assigning work to subordinates as well as any other supervisory procedures used. Company A has undergone and continues to undergo significant organisational change as part of a strategic realignment in response to an increasingly competitive business environment. The IS department has been significantly affected by this change and has had four different CIO's and IS management teams in an eight year period. The current management team has been in place four months when the research interviews took place and responses therefore focus largely upon norms and practices of previous management teams.

> "There is a state of flux especially in the IS side of things because of the different leadership changes" (A1)

> "The first thing that needs to change and is changing is implementation of KPI's. So once you have KPI's you can manage output rather than manage input. So by insisting people be in the office from 8 to 6 ... you are managing input, you are not managing output." (A6)

Control theory describes three forms of control mechanisms in organisations, input control, which is aimed at obtaining the right people and skills, behaviour control, which aims at controlling behaviour on the job, and output control, which aims to set targets for individuals and allows discretion for the individual as how to achieve the targets (Virick et al., 2010). Management control within the IS department of Company A has largely followed a process of behavioural control where the focus has been upon visible behaviour of staff, such as time and attendance, willingness to work late, and attendance of meetings. Senior IT management have also placed great emphasis on input control in the selection of staff with the right skills and business acumen, yet have severely restricted autonomy of individuals and discretion in decision-making.

> "with the manager that I had, being in the office was not negotiable. You had to be shown to be in the office to be effective." (A1)

> "we are looking for people that have business acumen and great new ideas ... and we want them to follow everything we tell them to. So why did we bother to and find these wonderful free thinking individuals?"(A8)

> "it's a ... school mentality, the headmaster and the children, I speak, you're quiet. I say you do." (A5)

Many IS projects by their nature are delivery focussed where targets are set for completion dates, budget, time and quality. Project management goals differ from a performance outcome orientation by management that focuses on specific targets or goals for individuals, such as individual Key Performance Indicators (KPI's). No outcome orientated management control mechanisms were evident in the IS department and there was no evidence of any organisational standard or departmental standard for the management of goals and targets. Each manager would manage their team according to their own subjective measures of performance such as the level of complaints or compliments received about an individual.

> "I don't think he knew what I was doing, I would pick up the work myself ... my mandate was very simple, [he didn't] want to be bugged with the people issues ... with [another manager] it was totally different, everything was micro managed." (A7)

> "So if the team is severely stressed and barking at each other, then he will start to dig a little deeper to find out what the problem is. So it's really EQ rather than real product output or task management."(A4)

> "[previously] it was just keeping your manager happy and feeding back on ... yesterday's stuff ... very little on my longer term planning." (A2)

> "[management control] ... was policing, it was very stressful ... it's very tiring because it depends upon the mood of the day, how the day will go. And that's emotionally very stressful." (A5)

The subjective nature of management control was evident in the encouragement of subjective measures of excellence such as 'going the extra mile', providing 'fresh thinking' and 'taking up the challenge of being world class'. With no formal performance measurement or assessment method in use within the company or the IS department, salary increases could only be determined by subjective means and risked supervisory bias.

> "there might be a quiet guy in the corner ... but he has not had the opportunity to show what he's doing because he is not an extrovert type." (A5)

The subjective management control was also evident in a high degree of correspondence bias that existed in the management of problems escalated to the CIO and interpersonal injustice that occurred as a result.

> "any escalation [received] ... IT was immediately at fault and we would be berated ... on the service we're providing. Whether or not it was our fault, was neither here nor there." (A1)

> "[previously] the witch hunt happened around who can we publically execute and hang as opposed to, how do we firstly fix it and then ... learn from it so that it doesn't happen again." (A2)

> "I felt the culture was ultimately a blame culture. You needed to do what you needed to do, in order that you didn't get blamed for something and it drove completely the wrong behaviour in staff." (A1)

Job characteristics

Job characteristics relate to aspects such as the degree of autonomy the employee enjoys in choosing the time and place of work, the level of feedback received when performing his/her job function and the support for goal orientation of the employee where the organisation aids the employee in the achievement of his/her career aspirations through development and training.

Company A has a management discipline, which focuses on behavioural management control, where emphasis is placed on physical attendance and observation. This approach does not allow any discretion in the selection of the time and place of work and employees are not given any autonomy in this regard.

> Q. "How much freedom do you have in choosing the time and place of work?"
> A. "I have no freedom whatsoever. My hours are pretty set, eight to five and then the one week every 4th week when we do –eight to six. The only flexibility I have is what Saturday I come in." (A8)
> A. "None." (A2)
> A. "None." (A5)
> A. "I would have to say no." (A3)

A. “being in the office was not negotiable. You had to be shown to be in the office to be effective.” (A2)

Feedback to the employee was not structured and no formal appraisal system was in effect. Thus, staff did not receive a regular, structured and objective assessment of progress and annual increases were subject to subjective bias as a result. Career aspirations could not be effectively managed without some form of structured feedback.

“There's no clear job description, this is what I'm supposed to do. I create it from what I see is not happening but there is no formal performance review.” (A5)

“my work was measured ... what was topmost in my manager’s mind ... that and also the time spent at work ... and I don't think it's been done very systematically.” (A2)

“So a lot of what my performance is measured on is emotion ... at the moment there are no KPI's, we're just starting to put the KPI's in place.” (A1)

Skills development and competency assessments were not raised by any respondent. Although not specifically examined, there was no evidence of career development processes. Training does occur within company A on an ad-hoc basis.

Communication

Examination of the communication patterns between individuals should give an indication on the use and importance of face-to-face communication in relation to electronic communication mechanisms. Media richness in communication has been found to be strongly associated with teleworking success (Turketen et al., 2011). Viewed from the perspective of media richness, a greater reliance on face-to-face communication will potentially make telework more difficult to implement in order to overcome the reduced communication effectiveness introduced by electronic media.

Company A makes extensive use of electronic communications in everyday use and has a well-established and accessible Video Conferencing network between the head office and regional offices. Video conferencing is accessible for meeting purposes, and was established to reduce the amount of travel to regional offices. Other forms of electronic communication typically used are telephones, cellular phones and email. Tools such as instant messaging and electronic whiteboards

are not in use although there have been very limited and largely unsuccessful attempts to use document management systems and some Web 2.0 technologies such as wikis and blogs within the IS department.

Interviewees strongly favoured the use of electronic communication versus face-to-face communications for the majority of their daily interaction with others. Seventy five percent of respondents chose electronic communications over face-to-face communications as their first choice of communications method and seven of the eight respondents chose electronic communication means as their second choice.

A very different pattern emerged when examining the amount of time spent in face-to-face meetings or interactions. The majority of respondents reported that they spent most of their working day in meetings and face-to-face interactions. The average for all respondents was that 68.75% of the working day was spent in face-to-face interactions with others.

Would the further use of additional or different ICT tools change this pattern of work? Two aspects were examined; firstly, could the use of additional ICT tools such as instant messaging be viable in the current environment, and secondly, would the use of these tools have a positive effect upon current work practices. All respondents expressed views that additional ICT tools could be used effectively in their work and their teams, where the communication was largely internal to the IS department. Some respondents expressed concerns as to whether or not interactions with the business could be effective using only ICT tools in place of face-to-face communication.

> "Yes I could do that quite easily ... but the rest of the organisation ... may have a problem with it ... although it may suit me for my purposes ... for the organisation that might be a big pill to swallow." (A6)

> "I doubt whether a divisional director would want to Skype me ... he probably wants to pop in when he is here."(A2)

Whilst the preferred means of communication was electronic for most interactions, the inverse was true for interaction with senior management as shown in Figures 8 and 9. Face-to-face communication was preferred by six of the eight respondents as the primary means of communication when interacting with senior management.

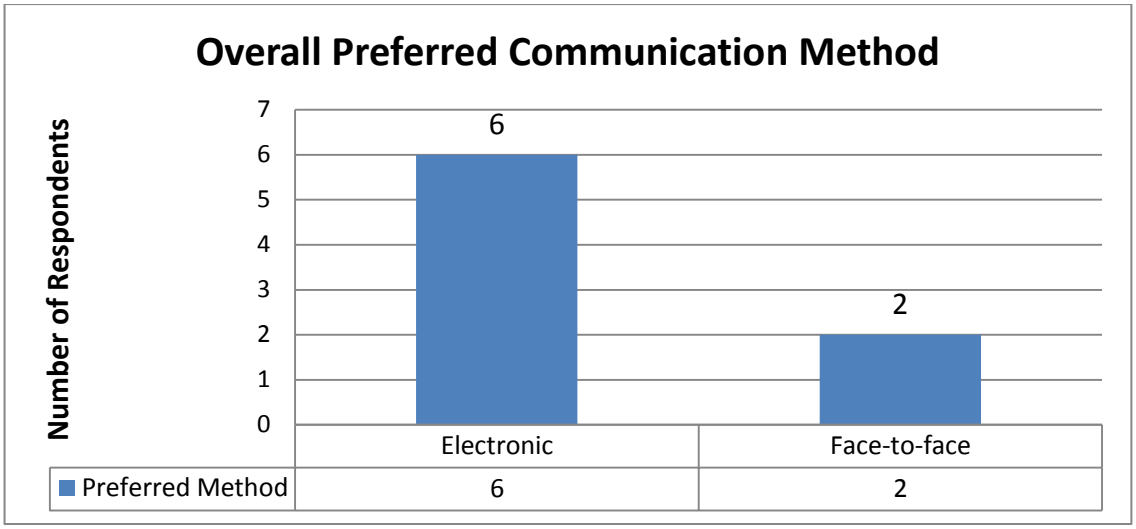

Figure 8 Respondents overall preferred communication method

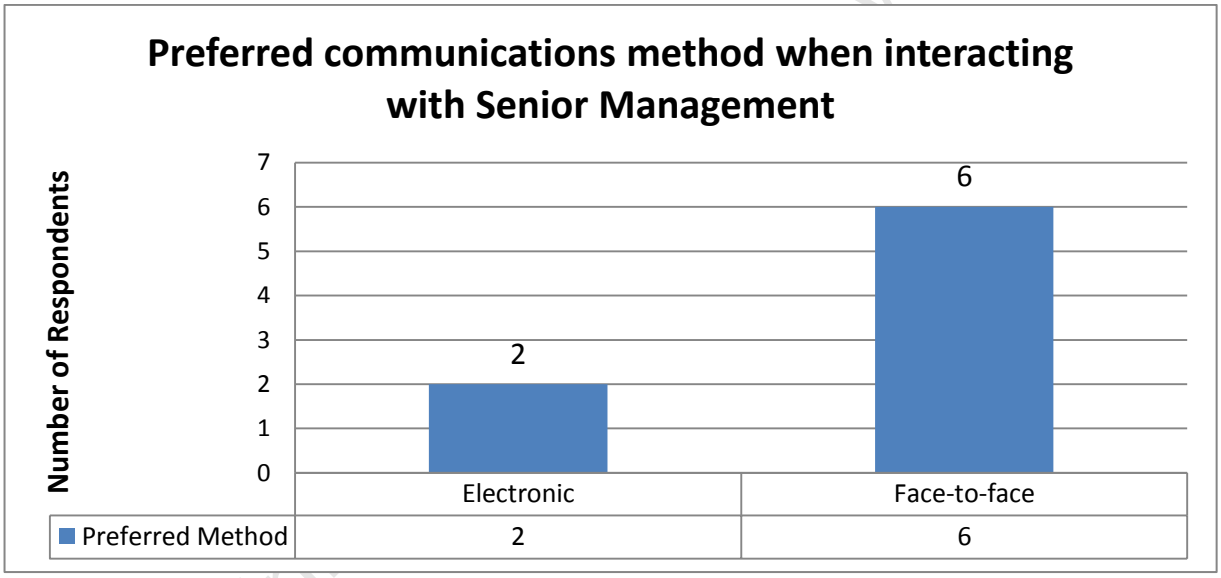

Figure 9 Respondents preferred communication method when interacting with Senior Management

The frequency and purpose of meetings in the IS department was indicated as problematic by a number of respondents in terms of the amount of time spent in meetings, as previously discussed. The IS department in Company A does appear to have developed a pattern of use where meetings become an exaggerated and overvalued mechanism for communication and decision-making.

> "We have meetings because we are expected to have meetings, but there's no real measurement of the output of those meetings. There's no real preparation or requirement for input to those meetings either ... one person will drag six other people into a room with an objective ... the other people are not even aware of." (A4)

> "it's just continuously meetings, and there's never time to actually action what we have been meeting about, and that's where the backlog comes and we start a lot of things but we don't have time to actually finish it because of the lack of time."(A5)

> "A lot of meetings here are just a case of 'I've booked a room and we need to discuss this, come downstairs quickly.'" (A4)

Practical Compatibility

Practical compatibility examines the mechanisms available to support telework such as the provision of ICT tools, ICT support for telework as well as policies, procedures and training. Company A does not make use of telework, and, as such, has not implemented any telework specific support mechanisms. This does not preclude the use of some existing measures and tools being adapted to support the implementation of telework.

Company A does make a number of ICT tools available to members of the IS department, and the type of tools and access differed depending upon whether you were an employee or not. Employees had access to email, file servers and the IT systems they supported and used. In some cases, employees (primarily support staff), had remote access via 3G connectivity and VPN access into the company network. Consultants did not have this access; even email connectivity proved problematic where consultants needed to access their own vendor email and this prevented them from having access to the Microsoft domain of Company A. Consultants could not easily access file servers used by employees, and projects would create their own file servers for the storage and sharing of information. Employees who were not part of the project would in turn encounter difficulties accessing project documents, as they did not necessarily have access to the project file servers. Scheduling of meetings and booking of resources, such as meeting rooms, were done manually.

Although the IS department and the ERP project team have been consolidated, some of these access limitations remain. Common working approaches such as a single project management methodology, common reporting standards for projects, and documentation standards for solutions have not been established. Company A does have some ICT tools in place, which could form the basis of access to support an employee wishing to telework. The VPN and 3G connectivity would allow access to email, file servers and systems, such as SAP and Microsoft application servers. Consultants would find remote work more difficult, but no more than is currently the case if they were granted access through the VPN gateway.

Company A does not make use of tools associated with supporting telework activities, such as content management systems or instant messaging systems. Line managers in the IS department, as well as a limited number of managers in the company, make use of Blackberry devices for push email purposes. The top management of company A does make limited use of tablet computers and smartphones. This is a personal choice and there are no established IS services within the company that provide content to these devices.

Personnel are not provided with any form of training or support for telework or working remotely. The policies do not refer to telework, nor is there any provision or guidance for remote work in any form. These policies would have to be updated to cater for specific aspects of work life that may occur because of telework.

Additional Factors

The existence of sub cultures within an organisation did not form part of the theoretical model and the expectation was that organisational cultural issues would form part of Value Compatibility. Company A demonstrated a strong sub culture within the IS department and respondents identified a very clear, distinct and separate 'IS culture' to that of the wider company and would often refer to the incongruence of applying the 'store culture' to the IS department. Although discussed in detail in the previous section entitled *Value Compatibility*, the existence of a sub culture within an organisation was not anticipated and in the case of Company A, is significant enough to warrant consideration as a separate factor in itself.

An additional factor that emerged from analysis of the data was the potential role of trade unions. The unionisation of the workforce was not considered as part of the theoretical model as the sample focussed on IS professionals. Although the implementation of Telework may not directly affect unionised workers, it could be used as a pretext in wage negotiations if proper consultation with unions does not form part of the implementation strategy for Telework.

> "[trust] is not there yet ... we are still in a very unionised environment with the bulk of our employees ... it is still an 'us' and 'them' relationship irrespective of what anyone wants to tell you." (A8)

According to Odendal and Roodt (2002), trade unions in South Africa resist flexible work practices. Given that Company A has a large unionised workforce, the potential for resistance to Telework

from the unions in the wider context of managing labour relations must be considered as an implementation risk.

Discussion of Results

Application of the data derived from company A to the theoretical model shows that several of the constructs would score low on a contiguous scale from low to high.

Value Compatibility

Telework changes the temporal-spatial nature of work, is supported by ICTs and therefore has a much stronger value compatibility with the "IS department culture". However, the dominant organisational culture within company A is the "store culture" and efforts to apply this to the IS department has resulted in a number of incongruences which would be exacerbated in the implementation of telework. Value Compatibility must also examine the actual organisational values and their potential to support the principles of telework. The stated organisational values for company A are themselves quite compatible with the principles of telework, however support of, adherence to and integration of these values into daily life is largely viewed as unsuccessful by the respondents. These combined factors therefore result in the construct of *Value Compatibility* as being assessed as low.

Trust

Research has shown that trust is an essential factor for telework success through the reduction of uncertainty and increased employee commitment, which is founded on reciprocation. The level of organisational trust was consistently perceived as low by respondents, and there was reference made to a "suspicious culture" and "very little institutional trust". Several strongly negative relational signals are evident within company A where respondents identified a "blame culture", management paying "lip service to values", as well as the opposition to telework which reinforces the message that staff are not to be trusted to work alone. The construct of *Trust* of the theoretical model is therefore assessed as low. Value Compatibility examines whether the organisational culture and daily norms of the organisation are able to support telework and the data shows several negative factors, which would require intervention within Company A. The differences between the "store culture" and the "IS department culture" almost represent polar types in management control. The "store culture" is primarily concerned with behaviour management of staff in a fixed location, i.e. the store. The "IS department culture" is concerned with output and results where the technology supports the completion of work from any location, such as is the case for after-hours support.

Top Management Support

Changes to management practices within an organisation require the support of top management and have been identified in research as an important factor for the implementation of telework. Top management knowledge of the advantages of telework was consistently perceived as negligible by respondents. There was no evidence of any form of support for the concept in communications by top management, and examples of direct and open opposition to the concept were given by respondents. The opposition to telework by top management was also evident where a formal request for telework was declined and the construct of *Top Management Support* is assessed as low.

Management Control

An aspect closely related to trust and the "store culture" is that of the management controls in use in Company A. Because the telework alters the temporal-spatial nature of work, management control must focus on output control. Telework research has shown that management of output is an essential factor in telework success, as a supervisor cannot directly observe the behaviour of the teleworker. Management control within Company A has been largely focussed on the selection of the right employees (input control) and the management of observable behaviour (behavioural control) with no formal goal setting or management of output (output control) being used.

This lack of output management allows subjective measures to be used and risks supervisory bias in the performance evaluation of employees as it pertains to remuneration and career advancement. The use of subjective measures, the associated correspondence bias, and interpersonal injustice are highly incompatible with the requirements for telework and the construct of *Management Control* must therefore be assessed as low for Company A.

Job Characteristics

Examination of the job characteristics of the respondents and their teams revealed large variances in autonomy. Some employees were allowed reasonably high levels of discretion in how work was performed and was measured by the level of complaints that were or were not received. Other employees experienced no autonomy and were subject to high levels of micro-management where all aspects of the work were prescribed and the output and details checked. No discretion was given in the ability to choose the time or place of work; all employees were expected to be at the office during working hours. The requirement to be at the office was driven more as a management

control than as a requirement of the work itself.

The majority of respondents could perform some degree of their work independently, requiring no interaction with others and work could be done remotely. Several of the respondents were of the view that some degree of autonomy in choosing the time and place of work would be beneficial, as the current work environment was disruptive and allowed frequent interruptions. Feedback of job results and progress tended to be absent, or tended to focus on negative aspects, such as the failure to achieve the desired results. The lack of a performance management system also contributed to the overall lack of feedback to employees, as they did not have access to a constructive intervention process to guide work quality and personal progress. The construct *Job Characteristics* has been assessed as low.

Communication

Communication within the IS department is widely achieved with electronic means such as email, teleconferences and use of SMS and cell phones. Support teams regularly make use of teleconferences to troubleshoot problems after hours, and in some cases during working hours if key team members are traveling. Company A has excellent video conferencing facilities, which is easily accessible and use is encouraged in order to reduce travel requirements. Some respondents referred to a practice of poor discipline in the scheduling and use of meetings, which lacked purpose or results, and most respondents referred to the large amount of time spent in meetings. As the sample population comprised a majority of line managers, it is reasonable to expect that a higher percentage of meetings would form part of the daily working routine. The ICT tools available to management and employees could be supplemented to provide a richer communications mechanism; however, when all factors are considered the construct of *Communication* for Company A has been assessed as medium.

Practical Compatibility

Company A does make use of a number of tools and systems to support daily work and allow work to be performed remotely. This is used primarily for employees who travel due to the nature of their job and is widely used by IS support staff for after-hours support. Secure communications mechanisms are in use for the access to systems but this is limited to specific jobs and roles. The tools in use would be scalable to support telework and can be supplemented by other tools, such as Instant Messaging. Organisational policies do not address telework in any form and make frequent reference to “manager’s discretion” which can result in supervisory bias in the implementation and administration of telework. The implementation of telework within company A would require improvement of existing practical measures to support telework as opposed to extensive

development of these measures, therefore the construct of *Practical Compatibility* is assessed as medium.

Additional Factors

Two additional factors emerged from the analysis of the data, namely the existence of sub cultures within the organisation and the effect of trade unions. These existence and effect of a sub culture is probably quite specific to Company A and may not necessarily be suitable to wider generalisation in the theoretical model. However, the existence of a largely unionised workforce may certainly be apply to many other organisations and could warrant separate investigation. The effect of labour unions upon telework appears to have very limited coverage in previous research and probably is too narrow a focus as an organisational factor. A potentially more suitable and generalizable construct which could form part of a revised theoretical model would be that of industry type.

Chapter Summary

Company A is a multi-brand retail business based in South Africa with international operations in seven countries with its head office in Cape Town. The sample from Company A comprised six managers and two employees, one of the eight interviews was an HR professional and all respondents were from the IS department. The respondents were drawn from different functions of the IS department and the CIO was one of the respondents who was considered part of the IS function for the purposes of this study.

The IS department is seen as having an in dependant culture to the wider organisation and together with the poor integration of organisational values within the organisation resulted in the value compatibility of the organisation with telework being assessed as low. Trust was also assessed as low due to a perceived low level of trust of employees by managers. Top management did not demonstrate an understanding of telework and in some instances, actively opposed telework attempts and combined with behavioural management control mechanisms resulted in both aspects being assessed as low. Communication was assessed as medium due to a wide use of CMC methods such as email and video conferencing but this was offset by a poor discipline in the scheduling and dependence upon meetings. Technologies to support telework are used within Company A however, the organisation policies do not address telework and make often make reference to “manager’s discretion” which can result in supervisory bias. Practical compatibility was assessed as medium as a result.

The existence of the IS sub culture and the existence of a unionised workforce were additional factors which did not form part of the theoretical model and could be considered for inclusion. The following chapter is a write-up of the Company B case study and associated within-case analysis of the data.

Chapter Five: Company B Case Study

The following chapter provides a general introduction of Company B which has been derived from several sources, which include direct observation, information from the company Web Site as well as data from the interviewees. The chapter continues with an analysis of the data from the semi-structured interviews arranged according to each of the constructs of the theoretical model and concludes with a discussion of the results.

Data Collection and Analysis for Company B

Gathering of data was done over a six-week period, consisting of a series of semi-structured interviews, and direct observation. The interviews were audio recorded and transcribed soon after the interview to prevent information decay. The duration of the interviews was typically 60 to 70 minutes per interview. Field notes were taken during the interviews to capture the reactions of the interviewee by noting body language, voice inflection, pauses in answers and where the interviewee placed emphasis in their answer.

The sample from Company B comprised five IS professionals made up of two managers, three employees, one of the respondents was an HR professional, and the respondents were drawn from different functions in the business including sales, professional services, strategic outsourcing, and administration. The average tenure of the interviewees was twenty-one years, six months, two of the interviewees were female and three were male. Table 3 shows the role of the different respondents in Company B, in terms of their being a manager or employee.

Respondent	Role
B1	Employee
B2	Employee
B3	Employee
B4	Manager
B5	Manager

Table 3 Role of respondents in Company B

Multiple readings of the interview transcriptions together with the evaluation of field notes were used to identify evidence which confirmed or denied the validity of the theoretical model and to identify new constructs for inclusion as "additional factors" in the research results. Quotation examples are used to demonstrate evidence supporting the findings resulting from the analysis of the data. The triangulation of data collection methods was used to provide stronger substantiation of the constructs defined in the theoretical model as well as to explore additional factors that arise as emergent themes not previously identified in the theoretical model. ICT tools used for remote access to ICT systems and productivity tools were also examined.

The Company

Company B is a global ICT technology and services company, which operates in over 170 countries worldwide and has local representation in the major centres in South Africa. Company B manufactures and sells computer hardware and software, and offers infrastructure, hosting and consulting services in areas ranging from mainframe computers to nanotechnology. The South African operations do not include any manufacturing capabilities, but are focussed upon sales, software and services, which include consulting, strategic outsource, and business continuity services.

Work Practices.

The South African operations of Company B mirror that of the global parent company in that all process, procedures and operations follow the global standard. Staff and management form a seamless extension of the wider organisation, and interact with overseas colleagues extensively to such a degree that teams are comprised of local and overseas members. Company B makes extensive use of virtual teams for the sales and professional services offerings, which are highly mobile. Teams are brought together to complete a specific task for a short duration, and members will then be assigned to other projects or tasks as needs arise. The local workforce has a rich toolset available to enable work from any location and the company expects staff to work from remote locations, such as customer premises or their homes. Limited office space is provided with temporary hot desks or 'landing areas' and meeting rooms that staff can use as required, on a rotating basis. However, these desks only cater for a subset of the total staff complement and cannot house all the staff at any given time.

Company B has developed a very strong process discipline for all aspects of its operation and formalised processes have been developed over a number of years for virtually all aspects of work. These processes and tools were developed over the last fifteen years and have reached a high level of maturity. The process driven approach enables effective use of virtual teams with members

working from several different countries in the fulfilment of a task. The values of Company B actively support work-life balance and staff are encouraged and supported in achieving this goal.

Results and Analysis: Company B

The following section describes the different findings resulting from the analysis of the data and is structured according to the constructs of the theoretical model followed by a description of additional factors. Each construct is described in a separate section and comprises a definition of the construct followed by contextual information supported with quotation examples to demonstrate evidence of the findings resulting from the analysis of the data. The contextual information was drawn from the triangulation of interview data, observation and field notes.

Value Compatibility

The organisational values, norms and culture relate to the degree of organisational fit that telework has within an organisation. The greater the congruence of telework with the norms and values of the organisation, the greater the potential telework success. Value Compatibility examines whether the organisational values, culture and daily norms of the organisation are able to support telework.

Company B has a strong culture which supports values sympathetic to telework such as trust, autonomy and an explicit emphasis on the importance of work-life balance.

> “It is part of part of our value propositions for new hires that we respect work-life balance, we explicitly state that and that means the ability, we provide you the tools to work from home at different times." (B2)

> “They call it a work-life balance so they ask you to balance your work and your life. So there's a work-life balance policy that you don't work 24 hours a day so they are quite strict on that.” (B4)

> “There is the respect dimension, what we call, the etiquette that goes with the agreement to be always connected, and the value for work-life balance.” (B2)

Employees are empowered to make choices to support work-life balance, which is an important value within the organisation and is counter balanced with clearly defined outcomes.

> “They trust us completely; they don’t really care where you are as long as you are achieving your numbers. So the way you work, say you have to go and watch a football

match, you can work all night and as long as you do your work, they really are leaving it up to you to manage your life. So I think it's a very good model." (B1)

"So most people would say yes, they could do their work anywhere, anytime, as long as you meet your performance objective. This is fundamental to a lot my answers, is that we have a high performance culture which is based significantly on an annual bonus schemes which is based on your performance objectives." (B2)

The culture within the Company B appears to be well-understood and supported at all levels within the organisation. Core values are well integrated into daily life and a culture of mutual support is encouraged through mentorships.

"The other thing we have to do is that we have to mentor someone ... so that person I talk to every second day." (B4)

"you can go and find the information you need, or you need to build up a network of peers, seniors, subordinates worldwide to assist you." (B3)

"So for instance a guy phones me this morning and asks me 'what's HPC?' I say 'Why are you asking the question?' He replies that he has an RFP that he needs to complete ... I can provide him with 6 or 7 different names, people that he must talk to that can provide him with assistance because they are the experts in that field ... and they can assist him." (B3)

The values of the organisation are communicated on a regular basis at all levels within the organisation.

"It's part of life and walked. Talked all the time, you hear it in all the messages; you hear it in all the presentations. It's just constant." (B2)

"So one of our key values is trust and personal responsibility in all of our engagements, internally and externally. And we take these values very seriously like any company I suspect. But we really do in the sense that the senior leaders will take about those values on a regular basis." (B2)

Trust

Trust was explored at two levels within Company B, namely at an organisational level where the perception of the company as a trusting organisation was examined, and the superior-subordinate relationship level.

The overall feedback from all respondents was that very high levels of trust exist within Company B. Trust forms part of the ethos and way of working and is an integral part of daily life. Trust as a value and way of working is so embedded that it is not viewed as being in any way different at an organisational level or at the superior-subordinate level, it is for employees one and the same.

> "This is how we work, this is part of the culture, part of the ethos, we trust you, we believe you will get it done." (B4)

> "I think that they trust us completely." (B1)

> "It's increasingly the motive, trust and personal responsibility for everything we do, it's part of our values." (B2)

> "I think trust is [inherent] they believe you are professionals." (B4)

Trust extends beyond the superior-subordinate relationship to colleagues, peers and subordinates within the wider organisation. Many work teams are virtual teams comprised of members in physically different locations across the globe. A culture of trust exists at a peer level that your colleague will take personal responsibility for his/her tasks and support the team outcomes.

> "So one of our key values is trust and personal responsibility in all of our engagements, internally and externally." (B2)

> "you have got to trust that work will be done and you have got to trust how you get the feedback ... so there is a different way of operating." (B3)

Trust, as a cultural value, exists within the organisation and is embedded in the way the work is performed. It is not a value that is aspired to, but a value that is part of everyday life. However, when viewed from an employees' perspective, the trust the employee places in the organisation to look after his/her best interests has reduced over time.

> "If you take probably the last ten years, the trust has lessened ... the reason why it has lessened is because we used to be more of a paternalistic organisation ... [Company B] has become a tough organisation ... and have become pretty hard in describing what a job is and what's expected of you and how it looks after you." (B5)

Top Management Support

Successful telework adoption and its subsequent diffusion, has been found to be associated with top management support and top management play an important role in supporting goal orientated management objectives (Mihhailova, 2009).

Company B enjoys strong support by its top management for the core values and a clear focus on output orientated management style within the organisation. The senior leaders repeatedly demonstrate this not only in the communication of the values but through practical demonstration and adherence to the values.

> "Senior leaders know that their role is so important that they will take the time out of their busy schedules for events with round tables with employees." (B2)

> "[the manager for Africa region] sends notes out ... structured communications at least once a month which is very good." (B4)

> "He is a high level executive but he just talks the value. And you see it all the time in everything he does ... I see that extremely consistently across the senior leadership team, up to the CEO who speaks this stuff all the time." (B2)

Top Management demonstrate commitment to the values and processes by allowing themselves to be subject to the same evaluation processes as other employees.

> "So we increasingly don't say 'that's an HR thing, this is a business thing'. HR is business and therefore senior leaders have to go through their own performance assessment, they go through the same assessment that the band 4 guy is doing, and then more." (B2)

The organisation has also developed mechanisms to support the senior managers through training and development to ensure the quality of the leadership and reduce the opportunity for subjective

management practices. This is formalised and institutionalised, based upon competency, not years of service within a role. Specific training has been developed for managers, which ensures a consistency in management approach and, is formally described by means of training and mentorship programs.

> "So you got to have a process based company, very consistently rolled up, communicated in order for this to happen. If you leave guys to do what they do, you and I know senior leaders are egotistical wagon drivers and if you restrain them through processes, and keep reminding them, keep inculcating them, conditioning them ... So it's critical." (B2)

> "We are big on mentoring, this could be a Vice president in Japan, it might not even in your own profession, but it's a person who has been around for a long time, someone you can bounce ideas off ... if you are higher in the organisation, especially if you are a senior leader, we have a group of internal coaches who are very experienced people, HR guys." (B2)

> "If you become a new manager, you go to manager training ... we have facilitators where we do role playing with managers and we do a lot of work on management styles ... So, yes we acknowledge different types of management styles but it is formally described." (B2)

> "There are levels of training and expectation for senior leaders, that HR runs and we got some really good trainers who on a regular enough basis keep these leaders reminded and know that in addition to all their busy jobs they have got to keep being a good manager." (B2)

Management Control

Traditional management methods of assessing performance through direct observation are not congruent with telework due to the physical separation of the superior and subordinate. Research has shown that telework requires a change in management style from direct observation to one focussed upon outcomes and objectives (Peters et al., 2004; Staples & Ratnasingham, 1998).

Company B has a very strong outcomes based management philosophy, which is applied consistently throughout all levels of the organisation. The emphasis in all aspects of work is upon the work output and not on the effort, time spent, or methods of how the goal was achieved.

> "It's outcome based ... I have certain deliverables which I feedback to on a daily, weekly basis depending upon what's happening and that's how I get measured ... very outcome based and they get measured on it, right through the organisation."(B3)

> "the environment I work in the focus is on outcomes, output as opposed to monitoring time and attendance ... if I want to spend my time given the mobility of the workers trying to assess have they started work at this time, have they put eight hours' work in, I am losing the plot. The game is 'have they delivered on what we are trying to achieve'." (B5)

> "You have to set your own business objectives for the year and it's managed against your manager's business objectives, so that we are all aligned." (B1)

Extensive use of processes is applied to all aspects of work wherever possible and great emphasis is placed upon adherence to these processes. The processes themselves have been established and continually refined over the last 15 years and are uniformly applied across the organisation which help the company to operate as a global company. The systems and processes used in Company B provide the visibility of work progress and essentially become the tools through which management control is enacted.

> "if you're maintaining the systems, there are so many checks and measurements that are automated, whatever the process area it is, functional area, that if you're not doing it, it's going to show ... the systems show it, it's like dash boarding, red indicators will show pretty quickly if there is something not working." (B5)

> "What has happened in the last five years, is that more and more intelligence has been applied to them (the processes) ... you can tell that if you are in this area/region and the next quarter that is coming up ... you should have this much weight of pipeline already ... you will have red lights flashing all over the table if you are not at that stage, so that is an indication of applying business intelligence analytics to a process…So I think these processes got more and more refined, more and more intelligent, more and more early warning." (B5)

The outcomes based management philosophy is actively supported by means of regular and

formalised feedback to employees on their performance. Performance assessment, as with other processes, is applied consistently across the organisation and is not based on subjective measures, rather its foundation are the goals and outputs required for particular roles.

> "Everybody has something known as PBC's, Personal Business Commitments. So that is a set of commitments that you make, write down formally and commit to your management, and it's completed going up the line ... a person at the top of the line ... the team that reports to him will have their PBC's written down, and he will write his PBC's out and make public his PBC's as well." (B5)

> "it is called PBC. So that is broken up into goals, business things ... do you look after the clients, do you do this, do you do that. The goals come down from the top." (B4)

> "So they do manage you because they get tracked on pipeline higher up. So everybody's looking at if you have a balanced pipeline." (B1)

> "Very visible, well documented processes, people may not like it but you can't say that it's not fair. It's collective; it's not one manager behind closed doors saying I like this guy." (B2)

Management control is also extended to the managers themselves where the effectiveness of managers is also formally assessed. This is achieved by means of feedback provided by subordinates on their manager's performance and supported by HR processes to drive behaviour. Managers' performance and remuneration are linked to the annual performance assessments.

> "If a manager micro manages. If it is debilitating or interfering, they can manage it through manager feedback survey which is done every year anonymously ... that manager is highly encouraged ... by their HR partner and by the culture, to get their feedback, to review it with their HR partner. By the way, their manager gets the feedback as well, i.e. the manager of the manager." (B2)

> "We do it already in manager training and then they know at the end of the year, their manager is going to assess them not on just their business commitments but their manager commitments." (B2)

> "If you are a people manager, what are your people management commitments? Even the manager as a sales leader bangs out his numbers 150%, he is forbidden from getting the highest PBC rating if his people management assessment is mediocre ... it is linked to the performance pay and career development ... It's also linked into your competency assessment, which is about your leadership assessment." (B2)

Management control does not rely upon the need to physically see subordinates; the management processes and culture support the ability of managers and subordinates to operate from different physical locations on an extended basis.

> "In the last 5 years my managers have always been in other countries. In many cases I would only see them once a year." (B2)

> "So it's a different model, if I think back to when I started working you had to be at your desk at eight and you left at five. Your manager managed you according to the time you were there but also to what you could produce. This is; we don't care where you are, you can produce, you've got the outcome and you have seen the clients, go for it." (B3)

Job characteristics

Jobs characteristics, when examined from a telework perspective, consider subjects such as autonomy, feedback and goal orientation (Pérez et al., 2002). Autonomy describes the freedom, independence and employee discretion in both the scheduling and execution of his/her work. A high degree of autonomy was evident in Company B where employees have the ability to schedule both the time of work and the location from where it is performed.

> "This gets us in the mind-set that we're working the whole time, but in this fluid sort of way, where I will literally wake up in the morning ... I take my girls to the bus stop, I take the dog around the block ... by 8am I'm online already and I am looking at my notes ... to see if there is anything blowing up or urgent. If there isn't, I keep it on in *Sametime* which is really the message that I'm online guys, I'm awake and this is connected to people in Japan." (B2)

> Q. "What would you describe as your typical place of work?
> A. "currently, customer and home." (B3)
> A. "My home. That's what has been my typical place of work for the last two years."(B2)

A. “Anywhere that is quiet. I split my work, if I am not on a project. It's either at home, or in the office.” (B4)
Q. So the freedom to choose where you work, is that totally up to you?”
A. “Yes. So for instance, when I asked you what time we could meet, I like to do it after nine because then I don't hit the rush hour traffic, so that's my choice.” (B3)

“The work that I need to do I schedule that myself, then I have a review with my direct manager once a week ... if I need to go to a doctor at nine I am happy to do that, I am not taking time off, I am choosing to do that and then this evening or tomorrow I will work it in.” (B3)

The autonomy that employees enjoy supports clear, well-defined roles and responsibilities. Job roles are closely linked to competency. This is assessed on a regular basis, and this approach is consistent throughout all roles within the organisation, including management roles. Competency is assessed for a specific job role and job roles are not associated with status or seniority.

“Where you can be a manager, it's defined by the job. As soon as you move a job, if there are no people that report to that role, then you are no longer a manager. So I could easily though become a manager again in a couple of months if I change jobs. But only because I have been a manager before, there's no hurdles or hoops to jump through. If I was to be a first time manager, then I would have to ... pass an assessment program to ensure that I have what it takes from a competency perspective to be a manager. So, I don't manage people today but I did in December." (B2)

“We have what we call a professions library, it contains job roles and job role skill sets and these are thousands, and thousands and thousands.” (B2)

Skills development is encouraged and supported through the provision of training tools and a formal skills assessment review, which forms part of the feedback to the employee. Feedback is formalised but not limited to performance alone, but encompasses the skills requirements and development needs for the combination of the individual, his or her specific role and the skills required to fulfil that role. The formalised process focuses on supporting the development of the employee through development plans, which are reviewed and agreed with the line manager.

> "The owner of your career is you ... [you are in] control of your own career and destiny and by that I mean your own investment in your own education ... because ... it is not a paternalistic organisation, it's almost the opposite, it is a self-service organisation. It has got everything setup there like a supermarket, you have got to go out and pull the things off the shelf ... I should know what the development requirements are for the job I do ... I should be going and pulling that education." (B5)

> "Every year we do a skills assessment ... based on your job role and job role skills set that you and your manager select. But it's not in order to explain what your job is, it's more in order to discuss your skills. And it's not just to discuss your skills so you understand what your job expectations are, more importantly it's to understand what your gaps are in terms of your skill gaps so that you and your manager can agree on your development plan which is done every year." (B3)

Goal orientation is strongly supported through assessment, training facilities, regular formalised reviews and outcome orientated management style. Feedback to the employee is an organisation-wide formalised process, and supports the outcome based management philosophy.

> "Every year we establish Personal Business Commitments, they are called PBC's. And these are a variety of very distinct, clear objectives that we have that are over and above our normal job. So it's not just coming to work, sitting down and doing my normal job in my job description. It's the stretch goals ... and then at the end of the year, I'm assessed on those commitments by my manager." (B2)

> "I have a half yearly performance review ... 'have you met your targets that you set out at the beginning of your personal business commitments' ... and at the end of the year, ok what has happened, here's your measurement rating." (B3)

> "Annually there is an assessment, mid-year there is an interim assessment ... at the end of the year the manager asks the employee to give their own assessment of their performance during the year, this is all electronic based as well. There is a rating system which has 5 levels and that is also an input to your annual salary review." (B5)

> "so we enable people's career development through work-life balance, through working

from home, through a regular skills assessment with your manager." (B2)

Communication

Telework places a reliance on the use of electronic means of communication due to the spatial nature of the work where the manager and the subordinates do not share the same physical location. Research has shown that media richness is an important factor in telework success, and the effectiveness of telework within an organisation must include examination of the communication patterns, media, and frequency of communication.

Company B is a global company, which makes use of dispersed virtual teams in many aspects of its operations. Communication is supported through both formal communications and informal communications. Formal communication is embedded in the process orientation of the company and supported through electronic management tools to process and monitor work.

"We have a lot of admin because we have incredible processes ... I say we are absolutely process driven ... and they are very stringent about the processes." (B1)

"you've got support of those processes with systems behind that and they're all the same and they're all electronically based." (B5)

Formal communication is complemented by informal communication, and Company B provides tools that cater for a variety of media richness choices and operate globally.

"So we have a lot of people who are outside the country that interface with us, England, Germany. ... We also have international toll free numbers ... so on a Monday morning, we can phone in, and that's lovely if it's a freezing cold winter morning, because I can continue to work while doing the conference call." (B1)

"*Lotus Live* which is a tool that I can pull up my screen, I can invite people to a conference, I can see who is attending my conference and I can say this is what I am doing. They can put their hands up ... at the end ... it produces a report to say these are the people who attended your call ... you can make notes, you can make minutes, you can record it, you can post it to the people afterwards." (B4)

> "*Sametime* reaches a point where you exchange or more sentences and then it's the question of whether this has to be a phone call or can we do it just on *Sametime*. If it's just a simple exchange it would be *Sametime*." (B2)

The dispersed nature of work and reliance on virtual teams places a greater emphasis on communication. Organisation B places emphasis on being contactable through the various communication channels, as opposed to managing physical presence at a set work location.

> "There is so much communication going on, you have got to have a level of communication that keeps a team together, particularly because the team is dispersed ... so the more a networked and virtualised team, you have got to have some integrating communication." (B5)

> "[my manager] doesn't want to know where I am as long if he wants to get hold of me he can." (B1)

There is an expectation to be online and available and forms part of the etiquette in daily work that a response can be expected reasonably immediately. One interview was paused due to a need to respond to a question where an immediate response was required.

> "What you are witnessing here is the expectation for response time is pretty high. So this is real time and my manager is asking me about my personal business commitments." (B2)

The communication tools can also be used to facilitate a level of social interaction to build and maintain relationships with minimal face-to-face contact.

> "I use my *Sametime* quite a lot as a networking tool ... I have them in groups in *Sametime*, if I see somebody that I need to speak to I just say 'hey how it's going this morning?' and they can tell you what's happened. So I'm the only one in Cape Town the others are all in Johannesburg, so I have to chat, it's one of those things. I have got to see what's the buzz, what's happening, is it raining, all that. So you actually get a flow of the grapevine." (B4)

> "I've been working with those guys for two months now, never met them. I met them yesterday, but we know each other so well that we were chit chatting and ... getting on so well and picking up each other's cues ... that is because we've been talking. It's also because we share the same culture ... there is an understanding about the need for informality in exchange because of our remote working situations." (B2)

The effective use of electronic communications is embedded in the work norms and supports remote working situations so that there is not a reliance upon face-to-face communication.

> "I could go ... for about a year without meeting anyone. I managed a team of people from New Zealand, Singapore, Japan, the U.S., and Germany and for one year. I didn't see any of those people [face-to-face]." (B2)

> "I got myself a conference number. So I actually schedule sessions ... I actually run my diary vigorously. So if I need to speak to anybody, I will schedule it and I will send out my conference number and then we'll meet. Even if it's somebody in Cape Town ... for instance this morning I had a session with four guys at 8am, that is a dial in conference call, one person was in the office, the rest of us were all at home." (B3)

Although electronic communications are used extensively within Company B, it has not replaced the need for face-to-face communications. Face-to-face communication still has value, which will be context specific.

> "So I don't think you will meet anyone ... who will say that face time has lost its value. We all know that there is a point in time where you have to have face time." (B2)

> "for me the need for face-to-face is sometimes if you starting with something new, and you need to explain it, then you need that face-to-face contact." (B3)

Practical Compatibility

Telework cannot exist in a vacuum and requires extensive practical measures to enable and support its existence. Practical compatibility considers all mechanisms required to support telework, such as the provision of ICT tools, policies, training and technical support. Company B has a large mobile workforce and has implemented many tools and support processes that enable the work to be performed from any location.

The tools provided for mobility are quite common, but these are supplemented with well-developed systems that provide strong process management of activities.

> "The tools we use are actually at the end of the day not rocket science and everybody knows what they are. They are mobile telephone, my laptop, this 3G card." (B2)

> "It is a process based company. So the person who sits next to me, is as close to me in theory as the person sitting in Shanghai and we are all run on the same processes. So whether it's a HR process, a finance process, an admin process, a sales process etc., it is consistent across the world. You've got support of those processes with systems behind that and they're all the same and they're all electronically based." (B5)

> "Because we are mobile, we can literally work anywhere and that's fantastic because you know, people do need to have their hair done, but at the same time I am always working so I don't feel guilty. That's a huge boon for me." (B1)

Company B do have policies which relate more to mobility in general than telework specifically, and this may be due to a greater maturity in the everyday use of technology to support a mobile and virtualised workforce.

> "Well we have got 3G cards ... and rules of the 3G card is that you have obviously got a limit, which you can't abuse There's only those type of rules around it, so you know everything ... is security and passwords and that type of thing." (B1)

A formal process exists within Company B for employees to follow if they wish to telework.

> "So there is an online process that documents the steps to follow ... and it ... probably would get one level of management approval, but again this will vary by the country as well." (B2)

Factors that contribute to telework success are effective technologies that support the teleworker in their ability to function and perform their tasks. In the South African context, the constraints of bandwidth do limit the effectiveness of some the ICT tools.

> "We have Siebel to deal with and it's incredibly slow, and it's much better to be in the office to do it ... the applicability of application with our bandwidth and that type of thing is a very very critical success factor. I found most important is the programs that you use, how effective are they remotely?" (B1)

Company B has invested in a broad range of electronic tools to aid communication, collaboration and day-to-day work activities. The process focussed approach to work is supported with numerous internal systems that allow everyday tasks to be performed electronically, thereby reducing the need for employees to be located in an office to perform their work. The processes and procedures were not developed for the purposes of creating a mobile workforce. Rather, they originated from an effort to drive efficiencies and respond to increasing competition. As the process discipline developed, it enabled new opportunities to support a more and more mobile workforce and introduce cost efficiencies, as well as savings on real estate. The changes within the organisation have developed over a period of fifteen years and thus the organisation enjoys a maturity in their processes and tools, which other organisations will not necessarily have.

Electronic tools include reference databases:

> "There is a vast amount of tooling ... there's certain knowledge bases of assets ... power point presentations, lectures, media, video, all of this stuff, write ups, documentations ... I have between eight to ten different databases that I can go and search and I can go and find stuff in it." (B3)

ICT support services are provided, which include technical support as well as help on organisational knowledge and information:

> "Then we have a remote IT helpdesk, where online, I can go and ask questions and answers come back so it is also again a knowledge repository for help and if I eventually cannot find the answer I can log an electronic call and somebody will phone me back ... they can take over the laptop and provide remote support." (B3)

Common processes and procedures are enabled as electronic tools, which can be performed from any location:

> "We have the meeting facility where I can do Lotus Live, so if I want people to see what's

> on my screen I can setup a Lotus Live session ... All our HR functions are email based or web based. So I can email people and they come back to me, or you can log a call against them (HR) ... we have a ... webpage where all the policies and procedures for [the company] exist ... leave I book electronically, my targets for the year I do electronically, my PBC I do electronically, my skills measurement I do electronically ... our travel bookings are electronic ... my manager signs it off electronically, the notification for the trip agenda comes back to me in an email saying here's your itinerary." (B3)

Collaboration is facilitated through various means such as international toll free numbers for teleconferences and online collaboration tools:

> "We have a telephone directory called blue pages, you can search on name, surname , country etc. and you can get hold of those guys and it's worldwide, we have something called faces where I can go in and I can search for people and their face appears." (B3)

> "*Lotus Live* which is a tool that I can pull up my screen, I can invite people to a conference, I can see who is attending my conference and I can say this is what I am doing. They can put their hands up and say I don't understand." (B4)

> "faces are an increasingly important thing ... when you are chatting to someone, it sounds bizarre, but it is actually important ... as a remote worker I'm asking people to put their photo up as it does humanise the exchange." (B2)

The electronic tools also support the skills development where much of the education is provided electronically.

> "You have got online learning ... there are training courses that you can learn about in detail around storage if you want to, to management courses. When you do your PBC and your development, you can go in and say what you want to do and it builds up a learning plan for you and you can then go and do that online." (B3)

Practical measures have also been established so that connectivity and access to systems within any office worldwide operates consistently and does not require technical assistance.

> "I can fly to any office worldwide, there is a little app on my desktop, I enter the details of

where I am and the application lists printers in close proximity to me, I select the printer and it is installed and I can print. I can go anywhere worldwide and plug my laptop into that network and it works without having to change settings." (B3)

Tools provide flexibility in choosing the means of communication and can supplement communication with features such as audit trails:

"if somebody feels they need some kind of audit trail, which is increasingly the case ... because we have an internal audit process that's better than any government ... So keeping an audit trail is increasingly important ... so people will save their chats and hold up the fact that we had this chat 6 months ago on *Sametime*. They will say here is the information we chatted about." (B2)

Additional Factors

Company B has been described as a global company with worldwide operations, and national culture can influence the adoption of telework within an organisation. National culture does not form part of the theoretical model, but there were instances described, where a national culture could influence the approach an organisation takes toward telework.

"This depends upon the country. So I live in France ... it is a culture which historically expects people to be in the office. The managers want to see people in the office, unlike the US ... , the UK and the Nordic cultures which have had more of a historical, I don't know if I call it trust, but permission to work flexibly ... and it's usually for productivity and financial reasons that create that. So working from home is permitted because I have always worked at Europe or worldwide level jobs with managers who have been outside the country. If I ever had a job, which was a typical French job, I think my experience would be different. I think I would have statistically more likely come across the manager who would have wanted me to come into the office more often." (B2)

"Increasingly so, our organisation is an American based corporation and as such it is deeply part of the ethos in the US for ... easily a decade. When I started, I was in conference calls with people in their homes up in the woods in Seattle and Iowa. Thirteen years ago." (B2)

Discussion of Results

Value Compatibility

Company B has a strong culture, which supports values sympathetic to telework such as trust, autonomy and an explicit emphasis on the importance of work-life balance. The values are well understood and actively supported by employees, regularly communicated by top management and consistently applied in everyday decisions. The values of trust and personal responsibility are not considered as amorphous goals, but practical values which are applicable to all in their daily work and are relied upon in order for tasks to be completed. The embodiment of the values in daily work is such that some respondents consider the values as the formalisation of the work ethic of the company. The construct of *Value Compatibility* for company B was assessed as High.

Trust

Employees in Company B enjoy a high degree of trust from their managers. This trust is extended to peers and subordinates in the expectation that team members and colleagues will take personal responsibility for tasks and that work will be completed as required, thereby supporting the requestor. Trust is most likely enabled by a number of contributing factors such as the well-defined goals, processes and tools that form part of everyday work. The values of personal responsibility and work-life balance are consistently demonstrated and reiterated by top management. These elements work together to create a climate of trust where, from a management perspective, work is visible through the outcomes and processes, which negate the need for observation-based management. Employees are trusted to make their own decisions in choosing the time and place of work and this in turn creates a sense of trust from the employee towards management in that the employee knows what is expected of him/her and knows that he/she is trusted to act professionally. However, the employees' perception that the organisation will always have their (the employees) best interests at heart has reduced over time. Based upon these considerations the construct of *Trust* is assessed as Medium.

Top Management Support

Three aspects of top management support are notable in company B. Firstly, there is a visible, active and consistent communication of the values within the organisation by top management. This is important due to the value placed on the importance of work-life balance by senior management, which in turn creates a sense of permission for employees to make work-life balance choices without feeling intimidated in doing so. The second aspect of top management support is the use that senior managers make in their work habits, which sets a practical example of choosing working locations other than the office. The third aspect is that senior management hold themselves

accountable through the formal feedback mechanisms as well as through constant training and coaching of management members. This ensures that the 'walk' is the same as the 'talk' and adherence to core values flows through to daily decision making. The construct of *Top Management Support* has accordingly been assessed as High.

Management Control

Management control is based fully on the principle of output control where each job has a well-defined job description and employees have to formally commit to annual goals in the form of personal business commitments. Managers use the systems to monitor progress of work and a strong process discipline requires that the systems are maintained and up to date. Performance is formally reviewed and applies consistently to both managers and employees and this is further supported through skills assessment, training, and mentoring schemes to ensure consistency and continual growth. Management have also demonstrated commitment to the principle of personal responsibility where employees are able to give anonymous feedback on the manager's performance and this is able to influence remuneration of the manager. The strong process orientated and outcomes based control mechanisms used in company B result in the construct of *Management Control* being assessed as High.

Job Characteristics

Company B is a good example of an organisation with mature processes and well-developed tools and technologies, which is supported by a highly mobile workforce. Jobs have clear, well-defined roles and responsibilities, as well as clearly defined skills requirements associated with them. As would be expected, feedback occurs in everyday interactions, but is also formalised at an organisational level through a highly structured and well-managed annual review process. Skills development supports the review process where employees are able to access a broad range of training material. Employees are actively encouraged to develop their skills as part of their feedback assessment focuses on skills development. The employee is managed through clearly defined outcomes and goals, which are the overriding measure of productivity, thereby removing the need to focus on physical presence in a set location such as an office. Accordingly, employees enjoy a high degree of autonomy in choosing both the time and place of work, and have much latitude in doing so. In considering these factors together, the construct of *Job Characteristics* has been assessed as High.

Communication

Employees have several channels of communication at their disposal, which include typical means of communication for an ICT company such as telephone and email. Limited use of video conferencing has been made to date, but this is changing with new video conference facilities now being installed. ICT tools have been used to allow a high degree of collaboration such as instant messaging, online meetings, managing collaborative tasks end events, as well as online directories and intranets. These tools support the unstructured communication needs of teams, and are in turn supported and complemented by the formalised communication channels.

The formal communication channels are derived through the process focussed work orientation, and there is a requirement for systems to be continually updated as work progresses. These systems provide reporting on the progress of activities within the organisation, and form the basis of the formal communication channels. Teams are often virtual teams, comprised of members from different countries, which are able to operate quite effectively with minimal need for face-to-face interactions. Face-to-face communication is a personal choice an employee may wish to exercise; however, in many cases they are not able to do so due to the remote nature of their work. Communication is effective and well supported through the ability to use multiple different channels and therefore the construct of *Communication* has been rated as High.

Practical Compatibility

Company B has well developed support systems in place to provide not only technical support of remote employees, but also organisational support for routing work questions. A rich set of ICT tools has been provided to enable collaboration and support informal as well as formal communication. All day-to-day work processes can be done remotely, and the necessary systems and tools have been implemented with this as a consistent principle. The use of mobility solutions within Company B has reached a level of maturity where it seamlessly integrates into daily life as an extension of work practices. Policies that relate to mobility and remote workers focus upon issues of security rather than prescribing extensive rules on how remote workers are managed. The remote worker is not treated differently from a policy point of view. These practical measures provide the necessary mechanisms to very effectively enable remote work and the construct of *Practical Compatibility* is accordingly rated as High.

Additional Factors

National culture was not included in the original theoretical model, yet this did emerge from the analysis of the data in the case of Company B. Previous research has examined the effect of national culture on telework success, however due to the organisational focus of this study, this aspect was

excluded from the model. National culture can affect the adoption success of technologies and approach to working norms. As such, national culture could be considered as for inclusion in a revised theoretical model and would be a construct suited to generalisation.

Chapter Summary

Company B is a global ICT technology and services company, which operates in over 170 countries worldwide and has local representation in the major centres in South Africa. The sample from Company B comprised five IS professionals made up of two managers, three employees, one of the respondents was an HR professional, and the respondents were drawn from different functions in the business.

Company B has a strong culture, which supports values sympathetic to telework such as trust, autonomy and an explicit emphasis on the importance of work-life balance and resulted in value compatibility being assessed as high. Employees in Company B enjoy a high degree of trust from their managers. However, the employees' perception that the organisation will always have their (the employees) best interests at heart has reduced over time, and trust was assessed as Medium. Top management support was assessed as high due to the communication of the values and the accountability of management in providing regular and structured feedback to employees. Management control is based fully on the principle of output control where each job has a well-defined performance evaluation system and was assessed as high.

Employees have several channels of communication and a rich ICT toolset at their disposal and these tools are widely used throughout the organisation which resulted in communication being assessed as high. Company B has well developed support systems in place to provide not only technical support of remote employees, but also organisational support for routing work questions and practical compatibility was assessed as high. An additional factor that had not been included in the theoretical model was that of national culture and this was found to be evident in Company B
The following chapter provides a cross-case analysis of the results of the two case studies.

Chapter Six: Research Results

The case studies used were based on organisations that represent polar types or extreme ends of telework adoption and diffusion process. Company A is an example of the low end of the scale whilst Company B represents the high end of the scale for the different factors being examined. The purpose of using polar types is to provide a strong contrast with which to test each of the constructs of the model and provide a means to disconfirm the construct in place of only seeking evidence of confirmation. The following section discusses and compares each of the constructs of the model as they appeared within each company.

Organisation Profiles

Company A

Company A is a multi-brand retail business based in South Africa with international operations in seven countries with its head office in Cape Town. The company operated in-house IT solutions in support of the business, largely developed and supported by in-house IT staff with limited use of external contractors. As part of a strategic move to enhance operations and reduce IT costs, a decision was made to discontinue development of in-house IT systems and use externally sourced package solutions. The IS department of Company A is a centralised department providing IS solutions for the different divisions within the company, and is based at the Head Office in Cape Town.

The sample from Company A comprised six managers and two employees, one of the eight interviews was an HR professional and all respondents were from the IS department. The respondents were drawn from different functions of the IS department including support, project management, governance, and IS-business interface managers. The CIO was one of the respondents and considered part of the IS function for the purposes of this study. The average tenure of the interviewees was eight years nine months and the sample contained two female employees and six male employees.

Company B

Company B is a global ICT technology and services company, which operates in over 170 countries worldwide and has local representation in the major centres in South Africa. Company B manufactures and sells computer hardware and software, and offers infrastructure, hosting and consulting services in areas ranging from mainframe computers to nanotechnology. The South

African operations do not include any manufacturing capabilities, but are focussed upon sales, software and services, which include consulting, strategic outsource, and business continuity services.

The sample from Company B comprised five IS professionals made up of two managers, three employees, one of the respondents was an HR professional, and the respondents were drawn from different functions in the business including sales, professional services, strategic outsourcing, and administration. The average tenure of the interviewees was twenty-one years, six months, two of the interviewees were female and three were male.

Cross-Case Analysis

A cross-case comparison of the data was performed using the different constructs of the theoretical model where used to identify cross-case differences. Each construct of the theoretical model is discussed in terms of the cross-case differences, relation to telework maturity as well as relationships to other constructs of the model

Telework maturity is considered as the process of telework adoption as it progresses from the assessment through the actual adoption of the practice and finally matures as diffusion into the organisation.

Value Compatibility

An innovation such as telework can be compatible or incompatible with the socio-cultural values and beliefs of an organisation where a potential match or mismatch exists between the values of the organisation and the value assumptions embedded in the innovation (Bunker, Kautz and Nguyen, 2007).

Value Compatibility was assessed as low in the case of Company A and high in company B, which is consistent with their relative maturity of telework activities and is the expected result. Although the stated values of Company A were not in conflict with telework principles, it was the adoption and support of the values that is weak. Company B, by contrast, has values which strongly support the needs of teleworkers, and these values are well known and actively supported within the organisation. The working norms of Company A differ significantly between the IS department and the retail operations which has created a different culture within the IS department. This was not evident in Company B where there was always reference to one set of values, one culture and common working norms.

Value Compatibility was found to be associated with top management support, where employees

looked for inconsistencies in top management's support of the values in their communications, decisions or actions. Where inconsistencies were found, it negatively affected the perceived trust of top management by employees and conversely helped to bolster trust when the communication, decisions and actions of top management consistently supported the values.

The relative contribution of *Value Compatibility* to telework diffusion could be quite high as it has the potential to create a climate of permission in which telework can occur. This relates to the enhancement of trust, support of common working norms and the creation of an expectation of accountability and responsibility that was particularly evident in Company B. As such, it is expected that a high degree of Value Compatibility prior to telework adoption would act as an enabler and can be considered a valid construct of the model. A low Value Compatibility of telework with the organisation's culture as evidenced in Company A does indicate that this construct can act as a moderator to telework maturity however a longitudinal study would be required to establish the severity of the moderation effect.

Trust

Organisational trust was found to be at opposite ends of the continuum when comparing the two companies. Company A had very low levels of organisational trust where top management was perceived as not trusting staff, whilst in Company B the levels of trust of employees were perceived as being high. The low levels of trust in Company A were associated with a "blame culture" and "micro management" where staff felt they were not trusted. This in turn affected employees' perceptions of the trustworthiness of management where the perceptions were that procedural justice would often be forfeited due to management's correspondence bias. What is the contribution that trust makes in the adoption and diffusion of telework and is it a prerequisite? The answer to this question lies in the relation that trust has to the other factors, such as management control, top management support and value compatibility. These were all found to be low in the case of company A where top management were opposed to telework, a strong reliance was made on observation for management control and a perceived "suspicious culture" was in existence. The lack of trust in this example would act as a potential moderator in sympathy with the other factors.

Analysis of the data in Company B showed high levels of trust of employees by managers and " forms part of the ethos and way of working" which shows a strong relationship to the daily norms and therefore the culture of the organisation. This demonstrates that Trust and Value Compatibility are closely related in the case of Company B. According to Staples & Ratnasingham (1998), trust between the manager and the employee is an essential factor to telework success through the reduction of uncertainty, increased job satisfaction and employee commitment. The data from

Company B certainly supports this argument and trust can be considered as an enabler to telework maturity and success. Similarly, the data from Company A would indicate that a lack of trust would act a moderator to telework maturity and that would not necessarily be restricted to a particular stage of maturity. Therefore, trust plays a role in both cause and effect, and is considered a valid construct for the model.

Top Management Support

Very strong polarisation of Top Management Support was evident across the two companies examined. Company A had top management actively opposing telework adoption as shown through a number of examples, whilst Company B strongly supported the use of remote work and practised it themselves. In cases where telework adoption has been successful, top management support was found to be an important factor as senior management is in a position to support the adoption of a formal telework program and associated start-up costs (Higa & Shin, 2003; Peters & Heusinkveld, 2010). The evidence from Company B would support the argument that Top Management Support is an enabler of telework maturity.

The relative contribution of top management support in the adoption and diffusion of telework is deemed to be significant due to the influence this has upon the practical support (practical compatibility) and the management practices (management control) within an organisation. Top management is able to exert influence on all aspects of the organisation and have the power to determine the strategy and approach the organisation takes. The diffusion and progress of telework in an organisation will not be able to proceed without top management support as is evident in Company A that would indicate that Top Management support is a moderator of telework maturity. The seemingly contradictory evidence shows that the Top Management Support can act as either an enabler or a moderator to telework maturity depending upon presence or absence of the support. As such Top Management support is confirmed as a valid and effective construct of the model.

Management Control

Management Control demonstrated vibrant extremes across the two case studies where input and behavioural-based management was the overriding management control mechanism within Company A whilst Company B managed exclusively upon outcomes. This is consistent with the expectation that the polar types would demonstrate such differences. Management Control will be influenced by Top Management support as top management direct the operations of an organisation and will shape the approach to management control practices.

In turn, management control will influence other factors such as Job Characteristics, Trust, Value

Compatibility, and Practical Compatibility. The approach used for Management Control will affect autonomy and feedback, which relate to Job Characteristics. If management are relying upon observation to evaluate work, it becomes difficult to quantify progress and thereby can limit the level of autonomy given to employees. Telework requires that traditional management methods of assessing performance through direct observation have to change to a management style focussed on objectives and outcomes (Peters et al., 2004; Staples & Ratnasingham, 1998; Turetken et al., 2011).

Without the ability to accurately assess work progress other than direct observation it becomes difficult for the manager to manage remote teams and this has been associated with the manager's perceived loss of control. Similarly, it may become difficult for the manager to develop trust that employees will perform the work, as there is no effective means to assess this and creates the opportunity for subjective and inconsistent management decisions. Input or behavioural-based management control will potentially skew the approach to practical measures, where the investment in tools is driven by the need to emulate the observation approach, such as developing solutions to monitor user activity on systems. Opposite ends of the continuum are evidenced in Company A and Company B when it comes to the approach used for management control. When considered together with the relative maturity of telework within the organisations it demonstrates that Management Control can act as an enabler if focussed on output control and a moderator if focussed in input or behavioural control and is therefore considered a valid construct of the model.

Job Characteristics

According to Turetken et al. (2011), telework success is closely related to management being able to create the best organisational conditions to support telework. *Job Characteristics* were examined from three viewpoints, namely autonomy, feedback and support for goal orientation. *Job Characteristics* was assessed as low within company A due to the lack of autonomy employees have in choosing the time and place of work, as well as the absence of performance reviews and feedback given to employees. By way of contrast, employees in Company B enjoy extensive choice in the time and place of work provided the work goals are met. Company B also has a highly structured performance review process that is uniformly applied throughout the organisation and incorporates competency assessments of the individual for the job role being performed. This feedback forms the basis for skills development and a rich training toolset is provided to employees for skills development.

The organisational support of goal orientation of the employee is well developed in Company B,

whilst Company A has no such mechanism and training is done on an ad-hoc basis. Job characteristics such as autonomy and feedback are not prerequisites for successful telework adoption but are more likely to be influenced by telework adoption. Increased autonomy may result as telework diffuses through the organisation and degrees of choice may be afforded to employees, depending upon other factors such as the approach to management control and practical support, as defined in practical compatibility.

Feedback may also be affected, but it could remain unchanged, and is more likely to be influenced by the approach used for management control. *Job Characteristics* therefore would not be considered an enabler of telework diffusion. However, *Job Characteristics* potentially could impede the progress of telework diffusion once adopted. If employees were given little autonomy in choosing their time and place of work, many of the scheduling benefits for the employee would not be realised. Similarly, lack of feedback would increase feelings of isolation and potentially affect employee perceptions of trust of their manager. *Job Characteristics* are therefore considered a potential moderator of telework maturity if the organisational conditions are not created to support telework can be considered a valid construct of the model.

Communication

Communication examined the use of electronic tools and the reliance upon face-to-face communication. Company A makes extensive use of electronic communications and has well established video conferencing facilities. Two aspects relating to face-to-face communications were evident, the reliance on scheduling meetings, which are not well structured, and the preference of interacting with senior management on a face-to-face basis. This may give insight into the establishment of video conferencing facilities, which allows a richer form of communication that is closer to face-to-face communication. Company B makes extensive use of communications technologies and this was found to be consistent in all levels of communication. Communication to and from senior management is treated exactly the same using the requisite tools. There were aspects where individuals would prefer using face-to-face communication in instances such as interaction with customers, but as an organisational-wide practice, electronic communications dominated.

Communication is more likely to be influenced by telework maturity rather than directly affect telework maturity. Placing greater emphasis on the use of electronic communications is unlikely to make the adoption of telework easier whilst a reliance on face-to-face communication can be overcome with different forms of electronic communication media. Communication is also affected

by Practical Compatibility as the communications tools and their effectiveness would certainly influence individual choices in terms of how and when they communicate. Company B provided many different ICT choices for communication which enabled greater choice and flexibility. The contribution of communication as an enabler or inhibitor of telework diffusion is indeterminate and is more of an indicator of telework success than an influencer of telework success. Communication is therefore not considered a valid construct of the current model.

Practical Compatibility

Practical Compatibility examines the tools, systems, policies and procedures, which are able to support telework and it would be expected that an organisation that does not use telework would score lower in the assessment of this factor. A low assessment of practical compatibility would be an indicator of greater investment being required to provide the necessary tools whilst a high rating would indicate that current tools are sufficient. Company A was rated with a medium practical capability score due to there being a number of ICT tools in place, which can easily support a teleworker. There are opportunities where additional tools could be deployed and other practical measures developed such as a set of policies to support telework. Company B has a highly developed ICT toolset to support remote workers and this is employed very effectively for their mobile workforce. Company B do not distinguish between employees who work from an office or those who work remotely in terms of organisational policies.

The only specific concession found in Company B, was reference to a procedure to be followed to request home worker status. Practical Compatibility is in part an enabler, in that telework cannot occur without the means to access and manage work remotely. However, it is also partly the result of telework adoption. Once an organisational choice has been made to implement telework, the practical measures to support this mode of work have to be implemented.

Poor implementation of tools and processes can act as a moderator to diffusion. Conversely, a well-implemented set of tools will not drive telework adoption or diffusion on its own. A focus on such a technology driven approach is unlikely to succeed without addressing the other factors, such as top management support and management control. The potential contribution that practical compatibility makes to telework adoption and diffusion cannot be ignored and therefore is considered a valid construct of the model.

Additional Factors

Three additional factors emerged from the analysis of the data, namely; sub cultures, unionisation of the workforce and national culture. In considering these factors in terms of the ability to generalise the results of the study, company specific factors should be ignored if they are not considered to be generalizable. The existence of a sub culture in an organisation is considered for the purposes of this study to be specific to Company A and not that likely to occur in other organisations to the extent that is did in Company A and should not be included in a revised theoretical model.

Unionisation of the workforce, which was evident in Company A, could be applicable to many other organisations however it can be considered as a possible component of a wider construct being *Industry Type*. One of the limitations of this study is that the two organisations being compared are from completely different industries and this does make comparison and theoretical replication difficult. The selection of samples from a similar industry should be considered in future studies to improve theoretical replication.

National culture emerged as an additional factor which had not initially been considered in Company B. Previous research has examined the effect of national culture in telework success and could be a construct which would have general applicability to many international and multi-national organisations. National culture therefore should be included into a revised theoretical model and would be a construct that could potentially improve theoretical replication.

Research Findings

The results for each of the constructs explored in the theoretical model are summarised in Table 4.

Organisational Factor	Finding
Value Compatibility	Valid construct of the model, can act as an enabler if assessed as high and as an moderator if assessed as low.
Trust	Valid construct of the model, can act as an enabler if assessed as high and as a moderator if assessed as low.
Top Management Support	Valid construct of the model, can act as an enabler if assessed as high and as an moderator if assessed as low.
Management Control	Valid construct of the model, can act as an enabler if assessed as high and as an moderator if assessed as low.
Job Characteristics	Valid construct of the model, acts as an potential moderator if poorly implemented.
Communication	Not a valid construct of the model.
Practical Compatibility	Valid construct of the model, can act as an enabler if assessed as high and as an moderator if assessed as low.

Table 4 Summary findings of each of the organisational factors

A distinction was required to differentiate before and after effects of telework adoption. The adoption process itself has to be considered as it progresses from the assessment through the actual adoption of the practice and finally matures as diffusion into the organisation. The measurement values of the factors will therefore not remain static as the organisation moves from assessment through adoption to diffusion. The organisational factors would be affected by the process of adoption, thereby affecting their assessed values at different stages of adoption and subsequent diffusion.

An example is that of communication where frequency of use of electronic communications may be low at the outset, but as telework matures a greater reliance upon electronic communication will

manifest itself. Therefore, the values assessed for communication at the outset of the adoption would be low and would increase toward a higher value as telework matured and the use of electronic communications increased. An important dimension of the model to be included in future work would be to describe adoption phases and to then assess the factors in relation to those phases of the telework adoption process.

This study timeframe was cross-sectional and did not allow for a longitudinal assessment of how the values of the model changed over time. A longitudinal study may add greater insight to how the organisational factors, firstly, affect the adoption process, and secondly, are they themselves affected by the adoption process. From a research perspective, a longitudinal study could identify possible values or narrower value ranges for the different phases of adoption and subsequent diffusion. This could in turn form the basis of a set of metrics to be used in a capability maturity model. Taken from the practitioner's perspective, such a model would be of value, as it would potentially highlight which organisational factors may require greater intervention depending upon the maturity of telework initiative.

A second finding was that the relative contribution of the different organisational factors were not necessarily equal as assumed by the original model. Certain factors have far greater influence and significance than others. An example of this was management control, which had a far greater ability to affect telework success as it helped to create transparency, build trust and provided a basis of accountability with which work was managed and measured. By comparison, job characteristics did not have the same degree of influence on telework success, and were more a product of the process. Whether an employee could choose his/her time and place of work would do little to convince senior management of the need to adopt telework and acted more as an indicator of success than an influencer of telework adoption success. Therefore, the relative contribution of the different factors has to be considered as well as their role in telework diffusion and the model could be extended with a weighting for each of the factors.

A third finding was that the relative contribution and their roles (indicators or influencers) of the different factors could potentially be different depending upon the phase of the adoption process. Some factors will potentially have a greater influence than others in the initial assessment stage, an example being that of top management support, without which the progression to actual adoption is unlikely to occur. Top management support would likely remain a strong influencer of success during the adoption process itself in order to secure the necessary financial support, as well as support of the organisational change process that would occur. Once telework has been established

within the organisation, the continued diffusion and maturity would rely less upon top management support, thus this particular organisational factor would be less significant in the diffusion stage. The two organisations used in the study represented polar types and this helped to highlight that different stages of adoption did exist and that certain factors exerted a greater or lesser influence depending upon the point at which that organisation found itself in the adoption and diffusion of telework. This is illustrated in Table 5 where a ranking from most important to least important has been applied to each of the factors for the two organisations.

Company A (Immature)	Company B (Mature)
Top Management Support	**Value Compatibility**
Management Control	**Trust**
Value Compatibility	**Top Management Support**
Trust	**Management Control**
Practical Compatibility	**Practical Compatibility**
Communications	**Job Characteristics**
Job Characteristics	**Communications**

Table 5 A possible ranking of importance of organisational factors as applied to Company A and Company B

Based on the data from Company A, the factors most likely to directly influence telework success at the outset would be Top Management Support, Management Control, Value Compatibility and Trust. Once telework has been established and continues to diffuse throughout the organisation, the following factors would potentially become the greatest influencers of success (as derived from the data of Company B): Value Compatibility, Trust, Top Management Support, and Management Control.

The fourth finding deals with the interrelationship of the organisational factors. The initial model did not describe the relationships between the organisational factors as they were not known, and one of the objectives of this study was to try to identify the existence of possible relationships between factors. The specific relationships between any two given factors may only apply to the

organisations within this study and would require wider research to establish a specific set of relationships as a general principle; however, analysis of the data suggests a possible set of relationships as shown in Figure 10:

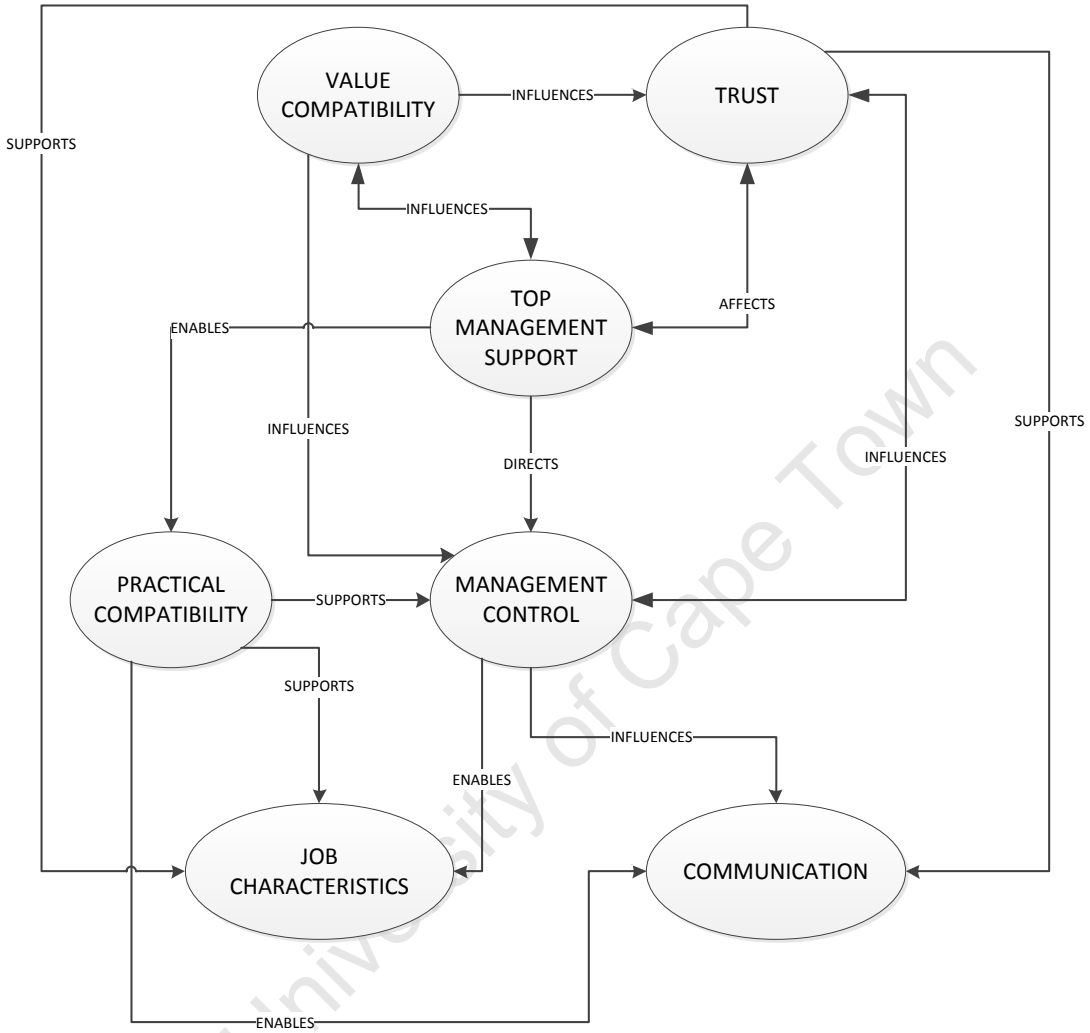

Figure 10 Relationships between organisation factors affecting telework adoption

Further investigation of these relationships between the organisational factors would be required in order to test and validate the types and strengths of the relationships between organisational factors.

Finally, consideration must be given to factors not described in the original model which could be included in a revised model. These include the effect of industry type where some industries may be more or less conducive to telework, and the effect of national culture on telework success.

Revised Model

The original theoretical model can be revised to include the findings from this study and should include:

1. A grading mechanism to quantify the measurement of each factor being assessed.
2. A Time Dimension to allow for a longitudinal evaluation, and to enable the measurement of the factors as the adoption process progresses.
3. A weighting factor to describe the inter-relationships between factors, and show the relative contribution: the weighting factor should be applied to the stages of the adoption process, as the relative contribution may be different from one stage to another.

A revised model is shown in Figure 11:

Construct	Stage 1			Stage 2			Stage 3		
	Measure	Weight	Total	Measure	Weight	Total	Measure	Weight	Total
Practical Compatibility									
Value Compatibility									
Management Control									
Communication									
Top Management support									
Trust									
Job Characteristics									
National Culture									

Figure 11 Revised research model

Chapter Summary

This research has adopted a dual case study approach to identify a set of factors, which can enable or hinder the diffusion of telework practices within an organisation. The case studies were based on organisations that represent polar types or extreme ends of a continuous scale from low to high in order to test the factors identified in the literature. Company A is an example of the low end of the scale whilst Company B represents the high end of the scale for the different factors being examined. Accordingly, it would be expected that the companies should score low and high respectively for the different factors. A summary of the relative ratings for the two companies is shown in Figure 12, where the innermost circle represent a low rating and the outermost circle represents a high rating.

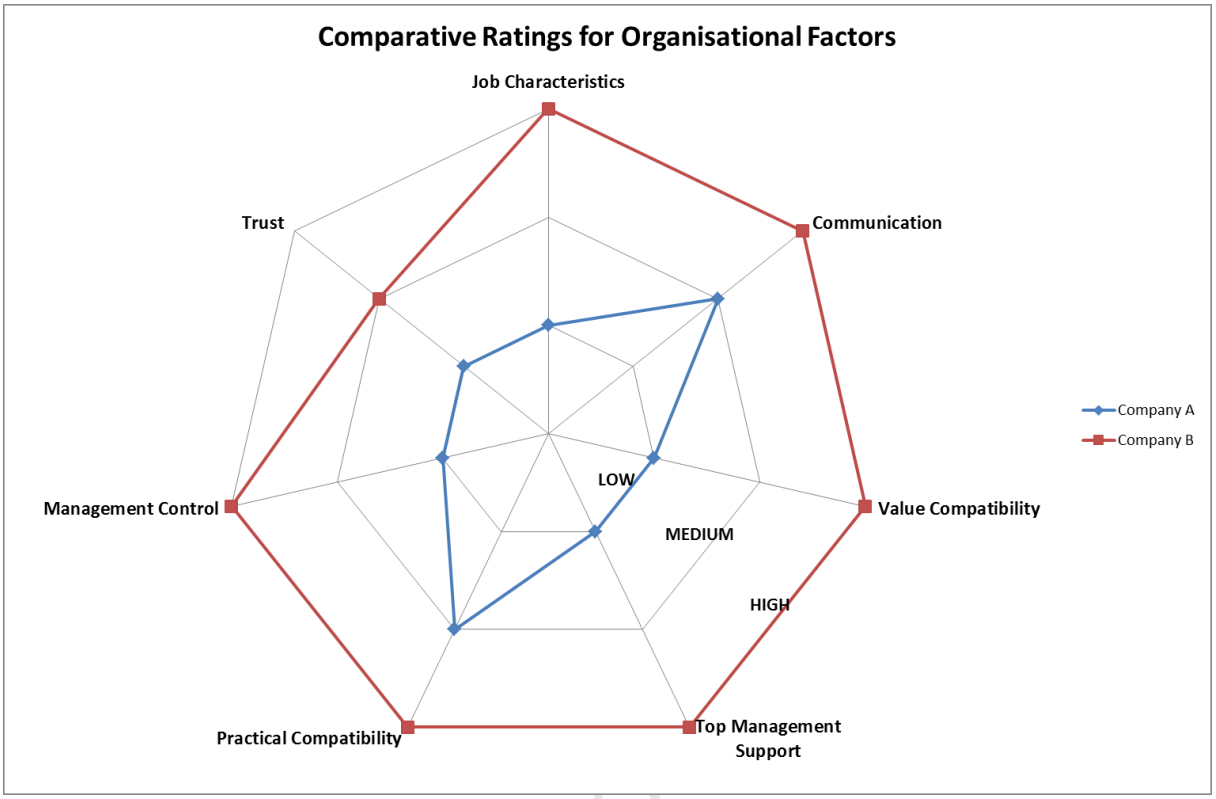

Figure 12 Comparative ratings of Company A vs. Company B

The rating mechanism used was a very simple low, medium, high rating and is only intended to indicate the relative assessment and not an exact assessment of the constructs of the model, as they exist within the two organisations. An important finding was that not all factors are necessarily precursors for telework, having had to be developed to a level of maturity in order influence the diffusion of telework. Some constructs, such as management control, will directly influence successful telework adoption by being at a more mature state (high scoring) prior to the implementation of telework within an organisation. Constructs, such as communication, may not have an effect on the process of telework adoption but are likely to change as telework diffusion increases, and telework practices mature within the organisation. Therefore, some of the constructs should be considered in terms of their ability to indicate maturity as opposed to being able to affect the outcome.

Chapter Seven: Conclusion

Introduction

Since the term telecommuting was first used by Jack Nilles in 1975, there has been a great deal of research and interest in the phenomenon of using ICTs to enable day-to-day work to be performed away from the traditional office or place of work. This form of work has enabled people to traverse spatial, structural and temporal boundaries, allowing new means of working and collaborating and thereby allowing greater freedom and autonomy to the employee in choosing how and when he/she performs work. Organisations benefit through cost savings by a reduced need for office space and have recorded benefits of improved employee productivity and greater organisational commitment by employees.

This form of work arrangement has had many names including telecommuting, e-work, virtual work and telework to name a few. This study has chosen to use the term telework and has set the scope of the work arrangement to be that of the full-time employee that uses ICTs to perform their day-to-day work activities whilst being located away from the traditional place of work. A limitation in the minimum or maximum time spent teleworking by the employee did not form part of the scope, therefore part-time and full-time telework options were considered as valid.

The Research Gap

Telework as a subject has been of great interest to researchers, practitioners and policy makers for some time and is certainly not a subject that can be considered under-researched. Telework is a complex subject and a large amount has been written since its inception due partly to the many types of activities, organisational configurations, and technologies that shape it. Even as a well-researched topic, telework success remains elusive, as the predicted widespread adoption has failed to materialise.

The majority of literature has examined telework from three viewpoints, that of the employee, that of the employer or organisation and finally, that of society. Viewed through the lens of the employer, studies have tended to focus on issues of adoption factors such as cost, improved productivity, decreased staff turnover, but have often approached the subject from a single dimension instead of treating the subject as a multidimensional concept. Research models developed to date provide useful guidance in understanding telework adoption, but few studies have examined the effect of organisational features that affect telework diffusion and success. An understanding of these conditions or factors within an organisation will potentially give greater

insight into identification of the pertinent actions required to improve telework success. Several studies have shown telework to be effective in increasing organisational commitment and reducing staff turnover intentions. One group commonly associated with high turnover intentions is that of IS professionals and the IS occupation is considered to face greater turnover challenges than any other occupation. Telework offers highly valued benefits of improved flexibility and autonomy, greater ability to handle family demands and increased job satisfaction which are benefits sought by IS Professionals. When considered together with the high degree of computer literacy, as well as relative job independence of IS professionals, this study focussed upon IS professionals as a population and explored the organisational factors that potentially affected telework success.

Research Goals

A set of themes derived from the literature clearly established specific determinants or factors that had been found to influence telework practices in organisations. These factors were defined in a model where each factor was described in terms of a continuum ranging from low to high.

The study posed the research question:

Which factors enable or hinder the diffusion of telework practices within an organisation?

The objectives of this research were:

- To confirm if the previously identified factors enable or hinder telework diffusion within organisations.
- To identify additional factors that may influence telework diffusion.

Research Approach

The research approach used a comparative case study of two organisations, one that has used telework for many years and one that does not use telework. Telework is not restricted to a particular industry or organisation type and is applicable to any organisation wishing to make use of flexible work arrangements. For this reason, the two organisations chosen were from different industries. However, by restricting the focus to IS professionals it provided a common basis of comparison. The organisations themselves were selected partly for reasons of convenience and also that they represent opposite extremes in terms of their adoption and use of telework, in other words, polar types in the use of telework.

The organisations examined in the case studies are two commercial organisations; Company A is an international retailer based in South Africa that does not have a formal telework program and

follows a traditional approach in terms of work arrangements. Company B is a global ICT technology and services company with local representation in the South African market. Company B makes extensive use of alternative work arrangements (AWA) for their employees and has been using telework for a number of years. Both organisations have offices in Cape Town, where the interviews for the research were conducted.

The study adopted an interpretivist philosophy and the purpose of the research was exploratory. Data collection comprised a combination of qualitative data collection methods such as semi-structured interviews, analysis of documentation and direct observation. The question set was defined to test for specific indicators of these determinants as well as additional questions that could probe for influencing factors not specifically associated with the predetermined themes. The interview approach used a snowball sampling strategy and interviews were conducted until data saturation was achieved. Interviews were semi-structured in nature and were audio recorded and transcribed soon after the interview and prior to data analysis, to prevent information decay and field notes were taken to supplement the interview data.

Research Model

The following a priori constructs were identified from the literature as being significant in telework success and were used as the themes within the model:

- **Practical Compatibility**: Practical compatibility examined the mechanisms used to support telework in day-to-day work, such as provision of ICT equipment, ICT support, policies and procedures for telework, training, and job design.
- **Management Control**: Management control examined the degree of output control used by managers when assigning work to subordinates, as well as any other supervisory procedures used to compensate for the lack of direct observation.
- **Job Characteristics**: Job characteristics were examined from three viewpoints, namely autonomy, feedback to employees, and support for goal orientation.
- **Top Management Support**: Top management support examined employees' perceptions of Top Management's support for telework in the organisation in terms of awareness of telework benefits, practical support measures such as financial support, and support of management practices to accommodate telework.
- **Communication**: Communication examined the use of communication media, the perceived importance of communication modes, and frequency of communication (upward, downward and lateral communication).
- **Trust**: Trust was explored at two levels, namely at an organisational level where the

perception of the company as a trusting organisation was examined, as well as at the superior-subordinate relationship level.

- **Value Compatibility**: Value compatibility examined the potential organisational fit of telework to organisation values, norms and culture.

Research Findings

An important finding from this study is that the different constructs of the theoretical model do not have a fixed state of being an enabler or moderator of telework maturity. Each construct can be measured in a continuum from low to high and depending upon the assessed value it determines whether the construct acts as a moderator or enabler. The results of the study show that when assessed as low, the constructs of the model act as moderators and as enablers when assessed as high.

Other findings were that the measurement values of the constructs do not remain static as the organisation moves from assessment through adoption to diffusion. The organisational factors would be affected by the process of adoption, thereby affecting their assessed values at different stages of adoption and subsequent diffusion. A second finding was that the relative contribution of the different organisational factors were not necessarily equal as assumed by the original model and some factors have far greater influence and significance than others. A third finding was that the relative contribution and their roles (indicators or influencers) of the different factors could potentially be different depending upon the phase of the adoption process. Finally, relationships were found to exist between the different factors but the investigation of these relationships fell beyond the scope of this study.

Study Limitations

Although comparing polar types, the sample drawn from company A is a support function of the business, whereas the sample from company B is taken from the core business function. It is to be expected that systems and resources will be deployed in support of core business functions before focussing on support functions and thus is not necessarily an equal comparison. Some constructs may be affected by this, an example being practical compatibility where the core operations of company A will have much greater automation and systems support of the retail business than the IS department.

Implications for future research

The evaluation of the model has identified possibilities for further development that could examine questions raised by this study. In particular, a more granular grading of the scale could be developed

and where more specific metrics can be used to assess the relative strength or weakness of a specific factor. This study has been exploratory in nature and has purposely avoided such a grading.

The relative contribution that the different factors have in the overall effect on telework success should also bear examination together with the relationship that each factor may have upon others. Some factors of the model bear further expansion such as Value Compatibility, which could be extended to examine the political implications of introducing telework and how it may change the political power of one or more groups. The role of power relations with regard to telework may bear further examination, not only of adoption and diffusion, but also in relation to how they are exercised in a teleworking or virtual team environment.

Implications for practitioners

The study is limited in its practical application as it lacks longitudinal evidence which could potentially be used to expand the current theoretical model to a Capability Maturity Model. However, the following implications for practitioners can be considered.

This study may be of use to IS Professionals as well as managers or employees seeking to either implement as telework in their organisation, or improve current telework practices. The study can be used to create an awareness of the organisational factors, which affect telework diffusion and success and thereby create a wider understanding of the organisational change impact of telework that stretches beyond the ICT tools themselves.

The study can also be used to create, albeit a subjective, assessment of the organisational factors within the organisation and identify which factors may act as enablers or moderators for the given organisation. Although the study does not provide a specific evaluation scale for assessing telework maturity, sufficient contextual information should be available for an opinion to be formed on the relative maturity of the telework within the organisation.

A deeper understanding of the organisational impacts upon telework success combined with an understanding of the relative maturity of telework within the organisation may provide useful insight as to which aspects of the organisation may require greater change management in order to improve the adoption and diffusion of telework.

References

Abbott, J., & Yoong, P. (2005). The stages of telecentre development: The case of the Kapiti Telecentre. *Technovation, 25*(4), 421-431.

Abuelmaatti, A., & Rezgui, Y. (2008). Virtual organizations in Practice: A European Perspective. Paper presented at the *AMCIS 2008 Proceedings*, Paper 142,603-613

Adla, A., Zarate, P., & Soubie, J. (2010). A Proposal of Toolkit for GDSS Facilitators. *Group Decision and Negotiation,* Retrieved from http://dx.doi.org.ezproxy.uct.ac.za/10.1007/s10726-010-9204-8

Andreev, P., Salomon, I., & Pliskin, N. (2010). Review: State of teleactivities. *Transportation Research: Part C, 18*(1), 3-20.

Ashforth, B. E., Kreiner, G. E., & Fugate, M. (2000). All in a day's work: Boundaries and micro role transitions. *Academy of Management Review, 25*(3), 472-491.

Babulak, E. (2010). Future Global Office. *12th International Conference on Computer Modelling and Simulation,* 352-356.

Beasley, R.E., & Lomo-David, E. (2000). Telecommuting and computing professionals: motivational factors. *Journal of computing sciences in colleges, 16*(1), 112-121.

Beauregard, T. A., & Henry, L. C. (2009). Making the link between work-life balance practices and organizational performance. *Human Resource Management Review, 19*(1), 9-22.

Blue, J., Serva, M., Baroudi, J., & Benamati, J. (2009). Human versus virtual moments: a proposed theoretical framework for understanding their implications in the workplace. In *Proceedings of the special interest group on management information system's 47th annual conference on Computer personnel research* (SIGMIS CPR '09). ACM, New York, NY, USA, 181-186.

Brown, G. (2010, 8 Jan 2010). Super-fast broadband for the whole country is vital to future prosperity. *Telegraph.Co.Uk,* Retrieved from http://www.telegraph.co.uk/technology/broadband/6949561/Super-fast-broadband-for-the-whole-country-is-vital-to-future-prosperity.html

Bunker,D., Kautz, K.H., & Nguyen, A.L.T. (2007). Role of value compatibility in IT adoption. *Journal of Information Technology, 22,* 68-78.

Butler, E. S., Aasheim, C., & Williams, S. (2007). Does telecommuting improve productivity? *Communications of the ACM, 50*(4), 101-103.

Campbell, J., & Heales, J. (2008). Factor analysis of individual outcomes for teleworkers. Paper presented at the *ACIS 2008 Proceedings,* (Paper 23.) 176-185.

Campbell, J., & McDonald, C. (2007). Defining a conceptual framework for telework research. Paper presented at the *ACIS 2007 Proceedings.*, (Paper 120).

Chen, L. (2008). Job satisfaction among information system (IS) personnel. *Computers in Human Behaviour, 24,* 105-118.

Chung, K., & Hossain, L. (2008). Network structure, position, ties and ICT use in distributed knowledge-intensive work. *CSCW '08: Proceedings of the 2008 ACM Conference on Computer Supported Cooperative Work,* San Diego, CA, USA. 545-554.

Cougar, J. D., & Smith, D. C. (1992). Evaluating The Motivating Environment for Information Systems Personnel in South Africa Compared to The United States. *South African Computer Journal,6,79-84*

Dimitrova, D. (2003). Controlling teleworkers: supervision and flexibility revisited. *New Technology, work and Employment,18*(3), 181-195.

Dube, L., & Pare, G. (2003). Rigor in Information Systems Positivist Case Research: Current Practices, Trends, and Reccomendations. *MIS Quarterly, 27*(4), 597-635.

Duxbury, L., & Neufeld, D. (1999). An empirical evaluation of the impacts of telecommuting on intra-organizational communication. *The Journal of Engineering and Technology Management,* 16, 1-28.

Dychtwald, K., Erickson, T. J., & Morison, R. (2006). *Workforce crisis: How to beat the coming shortage of skills and talent.* Boston, Mass.: Harvard Business School Press.

Eisenhardt, K.M. (1989). Building Theories from Case Study Research. *The Academy of Management Review, 14*(4),532-550.

Erickson, T. (2001). Here and there, now and then: Four views of a long-distance teleworker's 'workplace'. *SIGGROUP Bulletin, 22*(3), 10-15.

Felstead, A. (2009). *Detaching work from place: Charting the progress of change and its implications for learning.* Cardiff School of Social Sciences, Cardiff University. Retrieved 29/04/2010, from http://www.beyondcurrenthorizons.org.uk/detaching-work-from-place-charting-the-progress-of-change-and-its-implications-for-learning/

Fichman, R. G. (2004). Going beyond the dominant paradigm for information technology innovation research: Emerging concepts and methods. *Journal of the Association for Information Systems, 5*(8), 314-355.

Gartner Research. (2010). *Out of the ashes: Business continuity management lessons from iceland's volcanic eruption* No. G00200441. Gartner Research.

Golden, T. D. (2006). Avoiding depletion in virtual work: Telework and the intervening impact of work exhaustion on commitment and turnover intentions. *Journal of Vocational Behavior, 69*(1), 176-187.

Golden, T. D., & Veiga, J. F. (2008). The impact of superior–subordinate relationships on the commitment, job satisfaction, and performance of virtual workers. *The Leadership Quarterly, 19*(1), 77-88.

Haddad, H., Lyons, G., & Chatterjee, K. (2009). An examination of determinants influencing the desire for and frequency of part-day and whole-day homeworking. *Journal of Transport Geography, 17*(2), 124-133.

Harrington, S. J., & Ruppel, C. P. (1999). Practical and value compatibility: Their roles in the adoption, diffusion, and success of telecommuting. *ICIS '99: Proceedings of the 20th International Conference on Information Systems,* Charlotte, North Carolina, United States. 103-112.

Hawley, C. (2009). *Managing the older employee: Overcome the generation gap to get the most out of your workplace*. Adams Media, Avon, MA.

Helminen, V., & Ristimäki, M. (2007). Relationships between commuting distance, frequency and telework in finland. *Journal of Transport Geography, 15*(5), 331-342.

Hertel, G., Geister, S., & Konradt, U. (2005). Managing virtual teams: A review of current empirical research. *Human Resource Management Review, 15*(1), 69-95.

Higa, K., & Shin, B. (2003). The telework experience in japan. *Communications of the ACM, 46*(9), 233-242.

Hill, E. J., Ferris, M., & Märtinson, V. (2003). Does it matter where you work? A comparison of how three work venues (traditional office, virtual office, and home office) influence aspects of work and personal/family life. *Journal of Vocational Behavior, 63*(2), 220-241.

Hill, E. J., Hawkins, A. J., Ferris, M., & Weitzman, M. (2001). Finding an extra day a week: The positive influence of perceived job flexibility on work and family life balance. *Family Relations, 50*(1), 49-58.

Hoang, A. T., Nickerson, R. C., Beckman, P., & Eng, J. (2008). Telecommuting and corporate culture: Implications for the mobile enterprise. *Information Knowledge Systems Management, 7*(1), 77-97.

Hunton, J. E., & Harmon, K. W. (2004). A model for investigating telework in accounting. *International Journal of Accounting Information Systems, 5*(4), 417-427.

Institute For The Future. (2007). *The future of work: Technology foundations*. Palo Alto, California: Institute For The Future. Retrieved from www.iftf.org

Jeyaraj, A., Rottman, J. W., & Lacity, M. C. (2006). A review of the predictors, linkages, and biases in IT innovation adoption research. *Journal of Information Technology, 21*(1), 1-23.

Kirk, D., Sellen, A., Cao, X. (2010). Home Video Communication: Mediating 'Closeness'. *Proceedings of Conference on Computer Supported Cooperative Work 2010*, Georgia, USA.

Kossek, E. E., Lautsch, B. A., & Eaton, S. C. (2006). Telecommuting, control, and boundary management: Correlates of policy use and practice, job control, and work–family effectiveness. Journal of Vocational Behavior, 68(2), 347-367.

Kurland, N. B., & Cooper, C. D. (2002). Manager control and employee isolation in telecommuting environments. *The Journal of High Technology Management Research, 13*(1), 107-126.

Lautsch, A., Kossek, E. E., & Eaton, S. C. (2009) Supervisory approaches and paradoxes in managing telecommuting implementation. *Human Relations, 62*, 795-827.

Lee, H., Shin, B., & Higa, K. (2007). Telework vs. central work: A comparative view of knowledge accessibility. *Decision Support Systems, 43*(3), 687-700.

Lehmann, M., & Hietanen, O. (2009). Environmental work profiles - A visionary life cycle analysis of a week at the office. *Futures, 41*(7), 468-481.

Mattern, F., Staake, T., & Weiss, M. (2010). ICT for green - how computers can help us to conserve energy. *Proceedings of e-Energy 2010,* Passau, Germany.

Mayo, M., Pastor, J., Gomez-Mejia, L., & Cruz, C. (2009). Why some firms adopt telecommuting while others do not: A contingency perspective. *Human Resource Management, 48*(6), 917-939.

Mello, J. (2007). Managing telework programs effectively. *Employee Responsibilities & Rights Journal, 19*(4), 247-261.

Messersmith, J., (2007). Managing Work-Life Conflict Among Information Technology Workers. *Human Resource Management, 46*(3),429-451.

Mihhailova, G. (2009). Management challenges arising from the use of virtual work. *Baltic Journal of Management, 4*(1), 80-93.

Nelson, P., Safirova, E., & Walls, M. (2007). Telecommuting and environmental policy: Lessons from the ecommute program. *Transportation Research Part D: Transport and Environment, 12*(3), 195-207.

Nicholas, A. J., & Guzman, I. R. (2009). Is teleworking for the millennials? *SIGMIS CPR '09: Proceedings of the Special Interest Group on Management Information System's 47th Annual Conference on Computer Personnel Research,* Limerick, Ireland. 197-208.

Nilles, J. M. (1975). Telecommunications and Organizational Decentralization. *IEEE Transactions on Communications,* 23(10), 1142-1147

Odendal, A., & Roodt, G. (2002). Australian and South African perspectives on the implementation of flexible work practices (FWP): an exploratory study. *SA Journal of Industrial Psychology, 28*(3), 75-82.

Pérez, M. P., Sánchez, A. M., & de Luis Carnicer, M. P. (2002). Benefits and barriers of telework: Perception differences of human resources managers according to company's operations strategy. *Technovation, 22*(12), 775-783.

Pérez, M. P., Sánchez, A. M., de Luis Carnicer, M. P., & Vela Jiménez, M. J. (2005). The differences of firm resources and the adoption of teleworking. *Technovation, 25*(12), 1476-1483.

Peters, P., & Heusinkveld, S. (2010). Institutional explanations for managers' attitudes towards telehomeworking. *Human Relations, 63*(1), 107-135.

Peters, P., Tijdens, K. G., & Wetzels, C. (2004). Employees' opportunities, preferences, and practices in telecommuting adoption. *Information & Management, 41*(4), 469-482.

Presidential memorandum to slash federal government real estate costs can be aided by IWMS software says industry expert. (2010). Retrieved 6/23/2010, from http://www.businesswire.com/portal/site/home/permalink/?ndmViewId=news_view&newsId=20100617006188&newsLang=en

Profit forecast for worldwide airline industry - jun. 7, 2010.(2010, 7 June 2010). *CNNMoney.Com,* Retrieved from http://money.cnn.com/2010/06/07/news/international/airline_industry_profit/index.htm

Pyoria, P. (2009). Virtual collaboration in knowledge work: From vision to reality. *Team Performance Management, 15*(7/8), 366-381.

Ruiz, Y., & Walling, A. (2005). Home-based working using communication technologies. *Labour Market Trends, 113*(10), 417-426.

Salazar, C. (2001). Building boundaries and negotiating work at home. *GROUP '01: Proceedings of the 2001 International ACM SIGGROUP Conference on Supporting Group Work,* Boulder, Colorado, USA. 162-170.

Sharit, J., Czaja, S. J., Hernandez, M. A., & Nair, S. N. (2009). The employability of older workers as teleworkers: An appraisal of issues and an empirical study. *Human Factors ErgonomicManufacturing, 19*(5), 457-477.

Siha, S. M., & Monroe, R. W. (2006). Telecommuting's past and future: A literature review and research agenda. *Business Process Management Journal, 12*(4), 455-482.

Six, F., & Sorge, A. (2008). Creating a High-Trust Organization: An Exploration into Organizational Policies that Stimulate Interpersonal Trsut Building. *Journal of Management Studies,4* (5),857-884.

Snell, S. A., (1992). Control Theory in Strategic Human Resource Management: The Mediating Effect of Administrative Information. *The Academy of Management Journal,* 35(2), 292-327.

Staples, D. S., & Ratnasingham, P. (1998). Trust: The panacea of virtual management? *ICIS '98: Proceedings of the International Conference on Information Systems*, Helsinki, Finland. 128-144.

Straub, E.T., (2009). Understanding Technology Adoption: Theory and Future Directions for Informal Learning. *Review of Educational Research, 79*(2), 625-649.

Surry, D. W. (1997). Diffusion Theory and Instructional Technology. *Annual Conference of the Association for Educational Communications and Technology (AECT)*, Albuquerque, New Mexico. 12-15.

Thomas, D. R. (2006). A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation,* 27(2), 237-246.

Thompson, L. F., & Aspinwall, K. R. (2009). The recruitment value of work/life benefits. *Personnel Review, 38*(2), 195-210.

Tietze, S., Musson, G., & Scurry, T. (2009). Homebased work: A review of research into themes, directions and implications. *Personnel Review, 38*(6), 585-604.

Tsui, K. M., Desai, M., Yanco, H. A. & Uhlik, C. (2011). Exploring use cases for telepresence robots. *Proceedings of the 6th ACM/IEEE International Conference on Human-Robot Interaction,* 2011.

Turetken, O., Jain, A., Quesenberry, B., & Ngwenyama, O. (2011). An Empirical Investigation of the Impact of Individual and Work Characteristics on Telecommuting Success. *IEEE Transactions on Professional Communication, 54*(1),54-67.

United States Office of Personnel Management. (2002). *The status of telework in the federal government 2002.* Retrieved 6/21/2010, from http://www.telework.gov/Reports_and_Studies/tw_rpt02/status-summary.aspx

United States Office of Personnel Management. (2009). *Status of telework in the federal government : Report to the Congress* . No. SHRP-09-17138. Washington: United States Office of Personnel Management.

Virick, M., DaSilva, N., & Arrington, K. (2010). Moderators of the curvillnear relation between extent of telecommuting and job and life satisfaction: The role of performance outcomes orientation and worker type. *Human Relations, 63*(1),137-154.

Westerfall, R. D. (2004). Does Telecommuting Really Increase Productivity? *Communications of the ACM, 47*(8), 93-96.

Williams, R., Procter, R., & Dalziel, P. (2008). A case study of a small group teleworking pilot in a large organisation. Retrieved 25/04/2010, from http://citeseerx.ist.psu.edu/viewdoc/summary?doi=?doi=10.1.1.125.158

Appendices

Appendix A: Ethics Committee Approval Letter

UNIVERSITY OF CAPE TOWN

Faculty of Commerce
Ethics in Research Committee
Courier: Room 2.21 Leslie Commerce Building Upper Campus University of Cape Town
Post: University of Cape Town • Private Bag • Rondebosch 7701
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2 March 2011

Mr Francois van der Merwe
Department of Information Systems
University of Cape Town
francoisizak@gmail.com

Dear Mr van der Merwe

Project title: Enablers and moderators of telework: Assessing the maturity of telework practices in organisations

This letter serves to confirm that the project entitled, **"Enablers and moderators of telework: Assessing the maturity of telework practices in organizations"**, as described in your final submitted protocol dated 18 February 2011, has been approved subject to final confirmation by the Commerce Faculty Ethics in Research Committee. You may proceed with the research.

Please note that if you make any substantial change in your research procedure that could affect the experiences of the participants, you must submit a revised protocol to the Committee for approval.

Best wishes for great success with your research.

Regards,

I BROWN

A/Prof Irwin Brown
Commerce Faculty Ethics in Research Committee

"OUR MISSION is to be outstanding teaching and research university, educating for life and addressing the challenges facing our society."

Appendix B: Cover Letter

Department of Information Systems
Leslie Commerce Building
Engineering Mall. Upper Campus
OR Private Bag. Rondebosch 77001
Cape Town
Tel: 650-2261
Fax No: (021) 650-2280

Enablers and moderators of telework: Assessing the maturity of telework practices in organisations

Dear Sir/Madam,
As an Information Systems Masters student at the University of Cape Town, I am conducting research on the telework practices in organisations in South Africa.

Telework is a term used to describe the regular execution of day-to-day work by employees in locations other than a company office, and example would be where an employee works from home. Although telework has been in existence for over 30 years, the widespread adoption of telework practices is still very limited, particularly in South Africa. The purpose of the research is to examine the possible factors that may enable or inhibit the adoption and use of telework by companies.
Your participation in this research project will be greatly appreciated. Your input will assist in the identification and understanding of the various factors that play a role in the maturity of telework within your organisation. The information will be gathered by means of an interview that should take about 45 minutes of your time.

Participation is voluntary. Data collected will be stored electronically and will be kept strictly confidential. Participation will be anonymous as no sensitive personal details such as name and address will be collected. However, if you wish to receive a copy of the results of the research, you are welcome to give me your email address and the results will be sent to you.

The interview and interview questions have been approved by the University of Cape Town Ethics Committee. If you have any further queries, please feel free to contact the researcher using the contact details provided below or Professor Derek Smith at the address provided above.

Thank you for your time and cooperation.

Sincerely,
Francois van der Merwe
Masters Student (Researcher)
Email: francoisizak@gmail.com
Cell no: +27827862863

Appendix C: Interview Questions

No	Question	Theme
1	Could you briefly explain your job function?	introduction
2	Do you manage or co-ordinate the work of others?	introduction
3	How long have you been with the company?	introduction
4	What would you describe as your typical place of work?	introduction
5	Does your employer permit work to be performed in locations other than the typical place of work?	introduction
6	Does your day-today work routine involve a regular commute to a set work location?	introduction
7	How much freedom do you have in choosing the time and place of work?	Job Characteristics
8	How much of your working time needs to be spent at the company office?	introduction
9	Is that due to the nature of the job or a company requirement?	Job Characteristics
10	What degree of your work depends on close interaction with people?	Job Characteristics
11	What amount of your job content is performed where there is little or no interaction with other people?	Job Characteristics
12	What percentage of tasks or functions of your job cannot be done remotely?	Job Characteristics
13	How does your company manage and validate your time and attendance?	Job Characteristics
14	How is your work performance measured? e.g. through set goals / observation / other means?	Job Characteristics
15	What amount of time do you spend in face-to-face meetings or interaction with others in your job?	Communication
16	If some or all of those interactions were held using electronic tools which allowed you not having to go and meet with the other person, how could it affect the way you work?	Communication
17	How would you describe the need for face-to-face communication in your typical working day?	Communication
18	Is the face-to-face communication essential for you to be effective in your job?	Communication
19	Who are the people you have the most interaction with (colleagues / superiors / subordinates / customers etc.)?	Communication
20	Describe the three most used means of communication you use on a daily basis?	Communication
21	Which are the primary communications methods you use when interacting with superiors?	Communication
22	Can you describe how your company's values support or detract from an employee's ability to choose how and where they work?	Value Compatibility
23	As you understand the company culture (as in daily norms), do you think remote working arrangements could be compatible with the organisation's culture?	Value Compatibility
24	How would you describe your organisation's culture in the promotion of trust of employees?	Value Compatibility
25	Do the organisation's norms and values promote close supervision of work by managers?	Value Compatibility
26	How well do you think people know the organisation's values?	Value Compatibility
27	Do people in the organisation actively follow and support the organisations values?	Value Compatibility
28	How would you describe Top Management's knowledge or understanding of the advantages/disadvantages of working remotely?	Top Management Support

29	How would you describe Top management's support for the concept of working remotely?	Top Management Support
30	Has there been any evidence of Top Management promoting or opposing the use of remote work practices in the company?	Top Management Support
31	To what extent would you ascribe the development/lack of development of a remote work program in your organisation to the attitude of top management towards remote work?	Top Management Support
32	The leadership style of top managers can be described in terms of being goal orientated, i.e. focussed on outcomes or observation focussed i.e. making sure the work is done. What evidence have you seen that would describe your top managements leadership style as being either goal orientated or observation orientated?	Top Management Support
33	Describe how your manager schedules and reviews your work?	Management Control
34	Does the methods of assessment depend upon the individual manager's management style or is there a set method used within the organisation?	Management Control
35	How frequently does your manager check in with you on your progress and how is this done?	Management Control
36	How much does your manager rely on face-to-face interaction to asses work progress?	Management Control
37	Think of an instance when your manager was not happy with progress on a task, how did he/she arrive at that conclusion and how was it addressed?	Management Control
38	Does a policy exist within the organisation which addresses remote work in any way?	Practical Compatibility
39	Are employees provided with the ability to connect to work IT systems and information remotely?	Practical Compatibility
40	How would you describe the HR policies effectiveness of addressing remote work within the organisation?	Practical Compatibility
41	How would an employee who wanted to work from home go about requesting permission to do so?	Practical Compatibility
42	What practical measures are provided (such as training, equipment, call centres) to support remote workers?	Practical Compatibility
43	Does your manager trust you sufficiently for you to work unsupervised?	Trust
44	What is this trust based upon?	Trust
45	If you were working remotely where you did not see your manager face-to-face on a regular basis, would it affect their level of trust in you?	Trust
46	Do you have to constantly prove yourself worthy of trust in your job?	Trust
47	In thinking about remote work, what would you describe as the most important things that need to be done to convince senior management that it can/does work in your organisation?	Open Questions
48	Can you think of any other influences such as external factors that may change the attitude of management to remote work?	Open Questions
49	What are the biggest detractors or inhibitors to remote work arrangement in the organisation?	Open Questions
50	What would you describe as the greatest drivers for the use of remote work arrangements within the organisation?	Open Questions

Appendix D: Key literature sources of telework diffusion factors