

The perceived impacts of smartphone use on the performance of senior managers in South African firms

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Abstract

The aim of this thesis is to explore the perceived impact of smartphone (SP) use on the performance of senior managers in South African firms. With smartphone devices such as BlackBerrys (BB) now a pervasive communication tool amongst many firms in South Africa, the impact that this technology has on organisations, work processes and staff is of significant importance and interest.

As leaders of their respective companies, the ability for key management to operate at peak performance has implications not only for individual success, but also for a company's bottom line.

From the findings of this research (and indeed the literature review), it is clear that users have an ambivalent attitude towards SP technology and its perceived usefulness. As in Jarevenpaa et al's study on mobile technology, a number of paradoxes linked to SP use emerged. These are the Connection/Disconnection, Efficient/Inefficient, Informed/Uninformed, Multi-functional/Dysfunctional, Balance/Imbalance and Safe/Unsafe paradoxes.

One of the strongest themes that arose from the analysis was that of the potential imbalance that SP use brings in terms of the work-life equilibrium. The importance of self-discipline and the setting of boundaries were thus seen by many as key to managing the device and putting the control back into the hands of the user. For those addicted to using their SPs, personal willpower may not be sufficient to achieve this. In the latter case, strategies are explored by which employees can help to mitigate the negative impacts of SP use on work and private life.

Finally, the findings of this research will hopefully help shape management's decisions around SP deployments, as well as shed light on if and how technology such as push email and devices such as BlackBerrys should be controlled.

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1. Introduction

1.1 Research area

The world is currently experiencing a culture of digitalisation (Kleinman, 2007), miniaturisation (Theis & Paul Horn, 2003) and mobility (Brazier, 2011). Kindles and i-Pads are replacing books, magazines and newspapers; Global Positioning Systems (GPSs) seem to have rendered maps obsolete; BlackBerrys (BBs) appear to have stolen the email limelight from PCs, and advanced smartphones (SPs) are beginning to replace them all. We live in a time where connectivity is of utmost importance, especially for today's knowledge workers in the business world, where the rapid rate of information dissemination is a key ingredient for firm sustainability and competitiveness (Civi, 1995).

As a result of the positive spin-offs of mobile technology (e.g. increased productivity) (Sweeny, 2009), BBs and other SP devices are becoming pervasive work tools amongst senior management around the world. In the second quarter of 2011 alone, over 107 million smartphones were sold globally, accounting for 25% of total mobile phone sales in that quarter, representing growth of 74% year-on-year (Gartner, 2011). In the US itself, smartphone penetration is around 20%, with approximately 60 million devices currently on the market (Butcher, Kats, & Tsirulnik, 2011), and the US government alone running over 500,000 BlackBerrys (Sweeny, 2009). Finally, in a study of top executives (CEOs, CIOs) and technology managers conducted by Beurer-Zuellig et al, smartphones were considered mandatory in the workplace for 77% of surveyed candidates (Beurer-Zuellig & Meckel, 2008), and in some fields (like medicine), vendors are even handing out smartphones to doctors and nurses, following rising acceptance trends (Yangil Park & Chen, 2007).

Despite the seemingly obvious benefits of smartphones in the workplace, evidence (both anecdotal and empirical) suggests that smartphone users have a somewhat ambivalent attitude towards these devices (Middleton & Cukier, 2006). Jarvenpaa and Lang posit that this technology ambivalence arises out of a number of paradoxes related to user-technology interactions (see Figure 1 further on) (Jarvenpaa & Lang, 2005). In their paper on ubiquitous computing, Jarvenpaa et al refer to how an ICT user's situation or context impacts on whether or not they view the technology as helping or hindering them. The double-edged sword of technology (Beishon et al., 2008) leads to user conflict, whereby coping mechanisms are

adopted to overcome the tensions between man and machine, either by deploying avoidance strategies (such as using technology less, e.g. turning off one's smartphone) or confrontational strategies (such as negotiating with the technology, e.g. learning how to use the features of a phone better, like putting it on silent).

Whilst many view the smartphone as a tool to increase productivity (Carayannis & Clark, 2011) (and hence to free up leisure time) (Middleton, 2008), ironically some of these very same people find themselves working longer hours (Daantje & Arnold, 2010) and feeling the need to reply to work related emails after hours (Schwartz, 2010) or even on vacation (Jarvenpaa's empowerment/enslavement paradox in Figure 1) (Jarvenpaa & Lang, 2005).

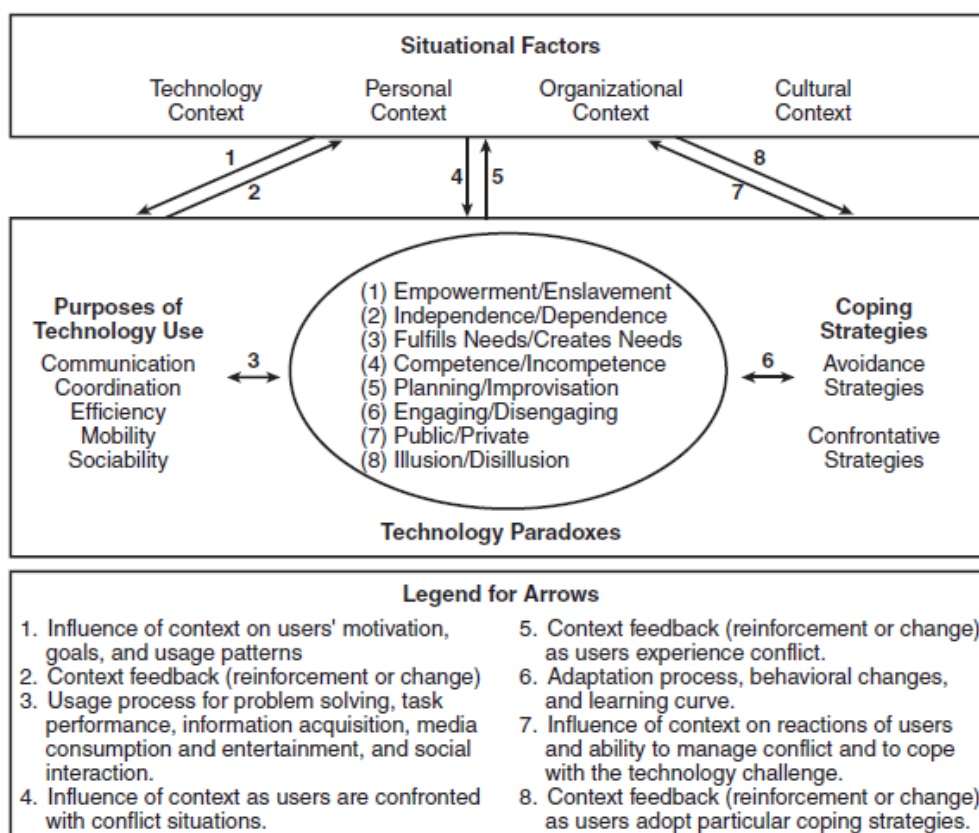


Figure 1: User-technology interaction process (Jarvenpaa & Lang, 2005)

Nowadays, advanced mobile phones fall under the umbrella term of *Work Extending Technologies (WET)*, meaning devices that are blurring the line between the office and home environment, organisational and private life as well as disrupting work-life balance (Towers, Duxbury, Higgins, & Thomas, 2006), (Higgins & Duxbury, 2005). Rethinam et al link the notion of a work-life balance to a concept they call Quality of Work Life (QWL). The authors go on to state that achieving QWL in the workplace can lead to job satisfaction,

motivation and productivity gains. Conversely, conflict between the demands of personal and work life can lead to strained relationships (at home or work) and potential burnout, resulting in lower staff commitment, QWL and (ultimately) reduced productivity (Rethinam & Ismail, 2008).

In addition, the always on connectivity of smartphones can also bring with it the burden of increased interruptions (Cameron & Webster, 2005), (Daantje & Arnold, 2010), the urge to multi-task (Herman Miller Inc, 2007), the advent of task switching (González & Mark, 2004) and workplace stress (Beishon et al., 2008). These interruptions and this toggling between activities can in turn lead to productivity losses (Iqbal & Horvitz, 2007), shallower thinking/lowered quality of thought (Herman Miller Inc, 2007), decreased creativity (Amabile, Hadley, & Kramer, 2002), pseudo-attention deficit disorder (Hallowell, 2005) and magnified error rates (Westbrook, Woods, Rob, Dunsmuir, & Day, 2010).

Whilst smartphones provide instant communication (voice, mail, message), the devices can also lead to distraction when trying to deal with deadlines or in meetings, resulting in decreased mindfulness (Daantje & Arnold, 2010), friction between staff (through impressions of lessened respect or lower civility) (Limpaphayom, 2011) and inferior communication (Jarvenpaa's engaging/disengaging paradox) (Jarvenpaa & Lang, 2005).

Social tools on smartphones provide users with access to networking sites such as LinkedIn, Facebook and Twitter which, although useful mechanisms for keeping in touch with professionals in one's circle of contacts, can lead to heightened chances of identity theft (e.g. through social network apps requesting user details) (Hogben & Marnix Dekker, 2010) and intrusion on one's private life (Beishon et al., 2008). This technology contradiction illustrates Jarvenpaa's private/public paradox (Jarvenpaa & Lang, 2005). Furthermore, whilst some studies (e.g. by Brent Coker) show that Workplace Internet Leisure Browsing (WILB) (which smartphones easily facilitate) can lead to increases in productivity, in the case of extensive use (i.e. for users exhibiting Internet Addictiveness traits), overall losses in productivity are expected; another study however, which sought to replicate Dr Coker's research, found that WILB actually decreased productivity (Rodger, 2009).

Additionally, due to their increasing sophistication, smartphones act as spare computers that employees can use in the workplace, enabling them to access websites restricted by

companies (such as gmail or lottery sites), and in so doing attend to personal affairs during company time, possibly violating a firm's internet policy (a phenomenon known as internet deviancy) (Limpaphayom, 2011), (Law, 2007). Finally, smartphones provide users with unparalleled access to information, supplying our brains with endless reward centres (Seven, 2004), a longing for instant gratification (Wajcman, 2008) and the possibility of cognitive overload ("death" by information)(Kirsh, 2000). These outcomes can combine to cause higher stress levels (Higgins & Duxbury, 2005), lower employee wellbeing (R. S. Persson, 2001), depression and sleep deprivation (Thomee, Eklof, Gustafsson, Nilsson, & Hagberg, 2007), and decreased productivity, ultimately adversely affecting firm performance (Rethinam & Ismail, 2008).

1.2 Problem statement

A 2010 country wide study of firms in SA by Internet consultancy World Wide Worx showed that three quarters of local companies have rolled-out smartphones in their organisations, compared to almost none two years ago (Webb, 2010). Given the deluge of information both for and against Work Extending Technologies such as advanced mobile phones, as well as the extent to which these devices are being adopted by firms in South Africa, it is imperative for top management to understand the implications (both positive and negative) of technology deployments such as enterprise wide BlackBerry roll-outs, and to learn to manage any conflict arising out of computer/human tensions (Jarvenpaa & Lang, 2005).

The significance of this research thus lies in understanding how an employee's personal performance at work is affected by smartphone usage, as this has implications for worker wellbeing and productivity, and ultimately for a company's profitability. Failure to reach this understanding and act accordingly could mean that the users of technologies such as smartphones succumb to interruptions, distractions, lowered quality of thought and technostress (Towers et al., 2006). In fact, the increase in work/non-work conflict brought on by Work Extending Technologies (such as smartphones) is of such national priority, that the governments of Canada and Britain have set up official programmes to examine this topic (Towers, Duxbury, & Thomas, 2005).

Whichever side of the argument one takes, whether one embraces advanced mobile phone technology use in the workplace unrestrainedly or not, what is certain is that the smartphone paradigm is here to stay. The question thus becomes less about whether or not smartphones

will change the way businesses operate and workers perform their duties, but rather how it will continue to do so.

1.3 Purpose and significance of the research

The purpose of this exploratory research is to gain insights around the perceived impacts of smartphones in the workplace, in order to uncover some of the benefits and concerns surrounding the use of such technological artefacts. Specifically, this dissertation will look at how knowledge workers at a senior management level in South African firms, perceive the effects of smartphone use on their performance (both positive and negative, i.e. factors affecting productivity and wellbeing). The introduction of new and disruptive communication technologies in the workplace both support as well as hamper work processes and how teams and organisations interact (Beurer-Zuellig & Meckel, 2008). By understanding the paradoxes associated with this technology and learning to manage them (Jarvenpaa & Lang, 2005), firms will be able to reap the productive benefits (Forrester Consulting, 2009), (Moro, 2007) that devices such as smartphones offer, whilst preserving employee wellbeing (Engelbrecht, 2007), all of which will help to boost a company's bottom line (Rethinam & Ismail, 2008).

To date, no such study has been conducted in South Africa, to the researcher's knowledge, thus this investigation provides originality in that it was performed in a new geography (SA as opposed to developed countries such as the US). Hence, this thesis may be useful in comparing local findings with results from abroad, and could be influential in shaping executive decisions around smartphone deployments and the management of Work Extending Technologies (WET) like BlackBerrys.

Examples of other existing research on mobile technology usage include the likes of Beurer-Zuellig et al's study entitled "Smartphones Enabling Mobile Communication" which showed that smartphones improve individual and company performance by enhancing and expediting work processes, whilst the perceived performance gains are larger for those users whose attitude towards the technology is more positive (Beurer-Zuellig & Meckel, 2008). Another study, this time on CEOs and smartphone usage, showed that the leaders using the devices benefitted from improved levels of learning, social networking and knowledge sharing (Carayannis & Clark, 2011). Finally, in his seminal work on the paradoxes of mobile

technology, Jarvenpaa et al devised a framework which explored the conflict arising out of computer human interactions (Jarvenpaa & Lang, 2005).

Thus, not only can the outcomes of this report be used to validate the findings of these studies and check for location based differences, but at the same time they can extend the existing body of knowledge by looking at possible opportunity costs linked to smartphone usage (i.e. the study will cover some negative aspects linked to the technology as well). Finally, this thesis touches on the implications that the research findings have for management, and briefly describes some possible strategies that employees and firms can adopt to manage the use of smartphones in the workplace (if indeed some sort of control is required).

In terms of the significance/relevance of conducting the research on knowledge workers in senior management roles, studies show that BlackBerry use is strongly associated with rank, indicating executives and top managers are much more likely to use smartphones than their subordinates (Law, 2007). In closing, so as to provide richness of data, enable generalisation and to test the effect of company size on the perceived utility of smartphone use, respondents from small, medium and large enterprises were interviewed (for some possibly additional interesting insights).

1.4 Research questions and scope

This research attempts to address the question “What are the perceived impacts of smartphone use on the performance of senior managers in South African firms?”

Sub-questions that this study aims to address include:

- What is the perceived effect of smartphone use on productivity?
- What is the perceived impact of smartphone use on employee wellbeing?

The analysis was done in the form of a phenomenological study which is exploratory in nature, and involved interviews with senior management from small, medium and large South African businesses, around their experiences of the impact of smartphone use in their organisations.

Given the chosen research approach (i.e. phenomenology, requiring lengthy interviews) and the limited time available, the study was constrained by the size of the qualitative data sample

(13 interviews), possibly resulting in a lack of richness or relevance. This obstacle was somewhat mitigated by adopting an elite interviewing (Aberbach & Rockman, 2008) technique (predicated on purposive sampling), whereby respondents were chosen based on the purpose of the study and the perceived level of relevant knowledge the candidate possessed that may help to answer the research question/s.

1.5 Research assumptions

The research assumptions were based on the premise that enough relevant participants would be willing to take part in the in-depth, open-ended interviews. Access to a sufficient number of smartphone users in senior management levels from South African enterprises needed to be secured in order for the qualitative analysis to be substantive. By leveraging personal, collegial, lecturer and friends' networks, the researcher did not experience any problems in getting enough participants to conduct one-one-one or telephonic interviews with. To avoid the pitfalls of convenience sampling, "cold calling" techniques were also employed to try to limit over-reliance on immediate social circles and any potential biases they may bring.

A further research assumption was that the participants being interviewed would be candid in their responses. To address this last concern (lack of openness), confidentiality agreements were signed with all interviewees, and anonymity was guaranteed, mitigating the risk that respondents were not transparent in their answers. Furthermore, by ensuring anonymity, participants were less inhibited in their responses, providing more genuine and deeper insights.

1.6 Research ethics

Since interviews were conducted with high-ranking employees of various companies, confidentiality of personal information was of utmost importance. To ensure that the identity of every respondent was protected, all names and personally identifiable attributes were not linked to the data collected.

Finally, as a pre-requisite for the successful submission of the Research report to the UCT GSB, the researcher applied for and signed an ethics clearance certificate from the school.

2. Literature review

The aim of the literature review is to provide a theoretical understanding of the topic around Information and Communication Technology (ICT) usage, particularly relating to smartphones and the effects Computer Mediated Communication (CMC) (such as mobile “push” email, instant messaging, social networking etc) has on the performance of knowledge workers¹ in senior management levels, and hence firm profitability.

Whilst the literature has shown how technology can aid organisations by increasing employee productivity (Forrester Consulting, 2009), work flexibility (Rieger & Gay, 1997), (Stough, Eom, & Buckenmyer, 2000) and performance (Mohanta, Kannan, & Thooyamani, 2006), (Moro, 2007), it also shows that technology potentially hinders individuals by infringing on private life (Towers et al., 2006), invading privacy (Mazmanian, Orlikowski, & Yates, 2006) and causing techno-stress (R. S. Persson, 2001).

With an increasing number of businesses embracing advanced mobile technologies (in many instances making smartphones mandatory) (Beurer-Zuellig & Meckel, 2008), it will become critical for top management to understand how to leverage the benefits of these devices whilst protecting the welfare of employees from any negative side-effects related to their use (Jarvenpaa & Lang, 2005).

2.1 Introduction

We live in a very disruptive world. With the pervasiveness of technology (every minute 1,000 new cellphone users are added to the 2.4 billion existing), the number and frequency of interruptions has escalated exponentially (around 62 billion emails and 14 billion instant messages are sent each day, respectively) (Herman Miller Inc, 2007). As a result, employees in the workplace are often under constant time pressure, finding it increasingly difficult to create “thinking space”, a sanctuary in which workers can reflect and think creatively (Amabile et al., 2002).

¹ Defined as “*anyone who works for a living at the tasks of developing or using knowledge*” (Mohanta et al., 2006) – for the purposes of this thesis, knowledge workers will be defined as senior managers in highly skilled professional fields (e.g. business, law, engineering, consulting etc)

This has led to some worrying that our frantic work pace and “always-on” email, instant message and telephony connectivity may be creating a pseudo-attention deficit disorder in people (Hallowell, 2005). Scientists call this bombardment by information “cognitive overload” (Kirsh, 2000) and other potential negative side-effects of this phenomenon include shallower thinking (Daantje & Arnold, 2010), stress (Janssen & Poot, 2006), strained personal/work relationships (Kirsh, 2000), distraction (Spira & Burke, 2009), and lowered productivity (Eppler & Mengis, 2003). The problem is that whilst cognitive overload seems to be the norm in many offices nowadays, few organisations find the idea of temporarily blocking off digital forms of communication a feasible suggestion at all (Seven, 2004).

As a result of these concerns, debates have been raging on as to the true productivity gains offered by technologies and devices such as push email and BlackBerrys. On the one hand, reports commissioned by Research in Motion (RIM), the BlackBerry handset manufacturer, show that by using their smartphones, organisations stand to benefit from productivity gains in excess of 30% (Sweeny, 2009). Duxbury et al (in a book by Law) state that organisations can profit from rolling out Work Extending Technology (WET) such as smartphones in the work place, through staff performing more work per day (due to higher productivity and possibly longer labour hours), enhanced accessibility of employees, extra control over workers and an improved organisational image (Law, 2007). The same authors propose that the advantages of WET to employees include practical gains (work flexibility – when, where and how) and impression/image management (the use of e.g. cellphones make people seem like exemplary workers or that they are in-demand).

On the other hand, some negative aspects of WET for organisations include cost of technological deployment and potential loss of corporate data, whilst possible disadvantages to employees incorporate invasion of space and time, family friction (Law, 2007) and lowered productivity (Karr-Wisniewski & Lu, 2010) (leading to economic losses in the order of billions of dollars in the US alone) (Spira & Feintuch, 2005).

Thus, whilst technological innovation in the communications sphere undeniably provides companies and individuals with useful tools with which to expedite the diffusion of information (Sharples, J. Taylor, & Vavoula, 2005) and potentially enhance performance (through productivity gains) (Sweeny, 2009), what is equally pertinent is the growing need

for individuals and organisations to properly manage such technologies effectively (Middleton & Cukier, 2006).

What follows is a discussion of knowledge workers and the role technology (such as smartphones) plays in the workplace, followed by an analysis of the factors that impact on knowledge worker performance (and wellbeing) and how they relate to SP usage. Finally, the literature review will end off with a discussion of basic acceptable use policies and some of the measures organisations and employees are adopting to manage/control the use of (mobile) technologies in the workplace.

2.2 Knowledge Based Economies (KBE) and the role of technology

Organisations today recognise the value of knowledge, considering it to be their most strategically important asset, leading to sustained competitive advantage (Civi, 1995). The same author states that advancements such as push technology play a crucial role in facilitating knowledge processes and methodologies. Furthermore, Civi sees the convergence of information and communication technologies as playing a leading role in knowledge management.

Similarly, Denisi et al assert that, in knowledge based economies (KBEs), it is recommended that technology be used to support work requiring the creation, dissemination and application of knowledge (DeNisi, Hitt, & Jackson, 2003). Drucker argues that *“the most important contribution management needs to make in the 21st century is similarly to increase the productivity of knowledge work and knowledge workers”* (Drucker, 1999), whilst Mohanta et al suggest that technologies (such as mobile and wireless varieties) allow knowledge workers to use previously unproductive time (Mohanta et al., 2006).

According to Bo Begole’s ubiquitous computing model (see Figure 2 further on), interoperation of ever-present mobile and network devices (such as smartphones) allows for interactive and proactive services that give rise to knowledge, convenience and assistance for the user to achieve his/her objective (Begole, 2011). Knowledge workers are increasingly voicing demands around their need and desire for IT solutions such as i-Phone and Android based smartphones, and by 2014, research firm Gartner expects that 90% of firms will allow corporate applications on personal devices (Plummer, 2010). The same report predicts that by 2015, 50% of all web-based company sales will be generated from social channels

(Twitter, Facebook, YouTube) and mobile applications (for which smartphones are suited). Furthermore, with the rapid rise in smartphone adoption, these advanced devices are increasingly being used to search the internet for information and conduct e-commerce, whilst marketers recognise these technological artefacts as being the driving force behind mobile advertising campaigns (Butcher et al., 2011). In Africa, mobile technology is seen as one of the bridges that can and should be used to breach the “knowledge gap” that exists in many organisations and communities on the continent, and is considered the key to unlock the advantages of the contemporary knowledge economy (Rao, 2011).

In short, knowledge is often viewed as the currency of many organisations these days, human capital the most important “balance sheet” item (Civi, 1995) and technology the indispensable tool that enables the creation and dissemination of organisational and personal information (Pritchard & Symon, 2010), (Mohanta et al., 2006).

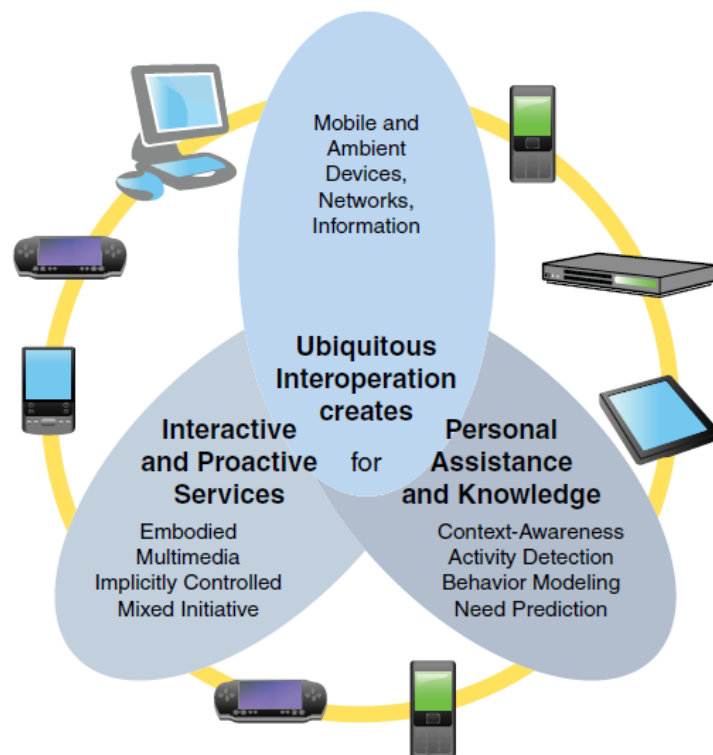


Figure 2: Ubiquitous computing model (Begole, 2011)

2.3 Technology use and knowledge worker performance

There are numerous attributes of knowledge worker performance. Drucker defines some of these as productivity, continuing innovation, autonomy, constant learning and teaching (collaboration) (Drucker, 1999). Still others link second order causes such as employee well-being to productivity and hence worker performance (Mohanta & Thooyamani, 2010). Persson explains how psychological stress results in reduced employee well-being, and explains how poorly implemented IT-developments can lead to techno-stress (R. S. Persson, 2001), thereby impacting staff productivity and performance (and ultimately a firm's profitability).

The following sections of this literature review will thus deal with the various elements that make-up or affect the performance of knowledge workers, and how they relate to the use of smartphone technology.

2.3.1 Smartphones and productivity

In the knowledge based economy, IT has been widely touted as an enabler of increased workplace productivity (Engelbrecht, 2007). Research in Motion (RIM), maker of the famous BlackBerry smartphone, regularly commissions independent research firms to conduct productivity audits at companies to demonstrate the productivity gains of adopting mobile phone email solutions. One such study claimed that a particular enterprise which incorporated RIM's technology benefitted from increased worker efficiency (over 38% improvement, leading to \$33,000 p.a saving per employee in one organisation), and lowered downtime (personal productivity gains of 250 hours per year) (Moro, 2007). Another case study by the same manufacturer states that a BlackBerry deployment in one company paid for itself within 11 days, whilst providing another firm with productivity benefits of between 1-21 hours per week for sales staff, field workers and executives (Forrester Consulting, 2009).

As Koschmann et al's mobility hierarchy (see Table 1 further on) shows, mobile computers (as represented by devices such as smartphones), provide today's knowledge workers with the ability to be productive, access and capture information, communicate and collaborate with others, all whilst "on the move" (Rieger & Gay, 1997), (Mohanta et al., 2006). From the hierarchy, it is clear that at the highest level (4), technology affords employees the ability to communicate intensively, in a "real-time" manner, even with regards to traditionally

“asynchronous”² communication such as email (due to advent of wireless “push” email, c.f. BlackBerry mail).

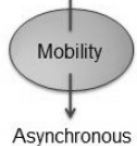
Mobility Hierarchy		Sample Applications	Technological Affordances
Level 4	Communication & Collaboration	<ul style="list-style-type: none"> • Real-time chat • Annotations • SMS (Simple Message System) • Wireless email 	Communication intensive Group work Synchronous  Asynchronous Individual work Content intensive
Level 3	Capturing & Integrating Data	<ul style="list-style-type: none"> • Network database • Data collection/synthesis • Mobile library 	
Level 2	Flexible Physical Access	<ul style="list-style-type: none"> • Local database • Interactive prompting • Just-in-time Instruction 	
Level 1	Productivity	<ul style="list-style-type: none"> • Calendars • Schedule • Contact Information • Grading 	

Table 1: Mobility hierarchy, sample applications, and technological affordances - as appeared in (Yeonjeong Park, 2011), **adapted from** (Rieger & Gay, 1997).

Certain other studies however have shown that whilst corporations have invested lots of money in technology, this has often not led to commensurate gains in productivity, possibly due to training not keeping up, the delayed nature of visible benefits, non-alignment of IT deployment with business processes or the human costs associated with the misuse of technological systems (Law, 2007).

Some researchers argue that tech devices can in fact reduce productivity due to the constant technology related workplace disruptions and information overload (Eppler & Mengis, 2003), (Karr-Wisniewski & Lu, 2010). The topic of cognitive overload has become a major concern for many companies like Intel and Xerox, with consulting firm Basex estimating that the US economy alone loses around \$588bn a year due to (often) irrelevant interruptions and the time needed to recover from them (Spira & Goldes, 2007).

As a way of dealing with the torrent of information sent their way, people often use their computers and mobile phones to multi-task, even though the evidence is contradictory as to whether multitasking works or not (Kleinman, 2007), (Ballenger, 2009). Task-switching, or toggling between functions, is closely linked to multi-tasking and together these activities have been found to adversely affect employee performance (Herman Miller Inc, 2007) and

² Asynchronous communication is traditionally delayed or non-instantaneous (Daantje & Arnold, 2010)

collegial relationships (especially between non multi-taskers or monochronics and multi-taskers/polychronics) (Bell, Compeau, & Olivera, 2005). One study, performed by Professor Gloria Mark, found that on average, the workers at a financial services firm in the US switched tasks every 3 minutes, were interrupted every 2 minutes and could focus for a maximum time of 12 minutes (González & Mark, 2004). Furthermore, only 55% of workers returned to the task they were doing before the interruption, and it took on average 23 minutes for them to re-focus (Herman Miller Inc, 2007).

The fact however is that despite the abovementioned concerns regarding multitasking (to say nothing of those around personal safety, e.g. texting while driving), many new entrants into the workplace have recently been labelled the “M-Generation” for their multi-tasking affinity, whilst still others have coined them the “thumb-generation” (referring to young workers’ reliance on mobile phone communication) (Seven, 2004). This obsession with doing multiple tasks at the same time has led to some researchers expressing concern over the possible development of Attention Deficit Traits (ADT) in certain individuals, which has been shown to cause even smart executives to underperform (Hallowell, 2005).

2.3.2 Mobile work and collaboration

The ability to digitally communicate whilst on the go is of increasing importance in today’s age of telecommuting³ (Davenport & Pearlson, 1998), especially as businesses extend their global footprints, look to reduce costs (e.g. travel related expenses) (Stough et al., 2000) and aim to retain scarce skills in geographically dispersed workforces (Wellman, Salaff, Dimitrova, Gulia, & Haythornthwaite, 1996). Analyst firm IDC reported that in 2006, there were approximately 760 million mobile workers globally, with that figure expected to have risen to 1 billion by the end of this year (greater than 30% of the world’s workforce) (Beishon et al., 2008).

Computer Mediated Communication (CMC) has allowed teleworkers to perform their jobs from remote locations such as their personal homes and satellite work centres (Beurer-Zuellig & Meckel, 2008). The advent of mobile email (especially push e-mail) and smartphones (in

³ Telecommuting refers to using technology such as email and internet to conduct business from a site other than the workplace (Genova, 2010)

particular BlackBerrys) has enabled “road warriors⁴” to work whilst in transit, in the field (Rieger & Gay, 1997) or out on client visits, providing business continuity, enhancing productivity (Frost & Sullivan, 2011) (partly by reducing downtime) (Mohanta et al., 2006) and enabling a better work-life balance (Towers et al., 2005). Of growing importance too is the role of mobile communication devices and the aid they provide “corridor warriors”, or those employees who are away from their desks (yet in their workplaces) for large portions of the day (e.g. in meetings)(Beurer-Zuellig & Meckel, 2008).

According to some authors, smartphones have facilitated increased collaboration amongst mobile eWorkers⁵, mitigated the need for escalation, improved customer and collegial communication, increased efficiency by accelerating work processes (Beurer-Zuellig & Meckel, 2008) and enabled employees to reduce “deadtime” (by allowing them to work whilst in queues, commuting etc) (Wajcman, 2008).

The advent of “cloud computing” should further enhance the ability for “mobile eWorkers” to access and disseminate data anytime and anywhere (i.e. increase their productivity⁶), via their Personal Digital Assistants (PDAs) (i.e. SPs). The reason for this is that with cloud computing, most data and processing power resides in the network cloud, negating the need for users to wield bulky devices with large storage capacities (Armbrust, Joseph, Katz, & Patterson, 2009), (Tonta, 2008) (hence increasing the utility of SPs).

Smartphone technology also enables users to collaborate digitally with peers, co-constructing knowledge (Mcgreen & Sanchez, 2005) digitally (via wikis, web forums, blogs etc) and sharing it (via email, social networking sites like Facebook/LinkedIn and virtual folders such as Dropbox) (Pritchard & Symon, 2010), (Tonta, 2008). Linked to this is the notion of “crowd sourcing”, the ability for individuals and organisations to source new ideas, resources (e.g. funding) opinions and information from peers and broader communities, contributing to diversity of thought, data triangulation and innovation (Patten, Sanchez, &

⁴ Defined as “*business people who travel frequently*” (Beishon et al., 2008)

⁵ A mobile “*workforce in need of online connection to the company network or the internet*” (Beurer-Zuellig & Meckel, 2008)

⁶ It must be noted, however, that in South Africa, broadband network limitations are likely to constrain the large scale adoption of mobile cloud computing in the short term

Tangney, 2006). Top management who construct and manage their networks in a strategic fashion are able to access valuable data quickly, which can be used to improve management proficiencies, leadership ability and ultimately firm profitability (Carayannis & Clark, 2011).

2.3.3 Serendipitous knowledge and informal learning

In his thesis on knowledge systems and lifelong learning, Vavoula developed a pedagogical framework (see Table 2 further on) in which the learner either controls the process of learning (i.e. through the tool or method he/she uses) or the goal of learning (intentional or self-directed) (Vavoula, 2004). In addition, the author introduces a third category of learning whereby learners “stumble upon” information that was not intentionally sought after, providing an informal learning opportunity for the explorer (Vavoula, 2004), (Clough, Jones, McAndrew, & Scanlon, 2008). It is this serendipitous knowledge accumulation that smartphones afford their users (Mefford, 2009) due to their always on connectivity, rapid access to information through the internet and their “wearable” nature (providing ubiquity) (Sharples et al., 2005).

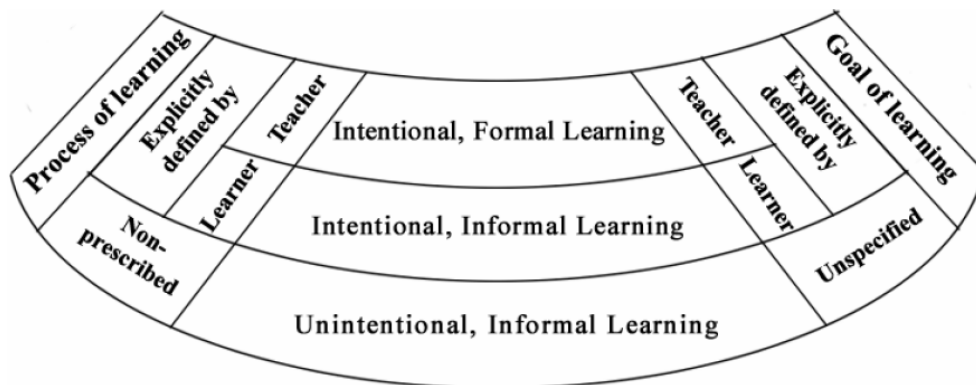


Table 2: Typology of learning based on the presence of, and control over, the object and process of learning (Vavoula, 2004).

Strategic knowledge serendipity brings about additional unintended benefits by allowing the accidentally discovered knowledge to “spill-over” between colleagues, groups and business units, stimulating creativity and building connections (Carayannis & Clark, 2011). Furthermore, Carayannis et al define the idea of strategic knowledge arbitrage – the ability to transform knowledge intended for a specific use into a form that is beneficial to a new application (by recombining knowledge assets). The authors are of the opinion that a firm’s top management can use smartphones to leverage both strategic knowledge arbitrage and serendipity (collectively termed SKARSE™) to become more visionary, creative, effective

and efficient leaders with elevated levels of integration and reach (Carayannis & Clark, 2011).

In Clough et al's survey of experienced mobile technology users, informal learning activities of the respondents were grouped together according to Patten et al's mobile learning functional framework (see Figure 3 further on) (Patten et al., 2006), (Clough et al., 2008). Clough appropriates Pattern's framework, dividing informal learning opportunities into 6 main sets of activities, ranging from data collection tasks through to geo-spatial actions using, for example, the GPS capabilities embedded in most smartphones. In this way, executives and managers can utilise the technology inherent in advanced mobile phones whilst 'on the go' (Clough et al., 2008), to kill 'dead-time', interact with contacts in their network, navigate more efficiently to meetings in unknown locations as well as construct, increase and share their own knowledge (Pritchard & Symon, 2010).

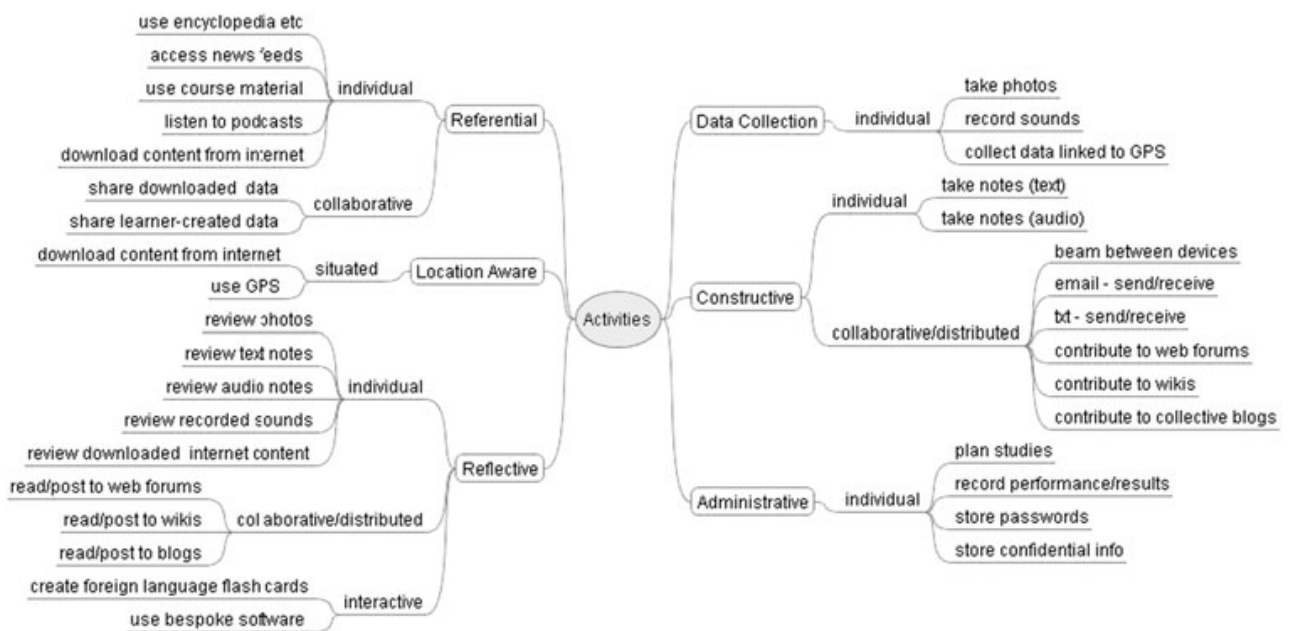


Figure 3: Mobile learning functional framework - adapted from (Patten et al., 2006) by (Clough et al., 2008)

2.4 Smartphones, mobile email and employee wellbeing

Despite all the positive aspects of the mobile revolution we are seeing in the workplace, some authors believe that Work Extending Technology (such as smartphones) is blurring the distinction between occupation and leisure (Spiegelman & Detsky, 2008). One study showed that 60% of office-workers went on holiday with their WET device, more than 50% of these answered work-related calls whilst on vacation, 63% of company executives were in contact with their workplace at least once per week and 26% kept in touch with their office daily (Law, 2007). Instant communication tools are leading to an “infringement of the work-life boundary”, with working hour norms rising as a result and families suffering from the absent-presence of spouses and parents “addicted” to mobile email (Spiegelman & Detsky, 2008), (Jarvenpaa & Lang, 2005). Extended ICT usage and a work-life imbalance is also associated with loss of sleep (Thomee et al., 2007), stress (R. S. Persson, 2001), depression (Rethinam & Ismail, 2008), relationship conflict (Kacmar, Mcknight, & George, 2006) and lowered productivity (Higgins & Duxbury, 2005)

Additionally, Spiegelman et al is of the opinion that the use of cellular phones has led to individuals becoming “invasive, impolite and disruptive” (Spiegelman & Detsky, 2008), something that Jarvenpaa et al refer to as the “engagement-disengagement” paradox (c.f. anti-social behaviour) (Jarvenpaa & Lang, 2005). Respondents of a survey conducted on the use of Work Extending Technology (WET) indicated that individuals view it as unacceptable to operate a BlackBerry device during a meeting, perceiving it as rude (Towers et al., 2005). To corroborate this evidence, a study of over 500 IT users in the States conducted by an enterprise solutions company, found that as many as 66% of employees will interrupt a meeting to communicate with others (see Figure 4 further on) (Harmon.ie, 2011), contributing to workplace incivility (Limpaphayom, 2011).

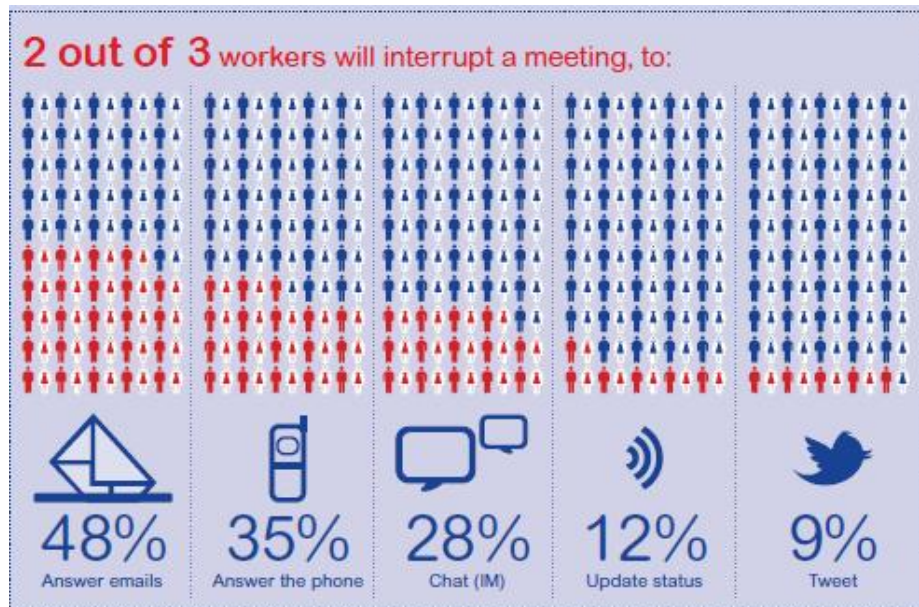


Figure 4: Reasons for interrupting a meeting – source: (Harmon.ie, 2011)

It seems that even in meetings, the urge to multi-task is gripping many employees, despite contradictory evidence as to the efficacy of such practices. Part of the reason people continue to juggle more than one activity at a time, is that many organisations expect potential candidates to be able to do so, with Spurduto & Associates (a psychological assessment company in the US) claiming that 75% of firms specifically look for this ability (multi-tasking) (Herman Miller Inc, 2007).

Another possible theory around why people are seemingly obsessed with being connected yet feel so ambivalent about doing so is due to job insecurity. Workers often feel the need to be “always available” (as if held by a “technological leash”) not to seem slack at work, even to the detriment of personal relationships (Kleinman, 2007), (Spiegelman & Detsky, 2008). This has led to workers feeling more stressed out, with a global survey indicating that out of 1,300 managers, one third suffered from adverse effects due to stress from information overload (Herman Miller Inc, 2007).

Another tech-related risk facing organisations is the possibility of poorer individual performance due to an inadequate task-technology fit, because of factors such as complexity (with the introduction of newer, more sophisticated smartphones, for example) (Karr-Wisniewski & Lu, 2010). Under cognitive load theory, the authors explain that after an initial beneficial spurt, users of tech devices experience diminishing marginal returns in

productivity, after which an optimal point is reached, when the addition of further system features start to overload the individual and detract from their performance (see Figure 5 below).

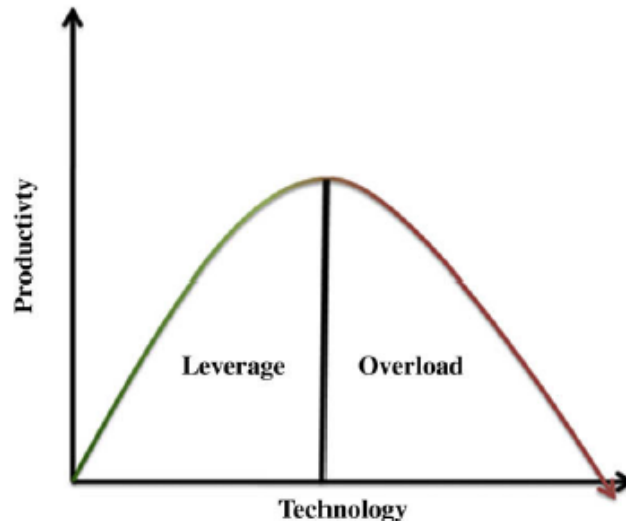


Figure 5: Technology overload and the law of diminishing marginal returns – source: (Karr-Wisniewski & Lu, 2010)

Lastly, some authors are concerned about the deterioration of social skills, and the miscommunication that non face-to-face dialogue can bring due to the absence of information-rich verbal (intonation etc) and bodily cues (Mazmanian et al., 2006). Kock’s “media naturalness theory” states that humans have evolved to accept face-to-face dialogue as the most natural and optimal form of communication, something which technologies such as BlackBerrys are endangering (Spiegelman & Detsky, 2008).

2.5 Acceptable Use Policies (AUPs) and managing technology

Some organisations in South Africa, have Acceptable User Policies such as blocking staff computers from access to certain internet websites, for instance, online mail (gmail, Yahoo etc) and gambling domains (e.g. the National Lottery). The arrival of smartphones, however, has enabled employees to circumvent these corporate rules, providing workers with unrestrained access to the World Wide Web, and the distractions it provides (*viz* cyberloafing and internet deviancy) (Rodger, 2009).

Some leaders of organisations have come up with operating policies governing the use of smartphones such as BlackBerrys in the office. One such person is Dick Fadden, Canada’s

former Deputy Minister of Immigration, who instituted a number of “BlackBerry rules” aimed at alleviating some of the stress related to work and technology.

These rules included:

- Instituting a Blackberry “blackout” between 19h00-07h00, as well as on weekends and during vacation
- Prohibiting the use of BlackBerrys during meetings
- Preventing meetings from being scheduled during lunchtime breaks

(Sweeny, 2009).

As a result, the amount of emails sent in the organisation (Department of Immigration) dropped substantially, relieving some of the pressures that staff felt whilst on duty (such as the expectation of having to instantly reply to mails that “always-on connectivity” brings). In addition to these measures, in order to combat the potentially damaging effects of WET, employers should be realistic about how much work employees can actually get done outside of normal business hours, and bosses should also train staff in how to better manage technology (Law, 2007).

Other authors, such as Towers et al, have highlighted official guidance in place at some firms regarding the use of Work Extending Technology (WET) such as smartphones.

This advice includes:

- Not using WET for personal reasons
- Adhering to official guidelines (although these are often unknown by employees)
- Avoiding pornography
- Following Internet policy
- Repaying personal long distance calls (Towers et al., 2005).

On a final note, it is important to mention the potential pitfalls of an increasing web presence, and the storage of the bulk of one’s personal and work related documents on the internet. Tech-terrorism from hackers and competitors is a real threat to individuals and firms (Pepper,

2007) concerned about the risks of identity theft and intellectual property/sensitive information being stolen (Mulani, 2010). These very real technology related problems could lead to personal safety concerns, as well as financial loss through fraud and client litigation (Genova, 2010), (Hogben & Marnix Dekker, 2010). This last point again emphasises the need for both employees and firms to strongly look at IT related security measures and consider adopting prudent AUP for both personal and organisational protection.

2.6 Conclusion

From the literature review above, it is clear that advancements in technology such as the introduction of the smartphone bring with it both advantages and disadvantages to users in terms of performance and wellbeing (and hence a firm's fortunes). This has led some authors to believe that the problem is not with technology, but rather how we have allowed it to take over our lives. An organisation called "Take Back Your Time" has noted that fewer workers are taking vacations in the US, causing relationship rifts and health problems (Seven, 2004), (Towers et al., 2006). Paradoxically, economist Daniel Hamermesh, from the University of Texas, found that more affluent workers experienced greater time poverty. The reason for this finding is that as people become wealthier, their opportunities and expectations increase, whilst time, which is limited, seems to be in increasingly short supply, by comparison (Hamermesh & Lee, 2003). Whilst technology has allowed workers to be productive, this has often been at the expense of leisure time, leading to a heightened feeling of time-poverty (Towers et al., 2005).

Lundberg, a labour economist from the University of Washington, also blames the technology user, rather than the technology, stating that in the end, every individual has a choice about how they spend their time, and that these choices reflect a person's values (Seven, 2004). This view is shared by Russell et al who conducted a study on strategies dealing with email interruptions and found that under Action Regulation Theory (ART), many people have developed techniques to prevent emails from serving as a distraction, including ignoring message notifications when facing a deadline (32% of respondents)(Russell, Purvis, & Banks, 2007). Supporting the above view, Kleinman is not of the opinion that technology causes people to take on more tasks and work at a faster rate, but rather that it enables one to do so (Kleinman, 2007).

Thus, in dealing with the conflict and tensions that computer-human interactions will inevitably bring (Jarvenpaa & Lang, 2005), it is up to organisations to put into place AUPs to protect corporate information as well as their most important assets, their people – failing this, individuals should realise that BlackBerrys and other smartphones (useful as they may be) are just tools, that in the end should be controlled by the user, rather than *vice versa*.

3. Research methodology

3.1 Research approach and strategy

An inductive research approach was used for this thesis, incorporating a qualitative research strategy. This approach was chosen because the purpose of the investigation is exploratory, and an inductive research method lends itself to emergent theory (John W. Creswell, 2003), thereby satisfying the curiosity of the researcher (Carayannis & Clark, 2011). Qualitative research is also useful for finding out more information about a complex topic (Baxter & Jack, 2008), allowing for proposition gathering, “bottom-up” theme generation (J.W. Creswell, 2007) and the development of theory/insights (John W. Creswell, 2003). Additionally, since this dissertation seeks to describe and/or evaluate people’s perceptions (good and bad) of the usage of a specific technology (smartphones), a qualitative strategy is well suited to reveal and judge the nature and efficacy of the Computer-Human Interaction (CHI) studied in this report (Leedy & Ormrod, 2001).

An assumption underlying qualitative research is that this approach can be used to objectively study human events, which may not be possible given that the researcher acts as the “instrument” and has to interpret the findings (Leedy & Ormrod, 2001). Qualitative research aims to examine the perspectives of various individuals/processes/phenomena in their natural settings (e.g. homes, workplace) (J.W. Creswell, 2007) through the lens of the researcher. By adopting a constructivist epistemological approach such as this, the study of complex phenomena such as people’s perceptions can be achieved (Leedy & Ormrod, 2001).

3.2 Research design, data collection methods and research instruments

A phenomenological research design was followed, in which an attempt was made to grasp people’s perceptions, understandings and perspectives of a specific situation (Leedy & Ormrod, 2001), i.e. in this case, smartphone use. With phenomenological research, comprehension of the “lived experience” is strived for, with the procedure involving the

study of a small number of subjects in an in-depth manner (John W. Creswell, 2003). Typically, phenomenological researchers depend almost entirely on lengthy interviews (between 1 and 2 hours in duration) with a carefully picked sample of participants (usually 5 or more people) (Leedy & Ormrod, 2001). According to Leedy et al, the final result of a phenomenological research design is a “*general description of the phenomenon, as seen through the eyes of the people who have experienced it firsthand*” (Leedy & Ormrod, 2001). This research design is thus well suited to the central question of this thesis, which aims to explore people’s perceptions of smartphone use.

The data for this qualitative analysis was derived from interviews consisting of largely open-ended questions (see Appendix A: Proposed interview template), during which the interviewer possessed a “hidden agenda” (a list of topics that he/she expected to cover in the interview unbeknownst to the interviewee) (Oppenheim, 2001). This enabled the researcher to explore a concept or problem without creating bias in the interview whilst allowing new ideas to possibly emerge organically from the interrogation.

Other possible designs for tackling this research were investigated, such as following a mixed method approach. A mixed method framework involves combining both qualitative and quantitative methods in the data collection and analysis stages. Specifically, a sequential transformative strategy was initially considered wherein a theoretical perspective is used to guide the research, whilst an initial qualitative study is used to corroborate the academic framework and inform a subsequent quantitative analysis (John W. Creswell, 2003). Typically, this two-prong approach is useful when the researcher is attempting to inform or provide support for initial theories (Leedy & Ormrod, 2001). Hypotheses are then typically drawn up based on the qualitative data gathered from the pilot phase in conjunction with the findings of the literature review (forming the theoretical perspective) (John W. Creswell, 2003). Beurer-Zuellig et al adopted such an approach in their research on smartphones, following up a qualitative pilot case study with a quantitative analysis using an online questionnaire (Beurer-Zuellig & Meckel, 2008).

One of the reasons why an approach following Beurer-Zuellig’s mixed method study on smartphone use was not carried out was because the survey instruments for her study were not been made freely available (even after contacting the authors), making replication difficult. Additionally, given that the purpose of the intended research was to explore a

relatively unknown topic rather than to make any theoretical deductions, a qualitative research approach was seen as more appropriate instead. Finally, due to the limited time in which to carry out the research, it was decided that favouring one data analysis method (e.g. qualitative) over a mixed method approach was more realistic.

3.3 Sampling

A purposive sampling technique was used whereby participants were chosen in order to fulfil the researcher's objective (Leedy & Ormrod, 2001). Purposive sampling is very similar to an elite interviewing method in which respondents are handpicked according to how applicable the candidates' insights are assumed to be for the study (Aberbach & Rockman, 2008). In this case, since the research deals with senior level knowledge workers' perceptions of smartphones, the sample selection criteria was *senior managers who have used a smartphone for at least 1 year*. The rationale for choosing such a sampling approach over, say random sampling for example, is that the researcher seeks to avoid expending unnecessary resources collecting data from non-qualifying participants (i.e. people who would not be able to contribute to answering the central research question).

The sampling frame consisted of four main sources:

- Personal networks (past colleagues, friends, family contacts, lecturer acquaintances)
- Alumni of the GSB
- Referrals from the above respondents (lead generation)
- Cold calls

Interviews involving respondents from small, medium and large corporations were held, so as to be potentially draw comparisons and insights between findings versus the variable "firm size", and to allow for generalisation of results.

Candidates were selected from companies of varying size (based on revenue brackets and number of employees) as per similar studies conducted on smartphones (Carayannis & Clark, 2011), and key interviewees were identified according to rank in the company (senior level management).

In order to secure the required number of interviews, an email to potential respondents was carefully crafted, detailing the purpose of the study, and sent to each candidate prior to the interview. As an incentive to taking part in the research, the researcher offered to send some participants the report abstract afterwards, as a gesture of gratitude. As Oppenheim states in his book on interviewing, a number of factors play a role in increasing response rates, including:

- providing advanced warning
- explaining selection criteria
- ensuring confidentiality
- sending reminders to participate
- guaranteeing anonymity
- creating rapport with respondents during the interview, and
- making sure the topic is of interest to the selected candidate (Oppenheim, 2001).

In the case of this research, all of the above tactics were employed to successfully secure interviews, and (as a result) the researcher enjoyed an extremely high positive response rate.

3.4 Segmentation

Thirteen interview candidates were chosen from a wide range of firm size, including small companies (one of which was a sole-proprietor, another the holding company for a conglomerate), medium-sized organisations (one of which was a newly formed division of a corporate), through to large corporates.

These 13 interviewees were selected in such a way that they would be spread as evenly as possible across the three categories of company size; namely small, medium and large. The criteria used to define the magnitude of a firm included a combination of: number of employees, and turnover (where given).

Firm size	Turnover (x)	Number of staff (y)
Small	$x < R20m$	$y < 50$
Medium	$R100m < x < R1bn$	$50 < y < 500$
Large	$x > R1bn$	$y > 1000$

Table 3: Segmentation of interviewees

Interestingly, there seemed to be no real differences in terms of the perceived impact of SP use on the performance of senior managers when firm size was taken into account. A reason for this finding could be that the segmentation methods for deciding on what constitutes small, medium or large firms could have been too broad or simply that such a clustering is arbitrary (i.e. it does not affect how people view SP use).

3.5 Profile of the candidates

The candidates chosen for the interviews were spread across various industries/professions, including telecoms (x2), consulting (x1), health and beauty (x1), mobile payments (x1), coaching (x1), banking (x3 people, 2 firms), investments/conglomerate (x1), doctor/social entrepreneur (x1), e-commerce/group buying (x1) and food (x1).

Most of the interviewees were male, with 3 females having been interviewed. Respondents ranged from 28 to 57 years of age, in order to achieve a wide spread in terms of life-stage.

Of the 13 subjects, 5 are either CEOs/owners of businesses, 6 are executives, 1 is a senior manager and another is a middle manager at a bank but also runs her own coaching practice (hence her inclusion).

Initially the study was to focus on middle **and** senior managers (in a bid to secure a sufficient number of respondents), but after scheduling the interviews, the researcher obtained access to enough higher level employees (e.g. a business owners, executives, senior managers) to narrow the scope of the research to only senior managers.

3.6 Data analysis methods

The qualitative data was analysed using the following 4 step phenomenological analysis method:

1. Identification of statements that relate to the topic (analysing the interview transcripts, separating relevant from irrelevant information, and then segmenting what is kept into smaller, specific thought buckets)
2. Grouping statements into “meaning units” (categorising the segments to reflect various meanings)
3. Seeking divergent perspectives (considering the various angles in which different people experience the phenomenon), and
4. Constructing a composite (the researcher uses the multiple meanings discovered to develop an overall description of the phenomenon as respondents typically experience it) (Leedy & Ormrod, 2001)

This is very similar to Creswell’s data analysis spiral whereby raw data is organised, perused, classified and synthesised before the final report is created (Leedy & Ormrod, 2001) or Schilling’s qualitative content analysis spiral (see Figure 6 further on) (Schilling, 2006).

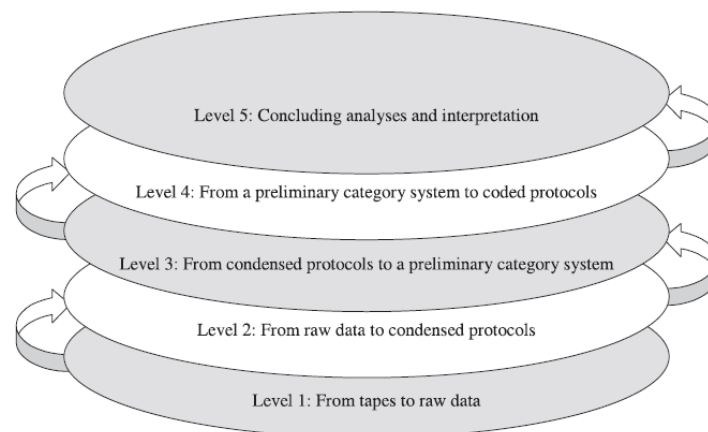


Figure 6: The qualitative content analysis spiral (Schilling, 2006)

Other data analysis methods were also investigated, when the idea of using mixed methods was entertained, for example. Specifically, in analysing the data from a sequential transformative design perspective, the findings from the initial qualitative exploratory research would have been used, in conjunction with theory derived from the literature, to

develop hypotheses that would have been tested against the results of a questionnaire. The output from the survey would then have been analysed quantitatively as per Beurer-Zuellig's study on smartphone usage (Beurer-Zuellig & Meckel, 2008).

In the end, Leedy et al's 4-step phenomenological data analysis method was chosen, as it is the technique most relevant to analysing the qualitative data of this project, given the fact that the research question revolves around the phenomenon of smartphone use in the workplace (and people's perceptions thereof).

3.6.1 Qualitative data coding

Honing in on the qualitative data analysis procedure used in this thesis, in order to achieve the 4 step phenomenological approach described by Leedy et al above, it is useful to think of the gathering and sorting process as encompassed by the concept of "coding".

Taylor and Gibbs relate how qualitative data analysis is performed on 4 main coding levels, beginning with level 1 coding, progressing to level 3, before ending with the last stage, namely defining theoretical concepts that emerge from the categories (see apex of the pyramid further on in Figure 7) (C. Taylor & Gibbs, 2010).

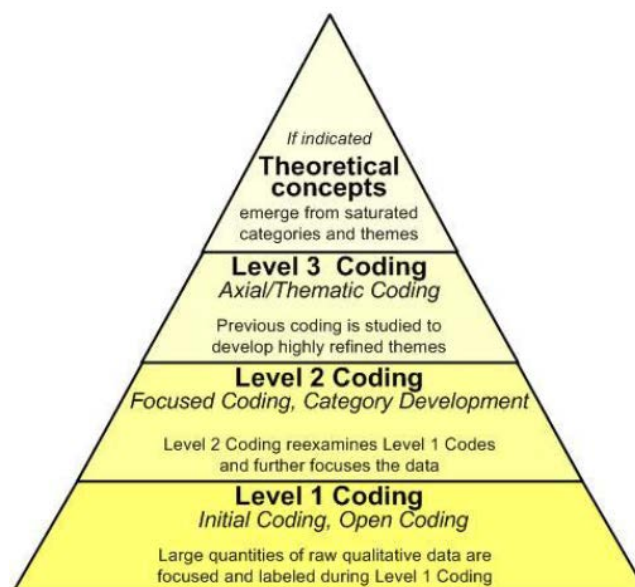


Figure 7: Qualitative data coding - Source: (C. Taylor & Gibbs, 2010)

3.6.1.1 Level 1 coding

In the research, level 1 coding involved personally transcribing each of the 13 audio interviews by hand. Whilst time-consuming, transcribing the interviews oneself allowed the researcher to become familiar with their content. The transcripts were then read a second time, in order to correct grammatical and spelling errors, as well as make brief comments on the transcripts (digitally). The transcripts were then printed out and fixed to a wall where they could be analysed in a first-pass, using a scrutiny-based technique. Whilst more labour-intensive than other methods (such as relying only on computerised keyword counts) and requiring attention to detail, this technique allowed for a more nuanced revelation of themes to emerge from the data (Ryan & Bernard, 2003).

Whenever a relevant proposition was discovered, it was written on a post-it note and stuck on a wall in an unmarked column of its own. This process was followed for each interview transcript. Specific post-it colours were chosen to correspond to the 3 categories of respondent, namely whether the interviewee was from a small, medium or large firm. Finally, the extracted data was grouped according to several categories that were fairly granular / specific (in line with design thinking and initially fighting the urge to converge).

3.6.1.2 Level 2 coding

This stage involved re-examining the level 1 codes in order to further focus them. This was achieved by taking the rough categories formed in the first stage, and re-arranging them (amalgamating two or more very similar themes; separating incorrect data groupings; side-lining minority or divergent themes, and removing irrelevant ones).

This technique was repeated until theme saturation was reached, with no new categories emerging. In this stage, the number of themes was reduced to 17, with 3 additional side themes.

3.6.1.3 Level 3 coding

Following an iterative approach, the themes derived from the previous coding phase were studied in detail, and a hierarchical or tree coding technique was then used to extract major codes from the 17 categories, with the remaining groupings sorted into sub-codes that cascaded down into branches that were in some way related to their parent (C. Taylor &

Gibbs, 2010). This refining process resulted in the emergence of 9 final themes, and their related sub-categories.

3.6.1.4 Creation of theoretical concepts

Taylor et al indicate that the last stage of qualitative analysis involves the development of a conceptual schema that is derived from the data. In their words, the schema “*answers the research question, is coherent, and goes beyond the obvious*” (C. Taylor & Gibbs, 2010). This stage typically involves organising themes into metaphors, an acronym or interesting narrative that will help to achieve some originality in terms of academic contribution to the field.

In the case of this thesis, the final themes (and their sub-categories) were grouped under 6 paradoxical pairs of concepts that formed the basis of the schema (termed the “wheel of SP paradoxes”) and research findings. These pairs included the efficient/inefficient, balance/imbalance, safe/unsafe, connection/disconnection, informed/uninformed and multi-functional/dysfunctional paradoxes, a few of which are encompassed in Jarvenpaa et al’s study on the paradoxes of mobile technology (Jarvenpaa & Lang, 2005).

3.7 Research criteria: validity, reliability and limitations

To ensure validity of the questionnaire, the original questions were sent to the thesis supervisor and co-supervisor for sense-checking and comment. In addition, the questionnaire was tweaked after the first interview, to see what questions produced relevant answers and which did not, as well as to gauge the number of questions one could cover in an hour.

To ensure that these initial adjustments to the questionnaire did not impair the integrity of the data collected, three extra interviews were conducted (beyond the targeted 10) for reliability. This ensured that the research approach possessed an extra level of rigour.

In terms of limitations, the findings of this research will be subject to the time at which the investigation is carried out, as well as the context in which it is placed. Considering the fact that technology advancements occur fairly rapidly, it may be difficult to compare the findings of a similar study replicated at a later stage.

4. Research findings, analysis and discussion

4.1 Introduction

This thesis has essentially been a techno-social study, trying to understand how smartphone (SP) technology impacts people, specifically with regards to the performance of senior managers in South African firms. From the literature study, it can be seen that the term “performance” encompasses a broad range of concepts, two of which include “productivity” and “wellbeing”.

For a firm to do well its employees need to perform, and one of the metrics of performance is productivity (Drucker, 1999). However, for an employee to remain productive (efficient, effective) on a sustained basis, it is necessary for him/her to maintain a sense of wellbeing (health, happiness, balance, effective stress management) (Engelbrecht, 2007), (Mohanta et al., 2006). What follows is a revelation of the main findings of the thesis and an associated discussion on its relevance to the research question at hand.

4.2 Research findings

From a deep engagement with the interview material it became clear that many of the respondents exhibit mixed feelings when asked about their SP use, with possible implications for individual productivity and wellbeing, and ultimately one’s ability to perform optimally. For example, when asked to describe their attitude towards technology and SPs in particular, some respondents would reply that that they “*love technology, hate technology*”, saying that whilst it helped them use their time more productively (e.g. by allowing them to work whilst away from the office) it would sometimes let them down (e.g. poor reception, short battery life, etc).

Another stated that whilst the SP has undeniably made him more productive and allowed him to run a multi-hat life (respondent is a doctor, social entrepreneur and lecturer), he found that he has become addicted to the device (referring to himself as a “Crackberry” addict, due to his over-reliance on his BB), and worried about the potential adverse health implications associated with extended device usage.

In terms of the ability to be connected 24/7, interviewees described it as being “*cool on the one hand, not cool on the other*”, or “*two sides of the same coin*”, in that they enjoyed being

able to monitor what is going on around them, stay on top of things and connect with loved ones, but the constant connectivity also served as a distraction, making it “*very difficult to switch off*” (intruding on one’s privacy). Yet another respondent bemoaned the fact that he is not able to connect with his family as everyone is too busy connecting with their SP.

Ironically, people often acknowledge how the SP has helped them to free up time and yet made their life busier as the self-same device allows them to plan more activities to fill these freed up timeslots. Another interviewee describes how the SP allows him to keep a balanced lifestyle which helps to prevent burnout, but later he goes on to explain how he never gets any timeout in his busy schedule to just be, and he states that “*probably the SP is half the problem with that...*”.

On being asked what a day in the life without one’s SP would be like, further incongruous statements were uncovered, such as “*it would be both good and bad*”, “*it’s the two ends of the spectrum*”, or one would feel “*blissful*” yet “*lost*”. On weekends, participants would find the experience of being without their SPs fantastic, as it would make them feel liberated and less stressed, but at the same time it would make people frustrated and less efficient during work hours (being unable to multitask), causing the business to slow down. Ironically too, for some participants, whilst going “smartphone-free” for a day would be desirable on the one hand (due to fewer interruptions), it would also make respondents worry about kids and family should the latter need to contact them in an emergency.

A further participant describes going SP free for a day as “*actually quite nice*”, but that whenever it’s happened, it has made her feel out of control (as she didn’t know what was going to come through) and guilty if she had to leave the office early or get into work a bit later (due to family commitments or admin errands).

Answers to the question “what life would be like without a SP” revealed enigmatic statements such as “*life would be less rich, and surprisingly more, depending on how you view it*”, further indicating how even people completely bullish on smart technology (the respondent is the founder and CEO of a mobile wallet company) are left pondering the true merits of the device.

One respondent describes the SP as a reluctant necessity (as he uses twitter on it to give his foods business a professional voice), describing his own hypocrisy at how he feels the need to share himself and his experiences via the social networking platform and conversely how he hates it when other people do the same. Linked to this idea of connecting with others, a further candidate relayed the experience of how instant chat (such as Whatsapp) and social media applications (such as Facebook) on one's SP gives one a false sense of engaging with the outside world, but later goes on to state how they have also allowed him to keep in touch with more acquaintances than ever before.

As can be seen from the above statements, various paradoxes associated with the use of SP technology have emerged during this thesis (as in Jarvenpaa et al's study on mobile technology) (Jarvenpaa & Lang, 2005). These paradoxes have been coded into 12 main themes or six "paradoxical pairs", as each category has an antithetical partner (see Figure 1: SP wheel of paradoxes further on).

The 6 paradoxical pairs related to SP use are (proceeding clockwise from 9 'o clock on the wheel):

1. Efficient/inefficient
2. Balance/imbalance
3. Safe/unsafe
4. Connection/disconnection
5. Informed/uninformed
6. Multi-functional/dysfunctional

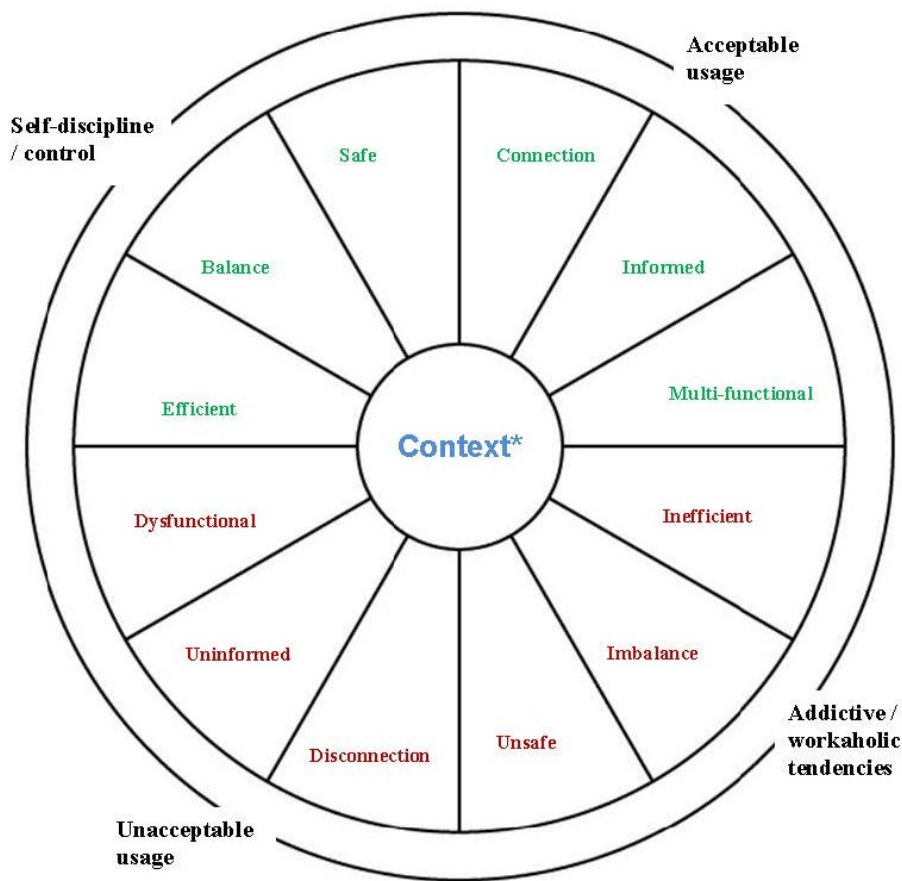


Figure 8: SP wheel of paradoxes

On the constructive side, the SP can help one harness the benefits that the tool has to offer (i.e. the positive themes, highlighted in green on the wheel), especially if used correctly (i.e. with self-discipline and control). These benefits (perceived or real) include increasing one's productivity, maintaining a work-life balance, aiding one during emergencies, helping employees communicate effectively, keeping workers up to date with news/events, and providing people with a host of useful tools, such as mobile email, cameras etc, all of which help to improve the performance of an individual in their daily (especially work) lives.

On the destructive side, the device can lead to a number of potentially undesirable outcomes (i.e. such as those negative concepts highlighted in red on the wheel), especially (but not exclusively) if used inappropriately (i.e. by people who have workaholic or addictive tendencies). These adverse consequences may include causing interruptions at work, extending work hours (creating addiction), endangering one's health/other's lives, creating a fear of missing out (FOMO), and letting one down (lack of reliability/robustness).

Additionally, what constitutes acceptable or unacceptable use is often influenced by the context in which the SP is used (as in Jarvenpaa et al's study) (Jarvenpaa & Lang, 2005), and for that, one has to ask 6 questions:

- Who from:

Who the communication comes from will often determine whether the interaction/message is useful or important. For example, if one's boss sends one an email via BlackBerry (BB) after hours, this may be viewed as acceptable, whereas a BlackBerry Message (BBM) from a vague acquaintance may not be.

- Who for:

For a working mother, receiving emails after hours via one's SP might be totally acceptable usage for her as it may allow her to juggle a career and looking after her children, whereas for a busy consultant who works across time zones, receiving work instructions/documents etc on the weekend via one's SP may lead to burnout.

- Why, what:

The intentionality/relevance behind the SP use and whether it is for social, personal or work related purposes will also partly determine whether the usage is appropriate or not. For example, accessing the net from one's mobile during a meeting to resolve a dispute or clarify a point might add value, whilst checking one's Facebook profile during the same gathering will probably detract from proceedings.

- When:

Using one's SP to send an instant message (IM) to someone whilst driving is certainly viewed by most as inappropriate, whereas sending someone an IM whilst sitting in an airport lounge awaiting a flight is generally acceptable.

- How:

Answering a call/checking an email at a social gathering midway through having a conversation with someone might be considered rude, whereas excusing oneself first or waiting for a lull in the dialogue might be viewed in a more favourable light.

One can thus see that, as one respondent sagaciously stated, “*everything is circumstance dependent – there are no absolutes with technology.*” This cannot be closer to the truth than when looking at SP use and its perceived impact on people’s lives – what one person finds irritating in one context, may be acceptable in another; many situations are nuanced when it comes to the use of SPs and the utility thereof. The idea of hypocrisy also crops up quite often whereby people mention habits of SP use that annoy them or that they view as unacceptable, only to admit that they themselves are culprits of similar behaviour at times.

As an aside, what is important to note also is that people do not often differentiate between the term cellphone and SP, which raises the question as to whether people are talking about the utility derived specifically from functionality only found in SP devices or whether they are talking about basic functions (such as call and SMS) that are found in most standard feature set mobile phones. Insofar as the “normal” functions of a SP are inalienable from the device itself, it is the researcher’s opinion that the responses around the perceived utility/hindrance of such technological artifacts are still valid in addressing the research question, as great care was taken to ensure that each respondent is using a SP (and has been doing so for at least the past 12 months).

4.3 Analysis and discussion of research findings/key themes

The major overarching theme that emerged from the analysis of the transcripts was that of the “always-on connectivity” of SP technology. This brought with it a sense of being able to access news, information and email very quickly, thus allowing speedier decision making. At the same time it seemed to blur the lines between the business world and the home environment, which some found beneficial (including both working mothers as well as two entrepreneurs), and others found quite disruptive. Almost everyone sees the merit in having constant, immediate access to the internet and contacts, yet similarly many find it to be a double edged sword in which privacy and personal time suffers as a result. What the always

on connectivity has undeniably done is increase the time users spend on the SP devices, with some interesting consequences.

In terms of the 6 paradoxical pairs and the relative strength of the themes, the following table (Table 4) gives a count of how many poignant propositions were lifted out of the transcripts and subsequently written on post-its⁷.

Positive theme	Proposition Tally	Negative theme	Proposition Tally	Total
Balance	32	Imbalance	87	119
Connection	44	Disconnection	47	91
Functional	34	Dysfunctional	53	87
Efficient	39	Inefficient	5	44
Informed	26	Uninformed	8	34
Safe	15	Unsafe	16	31

Table 4: Heatmap of themes

From Table 1 above, it can be seen that the paradox of the SP creating balance/imbalance in one's life is fairly weighty, with most respondents viewing the device as something which disturbs the equilibrium between work and play (bar people such as working mothers and people with multiple careers). Under the **imbalance** theme falls the *extension of one's body/addiction* (25 propositions), *increased expectation to respond* (24), *extension of work hours* (20), and *blurring of the work/life boundary (undesirable)* (18). Under the category of **balance**, appear the concepts of *mobile office* (20), *enabling multiple roles* (7), and *blurring of the work/life boundary (desirable)* (5).

Additionally, one of the most frequently highlighted and evenly balanced paradoxical pairs is that of connection/disconnection, especially with regards to meetings (in negative instances), and bringing family/friends/colleagues closer together (in terms of the positive aspect).

Under the multi-functional/dysfunctional paradox, whilst the utility (e.g. email, calendar, camera, calendar etc) of the SP undeniably shone through (with 34 propositions), the

⁷ Note, sometimes the same respondent mentioned a particular theme on multiple occasions thus potentially skewing some results, so this is purely a representation of which comments were particularly salient and warranted recording (in the researcher's eyes)

device/technology is not without its flaws (53 propositions), with gripes about battery life, screen sizes and unreliable software/connections rife (warranting the second most commonly mentioned theme).

With respects to the efficiency/inefficiency paradox, most respondents seem overwhelmingly positive as to the efficiency gains that SPs help deliver, in terms of speeding up decision making and response times and providing one the ability to multi-task. The reason why the **inefficiency** theme seems relatively small (in comparison to its partner, the **efficiency** category), is that the researcher had to decide where to group propositions related to meeting disruptions. In the end it was decided to put these statements under the **disconnection** classification, but some examples contained in that section speak to inefficiency due to SP use and interruptions in meetings (e.g. having to reschedule meetings, repeat things during them or have lengthier ones). Thus the **inefficiency** theme is more significant than the heatmap would suggest.

In terms of the informed/uninformed paradox, there was a clear “leader” between the two, with most participants suggesting that the SP undoubtedly helped them to stay **informed**. Where the **uninformed** aspect of the paradox came in was the surprise finding of the concept of the Fear of Missing Out (FOMO), with people expressing anxiety at not continuously knowing what was going on around them, whether it be in connection with events or knowing where one’s loved ones are. This concept was viewed by many as very much a modern day concern that is manifesting itself in society, and which the SP has exacerbated. The inclusion of this sub-theme was thus done on the basis of its novelty/interest factor.

Lastly, the safe/unsafe paradox was fairly balanced, with as many people saying that SPs helped them out of tricky situations and emergencies (i.e. made them feel safer) as people who said that using the device was hazardous to one’s health (driving whilst texting, developing brain cancers) or dangerous for others (kids, cyclists), i.e. **unsafe**.

As a supplement to tallying up the number of propositions that fell under various themes, qualitative encoding software (QSR Nvivo 9) was used to cross-analyse the 13 interviews and

form a word frequency list. The results were filtered to remove irrelevant words (such as “also”, “the”, “you” etc) and plotted in a tag cloud diagram⁸.

Although a primitive form of analysis (and subject to the manual filtering process), what one can clearly see from the tag cloud diagram (Figure 1 further on) is that the term “phoning” (including “phone”, and “phoned”) is the most commonly used word, followed by SP (smartphone), email, BB (BlackBerry), meetings, calls and connectivity.



Figure 9: Tag cloud of frequently mentioned words

From this crude investigation, one can see that whilst the SP is capable of many advanced functions, one of the most frequently referred to (and by extrapolation, used) ability of the device is its primary function, namely the ability to make voice calls. This finding probably speaks to people’s need/desire for direct communication (i.e. verbal, if not in-person), which is still often considered more complete/rich than written text, or the relatively high costs of mobile broadband in this country.

⁸ Note, the words in the diagram include extensions, i.e. “phoning” (the largest tag) represents the word “phone” and “phoned” as well

Additionally, email has become synonymous with SPs, hence the frequent referral to BBs. Part of the reason for the frequent referral to the term “email” might be due to the fact that email has become a dominate mode of communication in the workplace for many as well as a large portion of what people spend their time on.

Further substantiating the claim that for many respondents, the disconnection theme was quite important, is the fact that the term “meeting” (including meet, meetings) appeared so often. The reason for this is that smart technology (such as SPs) is potentially the most disruptive force in meetings for organisations today, especially due to their pervasiveness. Additionally, given the fact that these devices are getting progressively advanced over time (and that smart technology such as tablets/iPads are also flooding the market), the increased functionality is merely providing people with more avenues for distraction.

The next few sections will deal with the findings as highlighted in the “SP wheel of paradoxes” diagram (Figure 1) earlier on, analysing and discussing them in greater detail with regards to the central thesis question on SP use and the perceived impact it has on the performance of senior managers in South African firms.

4.3.1 Balance/Imbalance

Mobile office

SPs have allowed workers to be mobile, giving people extra flexibility during the day by enabling them to work from home or whilst on the move, “*almost like having your office with you*” (as one person stated). People speak of the mobile, virtual office, being able to perform tasks whilst away from their desks (like approving leave etc), making payments from their couch, reading and editing documents whilst in meetings, or providing the convenience of checking email after breakfast “*with their feet up*”.

One banker, when asked how he would feel without his SP, responded saying, “*When that happens it’s been very frustrating because you’re tethered to the desk, it’s difficult to get away*”. Another spoke of how the mobility of the SP has made him more productive as he is juggling multiple careers and spends over 50% of the time on the road.

This idea of being trapped in the office was highlighted by another respondent,

“A few years ago the power that you have on your phone today was not imaginable...you were tied to a desk to perhaps type an email or access some figure or something like that, but today I could be anywhere...”

Anywhere could include being in transit on a plane or train, where employees are able to connect to the server via their SPs and work in-between meetings. Additionally, one participant (a self-employed personal coach) spoke about how enabling roaming on her BB device meant that she was able to receive and respond to two opportunities she received on her SP via emails whilst on holiday, stating that without the device she would not have been able to capitalise on these new client leads. The SP thus allows operational staff to be efficient, even whilst travelling, by virtue of the always on connectivity, whilst allowing entrepreneurs to seize opportunities as they arise. The enhanced productivity that the SP affords users by allowing them to work whilst being mobile is supported in the literature (Beishon et al., 2008), (Carayannis & Clark, 2011).

For one participant, the week in which her company’s BB enterprise server went down was a “*nightmare*”, as it forced this “road warrior” and mother to go into the office each morning before she did her rounds (travelling from one branch to the other), making her less efficient and ruining her work schedule. Similarly, another working mother spoke about how the SP has allowed her the flexibility to be pick up emails whilst attending occasions such as her teenage son’s school assembly, describing the ability as a “*Godsend*” and preventing her from needing to book a half day’s leave off work. Thus the idea of the SP enabling one to take on multiple roles, or balance multiple responsibilities is a strong one, and clearly one of the advantages of the device in terms of being able to simplify and coordinate a busy schedule whilst remaining productive (Mefford, 2009), (Karr-Wisniewski & Lu, 2010). This may be linked to studies that show that IT solutions in general can help to improve the productivity of workers in corporations, provided the technology assists in streamlining business processes (Towers et al., 2006).

Blurring the work-life boundary

For some people, the always-on/always connected aspect of SPs makes it difficult to separate work from personal matters, blurring the line between the two. One respondent relates how he used to switch the data connectivity of his SP off on weekends so that he wouldn't receive any work related emails, but then found that he was unable to stay in contact with friends and family via BBM. Another respondent referred to the SP as being "*part of the family now*", alluding to the point that SPs are used by his spouse and most of his relatives, and on a regular, everyday basis.

Still others describe their SPs as invasive, infringing on the work-life boundary. As one person mentioned:

"...certainly my wife's perceptions of my SP use as the extension of work gets taken home by the BB is more negative, because it starts to intrude on family life and other things, and so one has to start to develop some discipline and your own boundaries..."

For this reason, many people choose to have two phones, to make the distinction between business and private life more clearly defined. One respondent mentioned how the SP and being constantly on it (mainly in terms of social media platforms like twitter) has raised stress levels a bit at home, and negatively impacted on his marriage, to a degree, although he admits that both he and his spouse are guilty in this regard. This ties in with the literature which states that the constant connectivity of technology such as SPs contributes to family friction (Cameron & Webster, 2005) and conflict (Daantje & Arnold, 2010). In addition, tension at home affects one's ability to concentrate at work, potentially impairing performance (Herman Miller Inc, 2007).

A further respondent refers to a trend she has noticed amongst her male counterparts at the bank in which she heads up their coaching, mentoring and talent development unit for Africa:

"It's interesting because you get a lot of people, and it's mostly the men, who say no, with my BB, I'm never off duty, I'm permanently working, it throws my work-life balance and it causes issues with my family..."

In her opinion, this finding was due to a one-upmanship culture which had developed at the bank in which people tried to show off how hard they were working.

“...one of my friends, who has a senior position within risk, found that there was a growing expectation that he would be answering emails 10, 11 o’ clock at night because everybody had BB and it almost became an ego driven competition [to see] who can reply to the email first and who can be sending emails the latest at night or the earliest in the morning.”

Even more interesting was the fact that, in her opinion, the respondent (as well as another) experienced the exact opposite to be true for herself. She found that, as a working mother, using the SP has actually freed her from having to be at the office, enabling her to be efficient and effective as a worker whilst combining that with being a mother. This ability for SPs to contribute positively towards work-life balance is also documented by some authors (González & Mark, 2004), although conflicting perspectives on the topic do emerge from this and other papers (Beishon et al., 2008). The ability for working parents to balance family commitments has implications for personal happiness, which could lead to a more motivated, more productive employee (Kacmar et al., 2006).

Whilst the blurring of the work-life boundary may work for some, others did acknowledge that they can see it working badly for people with workaholic tendencies and who are never able to switch off. This last observation was highlighted by another banking executive, who mentioned that on holidays he has never been able to switch off his SP entirely. Similar sentiments were expressed by a consultant who complained how SPs were intrusive over weekends, and led to him turning off his email functionality over these periods. There is thus a real feeling that the device can disrupt one’s work-life balance, potentially leading to employees feeling jaded or harassed, with possible implications for worker morale and performance (Middleton, 2008).

The extension of work hours

According to one respondent, SP technology has enabled operations to run continuously, both day and night:

“...it’s made operations very 24/7...you’re always in contact, if you dare turn on your email at 9 at night it’s your own problem because you’re going to land up sitting on until 10, depending on what kind of person you are, if you’re say a workaholic...it has made operations more efficiency driven.”

SP instant communication and always-on connectivity has allowed operations staff to excel at their role, to become “*a superman at operations*”, but for individuals with workaholic tendencies, it means they never have to switch off. Being always contactable and connected means one may fall victim to working longer and harder, potentially leading to burnout and lowered productivity.

For some (e.g. the CEO of a group buying e-commerce site), being constantly connected via one’s SP is the *status quo* in business, and is tied to the “*nature of our business, given that we operate 24 hours a day*”. In line with this thinking, a further respondent describes keeping his SP on after hours as something he needs to do in his line of work (as executive corporate finance consultant in a diversified investments holding group).

For others being permanently “plugged in” (via one’s SP) has become a prevailing culture within the corporate as well as entrepreneurial environment, as a self-employed coach and part-time employee of a large fashion and food retailer admits,

“When you’re self-employed and I think in this culture [retail corporate] too, people are expected to be able to be contacted 24/7...instead of 8-5 each day, you sort of work beyond that, so I think it’s even more important if you’re self-employed to have some boundaries in place...”

There is a feeling that as a business owner or corporate suit, the ability to be permanently reachable and online is necessary to remain competitive, whilst the need to draw lines around one’s private life seems equally important (from a wellbeing perspective). This is a critical

observation as longer work hours and cognitive overload has been proven to increase stress, leading to lower productivity (Rethinam & Ismail, 2008), (Hallowell, 2005). As an aside, it is interesting that this last respondent is particularly cognisant of the need for personal discipline with regards to her availability via the SP, and it is a curious thought as to whether her coaching experience has led to this sense of heightened awareness around boundaries.

Extension of one's body and addiction

Another dimension that the always on connectivity and availability (constant presence) of the SP potentially brings is that of attachment to the device. Some people speak of the SP as “*an annexure, an extra arm*” or even a “*crutch*” that they rely on for support. This feeling of reliance is sometimes so strong, many people refer to their SP use as an addiction, indicating that the urge to interact with the device is something they sometimes cannot resist. One respondent mentioned the term addict or addiction of his own volition three times during the interview.

“...it's really like this multifunctional thing, an extension of myself in many ways...yes you have found a Crackberry addict”

For the respondent, the SP has become an appendage to the rest of his body, seemingly impossible to do without. It is important to note that this particular respondent leads a multi-faceted career, in which he is juggling many different commitments, and so his SP use would be fairly heavy, partly explaining why he is so hooked on it (interestingly, two other candidates also brought up the term Crackberry).

Says another interviewee,

“I couldn't imagine being disconnected for any great length of time...yeah, it's actually quite an addiction really...”

When asked what disadvantages this particular candidate found in connection with his SP use, he again alluded to his sense of attachment to the device.

“I suppose it's just one's sense of reliance or attachment to them in that you do become pretty attached, it is such a part of my life that it's a constant touch point (nervous laugh).”

It's that sense of anxiety that if you haven't checked...on my BB, I see the red light flashing, I've got a message, I've got to check it, it might be something important, so that sense of anxiety and attachment to it is kind of unhealthy, I guess (nervous laugh)."

For the respondent, it seems as if he is held by a technological leash, with the device being permanently connected to his body. There is a feeling that being so anxious and attached to the phone can impact on one's wellbeing. Pressing the interviewee for more information revealed that this unhealthy obsession probably has more to do with an addiction to communication, or email, than the SP itself - the device merely adds a convenience factor and acts as the medium through which these messages are delivered (this was true for another respondent as well). What is interesting too to note is the reference to the flashing LED light on the BB that signifies a notification is present. Respondents mentioned how they could not resist the temptation to go and see what message had landed in their inbox when they noticed their BB light flash (even if checking the device proved unnecessary), and that it drove them insane.

Says another participant,

"...as soon as you see that little red flashing light, it's almost like Pavlov's dogs, you have to go and see what it is, so the tactic that I employ is if I decide, say when I'm on holiday, is I would turn it off so I cannot see the light."⁹

One possible reason why some self-employed individuals may feel the need to check each notification is that it may signal a potential new client, and consequently each time an alert is ignored there is the potential for lost revenue.

For another participant, the SP seems to have a power all of its own:

"For me the disadvantage is that it can be intrusive, and you can let it sort of control you and not the other way around".

⁹ See section 4.3.7 for more strategies on how to manage SPs

Additionally, when the BB service was down for a few days (and made world headlines) in early October this year, the respondent mentioned how everyone at her workplace was talking about it “*as if World War III had broken out*”, indicating how reliant people have become on the device. This has implications for the ability for staff to perform without their SPs, and highlighting the necessity for backup systems to be put into place at firms. Furthermore, there is also a real sense of the need to manage the device properly, and not become a slave to technology through putting in place the necessary boundaries, or observing adequate doses of self-discipline.

Some interviewees believe that people can become addicted to the social media element of SPs, as well as messaging applications such as Mxit. As one respondent mentioned,

“I think you can so easily just get sucked into playing on your SP or Whatsapp’ing¹⁰ that you have a false sense of engaging, almost because you’re texting or tweeting or Whatsapp’ing or Facebooking...”

Given the plethora of communication platforms offered on SPs these days, it is seemingly very easy to while away one’s hours communicating via the device, with implications for worker productivity (i.e. potentially lowering it, especially in the case of addictive users) (Rodger, 2009), (Westbrook et al., 2010). At the same time, this type of communication is seen as potentially less engaging than alternative forms of communication, presumably voice or face to face (Mazmanian et al., 2006), with implications for quality of relationships and the separation between work and private life.

Whilst providing a distraction for many, some take a more mature and pragmatic approach to these notifications and state that it is up to the individual to learn self-restraint. Says one interviewee,

“It’s not an intrusive thing, it’s very much a pull approach, there’s nothing push other than a notification, which to a certain extent you can also turn off...it’s [the SP’s] becoming a device which you determine what you want from it and when you want it...”

¹⁰ Whatsapp is an instant messaging application available for free download and use on most SPs

For others, this self-discipline is easier said than done, and the reality of having a phone with email functionality on it is that they are going to check it. Finally, as one respondent aptly suggested, what is clear about the device is that “*if you let the SP take over, it will.*”

Increased expectation to respond

With the constant connectivity also comes a heightened pressure to reply to others almost immediately after receiving their message. Says one respondent,

“I’ve got a BB and sometimes they [work colleagues] expect me to be responding when I can’t be all the time and so it obviously does raise the expectations and life becomes a bit faster because of it.”

This idea of speed is one that pervaded the responses of interviewees, with people mentioning how life (and especially the business world) would be slower without SPs. This has implications for employee wellbeing, as living life at breakneck speed could lead to heightened stress and fatigue, lowering an individual’s performance (Wajcman, 2008).

In a similar vein, another respondent speaks about how SPs make “*the fast world faster*”, and how the outcome was “*very sad*” because sometimes she felt the need to slow down. To combat this increase in the pace of her life, she mentioned how she would book out time in her diary simply to get a breather from everything going on around her – this she labeled “*admin time*” which could include simply cleaning out her mail box, to spending quality time with her loved ones.

Yet other respondents speak of feeling guilty at not always having their phone on, and being frustrated at others for labeling their communication as crucial. Says one lady, “*People leave you messages and they’re urgent - I always ask them a question, whose urgent, my urgent, or your urgent? It’s generally their urgent...*”

Linked to the feeling of guilt, one consultant mentions how turning off the email functionality on weekends gave him “*a clear conscience*” to not have to worry about addressing every mail that came through on his SP.

Additionally, for another interviewee, the fact that some people are unable to resist the urge to answer their phones, even during social interactions, really annoys her.

“...you’re having a conversation with someone and then the phone beeps, flashes, vibrates or whatever and they immediately feel the need to respond to that. I hate it...I think it’s rude...”

Seemingly, one of the unintended consequences of the need to respond immediately to all communication that arrives via the SP device is thus incivility between friends, family or colleagues, with potentially adverse ramifications for relationships (e.g. at work). This assertion is supported by the literature, especially in connection with disruptions during meetings, and the fact that such practices are considered rude (Bell et al., 2005) and can lead to incivility between colleagues, and an attendant drop in work effort, quality and time spent at the office (Limpaphayom, 2011).

Interestingly, one participant (head of mobile products at a telecoms firm), vehemently denied that he felt an increased expectation to respond. In discussions with him it emerged that he and his team got on very well, being more like friends than colleagues, and that dealing with SPs was *“part of who we are”*. This divergent opinion might be explained by academic theory which states that under the Technology Acceptance Model (TAM), the greater a device’s perceived utility and ease of use, the more positive one’s attitude towards it becomes (Yangil Park & Chen, 2007), (Beurer-Zuellig & Meckel, 2008).

4.3.2 Connection/Disconnection

Engaged, connected, social, enhanced communication

For many people, the prime function of a SP is enhanced communication, bringing people such as friends and family closer. For some, it is part and parcel of how we all communicate nowadays (via SP), whilst others describe connecting with other people via SP technology as a basic human necessity:

“...people want to speak to people, end of story, that’s why cellphones are such a huge success...I mean that’s the biggest single human behavioural trait, linking with other people, and it’s [the SP’s] just extended that from voice to email, now into visual and even Skype for that matter, it’s audio visual, it’s the Full Monty now...”

Most people feel the need to be connected, and the SP is a tool designed to enrich that communication experience by making it seem more real. In addition, some people speak of how the SPs and access to social media have made it easier to have and maintain relationships with family, or improved their level of customer engagement (Begole, 2011), (Rao, 2011). One participant mentions how she uses a Linked-in¹¹ application (My Travel) on her SP to inform colleagues and acquaintances of her travel arrangements via the social platform, providing her with valuable networking opportunities. This finding ties into the conclusion by Carayannis and Clark that leaders using SPs can benefit from improved levels of social networking and knowledge sharing (Carayannis & Clark, 2011).

SPs also allow for instant connectivity and, with Skype for mobiles, enable cheaper international calls, helping people reduce their cost to communicate, as one CEO mentioned. For a working dad, the ability to communicate with his children whilst abroad through his SP is particularly appealing:

“...my best experience would probably be any time I travel that I’m able to receive a picture of one of my boys MMS’ed to me.

It’s interesting, that takes us back 100 years actually where industry was typical where you would work beneath where your family lived, and at the end of your work day you would go upstairs and read your kids a goodnight message...

So a cellphone allows you metaphorically to go upstairs to kiss your kid goodnight, which is actually awesome...”

There is thus a sense that the SP is making the world smaller, and is one of the benefits of this device, namely helping working parents deal emotionally with being separated from their family. Whilst there is literature to support the notion that technology can help enhance communication (acting as a “boundary spanner”) (Kacmar et al., 2006), Computer Mediated Communication (CMC) is still recognised by some as an insufficient substitute for face to face interactions (Wellman et al., 1996) or as a device responsible for blurring the line

¹¹ Linked-in is a social media network for professionals

between one's public/private life (causing invasion of privacy) (Prasopoulou, Pouloudi, & Panteli, 2006).

In order to support this notion (of the importance of in-person communication), one respondent had the following to say:

"I believe it [Skype video conferencing] should be used a lot more but there is nothing at this stage that can replace face to face meetings. There's just an ability to engage with someone and to facilitate a meeting to really start finding, almost sussing a person out, and that's crucial in business."

This idea of needing to see a person in the flesh in the business world was echoed by a number of respondents.

"...if you're involved in international business then the funny thing is that you got an extranet, you've got technology, you've got money, you've got everything and you think you can expand as fast as you like but you're still limited by the human factor, and that is that at some point you need to put a warm body in front of a warm body..."

Face to face communication is still very much valued in this business (at a strategic level at least), with the company stating that the speed of their growth (i.e. expansion overseas) was literally linked to the number of times/weeks key, experienced staff can be out of the country for, meeting with key stakeholders in person.

Tied to this idea of the importance of corporeal communication, is the notion that this form of interaction is richer than other modes such as verbal or the written form. Says one interviewee,

"I think you're losing human dynamics so it's [society and communication] becoming too virtual, as opposed to seeing the person face to face, seeing facial expressions...so people are losing touch with reading body language."

This last concern seems to be supported in the literature where some authors have found that a rising BB usage (at one firm, for example) resulted in a concomitant withdrawal from social

engagements, resulting in potentially lower quality relationships at work and increased tension (Mazmanian et al., 2006).

One respondent is of the opinion that SPs, in particular mobile email, have raised the opportunity for misunderstandings to arise from sending an ill-considered message when feeling emotional, upset, tired or even drunk. This fear is substantiated in the literature with one academic speaking about the fact that “how things are said” is not accurately conveyed by the likes of email communication, potentially resulting in misunderstandings (Daantje & Arnold, 2010), (Hemby, 2010).

Distraction, intrusion, annoyance

By far one of the most frequently mentioned negatives around SP use is how it can be disruptive, whether it be in meetings, at social gatherings, around the dinner table or on holiday. Words and phrases like “*annoying/irritating*”, “*intrusive*”, “*distracting*”, “*disconnected/disengaged*”, “*inattentive*”, “*lose focus*”, “*neglect others*”, “*bad manners/rude*”, “*not being present*”, “*detracts from family time*” are commonly bandied about regarding the device. Even during the field work for this thesis, I recall one interviewee who looked at his SPs (both his BB and iPhone) on multiple occasions (at least 6 that I counted), and even typed out messages on his device whilst being interviewed.

In meetings specifically, some people speak of how the SP provides a form of escapism whenever things start to get boring and how reaching for the device is almost instinctive. Some people seem to allow their SPs to intrude on personal interactions unintentionally, almost as if it’s a bad habit that needs to be unlearned, requiring self-discipline. The danger, as one individual put it, is that SPs start to intrude on normal social interactions with people where “*it becomes more important than the person in front of you*”.

For one respondent, the problem is that SP’s are fairly small devices that makes “policing” people impractical to do,

“Disadvantages is sitting around a boardroom table, everybody’s on their phones, is not really paying full attention to the meeting...you can’t see some people playing with phones under tables, so how present are the individuals in meetings, which means you could repeat

yourselves twice or you could have another meeting because somebody kind of missed the point...”

For this candidate, using a SP in a meeting could result in a misunderstanding that could detract from productive work time through having to reschedule meetings or people getting the wrong message, potentially lowering efficiency in a firm. Another potential downfall of SP use during meetings is being disengaged from one’s team. One respondent referred to how she had to coach a client of hers around his presence in meetings

“...he got very disconnected from his team and their productivity started to fall because the leader wasn’t actually paying attention.”

Since then, the team leader has banned all phones and laptops from his area meetings and more production is getting done, with meetings having gone from a full day to half a day.

A further participant speaks of how using the SP during meetings can break people’s concentration, and *“should be set aside for a few minutes to focus and add real value sitting in that meeting”*. Another spoke of how receiving a message that was mistakenly sent to her informing her that she had been handed over to attorneys kept her worried throughout a whole meeting, meaning she didn’t feel present for the entire proceedings.

One person however takes a more diplomatic stance towards SP use, and whilst agreeing that SPs can be disruptive during meetings, believes that the devices can also be useful during gatherings, for example if somebody voices an opinion and someone else at the meeting uses his SP to send a note to inform that person of a change in a situation. So here the purpose behind the use of the device drives its appropriateness or inappropriateness (i.e. the intentionality behind the technology is key, in other words the “what, why” context mentioned earlier). The idea that mobile technology use in meetings and in the workplace can lead to increased tension between colleagues is supported in the literature (Bell et al., 2005), as is the concept of decreased mindfulness (Daantje & Arnold, 2010) and increased worker incompetence (Jarvenpaa & Lang, 2005). However, it is interesting to note that according to Jarvenpaa and Lang’s competence/incompetence paradox, whilst distracting for some, SP use in meetings can also be beneficial to users, providing them with better

information (substantiating the last participant's view about the applicability of mobile phone use in certain meetings) (Jarvenpaa & Lang, 2005).

The sometimes constant notifications on one's SPs can also cause interruptions that affect quality of thinking, as one CEO alluded to.

"I work my whole day around no interruptions, because all we do is create, so it's like you're just trying to find whitespace the whole time and the longer it is, the better, because I'm in my head, thinking about ideas..."

Having time to just be by oneself, thinking deeply and reflecting is important from a creative and strategic perspective, and it is this silence that the SP sometimes denies people. This has implication for workplace innovation and ideation (Amabile et al., 2002).

On the less desirable side again, the SP also has the potential to disrupt family life, with one respondent mentioning how his family (especially his wife) were *"not the greatest fans of the BB"* because of its intrusiveness, another describing how his family *"wish at times they could take it and dump it out the window"*, and a further participant relating how he is *"often in the bad books [with his fiancé and friends] because I'm too much on my phone"*. The risk of neglecting personal time is that it can lead to a breakdown of relationships at home (R. S. Persson, 2001), resulting in stress (Towers et al., 2005), lowered wellbeing (Higgins & Duxbury, 2005) and ultimately potentially affecting one's performance at work (Rethinam & Ismail, 2008).

Even in a social setting, SP use can result in detrimental outcomes that could affect business performance, such as one participant mentioned,

"...you wouldn't want to be at a rugby game and have a guy glued onto the SP for the duration because there wouldn't be any value in being in that location...some of the executives or businesses use some of these hospitality packages for networking and I think if people are going to spend the time on BB or any other SP, clearly that's quite negative, that's not the intended process..."

So socially, e.g. at a networking event, unrestrained use of the SP can impinge on the purpose of networking, and so making sure one knows when to use the device is critical, and even (or especially) when mixing business with pleasure. Again, this observation points to the relevance of “context” in terms of acceptable SP usage, as supported by literature (Jarvenpaa & Lang, 2005).

Lastly, it is worth mentioning that more than one respondent spoke about the fact that cellphones (and SPs) have become so pervasive so quickly that society has lost a whole generation almost of learning what potentially well-mannered ways of using a phone are. For some, a clear etiquette has not yet evolved around the use of cellphones, and the advent of SPs has only compounded matters because everything is instant on these devices so that as technology has progressed, people have become more engrossed with their mobiles.

4.3.3 Functional/Dysfunctional

Multi-functional tool – utility, reliability and robustness of smart device/technology

When one thinks of the term “smartphone”, what springs to mind for some is the idea that the device has “a brain of its own” and can provide an array of abilities that may be helpful to its user. It is this multi-functional dimension of the device that warrants calling it “technology’s Leatherman”. People speak of the SP as many devices rolled into one, and the need to no longer carry a camera around, that it functions as people’s watches nowadays, how it has replaced the lounge stereo or the car sound system.

In particular, in a professional environment, one CEO describes the SP as the modern day weapon in the battlefield of business, saying,

“...cellphones are a necessary business tool, you can’t opt out or you won’t be competitive, it’s like a Spartan spear and shield, you need both, its defence and attack, if you don’t have your cellphone, you can’t go to war.”

For this particular respondent, the SP is used to market his foods business (e.g. by social media platforms such as twitter), to gather data for a professional blog, or to take photos of what he is seeing in the trade as “a 7 MB image is useful when you don’t carry a full camera around all the time”. This notion of spontaneously being able to capture a moment was

mentioned by other participants who said things like “*seeing is believing*” and how the SP allowed them to take pictures of ideas they spotted whilst driving on the road or browsing a store in China. The literature mentions a concept tied to this spontaneous knowledge accumulation called SKARSE™ (see section 2.3.3 for a description of this term), and for some the SP is a tool designed to facilitate this (Carayannis & Clark, 2011), allowing employees to be more creative in their jobs, improving their performance through better innovation (Hagel & Brown, 2004).

For another interviewee, a CEO of a mobile payments company, his heavy use of the SP epitomises this idea of the multi-faceted nature of the device,

“I honestly find the SP is probably the thing that has revolutionised my life in the last 3 years, and literally I use it exponentially more as time goes on.”

For this candidate, the SP is used for anything from accessing information at the tip of his fingers using the internet every day, to communicating via SMS/IM/Facebook, organising his calendar and events, to navigating around the city with GPS and Google maps, accessing videos on You Tube, to taking notes on the device (although he largely does this on the iPad now), and making mobile payments.

In terms of the email utility of the SP, one respondent alluded to how it helped him to reduce stress levels when he uses the device to catch up on his messages, “*I feel a bit lighter when I know I’ve just gone through it [my email, using my SP] and see that there is nothing important...*”. Clearing out his inbox allows him to focus on more important matters, such as the strategic side of the business. However, linked to this notion of the SP as a “tool” or “lube to keep the business wheels turning”, the same respondent mentioned that for users who are less aware, there is a danger that one could get “*sucked into operations*”, with the consequence of doing less thinking in the workplace. Along similar lines, another CEO spoke of how access to emails “at the coal-face” has meant he is increasingly focused on the nitty-gritty of running the business, distracting him from higher level, executive responsibilities.

A further respondent speaks of how the SP is really just a “tool for consumption”, likening the device to a TV – “*it’s more useful for consuming information than creating it*”, although

he does go on to describe the BB as “*more utilitarian*” given its email capability. As another candidate put it, the SP doesn’t intrinsically make one any cleverer, and instead possibly makes people a little bit lazier, less inquisitive. “*It’s like you know where to find every song but you don’t know how to play any song...we get more and more removed from the source of things...everyone’s just becoming a consumer of something.*” In his eyes, SPs and apps make consumers out of users, where people no longer have to create, think or be innovative, as everything is designed for them – for him, the originality or creative element is numbed through SP use, with implications for innovation in firms (Amabile et al., 2002).

Referring back to mobile email, some would even question how much utility is actually derived from that SP functionality:

“When I’ve been off for a couple of weeks and I go back to work, I make a joke ‘I can’t really remember what I used to do but I know it has something to do with email!’, and the risk is that we can get so obsessed with dealing with email it gives us the illusion of effectiveness and we can lose sight of what the core of our job is...and all email is, is a tool to get me there.”

In her opinion, having electronic communications via the SP can actually work one up into a frenzy of busyness which gives one the illusion of being productive when actually they’re not necessarily. This view is supported by theory which suggests that too many workplace interruptions (such as those caused by mobile email) can result in costs due to the fragmentation of work tasks (Spira & Feintuch, 2005), (Sykes, 2010), and lowered productivity (Daantje & Arnold, 2010).

There thus seems to be a bit of a contradiction around the utility (especially related to email) of the SP, with the device both helping to unclutter one’s life as well as being partly responsible for adding to the clutter (by delivering a torrent of messages). This has implications for whether or not the device is value-adding from a performance perspective or whether it detracts from it – ultimately it seems that this would depend on how disciplined one is with regards to one’s SP use.

The irony behind SPs and advanced mobile technology is that despite its utility, many respondents spoke about the pitfalls of the device (i.e. its dysfunctional aspect), whether

caused by internal (the SP itself) or external factors (e.g. the cellular network). Gripes that were commonly mentioned include the SP having poor battery life, freezing all the time, being too slow, being too heavy and cumbersome, not getting good reception, not being robust enough (screen gets easily damaged), having too small a screen (to be able to view attachments etc) or inadequate applications (e.g. Skype on the BlackBerry).

Says one executive,

“...technology sometimes shot you in the foot...you needed to make that phonecall and your battery is dead or you needed to urgently check something on the internet or something and your phone bombs out”

Reliability is thus a real bugbear for some users and is one of the reasons why this particular interviewee (as well as many others) carries around 2 phones (one as a backup) as he finds the battery does not last due to his heavy use, or the operating system on one of them would sometimes crash. This could have potential negative consequences for those SP users who do not have redundancy systems in place, as one could miss out on an important notification or lose one's work (e.g. non-backed up email) at a critical juncture. This is where the idea of a backup system (e.g. automatic synching to a desktop, laptop or even the cloud) is needed to preserve critical information, as cited in literature (Hogben & Marnix Dekker, 2010).

Says another respondent,

“The frustrations of SPs...probably when you lose stuff and its lost off the server as well...so because of its power, when things go bad...there have been times when I've a lost a significant amount of email [6 months' worth], which was partly due to a SP clash with the servers, it's supposed to backed up on the server as well, which it wasn't doing for some time without my knowledge, and then my BB died..”

A major theme that emerged as an obstacle to doing business (and part of the “dysfunctionality” of smart technology) was the cost of mobile communication, especially call rates overseas, but also the price of data on non-BB SPs. In fact, some acknowledged that the only reason they went the BB route was due to the unlimited email, IM and internet connectivity at low cost (R70 per month).

4.3.4 Efficient/Inefficient

Speeds up decision making/response times

The constant connectivity combined with immediate access to information, news and email also allows for speedier decision making and response times. People speak of the speed with which they are able to respond to emails, how consensus decisions in meetings are made quickly, and how convenient and easy to use SPs such as BBs have made email (enabling “touch-typing” from one’s mobile, preventing the need to power up computers etc). One CEO mentioned how the messenger type applications on his SP have negated the need for lengthy telephonic calls, allowing him to type quick responses to queries and save time in his busy daily routine at the office.

“...the [BB] messages are another important thing when you’re so busy and someone needs a quick response, they can message me and I can check what it is, if it’s something I can quickly respond to...You can become a lot more focussed and limit your need to have lengthy discussions.

It’s become quite a big portion of how I communicate, just because of my availability...people phone me and can’t get hold of me...”

In his eyes, the need for responding is constant, so since he is not always available, the SP affords the respondent the opportunity to communicate in short, ad hoc bursts when he is freely available as opposed to fielding a potentially time consuming phone call. This allows him to remain focussed on his work (minimising interruptions or invasive verbal communication) whilst ensuring that he gets back to those who contacted him at a time convenient for him, to ensure he doesn’t let them (a client, colleague etc) down. This is an interesting finding as it runs counter to the literature which speaks about how the constant notifications offered by SPs can lead to a break in one’s concentration, and productivity losses through distraction and delayed resumption of the original activity (Iqbal & Horvitz, 2007), (González & Mark, 2004).

People also spoke of the value add of SPs when making decisions, in terms of accessibility to information as well as being able to seize *ad hoc*, in the moment opportunities. Says one respondent, the CEO of a niche foods company,

“...so life without a cellphone today would be less entrepreneurial, impossible to pursue this kind of a career and certainly impossible to do effective marketing, where decisions have to be made on the spot.”

By making use of his SP, this candidate is able to successfully market his business which, due to its relatively small firm size and limited market scope (playing in a niche space), is crucial for the company's financial success (gaining brand exposure at a decent price by being able to jump at lucrative prospects).

In another instance related to the ability to make quick decisions, SPs also allowed certain individuals to be more spontaneous or agile in accommodating changes. One executive of a telecoms firm explained how the SP allowed him to readjust his diary at the last minute, affording him a valuable, unplanned networking opportunity,

“...on a day to day basis my diary shifts...there was an opportunity to meet guys who we met via email and we just scheduled a breakfast meeting, and we were meant to fly out first thing 8 'o clock. And the ability to send a note to the office so that admin was able to adjust my ticket, and being able to approve instantaneously the scheduling and new flight times were a bliss, because you're able to actually make those trips much more productive...this tool allows you to adjust and make the right decisions to ensure that you're able to service the business in a better way.”

Through utilising the SP, the respondent was able to increase his productivity and add value to the business by allowing him to make last minute decisions and approve unforeseen changes to his schedule. In the words of other respondents, SPs afford some people the ability to lead a more opportunistic life, whilst at the same time allowing them to utilise their time more efficiently. This concept speaks to the idea of options, whereby rapid last minute decision making ability gives one value in flexibility and spontaneity, being able to seize the moment.

A further candidate related how SPs enabled the timely turnaround of decisions, preventing hold ups in the business environment due to pending sign-off by key executives. During meetings the interviewee is able to review and edit documents sent to him by his staff. In this

way, SPs help to create a productivity multiplier effect, whereby more and more subordinates can carry on with their work, similar to clearing a blockage in a pipe, allowing work to flow freely. In terms of the literature, various studies on SPs corroborate these findings, stating that the devices can help to accelerate business processes (Beurer-Zuellig & Meckel, 2008) and speed up decision making, especially when away from the office (Law, 2007).

Multi-tasking/task-switching

One concept that seemed to be synonymous with SPs is the idea of getting more done in the same or less time, with certain people touting the value adding capacity of the SP in terms of multi-tasking. But there are some who question whether multi-tasking really works, whilst others argue that task-switching has caused attention spans to shrink and people to skim read (leading to shallower thinking).

To illustrate this last point, one participant mentioned how *“we’ve become so accustomed to flitting between pieces of data that we don’t properly engage, we don’t properly read, and a cellphone is just an added temptation to get distractions”*.

Yet another candidate mentions how things like SP technology have enabled us to consume broadly but shallowly.

“...so we’ll read lots of things very quickly and we’ll hyperlink and we’ll jump around but we don’t actually necessarily read things in depth and work our way through implications, through arguments or books. We like to know a lot of factoids rather than know something in depth...”

There is thus a feeling that whilst SPs have allowed people to do more things at once and access multiple sources of information, it has come at the expense of being able to focus on, digest and interrogate this information critically. This fear of shallower thinking/lowered quality of thought has also been cited in the literature (Seven, 2004). This has implications for the quality of thinking and analysis of senior managers and potentially their level of performance (in terms of more errors) in their respective firms (especially since the knowledge economy relies so heavily on critical thinking skills) (Westbrook et al., 2010), (Wajcman, 2008).

To further highlight clashes of opinion around the ability to perform multiple activities at the same time, consider the following examples,

“People talk about multitasking but you can’t listen, type, read a message to another colleague while listening to somebody else present.

This interviewee does not believe that multitasking works but instead is of the opinion that SPs allow one to utilise dead-time. This idea was further emphasised by another candidate, a 57 year old female self-employed coach, who found that she was able to concentrate on only one thing at a time to be effective. Conversely, there are those who suggest that multi-tasking is indeed possible, as one CEO mentioned how SPs have allowed his staff *“to do everything in deuce”*, i.e. it has given them the ability to perform two activities or functions at once. Another respondent agreed with this assertion, by stating the following:

“[without SPs] there wouldn’t be that constant parallel processing and always on connectivity that we have today, the idea that you’re constantly working on different things at the same time. So I’m sitting in a meeting listening to one thing or having a discussion while at the same time reading an email while also possibly communicating via text or Instant Message. I think there’s a sense that you’re engaging on multiple levels simultaneously - you can say that your presence is fractured.”

We can thus see that there are polar opposite opinions as to whether or not multi-tasking works. The latter respondent is of the opinion that multi-tasking reflects reality and the way we live today. Interestingly enough, he also mentions that one of the side effects of engaging on multiple levels is that one’s attention is divided, which could have implications for the quality of those interactions. Later on however, the interviewee does go on to qualify his statement regarding multi-tasking by saying that in certain situations, one needs to pay full attention as doing otherwise would be counterproductive (i.e. it depends on the context, in this case, the “when” or “where” of using one’s SP). This speaks directly to the literature which is divided as to the benefits of multi-tasking (Mark, Gonzalez, & Harris, 2005), and suggests that its efficacy is task dependent (i.e. multi-tasking is more likely to be effective if one of the task being performed is relatively automatic/simple) (Herman Miller Inc, 2007).

Rather than doing two or more activities at the same time (i.e. multi-tasking), some people believe in the concept of task-switching, or multiplexing one's efforts (toggling between various tasks). For example, one participant suggested that SPs allow one to attend to an urgent matter in a discreet manner, and return to whatever one was doing before the issue arose without entirely losing one's momentum. Another respondent mentioned how conducting some leisure based browsing on her SP during a tough project helped to renew her energy levels and provide a much needed break when work wasn't going so well. Some authors have stated how, in small doses, task-switching can be beneficial, by refreshing a person and sparking new ideas, whilst doing so too often can however lead to start-up losses and low levels of task accomplishment (Kirsh, 2000). Thus, for some, it would appear that task-switching actually helps them to complete multiple activities whilst almost providing a welcome break from a particular project, thus aiding performance.

Lastly one respondent, the CEO of a wireless wallet company, mentioned how he came across an interesting statistic where the researcher counted up all the hours that people used in a day to perform various activities (including sleeping, eating etc), and on average, per person, the total amounted to more than 24 hours – the reason for this: multitasking. And he took himself as an example of a prime candidate of this practice:

*“I honestly think that my usage a day is probably easily 3-4 hours...but now the thing that's interesting and that's talk time, whatsapp, message checking, news, the whole thing, but I think the misperception is that people will go, *wow* that's half your day almost or a third of your day on your phone, but what they don't realize is multitasking, and that's what the world's becoming.”*

For this participant, the SP allows him to perform more activities in the same amount of time, almost like extracting the most utilisation out of every minute as possible, making him extremely productive each day (in his view). People mention how “*dead time is now dead*” with every moment being a productive one. There are no longer cracks and gaps through which time can get lost due to hurry up and wait scenarios. Downtime on planes, in airport lounges and walking between meeting venues and the office is used to draft responses to mails, catch up on social media or check the news. The potential problem with this is that one never switches off, and life moves along without “*well-needed gaps*” to just sit down and unwind, in order to prevent burnout (which is needed to maintain clarity of thinking in

business). This idea is supported in the literature where authors mention the importance of “thinking space”, a sanctuary in which to be able to contemplate and develop creative ideas (Schwartz & Mccarthy, 2007), (Hallowell, 2005), (Amabile et al., 2002).

Lastly, for another respondent, the SP, whilst theoretically enabling him to utilise downtime to catch up on work, in practice is not so easy to achieve due to the screen being too small, making attachments hard to review/edit and prices difficult to look up. Also, in his opinion, deadtime is useful for reading hard copies of documents, or merely to sit and think, a practice he feels others do not necessarily consider a worthwhile business activity anymore (as it is almost viewed as non-productive work).

4.3.5 Informed/Uninformed

Quick access to news, info, email etc (fingertips)

One particular advantage of being constantly connected is that of immediate and rapid access to news, information and emails, etc. Many interviewees used terms like having information “*at their fingertips*”, such as news relevant to their work that helped them to stay on top of things. As one interviewee put it, “*sometimes it’s [the SP] almost the first bearer of good or bad news*”. It is this immediate access to important information that almost imbues the SP with pre-emptive powers.

Says one respondent (a doctor, social entrepreneur and lecturer),

“..because I’m juggling [multiple careers], I can keep balls from dropping because I know when things are about to go wrong, I can anticipate things because I’m kept current as opposed to finding out the next day that this happened and it’s too late to do anything.”

Being able to instantly access information relevant to his job, the respondent finds it easier to live out his multi-dimensional career and prevent crises from occurring. On the flip side, however, the same participant did mention that easy and instant access to social media via one’s SP did open up the possibility of abuse by users, potentially negatively impacting on their productivity at work. Whilst some find using social media helps to allow businesses to engage better with customers, if not properly managed, such access via SP devices may facilitate internet deviancy. This is backed up by academic theory with some authors stating

that non-work related communication can have adverse impacts on productivity (Rodger, 2009).

One CEO mentioned how news services, wikis and google maps on his SP were things that he used several times a day to stay informed, increase his knowledge and to find the location of an important business gathering (saving him valuable time in the process).

“...a massive one for me is maps, specifically in business, so every single time I go to a meeting now it’s literally, I’m in the car punching in the address and on the way, it synchs [with the SPs GPS], and I find out where I’m going... instead of spending an hour planning my day in Johannesburg, I’ll just know where everything is...”

People spoke of the SP’s 3G capability as a useful information portal, which can also help to add value to conversations, or allow one to change one’s opinion or actions in a meeting through instantaneous access to useful facts/material.

Besides constant connectivity to the web or emails, people spoke of how instant access to their calendars via their SPs was essential and assisted them in organising their time and keeping their diaries up to date. For a consultant, his SP allowed any changes that his personal assistant made to his calendar to be visible immediately, whilst for another it allowed her to schedule meetings instantaneously if she bumped into a colleague in the corridors who she was planning to catch up with. Finally, one interviewee relayed her experience of working part-time at a large corporate retailer wherein all the senior managers now setup their own diaries through their SPs, decentralising the secretarial function to the individual (and freeing up back-office staff to perform other duties or to render such an admin position redundant in other cases). This last finding was supported by the literature in which SPs were responsible for migrating the calendar function to the user, expediting the coordination process and reducing the workload for the back-office function (potentially resulting in cost savings as well) (Beurer-Zuellig & Meckel, 2008).

Fear of missing out (FOMO)

An interesting theme that emerged from an analysis of the transcripts, and one which is tied to the addictive element of the SP, is that of the Fear of Missing Out, or FOMO. This phenomenon was referred to outright by at least two interviewees, one of them labeling it a very modern social phobia.

Says one respondent,

“...there’s a constant distraction, constant focus in terms of is this something urgent, is there something happening, have I missed something...”

These ironic words show that for this particular respondent, the SP provides constant distraction for him at work that leads to a different type of focus, a focus on what the mysterious notification may be, a focus on the device. Since his company is experiencing extremely rapid growth, layers of management is missing at the firm and so the CEO has found himself becoming quite involved in operations, meaning he has to constantly keep a tab on many things to do with execution (as opposed to the more strategic side of the business). This is a potentially negative outcome associated with SP use as it can detract from an executive’s time and true value-adding ability.

Another interviewee, this time an executive at a telecoms firm, expresses a worry connected with not having his SP around, similar to the FOMO:

“...because it becomes part of your life I suppose perhaps there’s a bit of, initially, uneasiness and nervousness that there might be some important email that comes through or there might be something on twitter about some major event that you’re not going to see...but I would say that after a few hours you’re comfortable with it.”

For him, being without his SP fills him with a fear of missing out (FOMO) on an important piece of information or a significant occurrence in the world that would have been quickly broadcast on a social media platform. He however does describe this feeling as a transient one that he would eventually adjust to. There is also a sense that part of this adjustment

would be the process of weaning oneself off the routine of interacting so regularly with the device (i.e. breaking a habit of sorts) – possibly easier said than done.

Linked to the effects of social media, one particular respondent mentions how applications such as Facebook on ones SP allows a person to keep in touch with others and seeing what's happening in their lives. But, at the same time, he acknowledges that there is a chance that a person might get overwhelmed by all the events and things happening at any one stage on the social media platform. In his eyes, whilst the SP is a convenient tool for communication and access to information, it can also lead to FOMO, the fear of missing out. In his opinion, everything is becoming so attractive, so attainable, and news and events are so accessible on one's SP that it takes real character to learn to deal with this digital overload. Although FOMO is not mentioned outright in the literature covered by the researcher, there was reference to how SPs have increased our possibilities and brain's reward centres (Seven, 2004), creating a desire for instant gratification (Wajcman, 2008). It is quite possible too that information overload is a trigger for FOMO, as it makes it virtually impossible to sift through all the data being sent one's way, possibly leading to this anxiety of not being entirely in the loop.

For another respondent, the absence of her SP made her feel out of control as she didn't know what was going to come through. Here the fear is less about missing out, but more about fear of the unknown, and possibly finding out something at a much later stage or in a more abrupt, less controlled or discreet way. Still others mention a feeling of discomfort at not being contactable (i.e. a fear of missing out on an important call), or even a sense of guilt that they have missed out on something crucial that they had to deal with.

For one CEO, not answering one's phone means foregoing on some ephemeral reward, as explained below:

*“You were working but then there's this person who wants to talk to you, *whoah!*, what could that be, the hidden treasure, that it's the next social opportunity, and all it does is it puts this kind of anxiety that you might miss something if you don't pick up the phone.”*

From this snippet one can see that by the interviewee's SP going off, his concentration is broken and his work is disrupted for the thrill of discovering the next potential leisurely

engagement. In the past, one wouldn't miss out on anything because people couldn't reach each other easily, news of events and activities couldn't reach people easily, temptation couldn't reach people that easily. He goes on to explain that besides this expectant excitement, FOMO can also translate into a very real fear for the safety of his children, as in the times when the security company withholds their number and calls him on his SP. One can thus see that whilst the SP can help people to stay up to date with news and information (i.e. to be informed), it can also paradoxically lead to a Fear of Missing Out (FOMO), of being uninformed, which could result in users being unnecessarily distracted by the device or too engrossed with it, potentially adversely impacting on an individual's performance (Jarvenpaa & Lang, 2005), (Spira & Feintuch, 2005).

4.3.6 Safe/Unsafe

Health, safety and security concern

The final paradox related to SP use is around the health, safety and security concern of those who use the device or are exposed to others' use of it. It is interesting to note that two of the candidates who were either practicing doctors or had been before, both mentioned how they were worried about the health implications of extended device usage. One doctor relayed his fear that over time we will be seeing more head and neck cancers, with another speaking words to similar effect,

“And obviously there is the worry am I nuking myself...I'm a doctor I know that there is no good evidence out there but no good evidence doesn't mean it's not doing it, it means we don't know, and like many things the jury is still out and is going to be out for 20 years about whether this is really causing brain cancer or testicular cancer...I have a good friend who is a private urologist who says just anecdotally, he has seen so much testicular cancer...”

There is thus the real concern that the devices may in fact cause terminal illness which has significant bearing on the longer term wellbeing of executives in SA. A further respondent speaks about how he is suspicious of the health implications of using the device, and talks of a “*sense of radiation*”. Even though those with the medical knowhow admit that there is no good evidence out there to prove that cellular waves are harmful, this concern has potential implications for the next generation of workers who will have grown up with SPs and exposure to cellular waves since birth, potentially resulting in higher morbidity and

mortalities due to cancerous tumours. Still others speak about how they are wary of how hot their head gets after talking on their SP for an extended period of time, but most are not afraid enough to stop using the device altogether. According to the literature, as the respondents have suggested, evidence is inconclusive as to whether or not mobile phone radiation can cause cancer (Repacholi, 2001), although some studies suggest that extended exposure to cellular signals had a damaging effect on the brain neurons in tests on animals (Salford, Brun, Eberhardt, Malmgren, & B. R. R. Persson, 2003)

In addition to health concerns, there are also safety concerns linked to SP use, both in terms of personal welfare as well as that of one's children. People speak about their pet hates (even those who hypocritically state that they are also guilty of such practices) at seeing drivers talking, SMS'ing or BBM'ing on their phones. Says one executive from an investment management company,

"...being an avid cyclist, I know of quite a few deaths of people exercising and people have been either texting or speaking on their phone and they run people over. And that to me is a very important, it's one of the hates I have, it's one of my biggest worries..."

It is clear that for some, the distraction provided by the SP is a real fear, as it potentially endangers their life on the road, e.g. when on a bicycle. Others speak of how they have witnessed firsthand, car accidents caused by motorists who were using their handsets whilst driving. The dangers of driving whilst using mobile phones has been mentioned frequently in the news and other articles and is a real danger to both drivers and other road users (Seven, 2004).

Ironically, on the opposite end of the spectrum, the SP is seen as a vital tool to aid one in tricky situations or even to ensuring one's personal safety or the safety of one's family and kids. Multiple people spoke of how the SP is important for emergencies, if they had car problems or their children were in trouble and needed someone to contact. Others spoke of how the SP allowed them to get out of sticky situations, such as locking one's keys in the car, or being lost in a foreign city on a business trip. Says one interviewee:

"It was late on a Friday evening, it was raining, I hadn't been to Dublin for years, I had certainly never driven around Dublin before. It [the SP] helped me find our hotel which was

terrific, and to be honest, it probably would've taken us an hour or hour and a half to find that hotel if we didn't have a BB."

Thus the SP allowed this particular participant to save time and arrive safely at his place of accommodation, contributing both to his productivity (more time to do work) as well as his wellbeing (keeping him out of harm's way). People spoke of how the SP allowed them to reschedule meetings if an incident cropped up that waylaid them, or how the device proved to be a useful backup system if desktop PCs weren't working or the work network let them down. Related to this last point, some participants also mentioned how the security offered by the BB encryption of emails was critical in firms with very sensitive information, and the ability to remote erase information from the device was also a huge plus. This idea of data security was re-iterated in the literature, with reference to SP applications like BlackBerry Protect allowing users to backup data wirelessly and wipe out information on the device remotely (Hogben & Marnix Dekker, 2010) preventing unauthorized parties from accessing sensitive material.

It would seem that despite the fact that the use of SPs may seem undesirable or potentially dangerous at times, on the whole, it was not enough to stop people from using the device entirely, or from refraining from bad habits. Finally, almost all participants realise the value add that the device has to offer from a personal as well as family security point of view – for many, the SP is a prime example of the (modified) catchphrase, *"in case of emergencies, swipe glass..."*.

4.3.7 Strategies employed to manage the use of SPs

Finally, in order to answer a sub-question of the thesis, namely what strategies can and do senior managers employ to manage their use of SPs in a business/personal environment, listed below are a few examples mentioned/adopted by the interviewees themselves. There are 15 strategies in total – they are the following:

1. Distancing/Banning – keeping the SP in another room or prohibiting their use
2. Muting – turning the phone on silent
3. Disabling – switching off functionality such as email or the red light on the device (e.g. a BB)
4. Ignoring – leaving the mobile in one's pocket and paying no attention to notifications

5. Auto-responses – setting up an out of office message on one’s email or a recording a voicemail greeting
6. Respect for one another and open dialogue – being unafraid to reprimand others with regards to their SP etiquette if necessary and respecting others if they do the same
7. Screening – selectively choosing who to respond to and which calls to take
8. Routine checking – setting aside fixed times in which to look at the device
9. Turning it off – simply pressing the power button
10. Pragmatism – being practical about when it’s acceptable or not to use the phone, and the wisdom to know the difference
11. Managing expectations – letting others know in advance of one’s availability/contactability
12. Caps and restricted material – placing limits on SP bandwidth usage, which websites users can visit, and when people can use the device
13. Diverting calls – setting up an auto-forward facility on one’s cellphone line when out of the office, for example
14. Erasing – ensuring that IT has the ability to wipe out all information from the SP remotely in case of a security breach/phone theft
15. Textual etiquette – observing unspoken yet largely understood rules around acceptable grammar/ways of writing responses using the SP

4.4 Limitations

There were a number of limitations that this research faced. For one, only 3 women were interviewed out of the 13 participants, meaning the findings could be skewed by gender. Additionally, all of the female respondents were selected from a specific pool of candidates that all possessed a common trait, namely that of having been on the GSB’s Coaching Course. Whether this last fact has any bearings on the results are not known, but a future recommendation would be for the sampling to be performed more randomly and dispersed than this.

As most of the questions in the interviews were open ended, narrowing in on a specific topic sometimes proved difficult, and given the limited time that most respondents had in their diaries (being busy senior executives), this meant that some of the topics were not covered as in-depth by all participants (possibly leading to “gaps” in the analysis).

Finally, since the researcher is himself a SP user, is very interested in this topic, and has read extensively around relevant material, there is the obvious chance that the results and analysis are subject to bias.

5. Research conclusion

From an analysis of the findings one can see that one of the main boon's of SP technology is its always-on connectivity that gives one instant access to news, information and contacts. This allows employees in firms to stay informed, work efficiently (the mobile office concept) and stay in touch with colleagues, friends and family. At the same time, this ability acts as a double edged sword, resulting in the concept of "presenteeism", where users feel no respite from SP notifications/communication. This in turn can lead to an imbalance (one of the strongest themes that emerged from the analysis) in one's life as the SP acts as a prime form of Work Extending Technology (WET), which has implications for worker wellbeing and the possibility of burnout.

Linked to the idea of a blurring of the work-life boundary and imbalance in one's life caused by SPs, it may be worthwhile for senior managers suffering from techno-stress to undergo life coaching in order to gain fresh perspectives and possibly re-prioritise their lives. This last finding is linked to insights that arose from an analysis of the transcripts of some of the respondents who were either full-time or part-time coaches. To some degree, the balance/imbalance paradox can be likened to Jarvenpaa et al's empowerment/enslavement paradox, whereby the SP provides freedom to users by allowing them to take charge of their affairs anytime and anywhere but in the same instance makes people feel like they are being controlled by the device due to its always-on connectivity and the attachment it creates (Jarvenpaa & Lang, 2005).

Another strong dual theme that emerged from the analysis was that of the connection/disconnection paradox. Whilst the SP has undeniably improved one's communication ability, the device can also lead to distractions especially in meetings (see the tag cloud diagram, Figure 2). This theme was also highlighted by international authors such as Jarvenpaa and Lang, who labeled a similar paradox as engagement/disengagement. Part of the reason why people allow the SP to intrude on social gatherings is the lack of an emergence of etiquette around using the device. This in turn is partly due to the rapid

progression of the technology as well as the ubiquity of the SP (the devices are seen as an extension of many people's bodies). These observations point to the need to manage the use of such devices during work gatherings, although barring SPs from venues can however be counterproductive and impractical. The reason for this is that various respondents have pointed to the fact that at times, SP use in meetings is relevant, i.e. when it adds value to the conversation. One elegant strategy to manage SPs in meetings that was mentioned by a respondent was that of structuring agendas around regular intervals in which participants have a chance to look at their SPs and attend to emails etc. Additionally, other smart devices such as tablets are replacing pen and paper, and are thus technologies that, whilst disruptive, are most likely here to stay (given some authors views of the inevitable move towards a paperless society) (Liu, 2004). SP usage and its acceptance during formal work occasions is thus context dependent, and this was another major finding of this thesis. The importance of context in relation to mobile phone technology is also supported in the literature (Jarvenpaa & Lang, 2005).

Another fairly dominant theme that the analysis uncovered is that of efficiency and the gains in productivity that SPs gave employees, whether it be quick access to information, speeding up business processes/decisions or helping individuals multitask (minimising downtime). This finding would suggest that SP devices should indeed be encouraged in the workplace, as there are clear advantages that businesses stand to gain from encouraging the use of this technology. This is supported by other literature on similar topics, such as Beurer Zuellig et al's paper on SPs and mobile collaboration, which suggested that the devices helped to accelerate business processes (Beurer-Zuellig & Meckel, 2008). Again, the caveat to this suggestion revolves around personal discipline and ensuring that the user is always in control. In order to help manage the use of one's SP, users can adopt a number of strategies that can help to minimise the negative effects linked to SP. These strategies include turning off visual notifications on one's SP to disabling email connectivity after hours (see section 1.3.7 for a more comprehensive list of tactics). Whilst mostly adding to people's productivity, there is also the chance for excessive multitasking linked to SP use to be counterproductive, or for the multiple functions acting as distractions during meetings, leading to inefficiencies/productivity losses. This theme is similar to Jarvenpaa's competence/incompetence paradox.

An interesting finding that cropped up in the analysis was the concept of FOMO, or the Fear of Missing Out. This unexpected discovery seems to be a modern day phobia linked to the always on connectivity of SP technology where users feel an urge to take part in every event or to stay up to date with each piece of new information. Consequences of FOMO are an unhealthy attachment to one's SP, leading to potential productivity leaks (through the distraction of constantly checking for new notifications) and lowered wellbeing (through the development of anxiety and cognitive overload). This sub-theme (FOMO) was part of the informed/uninformed paradox, a theme that was not mentioned in other literature on the paradoxes of mobile technology, and that was specific to this group of interviewees. A possible reason that this difference emerged up is due to the time at which this study was conducted relative to existing theory, and the fact that this thesis focuses specifically on SPs. Another comparable keystone academic paper on a similar topic, such as Jarvenpaa et al's study on the paradoxes of mobile technology (Jarvenpaa & Lang, 2005), was restricted to normal standard feature set mobile phones and was written in 2005, before SPs were freely available and social networks such as Facebook became mainstream. The absence of these advanced technological artifacts and social media apps most likely lowered the chance of people developing FOMO as they were less informed about events happening around them.

Another thought-providing finding that emerged from the analysis was that of the safe/unsafe paradox, which was not highlighted in other studies looking at mobile technology paradoxes (such as Jarvenpaa and Lang's research) (Jarvenpaa & Lang, 2005). Whilst many people are wary of the health implications of SP use (e.g. of developing things like cancerous tumours), almost all users express how impractical it is to abandon the device entirely and thus are resigned to taking on this risk. This has potential implications (should long term RF exposure prove harmful) for the longer-term wellbeing and hence performance of the future ranks of senior managers in SA (i.e. the next generations) as these will be the first set of workers to be exposed to cellphone radiation since birth. Conversely, all respondents acknowledge the value that SPs provide them in cases of emergency, helping workers navigate to meetings timeously, or assisting people during tricky situations (i.e. if the car broke down). This utility of the device ensures that workers are able to remain productive for longer, improving their performance. A possible reason why the safe/unsafe paradox did not emerge from Jarvenpaa and Lang's study might be due to location based differences. Crime is notoriously high in this country, and South Africans are quite security conscious, hence frequent mention of the SP and its utility around emergency services, and concerns expressed

over profiling and the potential dangers of social networks in the hands of children. Conversely, Jarvenpaa et al's study was conducted in relatively safe first world countries, namely Finland, Japan, Hong Kong and the US (Jarvenpaa & Lang, 2005).

A further notable side theme that emerged was that of hypocrisy, whereby users would mention bad SP habits that annoyed them (such as driving whilst texting, sending constant social media updates, or emailing during meetings) whilst at the same time admitting to behaving similarly at times. As senior managers in their respective companies, many of the staff may look up to these leaders as role models, indicating the need for executives to be particularly aware of their SP conduct and to set an example that will encourage constructive SP habits (e.g. putting the phone on silent during presentations etc) rather than destructive ones. This will aid workplace civility, improving collegial relationships and resulting in better teamwork and improved worker performance (Limpaphayom, 2011). It is interesting to note that this theme of hypocrisy did not emerge from Jarvenpaa et al's study on the paradoxes of mobile technology, and one reason for this could be due to the fact that different interview methods were employed. In the latter study, the authors held focus groups, whereas this study involved personal one-one-one interviews, where respondents possibly felt more relaxed and thus were more open and honest with their feedback.

Additionally, whilst this study focused on SPs, the primacy of voice communications was another interesting finding. The fact that many respondents relied on and referred to the call function of their mobile devices could speak to the relatively high cost of broadband in this country, the predominance of 3G cards on laptops for web browsing/advanced "smart" functionality, or simply that voice communication is preferable to textual exchanges.

Under the multi-functional/dysfunctional paradox, even though the SP was seen as a useful tool that represented multiple devices rolled into one (e.g. a calendar, watch, camera, email/IM messenger, phone etc), the need for backup systems was highlighted by many due to the lack of reliability and robustness either of the SP directly or supporting networks. People mentioned the importance of having two devices, both in terms of helping to separate work and private life, as well as acting as a redundancy system in case of device failure.

Lastly, from the analysis it was apparent that firm size played little or no role in terms of the thesis's findings, i.e. there were no differences between responses based on the number of

employees at an organization, or how large the turnover was. Possible reasons for this finding could be that these segmentation criteria were incorrect, too broad or simply that such a division is arbitrary and does not impact on individual performance. One interesting observation that did appear was that of the potential gender related differences in perceived utility of the SP (see Section 6). This point speaks to the possibility for future research to focus on the reasons for any discrepancies between how men and women interact with and view these devices.

To conclude: SP technology is here to stay, and all indications are that the devices will become more pervasive amongst growing numbers and levels of staff. What is equally important to realise is that these devices are becoming increasingly sophisticated, providing users with more functions and greater power. The concern however, from a work perspective, is that the devices are no longer merely business tools. Given the rise of social media networks and the SP's ability to consume rich media, the chance for the technology to distract users and to encourage mobile deviancy (e.g. such as Workplace Internet Leisure Browsing) is increasing. Faced with this impasse, users will either have to develop personal discipline or risk facing lowered productivity at work and the possible repercussions thereof. Companies however need not be passive in addressing these concerns and have scope to put in place strategies that will help to manage the use SPs in the workplace whilst ensuring that users still derive the most utility from this game-changing technology.

6. Future research directions

Future recommendations would be to perform this study with segmentation by role, or gender. This is because people in more visual or creative functions alluded frequently to functionality like the camera on SPs or blogging, whereas operations based workers focussed on email and calendar functions. Additionally, in terms of gender, some of the data indicated that men and women may view the perceived impacts of SP use in different ways (e.g. many women like the fact that SPs help to blur the work-life boundary, especially mothers and some entrepreneurs, whilst some men find themselves working harder and longer hours as a result).

Since the theme of the SP and the potential work/life imbalance it may cause emerged quite strongly, it is suggested that this finding be further investigated, either by way of large scale

surveys to executives or focus groups in various companies, stratified by industry. This will help to establish the significance of this initial finding which this exploratory study helped to expose.

Finally, linked to another strong theme, namely that of distractions/disconnection (especially with regards to meetings), it would be interesting to conduct a study on the impacts of tablets in the workplace. With devices such as the iPad being frequently mentioned by respondents, and seemingly quite pervasive now amongst senior executives, there is a feeling that tablets could prove to be even more potentially disruptive than smartphones, due to the former's increased functionality and general acceptance as a replacement for pen and paper.

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- How do colleagues view your SP use? Bosses? Family? Friends?
- Work-wise and personally, what (if any) advantages do you derive out of using your SP? (with practical examples) ?
- Work-wise and personally, what (if any) disadvantages do you derive out of using your SP? (with practical examples) ?

Personal strategies around managing the use of SP

- What (if any) strategies do you employ to manage the use of your SP?

Open-ended questions

- I see you have an xxx phone. Can you remember what your first phone was like?
- What do you love/enjoy most about your i-phone?
- What other phones have you really liked?
- Is there anything about your phone or the way other people use their smartphones that you don't like/enjoy?
- Can you tell me about your best or worst smart phone experience?
- What is a day without your smart phone like?
- Can you imagine life without your SP? What would that be like?
- If you had to describe your SP in an abstract way, what adjectives would you use?