THE IMPACT OF TELECOMMUNICATION TECHNOLOGY ON THE NATURE OF MANAGERIAL WORK

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ABSTRACT

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GEORGE PATRICK

The purpose of this study was to develop an understanding of whether telecommunications technology (cell phones and pagers) serve to facilitate the performance of the three managerial roles identified by Mintzberg (1973). It was further the intent of this study to explore the ways cell phones and pagers create interruptions and false urgencies that could impede the performance of the managerial roles. The study also investigated the ways managers use boundary controls to manage their interruptions and false urgencies.

The effective performance of the three managerial roles was determined by the relevant information exchanged by respondents using cell phones, which had direct correlation to the managerial roles. The issue of whether cell phones and pagers create false urgencies and interruptions was related to the non-expected calls received and the importance and urgency of calls received. It was anticipated that managers who used extensive boundary controls would tend to receive fewer calls and thus manage their interruptions more effectively.

The research design involved a cross section analysis of data, which created a pattern of relationship between the issue of false urgency, interruptions and boundary controls. It was found that cell phones had indeed assisted managers to perform their managerial roles. It was also found that the issue of false urgency and interruptions was contingent upon the expectancy of calls received, importance and urgency of calls received and the effective management of the boundary controls.

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CHAPTER 1

INTRODUCTION

The emergence of electronic communication devices such as cell phones and pagers has without a doubt facilitated the accomplishment of managerial work by enhancing communication. Communication is a fundamental part of every managerial activity and it permeates every management function (Daft, 1991).

Communication not only facilitates managerial functions but also relates an enterprise to its external environment (Koontz & Weihrich, 1988). It is through information exchange that managers become aware of the needs of the customers, the availability of suppliers, the claims of stakeholders, the regulations of government, and the concerns of the community.

Mintzberg's (1973) research on the nature of managerial work posits that it encompasses three specific types of roles: Interpersonal Roles, Informational Roles and Decisional Roles. Mintzberg proposes that effective managers are those who execute all these roles effectively. He observed that key characteristics of managerial work include brevity, variety, fragmentation, and interruptions.

Although telecommunications technology has been widely accepted by managers, one has to wonder whether telecommunications technology has indeed facilitated managers to perform these many roles effectively. The interruptions and false urgencies created by telecommunications technology have the potential to compromise the effective

performance of the managerial roles. The effectiveness of telecommunications technology in aiding and assisting managers in the performance of their tasks has not been closely evaluated.

One way that managers may exercise control over unnecessary and or unwanted interruptions is through the use of boundary controls. Perlow (1998) developed the concept of boundary controls in terms of the ways that a company could control the time and activities of employees. This same concept can be used to describe the ways that individuals control their own time and buffer themselves from false urgencies and interruptions.

This study is designed to develop an understanding of whether telecommunications technology (cell phones and pagers) serve to facilitate the performance of the various managerial roles identified by Mintzberg (1973). The concept of boundary control is used to explore the methods that managers employ to control the use of telecommunications devices and utilize them effectively.

BACKGROUND TO THE PROBLEM

It is acknowledged that cell phones and pagers are designed to provide convenience and flexibility. Telecommunications technology has the potential to provide assistance with scheduling meetings and coordinating tasks. Managerial work, however, goes beyond the scheduling of work such as attending meetings, seminars, and site visits. It involves using critical and relevant information as integral elements for the execution of the managerial roles. The problem is that it is unclear whether the proliferation in the usage of telecommunication technology facilitates or compromises the effective performance of all the managerial roles.

The need for managers to develop time management skills has been well established in the literature on managerial effectiveness. A basic principle for effective time management is that managers should rank priorities in terms of urgency and importance (Covey, Merrill, & Merrill, 1994). Ringing telephones create a sense of urgency (Mackenzie, 1990) and telecommunications technology has the propensity to create an even greater sense (often falsely) of both urgency and importance. Attending to unimportant and trivial phone calls can sway the manager's attention away from a more urgent and important matter because the incessant ringing and beeping of the cell phones and pagers create a false urgency effect. With the proliferation of telecommunications technology, there is a growing potential for unimportant and trivial matters to cause disruption to higher priority matters. It is possible then to conclude that telecommunications technology may in fact be reducing managerial effectiveness by distracting managers and calling their attention to lower priority issues.

Mintzberg has characterized managerial roles as Interpersonal Roles, Informative Roles and Decisional Roles. Each set of roles involves intense communication. The interpersonal roles involve interacting with supervisors, subordinates, peers and others outside the organization. The decisional roles require that managers seek out information to use in decision-making and then communicate this decision to others. The informative roles obviously involve focusing specifically on acquiring and disseminating information (Griffin, 1984).

The multifunctional ties of managerial roles posit the necessity of a more modern channel of communication with high speed and flexibility in the flow of information. Managerial work is not confined to only merely scheduling of work but involves speedy decision-making and strategic planning especially when managers are constantly mobile and busy attending meetings and other scheduled work. Cell phones and pagers are not only a tool to make one available to stakeholders at all times and at all places. They can be used for the exchanging of information for the effective functioning of managerial roles. The question that arises is how many managers are using cell phones and pagers for the above stated purposes.

THE CHANGING NATURE OF MANAGERIAL WORK

The very nature of a manager's work is changing through telecommunications technology. The highly competitive global economy requires that managers employ a variety of managerial skills to suit the uncertainties and unpredictable changes in

managerial work (Handy, 1993). The changes that are occurring create the need to manage diversity and the need for flexible management, which is enhanced by the occurrence of mergers, acquisitions and globalization.

The very notion of aggressive competition and globalization has necessitated effective communication channels and the use of telecommunication devices. Telecommunications can keep managers informed and help them to keep pace and abreast of developments in the external environment. Telecommunications has the potential to help in the organization and executing decisions for the survival of the organization. The availability of telecommunications devices, coupled with the turbulent global business environment are contributing to changes in how managers receive, process and transmit information to other stakeholders.

Over the past decade, technological developments have enabled people to communicate more information immediately across larger distances, transforming the workplace into a multi-national cyber community (Connell, 2000). Managers are increasingly dealing with people who are telecommuting from home or one working in geographical dispersed locations, using e-mail, voicemail, the web, and various forms of conferencing (Coovert, 1995 cited in Connell, 2000).

RESEARCH DESIGN

Problem Statement:

The problem addressed through this research is that it is unclear whether the proliferation in the usage of telecommunication technology facilitates or compromises the effective performance of the managerial roles defined by Mintzberg (1973).

Purpose Statement:

The purpose of this research project is to investigate the ways in which cellular telephones and pagers facilitate or compromise the effective performance of the managerial roles defined by Mintzberg (1973).

Research Questions:

In order to develop a methodology for carrying out this purpose, three research questions are posed:

1. *In what ways does Telecommunication Technology (cell phones and pagers) help managers to effectively perform the various managerial roles?*
2. *In what ways does Telecommunication Technology (cell phones and pagers) create interruptions and false urgencies that impede the effective performance of managerial roles?*
3. *In what ways do managers use boundary controls to manage interruptions and false urgencies created by telecommunications technology?*

RATIONAL FOR THE STUDY

From their everyday experiences, most managers who are familiar with trends in electronic communication can attest to the rapidly expanding access via cell phones and pagers in their working environment.

From a practical standpoint, it seems clear that organizations have invested much effort and time to improve electronic communication structures. Although the use of cell phones and pagers is a well-known trend and practice, very little is really known about manager's perceptions towards cell phones and pagers and how it impacts their managerial work.

The current expansion and diffusion of electronic communication networking has resulted in high utilization by managers of cell phones and pagers in organization without a concurrent body of well-defined theory and empirical research. A knowledge base that might help to explain the impact of cell phones and pagers in the context of organization communication or to more fully understand manager's perceptions about this new phenomenon has not been forthcoming.

Most of the current case studies which were either obtained via internet or literature were written about issues concerning health, other hazardous issues, and interruptions pertaining to the usage of cell phones and pagers (by the general public) without focusing on the implications of these devices to a manager's nature of work.

In general, however, the issue of whether cell phones and pagers have indeed facilitated the nature of managerial work or have impeded or hinder the effectiveness of managers performing their various managerial roles has not been critically examined.

SIGNIFICANCE OF THE STUDY

It is anticipated that this observatory evaluation will shed some new light on the perceptions that managers have about electronic communication and in what ways that these devices facilitate managers in performing their managerial roles in an organization.

It seems possible that creating more knowledge and insight about the relationship between cell phones and pagers and their impact to the nature of managerial work might contribute toward a better understanding of managerial work. Perhaps, in addition, it will provide a unique contribution to the limited research base about the impact of cell phones and pagers on the nature of managerial work.

It is anticipated that both scholars and practioners will find this study to be useful in giving them an insight to reflect their assumptions about the effectiveness and efficiency of cell phones and pagers in relation to the face-to-face communication structures within one's own organization.

Perhaps, those who have not yet considered the significance of the problematic nature of cell phones and pagers will be surprised at the findings that the impact of these devices which have the potential to both foster and impede discourse among managers.

The findings should promote more understanding and spur additional research about issues that are inherent in procuring and gaining acceptance and support of managers when cell phones and pagers become an integral and important part of an organizational communication network.

Organizations that are planning changes involving the introduction of new communication technologies such as cell phones and pagers may want to consider in what ways these devices have facilitated managers in performing their various managerial roles. They may also want to learn from both the positive and negative aspects of cell phones and pagers and its impact to the effective performance of managerial work.

CHAPTER 2

REVIEW OF LITERATURE

INTRODUCTION

The emergence of electronic communication like cell phones and pagers has without a doubt facilitated the accomplishment of managerial work by enhancing communication. They are moving beyond simple communication devices and are fast becoming the ***"smoke alarm of the decade***"(Cirigani, D' Augostino, Kelly & Schilling, 2001). A survey published in The Economist a few years ago summed up the telecommunications revolution as ***"the death of distance***" which is capable of both transcending and enhancing location, and will shape the future development of the wireless industry (Wooldridge, 1999).

Mobile phones undoubtedly make it easier for people to work wherever they chose and it is of a great help for people on the move. Telecommunications Technology makes it easier for people to get in touch with each other whenever they need to (Wooldridge, 1999). Mobile phones and pagers allow their users to avoid frustration, and fill "niche time" that would otherwise be wasted especially when one is traveling or waiting in a long queue or just being stranded.

Fast and efficient communication systems have far-reaching positive effects for large industrial and manufacturing sites, speeding up production cycles and helping improve internal communications. It is estimated that the next five years will see a large expansion

in the number of businesses turning to mobile telephones for their primary means of communication (Eggleton, 1999). Companies will be using mobiles for speaking to their clients, colleagues and friends, forwarding text and accessing the Internet/intranet. With the technology needed to make this work currently being developed, and a range of features already available, many companies are now re-evaluating their communications networks and going mobile.

TIME MANAGEMENT

A very fundamental criterion for the effective management of work, both before and during the telecommunication era, is the effective management of time. Managers need to be disciplined and develop effective time management skills to sustain the complexities and intensities of managerial work.

Managers need to keep in touch with other managers and the actors in the external environment so that they are well informed within their organization, their industry and the world. This suggests that time management techniques need to accommodate the manager's need for a more fluid approach to time, one that focuses more on identifying priorities and concentrating on the critical tasks. The focal issues that concern managers now are techniques that can be utilized to prioritize demands and substantiate the difference between important and urgent calls. Inevitably, this is complicated by the emergence of telecommunications technology.

With the prevalence of false urgencies created by cell phones and pagers, the challenge faced by managers is to prevent the urgent but less important tasks from diverting manager's attention from important, but seemingly less urgent, ones. The task that lies ahead is to create a distinction between what is urgent and what is important. Covey, Merrill, & Merrill (1994), presented a Time Management Matrix that creates a distinction between urgent and important tasks. It is theorized that the most effective managers will be those who can use telecommunications technology to effectively balance their priorities and maintain a focus on the task that are the most highly urgent and important. One of the difficulties perpetuated by telecommunications technology is the tendency towards "crisis management", where each day is occupied by a series of crises and events that result in a series of reactive tactics rather than a coordinated proactive strategic approach.

In terms of creating an effective time management, there should be an understanding between positive and negative interruptions. Positive interruptions are work related and negative interruptions are not work related (Golin, Bricklin & Diamond, 1991). According to Golin et al. (1991), many of the interruptions loom as catastrophic in one's little corner of the universe. If one hopes to be serious about managing time, one has to understand that many of those interruptions (positive interruptions) are a predictable and necessary part of work, and should be dealt with as such. Interruptions can be anticipated if management set aside specific blocks of time to perform specific tasks. But schedules

should never be so tight that managers do not have time for the incidental and the unexpected.

It is envisaged that this telecommunication technology will be effective in enhancing managerial work. In recent research by Dodes (2000) nearly all respondents to a survey said that cell phones are the most indispensable piece of business paraphernalia. The feature they possess, especially accessibility, portability and connectivity, provide advantages for managers who are not only busy but highly mobile and allows them to execute their managerial roles in an effective manner. Cell phones provide speedy responsiveness and enhance networking for managers who have to scan the environment for imperative information for the benefit of the organization.

Cell phones and pagers can also be alienating and intrusive (Wooldridge, 1999). They trump face-to-face interaction, so that even a polite person will abandon a conversation to answer a cell phone call and indisputably, they are interruptive. These two features, particularly their incessant interruptiveness, pose distractions to the execution of managerial work because they potentially hinder the continuity of work and sway the manager from important tasks to attending phone calls that may be less important tasks (Covey, Merrill, & Merrill, 1994). This is termed as the "***false urgency***" effect.

MANAGERIAL WORK

There is limited research on whether telecommunication devices have indeed facilitated and enhanced the effective functioning of the manager's work. There is limited empirical evidence that strengthens the argument that cell phones and pagers have indeed facilitated managers in performing their managerial roles.

Organizations are investing substantial resources in new communication technologies, but little is known about the transition or how these technologies are changing organizational communication.

According to Starke & Sexty (1995), studies of managers' communication patterns show that a large amount of time is spent on oral and written communication. An earlier study by Henry Mintzberg showed that CEOs spent 78 percent of their time in oral communication. This took place in situations like scheduled and unscheduled meetings, plant tours, and telephone conversations. A more recent study by other researchers showed that they spent 74 percent of their time in oral communication (cited in Starke & Sexty, 1995). In both these studies, executives spent about half of their time with subordinates, and the other half with peers, the board of directors, and people outside the company.

Communications is crucial in each of the three managerial roles identified by Mintzberg. Its importance is most obvious when managers gather and disseminate information, that

is, in their ***information role***. Managers act as monitors (analyzing information about the unit's operation), disseminators (giving subordinates information they need to perform their jobs better), and spokespersons (sending information to individuals outside the manager's unit). The other two managerial roles also demand competence in communication. In the ***interpersonal role***, for example, managers interact with their subordinates, superiors, peers, and people outside their unit. In the ***decisional role***, managers must exhibit communication skills when they settle conflicts among subordinates, when they negotiate with people outside their unit, and when they communicate how resources have been allocated. Poor communication skills mark reduction in organizational effectiveness.

According to Mintzberg (1973), the manager's job is a calculated chaos and controlled disorder. A typical day for a manager includes most of the following activities: desk work, attending scheduled meetings, telephone calls, reading correspondence, answering correspondence, attending unscheduled meetings and tours. This suggests that a manager performs a great deal of work at an unrelented pace and manager's work requires great energy. Mintzberg's study on five executives in 1970 found that managers were not doing what they were supposed to do as managers such as planning, organizing, coordinating and decision-making. Mintzberg's study indicated that diverse managerial activities could be organized into ten roles, which he organized into three categories.

Many other researchers such as Quinn (1988) and Luthans (1988) used observational studies to describe what senior managers actually do and how they divide their time among various activities. These studies were primarily done to ascertain what constitutes effective managers.

Luthans (1988) conducted an observational study of 248 managers in a number of public and private sector organizations. He compared those managers who had a very high performance records as well as satisfied subordinates whom he labeled as "***effective"*** with those managers who had rapid rates of promotion whom he called ***"successful***". He concluded that these two groups indeed behaved differently. Luthans showed that effective managers behave differently than successful ones. The effective managers spent more time on communication and human resource management activities while successful managers spent more time on networking and politicking.

Another large scale study was conducted by Quinn (1988) who asked 295 part-time MBA and MPM students to describe the manager they knew best in terms of eight (8) characteristics; mentor, innovator, broker, producer, director, coordinator, monitor, and facilitator. The participants also assessed the managers on an overall effectiveness scale. A cluster analysis showed that highly rated managers could have any of several different profiles, but that "***master managers***" were rated above average in all eight (8) characteristics.

Mintzberg's approach has been replicated by several other researchers (Lau, Newman, & Broeding, 1980; McCall & Sewgrist, 1980; Snyder & Wheelan, 1981 cited in Javidan & Dastmalchian, 1993)). Other researchers have used primarily prescriptive approaches to the study of managerial effectiveness. This research suggests that the success of top managers depends on the extent to which they are able to create and sustain mutually satisfactorily relationships with the various groups of stakeholders, interacting with them. Different stakeholders groups represent different challenges in terms of desired behaviors, values, and attitudes (Katz & Kahn, 1978; Tsui, 1984). The expectations of such stakeholders are based on their own self-interests, work objectives, and role requirements (Tsui, 1984).

A study by Javidan & Dastmalchian (1992) involved 125 middle managers from a variety of public and private sector organizations. They were requested to describe in their own words the best senior managers they knew of based on 6 broad categories of roles. A set of six 6 roles (visionary, symbolizer, mobilizer, innovator, auditor, and ambassador) was seen as a satisfactory representation of their portrayal of "the best" senior managers. The findings show that managerial success is not highly correlated with their effectiveness, and that effectiveness relates to attributes reflecting senior manager's mobilizer role. Of interesting significance in all these studies is that the researchers were concerned with what managers actually do. This has been based on the insight developed by Mintzberg (1973) that managerial work is busy and involves a great deal of work at an unrelented pace. The basis of this study is to appreciate the fact that managers are not only busy but

they are also highly mobile. This is also another feature that could give some meaning in understanding in what ways telecommunication technology (cell phones and pagers) has facilitated managers in performing their roles.

This study will be based on Mintzberg's three (3) managerial roles without ignoring the contribution and significance of the above stated studies. In the era of Mintzberg's research, cell phones and pagers were not in existence to facilitate the executives in their managerial work. Communications were more based on written and traditional wire lined devices. Managers at that time were not as highly mobile as now. Managers were more based in small companies and were working in a more predictable and stable environment. The environment prevailing at that time was non-aggressive in product competition. But the environment now is very turbulent and non-predictable.

Organizational design now is very decentralized and the shift to vertical disintegration has dictated the necessity of managers to keep abreast with information flow, which is dynamic and changing rapidly. Managers now have to be flexible and prompt in satisfying all the stakeholders' expectations. Managers need to keep in touch with clients, suppliers, government agencies and other external market players to plan and organize their work. This highlights the need for an effective transfer and receiving of essential market information. The emergence of cell phones and pagers ensure that managers are accessible at all times to manage the information which is gravely important for their effective performance of their work. In today's enterprise, faster flow of information and

relevant information are important elements, which are necessary for managers to engage in effective decision-making (Koontz & Weihrich, 1988).

The dilemma that is faced by managers now is whether to appreciate telecommunications technology as a tool for effective management especially in facilitating a faster, reliable flow and integration of information.

The emergence of cell phones and pagers as compared to the traditional telephone possess the same interruptions and the potential for the "false urgency" effect. But the intensity of interruptiveness of cell phones and pagers is exacerbated by the fact that they are portable and can be accessible at any place and at any time. This brings us to the understanding that this issue of effective communication of cell phones and pagers rests on the ideal and correct usage by managers and how managers manage their time effectively. This posits that managers should use cell phones and pagers accordingly for important exchange of information especially for rich messages, which are important and urgent tasks rather than utilizing these devices on routine and non-important and non-urgent tasks.

A study by Clary (1998) was done to determine if cellular phones could help Extension Agents become more effective and efficient in their day-to-day work and thereby improve the quality of the services and the extent of Extension Agents contacts. The findings proved that the use of cellular phones increase the number of agent contacts and

basically, cellular phones allow agents to be available to their clientele while away from the office.

As such, this study will provide insight into ways cell phones and pagers are used by managers to facilitate their managerial roles especially in enhancing good communication and thus focusing on important and critical exchange of information that is necessary for the effectiveness of the organization. It is also the purpose of this study to investigate ways that the interruptive features of cell phone and pagers hinder the effective performance of managerial work and how managers manage their boundary controls.

COMMUNICATION

"Good communication is essential for effective management" (Luthans, 1986). Communication is the transfer of meaning and understanding between people through verbal and non-verbal means. In order to get work accomplished through other people, managers must influence their subordinates, peers and supervisors (Starke & Sexty, 1995). Communication is the central element in exerting this influence. Good communications skills can facilitate managers' careers and the performance of the organization for which they work. Of all the skills of management, the ability to really communicate must be the most valuable of all (Starke & Sexty, 1995). Without effective communication one cannot share information, give directions, make decisions or solve problems.

Communication begins with a thought, an idea or information we want to send to one another (Tarkenton & Bovett, 1991). These have meaning and it is this meaning that one tends to send. Communication is just not sending information but having a distinction between sharing and proclaiming which is imperative for an effective manager. Organization communication has two primary roles. First, it provides a means for accomplishing the firm's objectives. The way plans are to be implemented and activities coordinated to achieve these goals must be communicated to the individuals who must reach the goals. Second, communication provides a means by which members of the firm are motivated to carry out organizational plans. Managers have a central role in both these activities.

The communication process is the series of events that take place to transfer meaning. The elements in the general communication model consist of the source, encoding, message, channel, decoding, receiver and feedback (Starke & Sexty, 1995). Managers and their subordinates may communicate with each other through written, verbal, non-verbal, and electronic means. Each of these has advantages and disadvantages. Managers must be sensitive to when each should be used.

Communication via written means, such as memos, reports, letters, and company publications is advantageous when a manager wants to reach several people simultaneously or when it is intended to be documented. The disadvantage is that it is a

one-way communication, which is impersonal, and open to misinterpretation. Oral communication, such as one-to-one discussion, speeches, and committee meetings, works well when one needs to convey information quickly to another person or group. It provides quick feedback to the manager. The biggest disadvantage is that the message becomes distorted as it passes from one-person to another.

In terms of communication barriers, individual communication barriers are critical elements, which are caused by the characteristics of the individual working in that organization. This may include factors such as emotions, different perceptions, semantics, cultural differences, halo effect, stereotyping, defense mechanism, a lack of trust, and selecting the wrong channels for communication (Starke & Sexty, 1995).

Managers are motivated by both facts and emotions when communicating. Emotions are subjective responses to a situation or a person. When senders or receivers experience extreme emotions like love, hate, anger, depression, embarrassment, or happiness, communication is likely to be hampered (Starke & Sexty, 1995). Such state increases the likelihood that people will exercise bad judgment or make hasty or ill-advised comments. A manager's perception is also pertinent on how communication is effectively transmitted. Perception refers to the way that people "see". Each individual sees the world from a unique perspective because each person's background is unique.

The media managers use to communicate with others has an impact on their effectiveness of their communication. Two variables are important in determining communication effectiveness; firstly the media richness. Media richness is the extent to which a medium gives multiple information cues, immediate feedbacks, and a personal focus to the communication. Media can range from very rich (face-to-face communication) to very lean (written form letters)(Starke & Sexty, 1995). Secondly, is the routine nature of the message. This is the extent to which a message deals with a simple or repetitive problem.

Messages range from routine to non-routine. Non-routine messages have greater potential for misinterpretation than routine messages (Starke & Sexty, 1995). Managers must also check to see whether their communications have been understood. Encouraging feedback from subordinates, peers, superiors will help managers make this determination. This feedback can take the form of either words or actions.

It may be seen that communication barriers influence the usage of cell phones and pagers, and affect the effective exchange of information, which is imperative for the performance of the managerial roles. The advantages and disadvantages of communication via electronic devices have a profound implication on how managers perform their daily work.

FEATURES OF CELL PHONES AND PAGERS

Telecommunications Technology is defined as, "***the science and technology of communications by electronics transmission of impulses, as by telegraphy, cable, telephone, radio or television"*** (The American Heritage Dictionary, 1982).

The explicit features of portability, accessibility and connectivity, which are inherent in cell phones, and pagers, are superior to the traditional telecommunication devices. They are also well suited to the changing nature of managerial work. Providing facilities for receiving and sending e-mails via cell phones and pagers with its capacity to be connected to the Internet have far greater capabilities compared to the traditional telecommunication devices.

Nevertheless, one is left to wonder about the negative characteristics of cell phones and pagers due to their inability to facilitate managerial work effectively by virtue of the disturbances and interruptions they cause. Cell phones and pagers have the characteristics of creating false urgencies. The immediate beeping of cell phones tends to create a perceived notion in managers that the call is important and urgent. How do managers then create a distinction between an important and an urgent call? This suggests the need to look into how the changing communications paradigm relates to effective time management and how it affects the quality of managerial work.

PROLIFERATION OF THE WIRELESS TECHNOLOGY

According to the Cellular Telecommunication Industry Association (CTIA), as of December 31, 1999, there were over 86.1 million wireless subscribers in United States (U.S.). Today there are 100 million U.S. subscribers which is more than 36 percent of the U.S. population and subscribership is growing at a rate of 67,082 new subscribers everyday, about one subscriber every two seconds. CTIA also found that wireless phones accounted for 6.5 percent in 1999 of all telephone conversation but it is anticipated that in 2005, it will accord for 45.1 percent. It is also noted that the proliferation of pagers and cell phones will provide the additional purpose of sending and receiving e-mail and messaging. It is expected that this will be the driver of wireless adoption over the next few years. This is realized with the offering of Internet services via cell phones and pagers through the WAP and RIM pagers.

In the context of Canada, wireless communication is one of the fastest growing segments of the Information and Communication Technology sector in Canada. It includes wireless telephony (cell, PCS, satellite and wireless local and wide area networking), other wireless voice communication (e.g. public service radio, walkie talkies), wireless data communication over public and private systems (e.g. private wireless computer networks and fax transmission by cell phones), paging and wireless video communication.

According to Statistics Canada (2001), at the end of 2000, there were over 8.8 million mobile telephone subscribers across Canada. Most of the recent growth in access has

come from wireless or mobile services, which grew 26.7 % in the fourth quarter compared with the fourth quarter of 1999. Wireline and wireless industries directly employ more than 80,228 full time employees in the fourth quarter, up 1.1 % from the third quarter, and up 3.4 % from the fourth quarter of 1999. Capital expenditures for the wireline and wireless industries were $1. 35 billion and $553 million, respectively, representing 21.5 % and 36.1 % of wireline and wireless operating revenues, respectively.

The strong market demand growth in recent years has been due, in large part, to the technology developments that have made wireless technologies cheaper, more user friendly, and more accessible to the general consumer market. This has been reinforced by deregulation of the telecommunications industry and the increasing reliance on wireless technologies.

According to CTIA, as the number of wireless phones in the market place continues to grow, there also is a continuing shift away from usage of wireless phones primarily for business. As of February 1998, 64 percent of consumers reported using their phone primarily for personal needs, compared with only 20 percent who use them primarily for business. Three years ago, three in ten wireless customers were business users, and although each year business users have reported higher spending on their wireless service, they are a declining share of the market. Nevertheless, those wireless users who are the most likely to receive calls are also the most likely to make long distance calls,

and they tend to be business users, heavy users, and those who spend more than $50 on their monthly service. According to CTIA'S semi-annual wireless industry survey results (June 1985 to June 2000), the average local call length is 2 minutes.

When comparing interest levels in various wireless data services between those who use their phones mostly for business and those who use them mostly for personal needs, the CTIA survey finds that business users are more interested in the next generation of wireless phones than are personal users. In fact, business users are almost twice as likely as are personal users to express overall interest in wireless phones that provide data services. The above information is important to indicate the need for managers to use data services incorporated in cell phones and pagers to enhance and facilitate their managerial work.

The question is whether managers cell phones and pagers are equipped with these features, which are designed to assist managers in the exchange of critical and relevant information in a quick and efficient manner. The time saved in accessing pertinent information through this medium is inevitably the use that organizations are concerned with. Exchanging of information with speed and accuracy may increase the odds of survivability of organizations in competitive environments.

In today's business environment, messaging and responsiveness have become mission-critical, while at the same time, the work force is increasingly mobile. To be highly

productive and efficient, professionals need access to office information. While checking voice mail has been a straightforward and convenient for some time, checking e-mail and retrieving attachments has been far more challenging for the mobile workforce and corporate staffs that supports them.

Today many corporate teams from various companies have indulged in searching and coming up with practical business features that should be incorporated in cell phones and pagers. This is to ensure that managers who are highly mobile could access their e-mail and deliver from wherever they are.

Companies are making the mobile phones a natural extension of the office for managers. Managers can now manage their office e-mail by voice, by text, and importance via their cell phones through easy and practical e-mail mobile services. As such, managers can stay connected to critical information while being notified of urgent messages. This is designed to enhance customer response time and increase the manager's productivity.

FACE-TO-FACE INTERACTIONS

It is generally accepted that new technologies enable the transmission of a large quantity of information in a more convenient and inexpensive way. These improvements in telecommunications technology have stimulated a large interest in the interdependence between telecommunications and face-to-face interactions. The question is whether face-to-face interactions and telecommunications technology are substitutes or complements

for each other. According to Panayides (2000), the substitute hypothesis claims that as telecommunications technology improves, people will substitute face-to-face interactions with electronic devices and thus the demand for face-to-face interactions will be eliminated. The complementary hypothesis claims that telecommunications and face-to-face interactions are complements. Nevertheless, at least a certain number of face-to-face contacts will be required in an interaction because some information cannot be electronically communicated. Panayides (2000) summarized that telecommunication may be a complement to, rather than a substitute for face-to-face interactions.

A study by Siegel (1988), emphasized how and why managers use new telecommunication technologies compared to the traditional communicational technologies. The results support a prediction that new communication modes would be preferred and used more where social feedback preferences were lowest.

It is notable in previous research that managers spent much of their time communicating face-to-face and had a strong preference for the feedback provided by face-to-face interaction when they handle important and non-routine tasks. New telecommunication technologies may reduce the availability of feedback (Siegel, 1988).

In a study of 95 executives (cited in Stark and Sexty, 1995), it was found that their preference for face-to-face communication increased as the complexity of the message increased. For routine messages, over two thirds of the managers used written media, but

for the most complex messages, 88 percent of the messages used oral media. The essential finding in the study was that the most effective managers used “rich” (i.e. oral) media for complicated issues and “lean” (i.e. written) media for routine messages. As such, electronic communication such as cell phones and pagers (which are oral media of communication) should be used by most effective managers for rich and complicated issues and not merely for routine and not important messages. This issue requires further investigation and study.

Dana (1999), in a study designed to compare the trust levels between middle managers and staff members who work remotely and who primarily rely on computer-mediated methods of communication, found that e-mail was the most frequently used communication method for both groups even when the opportunities for face-to-face communication were present. It has further been found that face-to-face communication is preferred early in a relationship, however once the relationship is established, the method of communication is considerably less important. There was no evidence that the method of communication has an effect on the development and maintenance of trust.

Nevertheless, communication was seen as a key factor in fostering high-trust relationship, regardless of the work location. The study suggests that managers need to consciously make decisions that foster high trust and they should extend themselves to communicate regularly and proactively. Managers also need to provide opportunities for more face-to-face communications, especially in a relationship. As a general comment, it is generally

perceived that face-to-face communications and electronic devices are complementarily depending on the usage of these telecommunication devices and the art of communicating skillfully by managers in an effective way. This is to ensure social feedback so that managers can effectively coordinate the efforts of employees.

ROLE OF BOUNDARY CONFLICTS AND BOUNDARY CONTROLS

An additional issue that has emerged as a result of the accessibility created by telecommunications technology is the potential for role conflicts. The transcendence of managerial work into after office hours, and the increasing need for managers to travel for official work, creates many dilemmas for managers who typically have families and other commitments. The dual role and multiple role modes that are inevitable for managers encourage them to use cell phones and pagers as a means to balance multiple roles. For new cell phones users, telecommunications technology creates a way to stay in touch with their customers, clients, friends and family (Cirignani, D'Augostino, Kelly & Schilling, 2001).

But questions have been raised regarding whether personal calls made or received via cell phones are ethical and appropriate. Similarly, many managers feel that their autonomy and freedom during non-working time has been invaded by the expectation of being available to respond to calls. Few organizations appear to have well-established policies pertaining to the appropriate use of telecommunications technology.

Both legally and ethically, managers have duties of service, obedience, and loyalty to their employer. These requires them to obey lawful and ethical orders, to exercise reasonable care in the performance of duties, to put the employer's interests ahead of their own in business matters, and not to use organizational resources for personal gain (Green, 1994). As such, it is very ambiguous to state that personal calls are legitimate when managers have to adhere to organization policy, which generally prohibits the usage of cell phones and pagers for personal calls. Organizations now have to look into accepting and appreciating the notion of inseparability of home and office and allowing understanding that managers need to have peace of mind of the home front so as to have a productive mind to work (Handy, 1993). At the same time, managers must explore ways to prevent work from taking over their lives (Perlow, 1998). Nippert-Eng (1995) cited in Ashforth, Kreiner, & Fugate, 2000 documented two strategies to balance work and life outside of work: one strategy is to physically separate work and home life ("segmenting"); the other strategy is to intertwine work and home ("integrating"). The features of accessibility and connectivity of cell phones and pagers at anyplace and at any time have the potential to both create and to mitigate family-work conflict.

The concept of "boundary controls" (Perlow, 1998) relates to the manner through which managers segment their roles and tasks, and consciously control their allocation of time. Activities that ascertain boundary controls are such as turning off a cellular telephone during an important meeting, or forwarding calls to voice-mail while working on an important report. Based on fundamental time management principles, it would appear

that managerial task effectiveness might be dependent upon the extent to which managers consciously employ boundary controls. Effective use of boundary controls allows manager to buffer themselves from the many minor distractions that can be created by telecommunications technology, while remaining connected and in-touch with the urgent and important strategic issues and opportunities that require their attention.

CHAPTER 3

RESEARCH METHADOLOGY

INTRODUCTION

The primary methodology employed in this project was a qualitative approach. The qualitative approach encompassed three (3) stages. The first stage involved a ***job shadowing*** exercise with managers from various organizations within the city of Lethbridge. The second stage was a ***debriefing exercise*** (interview) conducted with each participant after the completion of each job-shadowing episode. The third stage involved a ***questionnaire***, completed by the respondents after the debriefing exercises (see Appendix C).

A letter to procure the consent from respondents was sent prior to the job shadowing exercises. This letter explained the purpose of the study, the job shadowing and the debriefing exercises and the affirmation regarding the confidentiality and the anonymity of the respondents (see Appendix A).

The Human Subject Research Approval was obtained on May 10, 2001 with some minor recommendations to the Appendices A, C and E (see Appendix B).

JOB SHADOWING

The job shadowing exercise involved observations by the researcher on the usage of cell phones and pagers by managers working in the office and out of office. The researcher

spent a "typical work day" with each participant. The researcher accompanied each subject through the day and recorded observations by taking notes. A checklist was used to record the observations.

The observation protocol (see Appendix D) involved:

- Identifying the number of calls managers received and made during a working day whether in office or out of office
- Whether managers turned off their cell phones and pagers while in meetings and in the office.
- The number of calls (interruptive calls) attended by managers during meetings and in office.
- Time consumed while conversing during each call received or made.

DEBRIEFING

The debriefing exercise involved an interview protocol whereby the researcher gathered detailed information based on the managers' opinions and perceptions pertaining to each call made or received for the entire day (while in office and out of office). This was based on the observations recorded during the job shadowing exercise. The interview was conducted in the respondent's office and the researcher prepared questions during the observation period, and responses were recorded in a written form (refer Appendix E). The ***debriefing exercise*** (conducted after the job shadowing exercise) encompassed:

- The nature of calls (business or personal) received and made

- Detailed information regarding business calls
- Detailed information regarding personal calls
- Perception of managers towards the business calls in terms of its urgency and importance and sufficiency.
- Perception of managers towards personal calls received and made during working time in terms of its importance and urgency, sufficiency and whether they view it as interruptive
- Why managers did or did not turn off their cell phones and pagers during meetings and in office?
- Why managers attended to calls during meetings and in office (in cases where they did not turn off their cell phones and pagers)?

QUESTIONNAIRE

The third stage of the data collection involved the collection of basic information about the respondent's profile, the organization policy on the usage of cell phones and pagers and the manager's perception of the usage of cell phones and pagers when dealing with business and personal calls. This background information was collected through a standardized questionnaire completed by the respondents after the debriefing exercises (see Appendix C).

SUBJECTS

A convenience sample of 10 managers was used. The sample comprised of managers from different disciplines in various business sectors who had prior affiliation with the

University of Lethbridge and who had given prior consent to this study. The sample was limited to managers based in the city of Lethbridge, Alberta, Canada.

DATA ANALYSIS

The observations based on the job shadowing exercise and the debriefing questions were designed to capture data, which would have direct relations to the three research questions.

The job shadowing exercise involved observations on the number of business calls received and made, personal calls received and made and also the length of the calls. All these observations were noted in the checklists prepared by the researcher. Respondents were told to state to the researcher whether these calls received or made via the cell phones were business calls or personals. Respondents were also asked to state the names of the callers who called respondents and also names of the person/s whom the respondents called. This was to ensure that respondents would be able to recall and describe the nature of the calls during the debriefing questions. The number of calls received and made was recorded according to whether it was received or made in the office or out of the office. This was to determine whether more calls were received or made via their cell phones either in their office or out of their office. This was also to ascertain whether cell phones were primarily used to receive and make calls when respondents were mobile.

The Debriefing Exercise was done to enable the respondents to describe to the researcher in more detail the respective calls received and made via their cell phones during the job shadowing exercise. The Debriefing Questions were designed to capture data, which could answer the three research questions.

Basically for the first research question, questions were asked related to the type of information exchanged via the cell phones for all the calls received and made by respondents. For the second research question, questions were asked on whether respondents expected the calls. This was asked primarily to ascertain whether calls received created a sense of urgency and importance to managers.

In relation to this, four more questions were asked to ascertain whether calls received were interruptive in nature. The following were the four questions:

- Whether respondents attended to any follow-up tasks immediately after receiving these calls
- The importance and urgency of the calls received
- Arrangements for a face-to-face interaction
- Sufficiency of the information exchanged via the cell phones

The questions above were designed as to find a correlation between the issue of false urgency of calls received and its interruptive nature to the respondents.

For the third research question, questions were posed in the questionnaires which attempts to find in what ways managers use their boundary controls to manage interruptions and false urgencies. Due to the limited time frame for this study, questionnaires were not sent prior to the job shadowing exercises. As such, respondents were asked to complete the questionnaires immediately after the debriefing exercises.

For the third research question, two questions were asked to establish the issue of boundary controls. Questions were asked in relation to the number of business features incorporated in the respondents cell phones and the number and type of stakeholders who have access to the respondents cell phone numbers.

After procuring these data, the researcher dwelt in establishing some definite patterns as to answer the three research questions. For the first research questions, data from the debriefing exercises were tabulated based on the type of information exchanged and its correlation to the three managerial roles of managers (informative, interpersonal and decisional role).

For the informative role, data or responses based on the giving of information (disseminator role), receiving of information and inquiries (monitor role) were the data relevant to the informative role. Responses based on the giving of instructions (leader role) and coordinating work (liaison role) was the data relevant to the interpersonal role.

Responses based on the decisions made via the cell phones were relevant to the decisional role.

The issue of false urgency was captured from the questions related to the expected and non-expected calls. All the non-expected calls received were construed as creating a sense of urgency to respondents. Nevertheless, the issue of whether these calls were interruptive in nature was contingent upon the importance and urgency of the calls.

The data on the expectancy of the calls, importance and urgency of the calls, attending immediately to follow-up tasks and sufficiency of the information exchanged via the cell phones were tabulated cross sectionally to find whether respondents were interrupted in their work.

The data based on the boundary controls were tabulated and analyzed cross sectionally with the number of calls received and made by respondents from different managerial work. This was to ascertain whether respondents with different managerial work had effective or non-effective boundary controls based on whether they received or made more calls. It was assumed that managers with effective boundary controls should not receive more calls than the managers who had non-effective boundary controls.

Receiving more calls was construed as interruptive in nature, but depended on the importance and urgency of calls. As such, data based on the importance and urgency of

the calls received was analyzed cross sectionally with the different managers who had effective and non-effective boundary controls.

It was anticipated that managers with effective boundary controls should tend to receive fewer calls and perceive that most of the calls received (if any) to be important and urgent in nature. This was the essence of an effective boundary control which is to limit the number calls received and to ensure that calls received are not interruptive in nature.

The number of personal calls received and made was analyzed to ensure whether respondents used their cell phones to make or receive personal calls. This data was also analyzed to ascertain whether respondents felt that personal calls were interruptive in nature. This was established by obtaining responses of whether these personal calls were important and urgent or not important and not urgent.

Other responses relevant to their overall perceived opinions about the usage of cell phones was also obtained from observing the respondents during the job shadowing exercises and also by obtaining further insights during the debriefing exercises. The data, which were relevant to the research questions, were deliberated during the debriefing exercises. Data that were more of a unique in nature and not directly related to the research questions were obtained from some respondents. They were incorporated as emerging issues. This could be useful for further investigation in future research studies.

The researcher also observed matters such as the emotional display of respondents when answering calls, their daily work routine, the length of calls and other telecommunication technologies used by respondents.

CHAPTER 4

RESULTS AND FINDINGS

INTRODUCTION

The research involved ten (10) respondents from various business sectors, all of whom were involved in managerial work. The time frame involved in the job shadowing exercise took place during May and June , 2001. All the respondents were male. It was difficult to get female respondents even though numerous attempts were made.

A total of 35 respondents were contacted from the list of names provided by Mr. Dan Kazakoff (Mentors Program Coordinator) and Prof. Bernard Williams (Supervisor) and also names referred by the potential respondents who were unable to participate due to a variety of reasons.

Some of the people contacted declined to participate due to the fact that their usage of cell phones was not extensive. Others pointed out that they were either busy or the organization prohibited the job shadowing exercise.

BUSINESS SECTOR OF THE RESPONDENT'S ORGANIZATION

The job designation of the ten (10) managers who participated in the job shadowing exercise are as stated below:

Manager (Water Treatment Facilities) (R1)

Hotel General Manager (R2)

Sales Manager (Insurance) (R3)

Technical Manager (Engineer) (R4)

Operations Manager (Facilities Manager) (R5)

Sales Manager (Car Sales) (R6)

Operations Manager (Managing Senior Homes- Voluntary Services) (R7)

Medical Health Officer/Vice President (R8)

Operations Manager (Facility Services) (R9)

Consultant (Executive Director)(R10)

A total of 2 respondents were from the industrial sector and another 2 respondents were from the government sector. The other 6 respondents was from the financial sector, retail sector, hotel conference sector, voluntary service sector, tertiary education sector (university) and the group benefit sector (insurance). To facilitate interpretations of results based on the various observations, respondents were categorized according to their nature of work. The number of respondents categorized according to their nature of work is shown below:

Nature of managerial work	***Respondent***	***Number of respondents***
Operations Manager	R2, R5, R7, R9	4
Technical Manager	R1, R4	2
Sales Manager	R3, R6	2
Senior Manager	R8, R10	2

R1 to R10: refers to Respondent 1 to Respondent 10

OVERVIEW OF JOB SHADOWING

The job shadowing exercise was done with managers for a typical working day and was limited to the office working time (approximately 8 am to 5pm). It was done either in the office or out of the office depending on the daily working schedule of the managers. A good portion of the job shadowing exercise was done out of the office. It was found that most of the calls received and made were captured when managers were working out of the office (mobile).

A considerable amount of information pertaining to the manager's perceptions about the usage of cell phones was captured or obtained during the conversation with the managers whilst traveling or when there was grace time to chat. This was done with the consent of the managers. The researcher often posed questions during transit time such as during traveling or meals.

All managers were asked to recognize the person who called them and also the person whom they called. This was done by designating the person's name in the checklist. This was to enable the managers to recall the conversation (based on the name of the person) and thus facilitate the debriefing exercise.

The researcher also observed the manner the respondent conversed via their cell phones especially the emotional expression portrayed. At times, the researcher abstained from shadowing respondents if the respondents asked to be left alone. When this occurred,

respondents were asked to keep a log on the calls made and received during this period. All the respondents were cooperative in this matter.

SUMMARY OF THE RESULTS

The following were the number of business calls and personal calls received and made by the ten (10) respondents in this study:

Table 1: Total number of business and personal calls received and made by respondents via cell phones.

Respondent	***Business Calls (Received)***	***Business Calls (Made)***	***Personal Calls (Received)***	***Personal Calls (Made)***
01	7	3	1	2
02	6	-	-	-
03	4	10	1	1
04	7	2	-	-
05	10	1	-	-
06	2	2	-	-
07	4	3	1	-
08	2	7	-	-
09	1	3	1	-
10	2	2	2	1
Total	***45***	***33***	***6***	***4***

A total of 10 respondents in this study received a total of 45 business calls. The greatest number of business calls received by a single respondent was Respondent 5 who received 10 calls (22 % of the total calls received via cell phone) while Respondent 9 received the least number of calls, which was only one call (2 % of the total calls received).

A total of nine respondents made a total of 33 business calls via the cell phones, while one respondent did not make any business calls via the cell phone.

A total of five respondents received a total of six personal calls via cell phones. The other five respondents did not receive any personal calls via their cell phones.

A total of three respondents made a total of four personal calls via cell phones. The other seven respondents did not make any personal calls via their cell phones.

OBSERVATIONS BASED ON BUSINESS CALLS RECEIVED VIA CELL PHONES

TYPE OF STAKEHOLDERS WHO CONTACTED RESPONDENTS

In terms of the total business calls received by respondents via their cell phones according to the type of stake holders, 22 calls received from the customers constituted the highest percentage (49 %), followed by 18 calls from the office (40 %) and five calls from the suppliers (11 %)(see table 2 below).

All the respondents except one were contacted by their office. A total of four respondents (R1, R2, R4 and R5) received 30 business calls, which constituted 67 % of the totals business calls received. These were technical and operational managers.

Table 2: Total number of business calls received by respondents according to the type of stakeholders

Type of Stakeholders who contacted respondents (via cell phones)	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total number of Business Calls received***
Customers	5	4	1	2	4	-	-	-	-	2	***18***
Office	2	1	3	5	2	2	4	2	1	-	***22***
Suppliers	-	1	-	-	4	-	-	-	-	-	***5***
Government regulating agencies	-	-	-	-	-	-	-	-	-	-	-
Total	***7***	***6***	***4***	***7***	***10***	***2***	***4***	***2***	***1***	***2***	***45***

TYPE OF INFORMATION EXCHANGE(VIA CELL PHONES)

In terms of the total number of business calls received via cell phones based on the type of information exchange, 20 calls were of receiving inquiries (44 % of the total business calls received via cell phones). This was the most frequent exchange of information by respondents while using their cell phones followed by seven calls that were giving instructions (16 %), six calls that were giving information (13 %), five calls which were

receiving information (11 %), three calls that were making decision (7 %), three calls that were coordinating work (7 %) and one call that was handling complaints (2 %)(see table 3 below).

Table 3: Total number of business calls received by respondents according to the type of information exchanged.

Type of Information Exchange	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business Calls Received***
Giving instructions	1	-	-	1	1	2	-	2	-	-	***7***
Receiving inquiries	2	5	2	3	5	-	3	-	-	-	***20***
Giving Information	1	-	1	2	1	-	-	-	1	-	***6***
Receiving Information	2	-	-	1	2	-	-	-	-	-	***5***
Making decisions	1	-	-	-	1	-	1	-	-	-	***3***
Coordinating	-	-	1	-	-	-	-	-	-	2	***3***
Others: Handling complaints		1									***1***
Total	***7***	***6***	***4***	***7***	***10***	***2***	***4***	***2***	***1***	***2***	***45***

A total of 31 calls received (69 % of the total business calls received) involved in either receiving information, receiving inquiries and giving information. This suggests that respondents use their cell phones extensively for the exchange of information either with their office, customers or suppliers. A total of five (R1, R2, R4, R5, R8) out of six respondents who received 18 calls, which were inquiries in nature constituted 40 % of the totals business calls, received. They were technical and operational managers.

IMPORTANCE AND URGENCY OF CALLS RECEIVED

In terms of the total business calls received via cell phones according to the importance and urgency of calls, 31 calls were important and urgent calls which constituted 69 % of the total business calls received) while14 calls were not important and not urgent calls which constituted 31 % of the total business calls received (see table 4 below).

Table 4: Total number of business calls received by respondents according to the importance and urgency of calls

Importance and Urgency of Calls	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business Calls Received***
Important and Urgent	4	6	1	6	6	2	1	2	1	2	***31***
Not important and not urgent	3	-	3	1	4	-	3	-	-	-	***14***
Total	***7***	***6***	***4***	***7***	***10***	***2***	***4***	***2***	***1***	***2***	***45***

A total of five (R2, R6, R8, R9, R10) respondents perceived that all the calls received via their cell phones were important and urgent.

ARRANGEMENTS OF APPOINTMENTS

In terms of the business calls received via cell phones, a total of 30 calls (67 % of the total business calls received) did not involve in respondents making appointments while a total of 15 calls (33 % of the total business calls received) involved respondents making appointments with their callers.

ARRANGEMENT FOR A FACE-TO-FACE INTERACTION

In terms of business calls received via cell phones, a total of 30 calls (67 % of the total business calls received) did not involve respondents to make any follow-up meeting (face-to-face interactions) while a total of 15 calls (33 %) involved in respondents making arrangements for face-to-face interactions (see table 5 below). A total of four out of five respondents (R1, R2, R4, R5) who received 30 calls (67 % of the total business calls received) needed arrangements for a face-to-face interaction with their callers. They were technical and operational managers.

Table 5: Total number of business calls received by respondents according to the need for arrangements for a face-to-face interaction

Arrangements for a face-to-face interaction	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business Calls Received***
Arrangements needed	5	2	1	1	4	-	-	-	-	2	***15***
Arrangements not necessary	2	4	3	6	6	2	4	2	1	-	***30***
Total	***7***	***6***	***4***	***7***	***10***	***2***	***4***	***2***	***1***	***2***	***45***

EXPECTANCY OF CALLS

In terms of the total business calls received via cell phones, a total of 39 calls (87 % of the total business calls received) were calls which were not expected by the 10 respondents while a total of six calls (13 %) were expected by four respondents (see table 6 below).

Generally, respondents did not expect a substantial number of calls received. This suggests that respondents did not make any prior arrangements with their stakeholders. As such, this created a sense of urgency for them to attend to these calls.

Table 6: Total number of business calls received according to expected/not expected calls

Expected/Not Expected calls	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business Calls Received***
Expected Calls	3	1	-	-	-	-	-	1	-	1	***6***
Not Expected Calls	4	5	4	7	10	2	4	1	1	1	***39***
Total	***7***	***6***	***4***	***7***	***10***	***2***	***4***	***2***	***1***	***2***	***45***

NEED TO ATTEND IMMEDIATELY TO FOLLOW-UP TASKS (AFTER RECEIVING CALLS)

In terms of the total business calls received, a total of 27 calls (60 % of the total business calls received) did not need the respondents to attend to any follow-up tasks immediately after receiving these calls while a total of 18 calls (40 %) needed the respondents to attend to some follow-up tasks immediately after receiving these calls (see table 7 below). This suggests that respondents were not interrupted to attend to follow-up tasks while attending to other work when receiving these calls.

Table 7: Total number of business calls received by respondents according to the need to attend immediately to follow-up tasks

Attend to follow-up tasks	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business Calls Received***
Need to attend	6	1	3	1	3	-	1	2	1	-	***18***
Don't need to attend	1	5	1	6	7	2	3	-	-	2	***27***
Total	***7***	***6***	***4***	***7***	***10***	***2***	***4***	***2***	***1***	***2***	***45***

SUFFICIENCY OF INFORMATION EXCHANGE (VIA CELL PHONES)

A total of 30 business calls received (67 % of the total business calls received) were considered sufficient by the respondents as not to continue with a face-to-face interaction with the callers while a total of 15 calls received (33 %) were considered not sufficient by the respondents and there is a need to arrange for a face-to-face interactions with the callers (see table 8 below).

Table 8: Total number of business calls received according to the sufficiency of the information exchanged via cell phones

Sufficiency of Information Exchange (via cell phones)	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business calls received***
Sufficient	2	4	3	6	6	2	4	2	1	-	***30***
Not Sufficient	5	2	1	1	4	-	-	-	-	2	***15***
Total	***7***	***6***	***4***	***7***	***10***	***2***	***4***	***2***	***1***	***2***	***45***

THE EXCHANGE OF INFORMATION (VIA CELL PHONES) AND THE NATURE OF MANAGERIAL WORK

All the respondents perceived that the 45 business calls received via the cell phones had a direct correlation to the nature of the respondents work especially in facilitating faster responses, speedier decision making, expediting the dissemination of information.

OBSERVATIONS BASED ON BUSINESS CALLS MADE VIA CELL PHONES

A total of nine respondents made a total of 33 business calls via their cell phones. The greatest number of business calls made by a single respondent was Respondent 3 who made a total of 10 calls (30 % of the total calls made via cell phone) while Respondent 5 made the least number of calls which was only one call (3 % of the total calls made via cell phones). Only one respondent did not make any business calls via the cell phone (refer table 1).

TYPE OF STAKEHOLDERS WHO WERE CONTACTED BY RESPONDENTS VIA CELL PHONES

In terms of the total number of business calls made by respondents via their cell phones according to the type of stake holders, 18 calls were made to the office which constituted 55 % of the total business calls made, followed by 14 calls made to customers (42 %) and one call made to a manufacturer (3 %)(see table 9 below).

Two respondents (R3, R8) made a total of 17 business calls, which constituted 52 % of the total business calls made. Generally all respondents (except Respondent 2) made calls

to their office. This suggests that respondents always touch base with their office when they were working out of their office.

Table 9: Total number of business calls made by respondents according to the type of stakeholders

Type of stakeholders that respondents called (via cell phones)	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business Calls made***
Customers	1	-	7	1	-	1	-	3	-	1	14
Office	1	-	3	1	1	1	3	4	3	1	18
Others: Manufacturer	1	-	-	-	-	-	-	-	-	-	1
Total	***3***	***-***	***10***	***2***	***1***	***2***	***3***	***7***	***3***	***2***	***33***

TYPE OF INFORMATION EXCHANGED VIA CELL PHONES

In terms of the total number of business calls made via the cell phones according to the type of information exchanged, 10 calls were of giving information which constituted 30 % of the total business calls made. This was the most frequent exchange of information by respondents while using their cell phones followed by eight calls that involved obtaining information (24 %), giving instructions (21 %), returning calls (9 %),

coordinating work (9 %), receiving instructions (3 %) and follow-up calls (3 %)(see table 10 below).

Table 10: Total number of business calls made by respondents according to the type of information exchanged

Type of Information Exchange	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business Calls Made***
Giving Information	1	-	5	1	1	-	-	2	-	-	***10***
Obtaining Information	1	-	3	1	-	-	-	3	-	-	***8***
Obtaining Decisions	-	-	-	-	-	-	-	-	-	-	***-***
Giving Instructions	1	-	-	-	-	1	-	2	3	-	***7***
Receiving Instructions	-	-	-	-	-	-	-	-	-	1	***1***
Others: Return call Follow-up Coordination	-	-	 1 1	-	-	 1	- 3	-	-	 1	 ***3*** ***1*** ***3***
Total	***3***	***-***	***10***	***2***	***1***	***2***	***3***	***7***	***3***	***2***	***33***

Generally, respondents used their cell phones to make 18 calls (55 % of the totals business calls made) to give and obtain information either to their office or customers. None of the calls made involved in any decision-making. Respondents also made 7 calls (21 % of the total business calls made) via their cell phones to give instructions either to their customers or office. A total of 8 calls (24 % of the total business calls made) made

involved in either giving instructions or receiving instructions either from/to their office or customers.

IMPORTANCE AND URGENCY OF CALLS MADE VIA CELL PHONES

In terms of the total business calls made via cell phones according to the importance and urgency of calls, 18 calls made were important and urgent calls which constituted 55 % of the total business calls made, eight calls made were not important and not urgent calls (24 %) while seven calls made were important but not urgent calls (21 %)(see table 11 below).This suggests that a substantial number of calls made (55 % of the total business calls made) by respondents were considered important and urgent. Nevertheless, calls which were important but not urgent was also a significant finding in this study as to depict that some calls made were not urgent in matter that needs immediate attention.

Table 11: Total number of business calls made by respondents according to the importance and urgency of calls

Importance and Urgency of Calls Made	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business Calls Made***
Important and Urgent	3	-	3	2	1	2	-	4	1	2	***18***
Not important and not urgent	-	-	7	-	-	-	-	1	-	-	***8***
Important but not urgent	-	-	-	-	-	-	***3***	***2***	***2***	-	***7***
Total	***3***	-	***10***	***2***	***1***	***2***	***3***	***7***	***3***	***2***	***33***

ATTENDING TO FOLLOW-UP TASKS

In terms of the business calls made via cell phones, a total of 14 calls made (42 % of the total business calls made) involved in the need of the respondents to conduct follow-up tasks, while a total of 19 calls made (58 % of the total calls made) did not involve the need for the respondents to engage in any follow-up tasks. This suggests that respondents generally are not interrupted to do other tasks when they were working.

SUFFICIENCY OF INFROMATION EXCHANGED (AS NOT TO CONTINUE WITH A FACE-TO-FACE INTERACTION)

A total of 28 business calls made by nine respondents via the cell phones (85 % of the total business calls made) were considered sufficient by the respondents as not to continue with a face-to-face interaction while a total of five calls made (15 % of the total business calls made) were considered not sufficient by four respondents and there is a need to arrange for a face-to-face interactions with the callers (see table 12 below).

All the respondents perceived that the 33 business calls made via the cell phones had a direct correlation to the nature of the respondents work especially in facilitating faster responses, speedier decision making, expediting the dissemination of information.

Table 12: Total number of business calls made by respondents according to the sufficiency of the information exchanged

Sufficiency of Information (as not to continue with a face-to-face interaction)	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Business Calls Made***
Sufficient	3	-	9	1	1	1	3	7	1	2	***28***
Not Sufficient (face-to-face interaction needed)	-		1	1	-	1	-	-	2	-	***5***
Total	***3***	***-***	***10***	***2***	***1***	***2***	***3***	***7***	***3***	***2***	***33***

OBSERVATIONS BASED ON PERSONAL CALLS RECEIVED VIA CELL PHONES

A total of five respondents received six personal calls and all these calls were from their family members (see table 13 below). This suggests that respondents used their cell phones to receive personal calls from their family members. Nevertheless, the low number of personal calls received via cell phones infers that respondents could have educated their family members not to call them often while they were working.

Table 13: Total number of personal calls received by respondents via cell phones.

Relationship	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Personal Calls Received***
Family	1	-	1	-	-	-	1	-	1	2	***6***
Friends	-	-	-	-	-	-	-	-	-	-	-
Total	***1***	***-***	***1***	***-***	***-***	***-***	***1***	***-***	***1***	***2***	***6***

EXPECTANCY OF PERSONAL CALLS RECEIVED

Respondents did not expect a total of five calls which they received while only one call was expected (see table 14 below). This suggests that respondents generally do not expect to receive personal calls from their family members. This also infers that these non-expected personal calls have indeed created a sense of urgency to respondents because they attended to these calls.

Table 14: Total number of personal calls received by respondents according to expected/not expected calls

Expectance of calls	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Personal Calls Received***
Expected	-	-	-	-	-	-	-	-	1	-	***1***
Not Expected	1	-	1	-	-	-	1	-	-	2	***5***
Total	***1***	***-***	***1***	***-***	***-***	***-***	***1***	***-***	***1***	***2***	***6***

IMPORTANCE AND URGENCY OF PERSONAL CALLS RECEIVED

A total of 4 calls (67 % of the total personal calls received) was considered to be important and urgent while each of the other 1 call was considered as not important and not urgent and important but not urgent (see table 15 below). This suggests that respondents perceived that a substantial number of personal calls received from their family members were important and urgent.

Table 15: Total number of personal calls received according to the importance and urgency of calls

Importance and Urgency of personal calls received	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Personal Calls Received***
Important and Urgent	-	-	1	-	-	-	-	-	1	2	***4***
Not important and not urgent	-	-	-	-	-	-	1	-	-	-	***1***
Important but not urgent	1	-	-	-	-	-	-	-	-	-	***1***
Total	***1***	***-***	***1***	***-***	***-***	***-***	***1***	***-***	***1***	***2***	***6***

NEED TO ATTEND IMMEDIATELY TO FOLLOW-UP TASKS (AFTER RECEIVING PERSONAL CALLS)

Only one call (17 % of the total of personal calls received) needed respondent to attend to a follow-up task in relation to the call received while the other five calls (83 %) did not need the respondents to attend to any follow-up task in relation to the calls received (see table 16 below). Generally, respondents did not have to attend to any follow-up task after receiving calls from their family members. As such, they are not interrupted to attend to any follow-up tasks when they were working. As a whole, respondents did not receive a substantial number of personal calls via their cell phones.

Table 16: Total number of personal calls received by respondents according to the need to attend immediately to follow-up tasks

Attend follow-up tasks	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Personal Calls Received***
Need to attend	-	-	-	-	-	-	-	-	1	-	***1***
Don't need to attend	1	-	1	-	-	-	1	-	-	2	***5***
Total	***1***	***-***	***1***	***-***	***-***	***-***	***1***	***-***	***1***	***2***	***6***

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OBSERVATIONS BASED ON PERSONAL CALLS MADE VIA CELL PHONES

A total of four personal calls were made by three respondents via their cell phones (see table 17 below). The other seven respondents did not make any personal calls via their cell phones. The significantly low number of personal calls made suggests that respondents do not usually make personal calls via their cell phones when they are working.

Table 17: Total number of personal calls made by respondents via cell phones.

Relationship	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total1 Number of Personal Calls Made***
Family	-	-	-	-	-	-	-	-	-	1	***1***
Friends	-	-	1	-	-	-	-	-	-	-	***1***
Others: Doctor	2	-	-	-	-	-	-	-	-	-	***2***
Total	***2***	***-***	***1***	***-***	***-***	***-***	***-***	***-***	***-***	***1***	***4***

IMPORTANCE AND URGENCY OF PERSONAL CALLS MADE

A total of three personal calls made (75 % of the total personal calls made) were considered important and urgent by two respondents while the other call (25 % of the total personal calls made) was considered not important and not urgent (see table 18 below). This suggests that respondents made these personal calls via their cell phones only when it is important and urgent.

Table 18: Total number of personal calls made by respondents according to the importance and urgency of calls

Importance and Urgency of personal calls made	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Personal Calls Made***
Important and Urgent	2	-	-	-	-	-	-	-	-	1	***3***
Not important and not urgent	-	-	1	-	-	-	-	-	-	-	***1***
Total	***2***	***-***	***1***	***-***	***-***	***-***	***-***	***-***	***-***	***1***	***4***

NEED TO ATTEND IMMEDIATELY TO FOLLOW-UP TASKS (AFTER MAKING PERSONAL CALLS)

A total of three personal calls made needed the respondents to attend to some follow-up tasks while one call did not need the respondent to attend to any follow-up task (see table 19 below).

Table 19: Total number of personal calls made according to the need to attend immediately to follow-up tasks

Attend follow-up tasks	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Number of Personal Calls Made***
Need to attend	2	-	-	-	-	-	-	-	-	1	***3***
Don't need to attend	-	-	1	-	-	-	-	-	-	-	***1***
Total	***2***	***-***	***1***	***-***	***-***	***-***	***-***	***-***	***-***	***1***	***4***

RESULTS (BASED ON THE QUESTIONAIRES)

ORGANIZATION POLICY ON THE USAGE AND KNOWLEDGE OF CELL PHONES AND PAGERS

A total of five respondents had an organization policy on the usage and knowledge of cell phones and pagers while the other five respondent's organization did not have a policy (see table 20 below). A total of two respondents had policies on whom to call, two respondents had a policy on the prohibitions/limitations on personal calls and one respondent had a policy on the billing of the personal calls. A total of nine respondents had no training provided by their organization on the usage and knowledge of cell phones and pagers while one respondent had training provided by the organization.

Table 20: Total number of responses according to the existence of an organization policy on the usage of cell phones

Existence of Organization policy	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Responses***
Yes	X	X			X	X	X				***5***
No			X	X				X	X	X	***5***

OWNERSHIP OF CELL PHONES IN THE ORGANIZATION

Top managers constituted as the highest percentage (48 % of the total of 21 responses) in terms of the type of managers provided with cell phones and pagers in the organization followed by middle level managers (24 %), first level managers (14 %), technicians (9 %) and professionals (5 %)(see table 21 below).

Table 21: Total number of responses according to the ownership of cell phones by different level of managers

Type of Managers	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total***
Top managers	X	X	X	X	X	X	X	X	X	X	***10***
Middle level managers			X	X	X		X		X		***5***
First level managers				X	X				X		***3***
Technicians					X				X		***2***
Professionals (Architects, engineers etc)					X						***1***
Total	1	1	2	3	5	1	2	1	4	1	***21***

BUSINESS FEATURES INCORPORATED IN CELL PHONES

A total of nine respondents had business features incorporated in their cell phones while only one respondent did not have any business features incorporated in the cell phones. Voice mailbox was the most found business feature (48 % of the total responses) in the respondents cell phones. Followed by send/receive text messages (21 %), send/receive e-mails (16 %), internet/on-line information (5 %), access office computer network and business applications (5 %) and access information about news, weather, sports, stocks, etc (5 %)(see table 22 below).

It was found that only one respondent (a senior operations manager) had all of the business features (five) found in the cell phones. Generally all the other respondents (except Respondent 9) had at least a single common business feature in their cell phones (which was the voice mailbox.).

Table 22:Total number of respondents according to the different business features incorporated in the cell phones

Business Features (in cell phones)	***Number of Respondents***
Send/receive e-mails	***3***
Send/receive text messages	***4***
Internet/on-line information	***1***
Access office computer network and business applications	***1***
Access information about news, weather, sports, stocks, etc.	***1***
Voice mailbox	***9***

PEOPLE ACCESSIBLE TO RESPONDENT'S CELL PHONE NUMBER

Employees from the office and family constituted the highest percentage of response (53 % of the total responses) in terms of people who got accessed to managers, followed by customers (18 %), suppliers (13 %), friends (11 %) and government regulating agencies (5 %)(see table 23 below).

Generally, a total of five respondents (R1, R2, R4, R5, R6) had two types of stakeholders (customers and suppliers) accessing them. This appears related to the common nature of work of these five respondents, which includes dealing with customers and suppliers. The other respondents did not deal with suppliers because their nature of their work.

Nevertheless, all respondents had their office accessing them. All respondents had their family members accessing them. This suggests that all respondents felt that family members constituted as an important institution and calls received from them are always important.

Table 23: Total number of responses according to the number of different stakeholders who have access to the respondents cell phone number

Type of Stakeholders accessible to respondents cell phone number	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Responses***
Office	X	X	X	X	X	X	X	X	X	X	***10***
Customers	X	X	X	X	X	X				X	***7***
Suppliers	X	X		X	X	X					***5***
Government regulating agencies	X	X									***2***
Family	X	X	X	X	X	X	X	X	X	X	***10***
Friends	X	X				X				X	***4***
Others	-	-	-	-	-	-	-	-	-	-	***-***
Total	***6***	***6***	***3***	***4***	***4***	***5***	***2***	***2***	***2***	***4***	***38***

LISTING OF RESPONDENT'S CELL PHONE NUMBER IN DIRECTORIES

Office directory constituted the highest percentage of response (37.5 % of the total responses) in terms of the listing of respondent's cell phone number, followed by business cards (25 %), office web-site (19 %), public telephone directory (12.5 %) and correspondence (6 %)(see table 24 below).

A total of three respondents (R1, R2, R5) had three to four directories listing their cell phone number while five respondents (R3, R4, R6, R7, R9) had only a single means of directory listing their cell phone number. A total of two respondents (R8, R10) did not have any directories listing their cell phone numbers. These were senior managers who headed their department or organization.

Table 24: Total number of responses according to the number of directories that had listed the respondents cell phone numbers

Listings/directories of respondents cell phone number	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Responses***
Office directory	X	X	-	X	X	-	X	-	X	-	***6***
Public Telephone Directory	X	-	-	-	-	X	-	-	-	-	***2***
Business Cards	X	X	X	-	X	-	-	-	-	-	***4***
Office web-site	X	X	-	-	X	-	-	-	-	-	***3***
Others: Correspondence	-	X	-	-	-	-	-	-	-	-	***1***
Total	***4***	***4***	***1***	***1***	***3***	***1***	***1***	***-***	***1***		***16***

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FORWARDING CALLS TO VOICE MAILBOX

A total of five respondents forwarded the calls received to their voice mailbox while the other four respondents did not forward their incoming calls (see table 25 below). Only one respondent (R9) did not have the voice mailbox features. The four respondents who never forward calls to voice mailbox included two technical managers, an operations managers and a senior manager (the same senior manager who did not have any listing of his cell phone number). The technical and operations managers needed to attend to calls immediately because they were needed for disseminating information and decisions because they handled routine work which needed immediate responses. As such, they never forward any calls received. The senior manager perceived that all calls received had to be urgent because of his limited access.

Table 25: Total number of responses by respondents according to number of calls forwarded to voice mailbox

Forwarding calls to voice mailbox	***R1***	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total Responses***
Yes	-	*X*	*X*	-	-	*X*	*X*	-	-	*X*	*5*
No	*X*	-	-	*X*	*X*	-	-	*X*	-	-	*4*

LENGTH OF CALLS

All respondents tended to have an average of two minutes of conversation via their cell phones whenever they receive or made calls.

TOTAL NUMBER OF BUSINESS AND PERSONAL CALLS RECEIVED AND MADE BY RESPONDENTS VIA THE CELL PHONES (WHILE WORKING IN THE OFFICE AND OUT OF OFFICE)

A total of 38 calls were received and 36 calls were made by respondents via their cell phones while they were working out of their offices (see table 26 and 27 below). This constituted to 84 % of the total number of business and personal calls received and made by respondents while they were working in and out of their offices. A total of 13 calls were received and one call was made by respondents via cell phones while they were working in their offices. This constituted 15 % of the total business and personal calls received and made while they were working in and out of their offices. This indicates that respondents received and made significantly more calls via their cell phones while they were working out of their offices compared to while they were working in the office.

Table 26: Total number of business and personal calls received by respondents via cell phones while working in the office and out of the office

Location	***Number of calls received via cell phones by respondents***										
	R1	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total***
In Office	-	4	-	-	3	-	-	-	2	4	13
Out of Office	8	2	5	7	7	2	5	2	-	-	38
Total	***8***	***6***	***5***	***7***	***10***	***2***	***5***	***2***	***2***	***4***	***51***

Table 27: Total number of business and personal calls made by respondents via cell phones while working in the office and out of the office

Location	***Number of calls made via cell phones by respondents***										
	R1	***R2***	***R3***	***R4***	***R5***	***R6***	***R7***	***R8***	***R9***	***R10***	***Total***
In Office	-	-	-	-	1	-	-	-	-	-	1
Out of Office	5	-	11	2	-	2	3	7	3	3	36
Total	***5***	***-***	***11***	***2***	***1***	***2***	***3***	***7***	***3***	***3***	***37***

DISCUSSIONS

TYPE OF INFORMATION EXCHANGED (VIA CELL PHONES)

The managerial roles performed by the 10 respondents in this study were contingent upon the type of information exchanged via their cell phones.

In the context of the informative role as defined by Mintzberg, the type of information exchanged via cell phones by the 10 respondents in this study had indeed facilitated these managers to give and receive information and also to receive inquiries with their stakeholders.

A total of 31 calls received (69 % of the total business calls received) and 18 calls made (55 % of the total business calls made) in this study involved in respondents giving information, receiving information and receiving inquiries (refer Table 3 and 10). This suggests that respondents used their cell phones extensively to disseminate and receive information either to or from their customers, home office, and suppliers. This was the essence of the informative role as depicted by Mintzberg. These calls were substantially received or made when respondents were working out of their office.

In the context of the interpersonal role, the type of information exchanged via cell phones by the 10 respondents in this study had indeed facilitated these managers to give instructions and coordinate work and thus interact with their stakeholders.

A total of 10 calls received (22 % of the total business calls received) and 10 calls made (30 % of the total business calls made) involved in respondents giving instructions (leader role) and coordinating work (liaison role), which was the essence of the interpersonal role as, depicted by Mintzberg (refer Table 3 and 10).

In the context of decisional role, a total of 3 calls received (7 % of the total business calls received) involved in respondents making decisions via their cell phones (refer table 3). Even though this is not a very substantial number, the respondents gave their opinions that having a cell phone was imperative for them to make a decision. This does not suggest that respondents use their cell phones less to make decisions, but rather that the necessity to make the decisions did not arise the observation period.

The above observations regarding the three managerial roles (Mintzberg) which involved a great deal of information exchange support the suggestion that there will be a large expansion in businesses turning to mobile telephones for their primary means of communication (Eggleton, 1999).

Nevertheless, the type of information exchange via the cell phones was found to be contingent upon the nature of respondent's managerial work. A total of five (R1, R2, R4, R5, R8) out of six respondents who received 18 calls (40 % of the totals business call received via cell phones) were handling inquiries from either their offices (subordinates or employees) or customers (refer Table 3). They were technicians and operations

managers who handled work that needed them to give information immediately. These were the managers who have to perform their tasks immediately. They were constantly reached for this type of information either by their customers or their office.

INTERRUPTIONS

All the 10 respondents agreed that a total of 45 business calls received and six personal calls received had their attention swayed from the work that they were attending to answer these calls. They agreed that all the calls received created a sense of urgency and this was the reason for them to attend to all these calls. This is consistent with Mackenzie's (1990) suggestion that the ringing of the telephones creates a sense of urgency.

Nevertheless, the false urgency effect was found to be contingent upon the number of expected or non-expected calls received by respondents. The number of non-expected calls received by respondents further exacerbated the issue of interruptiveness. A total of 39 calls (87 % of the total of 45 business calls received) were not expected by respondents (refer to Table 6). Respondent felt that these calls created a sense of urgency because they were not expected. Respondents did not make any prior arrangements with their callers in terms of the timing for receiving these calls.

The issue of false urgency effect was also found to be contingent upon the follow-up tasks attended immediately by respondents when they received the calls. It was found that

18 calls received (40 % of the total business calls received) needed respondents to attend to follow-up tasks immediately (refer Table 7). This suggests that respondents were swayed (and felt obliged) to do some follow-up tasks immediately which could be lower priority tasks (not important and not urgent) compared to the tasks that they were attending when they received these calls.

It could be traditionally construed that attending to phone calls could be a less important and urgent task for managers compared to their other important managerial work as stated by Covey, Merrill & Merrill (1994) in their time management matrix. Nevertheless, the issue of whether respondents were interrupted was contingent upon the importance and urgency of the calls received. Attending to cell phone calls was found to be important in this study due to its importance and urgency of the nature of the calls or matters discussed via the cell phones. This could be due to the reason that respondents had to depend on their cell phones and pagers as a tool of communication when they were working out of their office. This was to ensure that they would be connected and made available to their stakeholders to receive or give important and urgent information.

As such, the issue of whether calls received were interruptive in nature to respondents had a direct correlation to the importance and urgency of calls. A total of 14 calls received (31 % of the total business calls received) and two personal calls received (33 % of the total personal calls received) were either not important and not urgent or important

and not urgent to respondents (refer Table 4 and 15). These were the times when respondents felt that they were interrupted in their work.

The issue of interruptiveness was also contingent upon the number of stakeholders (customers, office, suppliers and government regulating agencies) who were accessible to respondents cell phone numbers. A total of 4 respondents (R1, R2, R4, R5) who received a total of 30 business calls (67 % of the total business calls received) were the same respondents who had 3 to 4 types of stakeholders accessing them via their cell phones (refer Table 3 and 23).

The issue of interruptiveness was also contingent to the boundary controls managed by respondents. A total of four respondents (R1, R2, R4, R5) who received a total of 30 business calls (67 % of the total business calls received) were the same respondents who had multiple listing of their cell phone numbers in various directories (refer Table 3 and 24). This suggests that these respondents did not have effective boundary controls and thus received a substantial number of calls.

Nevertheless, these managers were found not to have an option to either turn off their cell phones or to limit their boundary (in terms of making their cell phones numbers less known) because of their nature of work, which was either operational or technical and necessitated immediate responses. Most of their stakeholders wanted to access them for

information and inquiries. These were the same managers who received a substantial number of calls, which were inquiries in nature.

In contrary, the other five managers (except R6) who received 13 business calls (29 % of the total business calls received) were managers who were accessed mainly by only one or two type of stakeholders (office and customers)(refer Table 3 and 23). These were the same managers who had only one or none of the directories listing their cell phone numbers (refer Table 3 and 24). This suggests that managers who manage their boundary well had limited or less number of calls received via their cell phones. These were the senior managers who did not want to be interrupted for not urgent calls (even though they are important) or calls that are routine or operational. These were also be managers who had the option to turn off their cell phones and managers who had a defined scope of work, that did not involve too many stakeholders other than their office employees.

Interruptions due to personal calls were difficult to infer in this study because of the limited number of personal calls received and made by respondents. This suggests that managers exercised reasonable care in the performance of their duties as to put the employers interests ahead of their own in business matters as stated by Green (1994).

All respondents had their cell phone numbers made accessible to their family members. This suggest that all respondents perceived that family members should have access to their cell phone and considered them as an important institution in their lives. A total of

four personal calls received via cell phones were considered to be important and urgent. Of the other two personal calls, one call was not important and not urgent and one was important but not urgent (refer Table 15). All respondents agreed that they only felt interrupted when the personal calls were not important and not urgent or important but not urgent.

This suggests that personal calls should not be concluded or inferred as intrusive to a manager's work. Managers stated that they need to correspond to their family members as when it matters because it gives them a peace of mind and thus leads them to do productive work as stated by Handy (1993). Several managers added the caveat that personal calls should be brief.

The number of non-expected personal calls received by respondents further exacerbated the issue of interruptiveness. Respondents did not expect a total of five personal calls out of the total of six personal calls received (refer Table 14). Respondents did not expect to receive calls from these callers but perceived that these calls created a sense of urgency and were only interruptive in nature when they were not important and not urgent or important but not urgent. This suggests that the issue of false urgency effect had a direct relation to whether respondents expected all the calls that they received.

BOUNDARY CONTROLS

The issue of whether managers manage their boundaries well was analyzed by considering:

- How managers made their cell phone numbers known through directories, business cards, office web site or correspondence.
- Whether managers had the options to turn off their cell phones.
- Whether managers forwarded the calls received to their voice mailbox.

In this study, a total of three respondents (R1, R2, R5) had three to four means of listing of their cell phone numbers (refer Table 24). These were the same respondents who had four to six different types of stakeholders accessing them via their cell phones (refer to Table 23). These were the same respondents who had 23 business calls received (51 % of the total business calls received)(refer to Table 1). It was also noted that 12 of the 20 business calls received (60 %), which were inquires in nature, were received by these three respondents (refer to table 3). This suggests that respondents who had limited boundary controls received more calls, and that the calls were typically routine in nature.

A total of seven managers (R3, R4, R6, R7, R8, R9, R10) had one or two means of listing their cell phone numbers (or none at all) through various directories (refer Table 24). These managers received 22 business calls via their cell phones, which was less than the three respondents (R1, R2, R5) who had three or four means of listing their cell phone numbers. This suggests that respondents who manage their boundary well received fewer calls.

The three respondents (R1, R2, R5) who had the least extensive boundary controls perceived 16 of the business calls received as important and urgent and 7 of the business calls received as not important and not urgent (refer Table 4). The other seven respondents who had more well developed boundary controls perceived 15 of the business calls received as important and urgent and 7 of the business calls received as not important and not urgent. This suggest that the seven respondents who had excellent boundary controls received limited number of calls individually and perceived a substantial number of these calls (15 of the 22 calls received) to be important and urgent(see table 28 below). This also suggests that these respondents perceived that all calls received should be important because only limited number of people were accessible to their cell phone numbers. Respondents could have educated their stakeholders to only call them for important and urgent matters.

Table 28: Total number of business calls received by 7 respondents (who had effective boundary controls) according to the importance and urgency of the calls

Respondent	***Important/Urgent Business Calls received***	***Not important/Not urgent calls received***	***Total Business calls received***
R3	1	3	***4***
R4	6	1	***7***
R6	2	-	***2***
R7	1	3	***4***
R8	2	-	***2***
R9	1	-	***1***
R10	2	-	***2***
Total	***15***	***7***	***22***

Invariably, the 7 managers who had excellent boundary controls made more calls than managers who had ineffective boundary controls. A total of 29 of the 33 business calls

made (88 %) were made by these 7 managers via their cell phones. They also perceived that 14 business calls out of the total of 29 calls (48 %) made were important and urgent and 7 calls (24 %), which were important but not urgent (see table 29 below). This suggests that managers who had excellent boundary controls made more calls than received calls and a substantial amount of the calls made were important. This also suggests that they are less interrupted (refer Figure 1 to see the relationship between boundary control and interruption according to the importance and urgency of calls received). These respondents were senior managers and sales managers (refer Figure 2 to see the relationship between boundary controls and desire to make or receive calls according to the type of managerial work).

Table 29: Total number of business calls made by 7 respondents (who had effective boundary controls) according to the importance and urgency of the calls

Respondent	***Important/Urgent business calls made***	***Not important/Not urgent business calls made***	***Important but not urgent business calls made***	***Total***
R3	3	7	-	***10***
R4	2	-	-	***2***
R6	2	-	-	***2***
R7	-	-	3	***3***
R8	4	1	2	***7***
R9	1	-	2	***3***
R10	2	-	-	***2***
Total	***14***	***8***	***7***	***29***

	Important/Urgent Calls	***Not Important/Not Urgent Calls***
High BC	Low Interruption	High Interruption
Low BC	Low Interruption	High Interruption

Figure 1 : The relationship between boundary controls and interruption according to the importance and urgency of calls received

Calls Received	***Calls Made***
High BC ??	Senior managers Sales managers
Operations managers Technical managers ***Low BC***	??

Figure 2: The relationship between boundary controls and the desire to make or receive calls according to the type of managerial work

FORWARDING CALLS TO VOICE MAILBOX

A total of five respondents forwarded the calls received to their voice mailbox while the other five respondents did not forward the calls received to their voice mailbox(refer table 25). The issue of forwarding calls to their voice mailbox was contingent upon the nature of the respondent's job. Managers who were operational and technical did not forward calls to their voice mailbox because they perceived that calls received are important and urgent to their daily operational and technical work (routine).

LENGTH OF CALLS

All managers had their conversation limited to an average of two (2) minutes. This is in consistent with the survey results of CTIA'S semi-annual wireless industry survey results (June 1985 to June 2000), which stated that the average local call length is 2 minutes.

All managers felt that if the conversation is too long and complicated, they prefer the stakeholders (especially customers and suppliers) to fax or e-mail their inquiries to their office. This is due to the costs incurred while conversing over the cell phone or because managers needed time to think over matters which needs further deliberations. This usually happened when managers were mobile (driving) or attending to other work, which was important in nature. It was observed that managers always had some sort of scheduled work whenever they were working out of their office. As such, deliberations via cell phones were usually kept in a brief manner if the topic was not urgent.

CONNECTIVITY

Significantly, respondents received and made more calls (business and personal) via their cell phones while they were working out of their office compared to while they were working in the office (refer Table 26 and 27). This suggests that cell phones facilitated managers to be always connected to their stakeholders when they were working out of their office. This was consistent with the suggestion by Cirigani, D'Augostino, Kelly & Schilling (2001) that new telecommunication technology creates a way to stay in touch with their customers, clients, friends and family. This also suggests that cell phones have become an important tool of communication or a necessity for managers to keep in touch with their stakeholders when they were working out of their office. This highlights that the key benefits of cell phones are the features of connectivity and portability.

EMERGING ISSUES

The issues of managerial roles, interruptions, urgency and importance, and boundary controls, were theorized a priori and examined systematically above. Additionally, the research methodology was open-ended in order to allow the discoveries of emerging issues that may not have been researcher previously or identified through the literature review.

DECISION MAKING (VIA CELL PHONES)

All respondents were comfortable in making decisions via their cell phones when they were dealing with established stakeholders (established customers, suppliers) provided the issue was a routine task that did not involve great costs. They prefer to have a face-to-

face interaction with the other concerned party before making decisions that involved new customers or suppliers and when it was a non-routine task that would incur significant costs. Nevertheless, some managers felt that making a decision via the cell phone or pagers is as similar when it involves landline phones provided that both parties trusted the information (its accuracy and clarity) and also trusted themselves (their business relationship). This is consistent with Starke & Sexty (1995), that lack of trust was one of the factors that contributed to the communication barrier.

Managers felt that communication via cell phones were sufficient when dealing with established customers and suppliers because they were very contented and assured of the quality and effectiveness of the tasks that the managers have rendered them. Managers felt a trust relationship was forged with established customers and suppliers. This was consistent with the findings of the research done by Dana (1999) whereby face-to-face interaction/communication was preferred early in a relationship and once the relationship was established the method of communication was less important. This posits that decision-making via cell phones was contingent upon the trust relationship and information established between managers and their stakeholders, routines of the tasks and the costs significance.

This is shown in the typology below:

Established Customers	***Not established Customers***
Desire to make a decision Routine	Routine
Non-Routine **No Desire to make a decision**	Non-Routine

Figure 3: The relationship between the desire to make a decision with established/not established customers according to the routine nature of the tasks

INTERRUPTIONS

One of the interesting findings in this study was about how the possession of cell phones by middle level managers has induced and facilitated them to often call more senior managers for decision-making. Managers felt that most of these calls were trivial in nature and interrupted their work because they were not important and not urgent calls. Managers felt that these middle level managers should have made their own decisions

more often. Managers felt that the mere possession of cell phones had impeded the need for these types of managers to learn to make decisions on their own.

Sales managers tended to feel that interruptions as part of their business. They felt that if clients do not “interrupt” them, it is a sign that they have not established a good and effective networking strategy. Nevertheless, they handled the interruptions effectively by always having their cell phones turned off whenever they were with other clients or in meetings.

BOUNDARY CONTROL

Based on the observations, senior managers seemed to always have the option to turn off their cell phones at any point of time when they did not want to be interrupted. They felt matters could wait for their indulgence because they were important people. But operations and technical managers did not have the option to turn off their cell phones during office time because they were needed gravely for giving instructions, especially in matters that had to be handled immediately. As such, senior managers managed their interruptions well with their cell phones.

Managers who trained and educated their employees and subordinates created an excellent boundary control that limited the receiving of non-important and non-urgent calls. Managers who had assistants or created a delegation of work also created an excellent boundary control in terms of only receiving important and urgent calls.

FACE-TOFACE INTERACTIONS

A total of 30 calls received (67 % of the total business calls received via cell phones) and 28 calls made (85 % of the total business calls made via cell phones) did not involve respondents making arrangements for a face-to-face interaction with their customers or office employees or their subordinates (refer table 5 and 12). This suggests that respondents were very satisfied with the exchange of information via their cell phones with their stakeholders.

This observation confirms the findings by Siegel (1988) that new telecommunication technologies would be preferred and used more where social feedback preferences were lowest. This finding in this study also confirms the claims by Panayides (2000) that as telecommunication technology improves, people will substitute face-to-face interactions with electronic devices and thus the demand for face-to-face interactions will be eliminated (substitute hypothesis). Nevertheless, Panayides summarized that telecommunication technology may be a complement to rather than a substitute for face-to-face interaction.

This was imminent in the findings of this study whereby 15 calls received and 5 calls made by respondents needed respondents to continue with a face-to-face interaction. This could be due to the complexity of the tasks at hand that needs further deliberations for both parties.

GENERAL OBSERVATIONS

All the managers who were observed handled their calls very tactfully in terms of being polite and brief in their conversation. Respondents who attended appointments either left the cell phones to a forwarding voice mail mode or simply excused themselves to attend to calls received.

It was interesting to find that some of the managers (primarily senior managers) had many different telecommunication technology tools assisting them in their work such as the palm pilot, personal computer, additional cell phones and pagers.

All of the managers tended to use their office phones when they were working in their office. They tended only to use their cell phones when they were working out of their office.

LIMITATIONS

The observation period with each manager in this study was limited to one working day. It was noted that telecommunications devices were used more often when managers were working away from the office. A richer data collection in terms of the usage of the cell phones and pagers could be obtained if managers were observed over a longer period, particularly when they are working out of their office. It was found that managers tended to get more calls and make more calls via their cell phones when they were working out

of their office. Managers tended to use more of their office phones if they were in their office.

Managers were only observed during their office time and for a limited time frame. This could not have captured managers who work after office hours. There could be some important additional insights gained if the observation period could be extended outside of the normal working hours.

Many managers were not comfortable with the job shadowing exercise because they felt it was too intrusive and might compromise their office confidentiality. A longer observation period may have allowed the research to develop a better rapport and gain the confidence of the participants.

The number of calls received and made via cell phones and pagers were not consistent in a manager's typical daily work. It varies according to their daily work. Managers who were contacted were not in a position to ascertain the exact day whereby they receive a substantial number of calls. It would be helpful to this study if the researcher could spent a week or a longer span of time with the managers as to have a consistent number of calls received and made. This could provide richer data. Future researchers should consider a longer timeframe that extends beyond normal working hours.

Managers who are not highly mobile by virtue of their work tended to have fewer calls received and made. This was prevalent among managers who were primarily observed in their office. Targeting highly mobile managers for future research may be a way to gain additional insights.

Only a few managers in this study had pagers. As such, few observations were captured in relation to the usage of the pagers. None of the managers who had pagers received any calls via their pagers.

Only managers from a limited profession were observed. Future research could expand the sample size and the cross-section of businesses represented. The study involved a convenience sample, which was determined primarily on the basis of the willingness of the managers to participate. Future research may be able to target specific industries and or business sectors to allow for more systematic comparisons.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this research a number of conclusions may be drawn. First, it was noted that telecommunications devices were used as a means to facilitate all of the managerial roles identified by Mintzberg.

Second, a strong relationship was established between interruptions and boundary controls. Those managers who implemented boundary controls such as limiting who had

their cell phone number tended to receive less calls and the calls they did receive tended to be more urgent and important than those who did not control their boundaries.

A third important discovery was that some managers desire to control their boundaries more than others. In this study, the more senior managers had the tightest controls through limiting access to their number, directing calls through an administrative assistant, delegation, and training of subordinates. Technical, operational, and sales managers on the other handed used their cell phones to be accessible to their office and to customers and suppliers. They viewed interruptions as an important and essential aspect of their jobs and did not want to limit their access.

All of these findings suggest that practicing managers should generally have a clear understanding of their own jobs and the ways that telecommunications technology can enhance their effectiveness. For those who do not want interruptions, effective boundary controls can be used to ensure that they use their cell phones effectively for important and urgent tasks. Managers should educate and train their subordinates not to call them for not important and not urgent tasks. This will limit their interruptions successfully. As such, managers could be able to concentrate on their existing tasks, which they have to focus whenever they are working either in the office or primarily out of their office.

REFERENCES

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

Cellular Telecommunication Industry Association, CTIA (n.d.). CTIA'S Semi-Annual Wireless Industry Survey Results (June 1985 to June 2000). Retrieved March 14, 2001, from http://www.wow-com/statsurv/survey/data.cfm

Cellular Telecommunication Industry Association, CTIA (n.d.). Dynamics and Trends in the Wireless MarketPlace. Retrieved January 27, 2001, from http://www.wow-com.com/industry/stats/hart/

Cellular Telecommunications Industry Association, CTIA (n.d.). The History Of Wireless. Retrieved January 27, 2001, from http://www.wow-com.com/consumer/faq/articles.cfm?ID=101

Cirignani, C., D'Augostino, J., Kelly, M., & Schilling, P. (n.d.). The Micro Technology of Cellular Phones. Retrieved January 9, 2001, from http://www.depaul.edu/~rthedos/papers/cellular.html

Clary, J. (1998). The Influence of cellular telephone usage on the perceived role and functions of county agents [Electronic version]. Retrieved January 23, 2001, from http://wwwlib.umi.com/dissertations/preview_all/9912913

Connell, J.B. (2000). Influencing & Perceiving Others: How communication media affect impression management and person perception [Electronic version]. Retrieved July 12, 2001, from http//wwwlib.umi.com/dissertations/fullcit/9979594

Covey, S.R., Merrill, A.R., & Merrill, R.R. (1994). First Things First: To Live, to Love, to Learn, to Leave a Legacy. New York: Simon and Schuster.

Daft, R. (1991). Management. Orlando: The Dryden Press.

Dana, M.A. (1999). The effects of computer-mediated communication on trust relationship between middle managers and their subordinates [Electronic version]. Retrieved May 11, 2001, from http://wwwlib.umi.com/dissertations/fullcit/9937806

Dodes, R.L. (2000, October). Wireless CHIC- The Buzzing, Blinking and Beeping of This season's Hottest Handheld Devices. Business Forward. Retrieved May 16, 2001, from http://www.bizforward.com/archives/2000-10/buzzguide/index.shtml

Eggleton, S. (1999, August). The Mobile Business. Telecommunications. Retrieved January 22, 2001, from http://proquest.umi.com/pqdweb?TS=…Sid=4&Idx=603&Deli=1&RQT=309&Dtp=1

Golin, M., Bricklin, M., & Diamond, D. (1991). The Rodale Center for Executive Development. Secrets of Executive Success – How anyone can handle the human side of work and grow their career. USA: Rodale Press, Inc.

Griffin, R.W. (1984). Management. Boston: Houghton Mifflin Company.

Handy, C. (1993). Understanding Organization. Middlesex, England: Penguin Books Ltd.

Javidan, M & Dastmalchian, A. (1993). Assessing Senior Executives: The Impact of Context on Their Roles. Journal of Applied Behavioral Science, 29, 328-342.

Javidan, M. & Dastmalchian, A. (1992). The relationships of senior management attributes and performance in public sector. The Academy of Management Best Paper Proceedings.

Koontz, H. & Weihrich, H. (1988). Management. New York: McGraw-Hill Book Company.

Luthans, F. & Larsen, J.K. (1986). How Managers Really Communicate, Human Relations. Academy of Management Journal, 39, 161-178.

Mackenzie, A. (1990). The time trap. New York: Amacom.

Mindy, B. (1999). Mobile workforce strains IT staff [Electronic version]. Retrieved May 16, 2001, from http://europe.cnn.com/TECH/computing/9901/18/roadwarriors.ent.idg/

Mintzberg, H. (1973). Nature of Managerial Work. New York: Harper & Row.

Panayides, A. (2000). Telecommunications improvements and urban development [Electronic version]. Retrieved May 7, 2001, from http://wwwlib.umi.com/dissertations/fullcit/9981595

Perlow, L.A. (1998). Boundary control: The social ordering of work and family time in a high- tech corporation. Administrative Science Quarterly, 43(2), 328-357.

Siegel, J.A.L., (1988). Managers' communication and telecommunications technology use [Electronic version]. Retrieved January 23, 2001, from http://wwwlib.umi.com/disseratations/fullcit/8814729

Starke, F.A. & Sexty, R.W. (1995). Contemporary Management in Canada. Ontario: Prentice-Hall Canada Inc.

Statistics Canada (2001, May 10). Telecommunications statistics-Fourth Quarter 2000. The Daily. Retrieved July 27, 2001, from http://www.statcan.ca/Daily/English/010510/d010510e.htm

Tarkenton, F. & Boyett, J.H. (1991). The Competitive Edge- Essential Business Skills for Entrepreneurs. USA: Plume.

The American Heritage Dictionary (1982). Second College Edition. Boston: Houghton Mifflin Company.

Wooldridge, A. (1999, October 9). Survey: Telecommunications: Second-hand noise. The Economist. Retrieved January 22, 2001, from http://proquest.umi.com/pqdweb?TS=…Sid=4&Idx=524&Deli=1&RQT=309&Dtp=1 (

Wooldridge, A. (1999, October 9). Survey: Telecommunications: The conquest of location. The Economist. Retrieved January 22, 2001, from http://proquest.umi.com/pqdweb?TS=…Sid=4&Idx=523&Deli=1&RQT=309&Dtp=1

Appendix A

-Letter Head-

Wednesday May 23, 2001

Dear Respondent,

My name is George Patrick and I am a student in the Faculty of Management at the University of Lethbridge.

I am currently pursuing a Masters of Science (Management) Program. One of the major requirements for this program is a research project component. The purpose of this research project is to study the impact of telecommunications technology (cell phones and pagers) on the nature of managerial work.

The study will involve two stages. Firstly, a job shadowing exercise whereby I will make observations on your usage of cell phones and pagers for an entire working day (in and out of the office). I will make some notes based on a checklist.

Secondly, I will conduct a debriefing exercise with you at your office immediately after the completion of the job shadowing exercise. This debriefing exercise will take approximately one hour. During the debriefing exercise I will ask your opinions and perceptions relating to the observations, which I made during the job shadowing exercise. This is particularly to get detailed information pertaining to the calls that you received, made and the interruptive calls.

I would also need your cooperation in completing a brief questionnaire, which will be made available to you once you have given consent to this study. The questionnaire will include relevant information regarding your personal data, organization data and some other basic questions about cell phones and pagers. You may hand in the completed questionnaire immediately after the debriefing exercise.

The information gathered in this study will be held in the highest confidence. The research findings will be used only for academic purposes. If you wish to obtain a

summary report of the findings of this research, please indicate this on the returned questionnaire. The research will be completed before September 1, 2001.

Your participation in this research study is greatly desired and it is valuable to its success, but completely voluntary. This research is being conducted in accordance with the Tri-Council Policy Statement and the University of Lethbridge policies.

I sincerely hope that you will participate in this study, but if for any reason you decide to withdraw, you are free to do so. If you have any questions about the study, please call me at the Faculty of Management, University of Lethbridge [403) 382- 7158] or e-mail to me (george.patrick@uleth.ca). My supervisor for this project is Prof. Bernard Williams, of the Faculty of Management, who may be reached at telephone number (403) 329-2068. Questions of a more general nature may be addressed to the Office of Research Services, University of Lethbridge (Phone: (403) 329-2747).

I wish to express my sincere gratitude for your much-anticipated cooperation.

Thank you very much.

Yours faithfully,

…….
George Patrick
Master of Science (Management) Candidate
Faculty of Management
University of Lethbridge

…….Detach and Return
Signed…….

I consent to participate in the study entitled " The Impact of Telecommunications Technology on The Nature of Managerial Work" as described in the letter dated May 23, 2001.

---------- ----------
Printed Name and Signature Date

Appendix B

Subject: **Human Subject Research Approval**
Date: Thu, 10 May 2001 15:06:01 -0600
From: "Margaret McKeen" <mckeen@uleth.ca>
To: george.patrick@uleth.ca
Cc: "Williams, Bernie" <b.williams@uleth.ca> , "Boudreau, Bob" <boudreau@uleth.ca>
Organization: University of Lethbridge

Your Master of Science (Management) human subject research protocol has been approved on behalf of the Human Subject Research Committee.

I have noted some recommended changes to your appendices below:

Appendix 1, paragraph 3, should read "...a job shadowing **exercise** whereby I will make..."
Appendix 1, paragraph 4, should read "I will conduct a debriefing exercise with **you** at your office...This is particularly to get **detailed** information..."
Appendix 1, paragraph 8, "Your responses are strictly confidential..." is probably not necessary because you mention in paragraph 6 that "The information gathered in this study will be held in the highest confidence."
Appendix 1, paragraph 9, should read "...Office of Research **Services**..."

Appendix 2, should read "**QUESTIONNAIRE**"
Appendix 2, D, should read "Please **complete** the following..."

Appendix 3, #4, should read "Were any appointments **made**?"
Appendix 3, #28, should read "...(**annoyed**, stressed...)"
Appendix 3, #29, should read "...(**stressed**, annoyed...)"
Appendix 3, #30, should read "**How was** the progress of the meeting/work **affected** when your cell..."
Appendix 3, #32, should read "Why did you **turn** off your cell..."

McKeen, Margaret<mckeen@uleth.ca>

Appendix C

QUESTIONAIRES

Respondent Code:
Date:

A. ORGANIZATION POLICY

1. Does your organization have policy guidelines on the usage and ownership of cell phones and pagers?

   □ Yes □ No

2. Who is/are provided with cell phones and pagers in your organization?

   □ Top Managers
   □ Middle Level Managers
   □ First Level Managers
   □ Technicians
   □ Professionals (Architects, Engineers etc)

3. Does your organization policy encompass matters such as the following?

   □ Whom to Call?
   □ Prohibitions/Limitations on personal calls
   □ Billing on personal calls (if permitted)

4. Did your organization provide any training about the usage and knowledge about cell phones and pagers and it's business features?

   □ Yes □ No

B. FEATURES OF CELL PHONES AND PAGERS

5. Are the cell phones and pagers incorporated with business features?

   □ Yes □ No

6. What are the business features incorporated in the cell phones and pagers?

   □ Send/receive e-mails
   □ Send/receive text messages
   □ Internet/on-line information
   □ Access office computer network and business applications
   □ Access information about news, weather, sports, stocks etc
   □ Purchase goods and services over internet
   □ Voice mailbox

C. BOUNDARY CONTROL

7. Who is/are accessible to your cell phone and pager number?

□ Office (PA, subordinates, managers)
□ Customers
□ Suppliers
□ Government regulating agencies
□ Family
□ Friends
□ Others (Please specify)…….

8. Are your cell phone and pager number listed in the following directories?

□ Office Directory
□ Public Telephone Directory
□ Business Cards
□ Office Web Site
□ Others (Please specify)……

9. Do you forward the calls received during your work/meeting to a voice mailbox incorporated in your cell phones and pagers?

□ Yes □ No

D. PERSONAL PROFILE

Please fill up the following particulars about yourself and your organization

Your Name :
Address :
E-Mail Address :
Organization Name :
Organization Location :
Number of Employees :

Please check the box below that best describes the business sector of your organization

□ Financial sector (banking, accounting and brokerage)
□ Retail sector
□ Industrial sector (heavy manufacturing or industry)
□ Natural service sector (Mining, oil and gas exploration and processing)
□ Information Technology sector
□ Others (Please describe)…….

Please write down your job designation and check the box below that best describes your work in your organization

□ Sales/marketing
□ Financial/accounting
□ Executive/senior manager
□Operations/production
□ Human resource Management
□ Others (Please describe)……..

Thank you for completing this questionnaire. Your responses to the questions are strictly confidential.

Thank you for your participation.

George Patrick
Master of Science (Management)
Faculty of Management
University of Lethbridge

CHECK LISTS

Appendix D

Respondent Code:

IN OFFICE

CALLS RECEIVED

NO	TIME	TIME CONSUMED	NOTES
TOTAL			

IN OFFICE

CALLS MADE

NO	TIME	TIME CONSUMED	NOTES
TOTAL			

OUT OF OFFICE

CALLS RECEIVED

NO	TIME	TIME CONSUMED	NOTES
TOTAL			

OUT OF OFFICE

CALLS MADE

NO	TIME	TIME CONSUMED	NOTES
TOTAL			

INTERRUPTIVE CALLS

IN OFFICE

NO	TIME	ATTENDED	DIDN'T ATTEND	TIME CONSUMED	NOTES
TOTAL					

OUT OF OFFICE

NO	TIME	ATTENDED	DIDN'T ATTEND	TIME CONSUMED	NOTES
TOTAL					

Appendix E

Respondent Code:
Date:

DEBRIEFING QUESTIONS

A. BUSINESS CALLS (CALLS RECEIVED)

1. Who called you?
   Call 1:
   Call 2:
   Call 3:
   Call 4:
   Call 5:
   Call 6:
   Call 7:
   Call 8:
   Call 9:
   Call 10:

2. Was the call important and urgent?
   Call 1:
   Call 2:
   Call 3:
   Call 4:
   Call 5:
   Call 6:
   Call 7:
   Call 8:
   Call 9:
   Call 10:

3. What type of information was exchanged?
   (Inquiries, coordination, instructions, decision-making)
   Call 1:
   Call 2:
   Call 3:
   Call 4:
   Call 5:
   Call 6:
   Call 7:
   Call 8:
   Call 9:
   Call 10:

4. Were any appointments made?
   Call 1:
   Call 2:
   Call 3:
   Call 4:
   Call 5:
   Call 6:
   Call 7:
   Call 8:
   Call 9:
   Call 10:

5. Was there any arrangement for a follow-up meeting (face-to-face interaction)?
   Call 1:
   Call 2:
   Call 3:
   Call 4:
   Call 5:
   Call 6:
   Call 7:
   Call 8:
   Call 9:
   Call 10:

6. Were you expecting the call?
   Call 1:
   Call 2:
   Call 3:
   Call 4:
   Call 5:
   Call 6:
   Call 7:
   Call 8:
   Call 9:
   Call 10:

7. Do you need to attend to some follow-up tasks/calls immediately after the call? If yes, please describe.
   Call 1:
   Call 2:
   Call 3:
   Call 4:
   Call 5:

Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

8. Do you think that the exchange of information was sufficient enough **NOT** to continue with a face-to-face interaction?
Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

9. Do you think that the exchange of information had a direct correlation to your nature of work? If Yes, in what way?

□ Speedy decision-making
□ Fast responses (save "time- lost")
□ Expediting dissemination of information
□ Others (Please describe)……
Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

B. PERSONAL CALLS (CALLS RECEIVED)

10. Who called you?
Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:

Call 7:
Call 8:
Call 9:
Call 10:

11. Were you expecting the call?
Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

12. Was the call important and urgent?
Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

13. Do you need to attend to some follow-up tasks/calls immediately after the call? If yes, please describe.
Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

C. BUSINESS CALLS (CALLS MADE)

14. Whom did you call?
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

15. Why did you call?
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

16. What type of information was exchanged?
    (inquiries, coordination, instruction, decision-making)
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

17. Was the call important and urgent?
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

18. Do you need to make any follow-up tasks/calls immediately after this call?
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

19. Do you think that the exchange of information was sufficient enough **NOT** to continue with a face-to-face interaction?
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

20. Do you think that the exchange of information had a direct correlation to your nature of work? If Yes, in what way?

□ Speedy decision-making
□ Fast responses (save "time- lost")
□ Expediting dissemination of information
□ Others (Please describe)……

Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

D. PERSONAL CALLS (CALLS MADE)

21. Whom did you call?

Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

22. Why did you call?

Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

23. Was the call important and urgent?
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

24. Do you need to attend to some follow-up tasks/calls immediately after the call?
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

E. INTERRUPTIVE CALLS

(BUSINESS AND PERSONAL CALLS)

25. Who called?
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

26. Why did you attend to the call?
    (expecting call, urgent/important call, boss, family/friends)
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

27. Was the call important and urgent after all?
    Call 1:
    Call 2:
    Call 3:
    Call 4:
    Call 5:
    Call 6:
    Call 7:
    Call 8:
    Call 9:
    Call 10:

28. What was your feeling when you received the call during your meeting/work? (annoyed, stressed, guilty, contented, as usual)
Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

29. What was your feeling after attending to the call?
(stressed, annoyed, guilty, contented, as usual))
Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

30. How was the progress of the meeting/work affected when your cell phones or pagers beeped?
Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

31. Why did you not turned off your cell phones and pagers before the meeting/work?

Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10:

32. Why did you turn off your cell phone and pager before the meeting/work?

Call 1:
Call 2:
Call 3:
Call 4:
Call 5:
Call 6:
Call 7:
Call 8:
Call 9:
Call 10: