

THE USES OF PERSONAL COMMUNICATION DEVICES IN CORPORATE  
ENVIRONMENTS

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# ABSTRACT

The rise of smartphones in the past decade has created situations in which individuals use them in public and private domains. More recently there has been an increase in the adoption of smartphones by corporations; what is not very well understood is their use within meetings. In this dissertation I present quantitative and qualitative data from two online surveys conducted two years apart on the type of smart mobile devices used in meetings, and the attitudes and behaviours of meeting participants towards their usage. The results from the two surveys included four key findings: (1) meeting participants believed that multitasking with a mobile device was a commonly adopted activity; (2) participants took a more accepting attitude towards using certain mobile devices (specifically laptops) in meetings; (3) it was somewhat acceptable to make work-related calls or send text messages regarding work-related emergency matters using smartphones during meetings; and (4) individuals in management tended to think that making important work-related calls during meetings was acceptable. Furthermore, from a list of six types of departments, the operations department tended to rate texting important work-related messages during meetings as acceptable compared with other departments.

After reviewing the data from surveys I and II, it was determined that more detailed data were required to observe people's actual behaviours in live meetings. As a result, a study was devised to simulate a meeting scenario in which one individual would receive and send text messages. Eight video recordings of meeting participants were captured and analyzed to assess their resulting attitudes and behaviours. In four of the meetings text messages arrived in two clusters (i.e., five text messages at the

beginning and three at the end of the meeting), while for the remaining four meetings text messages arrived evenly distributed throughout the meeting.

The data from those meetings suggest that the participants in the evenly distributed text messages group of meetings interacted with their mobile devices more often but on a less obtrusive level by checking their phone status. The participants in the clustered grouping of text messages group of meetings tended to produce more negative comments (verbal and non-verbal) regarding the actor and their own phone usage. When the actor received a text message, participants tended to give a negative non-verbal gesture, such as gazing at him, or when participants used their own mobile phones they tended to provide a verbal justification of their own use.

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## **Dedication**

I dedicate this work to my parents who believed in me and supported me throughout the years, and to my two sons. Set a goal and never give up.

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# CHAPTER 1 INTRODUCTION

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## 1.0 INTRODUCTION

“Email, instant messaging, and cell phones give us fabulous communication ability, but because we live and work in our own little worlds, that communication is totally disorganized.”

– Marilyn vos Savant, nd

In 1965 Massachusetts Institute of Technology developed Compatible Time-Sharing System (CTSS) which allowed instant messages between users (Petronzio, 2012). In the following decade, the first email was sent on the ARPANET in the early 1970s (Campbell, nd) and a few years later the cell phone was developed by Martin Cooper (Cooper, 2008). These three technological inventions and the way in which they support human communication needs are the grandmothers behind one of the most quickly adopted and ubiquitous technology on earth, the mobile phone.

In the past ten years we have seen a shift in the use of mobile technologies such as mobile phone and tablets from a social setting to a corporate setting. Smartphones have been around for the past decade and we have seen an increase in their use in meetings and other collocated settings. As mobile technologies are the core technologies that underlie the research in this thesis, it is important to describe the different mobile technologies that will be considered: smartphones, feature phones, and mobile phones. *The Oxford English Dictionary* (nd) defines a smartphone as “a mobile phone that is able to perform many of the functions of a computer, typically having a relatively large screen and an operating system capable of running general-purpose

applications” (para 1). A feature phone (*PCmag*, nd) is defined as “a cellphone that contains a fixed set of functions beyond voice calling and text messaging, but is not as extensive as a smartphone” (para 1); as well, it has limited functionality compared to smartphones. A mobile phone is defined as “a telephone with access to a cellular radio system so it can be used over a wide area, without a physical connection to a network” (para 1 *Merriam-Webster*, nd). In this dissertation, the term mobile phone will be used to describe smartphones and feature phones.

This chapter will introduce the motivation and problem statement for my research. Section 1.2 will state the two major research questions that my research will answer. The next section (1.3) will provide an overview of my methodology (and dissertation outline). Section 1.4 will discuss the scope of my research, what my research will cover and limitations. Section 1.5 will discuss my proposed contributions, and the last section (i.e. section 1.6) will conclude with some alternative research that has been conducted with mobile device.

## **1.1 MOTIVATION AND PROBLEM STATEMENT**

In the past decade, use of mobile technologies, such as laptops, mobile phones, and tablets, has increased in organizations, especially during meetings (Washington, Okoro & Cardon, 2013). The use of these technologies during group meetings may create a more efficient and streamlined meeting and decision-making process (Kleinman, 2004), or it may interfere with the group dynamics (Iqbal, Grudin & Horvitz, nd). Some researchers (e.g., Campbell, 2006) suggest that technology use during meetings can distract employees using the mobile device and surrounding individuals. Research by Gergen (2002) suggests that using a mobile device during meetings can

mentally transport the individual to a virtual world. Others, such as Kleinman (2007), argue that technology use does not create a distraction but rather enhances group dynamics by providing resources to the group. Meyers, Gray and Sanzogni (2009) found that of 1,200 survey respondents, 30% claimed that using mobile technologies (such as smartphones, tablets and laptops) improved their decision-making in meetings. This is important as it demonstrates that technology can play a vital role in meetings if meeting participants accept their use.

With a global annual smartphone growth rate of 39% from 2012 to 2013, and surpassing one billion units sold in 2013 (Llamas, Reith & Shirer, 2014), the smartphone seems to have been adopted faster than any other digital device in history (DeGusta, 2012). Among generation Y (18-29 year olds) and generation X (30-49 year olds), mobile phone ownership is 94% and 90% (Duggan & Rainie, 2012). Even with this rate of mobile phone penetration the effects of mobile phone use on meeting participants is unclear, as seen by the varied opinions mentioned above (Ling & Donner, 2013; Washington, Okoro & Cardon, 2013). As mobile phone ownership increases and employees begin to bring their mobile devices to meetings a better understanding of the attitudes and behaviours of meeting participants when these devices are used within meetings is needed (Middleton, 2007). How are these devices used during meetings and what are the impacts on group dynamics when one or more individuals engage with mobile phones? It is vital to gain a better understand of how meeting participants use mobile devices in meeting as these devices gain in popularity we will more likely start seeing them appear more often in meetings.

The goal of the research documented in this dissertation is thus to explore what occurs in groups (the group dynamics) during meetings when mobile devices are used and whether these devices are a hindrance or a support in certain circumstances. I aim to understand what role mobile technology plays during group meetings and the attitudes and behaviours of meeting participants when these devices are employed in those meetings.

The type and size of meetings, as well as the attendees present, will also play a vital role in how technology is used. In some types of meetings, mobile devices may be used more (e.g., staff meeting) than in other types of meetings (e.g., ceremonial type of meeting) (Moran, 2006; Volkema & Niederman, 1996; Monge, McSween & Wyer, 1989). Larger meetings, or the size of the meeting and the presence of key individuals, may also alter the behaviours of meeting participants and their use of mobile devices. This is an important area to study as most meetings tend to have on average half a dozen participants and some form of authoritative figure to be able to make decisions (Romano & Nunamaker, 2001)

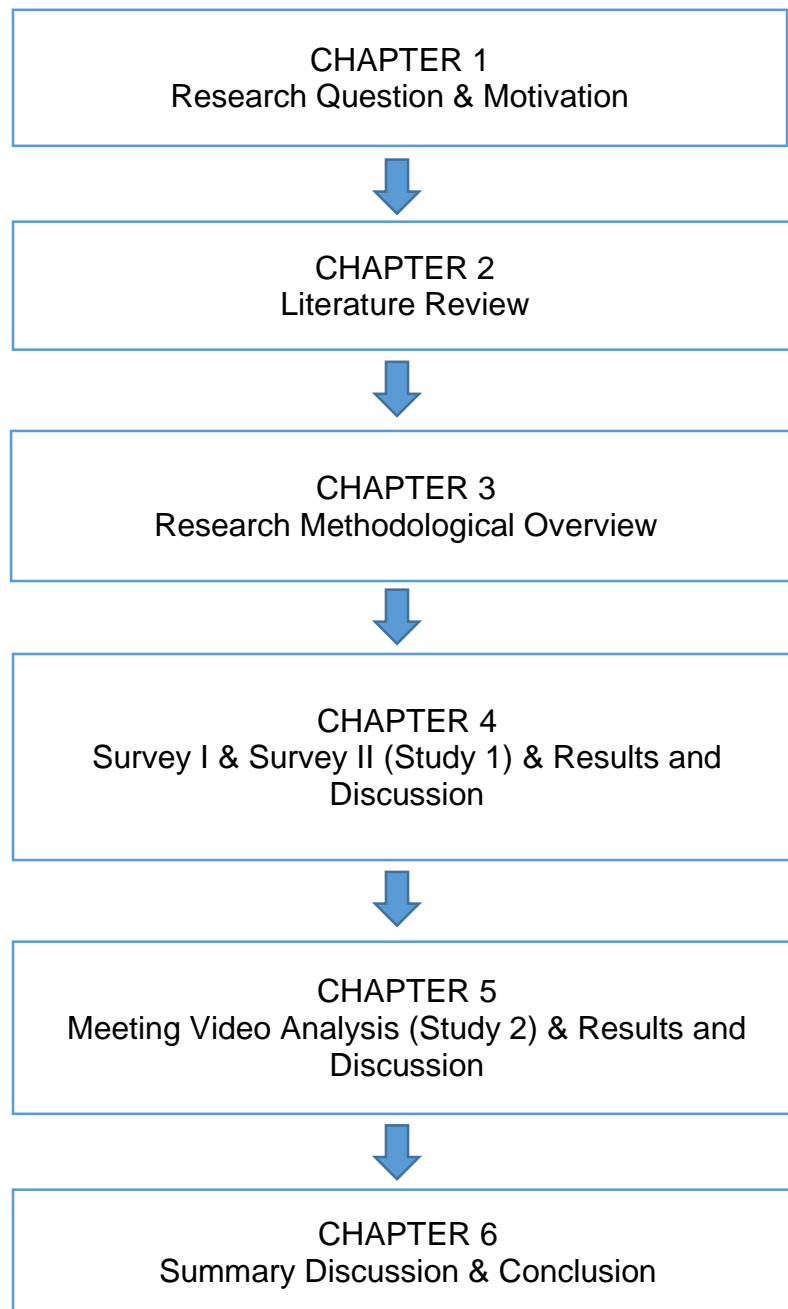
## **1.2 RESEARCH QUESTIONS**

The purpose of the research in this dissertation is to examine the role mobile technologies play within meetings and their impact on meeting participants, specifically to answer the following two questions:

- 1) How and why do people use mobile technologies during meetings?
- 2) What is the impact on the behaviour and attitudes of meeting participants' when mobile technologies are used during their meetings?

Two studies were designed to begin to answer these questions. A 40-question online survey was developed to collect quantitative and qualitative data about how they use mobile devices are in their meetings, and the attitudes and behaviours of respondents towards the use of those devices in meetings. To understand whether the results of this first survey showed a trend and to examine changes, a second (slightly modified) 40-question online survey was deployed two years after the first. While surveys help to explore and in general answer particular questions from a larger population in a cost effective and timely manner, they do not provide detailed data about a particular individual or problem (Babbie, 1973). As a result, more detailed data was required and a second study was devised to simulate eight meeting scenarios in which one individual would receive and send text messages. Video recordings of meeting participants were captured and analyzed to assess participants' resulting reactions and behaviours.

### 1.3 DISSERTATION ROAD MAP



**Figure 1.1 Dissertation structure**

Figure 1.1 outlines the structure of this dissertation. Chapter 1 introduces the motivation for the research, as well providing the two major research questions. Chapter

2 provides a literature review for the dissertation. This chapter begins with different aspects of successful meetings, the stages and roles of different meeting participants, as well as the role technology (in general) plays within them, are also discussed. Mobile phone use in public and private domains is introduced as a new element and challenge to society, particularly in the realm of some communication attitudes and behaviours. People communicate using mobile devices differently in public and private spheres (Ling, 1997) and understanding how that affects them and the people around them will be discussed. The chapter concludes with the major theorists in group dynamics. Group dynamics are defined and two major theories related to this topic are examined: the importance to understanding how groups of people in meetings develop through different stages, and how their interrelations develop during meetings.

Chapter 3 describes the research design and methodological overview of the two pilot studies conducted as well as the design of the first and second online survey (study one) conducted. The chapter will conclude with the research design of eight video-recorded live meetings (study two).

Chapter 4 describes the two online surveys conducted two years apart. This longitudinal methodology is selected because it provides an opportunity to analyze changes in attitudes over time related to mobile device use during meetings. As more people start owning mobile devices and begin to bring them to meetings, attitudes and behaviours may change over time. The results, data analysis and comparative analysis from the two surveys are also presented in this chapter.



Chapter 5 describes the second study that involves exploring actual and real-time participant attitude and behaviour toward mobile phone use during eight video-recorded meetings. Results and discussion are also presented in this chapter.

Both studies contain a small sub-set of research questions that are used to inform the main research questions for the dissertation. In addition, the limitations of both studies are identified and explained. In chapter 6, a summary discussion is provided that examines the main research questions in the context of the findings from the two studies and the reported literature, as well as the conclusion and future research are discussed.

## **1.4 SCOPE**

The two studies conducted and reported in this dissertation provide an analysis of mobile device use in meetings, specifically what type of mobile devices are used (e.g. laptops, mobile phones, tablets, desktops, and smartphones) and the attitudes and behaviours of meetings participants related to these devices. Specifically, this dissertation will examine attitudes and behaviours of meeting participants related to text messaging and making or receiving phone calls during one type of meeting, the forum meeting, through the use of two online surveys and one primary data collection study of actual mobile phone use in a forum-type meeting. Quantitative and qualitative analyzes are used to draw conclusions about the two major research questions, assess the limitations of the methodology and suggest areas for future research.

This dissertation will not provide an in-depth psychological or theoretical assessment of participants' motives for their behaviours or attitudes toward mobile phone use in meetings, why participants use certain mobile devices in meetings, or the

content of their text messages. In addition, different types of meetings or meeting participants, for example managers and subordinates, scientists, etc. are not considered in the actual meeting study carried out in this research. Finally, only mobile phones are used in the actual meeting studied in this dissertation; other devices, such as tablets, specialty apps, or laptops, are not considered.

## **1.5 PROPOSED CONTRIBUTIONS**

The purpose of this dissertation is to examine the use of mobile technologies in group meetings in organizations, and to investigate the attitudes toward using specific mobile devices. The work in this dissertation provides five major contributions:

- 1) The dominant use of mobile technologies in meetings is for tracking time, work-related tasks such as checking email, or using office productivity software such as word processing or spreadsheets, and making phone calls or sending text messages for emergency purposes. Mobile technologies in meetings are not used for computer programming, or personal activities such as playing video games or reading news.
- 2) The infrequent use of text messaging on mobile devices is more tolerated than when these devices require more attention, or messages arrive in clusters. When meeting participants' mobile phones are not too demanding, some use of these devices is acceptable by other meeting participants. However, once attention is diverted from the meeting, mobile phone use becomes unacceptable. Attitudes toward mobile technologies in meetings are changing, so that the presence and use of mobile technologies in meetings is acceptable, under certain circumstances.

- 3) The frequent use of mobile devices will invite more meeting participants to use their mobile phones and acknowledge their use. When a meeting participant engages with his or her mobile phone on a regular basis, other meeting participants engage with their own mobile phones.
- 4) Individuals in the specific departments of organizations such as the operations department have a more positive view of mobile device usage in meetings.
- 5) Using deception in real meetings as a methodology to study group behaviour, as it relates to mobile technology use, is a possible approach to understanding how groups behave in an actual meeting setting.

## 1.6 ALTERNATIVE RESEARCH

The dissertation will discuss mobile phone use in meetings, specifically text messaging during meetings. However, there have been numerous other research conducted related to text message in different locations. Wei and Leung's (1999) research into the top ten most irritating places to encounter cell phone use revealed that restaurants with 81% of respondents claiming it was the most annoying place to make a phone call, with the classroom or library coming in second place. Even turning away from others while on the mobile phone, speaking quietly, or shifting one's eyes away from audience members was considered rude (Campbell, 2004).

Campbell and Russo (2003) reported that mobile phone use in college classrooms is on the rise and is particularly disruptive. They found that students frequently complain about the annoyance and distraction from ringing cellular phones during classes.

Meetings are not immune to mobile device usage. A survey conducted by Galbreath & Long (2004) found that of 150 executives, 63% said that mobile phone users are ruder now in meetings compared to three years prior to the research.

Not all mobile phone usage has negative consequences. As stated above, Meyers, Gray and Sanzogni (2009) found mobile device usage during meetings to be beneficial since it improved decision-making. Mobile device used in healthcare has also proved beneficial. A group of researchers from New Zealand (Rodgers, Corbett, Bramley, Riddell, Wills, Lin, & Jones, 2009) found that 28% of individuals who received regular, personalized Short Message Service (SMS) messages providing smoking cessation advice, support, and distraction for the length of their study stopped smoking compared to 13% for the controlled group.

As for mobile device usage in private places such as cars, it has been reported (cellular-news.com, 2008) that more than fifty countries have banned mobile phones while driving. Galbreath & Long (2004) research found that the use of mobile phones during driving was not the root cause of distraction for the drivers but rather the act of an involved telephone conversation.

It is clear that mobile devices have effected all aspects of our lives, whether it is for the better or worse. The above examples of mobile device usage in varying locations have contributed to the research questions stated in this dissertation, by demonstrating that mobile devices have played positive and negative roles in our lives.

# CHAPTER 2 REVIEW OF LITERATURE

---

## 2.0 INTRODUCTION

This chapter is comprised of three main sections that relate to meetings, organizational behaviour, computer supported cooperative work, and mobile phone use in these contexts. To better understand what successful meetings are and the different stages that they go through, section 2.1 provides a discussion of research related to meetings including definitions, different phases (pre-meeting, meeting, and post-meeting), the role of different meeting participants (chair, note-taker, scribe, and meeting participants) during a meeting, and literature related to Computer Supported Cooperative Work (CSCW) that focuses on the use of technology to support meeting tasks. As mobile phone adoption and use increases, section 2.2 will discuss mobile phone use in the private and public domains, the social impact of their use, and mobile phone use in the workplace. To understand how technology affects the behaviour of meeting participants, section 2.3 will cover organizational behaviour in meetings and group dynamics related to theorists such as Kurt Lewin and Erving Goffman. The chapter concludes with section 2.4 where a analysis and summary is provided.

## 2.1 MEETINGS

### 2.1.1 Meeting Definition and Purpose

Face-to-face meetings involve complex and multimodal processes (Doyle & Straus, 1993). For the purpose of this dissertation I will adopt Boden's definition for meetings as it is the most structured and complete description of a meeting:

“a planned gathering, whether internal or external to an organization, in which the participants have some perceived (if not guaranteed) role, have some forewarning (either longstanding or quite improvisational) of the event, which has itself some purpose or ‘reason,’ a time, place, and, in some general sense, an organizational function” (Boden, 1994, p.84).

Schwartzman (1989), a leading scholar in meeting structure, adds examples of the purpose of meeting to be:

“...to exchange ideas or opinions, to solve a problem, to make a decision or negotiate an agreement, to develop policy and procedures, to formulate recommendations, and so forth.” (p.7).

Meetings are a common and almost ubiquitous occurrence in all forms of business and organizations (Kjellberg & Saxton, 2006) and most scholars agree that meetings perform a vital function in the communication practices and workings of those businesses and organizations (Barker, 1997). From a survey conducted by 3M with 903 meeting participants from 36 different organizations, researchers found that meetings had many purposes: 29% to reconcile conflict, 26% to reach a group judgment or decision, 11% to solve a problem, 11% to ensure understanding, 5% to facilitate staff communication, 4% to gain support for a program, 4% to explore new ideas and concepts, 2% to accept reports, 2% to demonstrate a project or system, and 6% other (Monge, McSween, & Wyer, 1989).

### **2.1.2 Successful Meetings**

Not all meetings are successful; some lack direction, some lack the power to make decisions, and some produce no results. Meetings are a pervasive phenomenon

in organizational life and constitute one of the most significant venues for organizational communication involving more than two people (Svennevig, 2012). In his ground breaking study, Mintzberg (1973) reported that managers, on average, spent 59% of their time in scheduled meetings and 10% in unscheduled ones. These findings were verified in subsequent studies (Lewis & Dahl, 1975; Ives & Olsen, 1981; Kurke and Aldrich, 1983; Moswick & Nelson, 1987; Tobia & Becker, 1990; Romano & Nunamaker, 2001). Estimates are that more than eleven million meetings take place in the United States every day (Doyle & Straus, 1976) and organizations, such as 3M, spend 7-15% of their personnel budget on meetings (Monge, McSween & Wyer, 1989). Mankins (2004) suggests that meetings are often inefficient, implying that they waste employee and company time and do not produce the necessary results expected from meetings. Given that so much time and resources are spent in meetings, it is important that there be some understanding about their efficiency, effectiveness and what constitutes success.

Organizational studies literature has viewed meetings as tools to be used within organizations to make decisions or to accomplish specific tasks related to an organization's objectives (Simon, 1997). He suggests that a well planned and executed meeting can bring many rewards to organizations.

While meetings may have many different goals, the levels of success or effectiveness of meetings vary and are determined by many factors. Some factors that have been reported as indicators of a successful meeting are: (1) open communication with processes to guide communication (e.g., freedom to speak during the meeting and creating a meeting agenda) (Kohm, 2002); (2) establishing ground rules (e.g., when to

start and when to end the meeting, who will take notes, who will chair, turn taking, etc.) (Rooney, 2006); (3) creating a sense of collaboration and community (e.g., participants feel invited and willing to share information) (Herbert, 1999); (4) collaborative discussions centered on learning (e.g., individuals should develop an idea of the purpose of the meeting) (Hoerr, 2005); and (5) celebration (e.g., feeling a sense of accomplishment once the purpose or task of the meeting has been met) (Dunn, 1991; Hoerr, 2005). Not accomplishing all or some the above indicators is not a sign of a failed meeting, but rather meeting participants should attempt accomplish as many of these goals as possible. What is missing from the above list of indicators is what role technology can play in meetings. Laptops, smartphones, or other mobile devices can potentially play an important role in communication within meetings where meeting participants can use laptops and smartphones during the meeting to acquire answers to questions that arise during meetings but cannot be answered by meeting participants.

In another study, Moran's (2006) found that six steps need to be followed for meetings to be effective: (1) meeting ground rules (such as when and where meetings will start or what needs to be brought to the meeting) need to be set at the first meeting in the meeting cycle (e.g., at the beginning of the fiscal year, calendar year, or academic year), and then brought before the group to be reaffirmed before each meeting; (2) the group will spend as much time on each pre-determined agenda item as listed on the meeting agenda; if more time is required, the group will need to vote by simple majority to extend the time; (3) decisions on agenda items are made by consensus; (4) each group member recognizes that the meeting chairperson is in charge of the meeting and is obligated to call attention to the meeting rules whenever a meeting participant is not



acting in accordance to the meeting rules established; (5) all meetings should start and end at the allocated time specified by the meeting agenda. If the meetings do not start at the specified time, it sends a message that the agenda is not in control and does not need to be followed carefully; and (6) meetings cannot end without documenting the decisions made during the meeting; agenda documentation should be done after each agenda topic. The meeting should close with a review of all documented decisions.

Technology may be able to play a role in assisting with these various tasks from automatic timekeeping to the recording and distributing meeting minutes electronically. Section 2.1.6 provides an overview of computer supported cooperative work related to software and systems designed to support meeting tasks.

### **2.1.3 Types of Meetings**

Not all meetings are alike; there are several different types of meetings with a variety of structures and goals. Monge, McSween and Wyer's (1989) survey of 903 meeting participants found that 45% of them attended a staff meeting regularly, 22% a task force meeting, 21% a general information sharing meeting, 5% a brainstorming meeting, 2% a ceremonial meeting, and 5% other, or a combination of two or more types. As seen in Table 2.1, researchers Moran, 2006; Volkema & Niederman, 1996; Monge, McSween & Wyer, 1989) have proposed six major types of meetings which are: (1) demonstration/information sharing, (2) ceremonial, (3) brainstorming/problem solving, (4) announcements/general orientation, (5) staff meeting/forum, and (6) round-robin. Volkema & Niederman, (1996) define each of these types as:

(1) Demonstration or information sharing: in this type of meeting, participants are updated or information is shared about a specific project or topic.

(2) Ceremonial meetings are usually held to honour an event or an individual; examples include a group of participants coming together to swear in or induct someone into the group or organization, such as an official.

(3) Brainstorming/problem solving usually has a single purpose and involves analyzing a specific problem or solving a problem.

(4) In announcements/general orientation meetings, participants communicate in a unidirectional fashion. Usually one individual talks, while one or more individuals listen and ask questions for clarification.

(5) Staff meeting/forum meetings are the most common types of meetings in organizations. They are constituted by several meeting participants contributing to the agenda and having an open dialogue. Meeting agenda items are usually numbered and are followed in order.

(6) Round-robin; in this type of meeting, each individual in the meeting presents his or her agenda of one or more items in its entirety to the meeting chair or group leader. These meetings usually work in the reverse order of announcements/general orientation type of meeting.

Each type of meeting is categorized according to its outcome or purpose, whether that is to share information within the meeting or to arrive at a conclusion or decision. The information sharing type meeting is usually held to inform the participants regarding work-related matters. Participants in this type of meeting are expected to listen and comprehend, and to ask questions as needed. The structure is relatively straightforward; the order of progress is identified and there is a specified amount of

time to answer questions. Someone (usually the meeting chairperson) must have the authority to control the use of time, and to keep the meeting on topic.

The second category of meetings is termed the decision making meeting and is held to reach a conclusion on one or more meeting agenda topics (Moran, 2006). The conclusion may be a solution to a problem, the details of a new activity, or a recommendation. In these types of meetings, participants are expected to understand the meeting agenda issues, make recommendations for addressing the issues, evaluate the proposals, and then participate in the discussion of and decisions. The structure for decision-making meetings has two distinct activities: (1) the search for potential solution(s) or action(s), and (2) the choice of the best solution or action.

**Table 2.1 Six different types of meetings and their purposes**

<b>Meeting Type</b>	<b>Purpose</b>
Demonstration/information sharing	Information sharing
Ceremonial	Information sharing
Brainstorming/problem solving	Decision making/information sharing
Announcements/general orientation	Information sharing
Staff meeting/forum	Decision making/Information sharing
Round-robin	Information sharing

My research will adopt the staff meeting/forum style of meeting for the following three reasons: (1) this style of meeting is the most common type of meeting and thus has the greatest representation among most organizations, (2) all meeting participants can contribute equally to the meeting agenda, so there will not be an imbalance of

power (or influence) in the meeting, and (3) since the purpose of staff/forum meetings is decision making or information sharing, I will gather data in both types of meetings (i.e., decision making and information sharing meetings).

In addition to these six meeting types, some meetings can be defined as a combination of two or more of the above. For example, meetings such as a demonstration and staff meeting can be combined to have a meeting where a product is demonstrated, followed by a discussion. These combined meeting types are not generally recognized as a format (Monge et al., 1989).

Regardless of the type of meeting, meetings in general involve the flow of information between meeting participants which can then be communicated to an organization as a whole or to non-meeting participants. The two broad categories of meeting information flow are hierarchical and organic (Volkema & Niederman, 1996). In hierarchical meetings, information flows between a single individual and the rest of the group (for example, a departmental head reporting to the rest of the department on certain changes that have occurred), while in organic meetings information flows among all members of the group (for example, each member reporting new information to the rest of the group). Technologies that are connected to either internal networks or the Internet such as smartphones and laptops may be able to support the informational and communication needs of these various meetings. Having access to the vast stores of either company or publically available data can allow meeting participants to instantaneously find answers to questions and data, send reminders or disseminate information from others is possible through the use of connected technologies.

## 2.1.4 Stages of Meetings

“Like a good book, a well-run meeting has a structure. There is a beginning, a middle, and an end” (Miller & Pincus, 2004, p. 111). It is important to know the stages of meetings, as this can indicate the group’s accomplishments on the meeting agenda (Brandenburg, 2008).

In general, meetings can be divided into three sections: (1) pre-meeting, (2) meeting, (3) post-meeting (Brandenburg, 2008; Levasseur, 2000; Wilkinson, 2005). The following describes the three stages.

### 2.1.4.1 Pre-meeting

The initial step of meetings consists of planning the meeting. Creating an agenda and other relevant documents are important aspects of this step. MCI Conferencing (2001) found a direct correlation between the preparation for meetings and meeting productivity in a survey of 510 participants who were asked questions related to how many minutes they spend preparing for a particular meeting and how productive that meeting was. They reported that people who ranked their meetings as highly productive, on average spent 53.5 minutes preparing for a meeting. The first step in creating an agenda is determining what kind of meeting will be held (Miller & Pincus, 2004), and what needs to be discussed and accomplished during the meeting (Doyle & Straus, 1976). This stage of the meeting is either conducted by the meeting chair or the person who is in charge of meeting minutes. The pre-meeting stage of meetings can benefit from technology; for example, if electronic meeting agendas are sent out prior to the meeting, meeting participants may be able to better prepare for the meeting and thus be potentially more productive

#### 2.1.4.2 Meeting

This “meeting” can be further subdivided into three subsections:

- (1) The beginning of the meeting consists of dealing with the purpose, the agenda, meeting participants’ roles, and rules for participation (Levasseur, 2000). The amount of time spend on this beginning component is usually no more than 10% of the entire meeting (Levasseur, 2000).
- (2) The middle portion is where the meeting agenda topics are covered and discussed by meeting participants. This portion usually requires up to 80% of the meeting time (Levasseur, 2000).
- (3) The end of meetings involve three steps: (i) reviewing the action items created, (ii) scheduling future meetings, and (iii) reviewing and evaluating the meeting based on the effectiveness of the teamwork during the meeting (Levasseur, 2000).

#### 2.1.4.3 Post-meeting

The third stage of a meeting involves actions taken after the meeting is complete. If the meeting generated action items that participants need to complete outside the meeting, it is the meeting chair/group leader role to hold meeting participants accountable for their assignments. It is important to see follow-up as part of the total meeting process and act as a resource to help with conflicts and assure that tasks are completed on time. In this stage, technology can be used to send out meeting minutes and reminders for meeting participants to complete tasks associated to them.

### 2.1.5 Meeting Roles and Individual Behaviour

Anyone who is invited to join a meeting should have a role within that meeting. Meetings that are private and internal to an organization tend to have informally structured roles for different participants (Brandenburg, 2008). Some individuals within these meetings may occupy multiple roles within the same meeting.

Streibel (2003), and Parker and Hoffman (2006), describe five roles that meeting participants can occupy within a meeting. The first role is the facilitator (chair); this individual is responsible for conducting the meeting, encouraging meeting attendee participation, and covering all points on the meeting agenda. The second role is the scribe, who records and posts key ideas, points, and comments during discussions on a flipchart, a whiteboard, or other means of display, so that all participants can refer to them. The timekeeper is the third key position in a meeting; this person is responsible for keeping track of the time during the meeting, as well as notifying the meeting participants that the time allocated for an agenda item is exhausted. The fourth role is the note-taker. This person records key meeting-related information (minutes) using an established format. This person also checks meeting minutes for accuracy and ensures that all group members receive a copy of the minutes. The fifth role is the meeting participant. These are individuals who attend the meeting to listen and contribute to the meeting through evaluation and decision making. His/her major role is to listen and comprehend the material being discussed or to come to a conclusion over a problem being discussed. All of these roles are allocated prior to the start of meetings and can change with each meeting. Depending on the number of participants attending the meeting and the type of meeting, some of the meeting roles (e.g., scribe, timekeeper,

and note-taker) may not exist or may be handled by a single individual. These roles are important as they make meetings effective and keep them on track (Monge, McSween & Wyer, 1989). As is the case for some meetings, mobile devices have been used by the note-taker to record meeting minutes as well as keep track of time.

Even though research has been conducted to better understand meetings in organizations (e.g., Allen et al., 2008; Beck and Keyton, 2009; Bennington et al., 2003; Hallett et al., 2009; Myers, 1986; Olesen, 1990), numerous researchers have noted the limited empirical research conducted in understanding the behaviour of meeting participants (Rice & Shook, 1990; Post, Cremers & Henkemans, 2004; Volkema & Niederman, 1996; Rogelberg et al., 2007; and Leach et al., 2009). Understanding participant's behaviour in meetings is based on cultural (organizational) interpretation (Miller, 1994). Each organization has its own unique culture which makes their meetings potentially different from other organizations. Trice and Beyer (1984) proclaim that studying ritualistic events in organizational life can help to understand organizational culture. Examining meetings and rituals reveals the numerous similarities between them. Meetings, like rituals, have (1) frequency, (2) regularity, and (3) a specific location. The formality of rituals or meetings is symbolized in the meeting agenda, the seating arrangement of participants, how the group is composed (e.g., who is invited) and with the designation of a chairperson (Feldman & Pentland, 2003; Hallett, Harger & Eder 2009; Leach, Rogelberg, Warr & Burnfield, 2009). Other examples of ritualization include the communication style adopted in meetings, the length of discussion, and the style of questioning. An open dialogue is more prevalent in a less hierarchical



organization, while closed questioning can indicate a more controlled organization (Deal & Kennedy, 2000; Pino & Mora, 1998; Waal van der, 2009; Kemp & Williams, 2013). A more controlled organization may be less likely to allow or adopt mobile technology in meetings.

### **2.1.6 Computer Supported Cooperative Workgroup**

In 1984, Iren Greif from MIT and Paul Cushman from DEC held a workshop and invited twenty people to attend and discuss a shared interest in how people work together and the role technology can play. In this workshop, they coined the term Computer Supported Cooperative Work (Grudin, 1994).

The term Computer Supported Cooperative Work (CSCW) (and other similar terms referred to in the literature, such as group decision support systems, electronic meeting systems, groupware, and group support software) refers to using technology to support individuals working together in a meeting (Greif, 1988). These technologies such as groupware or connected mobile devices such as laptops and smartphones can be used in meetings to help make group decisions or find answers to meeting questions, respectively. According to Johansen (1988), the four types of CSCW meetings where technologies could be deployed are outlined in Table 2.2. The first portion of the matrix, categorized as face-to-face interaction, refers to having all participants present in the same location at the same time using software such as University of Arizona GroupSystems2 (Nunamaker, Dennis, Valacich, Vogel & George, 1991). An asynchronous meeting occurs when individuals meet at different times but in the same location (using an asynchronous technology such as FacilitatePro (Adams, 2013)). Synchronous distributed interaction consists of participants meeting at the same

time but in different locations using a conference technology such as video or audio conferencing. Finally, the fourth type is asynchronous distributed interaction in which participants meet in different locations at different times using an asynchronous technology, such as a wiki or blog.

My research will focus on the face-to-face interaction type of meeting, since this type of meeting may or may not use mobile technology to support meetings (with some people in a face-to-face meeting employing mobile technology and others not using it), while the remaining three types of CSCW meetings require technology use. With face-to-face meetings there may be additional pressures for meeting participants to not use their mobile devices for non-meeting related tasks.

**Table 2.2. Four types of CSCW meetings**

	<b>Same Time</b>	<b>Different Time</b>
<b>Same Place</b>	Face-to-face interaction	Asynchronous interaction
<b>Different Place</b>	Synchronous distributed interaction	Asynchronous distributed interaction

#### **2.1.6.1 Technology in Meetings**

When technology is introduced into meetings, it adds a new level of complexity to meetings. Yankelovich, Walker, Roberts, Wessler, Kaplan and Provino (2004) conducted a survey of 325 participants to assess the effectiveness of existing meeting software and found that meeting participants' attitudes and the effectiveness of meetings that use technologies such as Flexible JAMM (Begole, Rosson & Shaffer, 1999) and TeamRooms (Roseman & Greenberg, 1996) is somewhat ineffective, stating

concerns with audio and other technical issues. From their research, they concluded that three major technology-related issues impact meeting effectiveness:

(1) Audio problems: Some remote individuals who used technology to conference in complained about not being heard or having too much extraneous noise.

(2) Behaviour problems: Some meeting participants complained about meetings not being well facilitated due to inadequate advanced planning or meeting participants not following effective meeting behaviour, such as indicating the current slide, or people who are face-to-face in the meeting generally ignoring remote participants. This last issue could segregate remote participants, allowing them to disengage from the meeting and not contribute.

(3) Technical problems: Some individuals complained about not being able to view meeting-related visual material or receiving the materials too late.

To resolve these problems, Yankelovich et al. (2004) created a software system called Meeting Central to support meetings. Meeting Central employed the ability for multiple meeting participants to view and edit documents in real time. They also incorporated tighter telephony integration into the software to support remote participants, as well as the ability to record meeting events that take place over time, to allow later replay of the meeting.

Research by Stefik, Foster, Bobrow, Kahn, Lanning, and Suchman (1987) conducted at Xerox PARC about the tools needed to support meeting effectiveness, is well documented. They developed three applications (i.e. Boardnoter, Cognoter, and Argonoter) to work together to support face-to-face meetings. These applications were operational but not fully integrated with each other and were not evaluated for success.

Boardnoter, had the functionality of an electronic chalkboard or whiteboard and was intended for informal meetings that use freestyle sketching. Boardnoter used “chalk” to draw, “eraser” to erase, a “typewriter” to type, and a “pointer” to point to different items on shared electronic screens. The second application developed was Cognoter. This tool was developed based on more formal models of meeting process. Cognoter was a tool for organizing ideas to plan for presentations. The third application developed was Argonoter, a tool used predominately for considering and evaluating alternate proposals. Stefik et al (1987) note that any technology or software produced for meeting collaboration would need to have meeting participants present in the initial organization. This could be the reason why more technology is being brought into meetings; meeting participants might be realizing that mobile technology such as smartphones and laptops help with collaboration as they are able to access meeting related information readily and share it with other meeting participants.

## **2.2 MOBILE PHONES IN THE PRIVATE AND PUBLIC DOMAINS**

When first introduced, it was believed that telephones would, “ruin the lives of the sick and tired, opening homes to all varieties of evil-doers, and even as a spreader of disease via unsanitary mouthpieces” (Marvin, 1988, p.121). This pessimistic view of the telephone proved to be false. Over the past hundred years, various new forms of mass communication technologies, such as radio and film, have been viewed by technological pessimists, such as Max Horkheimer and Theodor Adorno, as “harbingers of doom, not as a mean of political and cultural liberation but instead as means of manipulation” (McGuigan, 1996, p.180). The same could potentially be said about the recent invasion of mobile technologies into many aspects of society with their rapid adoption and their

constant connectivity to our work life. Mobile phones have the potential to have a profound negative impact on the workplace in the form of a (1) distraction and addiction, and (2) there is an increasing negative social impact on mobile phone use in public spaces. They can also be seen as having a positive impact such as for emergencies, supporting access to information and telecommunications functionality from many different places and times.

It is important to define three levels of space: (1) public space, (2) private space, and (3) public-private space. For this dissertation the first level of space (i.e. private) will refer to any environment where individuals are in their private domain, such as their home. While public space is an environment where the location is in the public domain, such as parks and large open gathering. The third space referred to as private-public domain is an environment where the individual is neither fully public nor fully private. An example of this type might be a corporation. Even though the corporation is in the public domain, the meeting room within the organization is a private domain.

Section 2.2.1 will discuss the impact that mobile phones have had on people in the work environment. For example, mobile phones have the potential to be a form of distraction when used in a group setting (Iqbal, Grudin & Horvitz, nd). While these are the negative aspects of mobile phones entering the work place, there are also positive implications. One of the issues to consider in this context is the notion that a mobile phone is a personal/private technology and this is being brought to and used in a much more public setting, the workplace, I will analyze how the mobile phone has extended the boundaries of personal space into public space and positive and negative reactions to this new situation.

### 2.2.1 Mobile Phone use in the Workplace

Personal computers, personal digital assistant (PDAs) or mobile phones have the potential to be technological distractions when used, not just for the user, but also for co-present individuals (Iqbal, Grudin & Horvitz, nd). Whether it is the anticipation of the ring of the mobile phone, the auditory interruption of the actual ringing of the phone, or even having to listen to one person's side of a conversation who is on the mobile phone, mobile phones can be said to cause distraction in a group. When mobile phone use occurs, the individual using that phone can become mentally removed from the communal space and transported to a virtual world that is not accessible to those surrounding him or her, what Gergen (2002) calls "absent presence".

This is in contrast to the research by Daft and Lengel (1986), which revealed that face-to-face communication is the most beneficial form of communication. I argue that Daft and Lengel's research was conducted in an era when digital technology was not yet very sophisticated, and society was not as digitally connected as it is now,.

Previous research published by Kleinman (2010) in her doctoral dissertation involved examining face-to-face meetings where meeting participants multitasked using a laptop. Her research used qualitative (eight interviews) and quantitative (two surveys, n=156 and n=110) methods to assess how meeting participants used laptops in meetings to multitask and what their attitudes and behaviours were towards technology-enabled meetings. Her studies revealed that people who viewed themselves as multitaskers tended to multitask using technology such as laptops in meetings. Project meetings tended to have the highest multitasking members compared with other types of meetings. Furthermore, meeting group members who worked well together tended to

view multitasking as appropriate during meetings, while outsiders who multitasked during the meetings were viewed as rude and distracting. However, her research did not explore the use of mobile phones during meetings. My research will examine a similar set of variables but with mobile phones instead of laptops.

With the help of mobile phones, employees are said to be able to extend their work day past regular business hours and into the evening, which can interfere with their personal time (Bailyn, 1988). This is supported by Middleton and Cukier's (2006) and Middleton's (2008) research on mobile email usage. They reported that individuals are using their mobile devices at all hours of the day, on vacation, on golf courses, and in other non-work settings; some even describing it as a leash. This constant connectivity to their work life outside the company walls creates an imbalance in work-life balance and potentially creates more stress and anxiety (Middleton, 2007).

The research conducted by Kleinman (2007) indicated that certain technology use such as laptops and mobile phones does not create a distraction during face-to-face meetings. Her study of 15 professionals (e.g. software engineers, lawyers, human resources managers, television producers) in varying positions and industries revealed that participants' "perception was that technology did not cause any informational or process loss to the group" (p. 2505). However, Newman and Smith (2006) argue that today's mobile communication devices and personal computers are designed for use in isolation, and once they are used in a group environment, such as a meeting, they have the potential to be distracting for others not using that device. Kleinman's (2007) research further proclaimed that the amount of technology available to employees was the strongest indicator of whether or not participants were distracted. She reported that

the use of laptops and handheld devices such as the Blackberry (more so than any other devices) were the primary causes of absent presence behaviour.

Kleinman's (2007) research also revealed that participants did not use communication technology devices when someone of power or status was present during the meeting. For example, if a senior manager or an external client was present, individuals refrained from using technological devices because it would appear rude to do so. What this resulted in was a subculture that accepted technology use but refrained from using it when a non-member of the subculture was present. The only negative feedback that participants experienced in regard to the use of laptops during meetings was emotional. Participants felt that individuals who used their communication devices during meetings were disrespectful and disinterested. Kleinman's (2007) research did not investigate the impact on the group as a whole when individuals used technology during meetings. When technology was used in meetings, the group may have had difficulty achieving their goals as certain individuals had not accepted technology or they may have achieved them faster or with more information. It may have also affected the group's ability to function as a cohesive group. Section 2.3.1 provides a discussion of different aspects of group dynamics that may be affected by the use or introduction of technology into group processes. However, in this thesis it is not technology that belongs to the group but rather a technology that could be considered as belonging to one individual (a personal technology).

Kleinman's research is supported by Francine Schlosser's research on Blackberry users. Schlosser's (2002) study revealed that five out of eleven participants viewed use of Blackberrys during meetings as rude and impolite, whereas four out of



eleven participants characterized Blackberry use as increasing efficiency. Furthermore, these four same individuals remarked that Blackberry use during meetings signifies one's importance with respect to corporate structure. The acceptable use of a Blackberry by certain individuals could represent the power relationships in the organization, indicating that certain people were permitted to use them.

In summary, most research related to mobile phone use in the workplace, specifically meetings, has centered on how such devices are a form of distraction, or how they connect the individual to the organization. A few researchers have also examined how mobile phones bring enjoyment when they are used, and how they can improve efficiency in meetings and be seen as status symbols. After an extensive search on attitudes related to personal mobile phone usage in meetings, no available studies were found. As smartphone adoption increases, and such devices are introduced more often into meetings, this area of research may gain more interest in the research community. I am specifically interested in exploring attitudes and behaviour related to these types of devices and meetings, and there seems to be a gap in the literature on this topic.

### **2.2.2 Social Impact of Mobile Phone use in Public Space**

The mobile phone as a new digital medium has facilitated a shift of some types of social interaction from private to public. Previously, using the telephone was restricted to communicating from a fixed or specific location, usually in a person's private home (although public telephones were available, their use was limited compared with in-home use). However, mobile phones can be moved through a physical space while still maintaining connectivity. This mobility can allow a person using a mobile phone to

intrude into other people's personal spaces which may or may not be acceptable to the other person. Initially, the cell phone was designed for the business traveler but as research by Wei and Leung (1999) suggests, use has shifted to a more social purposes. Wei and Leung's survey of 834 Hong Kong cell phone owners revealed that:

1. 46% made phone calls to friends or relatives;
2. 38% made phone calls that were business related'
3. 16% made phone calls to others (i.e., co-workers or classmates).

The research also revealed that 62% of these calls were made on the street, 10% at home, and 28% elsewhere. This suggests that cell phones have freed users from the fixed landline and allowed technology mediated conversations to occur in public spaces; an advantage for many as they do not need to be at home to talk to someone on the "phone."

The popularity of cell phone use in public places has also given rise to complaints. Respondents in Wei and Leung's (1999) research were asked to rank the top ten most irritating places to encounter cell phone use. Restaurants came in first place, with more than 81% feeling annoyed when they heard someone use their mobile phone in a restaurant or café. The second most irritating area was the classroom or library, with 80% feeling annoyed.

Much research has been conducted on mobile phone usage in numerous public settings (Campbell, 2004; Campbell & Russo, 2003; Ling, 1997, 2002; Murtagh, 2001; Rice & Katz, 2003; Wei & Leung, 1999). This research has suggested that certain public (e.g., in parks, on sidewalks or stores) and public-private domains (e.g., texting or leaving the room full of people to make a call) are acceptable areas of mobile phone

usage. However, it also found that there is a lack of agreement on what is considered appropriate or acceptable public use of mobile phones.

One drawback of mobile phone use in a public space is that co-present individuals around the mobile user are propelled into an audience role. Even though the conversation is with the individual on the end of the mobile phone, bystanders become audience members listening in (Fortunati, 2003). Paragas (2005) recorded individuals who used their mobile phone with bystanders standing in close proximity. He found that some bystanders actually went out of their way to listen to personal conversations by moving their bodies and heads closer to the other. Using focus groups and electronic discussions on Usenet Ling (1997) found that the majority of bystanders were offended when individuals had inappropriate conversations in public on their mobile phones where an inappropriate conversation with a mobile phone in this context refers to conversations in restaurants, during meetings, and at parties. In a survey of 211 participants, Caporael & Xie (2003) reported that restaurants, stores, churches, meetings, trains, buses, and theaters were also inappropriate settings for mobile phone use. Campbell and Russo (2003) reported that mobile phone use in college classrooms was particularly disruptive, and that students frequently complained about the annoyance and distraction from ringing cell phones during classes. What is important to consider is that in this early literature on attitudes towards cell phone use seems to indicate that being privy to private conversations in close quarters such as buses and in meetings is undesirable on behalf of the co-present audience. However, being able to conduct either personal business or work “on the go” seems not only desirable by the cell phone user but also necessary. One question that arises is whether this early

research was only measuring a reaction to the novelty of the social situation similar to early attitudes towards telephone use or whether these attitudes would be maintained over time.

Mobile phone users have responded to some of the negative reactions of co-present individuals by creating what Ling (1997) calls “symbolic fences.” These are nonverbal behavioural procedures or movements during a cell phone call that creates the illusion of a barrier. Some of these behaviours include turning away from others, speaking quietly, or shifting one’s eyes away from others (Campbell, 2004). Some might argue that mobile phone use in public is privatizing public space, but Campbell and Park (2008) believe that mobile phone use is personalizing public space, rather than privatizing it. The difference is that privatizing refers to conversations in public that are shielded from surrounding individuals, whereas personalizing refers to someone’s individual or personal affairs being public regardless of whether they shield their conversation.

The personalization of public space is not new. An example of this is people reading books or listening to their iPods on public transit. However, unlike listening to music in public, talking in public forces co-present people to become involved in the conversation as a passive listener whether they want to or not. It can be difficult to filter out audio stimuli when it occurs in close quarters (Girin, Schwartz & Feng, 2001).

The use of mobile phones in public space is sometimes considered rude (Ling, 1998), yet it is generally believed that we do not object to individuals having a conversation around us, so what is the difference between the two forms of conversation in public space? In a recent survey of 150 executives, 63% said that

mobile phone users are rudier now in comparison to three years prior to the research (Galbreath & Long, 2004). This increase could be the result of reduced patience by individuals about public mobile phone conversations, or it could be due to the increase in the number of mobile phones in society. Some might argue that with time, people will become acclimatized to mobile phone use in public places, as was the case a century ago when landline telephones were introduced into households.

Why are people finding it difficult to acclimatize to the use of digital communication devices in public spaces? What is so offensive about communicating in public on a mobile phone? Research conducted by Katz (2003) revealed that individuals do not find it impolite when their partners communicate using a mobile phone in public, as long as the individual on the other end is part of their “in-group” or social network. Problems occurred when the “distant present” person was not seen as part of the social network. Focus groups revealed that individuals ranked it highly irritating, and even threatening to the relationship, when their partners received calls from individuals outside their social network. This prior research regarding the negative reactions to mobile phone use was mostly related to conversations that involved an audio channel; the traditional use of the telephone. However, a mobile phone has other functions which are not restricted to the audio domain such as texting or accessing the Internet.

Mobile phones have also brought numerous positive effects to society. Healthcare providers are realizing the potential of mobile devices in healthcare. As Adler (2009) suggests, the reason that mobile phones are an attractive platform for delivering health-related services is that they are personal, portable, and connected; as new generations of mobile phones are produced, they are increasingly intelligent.

Another positive aspect of mobile devices in healthcare is that they can be used for the remote patient monitoring.

On average, eight billion text messages are sent per month in Canada (Text, 2012). Text messaging or Short Message Service (SMS) has opened up new ways of communicating with others in real-time and without sound. For example, healthcare providers have taken advantage of this rapid and ubiquitous form of communication to help individuals quit smoking. A group of researchers (Rodgers, Corbett, Bramley, Riddell, Wills, Lin, & Jones, 2009) from New Zealand conducted a randomized controlled trial of 1705 smokers who owned a cell phone and wanted to quit smoking. The participants received regular, personalized SMS messages providing smoking cessation advice, support, and distraction for the length of the six-month study. Follow-up data were available for 1624 participants at six weeks and 1265 participants at twenty-six weeks. They found that more participants reported not smoking in the intervention group (28%), compared to the control group (13%), at six weeks and twelve weeks.

Research conducted by Litan (2008) of the Brookings Institution, states that remote health monitoring through mobile technologies could save as much as \$197 billion over the next 25 years in the United States, with cost savings especially great in the chronic disease areas of pulmonary disease, diabetes, congestive heart failure, and skin ulcers. Researchers at the University of Massachusetts (Boyer, et al., 2012) have developed a device for substance abusers to wear, which monitors and measures skin temperature and nervous system activities. Data from the device, as well as self-reporting stress levels, are transmitted through smartphones to healthcare providers

trained to look for risk behaviour and physiological patterns, so they can provide individualized support through SMS messages and audio calls to discourage drug use.

Other positive uses of smartphones have contributed to improved communication and social skills in autistic children (De Leo & Leroy, 2008); providing financial support to the poor in East Africa by allowing receipt of electronically transferred funds through their smartphones (Hellström & Tröften, 2010); provided mobile learning to medical residents in Africa (Chang, et al., 2012); and having increased communication between remote healthcare workers and patients (Beurer-Zuellig & Meckel, 2008).

It would seem then that the traditional audio-based telephone conversation in public is problematic, however, there are many other uses including private text conversations that may not only be acceptable in public but beneficial and desirable. One example might be during the Sandy Hook Elementary School shooting in Newtown, Connecticut where 26 people were killed. A child was able to text her parents to let them know that she was safe.

Not all public use of mobile phone is acceptable. A survey conducted by LexisNexus found that baby boomers are more likely to be annoyed than younger employees when others check their mobile phones for email or text messages during meetings (Schonfeld, 2009). However, the same survey found that some generation Y workers also found the act to be rude. A poll of 5300 workers (Williams, 2009) found that on a scale from never to very frequently, 33% of employees said that they frequently checked their email on their smartphones during meetings and that 20% had been reprimanded for poor manners regarding their mobile devices. There seems to be occasions when mobile devices are considered inappropriate or “poor etiquette” for use

particularly in employment situations, and that they are punishable via reprimands. However, the data in these studies were reported in 2009, three to four years before the work reported in my thesis. Since attitudes towards new technologies are subject to change, I would suggest that the conclusions drawn from these data may no longer apply.

For some situations such as driving, the use of mobile devices is not just considered poor manners but also hazardous. According to the website cellular-news.com (2008), 50 countries have fully or partially banned the use of mobile phones by drivers unless they use some form of hands-free kit. In Canada, three provinces have such bans: Ontario, Newfoundland, and Quebec. According to Galbreath & Long (2004), a “1997 study found that drivers using mobile phones were four times more likely to have an accident (with or without hands-free accessories) (p.10). They concluded that it is not the actual hands-on use of the mobile phone that contributes to accidents, but the act of an involved telephone conversation that distracts the driver. Face-to-face conversations in cars did not produce an increase in accidents, since the co-present was viewed as an extra pair of eyes for the driver.

### **2.2.3 Theories of Technology Acceptance**

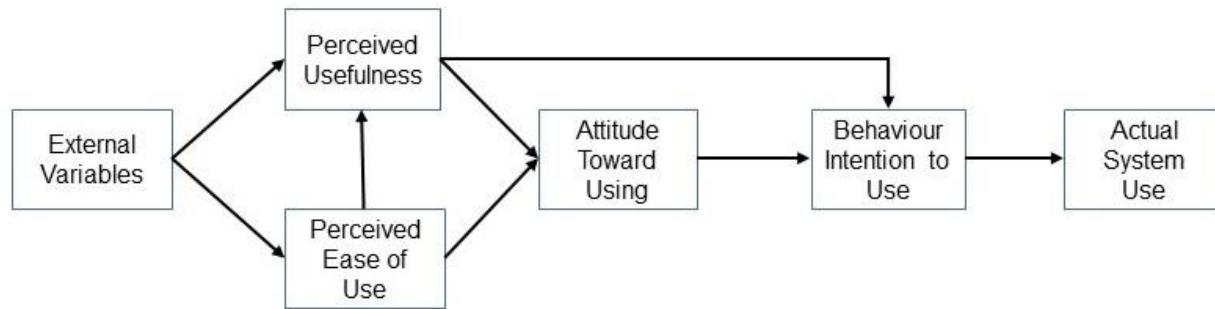
Understanding why people adopt or reject technology has been a subject of study in information systems (IS) research for at least 25 years and numerous theories have arisen during this period (Larsen, Allen, Vance, Eargle, 2014). For example some researchers have focused on studying the impact of users' attitudes and internal beliefs on their technology use behavior (Ives, Olson and Baroudi 1983; Srinivasan 1985; Swanson 1987), and how these internal beliefs and attitudes then influence various



external factors, including the technology design characteristics (Benbasat, Dexter and Todd 1986; Dickson, DeSanctis and McBride 1986); user involvement with the technology (Baroudi, Olson and Ives 1986) and cognitive style (Huber 1983). Others have focused on the consumption patterns of mobile phone usage (Wilska, 2003) and the use of mobile phones to bring awareness to environmental issues (Uzunboylu, Cavus & Ercag, 2009). The following four subsections will briefly review four common technology adoption theories that appear often in the information systems literature as describing general factors related to the adoption of technology by individuals (in organizations or other situations). These include the Technology Acceptance Model (TAM) 1 and 2 by Davis, Bagozzi, & Warshaw (1989) and Venkatesh & Davis (2000) respectively, Theory of Planned Behaviour by Ajzen (1991), the Unified Theory of Acceptance and Use of Technology by Venkatesh, Morris, Davis, & Davis, (2003). This will be followed by an analysis of how these models help understand the mobile phone use phenomenon.

#### **2.2.3.1 Technology Acceptance Model**

Originally, the Technology Acceptance Model (TAM) (as seen in Figure 2.1) was developed by Davis, Bagozzi, & Warshaw (1989) from their research of MBA students using word processing software. The model attempts to predict the acceptability or use of technology when users are exposed to a new technology. Two major factors influence technology acceptance, perceived usefulness (the perceived belief that using the technology would enhance his or her job performance) and perceived ease of use (the belief that using the technology would be free from effort).



**Figure 2.1 Technology Acceptance Model 1 Proposed by Davis, Bagozzi, & Warshaw (1989).**

In TAM 1, for someone to adopt/use a technology, labeled Actual System Use, there needs to be some form of External Variable such as subjective norms or job relevance. This External Variable influences two other variables, Perceived Usefulness and Perceived Ease of Use. Perceived Ease of Use relates to the difficulty the user can have in using the particular technology or system. For example, if the interface contains too many buttons or menus it can be confusing to use or difficult to learn. The usefulness of technology relates to how much the individual believes that using the device would enhance his or her job performance. Perceived usefulness will also influence the attitude toward the device by users and their willingness to use the technology.

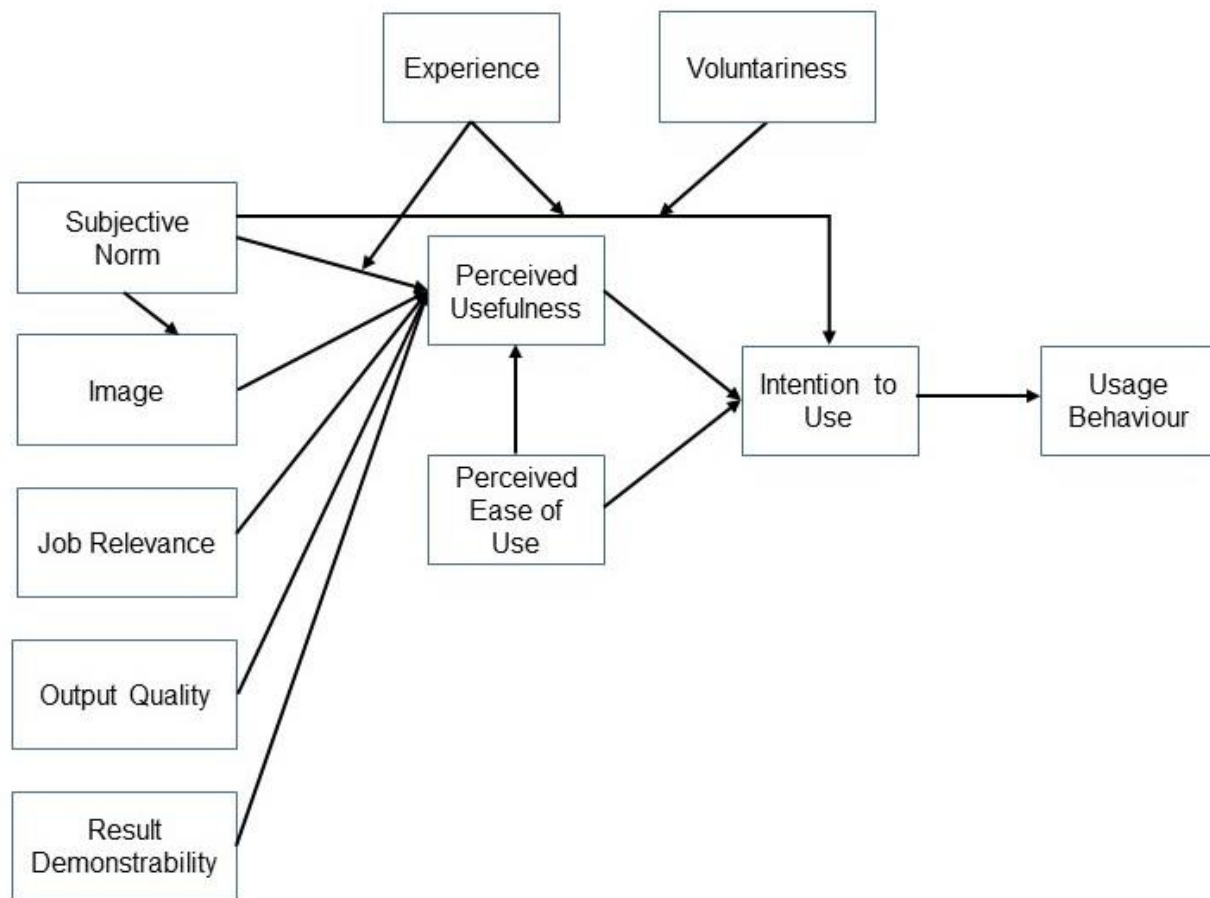
Davis, et al (1989) recruited 107 full time, first year MBA students from the University of Michigan and provided them with a one hour introductory orientation to the word processing software. The software was free and readily available for the students to use throughout the term for composing memos, letters, reports, resumes, etc.. At the end of the orientation students were given a questionnaire that contained TAM variables, a second questionnaire was administered at the end of the 14 week semester. They found perceived usefulness factor explained more than half of the

variance in the intention to use the software at the end of 14 weeks. Perceived ease of use had a small but significant effect on intention to use the software, although this effect subsided over time. The original TAM model was further expanded by Venkatesh & Davis (2000) when they developed the Technology Acceptance Model 2 (see Figure 2.2).

The TAM 2 model has two major processes (e.g. social influence processes and cognitive instrumental processes) that influence a user's acceptance of technology. The social influence processes which include Subjective Norms, Voluntariness, and Image. Subjective Norms are the perception that most people who are important to the individual using the technology would think he should or should not perform the behaviour. Voluntariness relates to the degree to which the use of the technology is perceived as being voluntary or of free will, and Image is the degree to which use of the technology is perceived to enhance one's image or status in one's social system. Subjective Norm and Image components also influence the Perceived Usefulness, while Voluntariness influences the Intention to Use a particular technology.

The cognitive instrument processes (Job Relevance, Output Quality, and Result Demonstrability seen in Figure 2) influence Perceived Usefulness. Job Relevance relates to the capabilities of a technology to enhance an individual's job performance. Output Quality is the perception of how well the technology performs the tasks that match with job goals, and Result Demonstrability is the degree to which the adopting the technology is observable and communicable to others. All three processes directly influence the Perceived Usefulness of the technology. The remaining variable, Experience, which relates to the prior experience with a specific or related technology

that an individual brings to the adoption process is a weak influence on Perceived Usefulness and Intention to Use (Holden & Karsh, 2010).



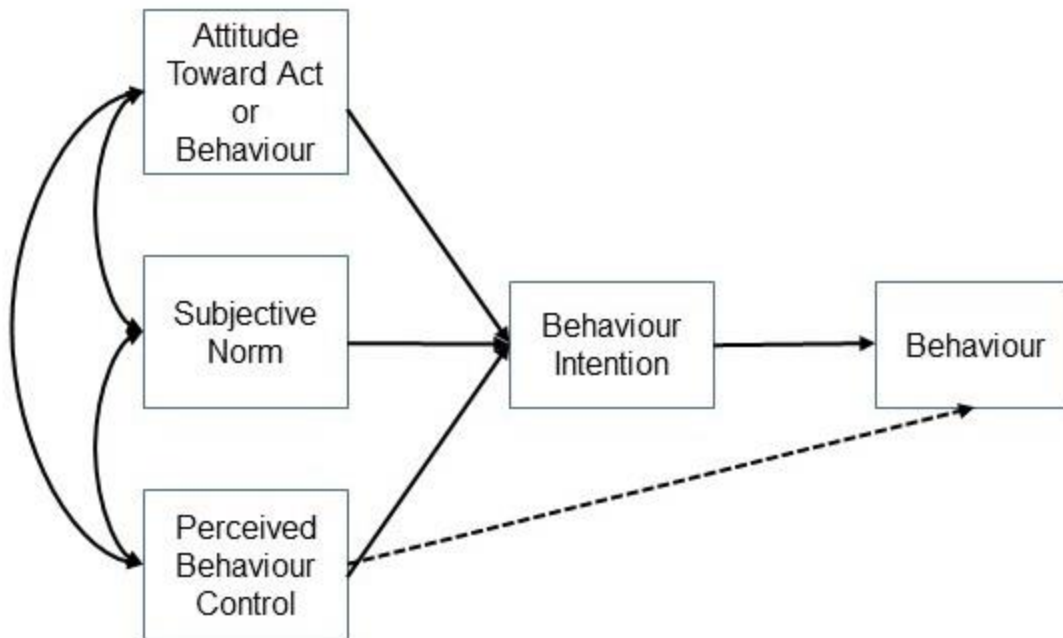
**Figure 2.2. Technology Acceptance Model 2 Proposed by Venkatesh & Davis (2000).**

TAM 2 is very similar to the original TAM model, however additional social influences were added. In this model Venkatesh & Davis (2000) conducted a longitudinal study with four organizations (for a total of 156 employees) that implemented a new software package. Employees were surveyed three times throughout the three month study and Venkatesh & Davis (2000) found that social influence processes (subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and

perceived ease of use) significantly influenced user acceptance. TAM 2 has been used to investigate many different technologies including mobile technologies. For example, Wu & Wang (2005) investigated what determines user mobile commerce acceptance and Van Biljon & Kotzé (2007) research in mobile phone adoption found that perceived ease of use significantly affected users' behavior. However, most of the literature related to either TAM model examines technology acceptance from the position of one individual user. There is little literature using either TAM model that involves groups although group behaviour and attitude can influence technology acceptance by individuals.

#### **2.2.3.2 Theory of Planned Behaviour**

The Theory of Planned Behaviour (TPB) was proposed by Ijzen (1985) and states that someone's behaviour intentions (and ultimately their behaviour) regarding the use of technology is driven by three factors: (1) their attitude towards the technology use (their willingness to use the technology), (2) their subjective norms (the belief that important individuals around them would perform the action), and (3) behaviour control (the perceived difficulty of performing the behaviour). Figure 2.3 shows that each of the three factors listed above influences each other and ultimately influences the individual's behaviour intentions which influences their actual behaviour. The perceived behaviour control has a weak influence on the behaviour of the individual as indicated by the dotted line in Figure 2.3.

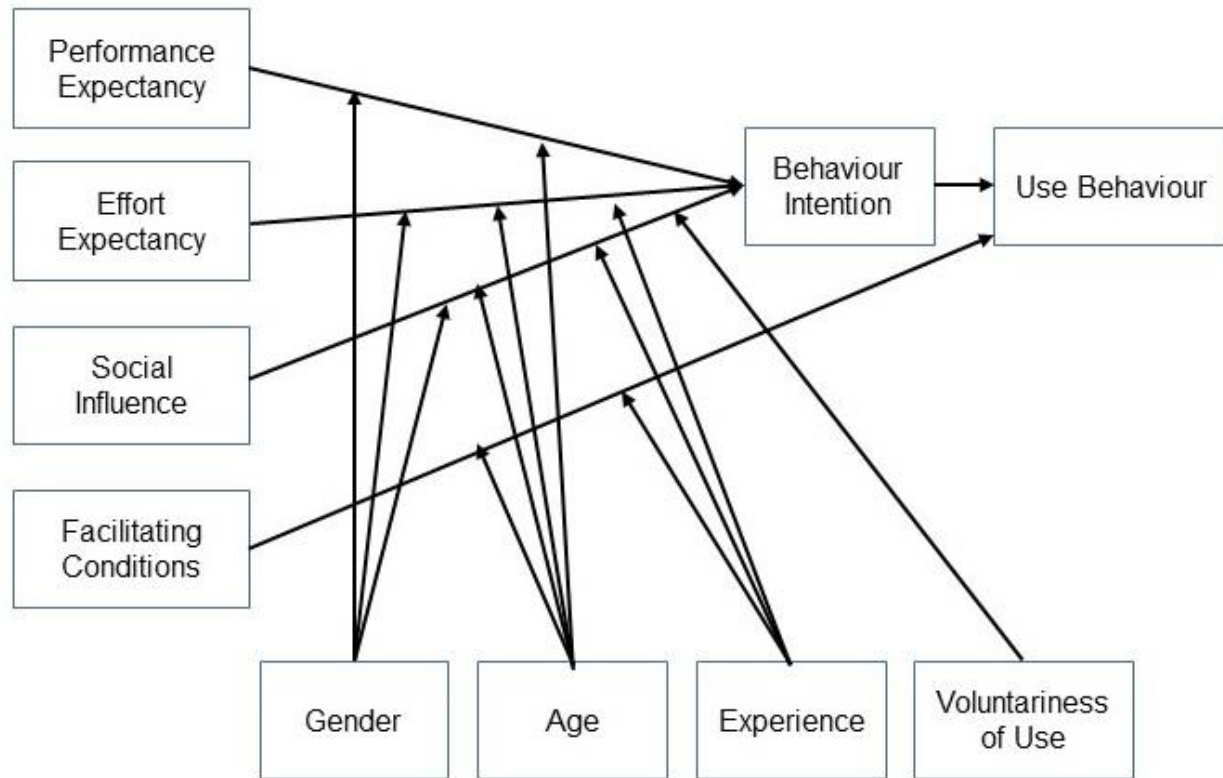


**Figure 2.3. Theory of Planned Behaviour (TPB) proposed by Ijzen (1985).**

TPB and TAM have one component that overlaps, the Subjective Norm. This means that the perceived pressure from peers can influence the use of technology. In a meeting, the perception that a meeting member thinks it is acceptable to use a mobile phone during the meeting might influence others to actually use their phones during the meeting.

### 2.2.3.3 Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (Venkatesh, Morris, Davis, & Davis, 2003) combines eight different models (including TAM, TPB, and others) into one unified technology acceptance model (see Figure 2.4).



**Figure 2.4. The Unified Theory of Acceptance and Use of Technology as proposed by Venkatesh, Morris, Davis, & Davis, 2003.**

The Unified Theory of Acceptance and Use of Technology (UTAUT) has eight components where four components, (1) Performance Expectancy (the degree to which an individual believes that using the technology will help him or her to attain gains in job performance), (2) Effort Expectancy (the ease of using a technology), (3) Social Influence (the degree to which an individual perceives that important others believe he or she should use the technology), and (4) Facilitating Conditions (the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the technology) strongly determine the use intention and behaviour of individuals. The remaining four components, (1) Gender (, (2) Age, (3) Experience (the prior experience of an individual with a specific technology), and (4) Voluntariness (the extent to which potential adopters perceive the adoption decision to be non-mandatory)

of use only have a moderate impact on use intention and behaviour of individuals. The UTAUT model has been used to explain factors that influence the adoption of weblog systems (Li & Kishore, 2006) as well as the adoption of mobile devices (Carlsson, Carlsson, Hyvonen, Puhakainen & Walden, 2006).

All four models (i.e. TAM, TAM2, TPB, and UTAUT) help to explain how an individual might accept and adopt technology, however, it does not explain how a group might accept or adopt technology such as in a meeting situation. For example, all four models might help explain how and why people have accepted and adopted mobile phones for personal use but it does not explain whether bringing the personally adopted device into a group situation where the group is faced with a decision about accepting that technology for personal and/or group use is another question. As suggested in Section 2.2.1 people in a group setting may be adverse to considering personal mobile devices in group or public settings. For the individual, the mobile phone is useful to him/her, however, the usefulness of it to the group must also be demonstrated if the IS models apply. Whether the other variables such as experience, voluntariness, etc. relate to the acceptance of mobile phones in meetings and then how they relate (arrows in the figures) is also unclear in these current models. In my dissertation, I intend to examine how people in meetings behave when mobile technologies are intentionally used for texting.

## **2.3 ORGANIZATION BEHAVIOUR**

### **2.3.1 Group Dynamics**

When Lewin (1951) studied individuals within groups, and their actions and reactions to changing circumstances, he coined the term group dynamics. Later,



Cartwright and Zander (1968) provided a more formal definition of group dynamics: the “field of inquiry dedicated to advancing knowledge about the nature of groups, the laws of their development, and their interrelations with individuals, other groups, and larger institutions” (p. 27). The research conducted by Lewin, Cartwright & Zander helped better understand group behaviour and group decision making (McGrath, Arrow & Berdahl, 2000). Meetings are not merely work-related discussions as described in Section 2.1.1. They are small-group interactions with all the group dynamics of small groups (Moran, 2006). Group behaviour is determined by much more than an interest in a solution to the problem before the group. Because these dynamics affect meeting processes and outcomes, group dynamics needs to be understood in order to begin to understand the reactions to various technologies, particularly mobile phones, being introduced into the meeting.

Giddens’s (2013) structuration theory (ST) informs group behaviour or dynamics in that it suggests that behaviours within large social structures, such as organizations, or smaller ones, such as groups, can be viewed through two components: (1) system and (2) structure. The term system refers to the organization, or a group within the organization, and the behaviours and practices in which the group engages to pursue its goals. The term structure refers to the rules or the expected behaviours based on the group’s culture, and resources that the group members use to create, sustain, and guide their behaviour within the system. In ST group-member behaviour is based on previous behaviours that individuals have acquired, and the behaviours acquired within the group. These new behaviours are manifested within the group to adjust the group’s

behaviour. The structure component from ST and the Subjective Norms from the TAM 2 model might indicate that group behaviour influences technology use.

Tuckman's (1965) research into group dynamics analyzed eleven published articles related to group development in group therapy meetings, training groups, and natural groups. He found that regardless of meeting lifespan or type, four phases are common in all groups: forming, storming, norming, and performing. Tuckman and Jensen (1977) further analyzed 55 published articles related to Tuckman's initial paper, and found that a fifth phase, adjourning, was also required. Other studies have supported Tuckman's model, and Tuckman and Jensen's (1977) research that group development consists of the five phases (Heinen & Jacobson, 1976; Moreland & Levine, 1988). Forming refers to the initial meeting of group members. In this phase each group member introduces him/herself, learns about other group members, and discovers the group's task (Furst, Reeves, Rosen & Blackburn, 2004). The second phase is storming, in which group members compete with each other for status and for acceptance of their ideas. In this phase, the group also learns how to solve problems together, function independently as individuals and as a group, and settle into roles and responsibilities within the group (Maples, 1988). Norming is the third phase, represented by the group working more effectively as a team. Group members are no longer competing with each other for status or acceptance of their ideas, but rather focus on developing a way of working together toward the group's goals (Tuckman & Jensen 1977). Group members informally respect each other's opinions and value their differences. In this phase, the group has agreed on their internal group rules for working together, how information will be shared, and how to resolve group conflicts. The fourth phase, performing, is not

achieved by every group; some groups remain in the norming phase more than any other phase. In the performing phase, the group works efficiently and at a very high level. The group is highly motivated to get the job done and any decisions that need to be made or problems that need to be solved are addressed quickly and effectively (Johnson, Suriya, Yoon, Berrett & La Fleur, 2002). The last phase of group development is adjourning. Adjourning involves dissolution and the termination of group member roles, the completion of tasks, and reduction of dependency (Tuckman & Jensen 1977; Forsyth, 1990). This is when the group's work is terminated, and group members leave the group for other groups or tasks.

Others have argued that group development does not necessarily follow the five phases outlined by Tuckman. Gersick's (1988) analysis of eight groups formulated her "punctuated equilibrium" model, which postulates that groups exhibit long stable periods interposed with brief changes. Unlike Tuckman's model, punctuated equilibrium assumes that group development depends on external relations. As explained by Gersick (1988), the punctuated equilibrium model is comprised of two phases. In the first phase, group members meet each other and the tone of the group is set. It is also in this phase that agreement on the group's behaviour is established. There is little work accomplished in this phase, mainly due to the group not being able to understand how the information they already have about the task is to be used. Between phases one and two there is a transition period. This is also when the group has consumed about half of its allocated time. Major accomplishments occur during this period; the group has learned from its past experience working with current group members, and has adjusted its work approach. The second phase starts when the transition ends. In this phase,

minor changes to the group occur (e.g., positive or negative) and in this phase the group completes its assigned task(s).

Dennis, Garfield, and Reinicke (2003) studied six medical groups. Half of the groups used the punctuated equilibrium model, while the other half used Tuckman's model. They found that the punctuated equilibrium model best fit well-established groups with well-established norms, while Tuckman's model is better suited for groups whose members lack shared scripts for work processes (e.g., newly formed groups, disrupted groups).

## **2.4 SUMMARY**

This chapter provided a literature review of some of the major technological philosophers, and their stances on the development and progression of technologies, whether the belief that technology progresses along a path of its own making, or that technology does not determine human behaviour, but rather, human actions transform technologies.

A definition of a meeting was provided, as were five factors (i.e., i. open communication, ii. establishing ground rules, iii. creating a sense of collaboration and community, iv. collaborative discussions centered on learning, and v. celebration) constituting successful meetings. Six types of meetings were defined (i. demonstration/information sharing, ii. ceremonial, iii. brainstorming/problem solving, iv. announcements/general orientation, v. staff meeting/forum, and vi. round-robin), as were the three stages (i. pre-meeting, ii. meeting, iii. post-meeting) that each meeting goes through. The section ended with the descriptions of the five roles found in

meetings (i. facilitator/chair, ii. scribe, iii. timekeeper, iv. note-taker, and v. meeting participant), as well as the definition and explanation of technology use in meetings.

Section 2.3 explored the positive and negative issues of using mobile devices in the public and private spheres. Several examples were provided for each, and a brief review of mobile etiquette was covered, as well as distracted driving. It is important to understand the differences between public and private communication as they relate to my research, since the act of communicating in these two different spheres is altered.

The chapter concluded with a review of group dynamic's theorists. In this section, two different group dynamic theories (i.e., Tuckman's stages of group development and the punctuated equilibrium in group model) were covered. Knowing how short-term and long-term groups develop through time is important, as my research will only examine short-term meetings. The next chapter (chapter 3) will discuss and present the first and second survey results.

# CHAPTER 3 METHODOLOGY

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## 3.0 INTRODUCTION

This chapter describes the methodology of study one (survey I and II) and study two (eight meetings). In section 3.1, survey I and II participants are explained. The next section (i.e. 3.2) will discuss the data analysis of both surveys, which is followed by the section 3.3, the purpose, procedure, and data analysis of the eight simulated meetings. The chapter will conclude with a summary in section 3.4.

## 3.1 SURVEY I AND II

To gain a better understanding of the attitudes and behaviours in meetings, a pilot study was conducted during two one-hour general staff meetings at Ryerson University. Based on the observations made during these meetings it was observed that some individuals used their mobile devices during the meeting while certain meeting participants seem to approve and disapprove of their usage. In addition, a survey was used in the investigation of laptop use in organizational settings by previous researchers. In this research they asked people 23 questions related to demographics, the number of and the type of meetings they attend, their multitasking behaviour during meetings, and the type of technology they use during meetings (Kleinman, 2010). As a result of this prior research in a similar vein of research and the observations made in the general staff meetings, an online survey was chosen to gather the attitudes and opinions of mobile phone use from a broad range of users. A 40 question online questionnaire was developed with 16 questions from the Kleinman study (with permission) and 24 developed specifically for my research questions. Three different

individuals were then asked to assess the clarity of the questions and answers, and to provide a level of external validity. Internal validity was indicated with a Cronbach alpha measure, which was  $\alpha=0.739$  and is considered acceptable (Streiner & Norman, 2008).

A second survey was deployed two years after the first one to assess meeting participants' perceptions and attitudes of mobile technology use during meetings, and whether there had been any changes over the 2-year time interval. A longitudinal survey was conducted to assess the beliefs, attitudes, and behaviours of individuals over time. As technology had changed in the intervening time, the survey was modified slightly. For the first survey study, a random sample from a wide population was recruited to gain a better understanding of the general attitudes and behaviour of meeting participants. For the second study individuals in Information Systems/Information Technology sector was recruited as they might be more comfortable and might use mobile device more often in meetings than other sectors. No compensation was provided for the participants who completed survey I or II.

### **3.1.1 Survey I – Survey Instrument**

The intent of the first questionnaire was to gather data to answer the following two questions:

- 1) What are the attitudes toward having smart mobile technologies in face-to-face meetings in organizations?
- 2) How is smart mobile technology being employed and adopted for use in meetings?

A survey methodology was chosen rather than an interview methodology since surveys provide a lower cost to administer, reaches a larger and dispersed audience,

increases accuracy of data because respondents record their own data, and increases respondents' anonymity (Frey, Botan & Kreps, 2000). The first survey (see Appendix A Survey I) was made available and distributed online, as well as distributed in hard copy format in the southern Ontario region for four weeks from August 9, 2010 until September 3, 2010. Participants were asked to complete the survey after having attended a meeting within their respective organization. The 40-question survey was composed of five sections. The first section contained eight questions to collect demographic information, such as age, sex, and employment status. Demographic questions were asked to get a better understanding of who the respondents are and in helping to explain the results of the survey (Fink, (2002). The demographic questions were stated at the beginning of the survey rather than at the end to increase response rate (Teclaw, Price & Osatuke, 2012). The second section contained six questions and asked participants about their technology use (e.g., how often they used a computer or mobile device, and for what activities), the purpose was to gain a better understanding of the participants level of technology knowledge (Davis, 1986). The third section contained 13 questions regarding participants' attitudes toward technology use during meetings. Questions related to the appropriate use of various technologies, such as laptops and smartphones, in meetings, as well as the different functionality of these devices, were included in the survey (e.g., texting and making or receiving calls). The fourth section asked two questions about company policy and attitude toward technology use. These questions were listed to see if the company they worked for has a policy on technology use in meetings and if the participant's attitude and behaviour would change based on the company policy. The last section contained 11 questions

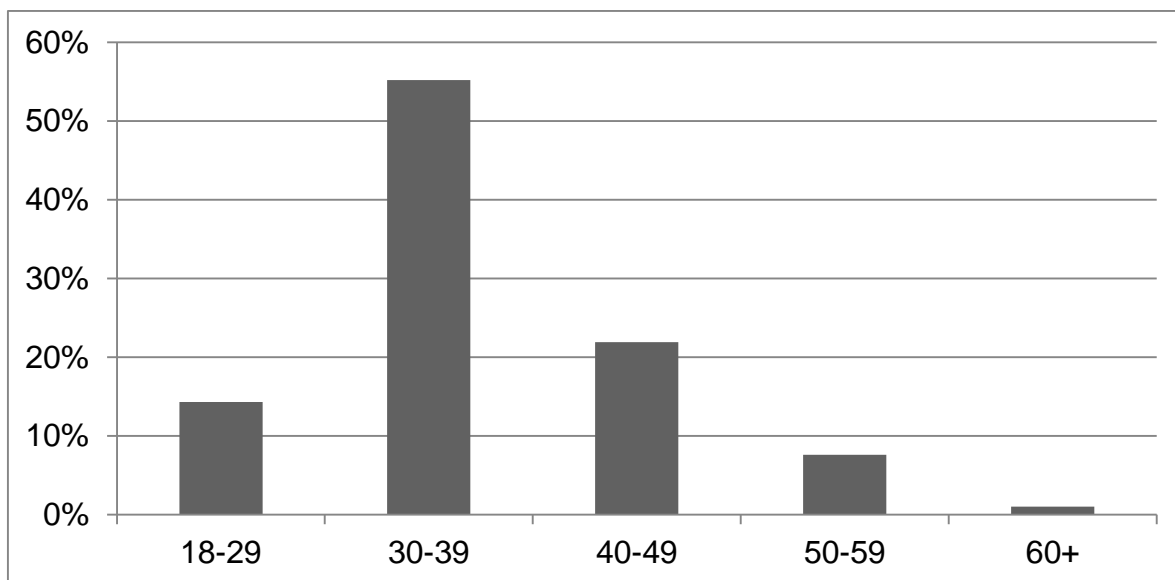


related to one specific meeting that the participant had recently attended (e.g., the type of meeting, length of meeting, and number of people attending), the technology used, and if they were distracted.

### 3.1.2 Survey I – Participants

During the four weeks that the survey was available, 105 participants (42 male, 62 female, one unanswered) completed the questionnaire through online and/or paper form. A post hoc power analysis was conducted on 105 subject sample and found to have a power level of  $p=0.5$  (with four degrees of freedom). The vast majority (55.2%) were 30-39 years old, and the second largest group (21.9%) were 40-49 years old.

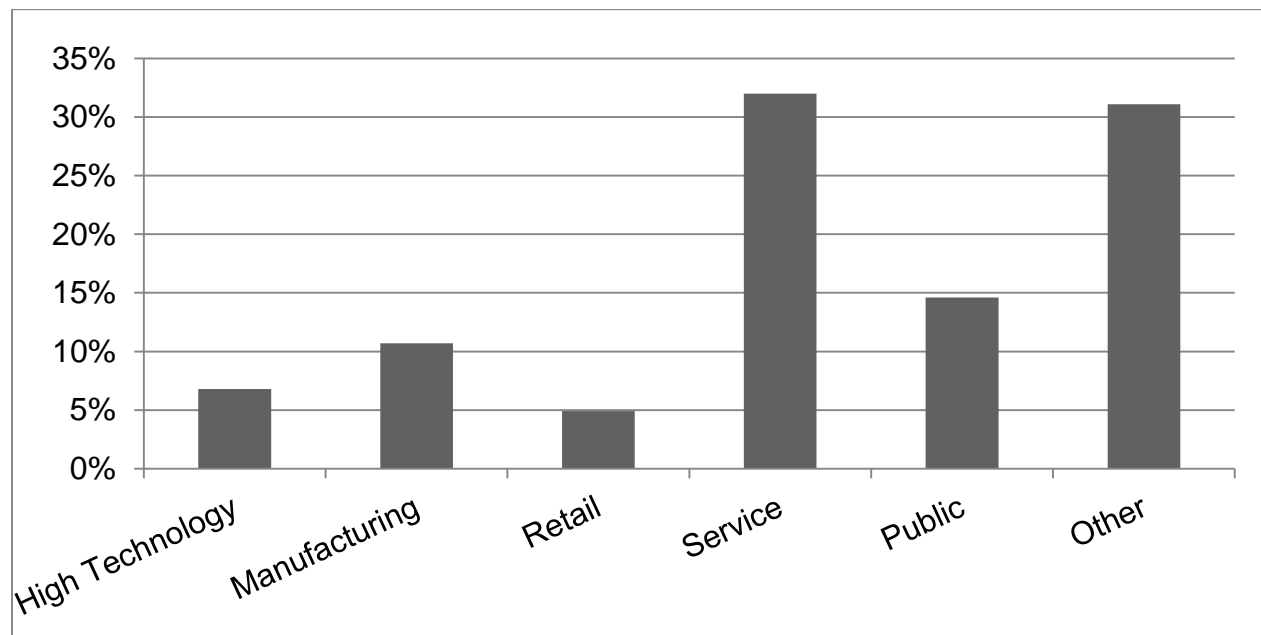
Figure 3.1 displays the age breakdown of all participants.



**Figure 3.1. Age distribution for first survey**

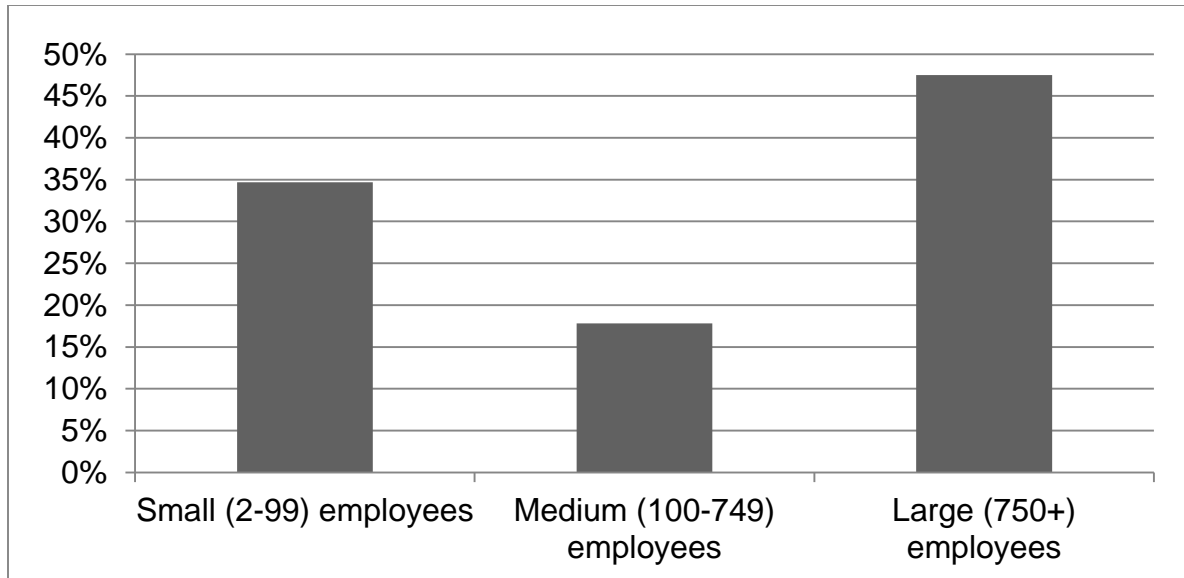
The most common industry selection that participants self-reported was the service sector, with 32% (see Figure 3.2); other categories included public,

manufacturing, high technology, retail, and “other”. The “other” category was a combination of two or more of the category options combined.



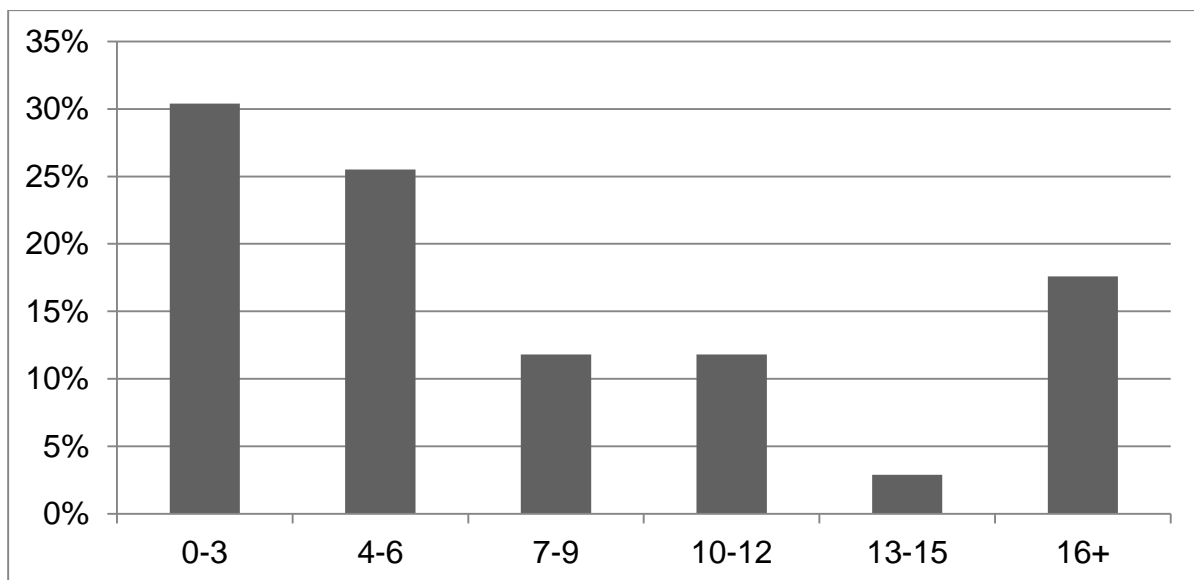
**Figure 3.2. Industry employed distribution of participants**

Almost half of the survey participants (47.5%) reported working for a large organization with over 750 employees. Figure 3.3 shows the percentage of participants that worked in a small, medium, or large organization.



**Figure 3.3. Participants' company size (by number of employees)**

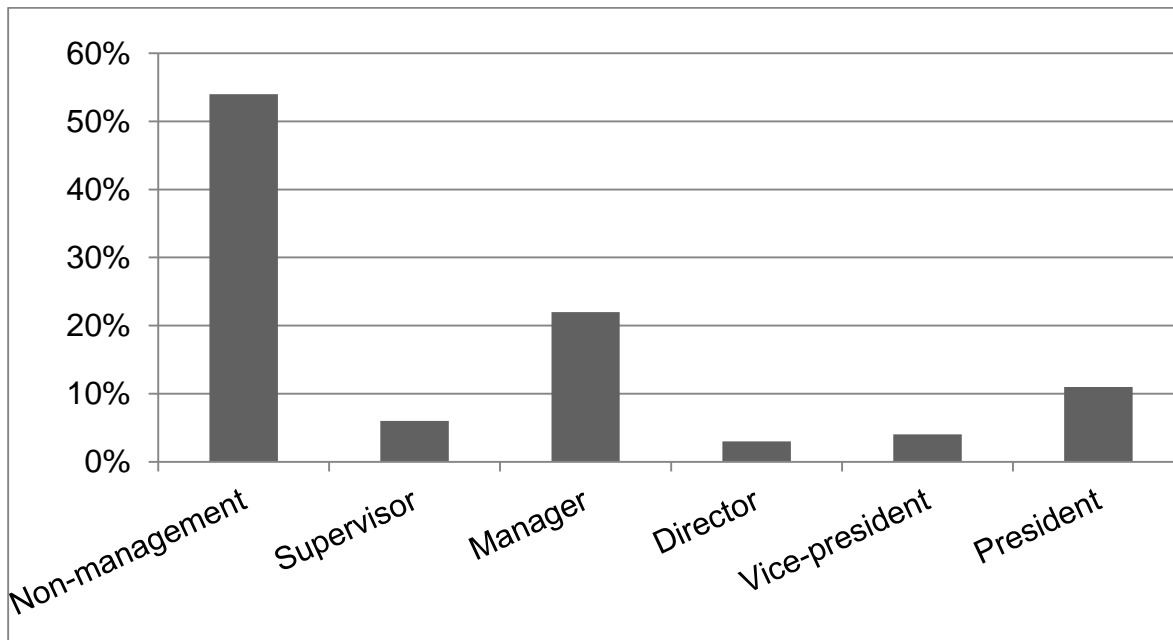
Figure 3.4 indicates the length of time participants worked at their current company, with the majority (30.4%) being employed for fewer than three years.



**Figure 3.4. Participants' years employed at their organization**

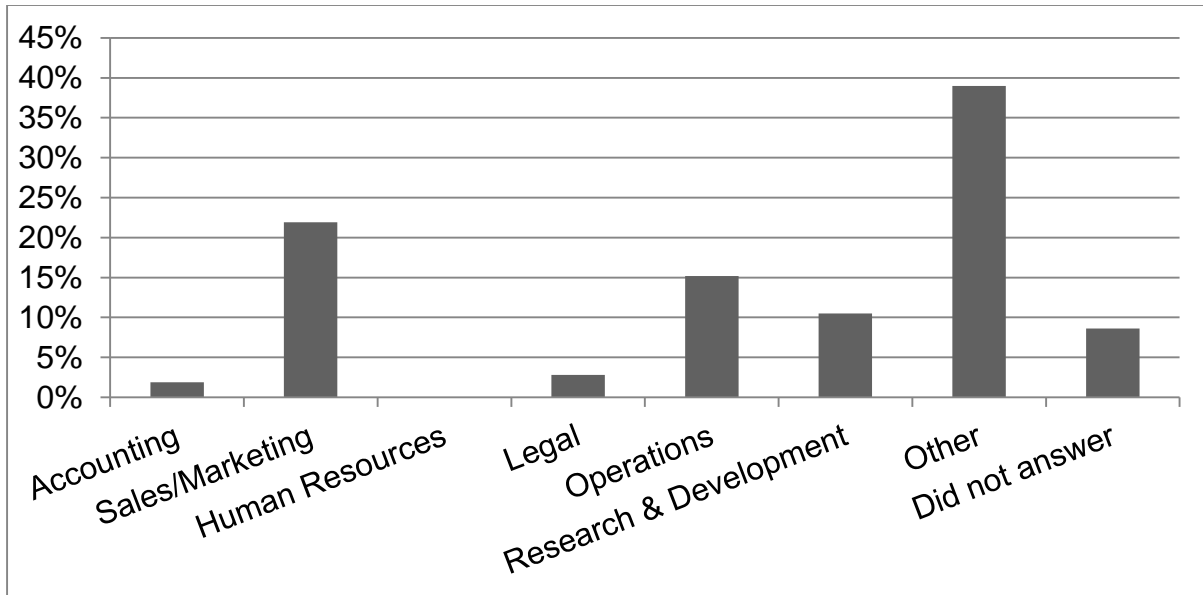
The survey also asked participants what positions they held within their organizations. The options were divided between non-management and management

(see Figure 3.5). More than half (54%) of participants who answered the question stated that they were in non-management positions, with the remainder in management positions distributed as seen in Figure 3.5.



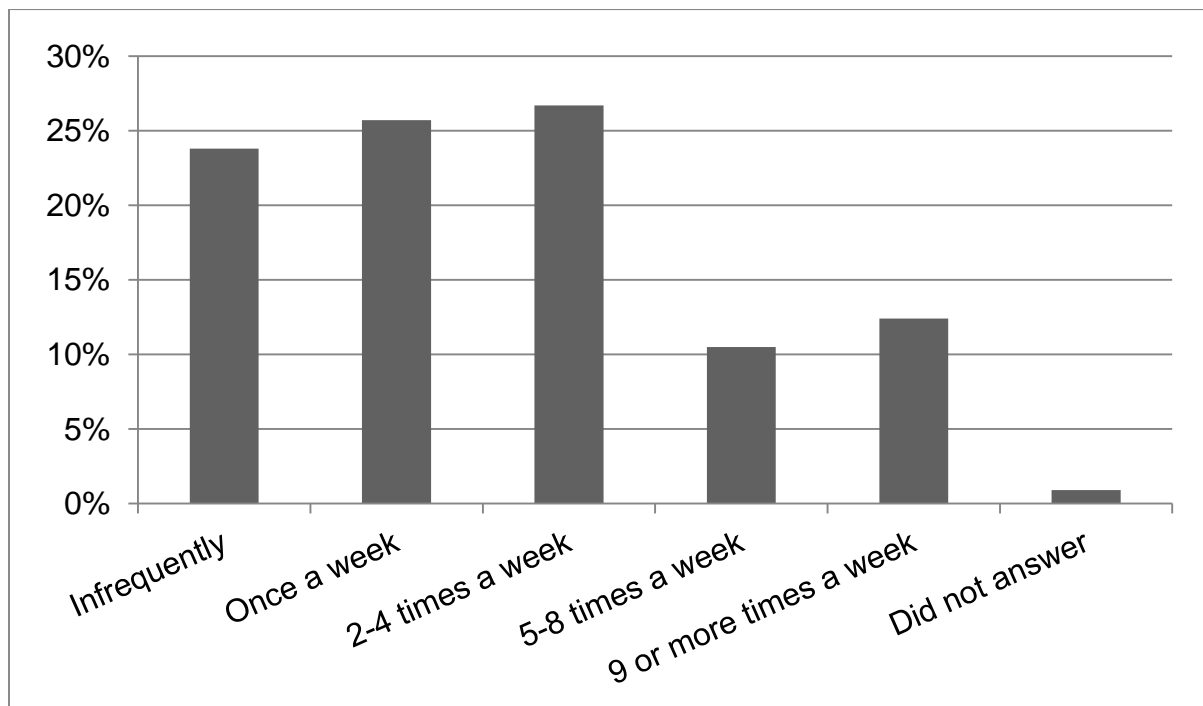
**Figure 3.5. Position held within participants' organizations**

The last demographic question asked participants in what department they worked; the top two answers were sales/marketing (24%) and "other" (42.7%). Some of the answers provide under "other" included departments such as procurement, information technology (IT), customer service, or a combination of the options provided. Nine participants did not answer the question. Figure 3.6 below shows the breakdown of participants' home departments. Note that no one reported working in Human Resources.



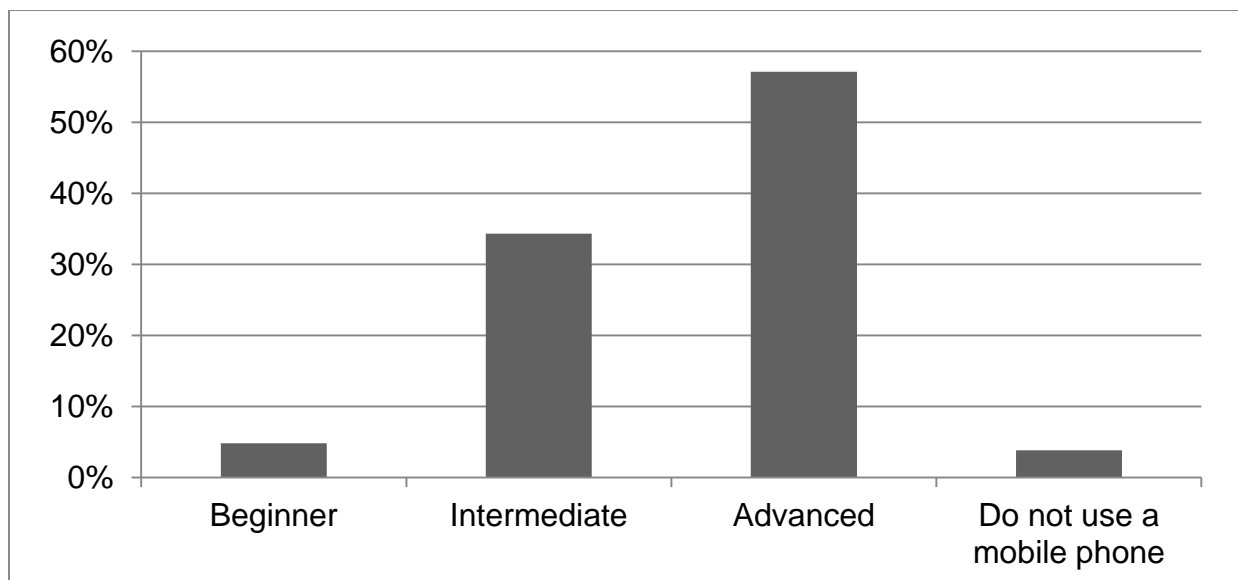
**Figure 3.6. Participants' home departments within their organizations**

When asked how frequently participants attended face-to-face meetings, the top two answers provided were two to four times a week (26.9%), and once a week (26%) (see Figure 3.7).



**Figure 3.7. The frequency of face-to-face meetings attended by participants**

The majority of participants (57%) considered themselves advanced mobile phone users, using their mobile phone five or more times a day, with a combination of phone calls, text messaging, and mobile Internet surfing (see Figure 3.8). A beginner mobile phone user was defined as someone who used a cell phone once or twice per week making phone calls only, and an intermediate user was someone who used their mobile phone three or four times a week to make or receive calls and send text messages.



**Figure 3.8. Participants' levels of mobile phone use**

Ninety-seven percent reported using a computer daily, two percent every few days, and one percent never. The top four commonly reported computer applications used were (1) email, (2) office productivity, such as word processing or spreadsheets, (3) browsing the Internet, and (4) watching online videos (e.g., YouTube or television websites).

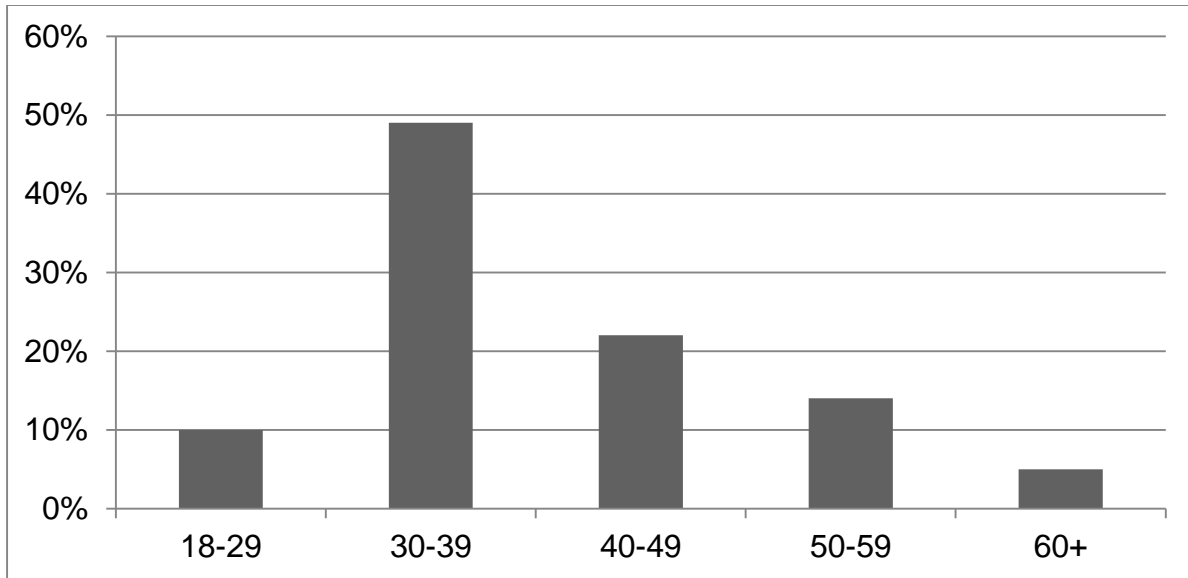
### **3.1.3 Survey I and II Differences**

In the span of two years between the first and second survey, the iPads popularity increased and thus the second survey had to be modified to include additional questions related to tablets. For questions 15 (in your opinion, when is it alright to use mobile technology (e.g., laptop, desktop, netbook, Blackberry, iPad, iPod, iPhone, cell phone) during meetings), 16 (in your opinion, in what type of meetings is it alright to use mobile technology devices e.g., laptop, desktop, netbook, Blackberry, iPad, iPod, iPhone, cell phone), and 28 (what is your company's opinion on the use of mobile technology devices in the company) the iPad was added.

Since the focus of the second survey was participants' perceptions and attitudes of mobile technology use during meetings, a decision was made to not include the last 11 questions from survey I that related to one specific meeting that the participant had recently attended (e.g., the type of meeting, length of meeting, and number of people attending), the technology used, and if they were distracted. The remaining questions from survey I were used in survey II.

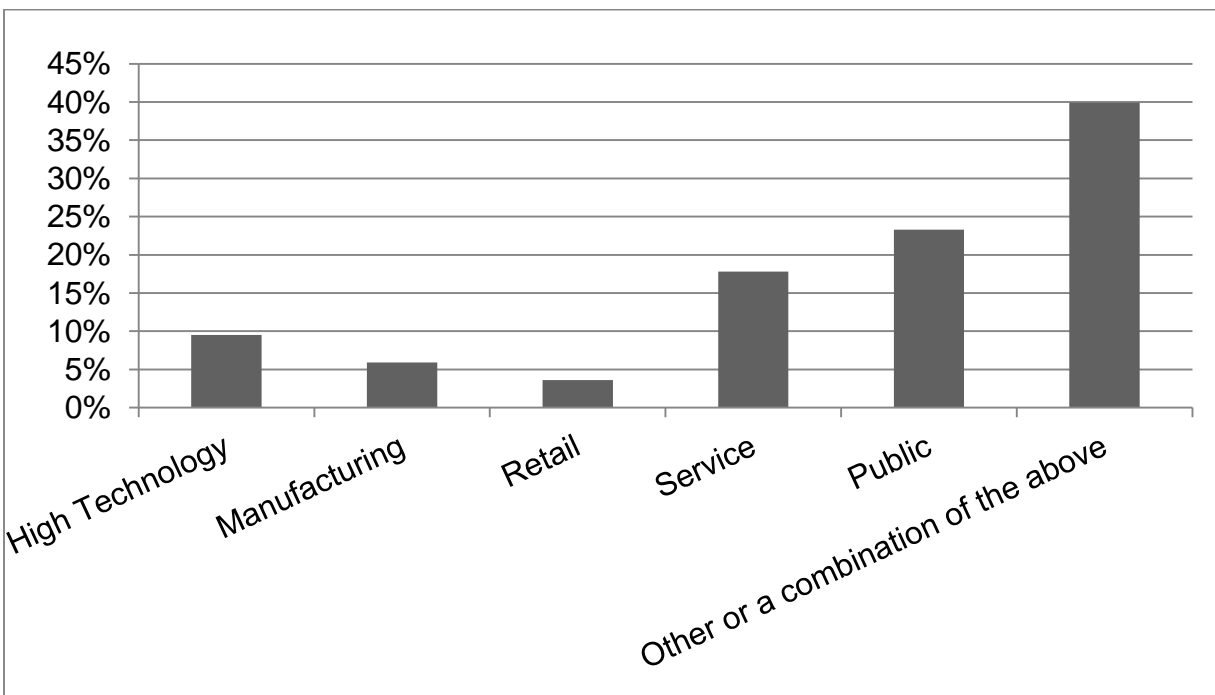
### **3.1.4 Survey II – Participants**

Two-hundred-and-fifty-five participants (118 males, 134 females, three unanswered) completed the survey. Almost half (49%) of the participants from the second survey were 30-39 years old. Figure 3.9 shows the age distribution of all participants.



**Figure 3.9. Age distribution for second survey**

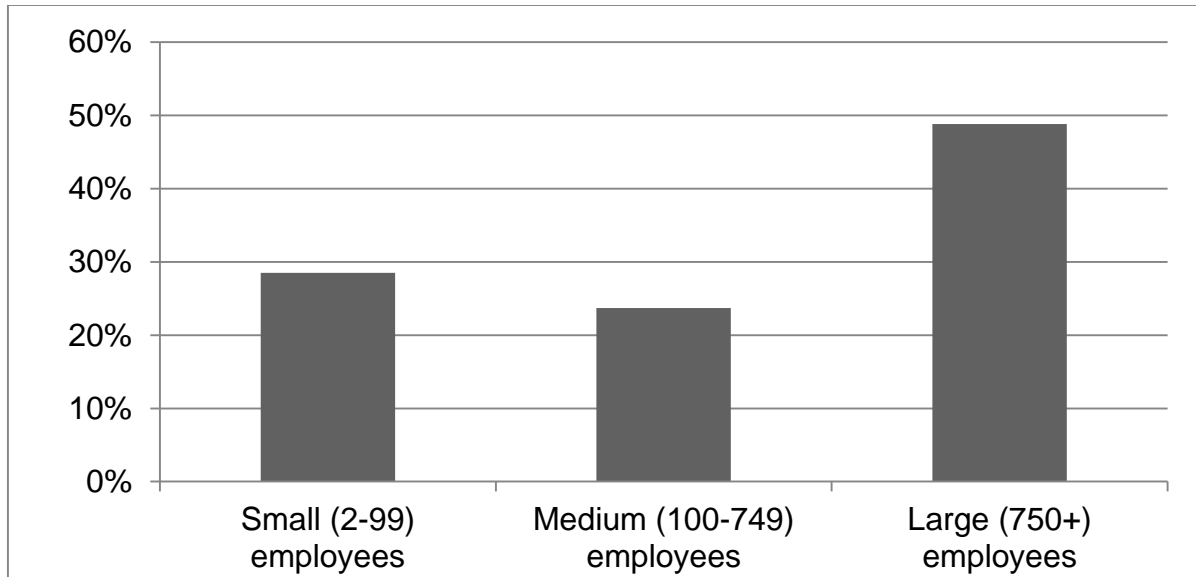
When asked in which industry they worked, the majority of participants reported “other or a combination of the above” (39.9%), with public sector being the second highest at 23.3% (see Figure 3.10).



**Figure 3.10. Industry employed distribution of participants**

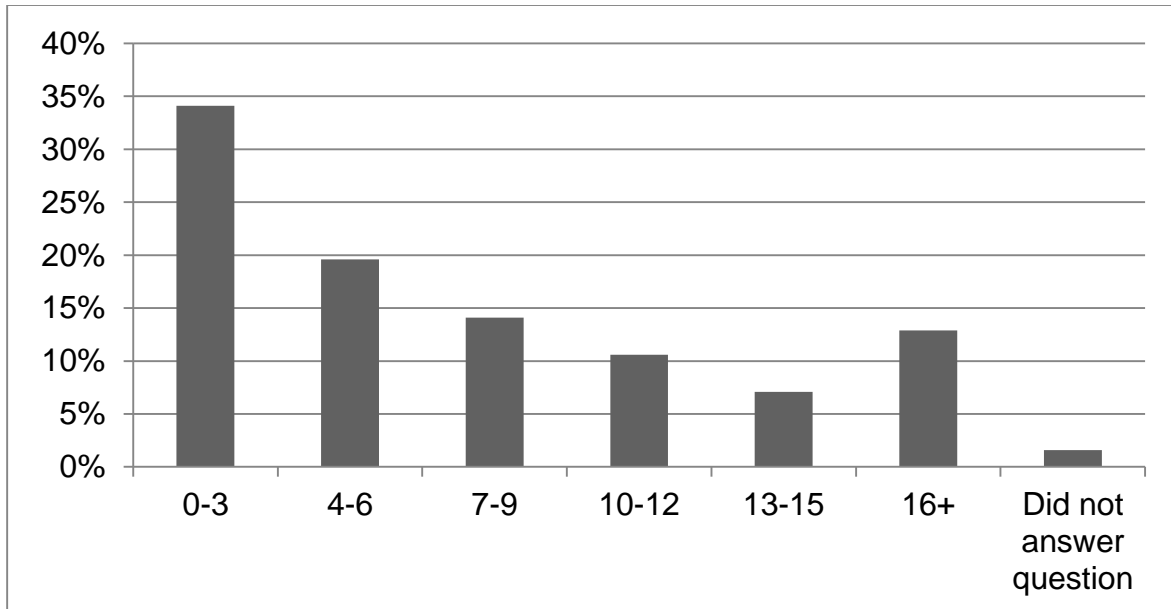


The majority (47.8%) were employed in large organizations with more than 750 employees (see Figure 3.11).



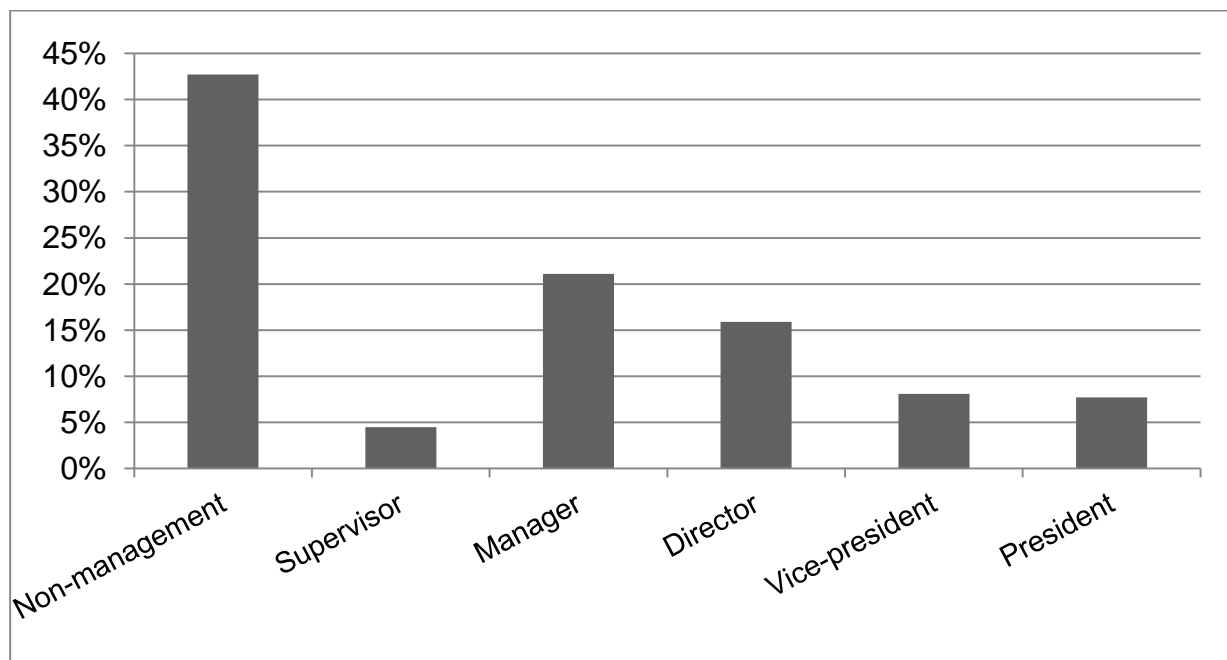
**Figure 3.11. Participants' company size (by number of employees).**

The majority of participants (85.7%) were employed as full-time employees, 8.7% as part-time employees, while 5.6% classified themselves as “other” (e.g., contract, seasonal, or volunteer). The results from the number of years employed at the participants' organizations were similar to the results from the first survey, with the majority of participants (34.7%) self-reporting that they had worked at their current organization for fewer than three years (see Figure 3.12).



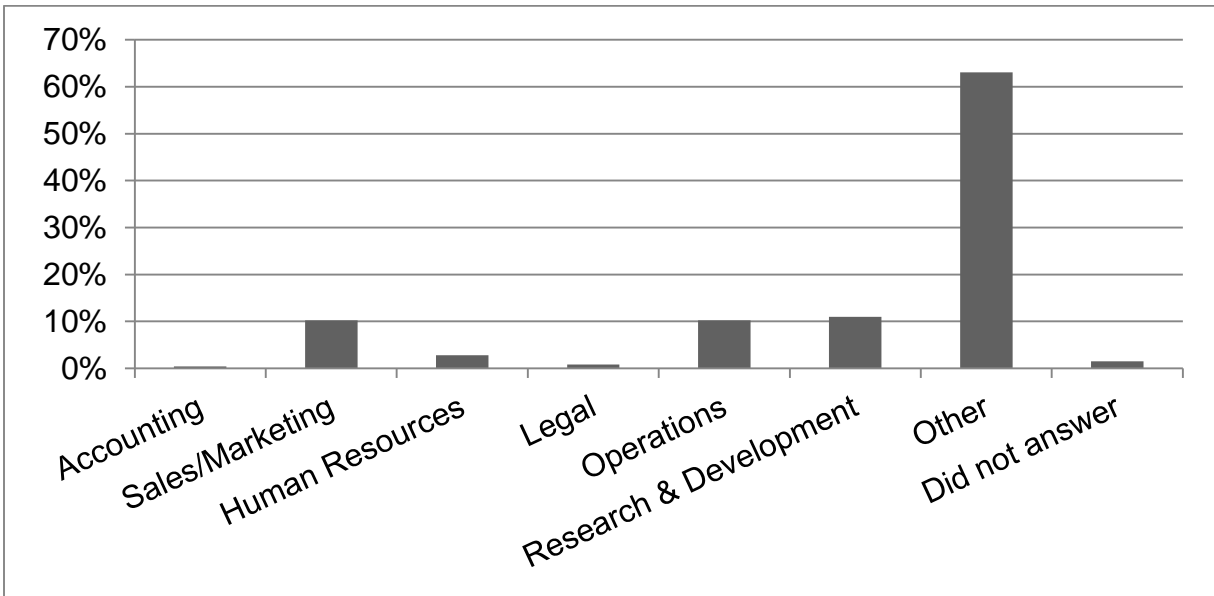
**Figure 3.12. Participants' years employed at their organization**

The second survey also asked participants whether they were in management or non-management positions within their organizations (see Figure 3.13). Unlike the first survey, the majority of participants were in management positions (57.3%).



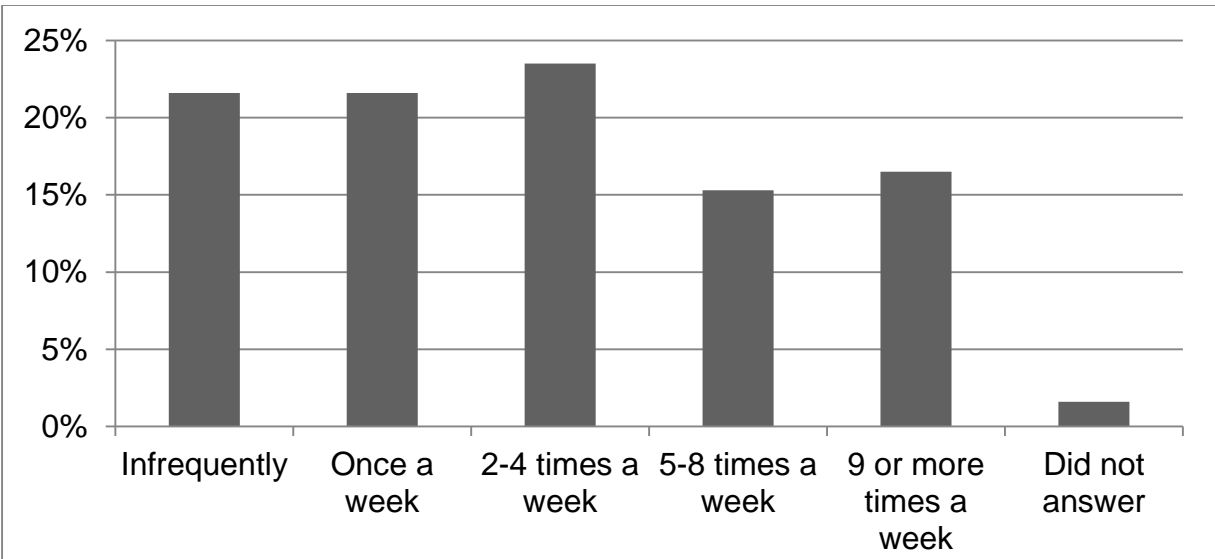
**Figure 3.13. Position held within participants' organizations**

When asked which department participants belonged to, the top three answers were (1) “other” with 63.1%, (2) research and development with 11%, and (3) operations with 10.2% (see Figure 3.14). Note that no one reported working in Accounting.



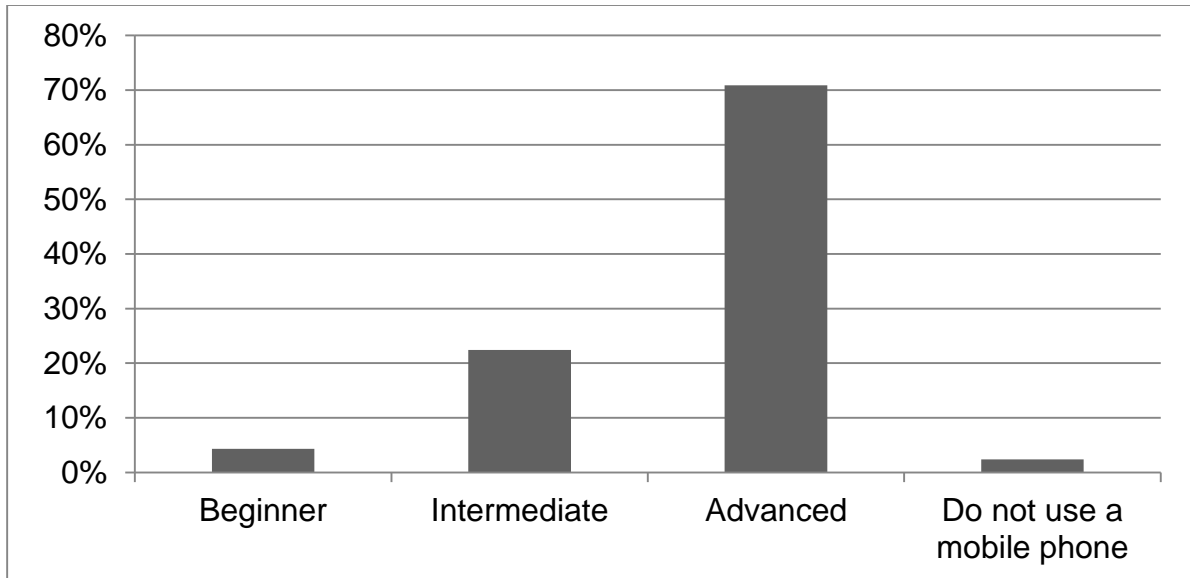
**Figure 3.14. Participants’ home departments within their organizations**

When asked how frequently participants attended face-to-face meetings (see Figure 3.15), the top three answers provided were (1) two to four times a week (23.5%), (2) once a week (21.6%), and (3) infrequently (21.6%).



**Figure 3.15. The frequency of face-to-face meetings attended by participants**

A large variation in the results of participants' levels of mobile phone use was recorded. Most participants (70.9%) reported being advanced mobile phone users, using their mobile phone five or more times a day, with a combination of phone calls, text messaging, and mobile Internet surfing (see Figure 3.16). A beginner mobile phone user was defined as someone who uses a cell phone once or twice per week, making phone calls only, and an intermediate user was someone who used their mobile phone three or four times a week to make or receive calls and send a few text messages.



**Figure 3.16. Participants' levels of mobile phone use**

Ninety seven percent reported using a computer daily, and 3% every few days. The top four most common applications used by respondents were (1) email, (2) office productivity, such as word processing or spreadsheets, (3) surfing the Internet, and (4) viewing online videos.

### **3.2 SURVEY I AND II DATA ANALYSIS**

To analyse the data from surveys I and II, different data analysis methods were employed. To compare the observed data with data with chance, a chi-square analysis was conducted on surveys I and II on all questions related to (1) multitasking, (2) participants' attitudes toward mobile device usage during meetings, (3) participants' companies' opinions on mobile technology use, and (4) company policies regarding mobile technology use during meetings.

A crosstab analysis was also conducted on survey I questions involving acceptability of mobile device use with numerous demographic categories, to examine whether there was a relationship between demographic characteristics, and the

acceptability of different mobile devices. For survey II, crosstab analysis was conducted on demographic information, (1) the acceptability of making and accepting personal and work calls during meetings, as well as (2) the acceptability of texting personal and work messages during meetings.

An independent samples T-test was performed on questions from surveys I and II relating to attitudes of individuals toward mobile devices in business meetings.

Several tests were performed to ensure that the data complied with the assumptions required to use the parametric statistics used in the data analysis. To test for normality or normal distribution (Shapiro & Wilk, 1965), a Shapiro-Wilks test was executed, and a reliability test (Cronbach's alpha test) was also run on all ordinal questions. A Levene's test was used to evaluate the homogeneity of variance for several questions (Olkin, 1960).

### **3.3 SIMULATED MEETINGS**

From the data analysis of surveys I and II, it was concluded that more detailed data were required to observe people's actual behaviours in live meetings (Stephens, 2012; Washington, Okoro & Cardon, 2013) when participants use mobile phones, in order to explore their behaviours toward text messaging during meetings. As a result, a study was devised to simulate a meeting scenario in which one individual would receive and send text messages. Video recordings of meeting participants were captured and analysed to assess their resulting reactions and behaviours. Since this methodology involves observing meeting participants behaviour, the frequency of the text messages being received was used as an independent variable to measure meeting participants attitude and behaviour. Eight meetings were recorded as most meeting behaviour

research tends to have small number of data sets (Newman & Cairns, nd; Iqbal, Grudin & Horvitz, nd; Payne & Payne, 1999; Holmes & Marra, 2004).

### 3.3.1 Purpose

The purpose of this study was to examine participant behaviours toward mobile phones used in actual meeting situations, specifically, to answer the following questions:

- 1) What types of behaviours are exhibited and prominent when text messaging occurs during a meeting?
- 2) Is there a difference in meeting participant behaviours when someone receives clusters of text messages, or when those messages are distributed evenly throughout the entire meeting?

As part of the live study setup, the person using his mobile device to communicate with individuals outside the meeting was a professional actor. Initially, meeting participants were informed that the purpose of the study was to gather their opinions on new funding opportunities available for Ryerson University. After the meeting finished, participants were debriefed on the actual purpose of the study.

### 3.3.2 Procedure

Instead of trying to video record meetings in different corporations, a controlled environment study was chosen to manage the meeting environment, the actor and his reactions, and still maintain a somewhat natural meeting setting. The resulting controlled study was approved by the Ryerson Ethics Board (see Appendix C Research Ethics Board).

Recruitment for the study was conducted through flyer advertisement at Ryerson University (see Appendices D Recruitment Flyer I and E Recruitment Flyer II). The flyers were distributed and posted throughout Ryerson campus from November 1, 2012 until December 14, 2012. The flyer advertised for students, staff or faculty to attend one 30-minute meeting on Ryerson University campus with other students, staff or faculty to discuss ideas regarding generating extra revenue for Ryerson University. Seventeen participants were recruited and a professional actor was hired from the Interpersonal Skills Teaching Centre (ISTC) at Ryerson University to participate in all meetings. For his involvement, the actor was paid \$320 for the entire eight meetings. For each meeting participant recruited, there was a \$10 gift voucher provided for their participation and time. Meetings were scheduled in November and December of 2012, and all participants were notified that each meeting would have between three and four individuals.

For all meetings, the actor was advised to arrive before the participants, so that he could sit in a chair facing the one-way mirror, behind which I was located, so that I could monitor his reactions from each text message he received. If adjustments to his reaction were needed, I would instruct him via text message. Once the participants arrived, they sat wherever they chose.

All participants were briefed on the purpose of the meetings, and given consent forms to sign (see appendix F Pre-Meeting Consent Form). The participants were encouraged to behave as they would in a work meeting. The brainstorming session required them to answer 10 questions (see Appendix G Brainstorming Session Questions) as a group in a 30-minute session. All participants received pens and the



10-question questionnaire to answer as a group. Since my research had a small number of participants (i.e., three to four) engaging in meetings, some participants were assigned multiple roles. All participants had the role of “meeting participant” and was asked to try and contribute equally to the meeting. One individual was also assigned the role of chair and timekeeper, while the remaining roles of scribe and note-taker were divided among the rest of the meeting participants. After the consent forms were signed and participants had no further questions, the three high-definition (HD) video cameras were turned on to record the meeting and the participants were left alone to discuss the questions as a group.

Throughout all meetings, I observed the group behind the one-way mirror and sent the actor eight text messages at one to five minute intervals describing the attitude and behaviour that I wanted him to portray. There were three positive, three neutral, and two negative text messages that the actor received and he subsequently produced the required reaction. Once the positive text message (e.g., “positive reaction, look happy and chuckle”) or negative text message (e.g., “negative reaction, look upset”) was received by the actor, he would verbally and non-verbally produce a reaction. For example, if the actor received a negative text message, he would produce a sound of disgust or disapproval, and his body language would reflect a similar reaction (see Figure 3.17). For a positive text message, the actor would smile and chuckle while reading the text message (see Figure 3.18). In neutral text messages (e.g., “neutral reaction, do nothing”) the actor produced no verbal or non-verbal expressions; he simply read the text message and continued the meeting (see Figure 3.19). These

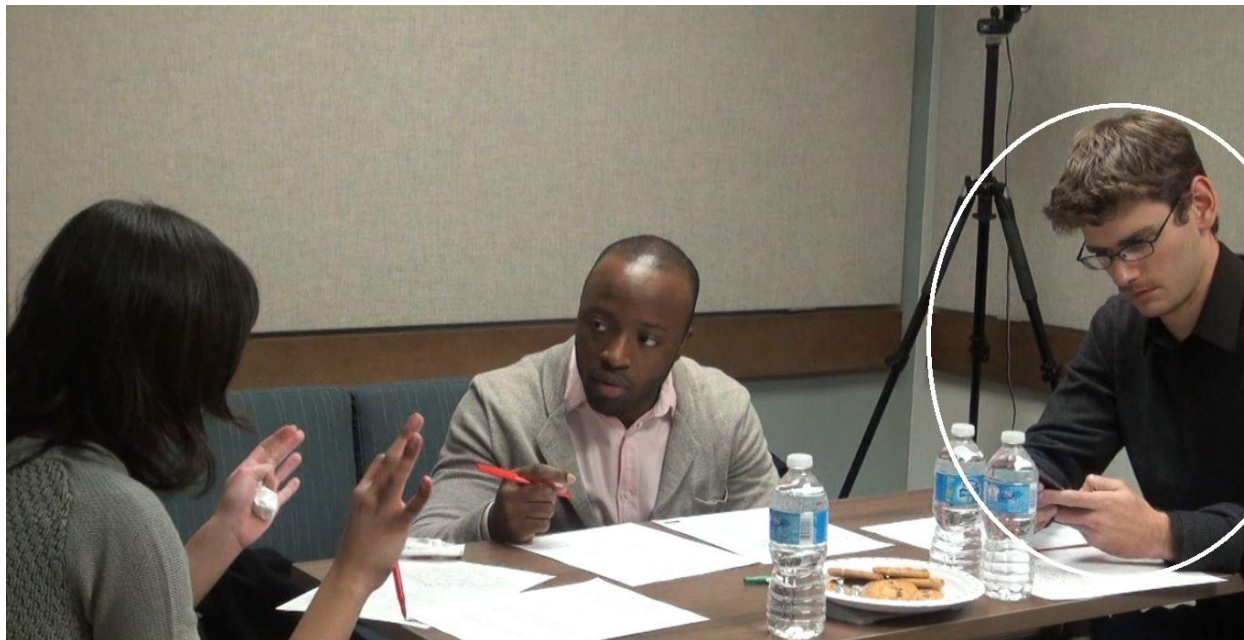
different emotional reactions produced by the actor were intended to instigate reactions from the participants.



**Figure 3.17. The actor on the right producing a negative non-verbal (upset) reaction to receiving a text message**



**Figure 3.18. The actor on the right producing a positive non-verbal (smiling) reaction to receiving a text message**



**Figure 3.19. The actor on the right producing no reaction to a neutral text message**

The eight meetings were divided into two sets of meetings. In four of the meetings (e.g., the first, third, fifth, and seventh), the actor received text messages in two clustered sets, one set of five text messages at the beginning of the meeting (at 5, 6, 7, 8, and 9 minutes into the meeting), and the second set of three text messages in the latter half of the meeting (at 20, 22, and 23 minutes into the meeting). The type of text message delivered at specific times was randomly selected, with the caveat of attempting to have a fairly even distribution of positive, neutral, and negative reactions. Table 3.1 shows an example of actor reactions prompted by each text message.

**Table 3.1. Actor reactions prompted by text messages from the researcher towards the beginning and end of meetings 1, 3, 5, and 7**

Meeting Minute	Actor's Reaction to Text Message
5	Neutral Reaction
6	Neutral Reaction
7	Positive Reaction
8	Negative Reaction
9	Negative Reaction
20	Positive Reaction
22	Neutral Reaction
23	Positive Reaction

In the second set of four meetings (e.g., in the second fourth, sixth, and eighth meeting) the actor received text messages at evenly distributed time intervals throughout the meeting, beginning at the three-minute mark (at every 1-5 minutes for the 30-minute meeting). The number of positive, neutral, and negative text messages

was consistent with the first set of meetings. Table 3.2 shows the requested reactions of the actor to each received text message.

**Table 3.2. Actor reactions prompted by text messages from the researcher every 1-5 minutes during meetings 2, 4, 6, and 8**

Meeting Minute	Actor's Reaction to Text Message
3	Neutral Reaction
5	Neutral Reaction
9	Positive Reaction
10	Negative Reaction
14	Negative Reaction
16	Positive Reaction
19	Neutral Reaction
24	Positive Reaction

These two different text messaging strategies were applied to observe any differences in meeting participants' behaviours (verbal or non-verbal) if the frequency of text messages received were clustered or evenly distributed throughout the meeting.

After the meeting was completed, participants were told that another meeting participant was a professional actor, and not a student, staff, or faculty member, and advised of the meeting's true intent. Participants were then asked to sign a second consent form (see Appendix H Post Meeting Consent Form) for participating in my true research. They were also asked to fill out a post-study questionnaire (see Appendix I Post Meeting Questionnaire) that was a modified version of surveys I and II.

This survey had 40 questions in five sections. The first section contained eight questions to collect demographic information, such as age, sex, and employment status. The second section contained six questions and asked participants about their technology use (e.g., how often they used a computer or mobile device and for what

activities), the purpose was to gain a better understanding of the participants level of technology knowledge. The third section contained 13 questions regarding participants' attitudes toward technology use during meetings. Questions related to when it was appropriate to use various technologies, such as laptops and smartphones, in meetings, as well as the different functionalities of these devices, were included in the survey (e.g., texting and making/receiving calls). The fourth section asked two questions about company policies and attitudes toward technology use. These questions were listed to see if the company they worked for has a policy on technology use in meetings and if the participant's attitude and behaviour would change based on the company policy. The last section contained 11 questions related to one specific meeting that the participant had recently attended (e.g., type of meeting, length of meeting, and number of people attending), the technologies used during the meeting, and if they were distracting.

### 3.3.3 Participants

A total of 17 participants were recruited (eight females and nine males, not including the male actor used in all eight meetings). The number of participants in each meeting was either three or four people, including the actor. Table 3.3 lists the length of time for all eight meetings and the number of participants in each meeting.

**Table 3.3. The length of all meetings recorded in minutes and seconds, and the number of participants in each meeting, including the actor**

Meeting	Length of Meeting in Minutes:Seconds	Number of participants
1	33:58	3 (3 males)
2	32:15	3 (2 males, 1 female)

3	31:59	3 (2 males, 1 female)
4	31:58	3 (1 male, 2 females)
5	32:50	3 (1 male, 2 females)
6	32:39	3 (3 males)
7	30:27	3 (1 male, 2 females)
8	30:12	4 (4 males)

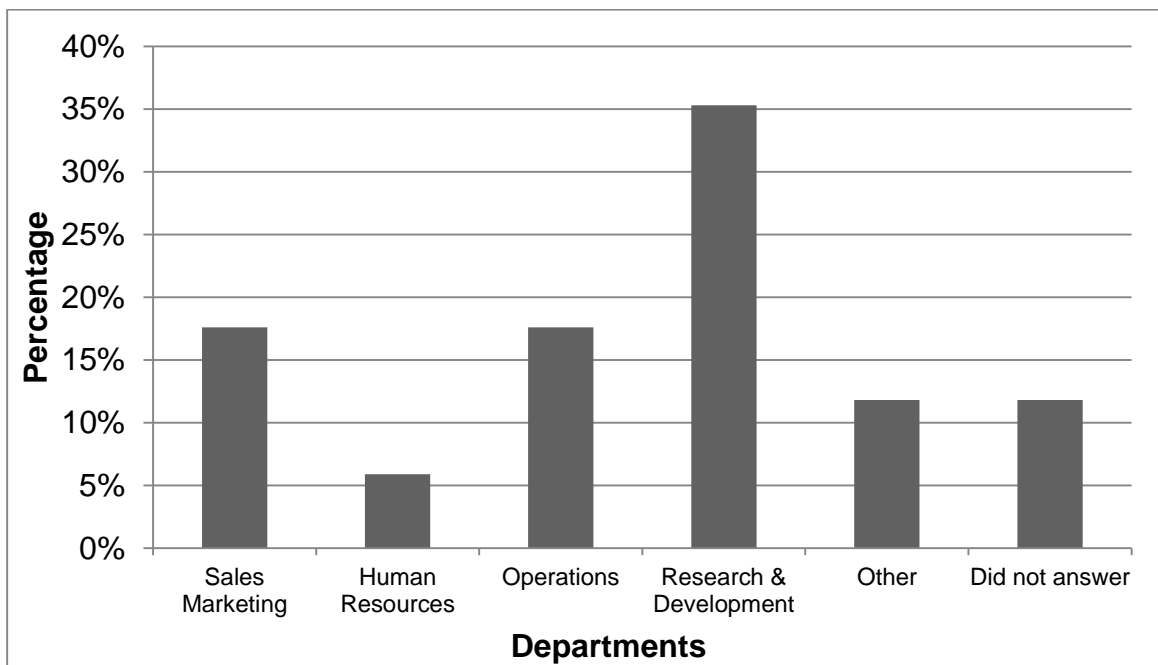
All 17 participants were between 18 and 29 years old. When asked which industry participants worked in, the majority (9 out of 17 or 52.9%) stated public service, while 3 out of 16 (17.6%) stated high technology. Four out of 17 participants (23.5%) stated “other, or a combination of the above,” and one person (5.9%) did not answer the question.

For company size, 6 out of 17 participants (35.3%) reported that their company size was between 2-99 employees; 9 out of 17 (52.9%) reported their company size was over 750 employees; and no participants reported working for a mid-sized company (100-749 employees). Two participants (11.8%) did not answer the question.

Forty-seven percent of participants (8 out of 17) reported being part-time employees, and 5 out of 17 (29.4%) full-time employees. Four individuals reported as being “other”, such as students or seasonal workers. The vast majority 12 out of 17 (70.6%) of participants reported working at their current organization for fewer than three years, 3 out of 17 (17.6%) between four and six years, and 2 out of 17 (11.7%) did not answer the question.

For position held within their organisation, 13 out of 17 (76.5%) reported being in non-management positions and 2 out of 17 (11.7%) in management positions. Two people did not answer this question.

Figure 3.20 shows the distribution of self-reported departments to which participants belonged; the largest was research and development with 6 out of 17 (35.3%).



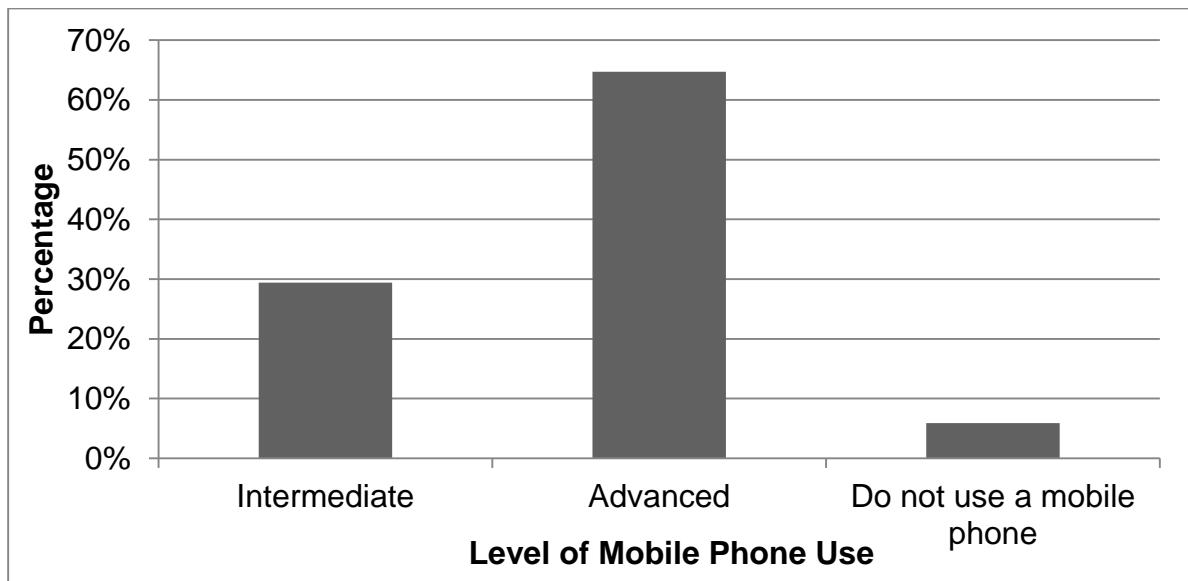
**Figure 3.20. Position held within participants' organizations**

When asked how often they attended face-to-face meetings, the majority of participants 9 out of 17 (52.9%) stated two to four times a week, 5 out of 17 (29.4%) infrequently (once or twice a month), and 3 out of 17 (17.6%) once a week. No participants reported attending meetings five to eight times a week or nine or more times.

Almost two thirds, 11 out of 17 (64.7%) of participants reported being advanced cell phone users, where a beginner used a cell phone once or twice per week making



phone calls only, and an advanced user used a cell phone five times or more per day with a combination of phone calls, text messages, mobile Internet surfing, and mobile applications (see Figure 3.21). One participant reported that they did not use a cell phone.



**Figure 3.21. Participants' levels of cell phone use**

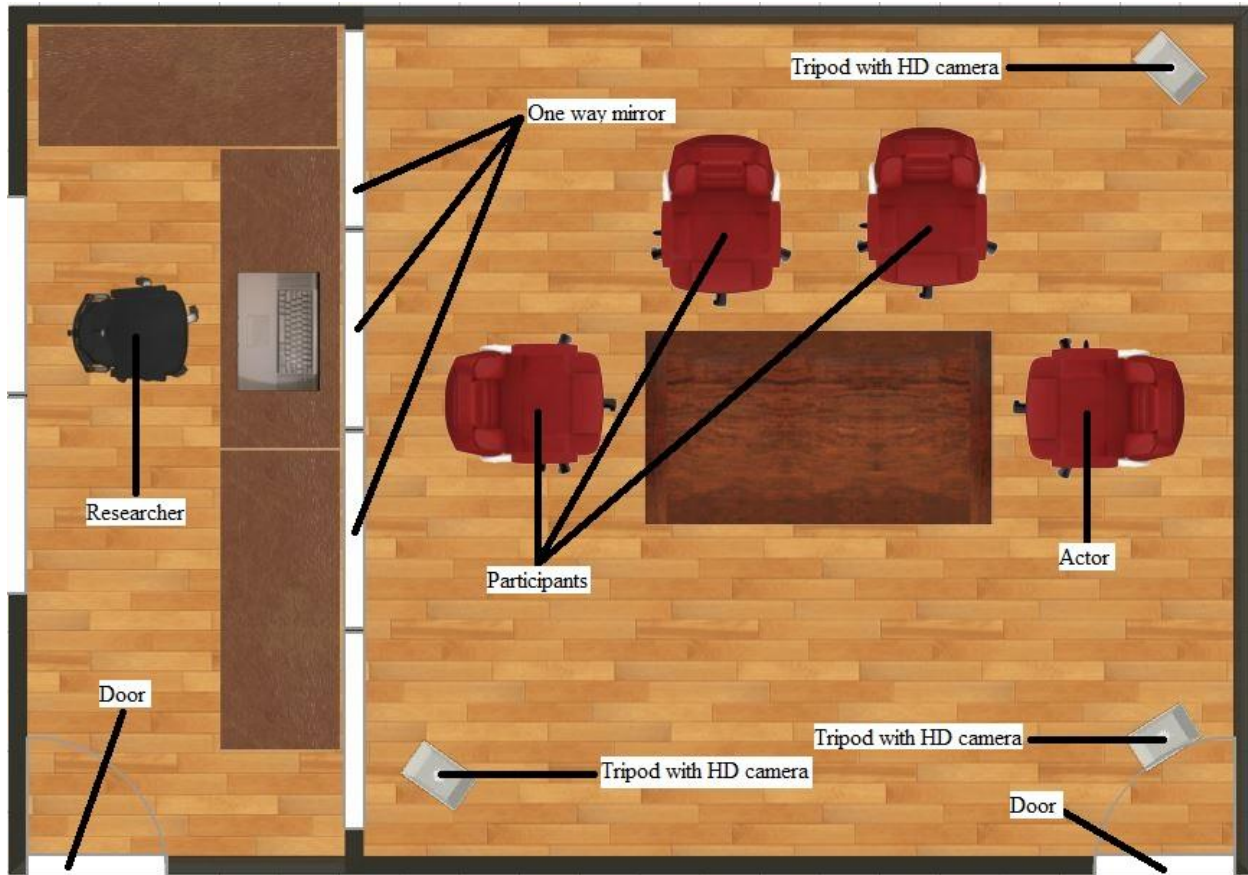
One hundred percent of participants reported using a computer daily. The top four most common applications used by respondents were: (1) email, (2) surfing the Internet, (3) viewing online videos, and (4) using office productivity software, such as word processing or spreadsheets.

### 3.3.4 Equipment and Setting

All eight meetings were located in the same room, at a research lab at 111 Gerrard Street in the northeast corner of Ryerson University campus. The meeting room measured 5.5 meters by 5.5 meters, and included a one-way mirror (see Figure 3.3).

For all meetings, the actor arrived at the meeting room first, and was instructed to sit in the chair facing the one-way mirror. This was done so that I could monitor his

facial and body language when he received text messages, and instruct him to increase or decrease his reactions. When participants arrived at the meeting room, they were asked to sit around a table as seen in Figure 3.22. Three high-definition (HD) cameras were placed at seated eye level in the room in three separate corner locations to record the meeting participants' actions and dialogue from multiple angles. The participants were made aware of the three cameras; however, they were told the cameras were for the purpose of transcribing their communication. On one side of the meeting room was a one-way mirror behind which I was located to monitor the meeting. The room was also equipped with a microphone allowing me to listen to the conversations. Participants were not aware of the microphone, or that I was on the other side of the mirror observing them. They were left alone to answer the questions as a group, while the cameras recorded their actions.



**Figure 3.22. Meeting room layout on the right, with researcher's observation room on the left**

### 3.3.5 Data Analysis

Data captured from participants completing the post-meeting questionnaire, was analysed using t-tests.

To analyse the video recordings from the eight meetings, a post-hoc thematic analysis was used. "It is a method for identifying, analysing, and reporting patterns or themes within data. It minimally organises and describes data set in rich detail" (Braun & Clarke, 2006, p6). All videos were viewed six to eight times to develop themes that were prevalent in all meetings. Table 3.4 provides the seven themes, and their accompanying definitions, that arose from the videos.

**Table 3.4. Seven themes and definitions resulting from the meeting videos**

<b>Theme</b>	<b>Definition</b>
1) Attend to phone activity by participant	After a few seconds of the actor's phone ringing, participants look at the actor's phone. This does not include looking at the phone immediately when it rings, but rather deliberately a few seconds later.
2) Participants attend to phone activity	Any activity by participants when they interact with their own phone, such as: a) phone checking – participants check their phone; b) texting – participants text with phone; or c) talking – participants receive or make a phone call with their phone.
3) Justification of phone interaction	Any non-verbal or verbal communication by participants to justify why they had to use their phones during the meeting. Non-verbal communication could include facial and/or hand gestures implying their requirement to check or answer their phones, while verbal communication could include phrases such as, "I need to answer this" or "someone keeps texting me".
4) Conversation direction	When the conversation (flow) direction is disrupted by someone's (e.g., participants' or actor's) phone ringing, participants and/or actor: a) exclude the individual by physically turning eyes, head and/or body away from the individual using the phone; b) include the individual using the phone by continuing eye contact; or c) pause until individual(s) involved in the conversation stop using their phone.
5) Change meeting conversation topic	The meeting conversation topic changes because of the use of a cell phone (e.g., someone uses a cell phone and other participants change the conversation topic to relate to a cell phone): a) actor – the actor uses the phone and participants change the topic of conversation; b) other – a participant uses his or her phone and other participants change the topic of conversation.
6) Reaction to actor's verbal reaction to text	The reaction of participants when the actor receives a text messages: a) positive – positive reaction by participant(s) (e.g., participant might smile or chuckle); b) ignore (neutral) – no reaction by participant; or c) negative – negative reaction by participant(s) because of the actor's use of cell phone (e.g., participant might frown, give an angry stare, or produce an audible sound that would be construed as anger).

7) Normal behaviour in response to actor's cell phone use	Any participant behaviour outside the above definitions, and related to the actor's use of his cell phone (e.g., participants gaze immediately at the mobile phone when it rings).
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Two sets of videos (meetings three and six) were randomly chosen to analyse and code for theme occurrences by two independent raters. The results of the coding were analysed and compared using the Intraclass Correlation Coefficient (ICC). The initial ICCs for some of the themes were below 0.6 and, as a result, adjustments to the definitions were made, and the process repeated with two other independent raters. The ICC result was then above 0.6. Values from 0.6 – 0.8 are considered a minimum standard of reliability coefficient (Kottner, et al. 2011). The remaining videos were analysed by one rater.

### 3.3.5.1 Questionnaire Responses

The answers from post-meeting questionnaires were analysed using non-parametric analyses, specifically a Mann-Whitney (used for data that is not normally distributed to detect differences in spread, as well as the median), chi-square (used to determine whether observed frequencies are significantly different from expected frequencies), and crosstab analyses (used to determine whether there were correlations between two categories).

## 3.4 SUMMARY

The first half of this chapter described the methodology of study I (survey I and II) and how and when the surveys were developed. The data from survey I and II were also discussed as well as the statistical analysis used to analyse the data. The second

half of the chapter was devoted to the eight simulated meetings and the purpose, procedure, number of participants and the equipment used. The chapter concluded with what statistical data analysis tools were used to analyse the data gathered from the meetings.

# CHAPTER 4 QUANTITATIVE RESULTS (SURVEYS I AND II)

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## 4.0 INTRODUCTION

In this chapter, the first and second survey results are presented and discussed. The chapter begins by describing survey I results and discussion (section 4.1), as well as its limitations. Section 4.2 presents survey II results and discussion, as well as its limitations. Section 4.3 provides a comparative analysis between the first and second surveys. The concluding section (4.4) provides a summary of the chapter.

## 4.1 SURVEY I

### 4.1.1 Research Questions

The intent of the first questionnaire was to gather data to answer the following two questions:

- 1) What are the attitudes toward having smart mobile technologies in face-to-face meetings in organizations?
- 2) How is smart mobile technology being employed and adopted for use in meetings?

The focus of the first survey was to gain a better understanding of the attitudes toward the use of “smart” mobile systems, including laptops, Blackberrys and tablets. A chi-square analysis was performed to determine if the observed data differed from chance for all questions related to (1) multitasking, (2) participants’ attitudes toward mobile device usage during meetings, (3) participants’ companies’ opinions on mobile technology use, and (4) company policies regarding mobile technology use during

meetings. Significant results are reported to a type 1 error probability of  $p < 0.05$  in Table 4.1. There were four degrees of freedom for all results reported.

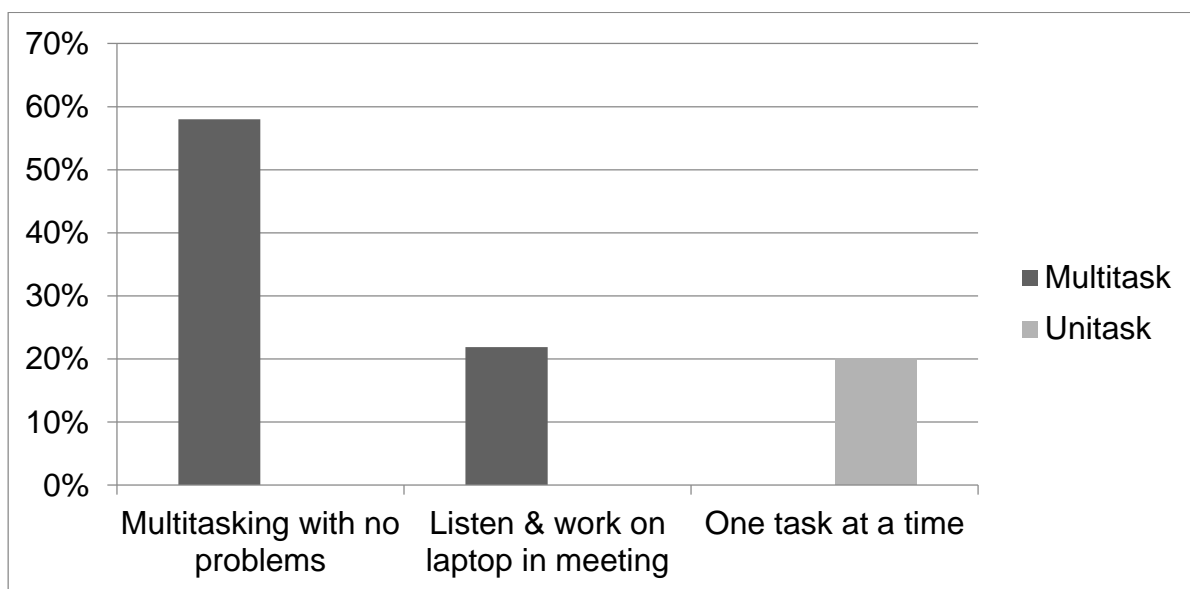
**Table 4.1. Chi square, mode, mean, and standard deviation results for questions related to productivity, mobile device use during meetings, and company policies related to mobile use.**

Questions	$\chi^2$	Mode	N	M	SD
1. How do you see yourself being most productive? Possible answers ranged from being able to multitask with no problem (rating of 1) to only being able to do one thing at a time (rating of 3).	29.03	1	105	1.62	0.80
2. When is it all right to use the following mobile devices during meetings? Possible answers were provided on a 5-point Likert scale, where 1 was always and 5 was never.					
Laptops	70.84	2	102	2.34	1.26
Blackberrys	35.19	4	99	3.46	1.38
iPhones	71.69	5	98	3.88	1.38
3. What is your company's opinion on the following usage of mobile technology devices within the company? Possible answers ranged from very supportive (rating of 1), to not supportive at all (rating of 5) on a 5-point Likert scale.					
Laptops	178.43	1	98	1.50	0.98
Blackberrys	48.48	1	94	2.16	1.37
iPhones	10.53	5	87	3.18	1.52
4. What type of policy does the company you work for have regarding use of mobile technologies, such as laptops and cell phones, during meetings? Possible answers ranged from very supportive (rating of 1) to not supportive at all (rating of 5).	65.50	4	100	3.47	1.41



### 4.1.2 Multitasking

Fifty-eight percent of participants (61 out of 105) believe that they can multitask without issue (working on two or more tasks, not necessarily with a mobile device). While 21.9% (23 out of 105) claimed that they can work on their laptops while listening during a meeting, 20% (21 out of 105) reported being able to do only one task at a time (see Figure 4.1).



**Figure 4.1. Multitasking versus unitasking during meetings**

This data suggested that about 80% of participants believed that they would be able to at least work on their laptops, or use another device, and pay attention to the meeting simultaneously. It would thus appear that multitasking was not only a common activity during meetings, but that participants believed that they could be productive and work on two or more tasks at a time. Kaufman-Scarborough and Lindquist (1999) found similar results from their research into multitasking. Out of 172 individuals in their survey who considered themselves monochronic (people who can only do one thing at a time)

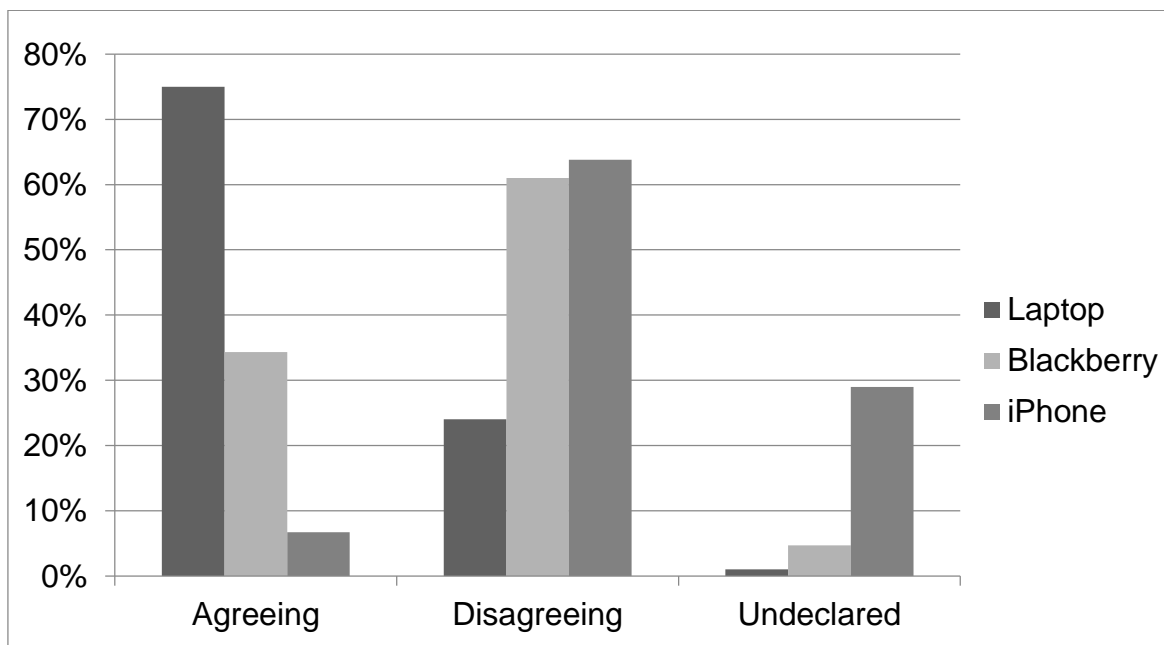
and polychronic (people who can multitask), they found that individuals who multitask were able to control interruptions more efficiently than people who did not multitask. For individuals who multitask in meetings, where multitasking includes use of their mobile phone it may be easier for them to attend to and work on multiple tasks simultaneously which would, in turn, lead to a higher use of a mobile phone in meetings .

Kleinman (2009) suggests that there could be certain types of meetings, such as demonstration or project meetings, which would offer a greater opportunity for individuals to multitask. Demonstration meetings may not require participants to be as actively engaged as brainstorming meetings, and thus participants may be able to work using their mobile phone at the same time as attending those types of meetings. For project meetings the same may be true; once participants have contributed their portion to the project meeting, they may not be required to participate any longer, and thus they may use their mobile phone to attend to other tasks while paying some attention to the meeting progress. My survey did not ask participants to specify any types of meetings in which they were involved affected their ability to multitask, as I wanted to gather a general sense of a participant's understanding of his or her own multitasking behaviour. It would seem that multitasking was a commonly adopted activity. However, future research could should investigate how multitasking affects meeting participation.

#### **4.1.3 Mobile Use Etiquette**

With respect to when it was acceptable to use mobile devices, the majority of participants somewhat agreed that it was reasonable to use a laptop in a meeting, with 75.2% of participants agreeing or somewhat agreeing, and 23.8% disagreeing (1 = agreed and 5 = disagreed on a 5-point Likert scale). However, a majority of participants

somewhat disagreed that BlackBerrys and iPhones should be used in meetings, with 62.1% and 68.4% disagreeing respectively (see Figure 4.2). These results match a recent smaller survey (Pinchot et al., 2011) finding that 63% of 88 undergraduate and graduate university students found it rude to use a cell phone in a meeting. In my study, it seemed that people believed that laptops were acceptable in meetings, but that iPhones or BlackBerrys were not, with iPhones being least favourable.



**Figure 4.2. Participants' opinions on laptop usage during meetings**

The results were surprising to me because of the variation in the acceptability of laptop versus smartphone use in meetings. From a functionality point of view, these devices are similar (e.g., real-time text communication, note-taking capabilities and surfing the Internet). However, smartphones can send and receive voice calls easily, and perhaps this functionality is more commonly associated with these devices, even though they may not be used for that purpose in a meeting. Accepting or receiving voice

calls may be considered an unacceptable event in a meeting, and thus mobile phones received a lower rating. Further research on this topic is encouraged.

In 2006 (about eight years ago) laptops were reported as being disruptive and unacceptable in meetings (Newman & Smith, 2006); as evidenced by my data it seems that this attitude has shifted. From my current data, it appears that this attitude has been transferred to smartphone use in meetings, whereas laptop use has become acceptable. Middleton and Cukier (2006) report that employees were expected to be connected through email at all times, including during meetings. Presently, it may be more culturally acceptable to access email through laptops than through smartphones. However, the acceptance levels of technology in the meeting environment may be changing, and smartphones may become more acceptable as their other functionalities (such as texting) become more valuable in addressing meeting objectives. For example, the city councils of Barstow, California (Jonas, 2011) and Lynchburg, Virginia (Petska, 2011) recently purchased new iPads, stating that council members requested lighter mobile devices, as well as the ability to mark up electronic documents, in an attempt to reduce paper use during meetings. Even though iPads (or tablets) function in a similar fashion to laptops, they do have a lighter and a more compact form factor, which may help them to be used for the same purpose as laptops and be more versatile. Panzarino (2014) stated that Apple's (nd) recent video and blog on iPad usage portrays an image that iPads can do all the things that laptops can do and more. He claims that tablets can "specifically do things that would be cumbersome, irritating or impossible with a laptop" (para 3). With 20 centimeter or smaller screen-size tablets gaining the highest market share from 2011 and 2017 (Dignan, 2013), it seems that the tablet form factor (slab or

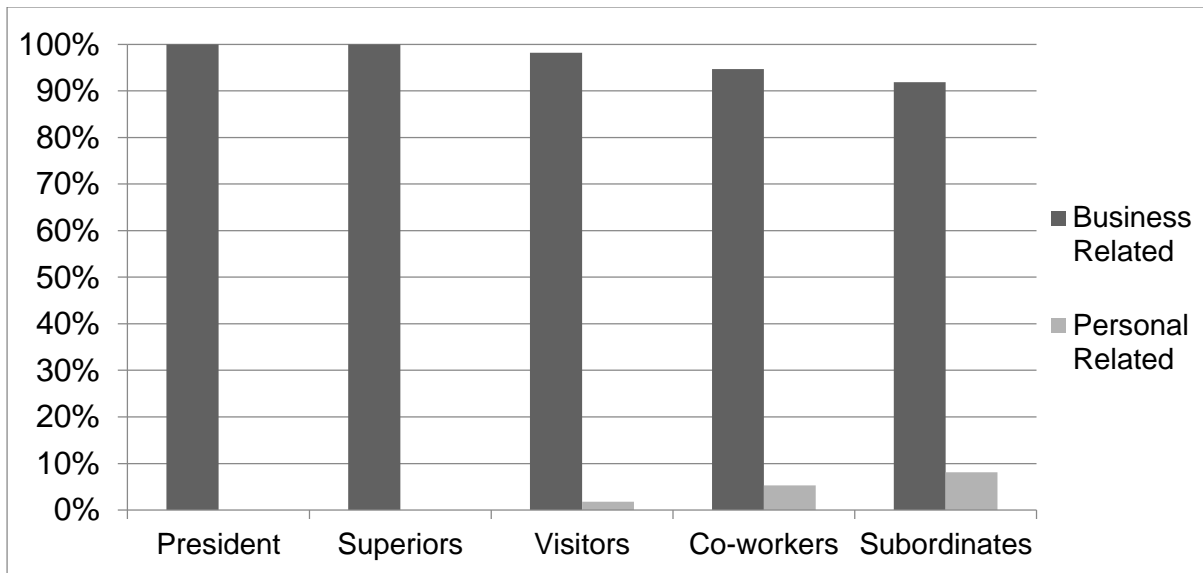
bar form factor, similar to smartphones) may be gaining popularity in organizations and thus being used in variety of locations such as meetings.

#### 4.1.4 Laptop use in Meetings

If we examine in more detail, meeting types and specific tasks in meetings where laptops are or are not accepted, participants reported that they would use a laptop in a meeting for work-related tasks regardless of who is in attendance (see Figure 4.19). For example, 100% of the 58 respondents said that it is acceptable to use a laptop in a meeting when the president of the company is present, while 91.9% of the 74 participants responding to this question said that it is acceptable when subordinates are present.

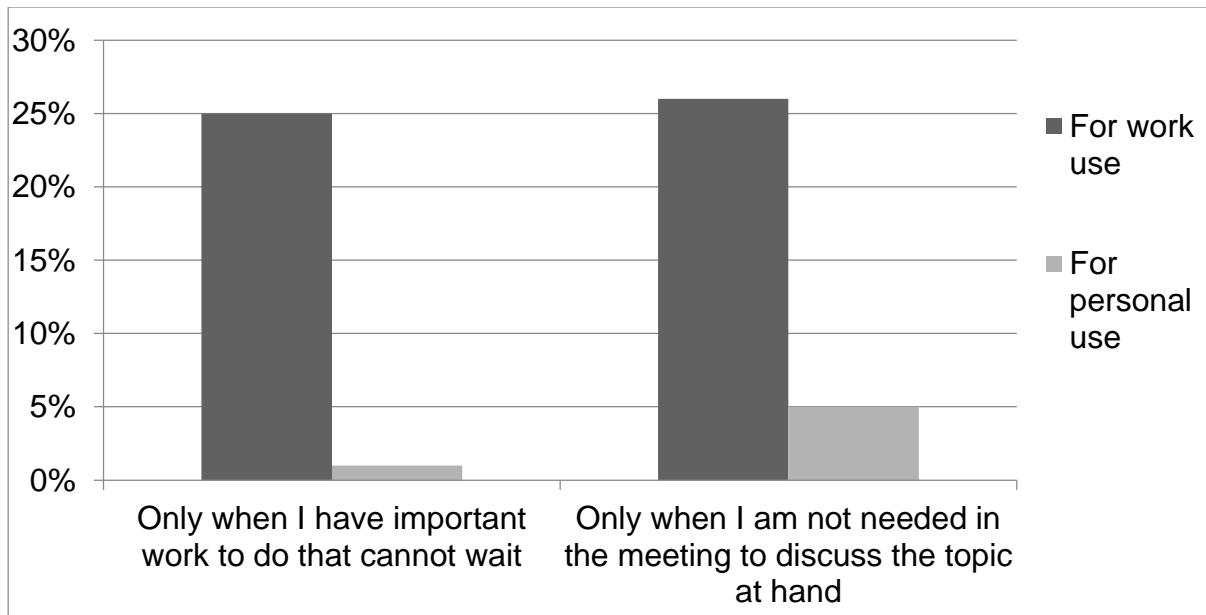
For personal tasks, the results are different. Most participants would not use their laptops for personal tasks, regardless of who was in attendance at the meeting. For example, only 8.1% or 6 participants (out of 74 who answered) would use their laptops for personal use when subordinates are present. No one would use their laptop for personal use when the president of the company or their superior was present in the meeting (see Figure 4.3)

Pearson and Porath (2005) found that different power relations (e.g., having subordinates or superiors present) in meetings, change meeting dynamics. It would seem that there is an important distinction between the acceptability of laptop use for work versus personal activities during meetings, particularly when superiors are present. This may be due to perceived repercussions, such as being reprimanded or dismissed for using work time and resources to conduct personal business.



**Figure 4.3. Laptops for personal and business use in meetings when different groups of individuals are present**

Twenty-four percent of participants (25 out of 105) said that they would use a laptop during any meeting only for work that was considered “important work that cannot wait”. Only one percent said that they would use their laptops during a meeting for important personal tasks that could not wait. Twenty-five percent of participants (26 out of 105) also reported that they would use laptops for work use when their participation in the meeting was not immediately necessary, for instance to discuss the topic at hand. Only 4.8% of participants (5 out of 105) reported that they would use their laptops for personal use in this situation (see Figure 4.4).



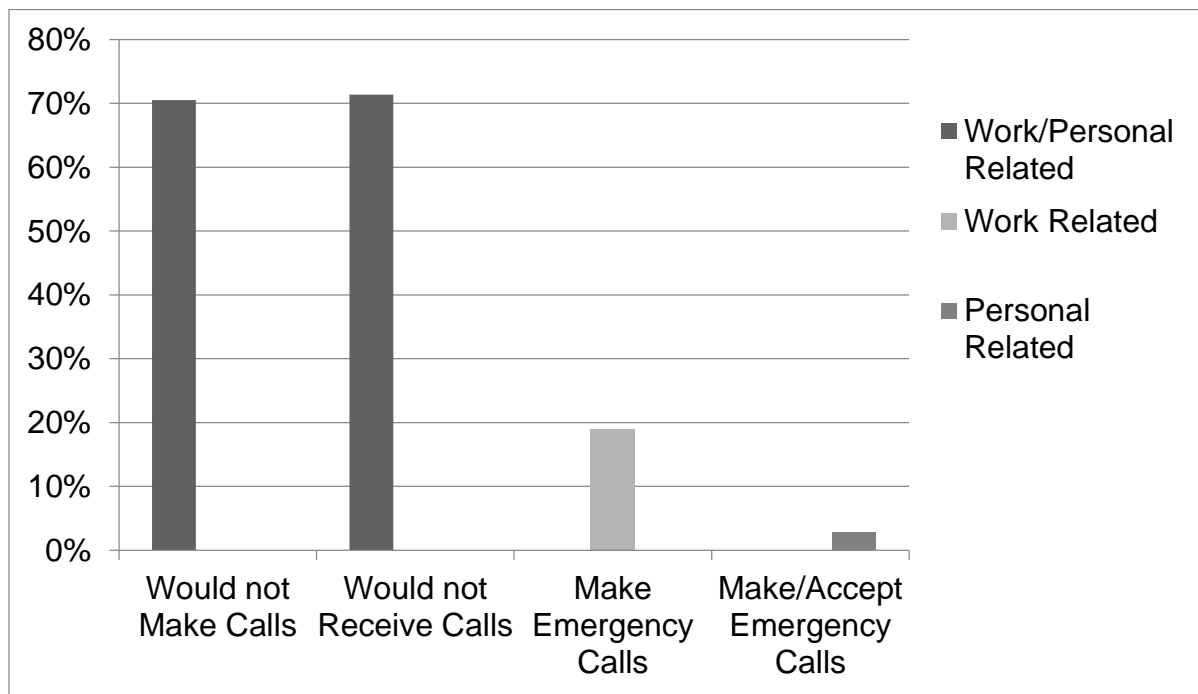
**Figure 4.4. Work and personal uses of laptops during meetings**

It appears that only about 25% of participants use their laptops when a higher priority issue arises, or when they have free time during the meeting to do work that is not related to the topic(s) at hand in the meeting. Kleinman (2007) suggests meeting participants are expected to use their laptops for meeting-related tasks. However, it would seem that at least 25% are doing other work-related tasks, not relevant to the meeting, during the meeting time. In my survey, I did not explore how this behaviour is implemented, or the frequency and duration of non-meeting related work during meetings. In future research, specific meetings should be observed to understand the implications of this type of behaviour on meeting and individual productivity and effectiveness.

#### 4.1.5 Mobile Phone Activity

When asked about making or accepting phone calls during meetings, 70.5% (74 out of 105) and 71.4% (75 out of 105) of participants respectively, said that they would not make or receive work-related or personal phone calls during meetings. Nineteen

percent of participants (20 out of 105) would make a work-related phone call about a task that could not wait, and 2.9% (3 out of 105) would make or accept a personal call during a meeting about a task that could not wait (see Figure 4.5).



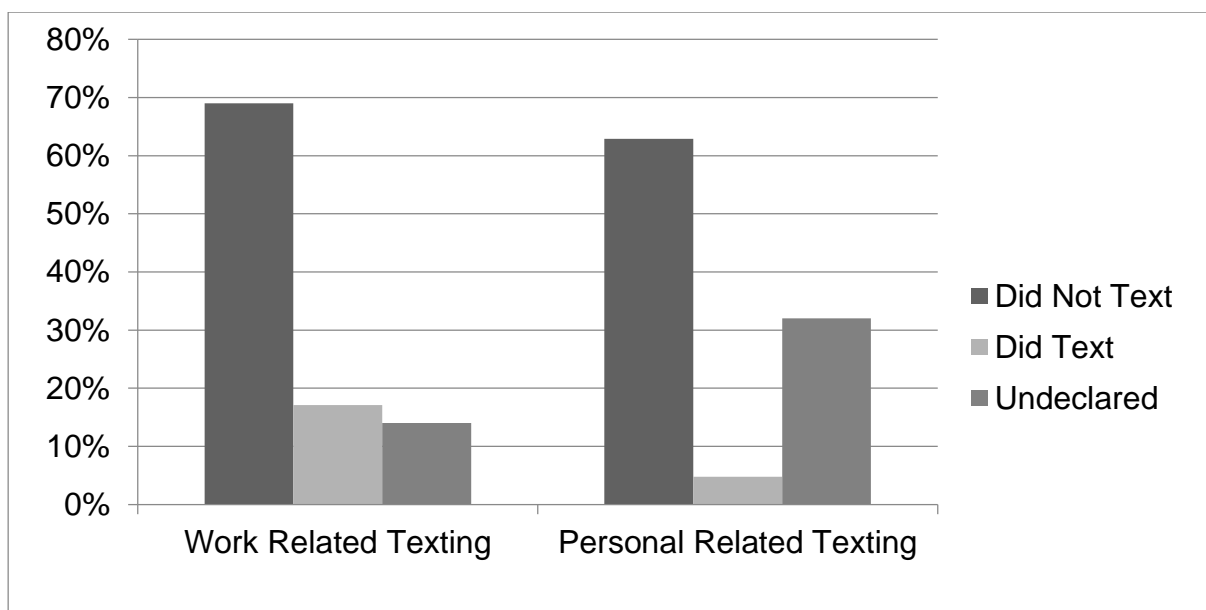
**Figure 4.5. Making and accepting work-related and personal phone calls during meetings**

It seems somewhat acceptable to make calls for work-related matters, and only slightly acceptable for personal emergencies. Pinchot et al., (2011) found that participants in their 88-person undergraduate and graduate survey reported that answering phone calls during meetings was considered rude. The responses from my survey could also suggest that individuals might consider it rude or impolite to be on the phone during a meeting, or that the meeting might be disrupted, supporting Pinchot's research results. Further research should investigate the level of distraction that may be caused by answering calls during meetings, as well as measuring meeting participants' gaze engagement with meeting participants who use their mobile phones during



meetings. Longer periods of gaze engagement with individuals who use their mobile phone might be an indication of meeting disruption.

Participants were also asked to evaluate the use of text messaging during meetings (see Figure 4.6). Sixty eight percent of participants (71 out of 105) reported that they did not text message work-related information, and 62.9% of participants (66 out of 105) did not text for personal reasons. However, 17.1% of participants (18 out of 105) said that they did text message work-related information when they had important work that could not wait, while 4.8% of participants (5 out of 105) text messaged personal information that could not wait during meetings.



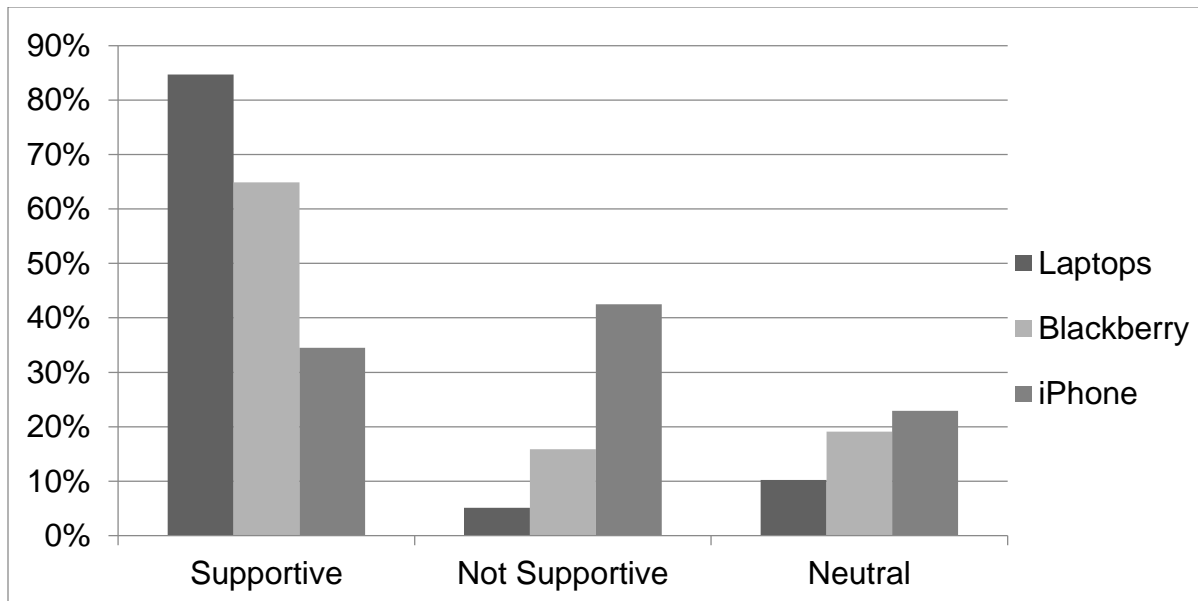
**Figure 4.6. Work-related and personal texting during meetings**

What this data reveals is that participants do not text during meetings, unless there is an emergency, especially one that is work related. There could be a number of reasons why this attitude is prevalent. It could indicate that people consider texting during meetings as an inappropriate or discourteous activity, that the company policy

discourages text messaging, or that it requires too much attention. The 3% difference between participants making work-related phone calls (20%) and texting work-related messages (17%) could mean that the work-related information they were communicating required greater detail, explanation, or urgency, and individuals felt the need to speak to the other person. Further research examining actual meeting behaviour is required to determine reasons for this slight discrepancy.

#### **4.1.6 Company Policy about Technology Use**

When asked about company policies or practices regarding the use of laptops, BlackBerrys, and iPhones, (see Figure 4.7) 84.7% of participants (83 out of 98) claimed that their company was somewhat or very supportive of laptop use. However, 5.1% of participants (5 out of 98) reported that their company was not very supportive or not supportive at all of their use, with the remaining 10.2% claiming a neutral opinion. For BlackBerrys, 64.9% (61 out of 94) claimed that their company was somewhat or very supportive, and 15.9% (15 out of 94) were not very supportive or not supportive at all, with the remaining 19.1% being neutral. The support of iPhones was even lower, with 34.5% of participants (30 out of 87) reporting that their company was somewhat or very supportive of their use, and 42.5% (37 out of 87) were not very supportive or not supportive at all of their use, with the remaining 22.9% being neutral.



**Figure 4.7. Percentage breakdown of company policy regarding laptop, BlackBerry, and iPhone use within the organization**

It would seem that iPhones are the least supported device by participants and by company policy for use in meetings, even though functionally they are similar to BlackBerrys. Perhaps the iPhone is perceived as an entertainment system for playing games, surfing the Internet, running “apps” or listening to music, rather than for serious business activities (Ragon, 2009). The BlackBerry may be viewed as a device that enables users to be more efficient and effective in business, and by extension, in business meetings (MacCormick & Dery, 2008; Middleton, 2008). Whether or not the iPhone will ever enjoy this same position is uncertain; however, it seems that the iPad or other types of touch-tablets may become more acceptable in meetings (Jonas, 2011; Petska, 2011).

#### 4.1.7 Crosstab Analysis

In order to carry out a valid crosstab analysis, some categories of the demographic section were removed or consolidated, due to low numbers of participants

in those categories. Three of the five age categories (18-29, 30-39, and 40-49) were used for the analysis, while the remaining two categories (50-59 and 60+) and their respective data were not used (i.e., there were only eight participants in the 50-59 and one in the 60+ category). The participants' positions were consolidated into management (those reporting in the categories of supervisor, manager, director, vice president, and president), and non-management, due to the low numbers in the management categories (e.g., there were only three participants in the director category and four participants in the vice president category).

A crosstabs analysis was conducted using age, sex, and consolidated categories of position within the company, to examine whether there was a relationship between specific demographic characteristics, and the acceptability of different mobile devices. There was no significant Spearman correlation between age ( $N=94$ ,  $r=0.055$ ), sex ( $N=102$ ,  $r=0.037$ ), nor company position ( $N=98$ ,  $r=0.114$ ), and when is it acceptable to use mobile devices during meetings:  $p>0.05$  for all reported correlations respectively. Although, the sample sizes were relatively small, it would seem that age, sex, and company position were not important factors in differences in attitudes toward mobile device use in meetings.

While individuals and companies may generally support the use of smart mobile technologies during meetings, there may not be support for specific activities, such as texting or taking/making phone calls. Regardless, the landscape of acceptable mobile technologies is changing rapidly. Further research examining specific company policies and practices in any particular company, may provide further insight into the impact of policy on actual behaviour. The results from my initial investigation seem to indicate that

the use of smartphones in meetings might be gaining popularity. A follow-up survey in the future with a larger sample size, and more evenly distributed demographics, might provide more insight into changing attitudes toward smartphone use.

#### **4.1.8 Limitations**

Even though my goal was to use chi-square and crosstab analysis for all questions and categories, there were some issues related to the uneven distribution of participants in specific categories. For example, for the crosstab analysis of participants' positions, several different groups (e.g., manager, director, vice-president, and president) had to be combined into one "manager" category due to the uneven distribution of data. For participant age, there was a similar limitation. Insufficient data was gathered in the 50-59 and 60+ age categories to include them in the analysis. Participants in these two groups could be specifically targeted in order to produce a more even sample and more representative results.

The sample size of certain categories (e.g., 50+ age, position within the company, and employee department) was also small. Future research should expand the participant groups to include a wider demographic, and deploy the survey more broadly, allowing for more complex statistical analyses, such as principal component analysis that could explain relationships among sets of interrelated variables. Since this survey investigated attitudes and behaviours toward technology, future surveys should be deployed on a larger geographical scale to determine if location plays any role in participants' attitudes and behaviours. I also recommend that the use of personal smartphones and other mobile devices in organizational meetings, be compared with

organizationally owned mobile devices to determine whether there are differences in use, attitude, behaviour, and policy interpretation between these groups.

## **4.2 SURVEY II**

### **4.2.1 Research Questions**

To gain a better understanding of changes in attitudes and behaviours toward mobile devices over time, to see if adoption had changed, a slightly modified second survey (see Appendix B Survey II) was made available only online, with the purpose of answering the following questions:

- 1) What are the attitudes toward having smart mobile technologies in face-to-face meeting settings in organizations?
- 2) How is smart mobile technology being employed and adopted for use in meetings?
- 3) How have attitudes changed?

### **4.2.2 Survey Instrument and Software**

Although similar to the first survey, the second one was composed of 29 (instead of 40) questions, organized into four sections (see Appendix B Survey II). The first section contained eight questions to collect demographic information such as age, sex, and employment status. The second section contained six questions and asked participants about their technology use (e.g., how often they used a computer or mobile device, and for what activities). The third section contained 13 questions that collected data about participants' attitudes toward technology use during meetings. Questions regarding when it was appropriate to use various technologies, such as laptops and smartphones, in meetings, as well as the different functionality of these devices, were

included in the survey (e.g., texting and making calls). The fourth section asked two questions about company attitudes and policies toward technology use.

Survey II was modified from survey I in three ways. First, although the second survey included all the same questions about mobile devices as the first survey, three additional questions about tablet (iPad) usage were added: specifically (1) participants' opinions on when it is all right to use iPads during meetings; (2) participants' opinions on meeting types in which iPads are acceptable; and (3) their companies' opinions on the use of iPads within the organization. These three questions were not included in the first survey, as tablet market penetration was minimal in 2010, and they were seen more as a personal mobile device than as a corporate device. The second modification involved not including the last section from the first survey. This section asked 11 questions about one technology use in one specific meeting that the participant had recently attended (e.g., type of meeting, length of meeting, and number of participants), the technology used and if the participants were distracted. This set of questions was eliminated, as I would be examining this in my next experimental phase. The third modification involved making the survey available only online. In addition, a different survey software (Opinio) was used that provided greater flexibility and control over the survey's structure.

#### **4.2.3 Survey Distribution**

The online survey was developed and distributed on an international information systems' listserve. The online survey was available on the Internet from May 1, 2012 until July 31, 2012.

#### 4.2.4 Results and Discussion

The purpose of the second survey was to examine the attitudes and behaviours of meeting participants who use mobile devices, particularly smartphones, during meetings, and compare them with the 2010 results. A chi-square analysis was conducted on questions related to: (1) when it was appropriate to use different mobile devices in meetings, using a 5-point Likert scale where 1 was always and 5 was never; (2) making personal and work voice calls during a meeting, using a 5-point Likert scale where 1 was “I make/accept phone calls all the time” and 5 was “I never make/accept phone calls”; and (3) sending personal and work-related text messages during meetings, using a 5-point Likert scale where 1 was “I text message all the time” and 5 was “I never text message.” Significant results are reported to a type 1 error probability of  $p < 0.05$  (see Table 4.2), with four degrees of freedom found in all significant results reported.

**Table 4.2. Chi-squared results, mode, mean, and standard deviation for questions related to mobile device use in meetings, including texting and sending/receiving phone calls**

Question	$\chi^2$ value	Mode	N	<i>M</i>	SD
Laptop	259.15	2	253	2.10	1.09
Blackberry	142.70	2	247	2.92	1.31
iPads	114.45	2	246	2.57	1.34
iPhone	110.47	2	244	3.09	1.33
Work voice calls during meeting	355.26	5	246	4.29	1.03
Personal voice calls during meeting	526.19	5	237	4.77	0.74
Work texting during meeting	171.89	5	246	3.98	1.13
Personal texting during meeting	374.08	5	236	4.40	1.06

#### 4.2.5 Smartphone use in Meetings

When participants were asked about their smartphone use in meetings, 43% of participants (110 out of 255) stated that it was to keep track of time; 38% of participants



(96 out of 255) suggested that it was for work-related emergencies; 35% of participants (90 out of 255) used it for communication, such as email or chat through text messaging; 34% of participants (86 out of 255) used it for work-related activities; 29% of participants (73 out of 255) used it for personal emergencies; 8% of participants (20 out of 255) used it for surfing the Internet; 2% of participants (6 out of 255) used it for activities not related to work; and 4% of participants (11 out of 255) said other. It seemed that the majority of individuals tended to use their smartphones in meetings for tracking time, work-related tasks, and emergencies, but considerably fewer used their devices for tasks unrelated to work, such as personal tasks, except for emergencies.

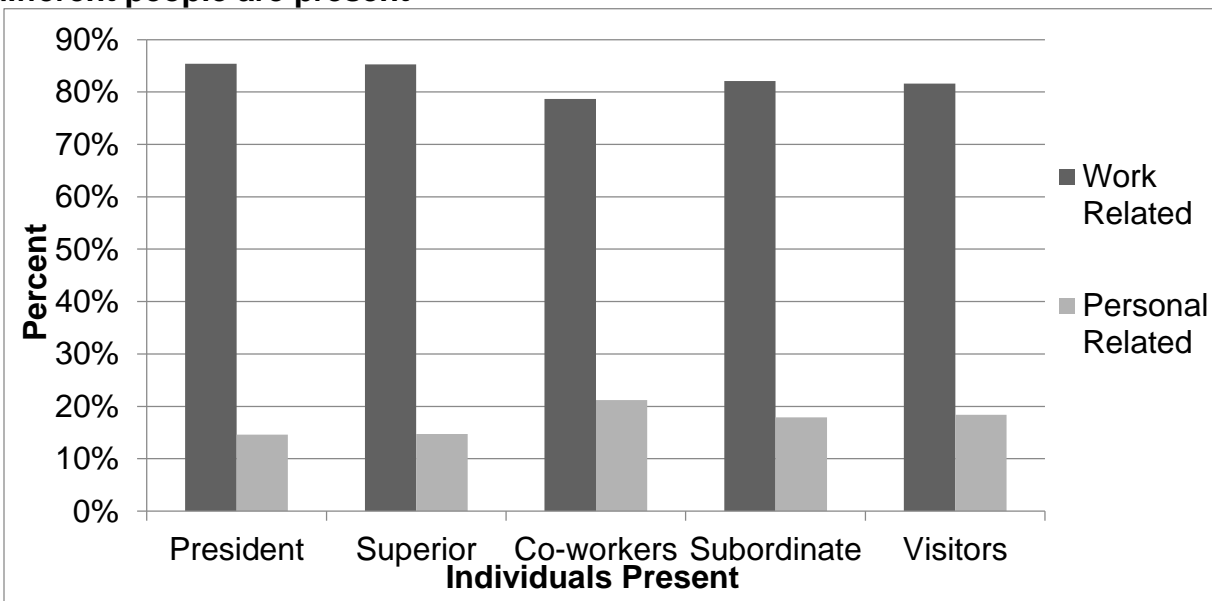
I suggest that when meeting participants use their smartphones, it is related to the meeting or work tasks at hand; however, which specific work-related task they are communicating about or working on remains to be determined, as it was not asked of participants in this study. Further research could investigate which types of non-meeting related work and communication activities are being carried out on smartphones, why this is happening, and worker priorities.

#### **4.2.6 Text Messaging in Meetings**

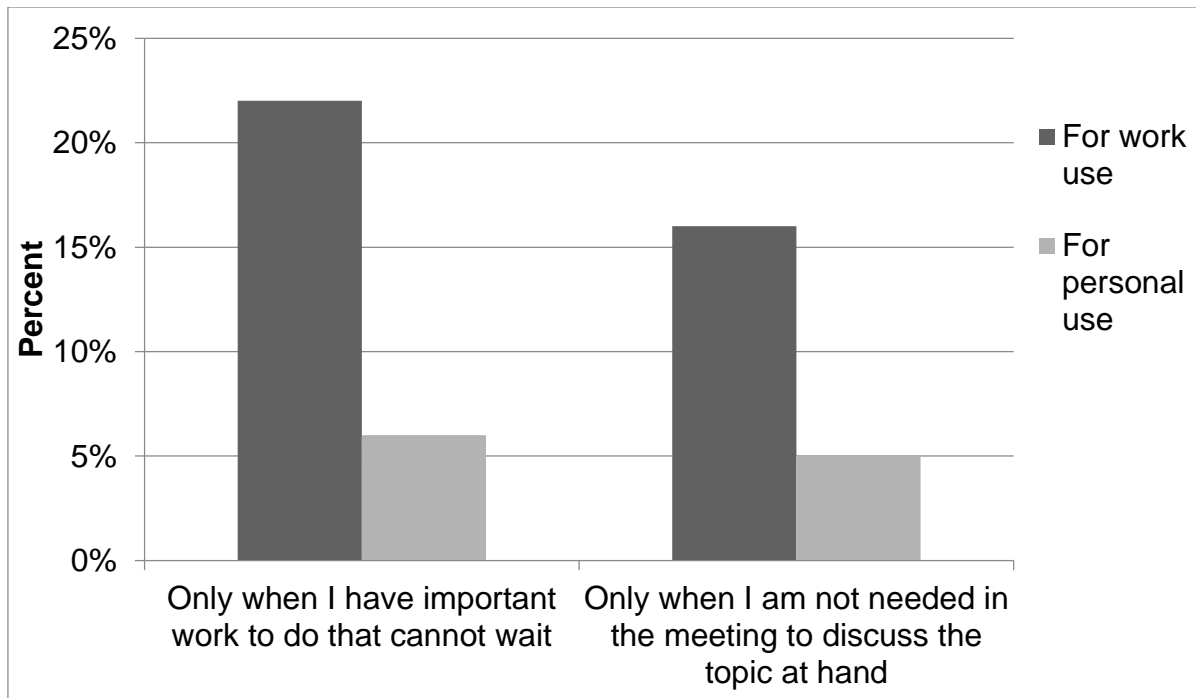
Fifteen percent of participants (16 out of 109) stated that they would text personal information when their superior was present; however, if a visitor was present, 18% of participants (20 out of 109) would text personal messages. If the meeting room only had co-workers, 21% of participants (34 out of 160) would text personal information (see Figure 4.8). This change in behaviour based on the presence of certain individuals can be explained by Ajzen's (1985, 1995) Theory of Planned Behavior, which states that one of the indicators that determines an individual's behaviour is that individual's

perception of whether people important to him or her think the behaviour should be performed. According to my data and the Theory of Planned Behavior, individuals tend to text personal messages more frequently when individuals around them are considered to be less influential by the meeting participants.

**Figure 4.8. Acceptance rate for personal and work texting during a meeting when different people are present**



Forty-three percent of participants (109 out of 255) stated that they would text about work-related tasks that could not wait, and 31% of participants (78 out of 255) stated that they would text personal messages that could not wait (see Figure 4.9).

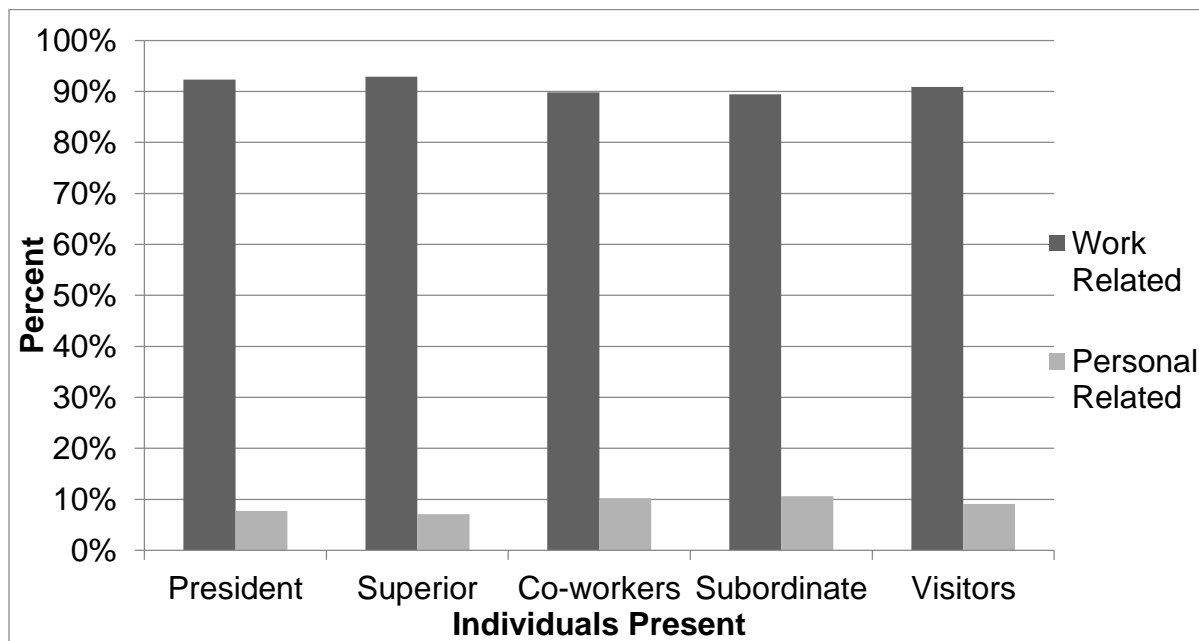


**Figure 4.9. Work-related and personal use of laptops during meetings**

Text messaging seems to be increasingly acceptable in meetings, particularly for work-related activities. Information about specific types of work-related text messages was not gathered in this survey; however, I postulate that meeting participants used their smartphones to collect meeting-related answers to questions posed during meetings (from co-workers or others outside the organization) that cannot be found within the meeting, as suggested by Spee and Jarzabkowski (2009). They suggest that smartphones and instant messaging could be considered as strategy tools allowing meeting participants to span intra- and inter-organizational boundaries through discussions. No longer are meeting attendees limited to communicating only within the formal meeting boundaries; they can also engage, either on task or not, with resources outside the formal meeting.

#### 4.2.7 Voice Calls in Meetings

While texting during meetings seems to be an increasingly acceptable practice, I wanted to determine whether this attitude transferred to voice calls. Seven percent of participants (5 out of 70) stated that they would make a phone call if a superior was present. With visitors or co-workers present, 9% of participants (6 out of 66) and 10% of participants (10 out of 98) respectively, would make a personal voice call during a meeting. Figure 4.10 illustrates the acceptance rate for making a personal or work-related phone call during a meeting when different individuals are present.



**Figure 4.10. Acceptance rates for making personal and work-related phone calls during meetings when different people are present**

More than a quarter of participants (66 out of 246) stated that they would accept or make work-related voice calls during a meeting, only when they have important work to do that cannot wait. The survey also revealed that people were three times more likely to accept or make work phone calls in a meeting in which they were not needed,

compared with 2% for accepting or making personal voice calls. Only 2% of participants (6 out of 246) stated that they would accept or make a non-important personal or work phone call during a meeting. A survey conducted by Campbell (2006) on college students and their use of mobile phones in classrooms, found that the phones were considered a serious distraction in the classroom. Collectively, participants reported mobile phone ringing as a problem. Since the function of a classroom setting could be considered similar to a meeting room, because both gather a group of people together in one location to discuss a specific topic and are usually led or chaired by one individual, I posit that individuals view making or accepting voice calls as more disruptive and obtrusive than text messaging. Further research should investigate which action is considered more disruptive, making phone calls or texting, during meetings.

#### 4.2.8 Comparison with Demographic Data

A crosstab analysis was used to determine whether there were correlations between: (1) the demographic information (e.g., age, size of company, position within the company, and employee department); (2) the acceptability of making and accepting personal and work calls during meetings; and (3) the acceptability of texting personal or work messages during meetings. Participants rated the acceptability on a 5-point Likert scale, where 1 was “always” and 5 was “never.” Significant results were reported to a type 1 error probability of  $p < 0.05$  with four degrees of freedom. The results of Cramer’s  $v$  are reported in Table 4.3.

**Table 4.3. Cramer's  $\nu$  value for voice calls and text messaging during meetings, with moderately strong relationships bolded**

Question	Cramer's $\nu$ Value			
	Age	Company Size	Position	Department
Attitude toward work calls	0.11	0.08	<b>0.22</b>	0.15
Attitude toward personal calls	0.11	0.08	<b>0.22</b>	0.18
Attitude toward work texting	0.10	0.11	<b>0.21</b>	<b>0.24</b>
Attitude toward personal texting	0.14	0.11	0.19	0.18

Due to the low number of participants in certain age categories (e.g., 60+) and departments (e.g., accounting and legal), this data were removed from the analysis. There was a moderately strong relationship between the department in which participants worked and attitudes toward texting work-related messages during meetings. Individuals who worked in research and development tended to rate texting during meetings in which they are not needed as more acceptable (Mode=9, M=5.6, SD=1.54) compared with those in other departments. See Table 4.4 for the distribution of mode and standard deviation for the remaining departments. Individuals who worked in operations tended to rate texting important work-related messages during meetings as acceptable, compared with individuals employed in other departments (M=5.93, SD=1.80).

**Table 4.4. The mode and standard deviation for different departments related to texting work-related messages during meetings**

Department	Mode	SD
Accounting	0	1.34
Sales/Marketing	4	1.31
Human Resources	0	1.32
Legal	0	1.35
Operations	3	1.80
Research & Development	9	1.54
Other	24	n/a

A moderately strong relationship was also found between the participant's position within the company, and making and accepting voice calls. Individuals who were supervisors (44%), managers (26%), directors (39%), and vice presidents (37%) tended to think that making important work-related calls during meetings was acceptable. There was a weak relationship in the ratings among non-management (21%) toward making work-related phone calls during meetings. This result is confirmed by Roberts (2007), who found that individuals in management positions were expected to: (1) produce greater output than non-management individuals; (2) be in contact with other co-workers; and (3) be seen as ever-present at work by their colleagues. I hypothesise that different levels of management could have used their smartphones to multitask, or be in constant contact with colleagues.

#### **4.2.9 Limitations**

Even though 255 participants completed the survey, there was still an uneven distribution, particularly across departments in which participants worked, age, and company position. There was only one participant (0.5%) from accounting, and two (1%) from legal departments. For the 60+ age demographic, there were only 13

participants (5%). For the supervisor position demographic there were only 11 participants (4.8%). In order to better determine attitudes from all of the demographic categories, more participants from these groups must be recruited.

These results only present a limited, univariate treatment and analysis of the data to gain a sense of present trends. Further multivariate analyses and more data are required to determine whether there are multiple factors that are correlated, for instance what role would organizationally owned versus personally owned mobile devices contribute to the attitudes, behaviours, and company policies on mobile device use. Future research should report on this aspect of the analysis.

As this was a broadly distributed survey, there was no opportunity to gather data on the details of text messages or voice calls, or why participants found some mobile device behaviours more acceptable than others. Future research should investigate what types of information participants' text and talk about on their smartphones during meetings, and why this behaviour seems to be acceptable in the workplace.

### **4.3 COMPARATIVE ANALYSIS OF SURVEYS I AND II**

A comparative analysis was also conducted on surveys I and II to examine differences in attitudes over a two-year period using independent samples t-tests with SPSS v16 for all Likert-scale data between surveys I and II. The sample size was not equal, and therefore statistical values for unequal sample sizes were used. A Shapiro-Wilks test for normality showed that the distribution was not normal ( $p < 0.05$ ), therefore there was an uneven frequency distribution. A reliability analysis was conducted using Cronbach's alpha test on all ordinal questions, and was found to be reliable ( $\alpha = 0.739$ ). The Levene statistic was used to evaluate the homogeneity of variance for each



question. If the assumption of homogeneity of variance was not met, the statistical values for unequal variance were used.

Three questions from the surveys could not be compared statistically because survey I had used a multiple possible answer question, while survey II used a forced-choice Likert scale question for the same concept. A comparison between these three questions is provided using descriptive statistics.

#### **4.3.1 Results and Discussion**

A significant difference in opinion regarding laptop use during meetings was found between surveys I and II,  $t(354)=2.08$ ,  $p=0.03$  on a 5-point Likert scale where 1 is always and 5 is never. The Levene statistic was significant for this question ( $F=0.00$ ,  $p<0.05$ ), thus the t-statistic for unequal variance was reported for this question. Survey I had a mean of  $M=2.39$  ( $SD=1.33$ ), and survey II had mean of  $M=2.10$  ( $SD=1.09$ ) for this question. These results indicate that over the past two years, individuals have become more accepting of laptop usage during meetings. Benbunan-Fich and Truma (2009) found that meeting attendees tended to use their laptops to take notes in electronic format, follow presentation slides at their own pace, or look up related information on the Internet while a meeting is in progress to enhance their acquisition and processing of information. Having this added functionality in meetings could be seen as beneficial to individuals and to the meeting, resulting in the increased acceptability of using laptops during meetings.

A significant difference in participant responses between the two surveys was also found regarding the question about feature phone usage during meetings,  $t(344)=2.90$ ,  $p=0.03$  where responses were provided on a 5-point Likert scale with 1

being always and 5 being never. The mean value from survey I was  $M=3.98$  ( $SD=1.30$ ), compared to survey II  $M=3.52$  ( $SD=1.35$ ). A Levene's test was significant ( $F=0.038$ ,  $p<0.05$ ) and therefore the t-statistic for unequal variances was reported. These results suggest that individuals have become more accepting of feature phone usage during meetings. This increased acceptance could be due to the limited functionality of feature phones which may reduce their use (e.g., only to check the time, or if a text message has arrived), or that the feature phone has existed for over two decades and people have become used to it. Future research should investigate the purposes for which meeting participants use feature phones during meetings, and for what length of time.

A significant difference in opinion scores for the question about how respondents reported their company's reactions to mobile technology use was also recorded, specifically regarding iPhone usage, within the company;  $t(318)=5.46$ ,  $p=0.03$  rated on a 5-point Likert scale with 1 being very supportive and 5 being not supportive at all. The mean value from survey I was higher (less supportive) ( $M=3.18$ ,  $SD=1.52$ ), compared to survey II ( $M=2.24$ ,  $SD=1.32$ ). The Levene's test for homogeneity of variance was significant ( $F=0.035$ ,  $p<0.05$ ). Responses to this question for other smartphone types were not significant. These results suggest that organizations have become more supportive of iPhone use in the past two years. This could be the result of increased numbers, or preferences for iPhone use, and/or organizations adopting iPhones as their corporate mobile phones, resulting in an increase in iPhone support within organizations in general. Between 2010 and 2012, BlackBerry experienced numerous production delays and was slow to acknowledge the Bring Your Own Device (BYOD) trend, which saw workers replace company-issued BlackBerrys with personal smartphones (Fingas,

2013). During this period, Blackberry's global market share dropped from 16% in 2010, to 3% in 2012, and Apple's market share increased from 16% in 2010, to 21.5% in 2012 (Walkley, Ramsay & Sinha, 2012). Even though this provides some evidence of increasing support of iPhone use within organizations, this does not mean that the attitude toward other smartphones has changed. A study by Park and Chen (2007) found that behavioural intention to use smartphones was largely influenced by perceived usefulness and attitudes toward using the smartphone. Perceived usefulness and ease of use positively affected attitudes toward using smartphones. If the popularity of smartphones increases over time, my survey results may also change. Future research should investigate organizational support for different mobile platforms (e.g., Android, iOS, Blackberry OS, and Windows phone 8) as certain operating systems are designed for consumer or corporate clients, and have varying levels of security and functionality, which may influence their adoption and use in corporations.

To compare responses to questions in which response formats had changed, I examined the percentage of responses that related to specific categories. For laptop use in meetings, 24.76% of respondents (26 of 105) from survey I said that they used their laptops during meetings, whereas 14.90% of respondents (38 of 255) from survey II said they used their laptops in meetings. Survey II results seem to contradict survey I results on the acceptance of laptops in meetings. The reason for this apparent contradiction could be that respondents' personal opinions of laptop use in meetings (i.e., the first t-test result) differ from people's actual behaviours. Company culture or policy could influence people's attitudes, while actual behaviours reflect the state of reality of laptop use. In addition, this variance could also reflect the decline in

prevalence of laptop use in favour of other technologies, such as tablets and smartphones. I also suggest that different industries might have different company policies regarding mobile devices. Further research into company policies, actual practices, and the distribution of technology use within companies across different industries, is required to determine whether organizations have begun implementing technology use policies, and how these may affect employee attitudes and behaviours.

The second question in which the format was altered between surveys I and II related to making important phone calls during meetings. Twenty-six percent of respondents (66 of 255) from survey II claimed to make important work-related voice calls during meetings, while 19% of participants (20 of 105) from survey I did so. The third question in which the format was altered related to generating important work-related text messages during meetings. Seventeen percent of individuals (18 of 105) texted important work-related messages during meetings in 2010, compared to 29% in 2012 (74 of 255).

It appears that making important work-related voice calls and text messages while in business meetings is becoming more acceptable. Perhaps society, in general, is more accepting of important voice calls and text messages on mobile phones, as reported by Vannoy and Palvia (2010), or company policies or work cultures have changed to permit important voice calls and text messages during meetings. Middleton's (2007) research regarding Blackberry users found that employees were expected to be connected to co-workers during meetings, and even outside work hours. Further research is required to examine the impact of company policies and their implementation on mobile device use, to determine whether company policies are being

followed. In addition, whether those policies or societal pressures have influenced increased acceptability of mobile devices in the workplace, particularly during meetings, should be examined. Example areas for more detailed investigation include: 1) at what point in the meeting do meeting participants text (to determine whether text messages are meeting related); 2) what is contained in those texts (e.g., work or personal messages, meeting or non-meeting related information); and 3) to whom (e.g., work colleagues or friends) participants are texting.

#### 4.3.2 Limitations

The comparative analysis of surveys I and II had a number of limitations, including different sample sizes between surveys (survey I had an  $N=105$ , while survey II  $N=255$ ), and non-normal distribution of dependent variable results.

There was also an imbalance in representation of work groups, age groups, and industry sectors. Future research should address these demographic limitations by expanding the participant groups to include a broader demographic range, and targeting specific demographic groups. Survey I was distributed in Southern Ontario, while survey II was distributed on an international listserve for IS professionals; however, no questions were asked in survey II regarding the geographical location of participants, therefore there was no control of geographic distribution. In addition, for survey II the fifth section of the survey, which contained 11 questions related to technology used in one specific meeting that the participant had recently attended, was not included in the online survey. This was intentional, since location and cultural differences of participants would have influenced the data gathered. Further research into cultural norms related to technology use might explore cultural differences experienced by meeting participants

when using mobile devices. Additionally, research should investigate how cultural differences associated with different countries, types of industries, or global versus local organizations, affect mobile device use in meetings.

Lastly, most questions did not show a difference between surveys I and II. This could mean that there was no change over the two-year period, or that two years was an insufficient time span for attitudes to change significantly, or that there was insufficient data. Possible future research could address these concerns by having a larger sample size and a longer time between the longitudinal surveys.

#### **4.4 SUMMARY**

This chapter reported the results from surveys I and II, and discussed their implications individually and in comparison. The main purpose for survey I was to: (1) gain a better understanding of the attitudes toward having smart mobile devices in meetings, as well as (2) how they are employed and adopted in meetings. Results from survey I indicate four key findings: (1) meeting participants believed that multitasking was a commonly adopted activity, and the vast majority (80%) of participants would be able to work on their laptops or use another device and pay attention to the meeting simultaneously; (2) the attitude toward using certain mobile devices (specifically laptops) in meetings seems to be more accepting compared to other mobile devices, such as Blackberrys and iPhones; mobile devices, such as Blackberrys and iPhones, were still considered unacceptable; (3) the data also revealed that it was somewhat acceptable to make work-related calls or send text messages for work-related emergencies using smartphones during meetings; and 4) iPhones were the least supported device by participants, and by company policy, for use in meetings.

Results from the first question in survey I (i.e., attitudes toward having smart mobile technologies in face-to-face meetings), revealed that laptops were more acceptable in meetings than Blackberrys or iPhones. Results from the second question in survey I (i.e., how are smart mobile technologies being employed and adopted for use in meetings), revealed that meeting participants used laptops to multitask in meetings, as well as using their mobile phones to make work-related emergency calls and text messages.

The slightly modified second survey was developed two years after the first survey, to answer the same research questions, and to determine whether attitudes and behaviours toward mobile devices had changed during those two years. Four key discoveries were discussed: (1) the majority of individuals tended to use their smartphones in meetings for tracking time, work-related tasks, and emergencies, but considerably fewer used them for personal tasks, unless it was an emergency; (2) text messaging has become increasingly acceptable in meetings, particularly for work-related messages; (3) it is somewhat acceptable to make work-related emergency calls during meetings, and only slightly acceptable for personal emergencies; and (4) from a list of six types of departments, the operations department tended to rate texting important work-related messages during meetings as acceptable, compared with individuals employed in any other departments. Additionally, most people in management positions (e.g., supervisors, managers, directors, and vice presidents) tended to think that making important work-related calls during meetings was acceptable.

A comparative analysis of most questions from surveys I and II was conducted, revealing that individuals have become more accepting of laptop and feature phone use during meetings. The analysis also showed that making important work-related voice calls and text messages while in business meetings was becoming more acceptable, and as well, organizations had become more supportive of iPhone use two years after the first survey.

Three questions were the driving force for survey II. Results from the first question (i.e., what are the attitudes toward smart mobile technologies in face-to-face meetings), revealed that participants from the operations department rated texting during meetings more acceptable than other departments. Results for question two (i.e., how are smart mobile technologies being employed and adopted for use in meetings), revealed that smartphones are used for work-related tasks and emergencies, as well as for work-related text messaging. The results for the final question (i.e., how have attitudes changed over the two years between surveys I and II), showed that meeting participants have become more accepting of laptops and feature phones in meetings, and organizations have also become more supportive of iPhones. Furthermore, it was discovered that making important work-related voice calls and text messages while in business meetings has become more acceptable.

Some of the major limitations for surveys I and II included different sample sizes, an imbalance in representation of work groups, age groups, and industry sectors, as well as survey I was distributed domestically, while survey II was distributed internationally. The section of survey I that dealt with technology use in one specific meeting that the participant had recently attended, was eliminated from survey II, and



therefore could not be compared, and lastly there was partial change in data distribution between the two surveys.

Chapter 5 will present and discuss the results of my meeting analysis, in which eight controlled meetings were conducted and video recorded to see how meeting participants behave when one individual uses his or her mobile phone throughout the meeting.

# CHAPTER 5 QUALITATIVE RESULTS (MEETING ANALYSIS)

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## 5.0 INTRODUCTION

This chapter describes the results of the eight controlled meetings that were conducted in the fourth quarter of 2012. The chapter begins with the results and discussion that describes the behaviour types in the eight meetings as well as the questionnaire results and limitations of the study. The final section will provide a summary of the chapter.

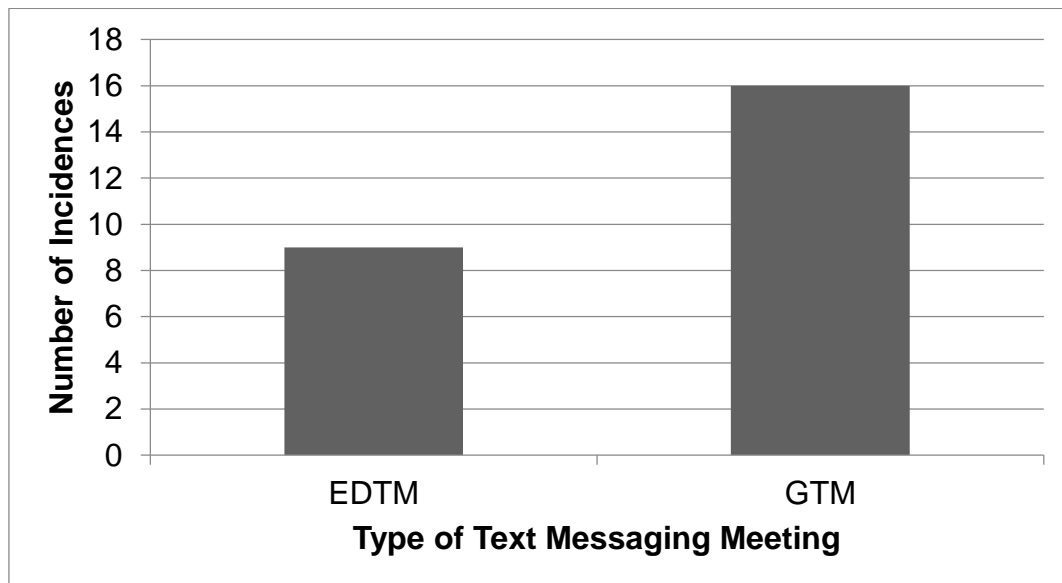
## 5.1 RESULTS AND DISCUSSION

### 5.1.1 Behaviour Types in Meetings

Participants' gazes at the actor's phone were the first of the identified seven themes. An incidence was recorded if, after a few seconds of the actor's phone ringing, one of the participants looked at the actor and/or his use of his mobile phone. In the eight meetings, a total of 25 incidences occurred in which participants gazed at the actor's phone after it produced an audible sound.

A Mann-Whitney U test between the two groups was not conducted on this theme, due to the low number of data set points; more occurrences of this theme than were recorded would be required to analyse the data statistically. However, the Grouped Text Message (GTM) (i.e., five text messages received at the beginning and three text messages at the end of the meeting) had more incidences than the Evenly Distributed Text Message (EDTM) meetings (see Figure 5.1). This could suggest that participants were annoyed or upset with the actor for receiving a bulk of text messages,

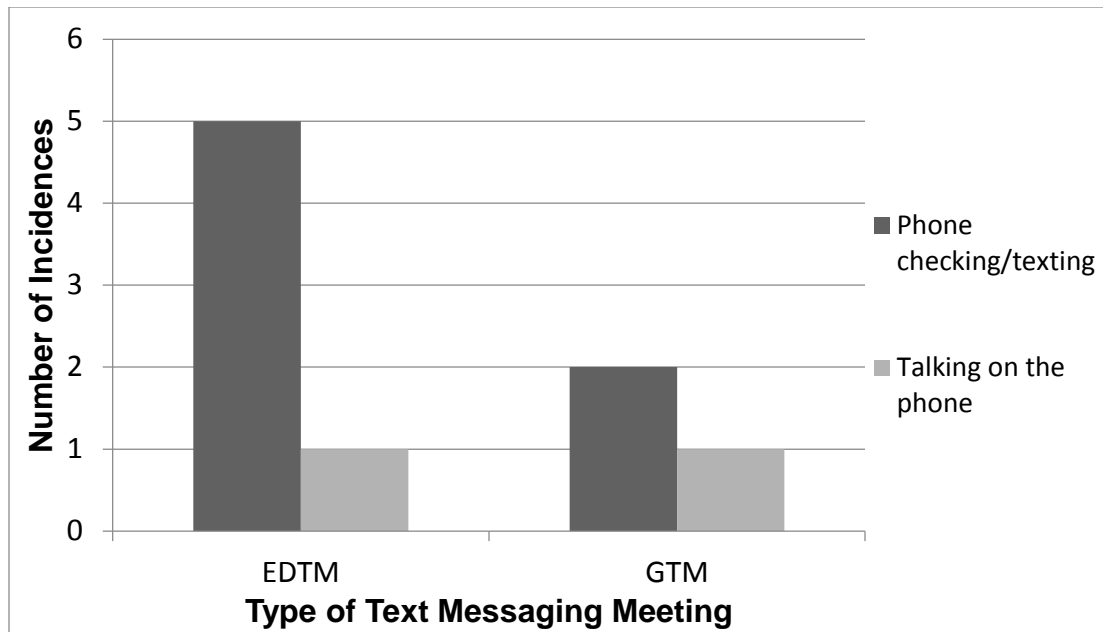
so they tried to get his attention by watching him. Another possibility could be that participants were curious of the motive or content of the actor's text messages. Further research should investigate meeting participants' gazes toward individuals who use mobile devices.



**Figure 5.1. Theme one, comparison of gaze amounts in two different meeting types (clustered and evenly distributed)**

For the second theme (i.e., any activity where participants either (1) checked their own mobile phones for any notification or sent/received a text message, or (2) made or received phone calls), nine incidences of phone interactions occurred (see Figure 5.2 for visual example). A Mann-Whitney U test was conducted to examine the difference between the two groups. There was no significant difference between meeting type and participants attending to phone activity,  $U=0.5$ ,  $z= 0.00$ ,  $p=1.0$ . Examining the details of people's mobile phone interactions, there were five incidences of checking smartphone status (e.g., checking time or email/text notification) (see Figure 5.3 for an example), two incidences of texting during the meeting (see Figure 5.4 for an

example), and two incidences of accepting phone calls during meetings (see Figure 5.5 for an example) (see Table 5.1). These results could suggest that participants in the EDTM group saw the actor using his phone more often, so they thought it would be acceptable to use their own phones to check their phone status. It might also suggest that even though in both types of meetings (i.e., GTM and EDTM) the actor received the same number of text messages, the number of text messages in the GTM group could have been perceived by the participants as fewer, but longer in duration, since the text messages arrived at the beginning and at end of the meetings. On average within a minute of each other. These behaviours can be explained with support from Fishbein & Ajzen's (1975) theory of reasoned action (TRA) that states that an individual's behaviour is driven by their own behaviour intentions, which in turn is driven by (1) their attitude towards the action; and (2) their subjective norms. Based on this theory, when meeting participants viewed the actor using his phone frequently, they viewed his behaviour as acceptable, so they used their mobile phones as well. No one made a phone call during the eight meetings.



**Figure 5.2. Theme two incidences of participants attending to phone activity**



**Figure 5.3. Participant on the left checking smartphone status**



**Figure 5.4. Participant on the right texting during the meeting**



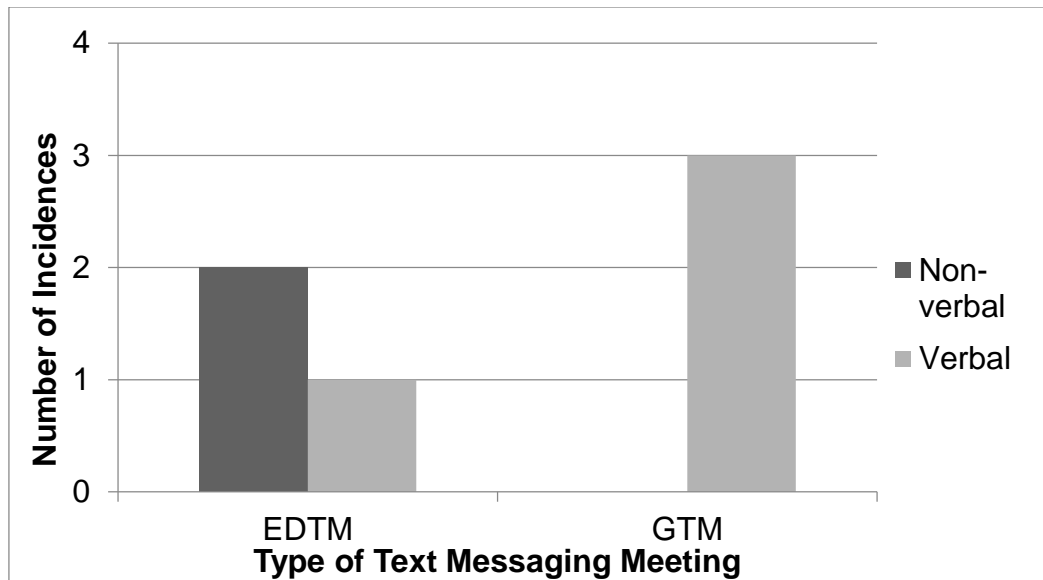
**Figure 5.5. Participant on the left accepting a phone call during the meeting**

**Table 5.1. Type of interaction with smartphone and duration**

Type of Interaction with smartphone	Duration in seconds	Meeting Group Type
Checking smartphone status	4.50	EDTM
	3.24	EDTM
	2.02	EDTM
	8.73	GTM
	4.18	EDTM
Texting on smartphone	30.98	EDTM
	9.31	GTM
Receiving phone call	20.89	EDTM
	86.64	GTM

Table 5.1 lists all the participants' smartphone interactions (in seconds) recorded in the eight meetings. From this limited data, we can see that participants interacted with their mobile devices more frequently by checking smartphone status, than by texting or receiving calls. On average, participants spent 4.5 seconds checking smartphone status, compared to 20.1 seconds texting, and 53.8 seconds receiving a phone call. This could suggest that participants viewed checking smartphone status as more acceptable, or less disruptive, than texting or making a phone call.

The third theme related to justification of phone interaction, which was defined as any non-verbal or verbal communication produced by participants justifying their interaction with their mobile devices (either by accepting or making a call or text messaging). Even though participants interacted nine times with their smartphones, there were only six incidences in two meetings where an interaction was justified (see Figure 5.6).



**Figure 5.6. Theme three incidences of justification of phone use by participants**

The four verbal justifications were:

- (1) In the first meeting, one participant received and read a text message, looked at the other participant, and announced, “everyone is asking me for 601 cases” relating to her class assignment.
- (2) In the fourth meeting, one participant received and read a text message, leaned toward the other participant, and said, “Chris is pissed.” The other participant replied but it was inaudible.
- (3) In the fourth meeting, the same participant received a phone call, said “I’m sorry, I have a phone call. Should I...I don’t know who it’s from either” and answered the call.
- (4) In the fourth meeting, this same participant announced after she ended the previously mentioned call, that the person was calling “from the Ontario Art Gallery and they were requesting donations.”

There were two non-verbal justifications:



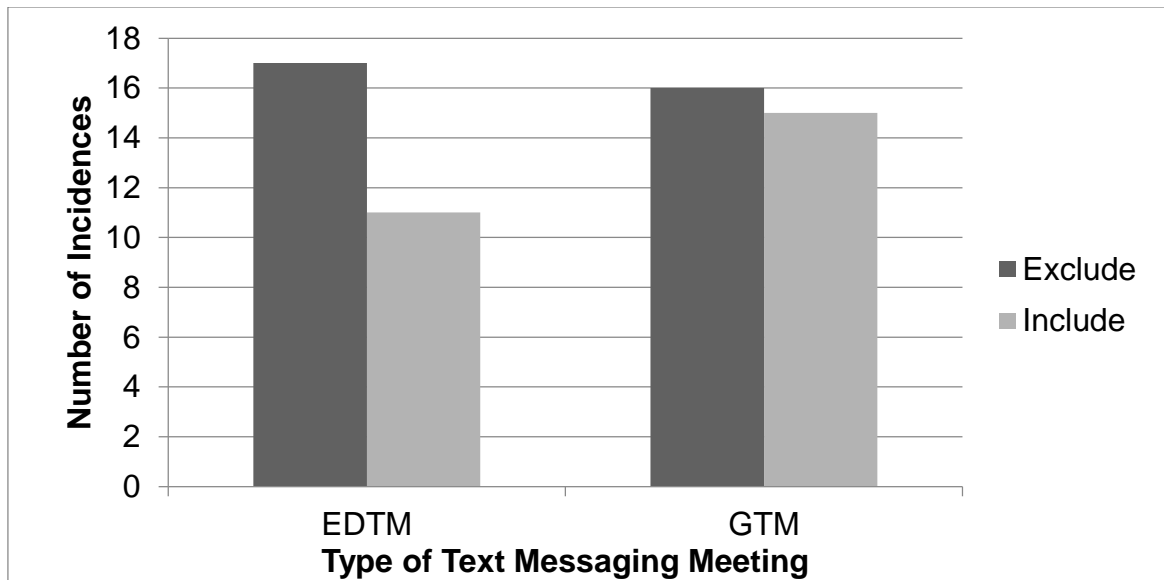
(1) In the first meeting, a participant received and read a text message, then shook his head after reading the message.

(2) In the first meeting, a participant received a phone call, and as the phone was ringing, he produced a disgusted facial expression.

A Mann-Whitney U test was not conducted on this theme due to the low number of data set points. More occurrences of this theme would be required to analyze the data.

Five of the six occurrences of phone justification occurred in the latter half of the meetings, so participants had seen the actor interact with his phone at least four times, and may have assumed that it was allowed. Another possibility could be that participants viewed their text messages or phone calls as important, and they thought they needed to justify their behaviour to others to provide a reason for interrupting the meeting.

The fourth theme related to conversation direction. In the two subcategories for this theme: (1) exclude, and (2) include, 59 incidences recorded. Figure 5.7 shows how the incidences occurred in the positive and negative sub-categories for the two text messaging groups.



**Figure 5.7. Theme four incidences; participants' conversation direction to exclude or include actor**

Two Mann-Whitney U tests were conducted on the fourth theme for the exclude and include factors between the GTM and EDTM groups. No statistically significant differences between groups or excluding from the conversation were recorded:  $U=23.0$ ,  $z= -0.199$ ,  $p=0.921$ . The GTM group had an average rank of 7.29, and the EDTM group had an average rank of 7.71. Similarly, no statistically significant difference between groups for the include sub-factor were recorded:  $U=17.5$ ,  $z= 0.0$ ,  $p=1.0$ . The GTM group had an average rank of 6.5, and the EDTM group had an average rank of 6.5.

Examining the frequencies between the two groups, there were 33 incidences related to excluding the actor or meeting participant from the conversation, likely because he was using his mobile phone (see Figure 5.8 for a visual example), and 26 attempts to include him in the conversation, even though he was looking at his mobile phone (see Figure 5.9 for a visual example). One possible reason for including the actor in their conversation could be that participants wanted to get his attention as a way of asserting themselves regarding the meeting's importance. Burgoon, Buller, Hale, and

DeTurck's (1984) research recruited 150 participants to view a video of a male and female engaged in a conversation during which they conveyed five cues (i.e., eye contact, proximity, body lean, smiling, and touch). The analysis found that eye contact was one of the indicators of trust, greater immediacy, dominance, and aggressiveness. As for my research, another possibility why meeting participants made eye contact was that the meeting participants wanted to be polite and ensure that everyone (including the actor) was included in on the conversation, regardless of what each person was doing during the conversation. A possible reason for participants' excluding the actor from the conversation could be because they were frustrated that the actor was receiving text messages, and not contributing to the meeting, so they focused their attention on individuals who were attentive. Another possibility could be that when the actor received text messages, he no longer made eye contact with the others, so participants focused on individuals who were still engaged in the meeting. Five incidences of the actor receiving a text did not fall into any of the two categories because when the actor received a text message, the other participants were not communicating with each other; they were either reading or writing, so no eye contact was made with anyone. No incidences were recorded when participants paused the conversation to wait for the individual to end his mobile device use.



**Figure 5.8. As the actor checks his phone, the two participants (left and center) exclude him from their conversation by turning their heads and avoiding eye contact with him**



**Figure 5.9. As the actor checks his phone, the two participants (left and center) include him in their conversation by turning their heads and maintaining eye contact with him**

Only one incidence was recorded of the meeting conversation changing due to the actor using his phone (fifth theme). In the first meeting, after the actor received and read a text message, one participant commented, “I see you haven’t moved on to the smartphones.” The actor responded, “There is just so much technology I want around me.” The participant’s comment occurred after the eighth (and last) text message in the meeting; possibly the participant saw that the actor received a lot a text messages and could benefit from a smartphone compared to the feature phone being used, or he was trying to get the actor’s positive attention. More research is required to assess whether this type of behaviour is more common that was found during this research, and to determine its underlying reasons.

The sixth theme related to participants’ non-verbal reactions to the actor’s verbal outbursts. From the eight meetings, the actor produced a total of 40 reactions: 24 positive, 16 negative, and 24 neutral reactions. Thirty-seven reactions produced by the participants as a result of the actor’s reactions were neutral. Only three incidences occurred in which participants produced a positive reaction (e.g., smiled or chuckled) to the actor’s positive verbal outburst (see Figure 5.10 – 5.12 for visual examples). Two of the positive reactions occurred in EDTM groups and one occurred in a GTM group. This could suggest that when the actor received a positive text message and produced a positive reaction (i.e., smiled or chuckled), only some participants found the reaction amusing. Further research is required to understand how meeting participants perceive positive and negative verbal reactions from individuals using mobile devices.



**Figure 5.10. Actor produced a positive verbal outburst and participant (left) produced a positive reaction by smiling**



**Figure 5.11. Actor produced a positive verbal outburst and participant (center) produced a positive reaction by smiling**





**Figure 5.12. Actor produced a positive verbal outburst and participant (center) produced a positive reaction by smiling**

The last theme related to any reactions, outside the themes listed above, produced by participants due to the actor's use of his mobile device. As seen in Figure 5.13, an example is a participant looking at the actor's phone as soon as it rang, which is a normal reaction to an audio stimulus (Fels & Weiss, 2000). All meetings had between one and six incidences recorded, for a total of 45 reactions.

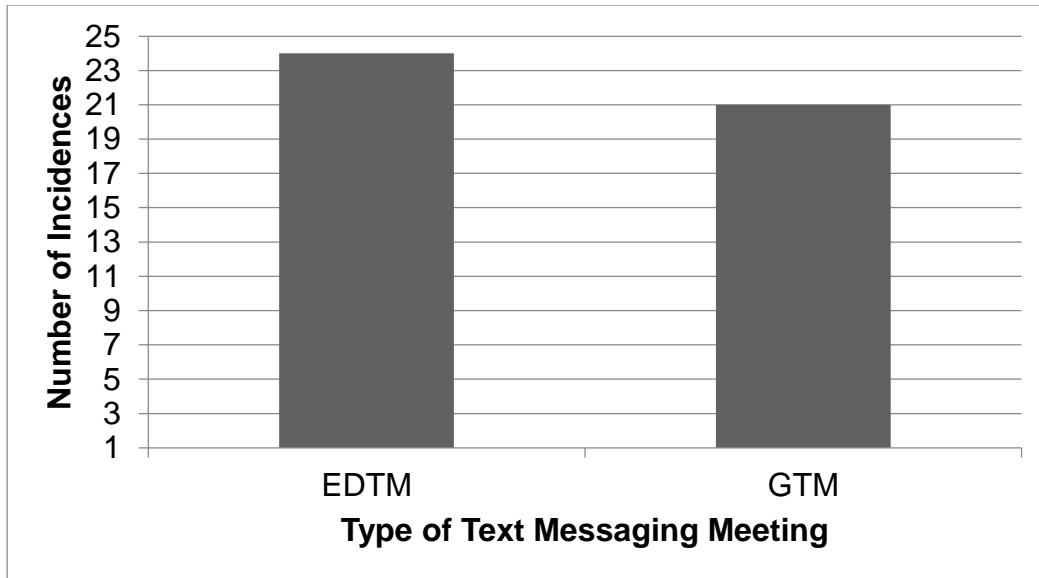
A Mann-Whitney U test was conducted for the normal behaviour incidences and meeting text type (GTM and EDTM groups). There was no significant difference between meeting text type and normal behaviour:  $U=12.5$ ,  $z=-1.12$ ,  $p=0.26$ . The meetings with text messages received in clusters at the beginning and end, had an average rank of 6.06; meetings in which text messages were received evenly distributed throughout, had an average rank of 8.5. Figure 5.14 shows the distribution of these incidences between the two text messaging groups, where the EDTM groups had a

higher occurrence with 24 incidences, and the GTM group had 21. One possible suggestion for the higher occurrence in the EDTM group compared to the GTM group was that text messages arrived on average every 3 minutes (for EDTM), compared to just over a minute (for GTM); participants may not have had the opportunity to get acclimatized to the phone's ringing, so they tended to glance in the direction of the phone immediately when it rang to see what it was. However, there is insufficient data to determine whether there is any real difference.



**Figure 5.13. Example of normal behaviour when a participant (centre) glances at the actor's phone immediately when it rings**





**Figure 5.14. Seventh theme, number of normal behaviour incidences**

In answering research question one, what types of behaviours were exhibited and prominent when text messaging occurs during a meeting, seven themes were identified from the eight meetings. From the seven themes, five dominant behaviours were exhibited and prominent when text messaging occurred during a meeting, as summarized in Table 5.2.

**Table 5.2. Dominant behaviours exhibited in meetings where text messaging occurs**

	Behaviour
1	Participants checked their phone status more than texting or accepting/receiving calls
2	Participants tended to look at the actor a few seconds after a text message arrived
3	As soon as a text message arrived, participants tended to look at the actor's phone. This is considered a normal reaction to an audio stimulus (Fels & Weiss, 2000).
4	Participants justified their phones verbally more than non-verbally.
5	When the actor received a text message, participants tended to exclude him from the meeting conversation.

When meeting participants interacted with their mobile phones, they tended to check their mobile phone status more than texting or accepting/receiving calls, possibly suggesting that they viewed the act as less obtrusive, or saw the actor use his phone and thought it was acceptable. Future research should investigate if the act of checking smartphone status is disruptive for meeting participants.

The second prominent behaviour exhibited by meeting participants was that when a text message was received by another meeting participant, others tended to glance at that individual interacting with his or her phone for a few seconds. This behaviour may be the result of participants being curious about the content of the message that the actor received, or that they were trying to indicate to the message recipient that they had noticed the interruption. Stiefelwagen (2002) recorded four participants engaged in a meeting all wearing eye-tracking equipment. His analysis found that direct eye gaze and head orientation was a reliable indicator (89% of the time) of attention or focus. Again, because the motivation behind the behaviour of looking at the participant receiving the message is undocumented in the literature, future research is required for better understanding. For example, a study could investigate why participants look at others who are interacting with their mobile phones, and the impact on participants.

The third behaviour consisted of participants looking at the actor's phone as soon as it emitted an audible sound, possibly suggesting that participants were startled at the sound. Because this phenomenon is a natural reaction to sound, it is unclear what impact it has on meeting effectiveness and efficiency. Research conducted by Fels and

Weiss (2000) found that flashing lights and sound emitting from a device was the quickest and most advantageous way of attracting attention. The actor's phone, which was always on the table facing up when not in use, emitted a flashing light through a small LED, as well as turning the LCD screen on, while producing the sound. The combination of the sound and LED, as well as the LCD turning on, might have elicited a quick response from the participants. Future research should investigate the impact of phone sounds on meeting participants, and their ability to participate in that meeting. A comparison with vibration instead of sound may also shed light on the level of disruption caused by phone sounds.

The fourth behaviour related to justification of phone interaction. When some of the participants interacted with their phones, they seemed to need to justify their use verbally, rather than non-verbally. One possible reason could be that participants viewed their text message or phone call as important, so they justified to others why they had to answer the call or read the text message, and disengaged from the meeting.

The last behaviour exhibited by meeting participants was conversation exclusion. When a text message was received by the actor, the rest of the meeting participants physically turned away from him, excluding him from the conversation, possibly suggesting that they were: 1) indicating their displeasure with the interruption; 2) giving the actor some privacy or auditory separation; or 3) isolating the meeting conversation from the actor's conversation. Research conducted by Iqbal, Grudin and Horvitz (nd) found that speakers in meetings tended to ignore individuals who used laptops and smartphones in meetings, as long as those individuals were not distracting the speaker.

Future research is required to determine if group dynamics or cohesion is affected when someone is excluded from the meeting.

In answering research question two, regarding the types of behaviours that appeared in the two different types of meetings (summarized in Table 5.3), it appears that participants in the EDTM group of meetings interacted with their mobile devices more often, but in a less obtrusive way; they spent more time checking the status of their phones, rather than using them for communication. Of the five occurrences of checking smartphone status, four occurred in EDTM group meetings. The participants in the GTM group of meetings tended to produce more verbal and non-verbal cues regarding the actor's, and their own, phone use. When the actor received a text message, participants tended to give non-verbal gestures (i.e., gaze at the actor, possibly to get his attention or show their disapproval of his actions), and give verbal justification of their own use, possibly to justify why they had to interrupt the meeting.

**Table 5.3. Behaviours associated with EDTM and GTM meetings**

<b>EDTM Behaviours</b>	<b>GTM Behaviours</b>
Participants frequently checked their phone status.	A few seconds after a text message arrived, participants tended to look at the actor.
As soon as a text message arrived, participants tended to look at the actor's phone.	Participants frequently verbally justified their phone use.
	When a text message arrived, participants often included the actor in their conversation.

### 5.1.2 Questionnaire Results

Due to the low number of participants, all 5-point Likert scale questions were reduced to a 3-point Likert scale for chi-square analysis as recommended by Jacoby

and Martell (1971). A chi-square analysis was conducted on the compressed data to determine if the observed data differed from chance on questions related to: (1) when it was appropriate to use Blackberrys, iPhones, and cell phones in meetings using a 3-point Likert scale, where 1 was always and 3 was never; (2) making personal and work voice calls during a meeting, using a 3-point Likert scale, where 1 was “I make/accept phone calls all the time” and 3 was “I never make/accept phone calls”; and (3) sending personal and work-related text messages during meetings, using a 3-point Likert scale where 1 was “I text message all the time” and three was “I never text message.”

Significant results are reported to a type 1 error probability of  $p < 0.05$ , where two degrees of freedom were reported in all significant results. Table 5.4 shows the significant results.

**Table 5.4. Chi-square value, mean, and standard deviation of questions related to mobile device use in meetings. Responses were given using a compressed 3-point Likert scale, where 1 was always and 3 was never.**

Question	$\chi^2$ value	Mode	N	<i>M</i>	SD
Blackberry	0.85	3	16	2.25	0.93
iPhone	0.62	3	17	2.24	0.97
Cell Phone	0.54	3	17	2.12	0.99
Work voice calls during meeting	0.42	2	14	2.29	0.61
Personal voice calls during meeting	0.15	3	11	2.82	0.41
Work texting during meeting	0.09	2	16	2.38	0.5
Personal texting during meeting	0.34	3	9	2.89	0.33

A crosstab analysis was also conducted to determine whether there were correlations between: (1) the demographic information (e.g., sex and employee department); (2) the acceptability of making and accepting personal and work calls during meetings; and (3) the acceptability of texting personal and work messages during

meetings. Participants rated acceptability on a 3-point Likert scale where 1 was “always” and 3 was “never”.

Significant results are reported to a type 1 error probability of  $p < 0.05$ , with two degrees of freedom. The significant results are reported in Table 5.5. Not all of the demographic categories used in Chapter 4 (i.e., age, company size, position, and department) were analysed due to a low data set.

**Table 5.5. Cramer's V value for voice calls and text messaging during meetings, with very strong relationships shown in bold.**

Question	Cramer's V Value	
	Sex	Department
Attitude toward work calls	<b>0.34</b>	<b>0.42</b>
Attitude toward personal calls	<b>0.43</b>	<b>0.59</b>
Attitude toward work texting	<b>0.42</b>	0.16
Attitude toward personal texting	<b>0.31</b>	<b>0.37</b>

A strong positive relationship between gender and making/receiving phone calls and text messaging during meetings was recorded. Females tended to rate making/receiving work-related ( $M=1.5$ ,  $SD=0.519$ ) and personal ( $M=1.45$ ,  $SD=0.522$ ) phone calls as more unacceptable compared with males. For texting in meetings, males tended to rate work-related ( $M=1.44$ ,  $SD=0.512$ ) and personal ( $M=1.44$ ,  $SD=0.527$ ) texting in meetings as being more unacceptable than females. This data seems to contradict what occurred in the video recorded meetings. Five participants in five meetings interacted with their phones (i.e., checking phone status, texting, or receiving a phone call); three of them were males and two were females. This could suggest that meeting participants' attitudes toward texting and accepting/making phone calls is

different from their behaviours. A larger-scale study into gender and individuals' behaviours of accepting/making phone calls and texting is required.

There was a strong positive relationship between departments and making/receiving phone calls and text messaging during meetings. Individuals who worked in the operations department tended to rate making/receiving work-related voice calls ( $M=5.0$ ,  $SD=1.83$ ) more acceptable compared to other departments. These results are similar to the results from Chapter 4, in which individuals who worked in operations tended to rate texting important work-related messages during meetings as acceptable. These activities (i.e., texting and talking on the phone) are similar, since they involve synchronous communication with someone outside the meeting.

### **5.1.3 Limitations**

In this study, there were only 17 participants. As a result, many statistical analyses were invalid and generalizations were not possible. In addition, most of the demographic categories considered in Chapter 4 were not available for analysis due to low participant numbers (e.g., age only had one group, 18-29, and duration of participants' employment only had two groups). However, the limited data did reveal five themes. A larger and broader participant sample may verify the trends found in this study.

All meeting participants came together as strangers for only one 30-minute meeting. While this type of meeting is common (Volkema & Niederman, 1995), other types of meetings could be explored. Future research should investigate the impact of mobile phone use in different types of meetings, for example, in meetings that are longitudinal (e.g., span over several weeks or months), or meetings with larger

participant numbers, or in which meeting participants know each other or have become accustomed to each other. Meetings among colleagues who are familiar with each other may produce different results. In her study of staff who knew each other from 24 elementary schools, Bulach (1993) found a positive relationship between openness and trust with colleagues. Meeting participants who have grown to trust one another tended to be more open. As for my research, if meeting participants knew each prior to the meeting and had a cohesive bond, they might have used their mobile devices more often or made more verbal comments about individuals using their mobile devices.

Since all the meetings were video recorded, meeting participants may not have behaved normally, and may have adjusted their behaviour due to the cameras in the room. Future research could attempt to video record meetings without the participants' knowledge, in order to capture normal behaviour, but this may create serious ethical issues and/or withdrawal of data by participants upon learning of the recordings. Recording participants over longer timeframes may allow them to become accustomed to video cameras in all meetings, and may normalize their behaviours.

The questionnaires that participants completed at the end of each meeting did not ask about the content of any text messages or phone calls made or received. This would have provided an opportunity to find out why participants texted during the meeting. Future research should investigate the content of meeting participants' text messages sent or received during the meeting, to determine whether they are meeting-related.



## 5.3 CONCLUSION

This chapter reported the results from eight video-recorded meetings that took place in the fourth quarter of 2012. The main purpose of this study was to observe meeting participants' behaviours toward mobile phones used in actual (but semi-controlled) meeting situations. An actor was used to simulate an individual sending and receiving eight text messages throughout the thirty-minute meetings. Analysis of the eight meetings revealed seven themes when the participant or actor used his or her mobile phone:

- 1) Participants tended to look at the actor's phone a few seconds after it rang, indicating that they might be annoyed or curious about the text's content.
- 2) Participants' phone activities consisted of checking their phones, text messaging, or accepting/receiving a phone call.
- 3) Participants justify their interaction with their phone either verbally or non-verbally.
- 4) Changing conversation direction (i.e., physically moving one's head, body, or eyes to include or exclude the actor in the conversation).
- 5) Changing meeting conversation topic because the actor was using his mobile phone.
- 6) Participants' reactions to the actor's reaction to a text message.
- 7) Participants' normal reactions in response to the actor's mobile phone auditory activation (considered an auditory stimulus).

These seven themes were used to examine participants' dominant behaviours during meetings when mobile devices are used. Five prominent behaviours resulted from the eight meetings:

- 1) Participants checked their phone status more than texting or accepting/receiving a call.
- 2) A few seconds after a text message arrived, participants tended to look at the actor.
- 3) As soon as a text message arrived, participants tended to look at the actor's phone. This was in response to the auditory interruption, rather than being a unique response to a mobile phone.
- 4) Participants justified their phone use verbally more than non-verbally.
- 5) When a text message arrived, participants tended to exclude the actor from the meeting conversation.

Two text message strategies were used for the meetings. In four of the meetings, text messages arrived in two clusters (i.e., five text messages at the beginning and three at the end), while for the remaining four meetings, text messages arrived evenly distributed throughout the meeting. For meetings where text messages were clustered, three behavioural differences were noted: (1) a few seconds after a text message arrived, participants tended to look at the actor more often; (2) participants justified their own phone use (verbally and non-verbally) more often; and (3) when a text message arrived, participants included the actor into the conversation more often. In the evenly distributed meeting text message meetings: (1) participants checked their phone status

more often, and (2) they tended to look at the actor's phone more often as soon as a text message arrived, compared to clustered text meetings.

What this data suggests is that participants in the clustered grouping of text messages group of meetings tended to produce more verbal and non-verbal cues regarding the actor and their own phone usage. When the actor received a text message, participants tended to give a non-verbal gesture, such as gazing at him, or when participants used their own mobile phones, they tended to provide a verbal justification for their own use. Participants in the evenly distributed text messages group of meetings interacted with their mobile devices more often, but on a less obtrusive level by checking their phone status.

The following chapter will draw together and discuss the findings from the two surveys, as well as the meeting analysis, answer the main research questions posed in chapter one, and provide a conclusion to this dissertation.

# CHAPTER 6 SUMMARY DISCUSSION & CONCLUSION

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## 6.0 INTRODUCTION

This chapter will begin with section 6.1, a summary discussion related to research question 1 and 2. Section 6.2 will list the contributions from the two studies and the connection to the Technology Acceptance Model. Section 6.3 (conclusion) will recap the methodology and results from both studies. Section 6.4 will list five future research suggestions. The chapter will conclude with section 6.5 with some final words.

## 6.1 SUMMARY DISCUSSION

### 6.1.1 RESEARCH QUESTION 1

Considering the results from both surveys in the context of research question one, there are some confirmatory trends. The survey data seem to indicate that meeting participants use mobile devices for meeting management and communication, specifically to track time and conduct work-related tasks or monitor emergencies. Laptop usage is accepted, and using mobile phones for communication within meetings is more acceptable than it was in the past. The perception of text messaging or making/receiving calls during meetings is becoming more acceptable, especially when used for work-related tasks. Lastly, depending on a person's position within the organization, and the department to which he or she belongs, there is an increased acceptability of using mobile phones for related tasks in meetings. This trend seems to indicate that higher-ranked individuals and individuals whose jobs entail managing day-to-day company operations, view mobile phone use as acceptable.

In survey two, the data gathered supported the findings from survey one. As an example, the data showed that in a two-year span, support doubled for using mobile phones in meetings for emergencies. Furthermore, survey results from the 17 meeting participants in the second study, confirmed what the second survey suggested; people in charge of day-to-day operations in an organization viewed using mobile phones as more acceptable than other departments.

This increased support for mobile phones, could suggest that meeting participants have accepted mobile phone use to support decision-making in meetings.

### **6.1.2 RESEARCH QUESTION 2**

The results from the two surveys demonstrated that, over time, meeting participants are more accepting of the use of mobile technologies in meetings. However, certain activities, such as text messaging, were not universally accepted by all levels of employees. The second stage of my research was prompted by the need to explore the actual behaviours exhibited by meeting participants toward text messaging in meetings. Access to actual meetings in organizations proved to be a significant barrier due to privacy concerns, as well as providing too many uncertain variables that would influence the research, such as the meeting environment, the frequency of text messages, and the power distribution among participants, all of which were reported as important in the surveys. To focus on one factor, text messaging, and keep as many other factors constant or controlled, eight mock meetings were conducted to observe the behaviours of individuals when one of the meeting participants sent/received text messages throughout the meeting.

The data results indicated that when a meeting participant received text messages evenly distributed in time throughout a meeting, the remaining meeting participants tended to use their mobile phones as well, but in a subtle manner, such as keeping their mobile phones under the table for a few seconds while checking their phone status. This may indicate that participants are more accepting of mobile phone use when others use their phones infrequently. However, when a meeting participant received a cluster of text messages, the remaining meeting participants who used their mobile phones, verbally acknowledged to the other participants their own mobile phone use, as well as providing negative non-verbal cues (e.g., gazing at the individual in hopes of getting his attention) toward the individual receiving the cluster of messages. This seems to indicate that when mobile phones are used in meetings for longer durations, other participants start using their own mobile phones as well.

Factors that may contribute to meeting participants using their mobile phones in meetings are intrinsic motivators. Davis, Bagozzi, and Warshaw (1992) found that intrinsic motivators had a significant effect on people's motivation to use technology in the workplace. The pleasure of using their mobile phones might explain why meeting participants started to use their phones during the meeting. From the questionnaire data, over 70% self-reported being advanced mobile phone users, using their mobile phones five or more times a day for numerous functions, indicating that mobile phone use might be a pleasurable act.

This behaviour can be explained with support from Ajzen and Fishbein's (1973, 1975) theory of reasoned action (TRA), that states that an individual's behaviour is driven by their own behaviour intentions, which in turn is driven by: (1) their attitude

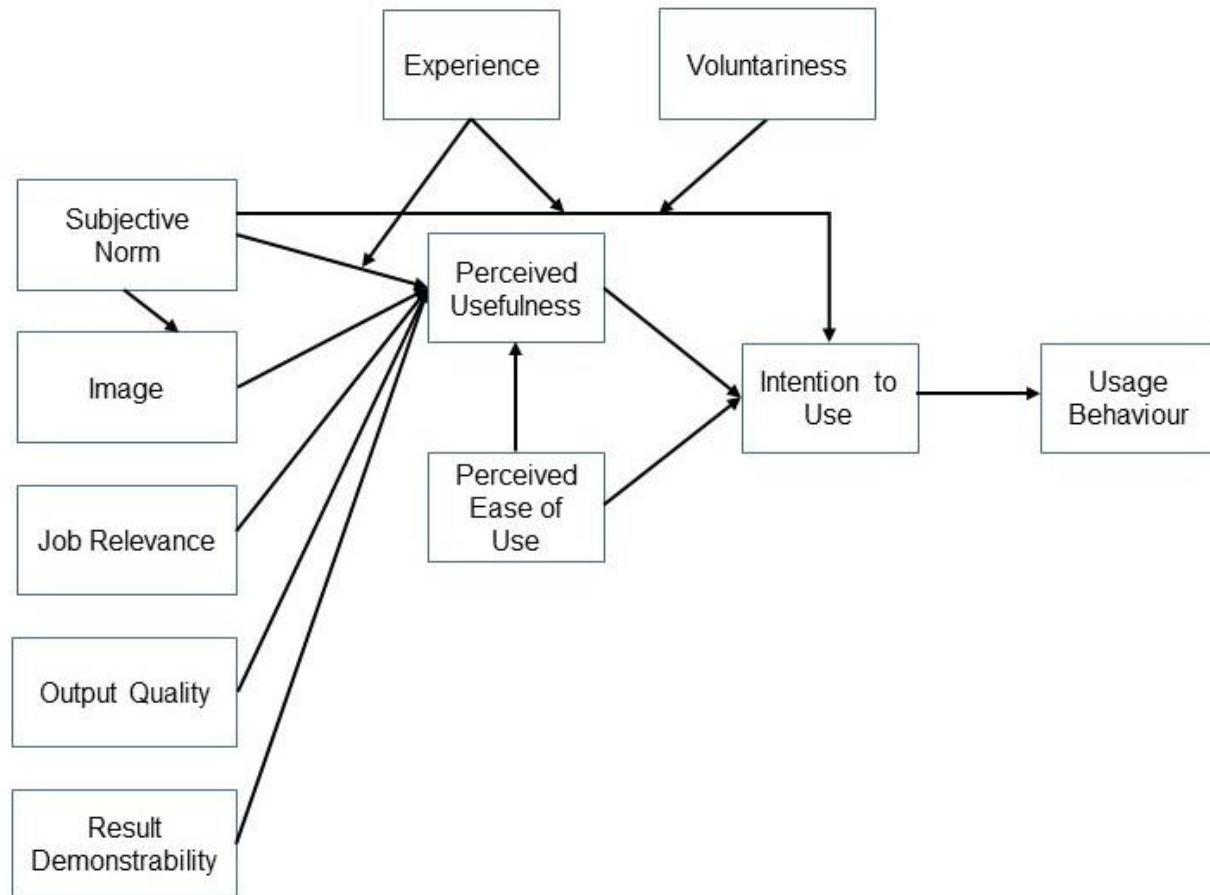
toward the action; and (2) their subjective norms. Based on this theory, when meeting participants viewed the actor using his phone frequently, they viewed his behaviour as acceptable, so they used their mobile phones as well. The survey data supports this; meeting participants would more likely use their mobile phones if co-workers or subordinates were present in the meeting, compared to superiors. Since everyone in the meetings could be considered at the same “level,” or not having any hierarchical power, meeting participants may have believed that the other participants were peers, and that using their mobile phones would be acceptable.

Support for this behaviour is also found in Structuration theory (ST). ST is a process by which rules or behaviours are produced and reproduced through an individual’s experiences (Giddens, 2013; Poole, Seibold, & McPhee, 1996). It suggests that when individuals join groups, they use rules or behaviours that they have learned from previous groups to structure their current behaviour, and their current behaviour ultimately changes the current group’s behaviour. In my research, some meeting participants were accustomed to using mobile phones from previous meetings, and brought those behaviours to the current meeting. The questionnaire results from the meeting participants indicated that 56% of respondents attended two or more meetings per week, and 65% stated that they would use their smartphones sometimes or always in meetings. As well, seeing the actor use his phone contributed to the group’s behaviour by indicating that one of the behaviours or rules for the group was that using mobile phones during meetings was acceptable. When the actor (or any meeting participant) used his phone to send/receive text messages, it may have seemed to the others that he was signaling his intentions or desires to the group that the act of using

mobile phones was acceptable. Habermas (1989) theorized that individuals do not communicate in order to satisfy their desires, but rather to make known a desire or intention. People do not aim to satisfy their own desires, but rather to disclose them, so others can decide to respond by reacting, helping, or hindering those intentions. It would appear that for the case of mobile phones being used in meetings, when the text messages arrived in clusters, participants reacted by using their own mobile phones.

The technology acceptance model (TAM) proposed by Davis (1986, 1989) states that the actual use of a device is based on the individual's behaviour intentions, which in turn are based on: (1) perceived usefulness of the device, and (2) perceived ease of use (see figure 6.1).

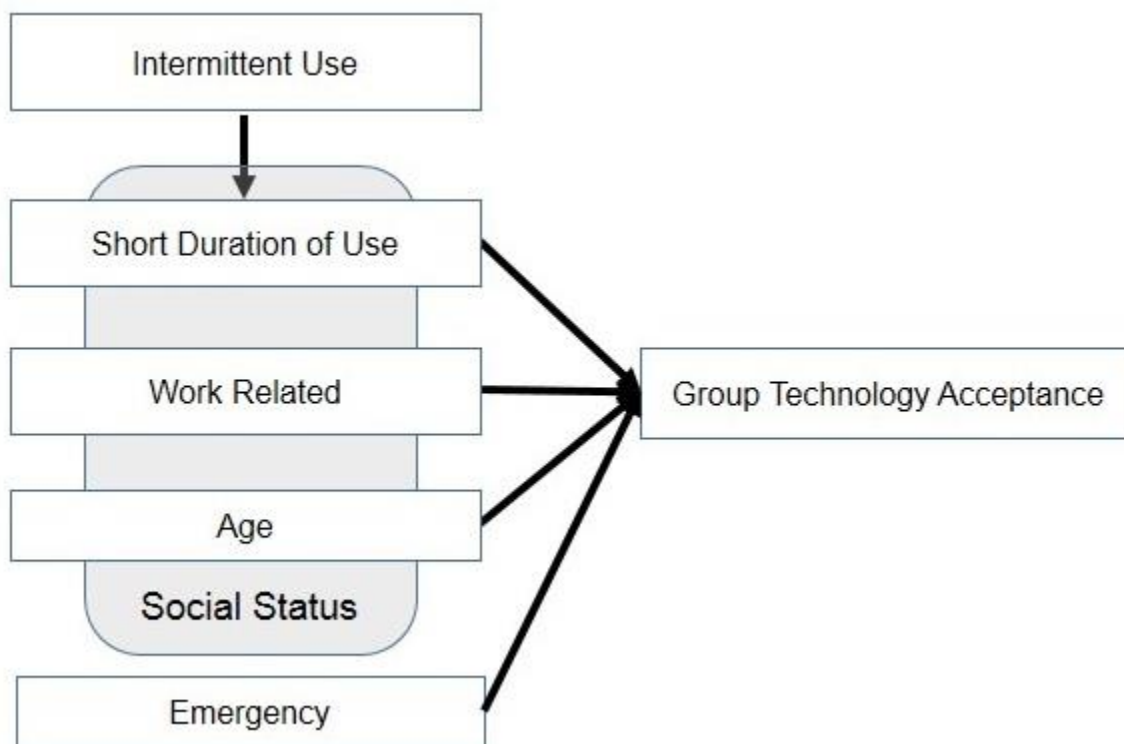




**Figure 6.1 Technology Acceptance Model 2 Proposed by Venkatesh & Davis (2000).**

The TAM model explains how individuals accept and use technologies (e.g., mobile phones), which are based on being useful and easy to use. Using this model, it seems that meeting participants have accepted using laptops and mobile phones in meetings because they may have realized that these devices can be useful support tools during meetings. For example, meeting participants self-reported that they use their mobile phones to check the time, and use certain applications to support their work. Another factor that might contribute to mobile phone acceptance is the different types of individuals present in meetings.

What the TAM model does not explain is the use of technologies in group situations. In the case of meetings, personal devices, such as mobile phones are often brought to and used in a group setting for non-group related tasks. Participants in each of my studies suggested that in certain circumstances, having and using a mobile phone is acceptable regardless of its purpose. The TAM model does not seem to allow for a situation in which there is a possibility of, or need for, group acceptability of an individual's personal technology when ease of use or usefulness are not a consideration for that acceptance. What is needed is a model that takes into consideration factors that allow or accept personal technology use in a group environment. For example, Figure 6.2 shows some of the most direct factors that might lead to group technology acceptability arising from my research.



**Figure 6.2. Proposed model for group acceptability for personal use of technology in a group setting**

For the group to accept the use of personal technology devices during meetings, I propose four criteria: (1) that the device use needs to be intermittent and for a short duration; (2) the work relatedness of the device usage; (3) age dependant, younger employees are more accepting; and emergency. Social status plays a background role where the presence of a superior will influence mobile device use.

#### **6.1.2.1 Other Factors Related to Acceptability**

Based on the results of my studies, there are additional indirect, individual, and/or group factors, which are drivers for the acceptability and use of personal mobile devices. These factors include having meeting participants who are not superiors or visitors. As well, the introduction and usage of mobile devices by one individual contributes to mobile device usage by other meeting participants. Age could be another factor. All the meeting participants were between 18 and 29 and, as stated by Schonfeld (2009), younger employees are less likely to be annoyed when mobile phones are used in meetings.

Participants self-reported that they would use their mobile phones less frequently if a visitor or superior was present, compared to co-workers or subordinates. While there was no hierarchical (status) difference between meeting participants in the second study, this lack of status difference could have contributed to a more relaxed environment in which participants felt comfortable using their mobile phones.

## **6.2 CONTRIBUTION**

The purpose of this dissertation was to examine the role mobile technologies play during group meetings in organizations, and to investigate the attitudes toward using specific mobile devices.

The work in this dissertation provides five major contributions:

- 1) The dominant use of mobile technologies in meetings is for tracking time, work-related tasks such as checking email, or using office productivity software such as word processing or spreadsheets, as well as emergency purposes such as making phone calls or sending text messages. As presented in the chapter 2 section 2.2.3.1 Technology Acceptance Model, one of the variables that contributes to perceived usefulness in the TAM 2 model is job relevance. If meeting participants view the use of a mobile device to enhance their job performance, they will use their mobile device. My research revealed that individuals use mobile device for work related purposes.
- 2) The infrequent use of text messaging on mobile devices is more tolerated than when these devices require more attention. Attitudes toward mobile technologies in meetings are changing, so that the presence and use of mobile technologies in meetings is acceptable, under certain circumstances.
- 3) The frequent use of mobile devices will invite more meeting participants to use their mobile phones and acknowledge their use. When a meeting participant engages with his or her mobile phone on a regular basis, other meeting participants engage with their own mobile phones, and verbally justify their use to other meeting participants. The TAM 2 model can explain why when an individual starts using their mobile device during the meeting it will attract others to use their mobile device. The image variable relates to the degree to which the use of a technology is perceived to enhance one's image of status in one's social system. When someone begins using their mobile device during a meeting,

others may perceive that person as important and their use of technology as acceptable, so others will also start using their mobile device.

- 4) Individuals in the operations department of organizations have a more positive view of mobile device usage in meetings. These individuals whose job was to manage the day-to-day operations of the company viewed mobile usage as more acceptable compared to other departments. There was a strong positive relationship between making/receiving phone calls and text messaging during meetings for this department. The job relevance variable in the TAM 2 model helps to understand this contribution. Job relevance states that someone will use technology if the capabilities of the technology will enhance the individual's job performance. An operations individual's job requires constant connection with the day-to-day operations of the organization. These individuals might then view the use of mobile devices in meetings as a form of connection to other individuals and as part of their need to be in constant connection with the rest of the organization.
- 5) Using deception in real meetings as a methodology to study group behaviour, as it relates to mobile technology use, is a unique approach to understanding how groups behave, as most meeting behaviour research has been conducted in laboratory settings or other controlled environments. Deception can be a successful approach to field research into meeting behaviour, as it still provides a somewhat controlled setting.

## 6.3 CONCLUSION

This dissertation examined meeting participants' attitudes and behaviours related to mobile technologies, specifically the impact on meeting participants' attitudes and behaviours when mobile devices, such laptops, tablets, and mobile phones, were used during meetings. Additionally, it examined meeting participants' actual attitudes and behaviours when mobile phones were used during meetings.

To gain a better understanding of the attitudes and behaviours in meetings, a pilot study was conducted during two one-hour meetings. Based on the observations made during these meetings, an online survey with 40 questions was developed to collect quantitative and qualitative data about the attitudes and behaviours of meeting participants toward mobile devices used in meetings. Survey questions sought to answer: (1) what are the attitudes toward having mobile devices in face-to-face meetings; and (2) how mobile devices are being used and adopted in meetings.

The data from the first survey revealed that: (1) meeting participants believed that multitasking, such as working on their laptops and paying attention to the meeting simultaneously, was a commonly adopted activity; (2) the use of laptops during meetings seemed to be more acceptable compared to other mobile devices, such as Blackberrys and iPhones; (3) it was somewhat acceptable to make work-related calls or send text messages that were work-related, or for emergencies, during meetings; and 4) the iPhone was the least supported device by participants and by company policy for use in meetings.

The slightly modified second survey was deployed two years after the first survey to answer the same research questions, and to determine whether attitudes and behaviours toward mobile devices had changed in the two-year span.

The data from the second survey revealed that: (1) the majority of individuals tended to use smartphones in meetings for tracking time, work-related tasks, and emergencies; (2) work-related text messaging was more accepted in meetings compared to the previous survey; (3) meeting participants were somewhat accepting of making work-related emergency calls, and only slightly accepting of calls for personal emergencies; and (4) operations employees and management viewed making/receiving phone calls and text messages in meetings as more acceptable than other departments. Regarding changes over the two years, the data suggested that meeting participants had become more accepting of laptops and feature phones in meetings, and organizations have also become more supportive of iPhone use.

After reviewing the data from surveys I and II, it was determined that more detailed data were required to observe people's actual behaviours in live meetings with mobile phones, to explore their behaviours toward text messaging during meetings. As a result, a study was devised to simulate a meeting scenario in which one individual would receive and send text messages. Eight video recordings of meeting participants were captured and analysed to assess participants' resulting reactions and behaviours. In four of the meetings, text messages arrived in two clusters (i.e., five text messages at the beginning and three at the end of the meeting), while for the remaining four meetings, text messages arrived evenly distributed throughout the meetings.

The data from those meetings suggest that participants in the evenly distributed text messages group interacted with their mobile devices more often, but in less obtrusive ways by checking their phone status. Participants in the clustered grouping of text messages meetings, tended to produce more negative comments (verbal and non-verbal) regarding the actor and their own phone usage. When the actor received a text message, participants tended to give a negative non-verbal gesture, such as gazing at him, or when participants used their own mobile phones, they tended to provide a verbal justification.

In summary it appears that meeting participants multitask in meetings, and are accepting of technology use, such as laptops, in meetings, as well as using mobile phones for text messaging and work-related emergencies. Specifically, they are accepting of short durations of text messaging during meetings, and less accepting of longer durations of text messaging.

## **6.4 FUTURE RESEARCH**

The following are suggestions for future research:

- 1) The use of personal smartphones and other mobile devices in organizational meetings should be compared with organizationally owned mobile devices to determine whether there are differences in use, attitudes, behaviours, and policy interpretation between these groups.
- 2) Future research should investigate what types of information participants text and talk about on their mobile phones during meetings, and whether there is a difference in acceptability dependent on the type of information being communicated. This could be useful to determine how meeting participants view,



and possibly accept, meeting-related, non-meeting but work-related, and personal information being texted or talked about in meetings.

- 3) Future research should investigate if the acts of checking mobile phone status, text messaging, or making/receiving calls, are disruptive for meeting participants, and how they affect group dynamics and individual meeting participants.
- 4) Future research should investigate the attitudes of meeting participants who gaze at other meeting participants who are using their mobile phones, to determine the purpose of this gaze, and how gazers' attitudes affect the group.
- 5) Future research should investigate the impact of mobile phone use in different types of meetings (e.g., ceremonial, general orientation, or round-robin), in meetings that are longitudinal (e.g., span over several weeks or months), and/or meetings in which participants already know each other.

## 6.5 FINAL WORDS

The findings of the research conducted for this dissertation revealed that the attitudes toward using certain mobile devices, such as laptops and feature phones, in meetings, have changed; these devices are becoming more acceptable, and short durations of their use are well tolerated. However, more longitudinal studies with different types of meetings and organizations are necessary to make definitive conclusions pertaining to all meetings. The lack of substantial 5-point Likert restricted factor analysis examination, future research should incorporate questions related to attitude and behaviour in a 5 or 7 point Likert scale. Although my research specifically examined mobile phone use in forum meetings, considerable work remains to be done to answer questions such as, are mobile phone activities during meetings disruptive for

the group, what types of information are meeting participants communicating during meetings with their mobile phones, and what are the attitudes and behaviours of meeting participants in other types of meetings when mobile phones are used.

## REFERENCES

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- Adams, J. (2013). Anonymity and Group Task-Conflict in GDSS Supported Meetings. *American Academic & Scholarly Research Journal*, 5(3).
- Adler, R. (2008). The Landscape of Texting4Health. *Fogg BJ and Adler R (Eds.) Texting*, 4, 9-19.
- Ajzen, I. (1985). *From intentions to actions: A theory of planned behavior*. In J. Kuhl, & J. Beckmann (Eds.), Springer series in social psychology (pp. 11-39). Berlin: Springer.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Ajzen, I., & Fishbein, M. (1973). Attitudinal and normative variables as predictors of specific behavior. *Journal of personality and Social Psychology*, 27(1), 41.
- Allen, J. A., Rogelberg, S. G., & Scott, J. C. (2008). Mind Your Meetings: Improve Your Organization's Effectiveness One Meeting at a Time. *Quality Progress*, 41(48).
- Apple (nd). *What will your verse be?* Retrieved January 18, 2014 from <http://www.apple.com/your-verse/#video-your-verse>.
- Babbie, E. R. (1973). *Survey research methods*. Belmont, CA: Wadsworth.
- Bailyn, L. (1988). Freeing work from the constraints of location and time. *New technology, work and employment* 3(2), 143-152.
- Baran, S., J. & Davis, D., K. (2000). *Mass communication theory: Foundations, ferment, and future*. California: Thomas Learning.
- Barker, A. (1997). *30 Minutes before a meeting*. New York: Kogan Page.

- Baroudi, J. J., Olson, M. H., & Ives, B. (1986). An empirical study of the impact of user involvement on system usage and information satisfaction. *Communications of the ACM*, 29(3), 232-238.
- Beck S., & Keyton J. (2009). Perceiving strategic meeting interaction. *Small Group Research* 40(2): 223–46.
- Begole, J., Rosson, M. B., & Shaffer, C. A. (1999). Flexible collaboration transparency: supporting worker independence in replicated application-sharing systems. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 6(2), 95-132.
- Benbasat, I., & Dexter, A. S. (1986). An investigation of the effectiveness of color and graphical information presentation under varying time constraints. *MIS quarterly*, 59-83.
- Benbunan-Fich, R., & Truman, G. E. (2009). Technical opinion Multitasking with laptops during meetings. *Communications of the ACM*, 52(2), 139-141.
- Benhabib, S. (1992). *Models of public space, habermas and the public sphere*. Cambridge MA. MIT press.
- Bennington A., Shetler J., & Shaw, T. (2003). Negotiating order in inter organizational communication: discourse analysis of a meeting of three diverse organizations. *Journal of Business Communication* 40(2): 118–43.
- Beurer-Zuellig, B., & Meckel, M. (2008, January). Smartphones enabling mobile collaboration. In *Hawaii International Conference on System Sciences, Proceedings of the 41st Annual* (pp. 49-49). IEEE.
- Bijker, W. (1987). The social construction of bakelite: Toward a theory of invention. In *The social construction of technological systems: New directions in the sociology*

- and history of technology, edited by Wiebe Bijker, Thomas Hughes, and Trevor Pinch, 17-50. Cambridge, MA: MIT Press.
- Bloor, D. (1976). *Knowledge and Social Imagery*. London: Routledge and Kegan Paul.
- Boden, D. (1994). *The business of talk. Organizations in action*. Cambridge, UK: Polity.
- Boyer, E. W., Fletcher, R., Fay, R. J., Smelson, D., Ziedonis, D., & Picard, R. W. (2012). Preliminary efforts directed toward the detection of craving of illicit substances: the iHeal Project. *Journal of Medical Toxicology*, 8(1), 1-5.
- Brandenburg, S. E. (2008). *Conducting effective faculty meetings*. Unpublished doctoral dissertation, Edgewood College, Maddison, Wisconsin.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Brey, P. (1997). Social Constructivism for Philosophers of Technology: A Shopper's Guide. *Journal of the society for philosophy and technology* (2)3-4, 56-78.
- Bulach, C. (1993). A Measure of Openness and Trust. *People and Education*, 1(4), 382-92.
- Burgoon, J. K., Buller, D. B., Hale, J. L., & Turck, M. A. (1984). Relational messages associated with nonverbal behaviors. *Human Communication Research*, 10(3), 351-378.
- Campbell (nd). *The first email message*. Retrieved August 18, 2014 from <http://www.cs.umd.edu/class/spring2002/cmsc434-0101/MUIseum/applications/firstemail.html>.

- Campbell, W. S. (2004). Normative Mobile Phone Use in Public Settings. Chicago, IL: Paper presented at the annual meeting of the National Communication Association, November 2004.
- Campbell, S. W. (2006). Perceptions of mobile phones in college classrooms: Ringing, cheating, and classroom policies. *Communication education*, 55(3), 280-294.
- Campbell S. W., & Park, Y. J. (2008). Social implications of mobile telephony: The rise of personal communication society. *Sociology Compass*, 2(2), 371-387.
- Campbell, W. S., & Russo, T. C. (2003). The social construction of mobile telephony: An application of the social influence model to perceptions and uses of mobile phones within personal communication networks. *Communication Monographs*, 70(317-334).
- Caporael, R.L., & Xie, B. (2003). Breaking Time and Place: Mobile Technologies and Reconstituted Identities. pp. 219–32 in *Machines that Become Us: The Social Context of Communication Technology*, edited by James E. Katz. New Brunswick, NJ: Transaction Publishers.
- Carletta, J., Ashby, S., Bourban, S., Flynn, M., Guillemot, M., Hain, T., & Wellner, P. (2006). The AMI meeting corpus: A pre-announcement. In *Machine learning for multimodal interaction* (pp. 28-39). Springer Berlin Heidelberg.
- Carlsson, C., Carlsson, J., Hyvonen, K., Puhakainen, J., & Walden, P. (2006, January). Adoption of mobile devices/services—searching for answers with the UTAUT. In *System Sciences, 2006. HICSS'06. Proceedings of the 39th Annual Hawaii International Conference on* (Vol. 6, pp. 132a-132a). IEEE.

- Cartwright, D. & Zander, A (eds.) (1968) *Group dynamics: research and theory* 3e. London: Tavistock Publications.
- Cellular-news.com, (2008). *Countries that ban cell phones while driving*. Retrieved February 23, 2014 from [http://www.cellular-news.com/car\\_bans/](http://www.cellular-news.com/car_bans/).
- Chandler, D. (1996a). Shaping and being shaped. *CMC Magazine* 3(2). Retrieved April 7, 2009 from <http://www.december.com/cmc/mag/1996/feb/chandler.html>.
- Chandler, D. (1996b). *Engagement with media: Shaping and being shaped*. Retrieved April 7, 2009 from <http://users.aber.ac.uk/dgc/determ.html>.
- Conferencing, M. (2001). Meetings in america: A study of trends, costs and attitudes toward business travel, teleconferencing, and their impact on productivity. *A network MCI Conferencing White Paper*.
- Cooper, M. *Encyclopedia of World Biography*. 2008. Retrieved August 16, 2014 from Encyclopedia.com: <http://www.encyclopedia.com/doc/1G2-2506300048.html>
- Daft, R. & Lengel, R. (1986) Organizational information requirements, media richness and structural design. *Management Science* 32, (5), pp. 554-572.
- Davis, F. D. (1986). *A technology acceptance model for empirically testing new end-user information systems: Theory and results*. (Doctoral dissertation, Sloan School of Management, Massachusetts Institute of Technology).
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-339.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management science*, 35(8), 982-1003.

- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of applied social psychology*, 22(14), 1111-1132.
- Deal, T.E., & Kennedy, A.A., (2000). *Corporate Cultures, the Rites and Rituals of Corporate Life*. 2nd ed. Cambridge, UK: Perseus.
- DeGusta, M. (2012). *Are Smart Phones Spreading Faster than Any Technology in Human History?* Retrieved on March 11, 2014 from <http://www.technologyreview.com/news/427787/are-smart-phones-spreading-faster-than-any-technology-in-human-history/>.
- Dennis, A. R., Garfield, M. J., & Reinicke, B. (2003). A script for group development: Punctuated equilibrium and the stages model. Retrieved February, 28, 2014 from [http://www.researchgate.net/publication/238474184\\_A\\_Script\\_for\\_Group\\_Development\\_Punctuated\\_Equilibrium\\_and\\_the\\_Stages\\_Model/file/72e7e5298c6382a9ea.pdf](http://www.researchgate.net/publication/238474184_A_Script_for_Group_Development_Punctuated_Equilibrium_and_the_Stages_Model/file/72e7e5298c6382a9ea.pdf).
- De Leo, G., & Leroy, G. (2008, June). Smartphones to facilitate communication and improve social skills of children with severe autism spectrum disorder: special education teachers as proxies. In *Proceedings of the 7th international conference on Interaction design and children* (pp. 45-48). ACM.
- Dickson, G. W., DeSanctis, G., & McBride, D. J. (1986). Understanding the effectiveness of computer graphics for decision support: a cumulative experimental approach. *Communications of the ACM*, 29(1), 40-47.



- Dignan, L. (2013). *Tablet market to be dominated by small screens, says IDC*. Retrieved January 3, 2014 from <http://www.zdnet.com/tablet-market-to-be-dominated-by-small-screens-says-idc-7000015962/>.
- Dix, A. J., Sheridan, S., Lock, G. (2004). *absent Presence*. Position paper for EQUATOR Record and Reuse workshop, UCL, London, 12-13 February 2003. <http://www.hcibook.com/alan/papers/absent-presence-2004/>.
- Doyle, M., & Straus, D. (1976). *How to make meetings work: the new interaction method*. New York: Wyden Books.
- Doyle, M., & Straus, D. (1993). *How to make meetings work: The new interaction method*. New York: Brekley Books.
- Drengson, A. R. (1995). *The practice of technology: Exploring technology, ecophilosophy, and spiritual disciplines for vital links*. SUNY Press.
- Duggan, M., & Rainie, L. (2012). *Cell phone activities 2012*. Washington, DC: Pew Researcher Center's Internet & American Life Project.
- Dunn, L. (1991). Faculty meetings have a new twist. *Elementary School Guidance & Counseling*, p. 158.
- Ellul, J. (1964). *The technological society*. New York: Vintage.
- Feldman, M.S., & Pentland, B.T. (2003). Reconceptualizing organizational routines as a source of flexibility and change. *Administrative Science Quarterly* 48(1): 94–18.
- Fingas, J. (2013). *Cracking up: a brief history of BlackBerry's fall from smartphone dominance*. Retrieved December 19, 2013 from <http://www.engadget.com/2013/11/05/broken-blackberry/>.
- Fink, A. (2002). *How to ask survey questions* (Vol. 4). Sage.

- Finnegan, R. (1988). *Literacy and Orality: Studies in the Technology of Communication*. Oxford: Basil Blackwell.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*.
- Forsyth, D. R. (1990). *Group Dynamics*, Pacific Grove CA.: Brooks/Cole Publishing.
- Fortunati, L. (2003). The Mobile Phone and Self-presentation. Paper presented at the Front Stage/Back Stage: Mobile Communication and the Renegotiation of the Social Sphere Conference, Grimstad, Norway.
- Frey, L., Botan, C. H., & Kreps, G. (2000). *Investigating communication*. NY: Allyn & Bacon.
- Furst, S. A., Reeves, M., Rosen, B., & Blackburn, R. S. (2004). Managing the life cycle of virtual teams. *The Academy of Management Executive*, 18(2), 6-20.
- Galbreath, S. C., & Long, C. S. (2004). Remember your manners when using technology. *CPA Journal*, 74, 10-11.
- Gehlen, A. (2003). A philosophical-anthropological perspective on technology. In (Ed.), *Philosophy of technology: The technological condition* (pp. 213-220). John Wiley & Sons.
- Gergen, K. (2002). The challenge of the absent presence. In J.Katz & M. Aakhus (Eds.), *Perpetual contact: Mobile communication, private talk, public performance*. Cambridge University Press, 227-241.
- Gersick, C. J. (1988). Time and transition in work teams: Toward a new model of group development. *Academy of Management journal*, 31(1), 9-41.

- Gibson, J. J. (1966). *The senses considered as perceptual systems*. Boston: Houghton Mifflin.
- Giddens, A. (2013). *The constitution of society: Outline of the theory of structuration*. John Wiley & Sons.
- Girin, L., Schwartz, J. L., & Feng, G. (2001). Audio-visual enhancement of speech in noise. *The Journal of the Acoustical Society of America*, 109(6), 3007-3020.
- Greif, I. (1988). *Computer Supported Cooperative Work: A Book of Readings*, Morgan Kaufmann, San Mateo, CA.
- Grudin, J. (1994). CSCW: history and focus. University of California. *IEEE Computer*, 27(5), 19-26.
- Gurak, L., J. (1995). Cybercasting about cyberspace. *CMC Magazine* 2(1). Retrieved August 7, 2013 from <http://www.ibiblio.org/cmc/mag/1995/jan/gurak.html>.
- Habermas, J. (1984). *The theory of communicative action I*. London, Heienmann.
- Habermas, J. (1989). *The structural transformation of the public sphere: An inquiry into a category of bourgeois society*. Cambridge, MA. MIT Press.
- Habermas, J. (1989). *The theory of communicative action: Lifeworld and system: A critique of functionalist reason* (Vol. 2). Beacon press.
- Hallett T., Harger B., & Eder D. (2009). Gossip at work: unsanctioned evaluative talk in formal school meetings. *Journal of Contemporary Ethnography* 38(5): 584–18.
- Hebert, E., A. (1999). Rugtime for teachers: Reinventing the faculty meeting. *Phi Delta Kappan*, 81(3), 219-222.
- Heilbroner, R. L. (2003). Do machines make history? In (Ed.), *Philosophy of technology: The technological condition* (pp. 398-404). John Wiley & Sons.

- Heinen, J. S., & Jacobson, E. J. (1976). A model of task group development in complex organizations and a strategy of implementation. *Academy of Management Review*, 1, 98-111.
- Hellström, J., & Tröften, P. E. (2010). *The innovative use of mobile applications in East Africa*. Swedish international development cooperation agency (Sida).
- Hoerr, T. (2005). Faculty meetings can be worthwhile. *Educational Leadership*, 63(2), 87-89.
- Holden, R. J., & Karsh, B. T. (2010). The technology acceptance model: its past and its future in health care. *Journal of biomedical informatics*, 43(1), 159-172.
- Holmes, J., & Marra, M. (2004). Leadership and managing conflict in meetings. *Pragmatics*, 14(3), 439-462.
- Huber, G. P. (1983). Cognitive style as a basis for MIS and DSS designs: Much ado about nothing? *Management Science*, 29(5), 567-579.
- Hughes, T. P. (1987). The evolution of large technological systems. *The social construction of technological systems: New directions in the sociology and history of technology*, 51-82.
- Iqbal, S. T., Grudin, J., & Horvitz, E. (nd). Divided Attention= Diminished Uptake? Multitasking with Computing Devices at Presentations.
- Ives, B., & Olson, M., H. (1981). Manager or Technician? The Nature of the Information Systems Manager's Job. *MIS Quarterly*, 5(4): 49–63.
- Ives, B., Olson, M. H., & Baroudi, J. J. (1983). The measurement of user information satisfaction. *Communications of the ACM*, 26(10), 785-793.

- Jacoby, J., & Mattel, M. S. (1971). Three-Point Likert Scales Are Good Enough. *Journal of Marketing Research (JMR)*, 8(4).
- Johansen, Robert. 1988. *Groupware. Computer Support for Business Teams*. New York and London: The Free Press.
- Johnson, S. D., Suriya, C., Won Yoon, S., Berrett, J. V., & La Fleur, J. (2002). Team development and group processes of virtual learning teams. *Computers & Education*, 39(4), 379-393.
- Jonas, K. (2011). *City to give iPads a trial run. Desert Dispatch*. Retrieved February 11, 2011 from <http://www.desertdispatch.com/news/city-10285-ipads-run.html>.
- Larsen, K. R., Allen, G., Vance, A., Eargle, D. (Eds.) (2014). *Theories Used in IS Research Wiki*. Retrieved August 11, 2014 from <http://istheory.byu.edu>.
- Leach, D., Rogelberg S., Warr P., & Burnfield, J. (2009). Perceived meeting effectiveness: the role of design characteristics. *Journal of Business and Psychology* 24(1): 65–76.
- Levasseur, R. E. (2000). *Breakthrough business meetings: Shared leadership in action* (2nd ed.). Lincoln, NE: iUniverse.com.
- Ling R (1998). *One can talk about common manners! The use of mobile telephones in inappropriate situations*. Telenor: Telektronikk.
- Ling, R., & Donner, J. (2013). *Mobile phones and mobile communication*. John Wiley & Sons.
- Litan, R. E. (2008). Vital signs via broadband: Remote health monitoring transmits savings, enhances lives. *Better Health Care Together*.

- Llamas, R., Reith, R., & Shirer, M. (2014). *Despite a Strong 2013, Worldwide Smartphone Growth Expected to Slow to Single Digits by 2017*. Retrieved on March 11, 2014 from <http://www.idc.com/getdoc.jsp?containerId=prUS24701614>.
- Katz, E. (2003). A nation of Ghosts? Choreography of Mobile Communication in Public Spaces, in Kristóf Nyíri (ed.), *Mobile Democracy: Essays on society, self & politics*; Passagen Verlag, Vienna, pp. 21–31.
- Kaufman-Scarborough, C. & Lindquist J. (1999). Time management and polychronicity: Comparisons, contrasts and insights for the workplace. *Journal of Managerial Psychology*, 14(3/4), 288-312.
- Kemp, L. J., & Williams, P. (2013). In their own time and space Meeting behaviour in the Gulf Arab workplace. *International Journal of Cross Cultural Management*, 13(2), 215-235.
- Kjellberg, B. J. & E. L. Saxton (2006). How to Avoid Death by Meeting. *The Serials Librarian* 50(1-2): 21-26.
- Klein, H. and Kleinman, D. L. (2002). The social construction of technology: Structural considerations. *Science, technology and human values*. 27(1), 28-52.
- Kleinman, L. (2004, April). Connecting with the absent presence: pervasive technology use and effects on community. In *CHI'04 Extended Abstracts on Human Factors in Computing Systems* (pp. 1037-1038). ACM.
- Kleinman, L. (2007, April). Physically present, mentally absent: Technology use in face-to-face meetings. In *CHI'07 Extended Abstracts on Human Factors in Computing Systems* (pp. 2501-2506). ACM.

- Kleinman, L. (2009, April). Perceived productivity and the social rules for laptop use in work meetings. In *CHI'09 Extended Abstracts on Human Factors in Computing Systems* (pp. 3895-3900). ACM.
- Kleinman, L. (2010). *Physically Present, Mentally Absent? Technology Multitasking in Organizational Meetings*. Unpublished doctoral dissertation, University of Texas at Austin, Austin, United States of America.
- Kohm, B. (2002). Improving faculty conversations [Electronic version]. *Educational Leadership*, 59(8), 31.
- Kottner, J., Audigé, L., Brorson, S., Donner, A., Gajewski, B. J., Hróbjartsson, A., Roberts, C., Shoukri, M., & Streiner, D. L. (2011). Guidelines for reporting reliability and agreement studies (GRRAS) were proposed. *International Journal of Nursing Studies*, 48(6), 661-671.
- Kurke, L. B., and Aldrich, H. E. 1983. Mintzberg was Right: A Replication and Extension of the Nature of Managerial Work. *Management Science*, 29(8): 975–984.
- Leach D., Rogelberg S., Warr P. and Burnfield J. (2009). Perceived meeting effectiveness: the role of design characteristics. *Journal of Business and Psychology* 24(1): 65–76.
- Lewin, K. (1951). D. Cartwright (ed.) Field theory in social science; selected theoretical papers. New York: Harper & Row). Dahlstrand, U and A Biel (1997) 'Pro-environmental habits: propensity levels in behavioural change'in *Journal of Applied Social Psychology*, 27, 588-601.
- Lewis, D. R., & Dahl, T. (1975). Time Management in Higher Education Administration: A Case Study.

- Li, J. P., & Kishore, R. (2006, April). How robust is the UTAUT instrument?: a multigroup invariance analysis in the context of acceptance and use of online community weblog systems. In *Proceedings of the 2006 ACM SIGMIS CPR conference on computer personnel research: Forty four years of computer personnel research: achievements, challenges & the future* (pp. 183-189). ACM.
- Ling, R. (1997). *One Can Talk About Common Manners! The Use of Mobile Telephones in Inappropriate Situations*. In Themes in Mobile Telephony Final Report of The COST 248 Home and Work Group, edited by Leslie Haddon. Retrieved April 09, 2009 from [http://richardling.com/papers/1997\\_One\\_can\\_talk\\_about\\_common\\_manners.pdf](http://richardling.com/papers/1997_One_can_talk_about_common_manners.pdf).
- Ling, R. (2002). Social Juxtaposition of Mobile Telephone Conversations and Public Spaces. Chunchon, Korea: Paper presented at conference on the social consequence of mobile telephone, July 2002.
- MacCormick, J. & Dery K. (2008) Too Much of a Good Thing? BlackBerry use Changing the Terms of Engagement, ANZAM, Auckland, December.
- Mankins, M. C. (2004). Stop wasting valuable time. *Harvard Business Review*, 82(143).
- Maples, M. F. (1988). Group development: Extending Tuckman's theory. *Journal for Specialists in Group Work*, 13(1), 17-23.
- Marvin, C. (1988). *When Old technologies were new: Thinking about electric communication in the late nineteenth century*. New York: Oxford University Press.
- Marx, L., & Smith, M, R. (1994). *Does technology drive history? The dilemma of technological determinism*. Cambridge, MA: MIT Press.



- McGuigan, J. (1996). *Culture and the public sphere*. New York, NY, Routledge. 179.
- McLuhan, M. (1964). *Understanding Media: The Extensions of Man*. New York: McGraw-Hill.
- McGrath, J. E., Arrow, H., & Berdahl, J. L. (2000). The study of groups: past, present, and future. *Personality and Social Psychology Review*, 4(1), 95-105.
- McGraw-Hill Concise Encyclopedia of Science and Technology, 2 Ed, (1989). McGraw-Hill Publishing Company.
- Merriam-Webster, (nd). Cellular phone. Retrieved March 1, 2014 from <http://www.merriam-webster.com/dictionary/cell%20phone>.
- Meyers, N., Gray, H. L., & Sanzogni, L. (2009). Codes of Conduct for mobile device use in meetings: An exploratory analysis. In *Proceedings of the Australian New Zealand Communication Association Conference* (pp. 1122-1139).
- Middleton, C. A. (2007). Illusions of balance and control in an always-on environment: A case study of BlackBerry users. *Continuum: Journal of Media & Cultural Studies*, 21(2), 165-178.
- Middleton, C. A., & Cukier W. (2006). Is mobile email functional or dysfunctional? Two perspectives on mobile email usage. *European Journal of Information Systems*, 15(3), 252-260.
- Middleton, C. A. (2008). Do Mobile Technologies Enable Work-Life Balance? Dual Perspectives on BlackBerry Usage for Supplemental Work. In D. Hislop (Ed.), *Mobility and Technology in the Workplace*. London, UK: Routledge.
- Miller, L. (1994). Japanese and American meetings and what goes on before them: A case study of co-worker misunderstanding. *Pragmatics*, 4(2), 221-238.

- Miller, R. F. & Pincus, M. (2004) *Running a meeting that works* (3rd ed.). Hauppauge, NY: Barron's.
- Mintzberg, H. 1973. *The nature of managerial work*. New York: Harper and Row.
- Mitcham, C. (1994). *Thinking through technology: the path between engineering and philosophy*. Chicago: University Of Chicago Press.
- Monge, P. R., McSween, C., & Wyer, J. (1989). *A profile of meetings in corporate America: Results of the 3M meeting effectiveness study*. Los Angeles: University of Southern California.
- Moran, Jr, R. F. (2006). Meetings: The Bane of the workplace: It doesn't have to be so. *Library Leadership and Management*, 20(3), 135-139.
- Moreland, R. L., & Levine, J. M. (1988). Group dynamics over time: Development and socialization in small groups. In J. E. McGrath (Ed.), *The social psychology of time* (pp. 15-181). Beverly Hills, CA: Sage.
- Mosvick, R., & Nelson, R. (1987). *We've Got to Start Meeting Like This: A Guide to Successful Meeting Management*. Glenview, IL: Scott, Foresman.
- Murtagh, M. G. (2001). Seeing the "Rules": Preliminary Observations of Action, Interaction and Mobile Phone Use. pp. 81–91 in *Wireless World: Social and Interactional Aspects of the Mobile Age*, edited by Barry Brown, Nicola Green, and Richard Harper. London, UK: Springer-Verlag.
- Myers FR (1986) Reflections on a meeting: structure, language and the polity in a small scale society. *American Ethnologist* 13(3): 430–47.
- Myerson, G. (2001). *Heidegger, Habermas and the Mobile Phone* (Postmodern Encounters).

- Newman, W., & Cairns, P. (nd). Towards the Non-Disruptive Laptop: Modelling the Impact of Mobile Computer Usage on Meetings. Retrieved March 1, 2014 from <http://abbitfiles.com/meetingsupport/files/newman-cairns-submitted-nonanon.pdf>.
- Newman, W., & Smith, E. L. (2006). Disruption of meetings by laptop use: is there a 10-second solution? Paper presented at the CHI '06 extended abstracts on Human factors in computing systems, Montreal, Quebec, Canada.
- Nunamaker, J. F., Dennis, A. R., Valacich, J. S., Vogel, D., & George, J. F. (1991). Electronic meeting systems. *Communications of the ACM*, 34(7), 40-61.
- Olesen V (1990) Immersed, amorphous, and episodic fieldwork: theory and policy in three contrasting contexts. *Studies in Qualitative Methodology* 2,205–32.
- Olkin, I. (Ed.). (1960). *Contributions to probability and statistics: essays in honor of Harold Hotelling*. Stanford University Press.
- Oxford, (nd). Smartphone. Retrieved March 1, 2014 from <http://www.oxforddictionaries.com/definition/english/smartphone>.
- Panzarino, M. (2014). *The Tablet Is The New General Purpose Computer*. Retrieved January 18, 2014 from <http://techcrunch.com/2014/01/18/the-tablet-is-the-new-general-purpose-computer/>.
- Paragas, F. (2005). Being Mobile with the Mobile: Cellular Telephony and Renegotiations of Public Transport as Public Sphere. pp. 113–30 in *Mobile Communications: Re-Negotiation of the Social Sphere*, edited by Rich Ling and Per E. Pedersen. London, UK: Springer-Verlag.
- Park, Y., & Chen, J. V. (2007). Acceptance and adoption of the innovative use of smartphone. *Industrial Management & Data Systems*, 107(9), 1349-1365.

- Parker, G. & Hoffman, R. (2006). *Meeting excellence: 33 tools to lead meetings that get results*. San Francisco: Jossey-Bass.
- Payne, J., & Payne, S. (1999). *Effektive møder på dagsordnen: Rationel planlægning, bedre tidsstyring, konkrete resultater, effektive handlingsplaner* [Efficient meetings on the agenda: Rational planning, better time management, concrete results, efficient activity plans]. Frederiksberg, Denmark: Danmarks Forvaltningshøjskole.
- PC Mag, (nd). *Feature phone*. Retrieved March 1, 2014 from <http://www.pcmag.com/encyclopedia/term/62894/feature-phone>
- Pearson, C. M., & Porath, C. L. (2005). On the nature, consequences and remedies of workplace incivility: No time for “nice”? Think again. *The Academy of Management Executive*, 19(1), 7-18.
- Petronzio, M. (2012). *A Brief History of Instant Messaging*. Retrieved August 16, 2014 from <http://mashable.com/2012/10/25/instant-messaging-history/>.
- Petska, A. (2011). *Council opts for iPads in quest to reduce paper use*. WSLS. Retrieved February 9, 2011 from <http://www2.wsls.com/news/2011/feb/09/council-opts-ipads-quest-reduce-paper-use-ar-832314/>.
- Petronzio, M. (2012). *A Brief History of Instant Messaging*. Retrieved August 16, 2014 from <http://mashable.com/2012/10/25/instant-messaging-history/>.
- Pinch, T. J., & Bijker, W. E. (1987). The Social Construction of Facts and Artifacts: Or How the Sociology of. *The social construction of technological systems: New directions in the sociology and history of technology*, 17.

- Pinch, T. & Bijker, W. (2006). The social construction of facts and artifacts. pp 221-232  
In *Philosophy of Technology: The Technological Condition, An Anthology*. Edited  
by Robert C. Scharff & Val Dusek. Malden, MA. Blackwell Publishing.
- Pinchot, J., Paullet K., & Rota D. (2011). How Mo-bile Technology is Changing Our  
Culture. *Journal of Information Systems Applied Re-search*, 4(1), 39-48.
- Pino, J.A., & Mora, H.A., (1998). Scheduling meetings using participants' preferences.  
*Information Technology and People* 11(2): 140–51.
- Poole, M. S., Seibold, D. R., & McPhee, R. D. (1996). The structuration of group  
decisions. *Communication and group decision making*, 2, 114-146.
- Post, W. M., Cremers, A. H., & Henkemans, O. B. (2004). A research environment for  
meeting behavior. In Proceedings of the 3rd workshop on social intelligence  
design (pp. 159-165).
- Postman N (1993) *Technopoly: the Surrender of culture to technology* (trans. C. Smith)  
London: Routledge and Keagan Paul.
- Postman, N. (2011). *Technopoly: The surrender of culture to technology*. Random  
House LLC.
- Ragon, B. (2009). Designing for the Mobile Web. *Journal of Electronic Resources in  
Medical Libraries*, 6(4), 355-361.
- Rice, R. E., & Katz, J. E. (2003). Comparing internet and mobile phone usage: digital  
divides of usage, adoption, and dropouts. *Telecommunications Policy*, 27(8),  
597-623.

- Rice, R. E., & Shook, D.E. (1990). Relationships of job categories and organizational levels to use of communication channels, including electronic mail. A meta-analysis and extension. *Journal of Management Studies*, 27(2), 195-229.
- Roberts, K. (2007). Work-life balance—the sources of the contemporary problem and the probable outcomes: A review and interpretation of the evidence. *Employee Relations*, 29(4), 334-351.
- Rodgers, A., Corbett, T., Bramley, D., Riddell, T., Wills, M., Lin, R. B., & Jones, M. (2009). Do u smoke after txt? Results of a randomized trial of smoking cessation using mobile phone text messaging. *Tobacco Control*, 14(4), 255-261.
- Rogelberg S.G., Scott C. and Kello J., (2007). The science and fiction of meetings. *MIT Sloan Management Review* 48(2): 18–21.
- Rogers, E. M. (2010). *Diffusion of innovations*. Simon and Schuster.
- Romano, N. C., & Nunamaker Jr, J. F. (2001, January). Meeting analysis: Findings from research and practice. In *System Sciences, 2001. Proceedings of the 34th Annual Hawaii International Conference on* (pp. 13-pp). IEEE.
- Rooney, J. (2006). Unleashing the energy. *Educational Leadership*, 64(1), 91.
- Roseman, M., & Greenberg, S. (1996, November). TeamRooms: network places for collaboration. In *Proceedings of the 1996 ACM conference on Computer supported cooperative work* (pp. 325-333). ACM.
- Rosenstiel, T. & Mitchell, A. (2012). *How the presidential candidates Use the web and social media*. Retrieved February 27, 2014 from <http://www.journalism.org/files/legacy/DIRECT%20ACCESS%20FINAL.pdf>.

- Schonfeld, E. (2009). Retrieved on January 23, 2014 from <http://techcrunch.com/2009/04/15/survey-says-baby-boomers-think-playing-with-your-blackberry-during-a-meeting-is-rude/>.
- Schlosser, F. (2002). So how do people really use their handheld devices? An interactive study of wireless technology use. *Journal of Organizational Behavior*, 23, 401-423.
- Schwartzman H. B. (1989) *The Meeting: Gatherings in Organizations and Communities*. New York: Plenum Press.
- Shallis, M. (1984). *The silicon idol: The micro revolution and its social implications*. London: Oxford University Press.
- Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika*, 591-611.
- Simon, H. (1997). Administrative behavior: a study of decision-making processes in administrative organizations. 4th ed. New York: Free Press.
- Spee, A. P., & Jarzabkowski, P. (2009). Strategy tools as boundary objects. *Strategic Organization*, 7, 223-232.
- Srinivasan, A. (1985). Alternative measures of system effectiveness: associations and implications. *MIS quarterly*, 243-253.
- Stefik, M., Foster, G., Bobrow, D. G., Kahn, K., Lanning, S., & Suchman, L. (1987). Beyond the chalkboard: computer support for collaboration and problem solving in meetings. *Communications of the ACM*, 30(1), 32-47.

- Stephens, K. K. (2012). Multiple Conversations During Organizational Meetings Development of the Multicommunicating Scale. *Management Communication Quarterly*, 26(2), 195-223.
- Stiefelhagen, R. (2002, October). Tracking focus of attention in meetings. In *Proceedings of the 4th IEEE International Conference on Multimodal Interfaces* (p. 273). IEEE Computer Society.
- Streibel, B. J. (2003). *The Manager's Guide to Effective Meetings*. NY, New York: McGraw-Hill.
- Streiner, D. L., & Norman, G. R. (2008). *Health measurement scales: a practical guide to their development and use*. Oxford university press.
- Svennevig, J. (2012). Interaction in workplace meetings. *Discourse Studies* 14(1): 3-10.
- Swanson, E. B. (1987). Information channel disposition and use. *Decision Sciences*, 18(1), 131-145.
- Swanson, E. B. (1988). *Information system implementation: Bridging the gap between design and utilization*. Homewood, IL: Irwin.
- Teclaw, R., Price, M. C., & Osatuke, K. (2012). Demographic question placement: Effect on item response rates and means of a veterans health administration survey. *Journal of Business and Psychology*, 27(3), 281-290.
- Tobia, P. M., and Becker, M. C. 1990. Making the Most of Meeting Time. *Training and Development Journal*, 44(8): 34.
- Trice, H.M. & Beyer J.M. (1984). Studying organizational cultures through rites and ceremonials. *The Academy of Management Review* 9(4): 653–69.



- Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological bulletin*, 63(6), 384.
- Tuckman, B. W., & Jensen, M. A. C. (1977). Stages of small-group development revisited. *Group & Organization Management*, 2(4), 419-427.
- Uzunboylu, H., Cavus, N., & Ercag, E. (2009). Using mobile learning to increase environmental awareness. *Computers & Education*, 52(2), 381-389.
- Van Biljon, J., & Kotzé, P. (2007, October). Modelling the factors that influence mobile phone adoption. In *Proceedings of the 2007 annual research conference of the South African institute of computer scientists and information technologists on IT research in developing countries* (pp. 152-161). ACM.
- Vannoy, S. A., & Palvia, P. (2010). The social influence model of technology adoption. *Communications of the ACM*, 53(6), 149-153.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management science*, 46(2), 186-204.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- Volkema, R. J., & Niederman, F. (1995). Organizational meetings formats and information requirements. *Small group research*, 26(1), 3-24.
- Volkema, R. J. and F. Niederman (1996). Planning and managing organizational meetings: An empirical analysis of written and oral communications. *Journal of Business Communication* 33(3): 275-292.

- Waal van der, K. (2009). Getting going: organizing ethnographic fieldwork. In: Ybema S, Yanow D, Wels H and Kamsteeg F (eds) *Organizational Ethnography Studying the Complexities of Everyday Life*. Los Angeles, CA: Sage.
- Walkley, T. M., Ramsay, M. D., & Sinha, S. (2012). *Daily letter*. Retrieved December 19, 2013 from [https://research.canaccordgenuity.com/\\_layouts/researchnoteviewer.aspx?pubid=85302](https://research.canaccordgenuity.com/_layouts/researchnoteviewer.aspx?pubid=85302).
- Wang, Y., Kalnin, A.J., Mosier, K.M., Dunn, D.W., & Kronenberger, W.G. (2006). Radiological Society of North America (2006, November 29). Violent Video Games Leave Teenagers Emotionally Aroused. *ScienceDaily*. Retrieved August 5, 2009, from <http://www.sciencedaily.com/releases/2006/11/061128140804.htm>.
- Washington, M. C., Okoro, E. A., & Cardon, P. W. (2013). Perceptions of Civility for Mobile Phone Use in Formal and Informal Meetings. *Business Communication Quarterly*.
- Wei, R., & Leung, L. (1999). Blurring public and private behaviors in public space: Policy challenges in the use and improper use of the cell phone. *Telematics and Informatics*, 16, 11-26.
- Wilkinson, M. (2005). *The secrets to masterful meeting: Ignite a meetings revolution* (2nd ed.). Atlanta, GA: Leadership Strategies.
- Williams, R. & Edge, D. (1996). The social shaping of technology. *Research Policy* (25)865-99.

- Williams, A. (2009). Retrieved on January 20, 2014 from  
[http://www.nytimes.com/2009/06/22/us/22smartphones.html?\\_r=0](http://www.nytimes.com/2009/06/22/us/22smartphones.html?_r=0).
- Wilska, T. A. (2003). Mobile phone use as part of young people's consumption styles.  
*Journal of consumer policy*, 26(4), 441-463.
- Winner, L. (1991). Upon Opening the Black Box and Finding it Empty: Social  
Constructivism and the Philosophy of Technology. In Pitt, J., & E. Lugo, eds., *The  
Technology of Discovery and the Discovery of Technology*. Blacksburg, Va:  
Society for Philosophy and Technology.
- Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce?: An empirical  
evaluation of the revised technology acceptance model. *Information &  
management*, 42(5), 719-729.
- Yankelovich, N., Walker, W., Roberts, P., Wessler, M., Kaplan, J., & Provino, J. (2004,  
November). Meeting central: making distributed meetings more effective. In  
*Proceedings of the 2004 ACM conference on Computer supported cooperative  
work* (pp. 419-428). ACM.

# APPENDIX A (Survey I)

---

## **Background Information**

In the past decade mobile technology use such as laptops, cell phone, and Blackberry?s, have increased in organizations especially during meetings. This use of technology during meetings has created a more efficient and streamline meeting and decision making process but it may have created a new source of distraction as well. Regardless, organizational culture is changing as a result. The goal of this research is to investigate what occurs in groups during meetings when mobile technologies are used and determine the impact these devices have on the meeting process. We want to understand what role mobile technology can play during group meetings and identify what the major issues are. You will be asked to fill out a questionnaire that will collect background information and your experience with and use of mobile technology.

**1) Your age (check one):**

☐ 18 - 29    ☐ 30 - 39    ☐ 40 - 49    ☐ 50 - 59    ☐ 60+

**2) Sex (check one):**

☐ Male    ☐ Female

**3) What industry does your company belong to (check one)?**

☐ High Tech    ☐ Manufacturing    ☐ Retail    ☐ Service    ☐ Public    ☐ Other

**4) What is the size of the company you work for (check one)?**

☐ Small (2-99) Employees    ☐ Medium (100-749) Employees    ☐ Large (750+) Employees

**5) What is your employment status (check one)?**

☐ Full Time    ☐ Part Time    ☐ Other (please describe)\_\_\_\_\_

**6) Length of time you have been with the company (check one)?**

☐ 0-3 years    ☐ 4-6 years    ☐ 7-9 years    ☐ 10-12 years    ☐ 13-15 years    ☐ 16+ years

**7) Your position within the company (check one)?**

☐ Non-management    ☐ Supervisor    ☐ Manager    ☐ Director    ☐ Vice President    ☐ President

**8) What department do you work in (check one)?**

- ☐ Accounting
- ☐ Sales/Marketing
- ☐ Human Resources
- ☐ Legal
- ☐ Operations
- ☐ Research & Development
- ☐ Other, please specify \_\_\_\_\_

**9) How often do you attend a face-to-face meeting (check one)?**

- ☐ Infrequently   
 ☐ Once a week   
 ☐ 2 – 4 Times a week   
 ☐ 5 – 8 Times a week   
 ☐ 9 or more times a week

**10) If a beginner is considered to be someone who uses a cell phone once or twice per week making phone calls only and an advanced user is someone who uses a cell phone 5 times or more per day with a combination of phone calls, text messages, mobile Internet surfing, and the use of mobile applications on the phone. How would you rate your cell phone use (check one)?**

- ☐ Beginner
- ☐ Intermediate
- ☐ Advanced
- ☐ Do not use a cell phone

**11) How often do you use a computer (check one)?**

- ☐ Never
- ☐ Once per month
- ☐ A few times per month
- ☐ Every few days
- ☐ Daily

**12) What are the four main activities you use a computer for (check four)?**

- ☐ Surfing the Internet
- ☐ Email
- ☐ Watching videos (e.g., on YouTube or television sites)
- ☐ Playing games or using Second Life
- ☐ Office productivity such as using word processing or spreadsheets
- ☐ Multimedia work such as image, video or sound editing
- ☐ Audio/video conferencing such as using Skype or MSN Messenger
- ☐ Text chatting
- ☐ Programming
- ☐ I don't use a computer

**13) How often do you use portable game devices (e.g., PlayStation Portable and Nintendo DS) (check one)?**

- ☐ Never
- ☐ Once per month
- ☐ A few times per month
- ☐ Every few days
- ☐ Daily

**14) In your opinion, how do you see yourself as being most productive (check one)?**

- ☐ I can multitask with no problem
- ☐ I can work on my laptop and listen at the same time
- ☐ I need to do one thing at a time

### USING MOBILE DEVICES DURING MEETINGS

**15) In your opinion, when is it alright to use mobile technology (e.g., laptop, desktop, netbook, Blackberry, iPod, iPhone, cell phone) during meetings (check all that apply)?**

	Laptops	Desktops	Netbooks	BlackBerrys	iPods	iPhones	Cell Phones
Always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sometimes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Don't Care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rarely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**16) In your opinion, in what type of meetings is it alright to use mobile technology devices (e.g., laptop, desktop, netbook, Blackberry, iPod, iPhone, cell phone) (check all that apply)?**

	Laptops	Desktops	Netbooks	BlackBerrys	iPods	iPhones	Cell Phones
Presentation by Someone Other than Yourself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Problem Solving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceremonial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Announcement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Progress Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**17) When is it not alright to use a laptop in a meeting (check all that apply)?**

- ☐ When the president is at the meeting
- ☐ When your superior is at the meeting
- ☐ When co-workers are at the meeting
- ☐ When subordinates are at the meeting
- ☐ When visitors are at the meeting
- ☐ It is never alright to use a laptop in a meeting

**18) In your opinion, when is it alright to use a cell phone for voice calls in a meeting (check all that apply)?**

	For work related calls	For personal related calls
When the president is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When your superior is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When co-workers are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When subordinates are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When visitors are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
It is never ok to use a cell phone in a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**19) In your opinion, when is it alright to use a cell phone for texting in a meeting (check all that apply)?**

	For work related texting	For personal related texting
When the president is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When your superior is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When co-workers are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When subordinates are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When visitors are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
It is never ok to text in a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**20) In your opinion, when one or more of the following individual(s) are present, when is it alright to use a laptop in a meeting (check all that apply)?**

	For work use	For personal use
President	<input type="checkbox"/>	<input type="checkbox"/>
Visitors	<input type="checkbox"/>	<input type="checkbox"/>
Superior	<input type="checkbox"/>	<input type="checkbox"/>
Co-workers	<input type="checkbox"/>	<input type="checkbox"/>
Subordinates	<input type="checkbox"/>	<input type="checkbox"/>

**21) When one or more of the following individual(s) are present, when is it alright to use a cell phone in a meeting (check all that apply)?**

	For work use	For personal use
President	<input type="checkbox"/>	<input type="checkbox"/>
Visitors	<input type="checkbox"/>	<input type="checkbox"/>
Superior	<input type="checkbox"/>	<input type="checkbox"/>

Co-workers	<input type="checkbox"/>	<input type="checkbox"/>
Subordinates	<input type="checkbox"/>	<input type="checkbox"/>

**22) When do you use a laptop during a meeting (check all that apply)?**

	For work use	For personal use
I use my laptop all the time	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am bored	<input type="checkbox"/>	<input type="checkbox"/>
Only when I have important work to do that cannot wait	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am not needed in the meeting to discuss the topic at hand	<input type="checkbox"/>	<input type="checkbox"/>
I never use my laptop during meetings	<input type="checkbox"/>	<input type="checkbox"/>

**23) When do you accept or make voice calls during a meeting (check all that apply)?**

	For work use	For personal use
All the time	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am bored	<input type="checkbox"/>	<input type="checkbox"/>
Only when I have important work to do that cannot wait	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am not needed in the meeting or to discuss the topic at hand	<input type="checkbox"/>	<input type="checkbox"/>
I never accept or make voice calls during a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**24) When do you text message during a meeting (check all that apply)?**

	For work use	For personal use
All the time	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am bored	<input type="checkbox"/>	<input type="checkbox"/>
Only when I have important work to do that cannot wait.	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am not needed in the meeting or to discuss the topic at hand.	<input type="checkbox"/>	<input type="checkbox"/>
I never text message during a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**25) For what purpose do you use your laptop during a meeting (check all that apply)?**

- ☐ Communication such as email or chat
- ☐ Work related activities (e.g., document production, financial work, etc.)
- ☐ Surf the Internet
- ☐ Programming



- ☐ Activities not related to work (e.g., games, read news)
- ☐ I do not use my laptop during meetings
- ☐ Other, please specify \_\_\_\_\_

**26) For what purpose do you use your cell phone during a meeting (check all that apply)?**

- ☐ Keep track of time
- ☐ Communication such as email or chat
- ☐ Work related activities (e.g., document production, financial work, etc.)
- ☐ Surf the Internet
- ☐ For work related emergencies only
- ☐ For personal emergencies only
- ☐ Activities not related to work (e.g., games, read news)
- ☐ I do not use my cell phone during meetings
- ☐ Other, please specify \_\_\_\_\_

**27) For what purpose do you use text messaging during a meeting (check all that apply)?**

- ☐ General communication to coworkers about work related issues
- ☐ For work related emergencies only
- ☐ For personal emergencies only
- ☐ Activities not related to work (e.g., chat, arrange social activities)
- ☐ I do not use texting during meetings
- ☐ Other, please specify \_\_\_\_\_

**28) What is your company's opinion on the use of mobile technology devices in the company (check all that apply)?**

	Laptops	Desktops	Netbooks	BlackBerrys	iPods	iPhones	Cell Phones
Very supportive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Somewhat supportive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Neutral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not very supportive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not supportive at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**29) What type of policies does the company you work for have regarding use of mobile technologies such as laptops and cell phones during meetings (check all that apply)?**

- ☐ Allowed to use mobile technology during meetings
- ☐ Not allowed to use mobile technology during meetings
- ☐ Allowed to use mobile technology during meetings when only co-workers are present
- ☐ The company does not have a policy regarding mobile technology
- ☐ Don't know

### **Post-Meeting Questionnaire**

The purpose of this survey is to gather your opinion about using mobile technology during the meeting you just attended. It should only take about 5 minutes to complete this questionnaire. Thank you in advance for your assistance.

**30) You were asked to participate in a meeting, what type of meeting did you participate in (check one)?**

- ☐ Presentation: The main purpose of the meeting was to present a new idea or sell a project
- ☐ Brainstorming: The main purpose of the meeting was to come up with new ideas or solve problems
- ☐ Ceremonial: The main purpose of this meeting was to honor an individual or celebrate an event
- ☐ Announcement: The main purpose of the meeting was to announce important or relevant information about a project, person, or the company
- ☐ Forum: The main purpose of this meeting is to provide input for an agenda
- ☐ Round Robin: The main purpose of this meeting is for each individual to provide an update on their progress
- ☐ Combination of two or more from the above meeting types
- ☐ Other

**31) Approximately how many people attended the meeting?** \_\_\_\_\_

**32) Approximately how long was your meeting?** \_\_\_\_\_

**33) Approximately how many people used mobile technology devices?** \_\_\_\_\_

**34) What type of technology did participants use (check all that apply)?**

- ☐ Laptops    ☐ Desktops    ☐ Netbooks    ☐ BlackBerrys    ☐ iPods    ☐ iPhones    ☐ Cell phones

**35) Approximately how often was mobile technology used during the meeting?** \_\_\_\_\_

**36) Approximately how long (in minutes) was mobile technology used during the meeting?** \_\_\_\_\_

**37) Approximately how long (in minutes) were you distracted by your use of technology during the meeting?** \_\_\_\_\_

**38) Approximately what percentage of time were you distracted by other people's use of technology during the meeting?** \_\_\_\_\_

**39) In general, describe why technology was a distraction for you?**

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**40) Was there a comment made about someone's inappropriate use of a mobile device during the meeting (e.g. shut off the mobile phone)? If so, please provide the comment and your opinion of the comment.**

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## APPENDIX B (Survey II)

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### **Background Information**

In the past decade mobile technology use such as laptops, cell phone, Blackberrys, and iPads have increased in organizations especially during meetings. This use of technology during meetings has created a more efficient and streamline meeting and decision making process but it may have created a new source of distraction as well. Regardless, organizational culture is changing as a result. The goal of this research is to investigate what occurs in groups during meetings when mobile technologies are used and determine the impact these devices have on the meeting process. We want to understand what role mobile technology can play during group meetings and identify what the major issues are. You will be asked to fill out a questionnaire that will collect background information and your experience with and use of mobile technology.

**1) Your age (check one):**

☐ 18 - 29    ☐ 30 - 39    ☐ 40 - 49    ☐ 50 - 59    ☐ 60+

**2) Sex (check one):**

☐ Male    ☐ Female

**3) What industry does your company belong to (check one)?**

☐ High Tech    ☐ Manufacturing    ☐ Retail    ☐ Service    ☐ Public    ☐ Other

**4) What is the size of the company you work for (check one)?**

☐ Small (2-99) Employees    ☐ Medium (100-749) Employees    ☐ Large (750+) Employees

**5) What is your employment status (check one)?**

☐ Full Time    ☐ Part Time    ☐ Other (please describe) \_\_\_\_\_

**6) Length of time you have been with the company (check one)?**

☐ 0-3 years    ☐ 4-6 years    ☐ 7-9 years    ☐ 10-12 years    ☐ 13-15 years    ☐ 16+ years

**7) Your position within the company (check one)?**

☐ Non-management    ☐ Supervisor    ☐ Manager    ☐ Director    ☐ Vice President    ☐ President

**8) What department do you work in (check one)?**

- ☐ Accounting
- ☐ Sales/Marketing
- ☐ Human Resources
- ☐ Legal
- ☐ Operations
- ☐ Research & Development
- ☐ Other, please specify \_\_\_\_\_

**9) How often do you attend a face-to-face meeting (check one)?**

- ☐ Infrequently  
 ☐ Once a week  
 ☐ 2 – 4 Times a week  
 ☐ 5 – 8 Times a week  
 ☐ 9 or more times a week

**10) If a beginner is considered to be someone who uses a cell phone once or twice per week making phone calls only and an advanced user is someone who uses a cell phone 5 times or more per day with a combination of phone calls, text messages, mobile Internet surfing, and the use of mobile applications on the phone. How would you rate your cell phone use (check one)?**

- ☐ Beginner
- ☐ Intermediate
- ☐ Advanced
- ☐ Do not use a cell phone

**11) How often do you use a computer (check one)?**

- ☐ Never
- ☐ Once per month
- ☐ A few times per month
- ☐ Every few days
- ☐ Daily

**12) What are the four main activities you use a computer for (check four)?**

- ☐ Surfing the Internet
- ☐ Email
- ☐ Watching videos (e.g., on YouTube or television sites)
- ☐ Playing games or using Second Life
- ☐ Office productivity such as using word processing or spreadsheets
- ☐ Multimedia work such as image, video or sound editing
- ☐ Audio/video conferencing such as using Skype or MSN Messenger
- ☐ Text chatting
- ☐ Programming
- ☐ I don't use a computer

**13) How often do you use portable game devices (e.g., PlayStation Portable and Nintendo DS) (check one)?**

- ☐ Never
- ☐ Once per month
- ☐ A few times per month
- ☐ Every few days
- ☐ Daily

**14) In your opinion, how do you see yourself as being most productive (check one)?**

- ☐ I can multitask with no problem
- ☐ I can work on my laptop and listen at the same time
- ☐ I need to do one thing at a time

### USING MOBILE DEVICES DURING MEETINGS

**15) In your opinion, when is it alright to use mobile technology (e.g., laptop, desktop, netbook, Blackberry, iPad, iPod, iPhone, cell phone) during meetings (check all that apply)?**

	Laptops	Desktops	Netbooks	BlackBerrys	iPads	iPods	iPhones	Cell Phones
Always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sometimes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Don't Care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rarely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**16) In your opinion, in what type of meetings is it alright to use mobile technology devices (e.g., laptop, desktop, netbook, Blackberry, iPad, iPod, iPhone, cell phone) (check all that apply)?**

	Laptops	Desktops	Netbooks	BlackBerrys	iPads	iPods	iPhones	Cell Phones
Presentation by Someone Other than Yourself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Problem Solving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceremonial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Announcement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Progress Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**17) When is it not alright to use a laptop in a meeting (check all that apply)?**

- ☐ When the president is at the meeting
- ☐ When your superior is at the meeting
- ☐ When co-workers are at the meeting
- ☐ When subordinates are at the meeting
- ☐ When visitors are at the meeting
- ☐ It is never alright to use a laptop in a meeting

**18) In your opinion, when is it alright to use a cell phone for voice calls in a meeting (check all that apply)?**

	For work related calls	For personal related calls
When the president is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When your superior is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When co-workers are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When subordinates are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When visitors are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
It is never ok to use a cell phone in a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**19) In your opinion, when is it alright to use a cell phone for texting in a meeting (check all that apply)?**

	For work related texting	For personal related texting
When the president is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When your superior is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When co-workers are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When subordinates are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When visitors are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
It is never ok to text in a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**20) In your opinion, when one or more of the following individual(s) are present, when is it alright to use a laptop in a meeting (check all that apply)?**

	For work use	For personal use
President	<input type="checkbox"/>	<input type="checkbox"/>
Visitors	<input type="checkbox"/>	<input type="checkbox"/>
Superior	<input type="checkbox"/>	<input type="checkbox"/>
Co-workers	<input type="checkbox"/>	<input type="checkbox"/>
Subordinates	<input type="checkbox"/>	<input type="checkbox"/>

**21) When one or more of the following individual(s) are present, when is it alright to use a cell phone in a meeting (check all that apply)?**

	For work use	For personal use
President	<input type="checkbox"/>	<input type="checkbox"/>
Visitors	<input type="checkbox"/>	<input type="checkbox"/>
Superior	<input type="checkbox"/>	<input type="checkbox"/>

Co-workers	<input type="checkbox"/>	<input type="checkbox"/>
Subordinates	<input type="checkbox"/>	<input type="checkbox"/>

**22) When do you use a laptop during a meeting (check all that apply)?**

	For work use	For personal use
I use my laptop all the time	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am bored	<input type="checkbox"/>	<input type="checkbox"/>
Only when I have important work to do that cannot wait	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am not needed in the meeting to discuss the topic at hand	<input type="checkbox"/>	<input type="checkbox"/>
I never use my laptop during meetings	<input type="checkbox"/>	<input type="checkbox"/>

**23) When do you accept or make voice calls during a meeting (check all that apply)?**

	For work use	For personal use
All the time	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am bored	<input type="checkbox"/>	<input type="checkbox"/>
Only when I have important work to do that cannot wait	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am not needed in the meeting or to discuss the topic at hand	<input type="checkbox"/>	<input type="checkbox"/>
I never accept or make voice calls during a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**24) When do you text message during a meeting (check all that apply)?**

	For work use	For personal use
All the time	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am bored	<input type="checkbox"/>	<input type="checkbox"/>
Only when I have important work to do that cannot wait.	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am not needed in the meeting or to discuss the topic at hand.	<input type="checkbox"/>	<input type="checkbox"/>
I never text message during a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**25) For what purpose do you use your laptop during a meeting (check all that apply)?**

- ☐ Communication such as email or chat
- ☐ Work related activities (e.g., document production, financial work, etc.)
- ☐ Surf the Internet
- ☐ Programming



- ☐ Activities not related to work (e.g., games, read news)
- ☐ I do not use my laptop during meetings
- ☐ Other, please specify \_\_\_\_\_

**26) For what purpose do you use your cell phone during a meeting (check all that apply)?**

- ☐ Keep track of time
- ☐ Communication such as email or chat
- ☐ Work related activities (e.g., document production, financial work, etc.)
- ☐ Surf the Internet
- ☐ For work related emergencies only
- ☐ For personal emergencies only
- ☐ Activities not related to work (e.g., games, read news)
- ☐ I do not use my cell phone during meetings
- ☐ Other, please specify \_\_\_\_\_

**27) For what purpose do you use text messaging during a meeting (check all that apply)?**

- ☐ General communication to coworkers about work related issues
- ☐ For work related emergencies only
- ☐ For personal emergencies only
- ☐ Activities not related to work (e.g., chat, arrange social activities)
- ☐ I do not use texting during meetings
- ☐ Other, please specify \_\_\_\_\_

**28) What is your company's opinion on the use of mobile technology devices in the company (check all that apply)?**

	Laptops	Desktops	Netbooks	BlackBerrys	iPads	iPods	iPhones	Cell Phones
Very supportive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Somewhat supportive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Neutral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not very supportive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not supportive at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**29) What type of policies does the company you work for have regarding use of mobile technologies such as laptops and cell phones during meetings (check all that apply)?**

- ☐ Allowed to use mobile technology during meetings
- ☐ Not allowed to use mobile technology during meetings
- ☐ Allowed to use mobile technology during meetings when only co-workers are present
- ☐ The company does not have a policy regarding mobile technology
- ☐ Don't know

## APPENDIX C (Research Ethics Board)

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To: Robert Bajko

Re: REB 2010-071: Mobile Technology Distraction in the Workplace

Date: May 1, 2011

Dear Robert Bajko,

The review of your protocol REB File REB 2010-071 is now complete. This is a renewal for REB File REB 2010-071. The project has been approved for a one year period. Please note that before proceeding with your project, compliance with other required University approvals/certifications, institutional requirements, or governmental authorizations may be required.

This approval may be extended after one year upon request. Please be advised that if the project is not renewed, approval will expire and no more research involving humans may take place. If this is a funded project, access to research funds may also be affected.

Please note that REB approval policies require that you adhere strictly to the protocol as last reviewed by the REB and that any modifications must be approved by the Board before they can be implemented. Adverse or unexpected events must be reported to the REB as soon as possible with an indication from the Principal Investigator as to how, in the view of the Principal Investigator, these events affect the continuation of the protocol.

Finally, if research subjects are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and approvals of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research.

Please quote your REB file number (REB 2010-071) on future correspondence.

Congratulations and best of luck in conducting your research.

A handwritten signature in black ink, appearing to read "Nancy Walton". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Nancy Walton, Ph.D.  
Chair, Research Ethics Board

# APPENDIX D (Recruitment Flyer I)



Inclusive Media Design Centre is part  
of the Ted Rogers School of  
Information Technology Management.  
[www.IMDC.ca](http://www.IMDC.ca)

## Project Title: Revenue Generating Strategies for Ryerson University

### Purpose of Study:

To research new ideas for generating extra revenue for Ryerson

#### Who

- Ryerson faculty, staff and students

#### What

- Attend one 30 minute meeting
- Brainstorm and answer approx. 10 questions about extra revenue sources for Ryerson
- Complete a post-meeting questionnaire

#### Where

- Ryerson campus, Research and Graduate Studies Building (111 Gerrard Street East)

#### When

- During the month of November/December 2012 (based on participant availability)

#### How

- Contact Rob Bajko, PhD candidate, with your availability at 416-979-5000 ext. 2753 or [rbajko@ryerson.ca](mailto:rbajko@ryerson.ca)

Participants will be compensated with a \$10 Tim Horton's gift card

#### Research Study

Rob Bajko's contact: 416-979-5000 ext.  
2753 or [rbajko@ryerson.ca](mailto:rbajko@ryerson.ca)

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2753 or [rbajko@ryerson.ca](mailto:rbajko@ryerson.ca)

## APPENDIX E (Recruitment Flyer II)



**Principal Investigators:** Rob Bajko, PhD candidate, Department of Communication & Culture, Ryerson University  
416-979-5000 ext. 2753 or RBAJKO@RYERSON.CA  
Deborah Fels, Ph.D., P.Eng. Ryerson University  
(416)-979-5000 ext. 7619 or dfels@ryerson.ca

**Project Title:** Investigation into Potential Revenue Generating Suggestions for Ryerson University

### Purpose of Study

The goal of this research is to investigate new ideas in generating extra revenue for Ryerson University as well as brainstorm some potential issue and problems with suggested ideas. We want to understand how different ideas in generating extra revenue affect faculty/staff/students at Ryerson University. As well as identify what the major issues (if any) with the ideas proposed. Participants will only need to participate in one 30 minute (or less) meeting.

### Tasks

You will be asked to brainstorm and answer about a dozen questions regarding generating extra revenue for Ryerson University. There are no special activities required of you other than to take part in the meeting as you normally do. After your meeting, you will be asked to complete the post-meeting questionnaire.

### Compensation

For your time, you will be compensated with a \$10 Tim Horton's gift card.



**Principal Investigators:** Rob Bajko, PhD candidate, Department of Communication & Culture, Ryerson University  
416-979-5000 ext. 2753 or RBAJKO@RYERSON.CA  
Deborah Fels, Ph.D., P.Eng. Ryerson University  
(416)-979-5000 ext. 7619 or dfels@ryerson.ca

**Project Title:** Investigation into Potential Revenue Generating Suggestions for Ryerson University

### Purpose of Study

The goal of this research is to investigate new ideas in generating extra revenue for Ryerson University as well as brainstorm some potential issue and problems with suggested ideas. We want to understand how different ideas in generating extra revenue affect faculty/staff/students at Ryerson University. As well as identify what the major issues (if any) with the ideas proposed. Participants will only need to participate in one 30 minute (or less) meeting.

### Tasks

You will be asked to brainstorm and answer about a dozen questions regarding generating extra revenue for Ryerson University. There are no special activities required of you other than to take part in the meeting as you normally do. After your meeting, you will be asked to complete the post-meeting questionnaire.

### Compensation

For your time, you will be compensated with a \$10 Tim Horton's gift card.

# APPENDIX F (Pre-meeting Consent Form)

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**Principal Investigators:** Rob Bajko, PhD candidate, Department of Communication & Culture, Ryerson University  
416-979-5000 ext. 2753 or rbajko@ryerson.ca  
Deborah Fels, Ph.D., P.Eng. Ryerson University  
(416)-979-5000 ext. 7619 or dfels@ryerson.ca

**Project Title:** Potential Revenue Generating Suggestions for Ryerson University

## Consent Form to Participate in Study

### Purpose of Study

The goal of this research is to investigate new ideas in generating extra revenue for Ryerson University as well as brainstorm some potential issue and problems with suggested ideas. We want to understand how different ideas in generating extra revenue affect faculty/staff/students at Ryerson University. As well as identify what the major issues (if any) with the ideas proposed. Participants will only need to participate in one 30 minute (or less) meeting.

### Tasks

You will be asked to brainstorm and answer questions regarding generating extra revenue for Ryerson University. There are no special activities required of you other than to take part in the meeting as you normally do.

After your meeting, you will be asked to complete the post-meeting questionnaire. You do not have to answer all of the questions if you do not want. There will be no penalty if you do not answer all of the questions. Participation in this research is voluntary and the decision to participate will have no impact on future relations with your employer and/or with Ryerson University.

### Compensation

For your time and attendance, you will be compensated with one \$10 Tim Horton's gift card.

**Principal Investigators:** Rob Bajko, PhD candidate, Department of Communication & Culture, Ryerson University  
416-979-5000 ext. 2753 or rbajko@ryerson.ca  
Deborah Fels, Ph.D., P.Eng. Ryerson University  
(416)-979-5000 ext. 7619 or dfels@ryerson.ca

**Project Title:** Potential Revenue Generating Suggestions for Ryerson University

### **Confidentiality**

All data (written and video) will remain confidential. We will also use number codes to link data with personal information so that people reviewing the data will only see the number identifiers and not the personal information. The data will be securely locked in a storage cupboard at The Inclusive Media and Design Centre at Ryerson University, and will only be viewed by the project development team. Data will only be presented in summary form and no one individual will be identified. Please note, although confidentiality will be requested of other participants, it cannot be guaranteed on behalf of other participants.

### **Expected Benefits**

There are no expected direct benefits to the participants; however, the data collected will provide useful information in understanding the issues regarding some ideas in revenue generation for Ryerson University.

### **Risks and Discomforts**

There are only minimal risks involved in this study. However, you may become tired during the study or in answering the questionnaires. If so, you may take a break at any time and continue again later, or you may stop the study altogether.

### **Opportunities for Researcher Feedback**

Copies of any conference proceedings or publications arising from this research will be available in the Ryerson libraries.

We sincerely appreciate your co-operation. If you have any questions or concerns, please do not hesitate to contact Rob Bajko at rbajko@ryerson.ca or 416-979-5000 ext. 2753.

This study has been approved by the Ryerson Research Ethics Board and is part of Rob Bajko's doctoral research. If you have any questions concerning your rights as a study participant, you may contact the Ryerson Research Ethics Board, c/o Office of Research Services Ryerson University, 350 Victoria Street, Toronto, ON M5B 2K3, 416-979-5042.

**Principal Investigators:** Rob Bajko, PhD candidate, Department of Communication & Culture, Ryerson University

416-979-5000 ext. 2753 or rbajko@ryerson.ca  
Deborah Fels, Ph.D., P.Eng. Ryerson University  
(416)-979-5000 ext. 7619 or dfels@ryerson.ca

**Project Title:** Potential Revenue Generating Suggestions for Ryerson University

## Consent Form to Participate in Study

I acknowledge that the research procedure has been explained to me and that any questions that I have asked have been answered to my satisfaction. I have been informed of the alternatives to participation in this study, which includes my right not to participate and the right to withdraw without penalty. I have received a copy of the information sheet and I hereby consent to participate in the study

Signature of Participant: \_\_\_\_\_

Name of Participant (please print): \_\_\_\_\_

Date: \_\_\_\_\_

The details of this study were explained to me by:

Name of Investigator: \_\_\_\_\_ Rob Bajko \_\_\_\_\_

Date: \_\_\_\_\_

# APPENDIX G (Brainstorming Session Questions)

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## **RYERSON UNIVERSITY REVENUE RECOMMENDATION**

As a group, please read through the following questions and spend 30 minutes discussing them and formulate a recommendation at the end of the meeting.

- 1) Have you walked through the Devo pond/pedestrian walkway this semester? If so, how often within a day/week/month? If not, why not?
- 2) Have you sat around Devo pond this summer? If not, why not?
- 3) To generate extra revenue, Ryerson University is considering opening up Victoria St and Gould St for car traffic and parking. How do you feel about cars parking on the side of the road on Victoria and Gould St? How do you feel about having a posted speed limit of 40km/h on both of the roads?
- 4) What do you think are the repercussions or consequences of opening up Victoria St and Gould St for car traffic and parking?
- 5) To generate extra revenue, Ryerson University is considering opening the road that leads you into the Quad (KHE, KHS, KHW, and KHN) for car parking and through traffic. How do you feel about cars parked inside the Quad? How do you feel about a posted speed limit of 40km/h?
- 6) What do you think are the repercussions or consequences of opening the road that leads you into the Quad (KHE, KHS, KHW, and KHN) for car parking and through traffic?
- 7) Ryerson University is also considering tearing down the Devo pond area and turning it into a multiple level car parking for students/faculty/staff and visitors. Would you support this action? Why or why not?



- 8) Would you be in favor of Ryerson University charging a premium for parking for cars that are not hybrid or electric cars? Why or why not?
- 9) Another option for Ryerson University to generate extra income is to use the sides of the buildings to advertise different products. Would you be in favor of having large advertising bill boards on the side of Ryerson University buildings? Why or why not?
- 10) Please provide at least three recommendations that Ryerson University can do to generate extra revenue?

Thank you for your contribution!

# APPENDIX H (Post Meeting Consent Form)

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**Principal Investigators:** Rob Bajko, PhD candidate, Department of Communication & Culture, Ryerson University  
416-979-5000 ext. 2753 or rbajko@ryerson.ca  
Deborah Fels, Ph.D., P.Eng. Ryerson University  
(416)-979-5000 ext. 7619 or dfels@ryerson.ca

**Project Title:** Mobile Technology Distraction in the Workplace

## Consent Form to Participate in Study

### Purpose of Study

In the past decade mobile technology use such as laptops, cell phone, Blackberry's, and iPods have increased in organizations especially during meetings. This use of technology during meetings has created a more efficient and streamline meeting and decision making process but it may have created a new source of distraction as well. Regardless, organizational culture is changing as a result.

The goal of this research is to investigate what occurs in groups during meetings when mobile technologies are used and determine the impact these devices have on the meeting process. We want to understand what role mobile technology can play during group meetings and identify what the major issues are. Participants will only need to participate in two questionnaires.

### Tasks

There are no special activities required of you other than to take part in the meeting as you normally do.

After your meeting, you will be asked to complete the post-meeting questionnaire. You do not have to answer all of the questions if you do not want. There will be no penalty if you do not answer all of the questions. Participation in this research is voluntary and the decision to participate will have no impact on future relations with your employer and with Ryerson University.

**Principal Investigators:** Rob Bajko, PhD candidate, Department of Communication & Culture, Ryerson University  
416-979-5000 ext. 2753 or rbajko@ryerson.ca  
Deborah Fels, Ph.D., P.Eng. Ryerson University  
(416)-979-5000 ext. 7619 or dfels@ryerson.ca

**Project Title:** Mobile Technology Distraction in the Workplace

### **Confidentiality**

All data (written and video) will remain confidential. We will also use number codes to link data with personal information so that people reviewing the data will only see the number identifiers and not the personal information. The data will be securely locked in a storage cupboard at The Inclusive Media and Design Centre at Ryerson University, and will only be viewed by the project development team. Data will only be presented in summary form and no one individual will be identified. Please note, although confidentiality will be requested of other participants, it cannot be guaranteed on behalf of other participants.

### **Expected Benefits**

There are no expected direct benefits to the participants, however, the data collected will provide useful information in understanding how mobile technology use impacts group dynamics.

### **Risks and Discomforts**

There are only minimal risks involved in this study. However, you may become tired during the study or in answering the questionnaires. If so, you may take a break at any time and continue again later, or you may stop the study altogether.

### **Opportunities for Researcher Feedback**

Copies of any conference proceedings or publications arising from this research will be available in the Ryerson libraries.

We sincerely appreciate your co-operation. If you have any questions or concerns, please do not hesitate to contact Rob Bajko at rbajko@ryerson.ca or 416-979-5000 ext. 2753.

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**Principal Investigators:** Rob Bajko, PhD candidate, Department of Communication & Culture, Ryerson University  
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(416)-979-5000 ext. 7619 or dfels@ryerson.ca

**Project Title:** Mobile Technology Distraction in the Workplace

## **Consent Form to Participate in Study**

I acknowledge that the research procedure has been explained to me and that any questions that I have asked have been answered to my satisfaction. I have been informed of the alternatives to participation in this study, which includes my right not to participate and the right to withdraw without penalty. I have received a copy of the information sheet and I hereby consent to participate in the study

Signature of Participant: \_\_\_\_\_

Name of Participant (please print): \_\_\_\_\_

Date: \_\_\_\_\_

The details of this study were explained to me by:

Name of Investigator: \_\_\_\_\_ Rob Bajko \_\_\_\_\_

Date: \_\_\_\_\_ Tuesday November 13, 2012 \_\_\_\_\_

# APPENDIX I (Post Meeting Questionnaire)

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## **Background Information**

In the past decade mobile technology use such as laptops, cell phone, Blackberrys, and iPads have increased in organizations especially during meetings. This use of technology during meetings has created a more efficient and streamline meeting and decision making process but it may have created a new source of distraction as well. Regardless, organizational culture is changing as a result. The goal of this research is to investigate what occurs in groups during meetings when mobile technologies are used and determine the impact these devices have on the meeting process. We want to understand what role mobile technology can play during group meetings and identify what the major issues are. You will be asked to fill out a questionnaire that will collect background information and your experience with and use of mobile technology.

**1) Your age (check one):**

☐ 18 - 29    ☐ 30 - 39    ☐ 40 - 49    ☐ 50 - 59    ☐ 60+

**2) Sex (check one):**

☐ Male    ☐ Female

**3) What industry does your company belong to (check one)?**

☐ High Tech    ☐ Manufacturing    ☐ Retail    ☐ Service    ☐ Public    ☐ Other

**4) What is the size of the company you work for (check one)?**

☐ Small (2-99) Employees    ☐ Medium (100-749) Employees    ☐ Large (750+) Employees

**5) What is your employment status (check one)?**

☐ Full Time    ☐ Part Time    ☐ Other (please describe)\_\_\_\_\_

**6) Length of time you have been with the company (check one)?**

☐ 0-3 years    ☐ 4-6 years    ☐ 7-9 years    ☐ 10-12 years    ☐ 13-15 years    ☐ 16+ years

**7) Your position within the company (check one)?**

☐ Non-management    ☐ Supervisor    ☐ Manager    ☐ Director    ☐ Vice President    ☐ President

**8) What department do you work in (check one)?**

- ☐ Accounting
- ☐ Sales/Marketing
- ☐ Human Resources
- ☐ Legal
- ☐ Operations
- ☐ Research & Development
- ☐ Other, please specify \_\_\_\_\_

**9) How often do you attend a face-to-face meeting (check one)?**

- ☐ Infrequently
- ☐ Once a week
- ☐ 2 – 4 Times a week
- ☐ 5 – 8 Times a week
- ☐ 9 or more times a week

**10) If a beginner is considered to be someone who uses a cell phone once or twice per week making phone calls only and an advanced user is someone who uses a cell phone 5 times or more per day with a combination of phone calls, text messages, mobile Internet surfing, and the use of mobile applications on the phone. How would you rate your cell phone use (check one)?**

- ☐ Beginner
- ☐ Intermediate
- ☐ Advanced
- ☐ Do not use a cell phone

**11) How often do you use a computer (check one)?**

- ☐ Never
- ☐ Once per month
- ☐ A few times per month
- ☐ Every few days
- ☐ Daily

**12) What are the four main activities you use a computer for (check four)?**

- ☐ Surfing the Internet
- ☐ Email
- ☐ Watching videos (e.g., on YouTube or television sites)
- ☐ Playing games or using Second Life
- ☐ Office productivity such as using word processing or spreadsheets
- ☐ Multimedia work such as image, video or sound editing
- ☐ Audio/video conferencing such as using Skype or MSN Messenger
- ☐ Text chatting
- ☐ Programming
- ☐ I don't use a computer

**13) How often do you use portable game devices (e.g., PlayStation Portable and Nintendo DS) (check one)?**

- ☐ Never  
☐ Once per month  
☐ A few times per month  
☐ Every few days  
☐ Daily

**14) In your opinion, how do you see yourself as being most productive (check one)?**

- ☐ I can multitask with no problem  
☐ I can work on my laptop and listen at the same time  
☐ I need to do one thing at a time

### USING MOBILE DEVICES DURING MEETINGS

**15) In your opinion, when is it alright to use mobile technology (e.g., laptop, desktop, netbook, Blackberry, iPad, iPod, iPhone, cell phone) during meetings (check all that apply)?**

	Laptops	Desktops	Netbooks	BlackBerrys	iPads	iPods	IPhones	Cell Phones
Always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sometimes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Don't Care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rarely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**16) In your opinion, in what type of meetings is it alright to use mobile technology devices (e.g., laptop, desktop, netbook, Blackberry, iPad, iPod, iPhone, cell phone) (check all that apply)?**

	Laptops	Desktops	Netbooks	BlackBerrys	iPads	iPods	IPhones	Cell Phones
Presentation by Someone Other than Yourself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Problem Solving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceremonial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Announcement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Progress Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**17) When is it not alright to use a laptop in a meeting (check all that apply)?**

- ☐ When the president is at the meeting  
☐ When your superior is at the meeting  
☐ When co-workers are at the meeting  
☐ When subordinates are at the meeting  
☐ When visitors are at the meeting  
☐ It is never alright to use a laptop in a meeting

**18) In your opinion, when is it alright to use a cell phone for voice calls in a meeting (check all that apply)?**

	For work related calls	For personal related calls
When the president is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When your superior is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When co-workers are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When subordinates are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When visitors are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
It is never ok to use a cell phone in a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**19) In your opinion, when is it alright to use a cell phone for texting in a meeting (check all that apply)?**

	For work related texting	For personal related texting
When the president is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When your superior is at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When co-workers are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When subordinates are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
When visitors are at the meeting	<input type="checkbox"/>	<input type="checkbox"/>
It is never ok to text in a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**20) In your opinion, when one or more of the following individual(s) are present, when is it alright to use a laptop in a meeting (check all that apply)?**

	For work use	For personal use
President	<input type="checkbox"/>	<input type="checkbox"/>
Visitors	<input type="checkbox"/>	<input type="checkbox"/>
Superior	<input type="checkbox"/>	<input type="checkbox"/>
Co-workers	<input type="checkbox"/>	<input type="checkbox"/>
Subordinates	<input type="checkbox"/>	<input type="checkbox"/>

**21) When one or more of the following individual(s) are present, when is it alright to use a cell phone in a meeting (check all that apply)?**

	For work use	For personal use
President	<input type="checkbox"/>	<input type="checkbox"/>
Visitors	<input type="checkbox"/>	<input type="checkbox"/>
Superior	<input type="checkbox"/>	<input type="checkbox"/>
Co-workers	<input type="checkbox"/>	<input type="checkbox"/>
Subordinates	<input type="checkbox"/>	<input type="checkbox"/>



**22) When do you use a laptop during a meeting (check all that apply)?**

	For work use	For personal use
I use my laptop all the time	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am bored	<input type="checkbox"/>	<input type="checkbox"/>
Only when I have important work to do that cannot wait	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am not needed in the meeting to discuss the topic at hand	<input type="checkbox"/>	<input type="checkbox"/>
I never use my laptop during meetings	<input type="checkbox"/>	<input type="checkbox"/>

**23) When do you accept or make voice calls during a meeting (check all that apply)?**

	For work use	For personal use
All the time	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am bored	<input type="checkbox"/>	<input type="checkbox"/>
Only when I have important work to do that cannot wait	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am not needed in the meeting or to discuss the topic at hand	<input type="checkbox"/>	<input type="checkbox"/>
I never accept or make voice calls during a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**24) When do you text message during a meeting (check all that apply)?**

	For work use	For personal use
All the time	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am bored	<input type="checkbox"/>	<input type="checkbox"/>
Only when I have important work to do that cannot wait.	<input type="checkbox"/>	<input type="checkbox"/>
Only when I am not needed in the meeting or to discuss the topic at hand.	<input type="checkbox"/>	<input type="checkbox"/>
I never text message during a meeting	<input type="checkbox"/>	<input type="checkbox"/>

**25) For what purpose do you use your laptop during a meeting (check all that apply)?**

- ☐ Communication such as email or chat
- ☐ Work related activities (e.g., document production, financial work, etc.)
- ☐ Surf the Internet
- ☐ Programming
- ☐ Activities not related to work (e.g., games, read news)
- ☐ I do not use my laptop during meetings
- ☐ Other, please specify \_\_\_\_\_

**26) For what purpose do you use your cell phone during a meeting (check all that apply)?**

- ☐ Keep track of time
- ☐ Communication such as email or chat
- ☐ Work related activities (e.g., document production, financial work, etc.)
- ☐ Surf the Internet
- ☐ For work related emergencies only
- ☐ For personal emergencies only
- ☐ Activities not related to work (e.g., games, read news)
- ☐ I do not use my cell phone during meetings
- ☐ Other, please specify \_\_\_\_\_

**27) For what purpose do you use text messaging during a meeting (check all that apply)?**

- ☐ General communication to coworkers about work related issues
- ☐ For work related emergencies only
- ☐ For personal emergencies only
- ☐ Activities not related to work (e.g., chat, arrange social activities)
- ☐ I do not use texting during meetings
- ☐ Other, please specify \_\_\_\_\_

**28) What is your company's opinion on the use of mobile technology devices in the company (check all that apply)?**

	Laptops	Desktops	Netbooks	BlackBerrys	iPads	iPods	iPhones	Cell Phones
Very supportive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Somewhat supportive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Neutral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not very supportive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not supportive at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**29) What type of policies does the company you work for have regarding use of mobile technologies such as laptops and cell phones during meetings (check all that apply)?**

- ☐ Allowed to use mobile technology during meetings
- ☐ Not allowed to use mobile technology during meetings
- ☐ Allowed to use mobile technology during meetings when only co-workers are present
- ☐ The company does not have a policy regarding mobile technology
- ☐ Don't know

## **Post-Meeting Questionnaire**

The purpose of this survey is to gather your opinion about using mobile technology during the meeting you just attended. It should only take about 5 minutes to complete this questionnaire. Thank you in advance for your assistance.

**30) You were asked to participate in a meeting, what type of meeting did you participate in (check one)?**

- ☐ Presentation: The main purpose of the meeting was to present a new idea or sell a project
- ☐ Brainstorming: The main purpose of the meeting was to come up with new ideas or solve problems
- ☐ Ceremonial: The main purpose of this meeting was to honor an individual or celebrate an event
- ☐ Announcement: The main purpose of the meeting was to announce important or relevant information about a project, person, or the company
- ☐ Forum: The main purpose of this meeting is to provide input for an agenda
- ☐ Round Robin: The main purpose of this meeting is for each individual to provide an update on their progress
- ☐ Combination of two or more from the above meeting types
- ☐ Other

**31) Approximately how many people attended the meeting?** \_\_\_\_\_

**32) Approximately how long was your meeting?** \_\_\_\_\_

**33) Approximately how many people used mobile technology devices?** \_\_\_\_\_

**34) What type of technology did participants use (check all that apply)?**

- ☐ Laptops   ☐ Desktops   ☐ Netbooks   ☐ BlackBerrys   ☐ iPods   ☐ iPhones   ☐ Cell phones

**35) Approximately how often was mobile technology used during the meeting?** \_\_\_\_\_

**36) Approximately how long (in minutes) was mobile technology used during the meeting?** \_\_\_\_\_

**37) Approximately how long (in minutes) were you distracted by your use of technology during the meeting?** \_\_\_\_\_

**38) Approximately what percentage of time were you distracted by other people's use of technology during the meeting?** \_\_\_\_\_

**39) In general, describe why technology was a distraction for you?**

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**40) Was there a comment made about someone's inappropriate use of a mobile device during the meeting (e.g. shut off the mobile phone)? If so, please provide the comment and your opinion of the comment.**

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