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ABSTRACT

It is commonly held that mobile phones, more specifically smartphones, are the way of future. However, current literature in the realm of communications fails to explore the implications of the newer technology, and its components, on every-day life. In this master’s thesis, I use qualitative data collected from six focus groups to explore how smartphones are used today, consumer choice and willingness to pay for mobile applications and how users respond to advertisements within their chosen applications. The results show that consumers choose applications primarily based on peer recommendations and in an attempt to make their lives both simpler and more enjoyable. Participant responses in this area also indicated that the Technology Acceptance Model, as it stands, is not enough when it comes to smartphones. Therefore, this thesis provides an extended model in which acceptance of the smartphone is the first step and enjoyment of the device is mediated by other factors. Results also show that consumers are unwilling, in most cases, to pay for applications and do not pay attention to advertisements on their smartphones unless an audio component is present.
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Chapter 1

INTRODUCTION

According to information from the International Telecommunications Union, there were six billion mobile subscriptions worldwide at the end of 2011. This equates to roughly 87 percent of the global population (ITU, 2011). In 2010, there were three cell phones for every computer with Internet connection (BBC News, 2010). The International Telecommunications Union takes this statistic a step further and estimates that there were approximately 80 mobile phone subscriptions per 100 inhabitants, but only 30 subscriptions to the internet per 100 inhabitants, and under 20 fixed phone line subscriptions per 100 inhabitants in 2010 (ITU, 2010).

Mobile phones are no longer used exclusively for voice calls. With the advent of smartphones, mobile devices are being used as both a telephone and handheld computer. Smart phones are devices that allow two-way communication and interactivity with other users while also providing access to media (Jun & Lee, 2007). Mobile phones provide users with individuality, constant connection, the ability to find information easily and the means to buy products (Wais & Clemons, 2008). These capabilities lead users to pursue extremely personal settings, settings that allow them to control their phones in a way that best meets their individual needs (Park, Shenoy & Salvendy, 2008). As such, smartphone users are encouraged to download applications (apps) based on their personal interests and needs. These apps can be defined as “little programs that sit on a device and update even when the Internet browser is closed” (Klaassen, 2008). Companies including
Facebook, The New York Times, Google, Twitter and many more promote and extend their brands by developing apps for smartphones. In addition to enhancing brand recognition and use, apps are allowing companies to reap monetary benefits using an ad-based system. For example, Medialets and Pinch Media created programs that analyze app activity and allow developers to collect information pertaining to how many people use the apps, how often people use specific features and how long people spend using the apps (Klaassen, 2008). This information allows app developers to create a pricing system for advertisers and gain revenue without having to impose a monetary cost on consumers. The problem lies in the fact that not all users are early adopters, or even take advantage of all of the applications in the same manner (Verkasalo, Lopez-Nicolas, Molina-Casillo & Bouwman, 2010).

**Smart Phones**

Mobile phones are becoming an increasingly important part of everyday life. As mobile phone popularity has increased, so have the number of functions it performs. In other words, they are becoming “smarter.” Mobile phones today incorporate an increasing variety of other technologies: personal digital assistants (PDA), timer/alarm clocks, GPS receivers and navigators, MP3 players, gaming consoles, e-readers and laptop computers (Barkhus & Polichar, 2011). Based on global mobile statistics from the International Data Corporation (IDC), total smartphone shipments in 2011 were 491.4 million units. This is a 61.3 percent increase from 2010. In 2011, the top five smartphone manufacturers in order are as follows: Samsung, Apple, Nokia, Research In Motion and HTC. Samsung had a reported 0.1 percent larger slice of the market share than Apple (IDC, 2011).

In 2012, the trend continued and 712.6 million smartphones were shipped globally. This is 44.1 percent more than in 2011. Quarter four, 2012, also brought a shift in the top five smartphone manufacturers. Samsung, Apple, Huawei, Sony and ZTE now dominate the market (IDC, 2012).
The fact that Huawei and ZTE now find themselves among the Top 5 smartphone vendors marks a significant shift for the global market. Both companies have grown volumes by focusing on the mass market, but in recent quarters they have turned their attention toward higher-end devices. In addition, both companies have pushed the envelope in terms of industrial design with larger displays and smaller form factors, as well as innovative applications and experiences (IDC, 2012).

**Applications**

Due to increased wireless network bandwidth and more advanced processing power, mobile phones are able to run stand-alone applications and client-server applications (Holzer & Ondrus, 2011). Initially, phone manufacturers, mobile network operators and some mobile application and content providers controlled the development of mobile services (Holzer & Ondrus, 2011). However, roles have changed. Mobile network operators lost control, portal providers gained revenue streams and financial institutions and content providers became more seamlessly integrated into the platforms. Currently, the mobile development market is dominated by five platform providers: Nokia with Symbian OS, RIM with Blackberry OS, Microsoft with Windows CE OS, Apple with iPhone OS and LiMo Foundation with Linux Mobile operating system (Holzer & Ondrus, 2011).

According to TechCrunch, there are more than 1 million mobile applications available across five major platforms. The top 200 highest-grossing applications in the iPhone App Store generated four times as much revenue as the highest-grossing applications in the Android Market (TechCrunch, 2012). The iPhone App Store separates the applications into 16 categories ranging from business to entertainment to education. Each application has a rating scale, based on customer feedback (out of five potential
stars). The iPhone App Store also provides consumers with customer reviews for each application (TechCrunch, 2012).

Applications are not only for mobile phones. Smartphones can connect seamlessly with laptops, tablets and e-readers. This is particularly true with regards to Apple products (iPhone, iPod, iPad and MacBooks). Although Windows coined the term Microsoft Tablet PC in 2000, tablet PCs failed to gain popularity (Nguyen, 2010). In 2010, partially due to the success of smartphones, consumers began to buy into the tablet computer market. In January of 2010, Apple brought the iPad to the market and started paving the way for the resurgence of a tablet market. Global tablet sales are on the rise. In the second quarter of 2011, 13.6 million units were sold (a large jump from the 3.3 million shipped in the same period of the previous year). Two out of every three tablets sold in that quarter were iPads. However, the iPad is not forcing all of the competition out – in September of 2011, Amazon brought the Kindle Fire to the market. This e-reader and multimedia tablet, priced at a competitive $199, is connected to Amazon’s online store (Statista, 2012).

Although mobile devices and applications are becoming extremely prevalent in every day life, there has not been a lot of research looking at mobile phones and more specifically, smartphones and applications. Additionally, there is virtually no information about advertising and public relations topics in the mobile phone arena. Because of this gap in the literature, this thesis will explore how mobile phones are used today, how and why mobile applications are being used, what leads consumers to download one application as opposed to another, consumer willingness to pay for applications and attitudes toward advertisements within applications.
Chapter 2
LITERATURE REVIEW

Technology Acceptance Model

The Technology Acceptance Model (TAM) was born from an attempt to employ psychological factors as a means of explaining why people adopted new technologies. It aims to explain the factors that drive user acceptance of information systems (Davis, Bagozzi, & Warshaw, 1989). More specifically, and according to Davis et al., “the model is an attempt to derive the determinants of computer acceptance that is general, capable of explaining user behavior across a broad range of end-user computing technologies and user populations, while at the same time trying to be parsimonious and theoretically justified” (Davis et al., p. 985, 1989). TAM has five components: perceived usefulness, perceived ease of use, attitude toward using, behavioral intention to use and actual use.

TAM was inspired by the theory of reasoned action – a theory that assumes an attitude toward an action impacts behavioral intention that in turn impacts how an individual performs the action (Ajzen & Fishbein, 1980). This theory implies that there are two factors that precede intention: predisposition, or attitude, toward a behavior and an internalized belief that individuals close to the decision maker prefer that he or she participate, or do not participate, in a specific behavior. Ajzen and Fishbein (1975) referred to the second preceding factor as a subjective norm. They believed that this
subjective norm is based on an individual’s preferences as well as his or her desire to comply with preferences (Ajzen & Fishbein, 1975).

As with other theories, the version of TAM most referenced today is an extended version of the original – researchers have branched out and considered new motivations. In 2001, Moon and Kim proposed a model in which perceived playfulness acts as an antecedent of attitude toward web surfing. This model was a reaction to the fact that the majority of preceding TAM research dealt with extrinsic motivations and ignored the effects of intrinsic motivations (Moon & Kim, 2001). Researchers now link perceived ease of use and perceived usefulness to extrinsic motivation and perceived enjoyment and perceived control to intrinsic motivation (Park, Lee & Cheong, 2008). Liao and Tsou also conducted a study in which they extended the TAM to include perceived quality and perceived playfulness. In their study, they found that higher perceived quality of SkypeOut (a peer to peer voice over Internet protocol software that can be used to make video calls, phone class or send text messages) had a direct impact on perceived ease of use. Perceived quality leads users to perceive technology as effortless – and perceived ease of use is a predictor of technology adoption. In addition to perceived quality, Liao and Tsou’s model found significance with regards to perceived playfulness. The results of their study found that the more playfulness SkypeOut employed, or possessed, the more positive an attitude users had toward the software (Liao & Tsou, 2009).

**Perceived usefulness**

When individuals decide to accept or reject a new technology, they consider the impact said technology will have on their lives – they contemplate if the new technology will make their lives easier. The degree to which an individual believes that a new
technology will benefit them and improve their life is the technology’s perceived usefulness. More formally defined, perceived usefulness is “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis et al., 1989).

The link between perceived usefulness and intention to adopt a new technology is thought to hold true when it comes to mobile devices. When it comes to mobile Internet, mobile data services, mobile banking, mobile commerce, mobile healthcare systems and advanced mobile services in general, perceived usefulness has been deemed an important determinant for user adoption (Cheong & Park, 2005; Lu et al., 2005; Hong et al., 2006; Luam & Lin, 2005; Wu & Wang, 2005; Wu et al., 2008). That being said, perceived usefulness does not seem to be a consistent indicator of a user’s intent to adopt a new technology. Though researchers have found support for perceived usefulness in some cases, there have been some instances in which it was rendered an insignificant predictor. For example, in a study looking at user adoption of mobile games, Ha et al. did not find significant evidence supporting perceived usefulness as a predictor of a user’s intention to play (Ha et al., 2007). Another study conducted by Meso et al. found that perceived usefulness had no impact on the use of mobile technologies when it came to both the social and business arena (Meso et al., 2005).

**Perceived ease of use**

Perceived ease of use refers to the effort an individual must put into using a system, or in this case an application. More specifically defined, perceived ease of use refers to “the degree to which a person believes that using a particular system would be free from effort” (Davis, 1989). Relying on this definition, Davis postulated that ceteris
paribus, an application that users perceive as being easier to use would be accepted over the alternative (Davis, 1989). Originally, Davis predicted that perceived ease of use and perceived usefulness would be parallel predictors of adoption. However, results found that the perceived usefulness – adoption relationship was significantly stronger than the ease of use-adoption relationship. Based on his findings, Davis suggests that perceived ease of use should be studied as a precursor, or antecedent of perceived usefulness rather than a direct predictor of usage (Davis, 1989).

**Perceived enjoyment**

Perceived enjoyment, as defined by Davis et al., is “the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated” (Davis et al., 1992). With regard to hedonic systems, such as handheld devices, perceived enjoyment is a greater predictor of adoption than perceived usefulness (van der Heijden, 2004). In an analysis of four mobile services – SMS, contact, payment and gaming – Nysveen et al. found that a user’s intent to adopt mobile services is directly impacted by perceived enjoyment (Nysveen, Pederson & Thorbjornsen, 2005). Though their results found a strong impact of perceived enjoyment and perceived usefulness, Nysveen et al. found that perceived enjoyment had a significant and positive effect on users’ intention to use and adopt both goal-oriented and experiential services (Nysveen et al., 2005).

Perceived enjoyment is a particularly important aspect of TAM because mobile phones are becoming a more prominent part of daily life outside of work. Today, they are used for non-work activities such as: entertainment, information seeking and social life maintenance. Due to this shift in purpose, consumers focus on pleasurable,
aesthetically pleasing and user-friendly qualities as much as, if not more than, efficient and functional qualities (Manovich, 2006). This shift from task-related usability has led to more of an emotional-usability viewpoint in which enjoyment relates to mobile service adoption (Mahlke, 2007).

Previous studies looking at consumer behavior have found perceived enjoyment to be a significant predictor of adoption, or continued behavior. In 2002, Khoufaris determined that shopping enjoyment is a key predictor when it comes to a consumer’s intention to revisit an online store (Khoufaris, 2002). Perceived enjoyment also had a significant impact on user e-loyalty, or a consumer’s intention to revisit a specific site for his or her online needs (Cyr et al., 2005). When it comes to online gaming, perceived enjoyment plays a large role in an individual’s motivation for playing. Players who experience enjoyment are more likely to be active users (Wu & Liu, 2007). Though smartphone applications come in small packages, their uses are very similar to mainstream, online websites and games. Therefore, it is reasonable to hypothesize that perceived enjoyment will have an impact on the applications that users choose to download and use.

**Perceived playfulness**

Perceived playfulness is a concept that is related to perceived enjoyment. Moon and Kim introduced perceived playfulness in 2001 when they suggested that the Internet was used for more than utilitarian purposes (Moon & Kim, 2001). Their extended TAM looked at playfulness, based on the concept of flow, as an intrinsic belief that is formed on the basis of an individual’s experience with the environment. More specifically defined, perceived playfulness is “The extent to which the individual perceives that his or
her attention is focused on interaction with the World-Wide-Web; is curious during the interaction; and finds the interaction intrinsically enjoyable or interesting” (Moon & Kim, 2001).

In 2005, Cheong and Park found that perceived playfulness acts as a predictor of an individual’s intent to use mobile Internet (Cheong & Park, 2005). Chung and Tan found support for perceived playfulness in the context of general information searching websites (Chung & Tan, 2004). Fang et al. found significant support for playfulness when it came to a user’s intention to participate in mobile games, but not when it came to general mobile Internet services (Fang et al., 2005).

**Perceived quality**

Multiple researchers have conducted research employing TAM and an added construct, perceived quality. However, they have done so using varying definitions of perceived quality. In 1996, Dabholkar used five attitude-based attributes to determine perceived quality: speed of delivery, reliability, enjoyment, ease of use and control (Dabholkar, 1996). Based on extensive research on factors that can impact the success of an information system (as conducted by Delone and McLean in 1992), Lin and Lu chose to focus on three variables related to quality: response time, system accessibility and information quality. In their examination of the TAM model in the Internet environment, Lin and Lu found evidence that perceived usefulness was the largest predictor of reuse. They also found support for the notion that perceived quality ultimately impacted user evaluation of perceived usefulness (Lin & Lu, 2000). In 2009, Liao and Tsou chose to define perceived quality using measures that better suited the technology system that they
were studying. They used four attributes to measure perceived quality: response time, voice quality, connecting rate and dropped calls (Liao & Tsou, 2009).

Because the focus of this research is on mobile applications – as opposed to Internet or computer acceptance – quality will be defined using the following measures: response time and reliability. Response time refers to the amount of time a user must wait to interact and use an application. Reliability refers to the applications and how well they perform their expected tasks – do they run without bugs? Do they unexpectedly shut down?

**Attitude toward using**

Attitude toward using is defined by Davis as “The degree of evaluative affect that an individual associates with using the target system when performing the job” (Davis, 1989). With regards to TAM, attitude is a mediator between a user’s beliefs (perceived usefulness, perceived ease of use, perceived enjoyment and perceived playfulness) and his or her intentions (Liao & Tsou, 2009). More favorable attitudes lead to increased system usage whereas unfavorable attitudes lead to system abandonment (O’Cass & French, 2003).

**Behavioral intention to use and actual use**

As defined by Moon and Kim, behavioral intention to use is “the strength of one’s willingness to use a system” (Moon and Kim, 2001). That being said, the more important aspect is actual use, or “a self-reported measurement of usage of the system” (Davis, 1993). Though the term itself states “actual usage,” most TAM studies use self-reported usage and assume that it successfully captures actual usage (Szajna, 1996).
Figure 1: Technology Acceptance Model (Venkatesh & Bala)
Uses and Dependency Model

In addition to understanding whether or not consumers are likely to adopt a new technology, it is important to understand what they seek to gain from the technology they choose. By combining two methods, the Uses and Dependency model does just that. The Uses and Dependency Model was created in an attempt to combat criticisms of the two theories it is derived from: uses and gratifications and media system dependency (Rubin & Windahl, 1986). This model looks at the media-society-audience connection as proposed by Ball-Rokeach and DeFleur and integrating the individual-centered uses and gratifications perspective (Katz, Blumler & Gurevitch, 1974).

Dependency

As direct experience with societal structures becomes limited, people rely on the media. Individuals depend on media for information. The Dependency perspective suggests that sociostructural forces that determine the information made available to the media determine the amount of time an individual devotes to media consumption. These resources, combined with an individual’s need for information, determine audience dependence on media (Rubin & Windahl, 1986) Dependency suggests that media influence is determined by the interactions between the societal system, media system and audience (Rubin & Windahl, 1986). The degree of audience dependence on media is important because it is a key component to understand when media messages can change audience beliefs, feelings, or behavior (Ball-Rokeach & DeFleur, 1976).

The relationship between society and media deals with how access and availability impact an individual’s media experience. Media dependence on societal
system can vary. However, the media tend to rely on the political system to provide legislative protection and facilitation and to provide political information. Government support of media outlets can come in the form of tax incentives or direct payments. In return, political systems require aid from the media to reinforce political values and maintain, “order and social integration, and organization and mobilization of the citizenry” (Rubin & Windahl, 1986). Furthermore, when there is a high level of structural instability and change in a society, there is greater potential for dependency, which leads to a higher chance of cognitive, affective and behavioral effects (Ball-Rokeach & DeFleur, 1976). Therefore the relationship between the media and the audience is the most important variable in the model because it impacts how people may choose to use the medium. Certain media functions may be more socially central, or more important for social and individual well being, than others. In other words, certain media functions are more relevant to an individual than others. The more relevant the media, or the greater the amount and centrality of the information delivered by a medium, the greater the audience dependency on said medium (Ball-Rokeach & DeFleur, 1976).

The relationship between society and audience deals with how societies influence an individual’s motivation for using media and provide standard values, norms, knowledge and laws (Ball-Rokeach & DeFleur, 1976). There are a variety of societal systems that depend on audiences. For example, the economic system depends on consumers and political systems depend on voters and special interest groups. In these situations, mass media play intermediary role (Ball-Rokeach & DeFleur, 1976).
Uses and gratifications

Human motivation drives human behavior (Maslow, 1943). At its most basic definition, uses and gratifications theory can be defined by the fact that consumers will seek content that appears to be the most gratifying. The amount of gratification a consumer is likely to have is dependent on his or her interests and personal needs (Windahl, Signitzer & Olson, 1992). The uses and gratifications approach springboards from this knowledge and assumes that audiences are motivated by social and psychological needs to consume media (Katz, Blumler, and Gurvitch, 1973). The uses and gratifications approach is most interested in how and why individuals consume media. Herzog’s study of the motivations people had to listen to daytime radio and Berelson’s study about what people missed most about newspapers during a strike are early examples of this type of research (Herzog, 1954; Berelson, 1954). That being said, the uses and gratifications approach really took hold from Katz’s editorial calling for a focus on what people “do with media” as opposed to what “media do to people” (Katz, 1959).

As defined by Katz, Blumler and Gurevitch, the uses and gratifications approach functions on the presumption that individuals, or audiences, are active in media use and choose to consume the media that they expect to gratify their needs (Katz, Blumler & Gurevitch, 1974). On an individual level, media are thought to satisfy audience needs for personal relationships, personal guidance, surveillance, identity formation and diversion (Blumler, 1979). This model assumes that individuals are aware of these needs and actively attempt to satisfy them. The model also assumes that individuals are both
capable and willing to accurately express their motivations in surveys and interviews (Bentley, 2012).

To date, previous uses and gratifications studies have developed typologies of gratifications by medium including: newspapers and magazines (Licheterstein & Rosenfeld, 1984), television (Palmgreen & Rayburn, 1979), the VCR (Lin, 1993), cable TV (LaRose & Atkin, 1988) and telephones (Dimmick et al., 1988). From these studies, researchers identified the following gratifications: surveillance, escape, arousal, reassurance, companionship, sociability, diversion and instrumentality (Rubin, 1994).

In addition to the media listed above, researchers have seen the benefits to using the uses and gratifications approach to study mobile phone use. In 2002, Rubin postulated that uses and gratifications would be a valuable model for understanding the newer, more interactive media (Rubin, 2002). To date, mobile phones have evolved from being a status symbol, to a necessity and finally to an aid to a mobile life-style (Blinkoff, 2011). For adolescents, the motivation to use mobile phones is derived from social networking and peers. Among adults, family and security drove mobile phone use (Blinkoff, 2011). In a study conducted by Wei and Lo, results showed that motivations of mobile phone use explained the variance in use beyond voice functions. The results support the active audience approach to studying the hybrid medium of mobile phones. Furthermore, the results study provided evidence that uses and gratifications is an applicable approach when it comes to studying new interactive media. They did so by showing that the instrumental use motivations drove mobile phone use for news and web surfing while the motivation to pass time was linked to gaming via mobile phones (Wei & Lo, 2006).
Combining dependency and uses and gratifications

The uses and dependency model allows researchers to interlink two perspectives: the microperspective of individual media behavior and the macroperspective of the media as it operates in a given society (Rubin & Windahl, 1986). Dependency allows researchers to explore the structure of audience needs and motivations while also providing them with a framework for exploring the role of alternatives and their consequences (Rubin & Windahl, 1986). The uses and gratifications portion of the model allows researchers to explore an audience’s receiving behavior (Rubin & Windahl, 1986).

Although Rubin and Windahl’s study focused on the motivations and patterns behind television viewing, the underlying theory is also relevant for smartphones and applications. Much like television, mobile applications can be used for time consumption and entertainment as well as information seeking. One of the goals of this thesis is to determine the motivation and patterns behind application use – why people choose to download specific applications and how they ultimately use them.

Willingness to Pay and Advertisements

Basic principles of economics assume that consumers are rational actors seeking to maximize product utility. This utility can be met by meeting price and/or quality needs. Consumers adjust price-quality trade-offs based on the options that are available in the market place. According to Bertini, Wathieu and Iyengar, consumer preferences are captured using an equation that states that net user benefit is a function of both quality and price. The more sensitive a consumer is to quality, the more he or she will be willing to spend on the product. (Bertini et al., 2012). When a service, or in this case an
application, is provided to a consumer free of charge, the cost comes in other forms. In many cases, the main alternative cost comes in the form of advertising. Advertising within applications can be seen as both an attractive and unattractive alternative. Consumers could adopt the mindset that advertisements signal lower product quality. They could also view advertisements as intrusive and take on the attitude that an application is not worth the hassle – even if it was “free.” Consumers could also take on a positive view of free applications that use advertisements. In addition to the fact that they are free, studies have shown that consumers can enjoy free products much more than products they receive at a low monetary cost. An explanation for this type of behavior can be found via the positive affect consumers’ link with free alternatives (Bertini et al., 2012). This thesis aims to explore the point at which advertisements cross the line and lower the quality of an application to the point where consumers would prefer to pay for the content/service.

**Research Questions**

The literature reviewed indicates a lack of information about the ways in which smartphone users may interact with applications, as well as a lack of information about their feelings about advertising in the smartphone environment. This is of critical concern, as mobile apps, a key feature of smartphones, are labor-intensive to produce. Based on traditional media models, the industry has looked to advertising to fund and pay for smartphone apps. However, users’ feelings about advertising in a mobile phone environment are not clear. Therefore this thesis explored the following research questions:

RQ 1: How does consumer attachment to smartphones impact daily life?
RQ 2: What features and influences impact a smartphone owner’s decisions about which apps to download?

RQ 3: How do consumers describe their interactions with apps across multiple mobile devices?

RQ 4: How do consumers evaluate the relative benefits of free apps with advertising versus paid apps without advertising?

RQ 5: How do smartphone users describe their experience of advertising in the mobile telephone environment?
Chapter 3

METHODOLOGY

Forty-eight students from a large public university in the Eastern United States were recruited to participate in focus groups. There were a total of six focus groups. The first focus group was recruited via email while the remaining five focus groups were recruited from a large enrollment telecommunications class in the College of Communications. In return for their time and participation, the students were awarded 10 points of extra credit, and an alternative assignment was provided for those unable or unwilling to participate. Although a particular screening procedure was not put into place, 23 of the 48 participants were female, 25 of the 48 participants were male and 44 of the 48 participants had smartphones. More specifically, 23 of the 48 participants had iPhones, and 25 had other smartphones. The participants ranged in age from 19 to 24 – the breakdown is as follows: (five) 19-year-olds, (twenty-one) 20-year-olds, (seventeen) 21-year-olds, (one) 22-year-old, (three) 23-year-olds and (one) 24 year old. Although the majority of participants were recruited from the same large telecommunications class in the College of Communications, 10 participants had non-communication majors. Their majors included: kinesiology, veterinarian biomedical science, industrial engineering, theater, English and psychology and economics. For a visual breakdown of the participants, please see table 1.

All focus groups took place in the Knowledge Commons at the Pennsylvania State University and lasted for approximately 40 minutes. The author served as the moderator for each focus group. Before the focus group began, participants heard a
generic message relating to verbal consent taken from the IRB website. They were assured that their identity would be protected, and in accordance with that promise, every participant’s name has been reduced to a number. Each focus group was recorded using a voice recorder and saved onto a flash drive.

The qualitative method of conducting focus groups was used because it is a commonly used technique in exploratory research (Lindlof and Taylor, 2011). The increasing use of “smart phones” is a relatively new phenomenon. Therefore, it is important to approach the topic from more than one perspective. Focus groups provide the researcher with the means necessary to develop hypotheses and more sophisticated questionnaires. Additionally, focus groups are an expedient way to collect multiple different viewpoints on a particular subject (Lindlof and Taylor, 2011). Perhaps most importantly, focus groups allow researchers to exploit the “group effect.” The method is based on the fact that people draw upon “a shared fund of experiences” (Lindlof and Taylor, 2011). It is for this reason that, “the explicit use of the group interaction [produces] data and insights that would be less accessible without the interaction found in a group” (Lindlof and Taylor, 2011). This design ultimately facilitated interesting conversation fed by participants asking each other various questions.

A transcription of each focus group was made from the recordings by the author and saved in a Word document to better facilitate analysis. The transcription therefore served as the first round of analysis. During subsequent readings of the transcripts, general patterns and common themes were identified and placed into categories for further explanation as seen in this paper. These categories serve as templates for theories regarding smartphones and applications. As explained by Glaser and Strauss,
comparative analysis, in which different groups or subgroups of people are compared, can be used to build theory. The theory can be tested and refined by comparing it with other comparison groups and finding patterns within the data.

In discovering theory, one generates conceptual categories or their properties from evidence, then the evidence from which the category emerged is used to illustrate the concept. These conceptual categories can be explored in comparison groups, which may support the categorical concept or suggest modifications to make it more generalizable (Glaser and Strauss, 1967).

<table>
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<th>Number of Participants</th>
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</tr>
<tr>
<td>Number of participants without a smartphone</td>
<td>4 (Participants 3, 6, 25 and 39) *participant 6 has had a smartphone in the past</td>
</tr>
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Table 1: Participant Breakdown
A list of questions that related to each of the seven research questions was used to facilitate conversation in each of the focus groups. The questions were developed to explore each of the theories reviewed above and to garner participation and conversation between participants. There were a total of 27 questions per focus group.
Chapter 4

FINDINGS

Consumer Well-being

Research question 1 asked how consumer attachment to smartphones impacts daily life. To get at the heart of this question, it is important to first gain an understanding about what consumers think it means to have a smartphone. The conversations in these focus groups provided insight into the everyday use of smartphones and the resulting interactions users face with regards to their peers and in their environments. Based on the transcripts, there are three major themes, all relating to consumer wellbeing. Participants revealed that the shift to smartphones has led to an increase in perceived danger while also impacting their emotional and communicative health.

The purpose and use of cell phones has changed dramatically in the last 10 years. When asked about their first cell phones, participants described basic phones that had one purpose: making phone calls. Participant 3 stated,

I got my phone when I was 11. And basically, it was just because my mom worked until 4:00 pm and so I had to stay after school. She was tired of coming into school and looking for me, so she got me a phone.

Multiple participants agreed that receiving their first phone was the result of after school activities, emergencies and the need to remain in constant contact with family members. Participant 21 stated, “I got my first one in sixth grade. My mom got it for me because she said she was scared for me and wanted me to be safe.” Participant 28 said, “I basically got it so I could call my parents after volleyball practice to pick me up. I could only use it to call them.”
In addition to being used for the purpose of family conversations, each participant (with the exception of a few) described their first phone as some derivative of what they deemed a “brick” phone. Participant 12 said, “I think I had one of those Nokias when it was like a block and it didn’t have – I mean it was way by far not a smartphone. It had a screen on it, but not much else.” Participant 23 said, “I had a Motorola like brick phone, and it didn’t even have a color screen.” Participant 21 also said, “It [the phone] was a Nokia, one of those large brick ones.” Participant 44 said, “It was one of those, like one of those ones you can drop on the ground. It’s like a rock.” Other descriptions included descriptions of walkie-talkie phones and flip phones with antennas. Participant 9 said, “My first personal one [phone] was one of those Nokia walkie-talkie types of phones.” Participant 45 said, “I got my first phone when I was 13 or 14. It was a flip phone. It had an antenna that went up.” One description was as follows: “It didn’t even have a calendar or a calculator on it. It was just a phone.”

Today, cell phones are expected to be much more than “just a phone.” Participant 5 explained,

I feel like I had a lot of the technologies that a single smart phone has, but I had them separately. But now, on my smartphone, it’s all just combined and so much more convenient.

Participant 1 said,

I do a lot of things with my phone; texting, make a call, take photos and do Photoshop for my photos and Skype, Chinese Facebook, Chinese Twitter, Facebook, a lot of stuff, like whoa. Like my phone always dies in-in five hours. It’s terrible.

Participant 11 said “The things that I would do on a computer with the Internet, I use on my phone more so than texting or even talking on the phone.” In response to the
question, what do you use your phone for most, Participant 7 said, “Just, um, everything. I mean, just, uh, Internet and, and, uh, texting; I would say both.” Participant 8 explained her smartphone use by stating, “I’ll wake up and see my texts, got through my emails. Um, like Facebook, uh, like Twitter, Instagram. Um, my cars news, technology news, and just kind of like repeat that like throughout the day.”

Smartphones do perform the basic function of making a phone call. However, users also anticipate using smartphones to retrieve directions (GPS), use social media, check e-mail, music, take pictures and keep calendars. The vast majority of participants said that they no longer use an assignment book or keep a hard copy of a calendar. Instead, they choose to maintain an electronic calendar housed on their phones because “it will always be on hand.” Participant 34 said, “Since I got a phone that can keep stuff like that [assignments and appointments], I almost exclusively use my phone.” Participant 20 stated, “I only use my phone [not an agenda book] because it’s always with me and I don’t, I’m not, in the habit of carrying a planner or anything. I know this [smartphone] is always there.” Participant 11 said,

Any time I have any kind of commitment like this [focus group], I enter into my Google Calendar widget. And it reminds me like an hour or two ahead of time. Then I have a sticky note app and if I need to remember something, I put it on there. I’d be worthless without it.

Participant 9 said, “I do the exact same thing. I use my calendar all the time, like for this [focus group], I got an alert two hours ago that reminded me I had to be here. And like, I do that every time I work.”

Many participants also cited the benefits of having a calendar that syncs with multiple mobile devices. Participant 2 equated smartphones to a professional tool by
stating, “I feel like I need to have access to my e-mail and stuff like that, and to respond to things in a timely manner. I feel like it’s a monetary investment in my future.” Many participants agreed that even if they were to pay for their phones, they would do anything within their power to keep a smartphone.

In fact, when asked why he chose to purchase a smartphone, Participant 31, who pays for the smartphone and the data plan, stated “I just need to have my e-mail and my internet and directions. You can get so much done, so much faster. It’s worth it.” Many participants cannot imagine going back to the days of more simplistic phones. Participant 6 had to make this transition from a smartphone to a “dumb” phone and had the following insights,

It’s so hard. It’s awful. You can’t look up directions, and you can’t just simply Google the definition of a word. Random little things that you really don’t think about being so convenient on your phone make it so inconvenient when you don’t have it anymore.

These comments show that smartphones enable consumers to complete a variety tasks with just one device. They show that organizational features and the ability to multitask is highly desirable and worth the cost of an expensive cell phone plan. The comments also reveal that consumers are willing to do almost anything to keep their phones – they are becoming attached.

The mobile phone market is in a perpetual cycle: as mobile phones become more popular, the number of functions they perform increases which lead to an even greater increase in mobile phone popularity. The International Data Corporation (IDC) reports that total smartphone shipments in 2011 were 491.4 million units - a 61.3 percent
increase from 2010. This means that more people are using a technology that, through unhealthy attachment, can lead to physical, emotional and communicative health issues.

**Perceived Dangers**

Based on the discussion, the participants perceived two main dangers that result from the use of mobile devices: Walking and driving. One participant bluntly stated, “I can’t walk and text at the same time.” Another participant told a story about an example of when she was walking and texting and said, “I walked into a stop sign once… that was bad.” Yet another participant said, “I’ve almost been hit three times because I was texting and walking. It’s really bad.” All of the participants agreed that it is hard to drive on campus because people have a tendency to look at their phone while they are crossing the street. One participant took the conversation a step further and said, “It’s annoying that people can’t put their phones away. If you look at everyone walking around, they are looking at their own phones. I wish that everyone would just look where they’re going and be friendly.”

An even more pressing danger associated with mobile devices is texting and driving. The majority of participants admitted that they have texted while driving in the past, and continue to do so. One participant gave an example of the danger resulting from texting while driving.

I was 16 or 17 and was texting and driving. There was a green light, but after I texted and looked up, the light wasn’t green anymore. I hit an old lady taking her husband to the hospital… he had Parkinson’s or something and was freaking out. Participants were taken aback by this story. One asked, “So you don’t do that anymore, right?” However, even though they were taken aback, they also admitted to texting while
driving. One of the participants attempted to rationalize the behavior by saying, “I do it [text] at red lights and stop signs.” This shows that even though participants were eager to tell each other that texting and driving was dangerous, they are too attached to their mobile devices to take their own advice. Instead, they choose to continuously put themselves in physical danger.

Not even a new law making texting while driving illegal is enough to deter participants from putting themselves in danger. (As of November 9, 2011, it is illegal to text while driving in Pennsylvania.) When asked if they had heard about the new law, all of the participants said yes. However, when asked if the law prevented them from texting while driving, the decisive answer was no. One participant said that the law only prevents her from texting and driving when police officers are in the vicinity. Another participant said, “I’m more cautious about it, but I’m still opening my phone or trying to dial a phone number.” Yet another participant said, “I think I would look at it [text message], but I wouldn’t answer until I’m done driving.” Of all 48 participants, only one stated that while driving, the mobile device remains out of sight and out of reach. Even though the participants gave the impression that they understood the new law, it seems as if they only had a superficial understanding and did not care to follow it. Instead, they were content to put themselves and others in danger. Their mobile devices allow them to put their desire to respond ahead of their physical safety. This is linked to Melissa Gregg’s argument that mobile devices allow users to put work at the forefront of their daily concerns, at the expense of sources of intimacy and fulfillment (Gregg, 2011).
In addition to disregarding the law, some participants found it frustrating. For example, one participant said, “I find it all kind of annoying. I get what they’re trying to do, but there have been times when I’m driving and try to change a CD or a song and that’s just as distracting.” Participants also expressed some of the mixed signals they receive from parents. “If my mom calls and asks if I made it to where I was going and I don’t respond in like ten minutes, she’ll think I was in an accident.” In response to this comment another participant said, “Yeah, and then she’ll get mad. She’s like you never respond to me. But if I do respond, she says, ‘Don’t talk to me while you’re driving.’”

**Emotional Health**

**Security**

Participants saw their mobile device as a safety net. They admit to feeling anxious without it – they are addicted to the notion of being constantly connected. They cannot help their compulsion to be available. Participant 24 said, “Without my phone, I cry because I can’t function without it every day.” When I asked if they turned their phones off before beginning the interview, nine participants said no and one stated that her phone had died. When asked how uncomfortable they were when their phones didn’t work, the same participant stated, “It gives me anxiety.” Participant numbers 16, 27, 28, 42, 43, 44, and 45 admit to carrying chargers with them, wherever they go. Participant 43 said, “I like to keep a charger with me all day.” Participant 28 said, “It’s always good to have it [smartphone] charged, so I always bring my charger along too.” Participant 23 admitted to buying a specific phone case to ensure that her phone didn’t die, “I got a solar case, so it charges it [smartphone] with built-in battery, so mine doesn’t die anymore.” The sentiment was similar when the participants were asked to describe how they feel
when they forget their phone. One participant stated, “I feel naked without it.” Another said, “I feel like it’s my go-to for everything. It’s like my little child. I don’t know – I mean I get really uncomfortable and I obsess until I have it.” Participant 27 said, “I don’t know how I ever survived without it.” A few participants admitted to going back for their phone: “Driving to work this summer – I was probably like 20 miles away when I realized I didn’t have my phone. So, I went back and got it.” When I asked why, the common answer boiled down to, “I need it.” A couple participants even admitted to missing class because they had forgotten their phone. Participant 37 said,

I got it [smartphone] one time, but that was because I was doing a proj- well, it’s probably because I still wanted to. But that day, of course, I needed it. I was walking to class, and I was already five minutes late, and then I was just, like, whatever. I was flustered and I just went home to get my phone. I didn’t even go to class.

In response to Participant 37, participant 34 said, “I’ve done that before. That’s funny. It’s like, oh, I forgot my phone so I’m not going to class today.” Participant 20 also admitted that if he forgot his phone, he would, “Not go where I’m supposed to go.”

A need for constant contact

Due to the pervasiveness of mobile devices, consumers expect rapid response rates; they expect their texts, emails and phone calls returned quickly. One participant said, “I know everybody has their phone and I know that everybody’s looking at their phone. So if someone isn’t responding to a text message, especially if it’s information I need, I get really annoyed.” The speed with which participants expected to receive a response varied on the importance of message. Participants agreed that if it’s an important text, they get annoyed if they have not received an answer in two minutes.
However, if it is a text about upcoming plans, participants will generally wait 30 minutes and then send a question mark in an attempt to prompt a response. Participants also find the ability to text, look at emails and check Facebook extremely useful when it comes to working in a group. One participant explained this sentiment by stating, “Because we’re working on a group project all day, I constantly had to check updates and send emails. Having everything on my phone and being able to see it all immediately makes everything so much easier.”

Although participants expressed a desire to have their smartphones and be consistently connected, some participants saw the harm that smartphones can cause. Some participants perceived mobile phone use as an addiction: “I think I’m addicted to just sitting and texting because if I’m not texting, I’ll just be like, ‘hi – talk to me.’ I think I just like to be texting someone.” Participant 37 explained that,

It [smartphones] can sometimes take up your life. Like when I need to study, I’m always doing something. And sometimes when I go to the library, I will purposely leave my phone at home. But then I’m thinking as I’m studying, what if I get a text?

One participant became so attached to her smartphone that she said, “I’m convinced now that when I graduate, no matter how little money I’m making, I’m going to have to buy a smartphone.” In addition to being addictive, participants observed that smartphones can act like a crutch in certain situations. One participant mentioned that as soon as there is a lull in any conversation the best bet is to turn your attention to a mobile device.

Participants said that they could not handle some social situations. Interviews seemed to be a particularly nerve-wracking situation, but even silence in general made participants feel uncomfortable.
Emotional benefits

Although an attachment to smartphones can become unhealthy, and the comments from this study were articulated in a mostly negative light, it is also evident that there are some emotional benefits associated with having a smartphone. With hundreds of applications available, consumers have the ability to choose the applications that best suit their perceived needs. As you will see later in this paper, consumers have a tendency to download applications that keep them in constant contact with the people they care about most, entertain them and help them relax. Previously, this thesis discussed how far out of their way students were willing to go for their smartphones. There is a reason for that – multiple participants said that they could not live without their phones. The applications and the roles that they fill are what make a smartphone feel like a security blanket. Without the applications and the roles they fill, it is unlikely that people would be so attached to their mobile devices and willing to pay so much to keep their expensive media plans. As mentioned earlier, smartphones are so important to daily life that consumers are willing to find a way to pay for the plan, “no matter how little money” they are making. Remaining connected, entertained and relaxed can foster a positive emotional state. If something does not fulfill a need, or does not make a person happy, what is the point of becoming attached?

Communicative Health

Smartphones do more than impact a consumer’s physical and emotional well-being; they impact a consumer’s communicative health by contributing to social anxiety and distraction.
Social anxiety

Participants believed that attachment to mobile devices can lead to social anxiety. They explained that mobile phones are used to diffuse awkward situations and avoid face-to-face conversations with strangers. The participants also believed that their comfort with texting and mobile technology made them more anxious in interviews.

Participant 6 said,

I’ve totally walked into a room or been sitting there for awhile and looked around in minute and just seeing every single one of my friends like scrolling through whether it’s like Twitter or Instagram or whatever it is they’re doing. And I’m just sitting there like, “Well, I thought we were all enjoying this television show or whatever movie we were watching, but like it’s cool, whatever.” It’s like mindless. You don’t even know that you’re doing it, but you’re always on your phone, always checking social media or whatever’s available to you and not really like paying attention to your friends in real life who are visibly sitting there with you. It’s-it’s kind of annoying.

Participant 41 said, “Smartphones take away from social situations – you know what I mean? – People on their phones instead of talking to their friends and stuff.” Participants said that sometimes they find it difficult to strike up a conversation with people they don’t already know: “I don’t know what to say and I hate the silence, so I use my phone instead.” Participant 13 said, “We could be sitting in this room and everybody is on their phone instead of talking with each other.” Agreeing, participant 12 said, “Yeah, like verbal communication, it’s just like nonexistent.” Participant 31 said, “It’s funny, I was just thinking about this in class today. It’s like you’re almost consumed in it [smartphones]. I mean, on the way up here, almost everyone was just on a phone.” The same was true for participants before the focus group began. I purposefully started each focus group a couple of minutes late in an attempt to observe how the participants
communicated with each other without mediation. Unless the participants came with a friend, or someone they seemed to know well, they were focused on their phones instead of talking with each other. Participant 4 attempted to explain this habit by saying, “I think it’s kind of like a comfort thing. Like, if there is an uncomfortable part of a movie, people all take out their phones and start like caressing the screens and stuff.” Although participants enjoy using their phones, they recognize that it can lead to some social problems. In response to “What is the downside of having a smartphone,” Participant 25 said, “Less real time.” Participant 32 said, “When do you talk to real people if you’re always texting people?”

In addition to making interactions with their peers more nerve-wracking, participants have said that their social anxiety extends into their job interviews. One participant said, “I hate in-person interviews. I always get really nervous that I’m going to say the wrong thing or stutter – I’m not used to talking face-to-face with people I don’t know.” Another participant admitted that she has to plan exactly what she says because “there is no editing a conversation you have face-to-face, it’s not like a text message.”

The benefits of being connected

Although participants acknowledged that smartphones can negatively impact social interactions with others, they also saw the importance of communication, and appreciated the ability to be connected and being organized.

Mobile devices have become increasingly popular; people have lined-up for hours with the express purpose of purchasing the latest smartphone. With all of the new functionalities built into smartphones, it is no surprise that people are becoming
increasingly dependent on their mobile phones. Increases in technology have long been hailed as progressive. Smartphones are considered beneficial to society as a whole, but is having everything in the palm of your hand truly desirable? Is it worth being tethered to a small device, dependent on a machine and always within societies’ reach?

**Distraction**

Although the majority of participants stated that they were annoyed that people are constantly on the phone, they too expected rapid responses. This expectation leads to distraction and ultimately dangerous situations. People have become so dependent on their mobile devices, in order to remain in the loop, that they have a difficult time refraining from texting in inappropriate situations (driving, class, work, etc.). Participant 35 said, “When you have a smartphone, there are more things to do so you’re more distracted.” Participant 43 said, “You don’t pay attention as much in class. I feel like I’m always checking my phone for the time and text messages.” Participant 35 said, “Yeah, you can pretty much not pay attention and just play on your phone all day.” Describing a smartphone, Participant 11 said,

> It kind of gives you ADD and it definitely makes society as a whole kind of anti-social. Which is ironic because everybody is being social on Twitter and texting and stuff, but when you’re walking from class, you have your headphones and you’re not talking to anyone.

Participant 24 said,

> There was an article in the New York Times about how people don’t know how to just sit in class or just think their thoughts. They always have to be doing something. Like waiting in line for coffee, what are you doing? You’re on your phone.

This is also demonstrated by Participant 6’s comments:

> I used to nanny, and I saw so many moms, like we would go to Gymboree and I’d
be with one of the kids. And every other kid of the 20 kids in the group would all be playing with me, because their moms were on their phones like texting, doing whatever. And it was, to me, so offensive, because I was like, this is your child and you’re totally not paying attention. I could be stealing all of them right now, smuggling like 10 kids in my car, and you wouldn’t even notice.

Students in the focus groups fully admitted to using their phones in class. Whether it was because they were bored, wanted to stay in touch with friends or just look at the time, they perceived smartphones as distracting. Participant 20 said, “My smartphone increases my procrastination. Since I do more stuff with my phone, I’m taking away from what I’m supposed to be doing.”

The rise in portable technology has created a society that aches to be distracted. Participants need to text—they need to continuously check email. The participants in the study commented that when they are forced to turn their phone off, it is more difficult for them to focus on the task at hand. This distraction can impact their physical, emotional and communicative well-being.

The focus groups in this study show that some participants perceive mobile devices as dangerous. If they receive a message, they are so compelled to answer it that they do not look where they are walking. Even more than causing physical harm, consumer attachment to mobile devices can result in anxiety. Users can have a difficult time coping without their devices. Furthermore, they feel as if they are losing the confidence needed for one-on-one, face-to-face conversations with potential employers. This could prove to be extremely problematic. Consumers need to work through their dependence to find the balance between getting the most out of their devices while maintaining the ability to be fully present in their environment.
Mobile Application Use

Research question 2 focused on the features and influences that impact a smartphone owner’s decisions about which apps to download. This question is further broken down into why consumers use particular applications and how they come across said applications. There is an abundance of mobile applications for users to choose from and use. Apple separates applications into categories such as cooking, traveling, productivity, health and fitness, music, business, news and more. However, participants listed four main reasons for using applications. Listed in order of importance, the four reasons are as follows: convenience and efficiency, entertainment, feeling connected and relaxation.

Convenience and efficiency

Participant 5 put the general sentiments of the majority into words by explaining,

Apps make us feel like we aren’t wasting time – our time is never idle. It facilitates this idea of technology is progress, even though it makes us busy all the time. So, I don’t know if it’s actually better for us or not, but it makes us feel like every moment is well spent.

As far as convenience and efficiency is concerned, Twitter was one of the most talked-about applications in every focus group. Participants raved about the ability to gain information from Twitter more conveniently and efficiently than from traditional media sources. Participant 11 stated, “I like Twitter a lot for information. Any time you hear something, like if a story is happening, I know it will be on Twitter.” Building on that statement, participant 15 said, “Yeah, when the debate was on, Twitter was exploding.” Participant 24 said,
Um, I love Twitter, um, because I can find out many things about the world by just going on Twitter and seeing a feed like I follow politics really closely. So rather than having to read an entire article on, in a newspaper. I could just go on Twitter and like see the feeds [sic].

After being asked what her favorite app was and why, participant 27 said, “Oh Twitter, the exact same reason that she [participant 24] said. I can get a snapshot of the world almost just by scrolling down the feed.” The above statements speak to the ease of finding information. Theoretically, this is reminiscent of ease of use in the Technology Acceptance Model and information availability in Uses and Gratifications. Based on ease of use, Twitter is one of the most popular applications because it is an easy source of aggregated information. However, Twitter applications also allow users to save time when it comes to hearing more than one side of a story. Participant 14 finds Twitter useful because, “in addition to getting links to various news articles, it is possible to get actual reactions and opinions from other people.” Chiming in, Participant 13 said, “You get opinions from your friends, compared to opinions from experts at the same time. It’s kind of one place for everything.” According to Participant 15, “it saves time because you don’t have to go on the Internet and you don’t have to ask your friends opinions.” The draw of Twitter lies in the fact that “Twitter provides a snapshot of the world just by scrolling down the feed.”

Another popular application for convenience and efficiency purposes was Gas Buddy. Multiple participants had, and praised, this application. Participant 6 shared her experience as follows: “I’m so big on finding apps on my smartphone that make things more efficient. I downloaded Gas Buddy so instead of having to know all the prices of the gas stations constantly I can just check that out really quick.” A similar application
deemed beneficial by a variety of participants was Google Shopper. This application shows the price of an item at multiple locations. With regards to Google Shopper, Participant 4 stated, “I think it makes a big difference because before, I would either waste my money buying it, or I would waste my time going home and checking, or going to another store to see if it was cheaper.”

Simple applications like My Fitness Pal, Reminders and Key Ring were also extremely popular. In focus group one, Participant 4 stated that her favorite application was My Fitness Pal. She explained how she used the application to try to eat healthier:

You can scan the barcode for everything that you eat. And then you put the amount that you ate right there on the screen and it syncs it with the website too. It helps a lot with my diet and you can track exercise and everything like that – it makes it much easier to get in shape.

Participants 27 and 46, praised “reminder” applications. Participant 27 stated, “I’d be walking around and thinking of things I had to do and could put them in the app. It helped me remember everything I had to do.” Participant 46 said, “I use the calendar, well, usually for like stuff that’s going to happen in the future. So, it gives me a reminder [of] what I have to do.” Key Ring scans all of the barcodes for store brand cards (Wegmans, CVS, Stop & Shop, etc.) from your phone. Participant 6 explained that because of this application you never had to actually carry each individual card. Put more plainly, “it is so convenient whenever I go to the store. It’s so easy to do – it just made everything easier.”

Across all six focus groups, efficiency was cited as the most important aspect of applications. Participants flocked toward apps that they thought would make their lives easier. If an app promised to increase their productivity (Reminder applications and
Calendars), save money (Gas Buddy and Google Shopper) or act as a shortcut to important information (social media sites and news sites), participants would willingly download said app.

**Entertainment**

The second most popular reason to download applications was entertainment purposes. After being asked, why do you have apps on your phone, participants 27, 29, 30, 41, 42 and 45 gave one word answers: entertainment. Participant 13 described a smartphone as “a great way to pass time. It’s easy to do in class and it’s fun. It’s entertaining and I can put it down whenever I want, and I can pick it up whenever I want.” Participant 9 said, “Usually, I like games because you can just play it and then put it away – it’s a really easy way to kill time.” Participant 1 admitted to having 77 applications loaded onto her iPhone. She explained, “The reason I download so many apps is because, well, in class you feel so bored.” Entertaining oneself in class was a common theme throughout every focus group. Participant 34 went so far as to say that he used his phone most often “to not pay attention in class, to occupy myself with something.”

Entertainment purposes really stood out when participants were asked to name the dumbest application on their phone and asked why they downloaded it. Nearly every answer included the word fun and entertainment. Participant 2 said, “I have one named Oldify and like if you take your pictures, and they will give you like the picture when you’re old, like, you know, like it’s you but it’s already like 70 or 80 years old you. Like that one’s so funny. I like that one.” Participant 16 said, “Yeah, like I love this app iFunny because it just has like ongoing just like stupid like images of just like comments.
It just gives you entertainment.” When asked what makes an application stand out, Participant 9 and 15 mentioned entertainment. Participant 9 said, “If it’s entertaining.” Participant 15 said, “If it solves some kind of problem or entertains you in a unique way.” Participant 31 described smartphones in the following way, “it’s almost like a toy. If I don’t have anything to do, I play with my phone.” Participant 30 made a comment about how different generations may use their phones.

Because like I know like, like a lot of business people that have like iPhones for like email purposes and like work purposes. And their other phone, like their home—like their other cell phone is not a Smartphone because they prefer not to use one. And we just use it for like convenience and like games and like entertainment.

Social connection

One of the most important uses of mobile phones for study participants was for integration of social media. Participant 25 said, “I use social media religiously.” A great number of applications the participants use relate to social media (Facebook, Twitter, Chatter, Instagram, etc.). Participant 24 said, “I use Instagram just because you can keep up with friends and I just like looking at everyone’s pictures.” Participant 14 said, “I’m always on Instagram. It connects you with friends.” Other participants expressed interest in an app called Snapchat. Snapchat is an app that allows users to send picture messages that delete within a few seconds. Participant 26 said, “I use Snapchat a lot too. It’s a fun way to keep in touch with people.” Participant 24 added, “You don’t have to talk to them. Some of my friends I don’t talk to. I just send pictures.” Participant 26 said, “Yeah. And I do it with my brother who’s away at school and my cousin and stuff like that.” Participant 28 commented that Snapchat is a way to “feel connected.” When asked to name their favorite application, two-thirds of the participants named Facebook, Twitter
and email – all of which facilitate social connection. Participant 34 took it a step farther and described an iPhone user in general as, “Somebody that’s pretty connected to social things, and someone that’s very aware of social things and connected with social things.” In addition to the popular application like Facebook and Twitter, participants seemed to prefer downloading games that allow them to connect with friends. When answering the question, why do you have apps on your phone, participant 19 said, “Stuff like Draw Something and things where you can interact with your friends.” Participant 1 stated that she downloads apps because, “all my friends play apps so I have to – well, they play very – I need to play it with them.” Participant 9 admitted that Scrabble With Friends was his favorite application. These comments show the validity of Uses and Gratifications. The participants feel a need to be connected and satisfy that need by downloading certain apps like, Twitter, Instagram, Facebook and Instagram.

**Relaxation**

Although less prevalent than the previous categories, some participants cited relaxation as the motivation behind downloading applications. Participant 5 explained,

My favorite apps are definitely the relaxation ones. I have some games, and I also have something called Overdrive. You can hook it up to a bunch of public libraries. But I like to download audio books and listen to them. And I like to do anything on my phone that’ll distract me from what’s going on in my life and what’s hard about it. So if I’m using my phone in between classes or when I get home, I’m playing a game or anything to transport me to a different place where it’s more fun and more relaxing.

Participant 2 also cited relaxation as a main motivator. She said, “My favorite app is Flipboard. It can put all the news you are interested in into a different place and they will renew it every day. It’s a relaxing place to go.” Participant 11 mentioned using
an eReader application to relax and help make reading more efficient. Participant 15 admitted to using Twitter and Instagram apps all the time. When asked why, she responded, “to kill time and relax. Those apps don’t really help me with anything else.”

**Application Selection**

In addition to looking at the reasons behind a consumer’s choice to download a mobile application, research question 2 looks at how consumers find said applications. Based on the focus groups, there are four contributing factors: friends and family (word of mouth), trial and error, ratings and reviews and usability. The findings are discussed in order of importance as designated by participants.

**Friends and family – word of mouth**

The vast majority of participants said that they find applications to download based on recommendations from friends and family. After being asked how they hear about the applications that they download, participants 10, 12, 19, 20, 36 and 37 said “friends.” Participant 6 said that she hears about most of the applications she downloads from her sister. “She loves being the first to do something. So, she’d always be like ‘Oh, I just got this great new app. Check it out.’ And then I was like, obviously I’m going to love it.” Participant 47 said, “I would only download something if one of my friends told me to get it.” Participant 16 said, “Friends because they’ll share their experience with it [app].” Continuing with the trend, Participant 46 explained that he downloads applications based on word of mouth. “If someone tells me to get an app, I usually do. I usually don’t just browse for apps. I’m really specific about what I want to use.” Participant 34 said, “Usually from friends if it’s like a useful app for, like, I’ll use the kind of app again, like, my friends will tell me like, you need to get this so that you can
see whatever, like.”

In response to the same question, participant 21 said, “Maybe some comments to see what people have been have trouble with on certain phones. But, other than that, usually my friends tell me, ‘I love this app.’ So, I usually do [download it].” Participant 14 put so much weight on a friend’s opinion that she downloaded an application she does not intend to use. “My friend told me to get it [snapchat], but I’m not into it – still didn’t delete it though.” Participant 20 said, “If my friend recommends one [an app], I usually will at least try it out.” Participants trust the opinions of their peers. This was made clear by the declaration and intention of multiple participants to download applications based on the conversations in the focus groups. Participant 4 said, “I don’t have it, but the one you can scan the thing on your keychain – when I get my new phone, I’m definitely going to get that, because right now, I have like ten cards.” This intention to download a new application was mirrored by several other participants with regards to the Gas Buddy application, the Find your iPhone application and multiple others. The fact that simply talking about favorite applications created increased interest further underscores the influence friends have when it comes to applications.

Participants also cared about their friends’ opinions when it comes to deciding between two apps with the same functionality. Participant 43 said,

Um, basically, if like all my friends have the same app, I’ll do the same app as them so we can all like play together. Like, there’s like variations of Words With Friends, there’s like different kinds, Hanging With Friends, Words With Friends. Whatever one like all my friends have I get the same ones so we can all like play together basically.

Participant 19 said he listened to “Friends’ experiences over one compared to another.”
Along the same lines, participant 26 said, “Popularity from friends.” Later, participant 47 said,

I usually don’t pick apps based on like what I want them to do. It’s usually someone says get this game so we can play and then I get that. I don’t go looking for an app that does something.

**Trial and error**

So long as the applications are free, many participants will download multiple applications, try them out and delete the ones they do not like. When asked how she would choose between applications that perform the same function, participant 1 stated, “I would download all of them and try to figure out which one is best.” Participant 7 said, “if it’s free, I download them and see which one I actually use more.” Participant 12 agreed saying “I try out an app and then, if I don’t like it, I’ll delete it.” Participant 26 said, “I sometimes test them out to see which one I like better.”

**Ratings and reviews**

Another popular method for finding and downloading applications is reading reviews and looking at popularity. After being asked how they decide which apps to download, participants 14, 15, 16, 17, 20, 21 and 22 said, “ratings.” Participant 21 said, “If I discover it [app], I’ll check the ratings.” Participant 4 said, “When I look for things just to download on the apps page, I would pick the things that are at the top, like the most popular, recommended free apps.” Participant 20 said, “I would say I usually use the charts on the app store.” Much like the previous comment, Participant 26 said, “I just go to the top 25 free applications – whatever it is.” When asked what makes them download an application, Participant 45 focused on ratings: “I look at ratings and what people are saying about it [applications].” Participant 43 agreed, “Yeah, ratings, user
reviews – that kind of thing.” Due to an aversion to deleting applications, Participant 4 stated,

I would definitely read the reviews, I mean, especially if I was going to by it. But even just to download it for free, it’s annoying to have to go in and try to delete it. So like I read the reviews for the version I’m going to be downloading, because sometimes things that used to be good or were good at one point aren’t anymore. Sometimes there are things that are better or the new version is really crappy compared to other ones. So, I think it’s really important.

Participant 41 said, “I go by ratings and downloads.” Participant 36 said, “Yeah, I would look at ratings and which one [app] is more popular.”

Even though multiple participants cited rankings and reviews as their main source of information about applications, almost none of the participants had rated any themselves. Participant 43 said, “I only rate [apps] if it’s a really, really good app.”

Further demonstrating how rare it is for users to rate applications, Participant 6 said, “I don’t know where they get their ratings from – I’ve never seen someone who does.”

However, this lack of participation and sense of authority does not hinder how reviews and rankings are being perceived. Participants still trusted the ratings on the iTunes store and various blogs. When asked how you decide which apps to actually download and keep, participant 10 said, “I go by the rating on the iTunes store. If it has stars, like one to five stars. I only download it if it has at least three stars.”

**Usability**

The topic of usability came up quite a bit in regard to keeping and maintaining applications. After being asked how he decides which apps to download and keep, participant 23 said, “Usability. If I can see myself using it, I’ll keep it, and download it.”

When asked how long it takes them to get the hang of applications, most participants
gave a range of one to five minutes. Participant 10 said, “not much,” Participant 15 said “minutes,” and participant 16 said “seconds – I want to say seconds.”

In fact, the ability to master an app quickly seems to be an indicator of whether or not an app will get used after it is downloaded. Participant 15 noted, “I feel like if you need to spend time [figuring out an app], there’s probably a better one out there.”

Echoing that sentiment, Participant 13 said, “If it’s a good app, it doesn’t take any time at all.” Participant 11 agreed, “Yeah, if it’s really going to be one of these apps you’re going to use, it should be good enough that you can pick it up quickly.” If an application is confusing or too complicated, participants agreed that they would either delete it or hide it in an obscure folder on their phone. Participant 6 said,

I have a folder of apps I don’t use and I couldn’t delete from my phone. I had downloaded MapQuest instead of the one that the iPhone comes with; I hated the one on the iPhone. And I have a folder like four pages away that is for stuff I don’t use.

Participant 44 said, “If [an app]’s been sitting on my phone for more than a week and I haven’t used it, I’m probably going to delete it.” Clearly users are unwilling to expend a lot of extra time figuring out applications and are unwilling to waste space when there is better option available. Participant 10 put it best by saying “I look for ‘really user-friendly applications.’” Usability also has an impact when it comes to choosing between two applications with the same functionality. Participant 20 said, “If there’s two [apps], which one’s easier to get to what I need to know and do.”

These results are consistent with the Technology Acceptance Model and the assumption that perceived ease of use is a predictor of technology adoption. Based on the comments, participants were most likely to keep the applications that are easiest to use. They want applications that they understand.
Multiple Mobile Devices

Research Question three asked how participants interact with apps across multiple mobile devices. When asked if they had multiple mobile devices every participant said yes. Each participant had a mobile phone and a laptop. Most participants also had an iPod, or some other form of mp3 player. Eight participants also had tablets. During the conversation about multiple mobile devices, Participant 4 stated,

I think I would consider getting a different phone or a different tablet, but I have a Mac computer, so I want to get all of the Apple products just because I know it works. You can have all of your music and everything in one spot.”
Many of the other participants also had mobile devices that “go together.

Many of the iPhone users praise iCloud. They appreciated the fact that apple products automatically sync, making it easier to maintain one calendar, update music and pictures and keep track of all applications that they may have downloaded. That being said, many participants said that they do not use applications on their computer. There seems to be a separation of fun and work. The smartphone represents fun while the laptop represents writing papers and other schoolwork.

Although participants admit to using multiple mobile devices, many claim that having smartphones does reduce their computer time. Participant 24 said, “I’d rather use my phone than a computer.” According to participant 31 smartphones replace computer time “…because I used to have to get on a computer to check email and stuff, and now I can do all of that on my phone.” Participant 34 agreed by saying “Smartphones replace computer time because I can check Facebook and other social media on my phone.” One participant said that using her smartphone made her more productive on her computer and therefore resulted in decreased time on the computer.
Having an iPhone increases my productivity when I use my computer because I check Facebook and Twitter to see what people were up to. And then, when I opened my computer, I would already know, so I didn’t have to check anything. It would kind of just be like, all right, I can write my paper instead of opening 17 websites. I can also Google search something really quick instead of having to pull out my whole computer, open it up, start the Windows and all that.

**Applications and Pricing**

Research Question 4 looked how consumers evaluate free and advertising-driven apps versus apps they are required to purchase. The majority of participants said that they refuse to pay for applications. Participant 5 said,

I can’t imagine wanting to pay for an app right now, because I just feel like it’s not real life. It’s like a game on a phone. And I don’t mean that offensively, just for me because I’d rather do things where I can concretely interact with others if I want to play a game or do something other than being on my phone and being isolated.

Participant 43 and 46, among others, reiterated these feelings. Both participants said, with resounding certainty, “I have never paid for an app.” When talking about the weirdest application he had on his phone, Participant 34 said,

It’s a knockoff version of Uno, the card game. And it’s all scrunched up in the corner, and these weird foreign names keep showing up as my opponents. The rules are not actually Uno, and it’s just ridiculous. I wanted to download it because I didn’t want to pay for a regular one, and I was trying to occupy time. This comment shows that free is preferable to brand name and in some cases, high quality applications. Participant 19 shared the same attitude as Participant 34. This was evident due to the following statement, “I don’t think it’s really necessary to pay for an app because there’s always pretty good substitutes that are free. I’ve never had to pay for an app that I necessarily need.”
The only area in which participants thought it might be acceptable to pay for an app was in the area of gaming. Participant 1 said, “I spend a lot of money on applications like Angry Birds. All of my friends play, so I need to play it with them.” This comment has two implications: it draws attention, again, to the fact that friends have great influence on application selection and that enjoyment is important enough to require payment. It also indicates that willingness to pay is socially conditioned. People are willing to pay for items that others are paying for – they desire to be a part of the social norm. Participant 15 spoke about paying for games due to popular demand “I find myself paying for dumb games that are just crazy popular.” Building on similar conversation, Participant 27 explained, “I pay for games because you cannot get to more levels without purchasing the full version.” A few participants agreed that if a game was fun, and worth it, they would be willing to spend $0.99 to purchase the full version. One, and only one, participant mentioned purchasing an application to avoid advertisements. In response to a question about purchasing a full version as opposed to using a “light” version, Participant 15 said, “There’s no ads and the ads get annoying – you have to sit there and wait for the button to come up to skip it, but if you buy it, you don’t have to.” However, this was not the norm.

**Applications and Advertisements**

Research Question 5 asked about how smartphone users describe their experience of advertising in the mobile market. The descriptions participants gave can be broken into two categories: how consumers felt about paying for an ad-free version of an application and how much they actually paid attention to ads within apps.

**Ad versus ad-free apps**
When asked at what point they would rather buy an application than sit through advertisements, Participant 24 said, “never.” Participant 6 said,

I—if I had an application that was free and then like halfway through using it, if I got to like a certain level in a game which I never really play or something, and it said you have to upgrade to go any further, I totally would like be out, because I was just like that is such a gimmick, it’s unfair, it’s annoying and it’s a tease. But I guess, um, I don’t know. I’m not sure if I would ever do that.

Participant 5 admitted, “I think I would just delete [the app] if it got annoying. And then I would find something else to use. There’s always a market for new apps.” Participant 26 said, “Yeah, there are other apps to go around. I’d find something else.” Participant 38 said,

I’m about to do that with my Pandora app, I think, because I can’t deal with the— It’s not even like the advertisements are that much of a hassle, but it takes so much time to load the advertisements that it kills the whole, like groove of the music.

Many participants admitted to doing just that. This is important because as the availability of close substitutes increases, so does price elasticity. This may result in a reduced pricing power of the provider.

How unpleasant an advertisement was seemed to be related to time spent with an application, according to some participants; they would need to be on their phones for an extended period of time to truly be annoyed by advertisements. Participant 16 said, “I’m not bothered by advertisements because I’m never on a certain app long enough to freak out because the advertisements are in my way.”

Advertisements and attention

Participants indicated they rarely, if ever, even paid attention to the content of ads. The majority of the participants’ answers mirrored participant 7 when she said, “Not usually,
rarely.” Participant 35 said, “I don’t even look at them.” Participant 18 said, “If I do realize it [advertisements] and it’s annoying me, that means I’m not going to buy the product ever.” Participant 12 said, “I probably intentionally clicked on one once or twice in the year and a half that I’ve had my phone.” Participant 15 had similar experiences and said,

I’ve only accidentally clicked on it. You’re clicking to skip the ad and you accidentally click on the ad. So then, eventually, it has to catch your attention. But it’s never changed my buying preferences. With a response of general consensus, Participant 20 explained “I don’t really pay attention to ads because, I mean, I’m faced with ads all over the place all the time.” This shows that the participants are desensitized to most advertisements that are used on mobile applications. Nearly all of the participants mentioned clicking the “x” to get rid of the advertisements. They all knew exactly where to click and the fastest way to escape the grips of encroaching ads. This allows participants to close the advertisement without even reading it.

There was one exception to this lack of attention with regards to advertisements. Participant 4 said, “I feel like video ones are harder to ignore. If you’re using YouTube or the YouTube app and something pops up in the beginning, you can’t get rid of it.”

Following up on the video, or audio ads, Participant 6 made the following comments,

Depending on the voice and sometimes if they have a good background song, I think it’s a playlist I’m listening to and I’ll be like, ‘Oh, this is interesting.’ And then I hear a voice, and I’m like, ‘All right. Well, I guess I’ll listen because you have my attention.

Participant 5 also weighed in by explaining,

Sometimes you can’t escape it. Like the Acuvue commercials will sometimes play on my phone, and you can’t fast-forward through them. But that’s also a
commercial that I’ve seen through other media platforms, like television. So, it’s just kind of reinforcing what I’ve already seen.
These comments raise three important points. First, in order to capture a user’s attention, and not be immediately dismissed, an advertisement must have an audio component. Second, advertisements must blend in to the application being used and seem interesting. Third, the most successful advertisements on applications are those that reinforce commercials seen on other media platforms.
Chapter 5

DISCUSSION

The present investigation explores the uses of smartphones and mobile applications, consumer choice and willingness to pay and the role of advertisements within the mobile phone. More specifically, this paper addresses how smartphones impact consumers on a daily basis, the reasons users seek out applications, how they find said applications and how they react to the advertisements displayed within applications. Results have shown some support for the Technology Acceptance Model and Blinkoff’s Uses and Gratifications model for mobile phones.

Smartphones and daily life

Mobile devices have become increasingly popular; people have lined-up for hours with the express purpose of purchasing the latest smartphone. With all of the new functionalities built into smartphones, it is no surprise that people are becoming increasingly dependent on their mobile phones. Increases in technology have long been hailed as progressive. Smartphones are considered beneficial to society as a whole, but is having everything in the palm of your hand truly desirable? Is it worth being tethered to a small device, dependent on a machine and always within societies’ reach?

In Work’s Intimacy, Gregg explains that technology was meant to give us freedom to work where we want, when we want, but has ultimately lead to the intrusion of work into our social lives (Gregg, 2011). With multiple forms of social media and communication at their fingertips, consumers expect quick answers and almost
instantaneous responses. The separation of environments no longer exists – no matter where they are, or what time it is, they become anxious if they are not connected.

Although the majority of participants stated that they were annoyed that people are constantly on the phone, they too expected rapid responses. This expectation leads to distraction and ultimately dangerous situations. People have become so dependent on their mobile devices, in order to remain in the loop, that they have a difficult time refraining from texting in inappropriate situations (driving, class, work, etc.). The rise in portable technology has created a society that aches to be distracted. Participants need to text— they need to continuously check email. The participants in the study commented that when they are forced to turn their phone off, they believe it is more difficult for them to focus on the task at hand. This distraction can impact their physical, emotional and communicative well-being.

The focus groups in this study show that mobile devices may lead users to make dangerous choices. If they receive a message, they are so compelled to answer it that they do not look where they are walking. Even more than causing physical harm, consumer attachment to mobile devices can result in anxiety. Users have a difficult time coping without their devices. Furthermore, they are losing the confidence needed for one-on-one, face-to-face conversations with potential employers. This could prove to be extremely problematic. Consumers need to work through their dependence to find the balance between getting the most out of their devices while maintaining the ability to be fully present in their environment.
Technology acceptance model

In addition to looking into how smartphones impact consumers on a daily basis, this paper explores how consumers decide which applications to download and how they find said applications. The 48 participants cited perceived usefulness (convenience and efficiency) and perceived enjoyment as the focal points of their decision-making processes.

Perceived usefulness (termed as convenience and efficiency in this paper) was the most important driving factor with regards to downloading an application. Participants felt the need for the applications they downloaded to serve a purpose – to make their lives easier. Following perceived usefulness in importance, as designated by users, was perceived enjoyment. Participants viewed their phone as a toy and made sure to outfit it as such. When a participant did not know why they downloaded a certain application, or could not find a valid use for the application, they said that they downloaded it because “It’s fun” or “It’s funny.” The majority of participants even admitted to using their phone for entertainment purposes when they were bored, in class, or in an uncomfortable awkward situation. This thinking also matches the Technology Acceptance Model. The focus group confirmed the thinking that due to the shift in purpose, consumers focus on pleasurable, aesthetically pleasing and user-friendly qualities as much as, if not more than, efficient and functional qualities. This shift from task-related usability has led to more of an emotional-usability viewpoint in which enjoyment relates to mobile service adoption. Participants also cited the importance of social connection. Many of the top apps (according to participants) involved social interaction. Lastly, participants placed a decent amount of importance on usability. They were not willing to spend more than a
few minutes learning how to operate applications. There was an expectation that if an application was any good, it would be easy to navigate. One of the more interesting findings that this study produced is the fact that perceived quality did not impact application choice. It did however impact application retention. Users would not base their decision to download an application on quality; instead they would rely heavily on word of mouth and recommendations from their peers. However, they would delete an application as soon as there was a problem.

Although the TAM appears to be a good model when it comes to predicting application use, it needs to be adapted when it comes to predicting mobile phone use. TAM uses factors including perceived usefulness, perceived ease of use, perceived enjoyment and perceived quality to explain why people adopt new technologies. However, the TAM model, as it stands, is insufficient to explain ongoing use of an interaction with smartphones. In particular, it appears that enjoyment needs to be included as an outcome of the smartphone interaction process. I propose a model in which smartphone adoption is the first step and the quality of interaction is mediated by enjoyment. The results of this study also suggest that enjoyment is mediated by ads and relationships. The proposed model can be seen below.
The results of this study also show that Blinkoff’s findings that the motivation for adolescents to use mobile phones is derived from social networking and peers hold true for smartphones and mobile applications at a college level. Participants explained that more times than not, they download an application based on the recommendations of peers. They also shared that the majority of their favorite applications involved social media including: Facebook, Twitter, Instagram, etc. Even the games that they choose to download are based on connecting with and playing with friends. This desire to connect with friends can even lead users to purchase applications. It is worth emphasizing the fact that college-aged students are behaving more like the adolescents than the adults in Blinkoff’s study. The question is, would business professionals also download applications based mostly on social networking and connectivity? Or have college students, who first gained access to the technology as adolescents, failed to mature when it comes to mobile technology?

Uses and gratifications

Uses and Gratifications also came into play when looking at one of the other methods participants used to gage whether or not they wanted to download an application. Some participants looked to ratings and reviews for help when choosing applications. They wanted confirmation that the apps they were going to download were easy to use, effective, high quality and entertaining. Looking at ratings and reviews allowed consumers to anticipate whether specific apps would satisfy their needs. In other words, ratings and reviews acted in a way anticipated by Uses and Gratifications Theory.
Willingness to pay

As far as willingness to pay and advertisements are concerned, the results were somewhat surprising, but very clear-cut. Participants are rarely willing to pay for an application – especially because there are a plethora of readily available, free alternatives. When they do pay for applications, it is to gain access to more levels in a game that they have already enjoyed or to connect with friends. The $0.99 fee serves as a means to satisfy the need for entertainment and socialization. An interesting sidebar is that, overall, the male participants were more willing than the female participants to pay for a game. The female participants appeared to be more concerned with downloading apps that made them appear more beautiful.

The focus groups also found that consumers prefer to use their time rather than their money to “pay” for apps. Users pay for their apps by taking the time to test various versions and listen to, or view, advertisements. If consumers valued time at a higher rate (for example, through a higher wage rate), then they might be less willing to expend it in experimenting with apps. They might be more demanding of gatekeeping functions (ratings, reviews) to ensure that the apps they download will be truly useful, before downloading. This leads to a question relating to age. Is the greater willingness to experience trial and error related to the greater time that young people have at their disposal? If an older demographic was queried, would the same result hold true?

Advertising and Applications Lastly, this paper looked at the advertisements placed within smartphone apps. The findings were very consistent. Consumers at this age had no interest in the advertisements. For the most part, they would rather find replacement apps than pay for a version without advertisements. Furthermore, advertisements within
apps were not successful unless they had an audio-visual component and were seen across a variety of platforms. For the most part, participants knew exactly how to delete an advertisement without even looking at its content. Again, this may be related to the age and income of participants. It would be interesting to see if there is a difference for more utilitarian apps catering to higher income individuals or the business sector – for example, expense managers and bill minders, energy management, stock market information etc.

**Implications**

**Marketing applications**

The results of this study show the importance of viral marketing. The participants in this study usually rely most heavily on word-of-mouth or suggestions from their friends and family to find the best new apps. Based on this information, it would be wise to find a pool of early adopters and grant them early access to an app that is about to hit the market. Another way to increase viral marketing comes from leveraging a consumer’s desire to use apps to drive social connection. Instead of using advertisements to promote a new app, include a function that requires users to invite their friends to download the app. An example of this type of app would be “words with friends.” In order to work at their highest potential, social apps require multiple parties to join the “in-group.” This study also shows the importance of a good rating. The second most prominent way participants found new apps was by looking at the apps topping the iTunes charts with the best reviews. If an app does not have a good review, it would be better to take it off the market and fix the problems. It might also be interesting to produce an incentive based rating system. Although participants said that they actively
use ratings to make their decisions, they hardly ever participate in rating an app. If consumers are provided with incentives to rate an app, it might increase the number of reviews and therefore the popularity of said app.

Advertising within applications

Traditional print advertising does not work within apps. Participants have become so accustomed to the ads that they are becoming white noise. Furthermore, the exit point on an app continues to be in the same location. This makes it easy for any consumer to close the ad without paying any attention to it. If a company chooses to pay for advertising, and they choose to advertise within an app, it would serve them well to have an audio or audiovisual ad. Participants said that they were more likely to pay attention to an ad if it were audiovisual or seemed to blend in with the app that they were using.

Willingness to pay

The results of this study show that if a company wants to charge a price for an app, it should be an entertaining app with social purpose. Securing payment for an app best happens in three steps. First, the app should be made public free of charge. Second, the app should remain free long enough for consumers to build a social network to the app and get hooked. Third, create a point at which it is necessary to pay in order to continue using the app. An example of this method comes from the app, “angry birds.” This app allows consumers to begin playing for free, but once they hit a certain level, they must pay to continue.
Limitations and Directions for Future Research

The participant pool for the focus groups conducted for this study lacked balance. Although the ratio of males to females was nearly equal, the balance of majors was not. There were roughly 38 telecomm majors compared to 10 disparate majors from alternative colleges. This study also failed to specifically recruit and gear questions toward those without smart-phones. In the future it may be beneficial to gain outside perspectives – to study how those without smartphones perceive the applications and why they choose to avoid them. More than that, no socio-economic information was collected. This kind of information could have a great impact on the type of applications users prefer as well as well as their willingness to pay for applications.

The results of this study were negative in tone. Participants used negative terms such as, “I’d be worthless without it” to discuss their relationships with their smartphones. This could be the result of how the questions were asked, or how participants perceived the questions. In future studies, it would be prudent to include a question that deals with the positive attributes of smartphones and applications.

Future studies should focus on varying age groups and how their preferences differ. It would be worthwhile to look at how the younger generation as well as the older generation uses applications in everyday life. Is the unwillingness to pay for apps the result of age and income? Does trial and error only work for students because they have more time on their hands? It would also be worthwhile to study how advertisements impact the different age groups. Do they impact children less because they are so desensitized?
It would also be valuable to look at advertising and promotions sent directly to users via visual and audio-visual messaging. It would be interesting to look at how consumers react to promotions and retail information being sent directly to their mobile devices. Social media is constantly evolving. How are businesses taking advantage of this to attract, and retain customers? Are businesses able to keep up and fight for a consumer’s attention? This is particularly important because of the findings in this study. Businesses need to find something other than a generic print advertisement that pops up in the middle of a game. The question is: how will they develop an advertisement that does not get lost in shuffle?
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