

**Mobile App Monetization – Expectations and Attitudes Formed  
by Users in Response to Advertising and Pay To Download  
Monetization Models**

Master's Program  
Missouri School of Journalism  
University of Missouri

by  
Anthony Brown

Dr. Margaret Duffy, Committee Chair

Jim Spencer

Dr. Kevin Wise

August, 2013

## **Acknowledgments**

Thanks to Dr. Duffy and Dr. Wise for their guidance and leadership throughout this too-lengthy process. Your patience and flexibility is a golden virtue. Thanks also to Jim Spencer, whose final firm push is exactly what I needed to put my head down and carry this research across the finish line.

## Table of Contents

ACKNOWLEDGMENTS .....	ii
LIST OF TABLES .....	iv
ABSTRACT.....	v
Chapter	
1. INTRODUCTION .....	1
2. ACTIVITIES DESCRIPTION.....	3
3. EVALUATION .....	14
4. PHYSICAL EVIDENCE.....	15
5. ANALYSIS .....	16
APPENDIX	
1. ONLINE SURVEY TEXT AND RESULTS .....	31
2. FOCUS GROUP DISCUSSION GUIDE AND TRANSCRIPT ...	61
3. PROJECT PROPOSAL .....	83
REFERENCES .....	102

## List of Tables

Table	Page
1. Q30. “How often do you download an app for your smartphone?” .....	25
2. Q18. “Things that influence my decision to pay for an app are (choose all that apply)” .....	25
3. Q26. “The primary source for information about apps I want to download is” .....	26

MOBILE APP MONETIZATION – EXPECTATIONS AND ATTITUDES FORMED  
BY USERS IN RESPONSE TO FORMS OF PAYMENT

Anthony Brown

Margaret Duffy, Committee Chair

ABSTRACT

This research attempts to discover the attitudes and expectations formed by different methods of mobile app monetization in users who have paid to download apps or encountered any method of monetization in their use of apps. The goal is to help lead app developers and marketers to proper conclusions about how to monetize mobile apps in ways that are unobtrusive to users. The research is completed via focus group and online survey. Upon examination, it is clear users prefer a single method of monetization—pay to download OR advertising based, for example—rather than a hybrid approach commonly seen in traditional media. Men may be more likely to download apps on a more frequent basis, also paying for upgrades more frequently. Users seek out brands they recognize and rely on friends and other users to provide them information about apps they should download.

## Chapter One - Introduction

For the past several years, my studies have focused on new media as well as on modern marketing practices. Over the past year, I have studied strategic communication with particular respect paid to innovative digital advertising campaigns. As the Interactive Specialist for MOJO Ad, I have gained experience designing digital portions of integrated marketing campaigns that meet specific media objectives. Over the same time period, I have been employed part-time at Newsy, a small start-up company focused on mobile video news analysis. In this role, I manage the entire process of updating and maintaining the company's mobile applications. Product concepting, graphic design, development oversight, deployment, and management of the products are solely my responsibility. I have personally overseen the full development of eight different mobile applications, deployed to any of five mobile platforms.

Professionally, I intend to pursue a career in digital product management. Client or agency-side, I am seeking a role in which I am tasked with the day-to-day maintenance of innovative digital products as well as the long-term strategy for an interactive division. Within a short amount of time, I plan to start my own company, one focused on innovation in new media. My experience at Newsy, itself a startup, has and will continue to provide priceless knowledge in fundraising, opportunity recognition, long-term strategy development, and

managing company growth. In addition, real-world experience with mobile applications and new media business models is invaluable to my career goals.

## Chapter Two – Activities Description

For the duration of the professional skills component, I have worked at Newsy in a role expanded from my current position, with greater emphasis in strategic communication. My day-to-day responsibilities for mobile app management remained. In addition, I worked closely with the marketing department, led by Alex Wharton, VP Marketing, on promotion of the mobile applications and website. I reported chiefly to Alex Wharton or Jim Spencer, President.

The skills component took place the week of May 9 to the week of August 12, 2011, for 30 hours per week (7.5 hours per day, four days per week), allowing an additional 10 hours per week to perform the research described in the following pages. Margaret Duffy, the project committee chair and member of the graduate faculty at the Missouri School of Journalism, received weekly field reports, added below.

### Week of 5/23

After submitting the updated Newsy iPad, iPhone, and Android apps last week, we began to prepare for release. Unfortunately, during testing, we discovered several faults with the iPad app and decided to delay the unveiling of the new apps and branding until those had been fixed. I worked with the development team to identify the issues and communicate our progress to those

who needed to know.

I worked with the marketing team to prepare scripts for promotional videos about the launch and helped coordinate the early dispersion of the app to journalists.

I also began to look forward to the next move. Newsy will move immediately into another large development project, and I spent time roadmapping the features and strategy of the next app, while trying to identify some of our development and marketing obstacles.

Week of 5/30

At 1 pm on Monday, we learned the latest, fixed version of our iPad app had been reviewed by Apple and was ready to be released. We spent time coordinating with each department of the company to make sure everything would be set. A Thursday release meant the editorial department would need to begin producing stories with the new branding during the day on Wednesday, I would need to coordinate with the Android developer to make sure it was released at the proper time, marketing needed copies of the app to deliver to journalists, and we needed to alert our third-party vendors of a probable increase in traffic.

The development team is also making a trip out to California next week, and it was my responsibility to set up meetings with many of our West Coast-

based business partners. I juggled schedules and helped create a meeting itinerary.

On Thursday, launch day, I kept a keen eye on the usage numbers and incoming feedback from users, looking for any anomalies that could indicate a problem with the app. I also spent much of the day researching new platforms and creating basic mock-ups of a brand new app. I worked with the developers to talk through some of the things we'd need and outlined our development timeline.

#### Week of 6/6

I met up with the Newsy team in San Francisco for the latter part of the week. Our developers were at Apple's Worldwide Developer's Conference, so we took the mobile arm of the company on the road to meet with our third-party vendors and advertising networks. We learned a lot about how the mobile industry functions out on the coast, and were able to make some great new relationships with other developers in the news category. I spent most of the week working out stronger relationships with our ad networks.

We also met with our mediation service, the company that allows us to serve ads from more than one network at once. We had been struggling for a couple of weeks to properly integrate their tech, and within an hour of just being in the same room we were able to have most of our issues worked out.

### Week of 6/13

After a debriefing meeting with the executive team to share what was unveiled by Apple at the conference and give updates from our meetings with third-party vendors, I set to work developing a road map for immediate future development. We knew we needed to make some updates to our applications following the meetings, so putting together a timeline with prioritized feature lists was important before our development team got to work. I created a three-month development plan to update 3 apps and create an entirely new one that would run on certain devices on Google's Android platform.

Once the development plan had been approved by the executive team, I began making sketches and wireframes for the new Android app and presented those initial designs to the developers at the end of the week. The goal of the new app is to leverage the increased processing and graphics capabilities of the newest Android devices. One of the major challenges from a design standpoint is making the app look both like a Newsy property while staying true to the design nuances of the device's operating system.

On Friday we submitted the first of the app updates, a small iPhone update that made our app compatible with Verizon iPhones everywhere.

### Week of 6/20

I started the week on a conference call with a team of British developers

who were interested in working Newsy's content into their news aggregator apps and website. As a technical point on the call, I was tasked with determining the best method for sharing Newsy content with aggregators and third-parties now and into the future. I spent time on the phone with our web developer to discuss the pros and cons of different technologies third-parties could use to access our content and we ultimately decided the best method.

I worked with the marketing department to determine if and how to promote the coming Verizon-enabling update to the Newsy iPhone app. I sat on a call and desktop demo of a company's advertising mediation service and worked with our development team to determine the resources necessary to integrate. The app was approved by Apple and released mid-week. I monitored user e-mail feedback, ratings, and reviews online to determine whether there were any issues with the release.

The last part of the week, I worked with members of the marketing and editorial teams on a major pitch to YouTube. In a very fast 72 hours, we were able to put together a full pitch, brief Newsy's executives, and create two motion-graphic videos to explain and illustrate the ideas in the pitch.

Week of 6/27

The development team is trying to meet two July 1 deadlines for completion of updates to the iPad and existing Android apps. My job is testing the

apps before they are submitted to their respective stores and working with the developers to be sure the entire user experience is sound. I spent the week working through bugs, fixing minor design issues, and preparing for a possible surge in activity over the holiday weekend. By Friday, one of the two updates was finished and I monitored its release. The other update hit a small bump in the road and release was delayed until next week.

#### Week of 7/4

I came in on Wednesday from the extended holiday weekend to begin testing some of the work that had been completed by the development team since the previous week. We found a number of issues and had to go back to the drawing board to restructure our approach.

Meanwhile, I worked with a new advertising network, negotiating a deeper integration and making sure we'd work much closer together in the future. I also finalized some more designs for the new Android-based application Newsy is working on.

#### Week of 7/11

The beginning of the week was spent readying an update to the Newsy iPad app (3.1). Users had complained about a bug causing a crash of the app when watching a video. Our developers pinpointed a cause in the way the ad

player communicated with the video player, which was communicated to Newsy's ad network partner and a resolution discovered. I also worked with the development team to optimize performance of the "coverflow" layout in the horizontal orientation of the app. The result was an app that used little more than half the memory of the previous version. I oversaw testing of the app up to submission on Wednesday.

I also identified an issue with Twitter links and improper behavior when using an iPhone to access the Newsy web site. Minor tasks this week included continuing the process of integrating an ad server and ad network and monitoring the performance of the ad network installed in the latest version of the Android app.

#### Week of 7/18

On Monday, I sat on a call with Sam Edge, a consultant who will perform a technology audit for Newsy. After, I worked with JJ Bailey on documenting the tech and editorial workflows that are used in the production of video at Newsy.

On Tuesday, we received word that Apple's review team had approved the iPad app update and we released it. To help encourage our users to update to the latest version, I helped brainstorm ideas for outcues with specific calls to action. Our goal was to educate many of our users about how to update their

apps and hopefully get the majority of users onto more stable releases of the apps.

#### Week of 7/25

When Apple released iOS 4.0, the switch on the side of iPads became a mute switch. Many users were unaware of the change and thus could not figure out why the Newsy app would play videos but with no sound. I have been responding to emails from users asking about the problem for the last couple weeks. I've worked with the development team to brainstorm fixes and discovered an override that can be programmed into the app.

I spoke with reps at the ad network serving our Android app to learn more about the poor performance we have seen on the ads recently. We've been concerned about low fill rates and they gave us suggestions for becoming a premium publisher. Part of their suggestion was managing the scale of the number of ad impressions our apps deliver. The more impressions, the higher the CPM on those impressions. We'll be attempting to aggregate the impressions across our platforms with an ad server. This will allow us to a) control ad network integrations at the server level, which cuts down on maintenance and b) optimize the performance of ads by subjecting them to a dynamic "waterfall" based on

current metrics. If one network is performing better than others, it will be directed the majority of traffic.

#### Week of 8/1

In monitoring feedback on iTunes for our iPad app, we decided to try to attempt to reduce the number of pre-roll ads shown to our users. I contacted the network serving ads to our iPad app and asked about options for rules we can put in place to limit impressions. We've settled upon a five minute rule: each user is limited to one ad every five minutes. We announced the change on the app page on iTunes.

Exciting news this week! Flurry, the analytics company we use to collect data on our mobile apps announced a new demographics service that uses what they know about users to provide a snapshot of your user data. Flurry is a free analytics service that thousands of apps use. As an option, apps can supply Flurry with demographic data if they gain it (often, apps will acquire gender and age data from Facebook logins). Flurry then makes that data available to all other apps in the network, allowing developers to see the actual demo data for sections of their user base. I took what we now know about our users and produced a one-pager of the data for our marketing and business development teams' use.

I spoke with Ken Doctor, author of *Newsonomics* about the analytics Newsy collects from mobile users and was able to share some of Newsy's data. It was refreshing and enlightening to speak with someone well-versed in news analytics and I came away with several ideas for metrics that would be meaningful to the Newsy team.

I also attempted to contact the editors of Pulse, Flipboard and Flud to see about content partnerships. Newsy has long considered the apps competitors but in reality each is an opportunity for wider distribution.

Week of 8/8

In June at Apple's WWDC, we previewed a feature in upcoming iOS 5.0 that is specifically for news apps. News apps will be able to package news for automatic delivery to users once per day. We have prototyped a new regular "headlines" show, called the Rundown, that users would view when they opened the app after receiving a notification. News apps accepted into Newsstand also have a special place in the iTunes app store as well as a reserved space in the Newsstand. I created a Keynote presentation we'll send to our rep at Apple to explain the idea.

A company called Identity Mine is working on a new app for Newsy, this one for the Windows Phone operating system. I reviewed designs on a call and helped define the scope of the project.

I also completed the technical documentation I've been working on for consultant Sam Edge, who is performing a technology audit for the company. We're attempting to identify solutions for increasing the efficiency of the production process, as well as raise the reliability of our video delivery systems.

### **Chapter Three – Work Product Evaluation**

I relish the time spent at Newsy as the professional skills portion of my project. I believe I grew immensely in my understanding of the marketing efforts of the company and was able to contribute significantly to the product development efforts. During the ten weeks, I learned how to produce detailed technical documents, gained experience in closely coordinating press announcements with advertising blitzes, and acted as point of contact for two external development efforts. I have worked at Newsy in different capacities for over a year and a half, but this project was the closest I have come to working full time. It has been really nice working with the staff in more of a day-to-day basis and I feel it has helped me grow as an employee.

## Chapter Four – Physical Evidence

*Examples of evidence are included in the Media Folder, labeled as below.*

Over my ten-week stint at Newsy, I produced a litany of work. In that time, I managed the release of four separate app updates, including a major rebranding effort. Those updates included interface designs designed by myself in concert with the Newsy development team (media A1, A2, A3). In support of that effort, I produced a weekly analytics report on the health and performance of Newsy's distribution platforms (media B1, B2). In collaboration with an external consultant tasked with a technology audit, I helped map Newsy's technical and editorial workflows end-to end (media C1). Throughout, I maintained the Newsy development roadmap by ideating, illustrating, and organizing the feature set of each platform (media D1). I also produced several pieces of creative that were used in marketing campaigns (media E1, E2). During app testing phases of development, I catalogued errors and bugs to help prioritize our efforts (media F1).

## Chapter Five - Analysis

### The Rise of Smartphone Apps

The smartphone market is dominated by three operating systems: Apple's iOS, Google's Android, and RIM's BlackBerry. Each OS is designed to give users more function than that of a basic mobile phone, with Internet capability, geolocation or GPS, multimedia playback, camera, and high-resolution display. These characteristics combined create a platform as rich and engaging as any laptop computer, but with an opportunity to tailor user experience to the specific usage of the device.

Perhaps the most defining characteristic of smartphones today is the ability to install third-party software, called apps, to the device through virtual marketplaces. Over the past two years, most notably through the iTunes App Store for Apple's iPhone and iPod Touch devices, app sales have exploded. As of December, 2010, the iTunes app store was estimated to host nearly 310,000 applications developed by more than 60,000 publishers (148Apps). Apple announced after just over two years of operation, the iTunes App Store had served over 7 billion app downloads to iPhones, iPod Touches, and iPads. The second-largest app store, Google's Android Marketplace, by comparison has nearly 190,000 apps in its inventory and slightly more than two billion total app

downloads to phones and tablets created by Motorola, LG, Samsung, and other mobile phone makers (AndroLib).

Many software developers attempt to recoup the costs of mobile smartphone application development by selling advertising in the application or selling the application itself (Constantinou 2010, p.6). The present research seeks to identify the attitudes that users of mobile apps form for methods of monetization. This research may identify opportunities to make users more likely to purchase an application or help developers choose a monetization model that complements the feature set and function of the application.

Promotion within the marketplaces that facilitates the download and installation of mobile applications is integral to the success of an application. Organic promotion within an application market is a legitimate source of traffic to download pages (Constantinou 2010, p. 5).

For stores that rank applications based on download volume, as Apple's iTunes App Store does, earning optimal placement is dependent upon a steady stream of new users. In the case of Apple's store, as well as several others, free-to-download applications are separated from pay-to-download applications in rankings, introducing yet another element of pricing strategy. Developers may choose a monetization model based upon potential visibility within an app category—where a specific category may be crowded by free apps, the paid section may be relatively barren, a potential opportunity. I know what you mean, but you might want to expand a bit. In the iTunes app store, free applications

receive a majority of the attention from users and have significantly higher traffic. Paid applications, often \$.99, are perceived as a separate tier that may achieve a perception of higher-quality, professional applications. For app developers, determining the best monetization model for a particular application can be a lengthy experiment.

Additionally, if a popular application relies on advertising for revenue, marketers are concerned about viewer expectation and perceptions. Does the pricing model affect the attitudes consumers form about quality, performance, utility, or community? What is the perception of an advertisement that appears in a for-pay app, and does it differ from that of a free app? Is the sentence below a research question?

*This study will attempt to answer:*

1. *What are the consumer perceptions of prevailing and emerging methods of mobile app monetization?*
2. *What do consumers expect from apps utilizing specific monetization strategies?*
3. *What factors influence the purchase process of mobile apps?*

This study is built around expectancy-value theory (EVT), which asserts a person's attitudes are created as a function of their collective experiences. Extensive research has shown the model to be a good predictor in the relationship between quality and corresponding satisfaction (Gottlieb, Grewal and Brown 1994, p. 878). The model has been extended to determine predictors for

repurchase loyalty based on a consumer's perception of quality. Studies have shown satisfaction serves as the mediator between the performance of a product and repurchase loyalty. When households in Norway purchased fresh fish, the performance of the product in consumer's evaluations of quality affected their level of satisfaction with the product, then influencing the likelihood that the brand would be purchased again (Olsen 2002, p.247). Smith and Swinyard (1983, p.265) performed a study that supports the notion that consumers who were able to try a product were more likely to purchase it than those who were exposed only to the product's advertising. The authors caution that the study was performed with food as the product, and the benefit of being able to taste the food likely contributed to the results of the study. They warn that other products may not achieve the same results. Bennett and Harrell (1975, p.110) introduce a psychological measure of confidence in a brand as a predictor of purchase. Consumers more confident in their ability to judge a brand's benefits over competitors are more likely to follow through with purchasing the brand. Lattin and Bucklin (1989) contend price may act as an attitude reinforcer. The attitudes formed about a product in regard to its price become reference points that are later evaluated while making purchase decisions. Consumers will use price to help evaluate the performance of the product, then recall their perception of the product when comparing the product to competitors during future purchase decisions.

Expectancy-value theory is directly linked to the uses and gratifications (U&G) approach, which, as applied to media selection, attempts to explain how a person's media selection decisions are guided by the goal of fulfilling a particular need (Ruggiero 2000, p. 20). Where EVT attempts to predict an individual's propensity to perform future actions based on the attitudes formed by evaluating an experience, U&G attempts to explain the consumption of a good or service through its role in satisfying a certain need or goal. Applying U&G to websites, users motivated by convenience, social interaction, and information spend more time on a web site than those with different motivations (Ko, Cho and Roberts 2005, p.66). Leung and Wei (2000, p.308) examined the motivations for use of cellular telephones with a uses and gratifications approach. Their research found that users of cell phones choose to do so because of the phone's ability to satisfy a user's mobility, immediacy, and instrumentality needs. Interviews of users of a photo-sharing mobile app (Naaman 2008, p.1744) exposed motivations consumers have for choosing mobile platforms over desktop or laptop computers: *multitasking* (low required attention to input allows users to engage in simultaneous activities); *ease of use* (the always-on nature of mobile devices avoids the time-demanding process of booting a computer, launching a browser, and navigating to a web destination); *social interaction* (the ability to easily share content without geographically relocating the social event); and *physical convenience* (the ability to move around easily or use in small spaces unlike a desktop computer). Also, use motivations appeared to satisfy one of three

functional needs: Task Time, Down Time, and Killing Time; in descending order of involvement (Naaman 2008, p.1745). A user engaged in Task Time has a specific function or goal in mind when the application is launched, whereas a user engaged in Killing Time has no superseding tasks to accomplish and is searching only for a way to pass time before her next task demand. As involvement level declines, run time increases. Users in Task Time launch an application, perform their intended duty, and close the application, whereas users Killing Time average a longer amount of time engaged with the application.

This study is less an examination of pricing strategy in dollar value and more an examination of the distinct difference between applications that require a payment for use and those that do not. However, Bruner found that price often allows users to make inference and substitute for unknown quality information as a symbolic value. When experience is low and little is known about the quality of the product, consumers may use the price to create perceptions of the quality of the product when making purchase decisions (1955, p.203). The extent to which the amount of the price affects symbolic value is unclear (Monroe 1973, p.78), thus our study will avoid treating price as a scale and rather as categorical variable.

This study will attempt to identify the multiple factors consumers use in evaluating applications that adopt specific revenue models as well as the individual decision-making process at the final stage of application purchase. Attitudes

toward price, the differing types or tiers of application use, as well as the role that peer reviews play in purchase intention will be examined.

## **Methods**

An online survey (Appendix A) was administered to consumers with varying amounts of experience with mobile applications. Respondents were asked to report their experience with different mobile operating systems: iOS (iPhone and iPad), Android, RIM (BlackBerry), Symbian, or other. A web survey was selected for the appropriateness of the target market, response speed and automated data collection (Mort 2007, p.305).

Respondents were then asked to characterize their level of usage of third-party mobile applications by estimating the number of applications used per day. They were then asked to report the frequency that they downloaded apps, as well as how often they chose to purchase apps.

Respondents were asked to name their top five paid and free applications, and indicate whether those applications included advertising. The respondents were then asked to recall any number of applications they made a conscious decision to discontinue using, and to indicate why they had reached that decision. They were asked to indicate whether they currently use (defined as once or more per week) an application that falls into any of the four prevailing revenue models.

Respondents were asked to recall a previous purchase of an application and to report the determinant factors that led to their decision, including: product reviews from the app store, product reviews from a third-party store, application rating, number of indicated downloads, brand name, appearance in screenshots, application description, price, expectation of advertising, opportunity for trial, or recommendation service.

To explore relationships between price and perception of quality, respondents were asked to indicate their agreement (on a five-point scale that ranged from strongly disagree to strongly agree) with statements designed to measure attitudes about consumer reviews, price-quality relationship, willingness to purchase subscriptions, and satisfaction with popular applications. The questions were intended to uncover the factors considered in the decision-making process of determining whether a particular app is suitable for purchase. What were you trying to get at here? Please expand.

Upon completion of the survey, respondents were asked to provide demographic information about age, sex, race, sexual orientation, income, and monthly phone bill amount in order to aid in the explanatory power of the researchers' descriptive statistics.

## **Results**

Respondents were recruited via Facebook and Twitter posts as well as announcements made via email lists. The recruitment messages were intended

to attract smartphone users of no particular demographic—the only requirement for the survey was to be a current smartphone user. The researcher surveyed 216 individuals, of whom 89 (41%) reported their gender as male and 112 reported female (52%). The average reported age was 25.3 years old. The majority of respondents had earned a college degree.

Among respondents, iPhone owners comprise 146 of the responses (70%), followed by 51 users of the Android operating system (25%), and four owners of phones using the Windows Phone operating system (2%). An additional seven respondents reported other less common operating systems, including BlackBerry and Symbian (3%). The respondents report an average monthly phone bill of \$79.43. A cross tabulation calculation was performed to examine relationships between the responses and the respondents reported gender, income level and phone operating system. To ensure proper sample sizes, only iOS and Android owners were included in the crosstab calculations (Windows and “Other” respondents were filtered out).

### **Downloading and purchasing apps**

When asked how often they download an app, most respondents (70.0%) indicated a frequency greater than once per month. When examining download frequency by gender, males reported downloading apps at a significantly higher rate, with 82.5% reporting a frequency greater than once per month versus

61.32% of females ( $\chi^2$  (6)= 16.61, p = .01).

#	Answer	Response	%
1	Never	3	1%
2	Less than Once a Month	59	29%
3	Once a Month	61	30%
4	2-3 Times a Month	55	27%
5	Once a Week	16	8%
6	2-3 Times a Week	7	3%
7	Daily	2	1%
	Total	203	100%

figure i: Q30. "How often do you download an app for your smartphone?"

Slightly more than half of respondents reported using an app that they had paid money for (57%), while only 31% reported having paid money to upgrade an app or unlock additional features. When examining purchase habits, iOS users are more likely than Android users to be currently using an app they have paid money for ( $\chi^2$  (3)= 23.31, p=0.00). Additionally, iOS users reported spending more money than Android users on the apps they had purchased ( $\chi^2$  (18) = 31.6, p= 0.02). Males are more likely to have paid money to upgrade an app or unlock extra features ( $\chi^2$  (1)= 4.44, p = .04).

#	Answer	Response	%
1	Additional features	137	69%
2	Difference in quality	124	63%
3	Brand significance	43	22%
4	Based on recommendations from websites or press	98	49%
5	Based on recommendations from friends	152	77%
6	Based on recommendations from user reviews	97	49%

figure ii: Q18. “Things that influence my decision to pay for an app are (choose all that apply)”

The most important influencers in the decision to purchase an app are recommendations from friends, additional features, or a perceived difference in quality. Respondents did not indicate brand significance as a major factor in determining their willingness to purchase an app. The most common source for information about apps was respondents’ friends, coworkers or family (39%). One third of those surveyed reported casually browsing an app store or market as their primary source of information about app downloads. Females are more likely to take reviews left by other users into account when evaluating an app’s candidacy for download ( $\chi^2 (3) = 8.19, p = .04$ ).

#	Answer	Response	%
1	<a href="#">My friends, coworkers, or family</a>	79	39%
2	<a href="#">Websites</a>	30	15%
3	<a href="#">Social Media</a>	17	8%
4	<a href="#">Browsing the app store or app market</a>	68	33%
5	<a href="#">Ads in magazines, newspapers, or television</a>	3	1%
6	<a href="#">Billboards</a>	0	0%
7	<a href="#">Other</a>	6	3%
	Total	203	100%

figure iii: Q26. “The primary source for information about apps I want to download is”

When asked about the significance of brand in the purchase decision-making process, the majority of respondents report preference to downloading applications developed by brands or companies they are familiar with (73%). Most say they are also more likely to purchase an app created by a company they recognize (69%). For companies or brands the respondent has had a good experience with in the past, those who are likely to consider paying money to download an app rises to 91%.

Respondents also seem to be wary of the idea that paying to download an app means they are receiving a product of higher quality. When posed the statement “An app that costs \$.99 is of higher quality than one that is free to download,” 62% of those surveyed disagreed. Only 48% of users agreed that apps they had purchased for any amount were of higher quality than those they had downloaded for free.

### **Advertising in apps**

The majority of respondents reported currently using an app that displays advertising (92%). Two thirds of those surveyed say they do not mind seeing advertising in an app (67%), however most say apps that have advertising should be free to download and use (88%). Users do not seem inclined to elect to upgrade their apps to advertising-free versions when given the option. Only 30% of those surveyed reported having paid money to remove advertising from an app.

### **Navigating the App Store**

More than half of respondents indicate they browse the app store casually, just for fun (60%). The majority report being satisfied with their app store's ability to provide quality apps (85%) with an additional 75% of respondents saying they feel their app store's offering is improving.

Results of the survey identified some differences in the location apps are downloaded by iOS and Android phone owners. iOS users tend to stick with the Apple App Store for their purchases and downloads while Android users will spread their shopping habits more widely. Android users cited the Amazon App Store as well as stores operated by their handset manufacturer (HTC, Samsung, etc.) as locations in addition to the Google Play store they have downloaded apps from.

### **Discussion**

Responses to the survey suggest differences in attitudes and behavior among smartphone owners of particular models and different genders. These results may be the result of several factors. The size of the sample of Android users is small compared to those who reported being iOS users. Operating system distribution may be a result of the survey recruitment, which relied heavily upon the researcher's friend groups and social media. The distribution of operating system may also be a result of the age distribution of respondents, which skewed

heavily toward the 21-25 age segment. Geographic location was not measured in the survey, thus it can not be assumed the results are indicative of a wide geographic area.

There may be behavioral aspects of particular smartphone owners that make them more likely to respond to surveys about smartphones. Gender may play a role in likelihood to respond to a survey or specifically a survey about technology.

More research would allow clarification of the questions raised by this study. Further studies could explore the relationship between gender and download and purchase behavior. The survey recruitment could focus on specific age demographics. A study could explore the role that peer or user reviews play in the decision-making process of selecting an app for download.

## **Conclusions**

In this paper, the researcher suggests iOS users purchase more apps than Android users, then pay more when they do. Males may download smartphone apps at a frequency greater than females; males are also more likely to pay to upgrade an app or unlock new features. Previous studies have shown gender to affect technology adoption. Men, concerned with expressing an innovative identity, tend to base their purchase and usage decisions on the potential for displaying their innovativeness (Koenigstorfer 2012, p.923 and Nysveen 2005, p.253).

Smartphone users encounter advertising in many of the apps they use. They also believe monetization models should not be mixed; that paying for an app should preclude them from encountering advertising in the app. This may be unique to the emerging media—for example, newspapers, magazines, and cable television all utilize hybrid monetization models of advertising and subscription-based revenues.

Users are more likely to download or purchase an app from brands they recognize or have had a good experience with in the past. Recommendations from friends, family, peers and other users are the greatest source of information about apps. This theory is widely supported by literature that identifies the importance of consumer reviews and word of mouth information in the purchase process.

## Appendix A – Online Survey Text and Results

1. Hi, and welcome! This is a survey that will ask a number of questions about smartphone app usage. The survey should take approximately 15 minutes or less to complete.

Your participation in this survey requires your understanding of the following:

**Background Information and Procedures:** You are invited to participate in a research study asking about your smartphone use. A series of questions and statements will be delivered, and you will respond to those prompts as directed in each section of the survey. The entire survey will take roughly 10 minutes.

**Benefits and Risks of Being in the Study:** You are not expected to participate in any treatments that would incur the risk of physical or mental injury during your participation in this study. This study is not expected to yield any immediate benefit to the individual participants.

**Confidentiality:** All responses will remain anonymous. Your privacy will be protected to the maximum extent as allowable by law. Data gathered today will be analyzed only in the aggregate so that your personal information will not be associated with the answers you provide. We will not ask for your name. On request, and within these restrictions, results may be made available to you.

**Voluntary Nature of the Study:** Participation in this study is voluntary, and you may choose not to participate at all, or you may refuse to participate in certain procedures or answer certain questions or discontinue your participation at any time without penalty or loss of benefits. You may also withdraw your consent to participate at any time without penalty.

**Contacts and Questions:** If you have questions, you may contact Tony Brown by phone: (720) 320-8148 or email: [ajbr3d@mail.missouri.edu](mailto:ajbr3d@mail.missouri.edu).

If you have any questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact, anonymously, if you wish the Campus Institutional Review Board, 483 McReynolds, University of Missouri, Columbia, MO 65211 or by phone at (573) 882-9585.

Do you voluntarily agree to participation in the survey?				
#	Answer	Bar	Response	%
1	I do not wish to participate.	0.072033898	17	7%
2	I understand and wish to continue.	0.927966102	219	93%
	Total		236	100%
Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.93			
Variance	0.07			
Standard Deviation	0.26			
Total Responses	236			
2. I currently use (once or more per week) an app on an iPhone, Android, or Windows Phone 7-based smartphone.				
#	Answer	Bar	Response	%
1	Yes	0.925581395	199	93%
2	No	0.074418605	16	7%
	Total		215	100%
Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.07			
Variance	0.07			
Standard Deviation	0.26			
Total Responses	215			
3. I currently use (once or more per week) an app that I have paid money for.				
#	Answer	Bar	Response	%
1	Yes	0.58411215	125	58%
2	No	0.41588785	89	42%
	Total		214	100%

Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.42			
Variance	0.24			
Standard Deviation	0.49			
Total Responses	214			
4. I currently use (once or more per week) an app that includes advertising.				
#	Answer	Bar	Response	%
1	Yes	0.920187793	196	92%
2	No	0.079812207	17	8%
	Total		213	100%
Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.08			
Variance	0.07			
Standard Deviation	0.27			
Total Responses	213			
5. I currently use (once or more per week) an app that I have paid money to upgrade or unlock extra features.				
#	Answer	Bar	Response	%
1	Yes	0.314553991	67	31%
2	No	0.685446009	146	69%
	Total		213	100%
Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.69			
Variance	0.22			
Standard Deviation	0.47			
Total	213			

Responses				
6. I currently use (once or more per week) an app wholly sponsored by a brand (for example, a takeover of a popular game by an unassociated brand).				
#	Answer	Bar	Response	%
1	Yes	0.212264151	45	21%
2	No	0.787735849	167	79%
	Total		212	100%
Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.79			
Variance	0.17			
Standard Deviation	0.41			
Total Responses	212			
7. Please share the names of apps you use the most (up to five).				
Click to write Choice 1	Click to write Choice 2	Click to write Choice 3	Click to write Form field 4	Click to write Form field 5
spotify	facebook	instagram	twitter	the weather channel
FlipBoard	Words With Friends	Skype	TuneIn	HootSuite
Facebook	Pintrerest	Groupon	Weather Channel	Living Social
Spotify	Google Maps	Instagram	Facebook	Twitter
usa today	espn	starbucks	twitter	facebook
Instagram	Words with friends/scramble with friends	facebook	hootsuite	pinterest
Sleep Cycle	Mint	Facebook	ESPN ScoreCenter	Instagram
Reddit News	Pocket	HBO Go	Flipboard	Google Reader

Facebook	Twitter	The Weather Channel	US Bank	ESPN
Yahoo Mail	Gmail	Facebook	MLB At Bat	Dolphin Browser
Song pop	Draw Something	Pandora	Facebook	Solitaire
Facebook				
Facebook	Pandora	ESPN SportsCenter	The Weather Channel	YouTube
Pandora	Shazaam	Touch	Instagram	Facebook
Facebook	Twitter	Instagram	Blackboard	Facebook messenger
UberSocial	HopStop	ESPN Radio	GroupMe	U.S. Bank
Facebook	Twitter	Next Transit	Instagram	OkCupid
Sleep Cycle	Scramble With Friends	Weather.com	Draw with Friends	Local News app
Twitter	Gmail	Facebook	Maps	Nike+ Running
Bloomberg	CNBC	Pandora		
Handcent SMS	Facebook	GMail	Google Maps	Yelp
Ecofon	Mail	Facebook	Pages Manager	Spotify
Facebook	Chase bank	Amazon	Kohl's	Travelocity
facebook	instagram	twitter	myfitnesspal	gps
Twitter	Facebook	Pinterest	Nike+	Instagram
7 Words	Tumblr	Harvest	CamScanner	Moxie
Rowi	4th and Mayor	Wordament	Plex	ESPN Score Center
Flipboard	Spotify	Instagram	Twitter	Facebook
Facebook	Instagram	Picstitch	emoticons	
Facebook	Chase Mobile	Safeway	Words With Friends	Kindle
Google Maps	Pinterest	Facebook	Twitter	

Alien Blue	Battle Nations	WTHR	Facebook	Instagram
Runmeter	Google Maps	Trivie	100 Floors	Draw Free
Echofon	Facebook	Instagram	USA Today	TiltShiftGen
Facebook	Spotify	Twitter	Google	Camera+
Craigslist	Facebook	Chase	Monster	Strumtune
Spotify	Instagram	Facebook	MyFitnessPal	
Mail	Messaging	Phone	Huffington Post	Weather Channel
Facebook	IMDB	YouTube	Angry Birds	Google Star Map
Google Maps	Chrome	Card Games	Board Games	
Nytimes	MLB	Delta	Facebook	Twitter
Twitter	Facebook	CTA Trip Tracker	Weather Channel	Buzzfeed
Facebook	Chicago Sun-Times	Music	Weather	Various Game Apps
Twitter	Instagram	Facebook	Solitaire	Yelp
Foursquare	Twitter	Flickr	Instagram	Pandora
Newsy	Youtube	SnapChat	The Weather Channel	Twitter
AP News	NPR News	Google Reader		
Newsy	Walgreens			
Instagram	Facebook	Vsco cam	Camera +	Snapseed
Google Maps	Gmail	gTalk	Bloomberg	Andy-83
Newsy	Shazam	Espn scorecenter	Facebook	Ecofon
Facebook	Twitter	Instagram	Pinterest	MyFitnessPal
twabbit	Newsy	Internet Explorer	Netflix	Office
Pandora	Facebook	Twitter	ESPN Fantasy Football	ESPN ScoreCenter

Facebook	Gmail	Hero Academy	Calendar	foursquare
Swift Key	Handcent	Tweet Caster	Pageonce Travel	Instagram
flixster	audible	spotify	cta watch	compass
Groupon	Pinterest	Starbucks	Bank of America	CNN
Pandora	Google maps	Linked in	Card munch	Notes
Gmail	Blackboard	Facebook	Twitter	Melodies (Google Music)
chrome	words with friends	busboy	maps	songza
Instapaper	Twitter	ESPN FFL	Yelp	Spotify
Facebook	Twitter	Groupon	MSNBC	Weather Channel
Facebook	Twitter	Gmail	Instagram	Pinterest
spotify	facebook	hootsuite	evernote	mail
Instagram	Facebook	Twitter	Pandora	Foursquare
Instagram	Flixster movie	gmail	Facebook	Twitter
Twitter	Instagram	Spotify	xScope Mirror	Quora
camera+	twitter	instagram	pages	redeye
Facebook	Twitter	AccuWeather	Camera+	
Facebook	Scramble with Friends	Chase	The Weather Channel	Twitter
Facebook	Words with Friends	E! Online	Pinterest	IMDb
instragram	twitter	google chrome	google maps	my fitness pal
Echo phone	Kik	Npr	What to expect	Baby center
Echofon	Facebook	IMDB	WootWatch	DirectTV
facebook	twitter	New York Times	Starbucks mobile payment app	instagram
Newsy	gmail	facebook	Twitter	
Words with	Netflix	HBO Go	Safari	Facetime

friends				
Echofon	Facebook	MLB At Bat	ScoreCenter	Instagram
Twitter	Facebook	Instagram	Foursquare	Pinterest
Facebook	Foursquare	Tout	Nytimes	Gmail
Facebook	BBC news	Newsy	Pinterest	Epocrates
Spotify	Mashable	Instagram	WhatsApp	Weather
Instagram	Twitter	Facebook	DragonVale	Bank of America
Facebook	Twitter	Words with Friends	Maps	Associated Press
Facebook	Mail	Tumblr	Instagram	Maps
Twitter	Foursquare	Gmail	Instagram	Facebook
Facebook	Facebook Messenger	Instagram		
Mail	Messages	GroupMe	Twitter	Safari
Instagram	Rdio	Voxer	GuitarToolkit	Chase
Pandora	Weather channel			
Twitter	My church's app	My company's app	Instagram	Facebook
Facebook	Twitter	Pandora	Instagram	Hangin With Friends
Facebook	Twitter	Hanging with Friends	Draw Free	Bubble Spinner
Echofon	Facebook	Newsify	Path	Flipboard
Tumblr	Instagram	Facebook	Echofon	Spotify
facebook	safari	weather	maps	google
Facebook	Gmail	Twitter	Instagram	Bejeweled
Twitter	Instagram	Facebook Messenger	Google	Weather
spotify	facebook	twitter	instagram	reddit
Facebook	Instagram	Huffington Post	Twitter	Camera
Statistic	Value			
Total Responses		201		

#	Answer	Bar	Response	%
1	Strongly Agree	0.12745098	26	13%
2	Agree	0.455882353	93	46%
3	Disagree	0.362745098	74	36%
4	Strongly Disagree	0.053921569	11	5%
	Total		204	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.34			
Variance	0.59			
Standard Deviation	0.77			
Total Responses	204			
8. An app I have to pay for is usually of higher quality than one that is free.				
#	Answer	Bar	Response	%
1	Strongly Agree	0.171568627	35	17%
2	Agree	0.598039216	122	60%
3	Disagree	0.181372549	37	18%
4	Strongly Disagree	0.049019608	10	5%
	Total		204	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.11			
Variance	0.54			
Standard Deviation	0.73			
Total Responses	204			
9. Reviews left by other users will often persuade me not to buy an app.				
#	Answer	Bar	Response	%
1	iOS (iPhone)	0.712871287	144	71%
2	Android	0.232673267	47	23%
10. My smartphone's operating system is:				

3	Windows Phone 7	0.01980198	4	2%
4	Other (Please indicate)	0.034653465	7	3%
	Total		202	100%
Other (Please indicate)				
android phone, nexus 7 tablet, iPad				
Crappy Sanyo Blackberry Ripoff				
iOS (iPad)				
Not sure.				
BlackBerry OS				
don't use one				
Blackberry OS				
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	1.38			
Variance	0.48			
Standard Deviation	0.7			
Total Responses	202			
11. I prefer to download an application developed by a brand or company I recognize.				
#	Answer	Bar	Response	%
1	Strongly Agree	0.217821782	44	22%
2	Agree	0.514851485	104	51%
3	Disagree	0.242574257	49	24%
4	Strongly Disagree	0.024752475	5	2%
	Total		202	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.07			
Variance	0.56			
Standard Deviation	0.75			
Total Responses	202			

#	Answer	Bar	Response	%
1	Strongly Agree	0.083743842	17	8%
2	Agree	0.315270936	64	32%
3	Disagree	0.507389163	103	51%
4	Strongly Disagree	0.093596059	19	9%
	Total		203	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.61			
Variance	0.6			
Standard Deviation	0.77			
Total Responses	203			
12. I actively seek to find applications created by my favorite brands or companies.				
#	Answer	Bar	Response	%
1	Strongly Agree	0.167487685	34	17%
2	Agree	0.522167488	106	52%
3	Disagree	0.246305419	50	25%
4	Strongly Disagree	0.064039409	13	6%
	Total		203	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.21			
Variance	0.63			
Standard Deviation	0.79			
Total Responses	203			
13. I am more likely to pay money for an application created by a brand or company I recognize.				
#	Answer	Bar	Response	%
1	Strongly Agree	0.167487685	34	17%
2	Agree	0.522167488	106	52%
3	Disagree	0.246305419	50	25%
4	Strongly Disagree	0.064039409	13	6%
	Total		203	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.21			
Variance	0.63			
Standard Deviation	0.79			
Total Responses	203			
14. I am more likely to pay money for an app from a brand or company I've had a good experience with in the past.				

#	Answer	Bar	Response	%
1	Strongly Agree	0.310344828	63	31%
2	Agree	0.596059113	121	60%
3	Disagree	0.068965517	14	7%
4	Strongly Disagree	0.024630542	5	2%
	Total		203	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	1.81			
Variance	0.44			
Standard Deviation	0.67			
Total Responses	203			
15. An app that costs \$.99 is of higher quality than one that is free to download.				
#	Answer	Bar	Response	%
1	Strongly Agree	0.00990099	2	1%
2	Agree	0.376237624	76	38%
3	Disagree	0.51980198	105	52%
4	Strongly Disagree	0.094059406	19	9%
	Total		202	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.7			
Variance	0.42			
Standard Deviation	0.65			
Total Responses	202			
16. I don't mind seeing advertising in an app.				
#	Answer	Bar	Response	%
1	Strongly Agree	0.049261084	10	5%
2	Agree	0.615763547	125	62%
3	Disagree	0.236453202	48	24%

4	Strongly Disagree	0.098522167	20	10%
	Total		203	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.38			
Variance	0.53			
Standard Deviation	0.73			
Total Responses	203			

17. Reviews left by other users will often persuade me to buy an app.

#	Answer	Bar	Response	%
1	Strongly Agree	0.103448276	21	10%
2	Agree	0.596059113	121	60%
3	Disagree	0.251231527	51	25%
4	Strongly Disagree	0.049261084	10	5%
	Total		203	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.25			
Variance	0.49			
Standard Deviation	0.7			
Total Responses	203			

18. Things that influence my decision to pay for an app are (choose all that apply):

#	Answer	Bar	Response	%
1	Additional features	0.692307692	135	69%
2	Difference in quality	0.625641026	122	63%
3	Brand significance	0.220512821	43	22%
4	Based on recommendations from websites or press	0.497435897	97	50%
5	Based on	0.764102564	149	76%

	recommendations from friends			
6	Based on recommendations from user reviews	0.492307692	96	49%
Statistic	Value			
Min Value	1			
Max Value	6			
Total Responses	195			
19. In my experience, apps I've paid for are of higher quality than those I've downloaded for free.				
#	Answer	Bar	Response	%
1	Strongly Disagree	0.054726368	11	5%
2	Disagree	0.457711443	92	46%
3	Agree	0.44278607	89	44%
4	Strongly Agree	0.044776119	9	4%
	Total		201	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.48			
Variance	0.45			
Standard Deviation	0.67			
Total Responses	201			
20. Apps that have advertising should be free for me to download and use.				
#	Answer	Bar	Response	%
1	Strongly Disagree	0.004975124	1	0%
2	Disagree	0.114427861	23	11%
3	Agree	0.487562189	98	49%
4	Strongly Agree	0.393034826	79	39%
	Total		201	100%
Statistic	Value			
Min Value	1			

Max Value	4			
Mean	3.27			
Variance	0.46			
Standard Deviation	0.68			
Total Responses	201			
21. I have paid money to remove advertising from an app.				
#	Answer	Bar	Response	%
1	Strongly Disagree	0.217821782	44	22%
2	Disagree	0.48019802	97	48%
3	Agree	0.242574257	49	24%
4	Strongly Agree	0.059405941	12	6%
	Total		202	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.14			
Variance	0.68			
Standard Deviation	0.83			
Total Responses	202			
22. I often browse the app store just for fun.				
#	Answer	Bar	Response	%
1	Strongly Agree	0.105	21	11%
2	Agree	0.49	98	49%
3	Disagree	0.31	62	31%
4	Strongly Disagree	0.095	19	10%
	Total		200	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.4			
Variance	0.64			
Standard Deviation	0.8			

Total Responses	200			
23. I am satisfied with my app store's ability to provide quality apps.				
#	Answer	Bar	Response	%
1	Strongly Agree	0.140703518	28	14%
2	Agree	0.713567839	142	71%
3	Disagree	0.135678392	27	14%
4	Strongly Disagree	0.010050251	2	1%
	Total		199	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.02			
Variance	0.32			
Standard Deviation	0.56			
Total Responses	199			
24. My phone's app store offering is improving (higher quality apps, less spam).				
#	Answer	Bar	Response	%
1	Strongly Agree	0.136363636	27	14%
2	Agree	0.611111111	121	61%
3	Disagree	0.237373737	47	24%
4	Strongly Disagree	0.015151515	3	2%
	Total		198	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.13			
Variance	0.42			
Standard Deviation	0.65			
Total Responses	198			
25. Approximately ___% of the apps I've downloaded are free to download				

and use (use the slider to select a percentage).				
#	Answer	Min Value	Max Value	Average Value
1	% free	0	100	85.32
26. The primary source for information about apps I want to download is:				
#	Answer	Bar	Response	%
1	My friends, coworkers, or family	0.385	77	39%
2	Websites	0.15	30	15%
3	Social Media	0.085	17	9%
4	Browsing the app store or app market	0.335	67	34%
5	Ads in magazines, newspapers, or television	0.015	3	2%
6	Billboards	0	0	0%
7	Other	0.03	6	3%
	Total		200	100%
Other				
Personal interest				
Media				
Familiarity with the app in another media - like, I use their website on the computer, so I download the app for my phone.				
none				
Tech media, especially podcasts				
Statistic	Value			
Min Value	1			
Max Value	7			
Mean	2.57			
Variance	2.39			
Standard Deviation	1.55			
Total Responses	200			
27. Approximately, the percentage of applications I use that were purchased (paid money for) is:				
#	Answer	Bar	Response	%

1	0	0.22	44	22%
2	1-20%	0.555	111	56%
3	21-40%	0.17	34	17%
4	41-60%	0.035	7	4%
5	61-80%	0.01	2	1%
6	81-100%	0.01	2	1%
	Total		200	100%
Statistic	Value			
Min Value	1			
Max Value	6			
Mean	2.09			
Variance	0.78			
Standard Deviation	0.88			
Total Responses	200			

28. Most of the applications I choose to purchase are:

#	Answer	Bar	Response	%
1	\$.01-.99	0.472636816	95	47%
2	\$1.00-1.99	0.213930348	43	21%
3	\$2.00-2.99	0.059701493	12	6%
4	\$3.00-3.99	0.019900498	4	2%
5	\$4.00-4.99	0	0	0%
6	\$5.00+	0.019900498	4	2%
7	I never purchase apps	0.213930348	43	21%
	Total		201	100%
Statistic	Value			
Min Value	1			
Max Value	7			
Mean	2.78			
Variance	5.7			
Standard Deviation	2.39			
Total Responses	201			

29. My phone's app store offering is getting worse (more crowded, harder to find high quality apps).

#	Answer	Bar	Response	%
1	Strongly Agree	0.035	7	4%
2	Agree	0.245	49	25%
3	Disagree	0.64	128	64%
4	Strongly Disagree	0.08	16	8%
	Total		200	100%
Statistic	Value			
Min Value	1			
Max Value	4			
Mean	2.77			
Variance	0.41			
Standard Deviation	0.64			
Total Responses	200			

30. How often do you download an app for your smartphone?

#	Answer	Bar	Response	%
1	Never	0.014925373	3	1%
2	Less than Once a Month	0.293532338	59	29%
3	Once a Month	0.303482587	61	30%
4	2-3 Times a Month	0.263681592	53	26%
5	Once a Week	0.07960199	16	8%
6	2-3 Times a Week	0.034825871	7	3%
7	Daily	0.009950249	2	1%
	Total		201	100%
Statistic	Value			
Min Value	1			
Max Value	7			
Mean	3.24			
Variance	1.36			
Standard Deviation	1.16			
Total Responses	201			

31. I download apps from stores run by my phone's manufacturer (Apple, HTC, Samsung, etc.).

#	Answer	Bar	Response	%
1	Yes	0.7960199	160	80%
2	No	0.2039801	41	20%
	Total		201	100%
Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.2			
Variance	0.16			
Standard Deviation	0.4			
Total Responses	201			
32. I download apps from stores run by my phone's service provider (AT&T, Verizon, Sprint, etc.).				
#	Answer	Bar	Response	%
1	Yes	0.1	20	10%
2	No	0.9	180	90%
	Total		200	100%
Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.9			
Variance	0.09			
Standard Deviation	0.3			
Total Responses	200			
33. I download apps from a third party website or store, such as Cydia or Appolicious (if so, list the third party sources).				
#	Answer	Bar	Response	%
1	Yes	0.075757576	15	8%
2	No	0.924242424	183	92%
	Total		198	100%
Yes				
Amazon Appstore				

when an untethered jailbreak is available				
Google Play				
Amazon (if discounted)				
Zynga				
xda-developers				
Amazon				
Cydia				
Cydia and various third party websites				
Sideloadng APK's - A lot of sources				
Amazon				
Cydia				
Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.92			
Variance	0.07			
Standard Deviation	0.27			
Total Responses	198			
34. How old are you?				
Text Response				
24				
24				
24				
24				
24				
24				
24				
23				
23				
23				
32				
52				
47				
23				
25				
21				
23				

24				
24				
23				
45				
48				
25				
24				
48				
24				
23				
28				
34				
24				
24				
24				
23				
30				
26				
25				
29				
44				
26				
23				
24				
24				
54				
56				
23				
29				
22				
36				
19				
22				
53				
22				
25				
32				
23				
23				
25				

24				
25				
31				
22				
33				
25				
29				
26				
43				
22				
24				
24				
24				
24				
24				
24				
25				
24				
23				
28				
27				
24				
24				
21				
24				
23				
45				
25				
23				
23				
21				
22				
24				
18				
23				
24				
25				
24				
24				
24				
23				
23				

24				
55				
22				
23				
25				
Statistic	Value			
Total Responses	200			
35. Are you:				
#	Answer	Bar	Response	%
1	Male	0.44	88	44%
2	Female	0.56	112	56%
	Total		200	100%
Statistic	Value			
Min Value	1			
Max Value	2			
Mean	1.56			
Variance	0.25			
Standard Deviation	0.5			
Total Responses	200			
36. What is your approximate annual income?				
Text Response				
40000				
69696				
40000				
30000				
43000				
42000				
50000				
63000				
10,000				
48000				
16000				
300000				
40000				

20000				
24000				
35000				
35000				
54000				
100000				
200000				
50				
20000				
200000				
25000				
23000				
35000				
60000				
20000				
15000				
50000				
33000				
24000				
77000				
25000				
50000				
40000				
39000				
30000				
35000				
16000				
140000				
170000				
39000				
60000				
45000				
55				
7000				
25000				
150000				
25000				
30000				
65000				
44000				

0				
60000				
58000				
100,000				
30000				
30000				
9999999				
30000				
52000				
35000				
40000				
45000				
60000				
0				
50000				
50000				
50000				
28000				
24000				
33000				
3000				
50000				
45000				
85000				
40000				
30000				
15000				
1,000				
12000				
26000				
0				
40000				
25000				
60000				
38000				
35000				
30000				
5500				
18000				
35000				

39000				
40000				
65000				
69000				
0				
0				
27000				
9400				
Statistic	Value			
Total Responses	183			
37. What is your approximate monthly phone bill?				
Text Response				
90				
90				
75				
99				
40				
70				
34				
35				
60				
80				
150				
250				
60				
90				
97				
75				
45				
54				
80				
200				
65				
80				
70				
250				
100				
90				

30				
110				
80				
50				
60				
90				
60				
0				
80				
100				
80				
55				
100				
0				
20				
100				
100				
50				
95				
45				
90				
30				
85				
225				
80				
50				
99				
100				
90				
150				
86				
200				
50				
179				
70				
50				
84				
100				
70				
110				

100				
50				
100				
50				
45				
50				
60				
110				
160				
50				
50				
100				
150				
100				
125				
250				
100				
90				
50				
70				
60				
30				
15				
40				
54				
100				
30				
100				
55				
50				
300				
37				
50				
90				
110				
Statistic	Value			
Total Responses	186			
38. What is your level of education (please indicate highest level completed).				

#	Answer	Bar	Response	%
1	Some high school	0.035	7	4%
2	High school/GED	0.05	10	5%
3	Some college	0.17	34	17%
4	2-year college degree (Associate's)	0.02	4	2%
5	4-year college degree (BS, BA)	0.595	119	60%
6	Master's Degree	0.11	22	11%
7	Doctoral Degree	0.005	1	1%
8	Professional Degree (MD, JD)	0.015	3	2%
	Total		200	100%
Statistic	Value			
Min Value	1			
Max Value	8			
Mean	4.52			
Variance	1.75			
Standard Deviation	1.32			
Total Responses	200			

## **Appendix B – Focus Group Discussion Guide and Transcript**

### **Discussion Guide**

Begin session.

“What are some of your favorite and least favorite mobile apps? Please use the paper in front of you to jot down the names of some of your favorite and least favorite apps.

Let’s share some of your favorites and tell me why you like them.

Now, next to each app name you’ve written, please assign a value from 1-5, for how often you use the app. 1 would be rarely, 5 would be often, nearly every day.”

What are some of the things that encourage you to use an app more often? Are there any apps you really couldn’t live without?

What makes a truly great app?

- What makes a bad app?

Let’s talk about how you discover those great apps. How do you normally learn about an app?

- What kinds of things will drive you to the app market?
- What do you look for on the app description page to help you make a decision?

Can you tell me a little bit about downloading an app you have to pay for versus one that's free?

- What kinds of things do you look for in an app to assess its quality?
- If you download a free app, are there any general qualities you expect from it?
- Have you ever downloaded an app sponsored by a brand that you really like?
- Do you ever run into advertising in your apps?
  - o Where?
  - o When?
  - o What kind of ads do you see?
  - o Have you ever tapped on an ad?
  - o Ever seen an ad you liked?

## **Transcript**

Tony: **Ok, lets get started**

**I am Tony Brown, for those of you who don't know me**

**You guys may or may not know that I'm still working on my Master's. I'm trying to finish that up this semester or over the summer. My research focuses on consumer behavior around smartphone apps, and a major focus of that is basically just how you interact with them and how you discover them. This focus group is meant to be exploratory. Nothing that comes out of here will actually be included in my report and if it is it will all be anonymized, strictly confidential. I am recording it but that won't be included in the report, it's purely so I don't have to scribble notes the entire time. Your participation is absolutely voluntary. If at any point, if something strikes you as wrong or you need to leave, feel free. There's no problem with that.**

**Basically, I'm going to just start asking some questions, I expect it to be very open, you all know each other, I hope everyone feels comfortable expressing their opinions. it doesn't seem like there's going to be anything controversial in this focus group, but feel free to express your opinions without judgment.**

**It appears Brittany is the only one with an Android phone, so if we can leave our judgment to a bare minimum about that... [laughter]**

**The first thing, before we get started, is verbal acknowledgement that you've read this cover letter and that you understand that your participation is purely voluntary and that you're comfortable participating.**

Bryan: Yes sir

Emily: Yes

Brittany: Yes

Jared: Yes

**Ok, excellent. We'll get started.**

**the first thing I'm going to ask you guys to do is to take the pen and the paper in front of you and form two columns. I'm going to ask you to create one column of apps that are your favorite and apps that are your least favorite. It's an open-ended thing, you can decide what your favorite consists of, whether it's design or which is the most awful. So, take a few minutes to do that.**

[Writing]

[Minor conversation]

Emily: I delete any apps that I don't like

**Tony: If you can think of any apps that you've downloaded and were terrible, you can put those down too.**

[More writing]

**Tony: If you feel like you've exhausted your list, that should be good. Let's just go around and share a couple of your favorites, and tell me just a little about why you like them. So pick a couple out of your list, tell me why you really like it. Bryan, do you want to start?**

Bryan: Sure! Uhhh, Facebook app, because it's easy to go on Facebook. Click it and you don't have to go online and log in and it's just easier to have the app and get the notifications faster in the app.

Bryan: Echofone, it's like one of the really good Twitter apps I like. I tried a bunch of them, can't remember the names now, but did that one and I really like it. Echofone.

Bryan: And Words with Friends, it's fun to play with your friends.

Bryan: And then Blackboard, I really like the Blackboard app, because it's just uh, unless you're on wireless, that's the only bad thing about it is you can only do it on wireless, but it's pretty helpful when you're in class to just check that rather than have paper and using that.

**Tony How about teh rest of your guys, are those pretty common?**

Brittany: I hate the facebook app, that's like my least favorite? It like, it shows up on my notifications when I get messages and I a) I don't read that but I can't turn it off so I hate it when I have a facebook message and it tells me i have like 42 unread but

I'm like I don't care, but I can't turn it off, and I don't like the way it's organized because it's not like Facebook it gives you that screen that has like a list of notifications, groups, whatever, visually I don't like it, I'd rather go to the website on the internet, it just bothers me.

Jared: I think the interface on the new Facebook app is easier to get around

Bryan: I know that it's different on Android than iPhone

Brittany: It just like, Twitter, any social networking app I probably won't download because I'd rather just go to the website.

Jared: I think that Words with Friends is really, or any app of that nature that allows you to do things with your friends when you're not together, compete with your friends when you're not together, interact with your friends when you're not together, just from your phone, is just something that is a really powerful thing

Emily: That's how I feel about Instagram, I really like Instagram

Brittany: And Shazam, that's a good one

Emily: And Shazam, yeah and I'm a fan of the TED Talks app I just like listen to it like it's a radio.

Bryan: Ted Talks?

Emily: Yeah, TED talks, it's just like all these people speak about different topics, it's really interesting, you should check it out.

Brittany: I also like the Netflix app a lot

Jared: I like Heytell, because it allows you to, it fills a service that didn't exist, which is something that's obviously valuable, people will want to use it if it fulfills something that doesn't exist

Brittany: I use it when I'm driving to and from Columbia to St. Louis because I want to text and drive but I don't want to use my phone. So I can just be like hey, call me in 15 minutes or hey I was just wondering about this thing

Jared: It's easier for on the go than texting, it's also really fun to leave messages on

**Tony: Are there apps on any of your lists that frustrate you but you continue to use for a certain reason?**

Emily: The Pandora app kind of drives me nuts sometimes, it just uses a lot of battery, but any app is going to do that, but it's pretty stable for the most part, it just drains like the [mother?]

Jared: I have this app that I really like because of all of the features it has, it's the major league soccer match da live app that's basically like the entire league site on one page and it has videos and scoreboards and I think of all of the professional sports teams I think it has the best app. But it crashes a lot because I think because of all of the data. It's just so frustrating because of all of the crashes but the amount that's on the app, is just so inclusive, that I wouldn't stop using it even though it crashes fairly regularly.

Brittany: I use a messaging customization so I can like customize all of the colors and backgrounds and like sounds and the one I have now is better than handset was, handset drove me nuts, but you still, like I have to delete, every day I'll delete most of my texts. My phone crashed last semester because I had so many messages, and there's just so much jammed in it because of the colors and the backgrounds. I like having it but it's also kind of a pain in the butt

**Tony: Does that customize the native messages? [To Bryan} Did you used to have an Android?**

Bryan: Yeah, I used to have an Android and I just switched to iPhone, so I had an HTC Hero and you have your own messaging app that you replace because the regular messaging app can't be customized. Like you, can add pictures and change your bubbles and colors

Brittany: And it syncs to Facebook too, so like if someone updates their profile picture and like their status will scroll when I text them

**Tony: Is that something you like, social media integration with different apps? Do you notice it?**

Bryan: Yeah, like with Owrds with Fridnds or Scramble you can go through your FB friends to see who's playing because you wouldn't know otherwise. Like you go through FB and you just say hey I know they have this on their phone and they can play with me. I like that because my old android was outdated

Brittany: Have you seen the draw my thing app? I want it so bad, do you know what draw my thing is? it's called draw something now because it's inappropriate but it used to be through facebook so like with your facebook friends you can invite people and it's like playing pictionary -- I really want it

**Tony: Next what I'd like you to do is go through each of your lists and mark down, number 1-5, assign a score, 1 being I use it very rarely and 5 being I use it very often: every day or almost every day.**

**So, what are some things that encourage you to use an app more often?**

Emily: Well, like with the Twitter app, like if I'm bored in class or between classes or something I'll just look at what other people are doing or links they're posting I'll go read whatever that article is, just kind of a way to pass time

Jared: Integration of lifestyle, something that enhances and interacts with the things that you do every day no matter what in a way that's not intrusive but enhancing. So for example, I use the Nike+ GPS app every time I go run. Something that enhances when I go running, it makes it easier and more fun, it makes it better for me without getting in the way being a distraction, so stuff like that that's going to foster and improve things in my everyday life

Bryan: it's just easier, like with Facebook or Twitter to just go on your phone rather than bust out your computer or if you're in class you know you're just like being on your phone because you're sitting there and it's easier to do because it's in your hand walking to class, stuff like that

00:15:00.0

Jared: something you can get in and out of really quickly too, something that's not a huge time commitment because often times you're doing things where you have 5 minutes to kill and so you sit down and you pull out a game or something that you can do in 5 minutes, something that you can pull up and you can do in a short period of time and it's not going to kill you if you start it and then can't continue

Emily The last thing I want to do is carry around more stuff, so I don't want to like pick up a newspaper, I just read on my phone. to me, my phone is just an extension of my computer, like I have post-it note reminders, I have pictures, I have any email or blackboard or anything, I fi had to do the entire day without my compuer I could do it because I have my phone

**To that point, are there things you feel that your phone can't do that you definitely need a computer for?**

Emily: The screen size can be kind of limiting, there's some stuff I definitely enjoy doing more on my ipad than my iphone but I could still do on my iphone. Like I would take notes in class on my ipad but not you know I just do short notes on my iphone.

Bryan: that's one of the reasons you're not going to sit in class and like type on your phone, you use an ipad or a computer for that just because the screen is too small or shuts off on you

Brittany: Plus phones and video are still annoying to me, it 's just any time I have to pull a video up I know it's going to work but like if my computer is there I'd rather just pull it up on my computer not because of the size but because I think it's sketchy on your phone. If I really want to see the video, if it's a movie trailer that just came out and I'm dying to see it right this second I'm just going to get my computer because my ohne is going to be stop and start and sometimes the youtube app is questionable too

**Tony: Are there any apps that you feel you really couldn't live without?**

Emily: I don't feel like I would know what is going on in the world without the NYT app. I watch the Today show in the morning but that's not really news. That's like how I get my news

Bryan: I don't have time to watch the news, and it's easier just to see it on Twitter or just like Facebook if you see a link. I found out Whitney Houston died from Facebook, that's how I found out was getting home and seeing it popping up on my facebook app

Brittany: When I sit in econ, my favorite class ever, I will just like anything Mizzou retweets about basketball I'll read so I know more about basketball this season than I ever have in my entire life

Emily: same

Brittany: Because I just sit there in class and literally if there's an article about mizzou basketball I've read it. I've never felt so intelligent about sports in my life. So it's not that I can't live without it, but I feel like in that way it's enhanced my life. I just got in a big conversation with a guy who was like you don't know anything and I was like psht and I felt cool, because of my phone

**Tony: So let me ask a follow-up. If you lost your phone right now, what would you miss most?**

[Resounding "Texting"]

Jared: For me it would still be the essential phone functions

[Resounding agreement]

Emily: Texting. I don't talk on the phone, I have one phone call a day to my grandmother, otherwise I don't talk on the phone

Brittany: I don't text that much, it's just the thought of not being able to get a hold of someone if I want to. Or, like, this sounds stupid but sometimes if I'm walking around and I see something stupid and want to send it to a friend and want to take a picture or something it would drive me up a wall if I had to describe the story on my own rather than just show the picture

Bryan: As long as you can still get your emails. I remember with Android I had an email app that could do it and now with my iPhone I just get it

Brittany: Yeah, I haven't used that app, but I would not get shifts at Tour Team {work} if I didn't have email on my phone. The old system I would not, because Nate and I would compete, as soon as they sent the email I would say i can do it, and done. Now the way it is, where you have to get them when you can, that's the only reason I get as many shifts as I do, because I'll be sitting in class and that email will go out and I'll be like ok, I got it. So, really, I make money off of it.

Jared: I would say phone calls, text messaging, and emails are the things I would miss the most if I lost my phone.

Emily: I would feel uncomfortable, it would give me anxiety.

Bryan: Yeah I was running late to class the other day and I left my phone, and I turned around. I was not going to be there, on campus, for 4-5 hours and not have my phone. I'm already late, I don't care, let me get my phone, so I turned around and got my phone.

**Tony: Now envision in your head, a time that maybe you'd talked to a friend who said "this app is a truly great app". What makes an app truly great?**

Brittany: I think it has some type of lasting power, its something I'm going to use every day or makes my life easier in some way. Not something that's like a trend, I love Angry Birds and I'm sure \_\_\_\_ is really cool, but that will last for a few weeks and it'll be over. That might be something that like you've got to download Angry Birds, that went around for a while but now it's losing steam. It needs to be something like as stupid as it is, anytime someone gets an Android phone I tell them about customization because it's one of the things you can do that you can't do on an iPhone, so it's one of the things people want to get. Also like shazam so when I'm sitting around I can know what songs I hear and things like that.

Emily: When I was in New York this summer, I really really liked that hopstop app because it was always reliable and always got me where I needed to go, it never crashed or anything like that, it was reliable.

Brittany: Things like that; Mpaquest, UrbanSpoon, it's just like something that is going to make my life easier when I need it instantaneously

if someone's like hey, we need directions or I thought the house was here and it's not then I can just type it in just go. it serves a purpose right then and there

Bryan: Like i hvae a GPS in my car and it take sforever to type it in and load it, find directions, satellites, so my phone just makes that so much easier.

Brittany:I don't have to call 15 times and be like where am I?

Tony: Do you feel more independent or self-reliant with a smartphone?

Emily: yes

Bryan: Yes, because my life's on this phone. Everything I'm doing like \_\_\_\_\_ when I'm there or my if tests come up it's in my phone or if I have to work, everything's in tehre, meetings and stuff. Helps me keep track of things and seeing it in person rather than pulling your planner out or something like that.

Brittany: I think like dependent is a funny word because it makes you mroe comnneted to other people so it's like you're deep into it and your dependent on your phone and I'm totally ok admitting that, but I do feel independent because I sdon't need, like that example, if you tell me to be somewhere I'm going to ahve a reminder in my phone to be there and set an alarm if I need to, I do that in the morning all the time to be sure I'm on track, and I can get direcitons las tminute and check email to be sure I'm going the riht place. the first couple days of school when I forget my schedule, all I ahve to do is pull up MyZou and then I don't have to worry about stopping and asking directions or anything, because I've got it right here

Emily: It makes it easier to solve problems by yourself. You ahve the resources to solve the problem.

Jared: You're both more and less self-reliant in a lot of ways because you're certainly need to rely on people a lot less, but you're putting more of your eggs in one basket which is kind of the opposite of self reliance in some ways

Emily: it's kind of scary

Tony: Are any of the apps that are on your list of good apps, would you say they are extensions of a brand, or that you downloaded them because you're a fan of a certain brand, whether it's someone who sells something to you. Not necessarily Angry Birds, but a well-recognized brand that you wanted to download.

Bryan: I got the Express app. I really like Express, I was able to get this coat, and I was able to find it on there, snapshot it, send my dad and my mom a picture of it, that app I just got because I love that brand, I love the stores and it's just easier to order online, I just love that brand and that's why I got it because I love the clothes.

Brittany: The only reason I have the Facebook app is because of the name Facebook. I prefer to do it the other way but I got the app

Emily: the Pinterest app...

Brittany: Even like Pandora, I only got that because I had it on my computer.

Jared: I agree, I have a couple apps, but at the same time, there are a bunch of lifestyle apps, like Google Reader

Tony: how about on your phone, something that would be more of a traditional brand, something like department stores, like Express

Emily: I have Starbucks

Brittany: I have an Amazon, Starbucks, and Blockbuster app

Jared: I used to have a Chad Ochocinco app but I finally got rid of it because I didn't use it for like 2 years, I have the NPR music app

Tony: that kind of leads me into this question. How do you discover apps? How do you determine you want to download an app?

Bryan: kind of depends, sometimes you're playing with your friend's phone, or sometimes going through the app market to see what's new

Jared: or sometimes when you have a \_\_\_\_\_ that you want your phone to do, then I search for apps that can do it like if there's something that I want to be able to do I'll go online and search keywords for it

Bryan: Like a flashlight!

[laughter]

Brittany: I use it though!

Bryan: I remember I was just somewhere that I needed to see in the dark, I don't remember where I was at.

Brittany: Or, like, stores or commercials too. Like the barcode app, the barcode scanner, I can like scan stuff and then I know how much it costs and then stores will promote that because it's good for them to have you scan their codes so there have definitely been commercials I've seen or shows that are like download our app and blah blah blha

Bryan: You see like a lot of things with the QR readers, like on alcohol bottles like they were doing some campaign in the student center with some stuff you could win a some competition

Brittany: At the movie theater, if you get their app and like scan or whatever you get a free popcorn everytime you come or or like every birthday you get free tickets or whatever

Tony: How often would you say you scan a QR or a barcode?

Emily: I never have.

Jared: Never.

Bryan: I've done it!

Brittany: I have too!

Bryan: If I see it on there, if it had one on this right now I'd do it, I did it in Rollins one day because it had it on a ketchup bottle

Brittany: On the first phone I had it did price comparisons, so if I scanned like a charger, I could scan it and it could tell me within a whatever mile radius, what other places were selling phone chargers for and what prices, so then i could know that like I'm not oging to buy it here because it's at walmart ofr like 4 dollars or whatever. I used to use that a lot, I don't have it anymore, but I used to.

Tony: Is that one you downloaded or was it preloaded on the phone?

Brittni: I downloaded that one.

Tony: I'm curious, because the two of you have scanned barcodes, would you say that's tied to using android?

Bryan: Yeahhh, I think, I had an Android for two years

Brittni: and it comes with a barcode scanner, so like I was more likely to use it just because people would be like "what is that" and I'd be like "oh it's sweet it scans barcodes"

Bryan: It's just pretty cool to use that, it's cool to use it and see interactive websites and things

Brittni: but now that I think about it I would definitely associate it with Android, like anyone that I know who has android will tlak about barcodes scanner but I've never heard anyone who has an iphone talk about the barcode scanner.

Tony: Ok, now on your piece of paper, wherever you'd like, just name the top three places that you learn about apps from. Rank them 1-2 and 3. If they're out of order, just draw a 1, 2, or 3 next to them.

Tony: Is there any one of those that stands out more than the otehhrs as being a bigger source than the others?

Emily: Just hearsay, friends.

Jared: Yeah, probably. Though I also discover them through reading. Like, different blogs and websites and things like that.

Bryan: And the app store, going in and seeing what's new on the app store.

Tony: Is there anything that will drive you to the app store just to browse?

Emily, Brittni, Bryan all at once: Boredom.

Bryan: If I'm just sitting in class bored, or sitting in the student center with time to kill I'll look at the app store.

Jared: I almost never do that. I don't think there's any app on my phone that I downloaded by going to the store and looking at what's most popular.

Emily: When I'm bored, I'll just download a bunch of them

Bryan: yeah, I'll download them just to see what I like, if I hate that I'll delete that but I just like go through-- ust pure boredom

Emily: It doesn't happen that often. but every once in a while

Tony: When you're going through the app store, what will trigger a download? What will drive you to actually do it?

Bryan: I look at the screenshots and stuff, like when it's games, I look at the games and it's kind of fun I'll try it out

Brittni: I read the reviews too.

Emily: I read the reviews.

Jared: Yeah.

Brittni: People are like this is one of the top 10 apps that everyone should have on their phone, and like, I've used it, it works really well, and here, like all the pros and just one con then I'll be like ok, I'll try it out.

Jared: I look for like, negative things about it, I look through reviews for like this app crashes all the time or I bought this app with the intention of it doing this and it doesn't do this. Or the opposite end too: like this app fulfilled the exact need I was looking for, this is what it does.

Obviously there's tends to be a lot more brutal honesty in comment sections than in the app descriptions that the developers write themselves or whoever does PR for them wrote.

Tony: Do you read the descriptions?

Jared: Of the apps?

Tony: Yeah.

Jared: yeah.

Tony: which would you say is the bigger decision-making factor? Would it be the description, the screenshots, or the reviews?

Jared: Reviews.

Emily: and whether or not there's a price. i rarely pay for apps.

Jared: Especially if I'm going to pay for one, that's when I'll read through the comments.

Bryan: You look at all three of those factors.

Jared: If it's free then I'm like yeah, I'll download it and if I don't like it it's very easy to get rid of. That's thirty seconds of my life, no big deal.

Tony: When you're looking at screenshots, what kinds of things do you do to assess the app quality?

Bryan: I just look at, unless it's a game, I don't look at the screenshots. If it's a game, I look and it looks like it might be a fun thing to pass the time while I'm sitting in class or walking to class.

Tony: How about when you're using the app, after you've downloaded it and you have it, what kinds of things do you do to assess quality? Imagine you just opened an app for the first time...

Jared: How easy it is to navigate, like where you land, how easy it is to accomplish what you want to accomplish from that landing page, how clear the navigation is

Emily: Can you figure it out quickly, like right away, you don't have to spend a bunch of time like jumping through hoops

Jared: That's what I think is best about Instagram, is Instagram is so linear, and so straightforward, it's just like share, filter, where do you want to share it, and there it is. It's just linear and in order. And that's what I want, something that's just intuitive like that. I know that intuitive is such a hard thing to quantify but just how easy it is to get from point A to point B.

Brittany: Like on the , I've used like three different of those , I'm all about my custom messaging, but like if I've opened it and I can't immediately figure out how to change colors and everything, I'm fairly good with that kind of stuff, but if I can't figure it out instantly, I'm going to delete it and try something else. I need to be like oh, you want to change colors, click this. You want a bubble or a line, click here. I just need to know immediately. That's why I hate the FB app, because online it's not like, it takes me to the wrong place first. So it's just like, it's just like, instantly once I open it, can I navigate it from the opening page.

Bryan: It's kind of like, what's the point of using it, you might as well get your computer out of your backpack.

Brittany: If I open up mapquest or whatever I should not have to figure out what button I need to press to get directions, it should be very clear to press here or here.

Tony: How about if you download a free app. What kind of general qualities do you expect for something that's free?

Bryan: That it works. That's about it. If it's free, I'm like, I didn't pay for it, I'm not going to be upset, it just sucks that I have to download something else.

Brittany: If it does what it says it will. If it's an app that says it's going to tag music for me when I listen to it, and it doesn't work. If it tells me it's going to do something, it better do it. If you say you can do it, do it.

Tony: How about if you pay for one?

Bryan: I can't tell you the last time I paid for one.

Emily: I never pay for apps.

Jared: I've paid for quite a few apps. Obviously there's a higher expectation and it's held to a higher standard. There's just a level of there's a heightened sense of like you actually have a right to be frustrated if it doesn't work. You have a right to go write a bad review or be mad about it. You have a right to be frustrated if it doesn't do what it's supposed to do, whereas if it's free it's like oh well.

Bryan: I think you can get refunds, if you don't like it. I think I tried it once but don't remember if I ever got paid back.

Jared: At the end of the day, it's like 99 cents or a dollar 99

Brittany: My mom paid \$100 for a medical dictionary that she can keep on hand so that if there's a term she needs right then she can pull it up. She's a nurse practitioner, so like if she's right there and has a term, it'll tell her what the diagnosis is and the common prescriptions. And it's literally just a book that she has, but it's on her phone. It's not a guessing game like googling how do I cure a broken arm, it's super legit. It took us like a week of her going back and forth figuring out whether to

pay for it or not. She read reviews and did research and my dad did too. She's not that good with phones, so it had to be something she'd be able to use, so she wanted to go online and look at it and other women my age how are they using it and she did some hardcore homework. When it came to it, she expected it to do everything it said it did—and more. But she loves it.

Tony: How skeptical would you say you are when looking at and evaluating a new app? One that you haven't used before, your friends have recommended, or found in the store.

Brittany: I'm really skeptical. If no one recommended it to me, I'm really skeptical.

Emily: Usually the ones I look at first are the ones ranked in the top free apps, so that's usually where I start and I'll go down the list. My expectation is at the top of the list, I take it to mean it works.

Tony: Are there any apps in your phone that maybe were free that you would have paid for?

Jared: Plenty

Emily: Yeah

Bryan: I wouldn't say plenty, but yeah.

Tony: Pick your favorite and tell me how much you'd pay for it.

Brittany: I spent 99 cents on a flashlight...

Bryan: I like my Bible app a lot. If I got to church, i don't have to bring a bible with me, I just have it with me. I'd pay a couple dollars for it.

Brittany: You can like bookmark and do devotions. You type in I'm going to do a devotion on temptation, and it'll pull all of the scriptures on temptation and give you like "here's all the reading you should do for this day" and give you notes. It's super legit. I'd pay \$5 for that.

Bryan: You see a lot, when I go to church back home, people have their iPads or Kindles, stuff like that, because it doesn't defeat the purpose of having a bible, you leave it at home and you want to bring something light and not carry everything or you have kids, you have it on your phone.

Brittany: It makes you a better christian.

Bryan: You never forget your Bible!

Tony: Do you ever run into advertising in your apps?

All: yep

Brittany: Especially free ones.

Bryan: Especially words wth friends, that's the worst part of it, the ads. But I love the game, I don't care that they're on there

Brittany: Pandora does that, and I don't care as long as I'm just listening to it, but the ads will like pop up and cover what I'm doing.

Tony: What are the most annoying ads?

Jared: I think the ones that are somewaht hoodwinking. I'll just use Temple Run as an example, there's a free version of TR and after a round it'll pop up and say something like "do you want more coins?" and it looks like it's part of the gameplay, then you click on it and it takes you to the app store for a different app. I'm frustrated whn I think I'm being misled by an ad. If it's straightforward, I get that, I didn't pay for the app, I'm ok with some advertising, it's not oging to bother me to hit skip or wait 2 seconds or whatever, but when it's misleading is when it's frustrating.

Bryan: I always want to laugh at the ad for Zoosk, it's like a dating site, it always pops up in WWF, it's fun to laugh at and

Brittany: I like it when it's phone stuff, like have you tried this new app or these new headphones or like the evos or cases or whatever, that doesn't bother me because I might be interested in it. It's like when I get stupid ads like weight loss or dating sites or stuff like that, I don't know if you demographically know that I'm female and single but I don't need you to try and hook me up with someone or make me skinnier.

Tony: Are there ads you tap on?

All: Ummmmmm, no

Tony: Have you ever intentionally tapped on an ad?

Bryan: I looked at that Zooks one! It was funny, so I tapped on it and I read the app description and it was funny, but I was like, sorry, I'm not going to download it.

Brittany: I looked at one about phone cases, it was evo phone cases.

Jared: I've never left an app to go to an ad.

Emily: Me neither.

Jared: I've viewed ads in my phone, sometimes it'll pop up and I'll check it out but I'm not going to leave the app to go to an ad.

Tony: So other than the Zoosk ad, is there ever an ad you actually liked.

Emily: I don't even remember any of them, I just don't pay attention.

Bryan: You're just waiting for that skip to show up, you're not even looking, you do something else for a couple seconds. I don't even pay attention that much. If it doesn't catch my eye.

Tony: That takes me through my questions, is there anything else you'd like to share about mobile apps, advertising, where you find them in the marketplace?

Bryan: I love apps.

Emily: Yeah, I love that there are apps.

Jared: It's just one of those things where as soon as they came out and started integrating with everyone who had a smartphone, it's like one of those things where how the hell did this not happen sooner. How did this take 65 billion years to get to this point, how did we not think of this sooner, it just makes so much sense for you to have something on your all the time that can help you with a task, or can accomplish multiple tasks in one spot, how did it take so long to get to this.

Brittany: There's, I was just thinking this today, and I know there are some phones that do this, I know Windows phone does this, but if you click on one of your contacts, it'll pull up the conversation or pictures they've sent you or emails you've exchanged or their facebook and it gives you all of that in one place, and I know there's an app for it but I don't know what it is and I want to find it.

Bryan: Yeah, those are Windows phones

Brittany: Yeah, because I know they do that and it would be so convenient to keep it all together.

## **Appendix C – Project Proposal**

### **Professional Project Proposal**

Master's Program  
Missouri School of Journalism  
University of Missouri

By  
Anthony Brown

Dr. Margaret Duffy, Committee Chair

May, 2011

## **Introduction**

For the past several years, my studies have focused on new media as well as on modern marketing practices. Over the past year, I have studied strategic communication with particular respect paid to innovative digital advertising campaigns. As the Interactive Specialist for MOJO Ad, I have gained experience designing digital portions of integrated marketing campaigns that meet specific media objectives. I have also participated and helped design both quantitative and qualitative studies for strategic communication research. Over the same time period, I have been employed part-time at Newsy, a small start-up company focused on mobile video news analysis. In this role, I manage the entire process of updating and maintaining the company's mobile applications. Product conception, graphic design, development oversight, deployment and management of the products are solely my responsibility. I have overseen the full development of eight mobile applications, deployed to any of five mobile platforms. My undergraduate degree in convergence journalism from the University of Missouri exposed me to emerging media, with lessons in social media content generation, online multimedia, and new media business models.

Professionally, I intend to pursue a career in digital product management. Client or agency-side, I am seeking a role in which I am tasked with the day-to-day maintenance of innovative digital products as well as the long-term strategy for an interactive division. Within a short amount of time, I plan to start my own

company, one focused on innovation in new media. My experience at Newsy, itself a startup, has and will continue to provide priceless knowledge in fundraising, opportunity recognition, long-term strategy development, and managing company growth. In addition, real-world experience with mobile applications and new media business models is invaluable to my career goals.

### **Professional Skills Component**

For the duration of the professional skills component, I will work at Newsy in a role expanded from my current position, with greater emphasis in strategic communication. My day-to-day responsibilities for mobile app management will remain. In addition, I will work closely with the marketing department, led by Alex Wharton, VP Marketing, on promotion of the mobile applications and website. Either Jim Spencer, president of Newsy, or Alex Wharton will set specific tasks and goals.

The skills component will occur from May 9 to the week of August 12, 2011, for 30 hours per week (7.5 hours per day, four days per week), allowing an additional 10 hours per week to perform the research described in the following pages. Abundant physical evidence will consist of weekly detailed field reports, examples of promotional campaigns I work on or design, copies of internal metrics reports, and/or examples of research on emerging technologies and

digital platforms. Jim Spencer and Alex Wharton will supervise the work on-site at Newsy. I will email weekly field reports to members of my committee.

## **Analysis**

### *Theoretical Framework*

Many software developers attempt to recoup the costs of mobile smartphone application development by selling advertising in the application or selling the application itself (Constantinou 2010, p.6). Similar to consumer behavior studies, we will attempt to identify the attitudes that users of mobile apps form for methods of monetization. This research may identify opportunities to make users more willing to purchase an application or help developers choose a monetization model that complements the feature set and function of the application.

Promotion within the marketplaces that facilitate the download and installation of mobile applications is integral to the success of an application. Organic promotion within an application market is a legitimate source of traffic to download pages (Constantinou 2010, p. 5).

For stores that rank applications based on download volume, as Apple's iTunes App Store does, earning optimal placement is dependent upon a steady stream of new users. In the case of Apple's store, as well as several others, free-to-download applications are separated from pay-to-download applications in

rankings, introducing yet another element of pricing strategy. In the iTunes app store, free applications receive a majority of the attention from users and have significantly higher traffic. Paid applications, often \$.99, are perceived as a separate tier that may achieve a perception of higher-quality, professional applications. For app developers, determining the best monetization model for a particular application can be a lengthy experiment.

Additionally, If a popular application relies on advertising for revenue, what do users expect? Does the pricing model affect the attitudes consumers form about quality, performance, utility or community? What is the perception of an advertisement that appears in a for-pay app, and does it differ from that of a free app?

**What are the consumer perceptions of the prevailing and emerging methods of mobile app monetization, and what do consumers expect from each?**

This study is built around expectancy-value theory (EVT), which asserts a person's attitudes are created as a function of their collective experiences. Extensive research has shown the model to be a good predictor in the relationship between quality and corresponding satisfaction (Gottlieb, Grewal and Brown 1994, p. 878). The model has been extended to determine predictors for repurchase loyalty based on a consumer's perception of quality. Studies have shown satisfaction serves as the mediator between the performance of a product

and repurchase loyalty. When households in Norway purchased fresh fish, the performance of the product in consumer's evaluations of quality affected their level of satisfaction with the product, then influencing the likelihood that the brand would be purchased again (Olsen 2002, p.247). Smith and Swinyard (1983, p.265) performed a study that supports the notion that consumers who were able to try a product were more likely to purchase it than those who were exposed only to the product's advertising. The authors caution that the study was performed with food as the product, and the benefit of being able to taste the food likely contributed to the results of the study. They warn that other products may not achieve the same results. Bennett and Harrell (1975, p.110) introduce a psychological measure of confidence in a brand as a predictor of purchase. Consumers more confident in their ability to judge a brand's benefits over competitors are more likely to follow through with purchasing the brand. Lattin and Bucklin (1989) contend price may act as an attitude reinforcer. The attitudes formed about a product in regard to its price become reference points that are later evaluated while making purchase decisions. Consumers will use price to help evaluate the performance of the product, then recall their perception of the product when comparing the product to competitors during future purchase decisions.

Expectancy-value theory is directly linked to the uses and gratifications (U&G) approach, which, as applied to media selection, attempts to explain how a

person's media selection decisions are guided by the goal of fulfilling a particular need (Ruggiero 2000, p. 20). Where EVT attempts to predict an individual's propensity to perform future actions based on the attitudes formed by evaluating an experience, U&G attempts to explain the consumption of a good or service through its role in satisfying a certain need or goal. Applying U&G to websites, users motivated by convenience, social interaction, and information spend more time on a web site than those with different motivations (Ko, Cho and Roberts 2005, p.66). Leung and Wei (2000, p.308) examined the motivations for use of cellular telephones with a uses and gratifications approach. Their research found that users of cell phones choose to do so because of the phone's ability to satisfy a user's mobility, immediacy, and instrumentality needs.

This study is less an examination of pricing strategy in dollar value and more an examination of the distinct difference between applications that require a payment for use and those that do not. However, Bruner found that price often allows users to make inference and substitute for unknown quality information as a symbolic value. When experience is low and little is known about the quality of the product, consumers may use the price to create perceptions of the quality of the product when making purchase decisions (1955, p.203). The extent to which the amount of the price affects symbolic value is unclear (Monroe 1973, p.78), thus our study will avoid treating price as a scale and rather as categorical variable.

**Research Topic**

The smartphone market is dominated by three operating systems: Apple's iOS, Google's Android, and RIM's BlackBerry. Each OS is designed to give users more function than that of a basic mobile phone, with Internet capability, geolocation or GPS, multimedia playback, camera, and high-resolution display. These characteristics combined create a platform as rich and engaging as any laptop computer, but with an opportunity to tailor user experience to the specific usage of the device.

Perhaps the most defining characteristic of smartphones today is the ability to install third-party software, called apps, to the device through virtual marketplaces. Over the past two years, most notably through the iTunes App Store for Apple's iPhone and iPod Touch devices, app sales have exploded. As of December, 2010, the iTunes app store was estimated to host nearly 310,000 applications developed by more than 60,000 publishers (148Apps). Apple announced after just over two years of operation, the iTunes App Store had served over 7 billion app downloads to iPhones, iPod Touches, and iPads. The second-largest app store, Google's Android Marketplace, by comparison has nearly 190,000 apps in its inventory and slightly more than two billion total app downloads to phones and tablets created by Motorola, LG, Samsung, and other mobile phone makers (AndroLib).

This study will examine multiple factors to which consumers evaluate in forming perceptions of applications that adopt particular revenue models and how a user arrives at the final stage of application purchase. Attitudes formed around price, the different types or tiers of application use, and the role that peer reviews play in purchase intention will be examined.

### **Subject Literature**

There are four prevailing or emerging methods of smartphone app monetization: pay-to-download, pay-to-subscribe, branded application, and advertising supported (Grundstrom 2010 p.36). Each method is non-exclusive, though application developers will generally select just one of method. It is common for an application to be free to download and supported by advertising, but offer a one-time or subscription fee to remove the advertising.

### **The Perception of Price**

In consumer behavior, the perception of price is a well-researched topic. Classic studies have shown consumers' tendencies to use extrinsic values such as price, brand name, advertising level, and packaging as cues for product quality evaluation when intrinsic values are unavailable. A consumer's inability to adequately assess the product's quality from their own experience leads her to draw on heuristics developed around perceptions of price and brand to form an acceptable appraisal (Chu 2005, p.116). The use of extrinsic clues is more

common with products for which intrinsic values are harder to come by. Consumers will associate higher prices or brand characteristics with increased quality. For example, in the purchasing of an automobile, it is nearly impossible for the consumer to fully assess the intrinsic value of the product's complicated components. Thus, consumers fall on extrinsic values such as price and brand to form their beliefs about a product (Erickson 1985, p.198; Szybillo and Jacoby 1974, p.76). Consumers who are more price-conscious are less likely to form price-quality relationships and lower levels of price acceptability. Consumers who equate price with quality are more accepting of higher prices (Lichtenstein 1988, p.249).

### **Software and Media Provider Revenue Strategies**

An estimate by Chetan Sharma Consulting pegged the average selling price of applications in 2009 at approximately \$1.90 and expected that number to decline 29% over the following three years due to market competition. Applications earning revenue from advertising earn approximately \$0.09 per user per app per year (Sharma 2010, p.12). Revenue models for mobile applications are similar to those used by web content providers. Often, mobile applications are an extension of existing web properties, thus it has been convenient for developers to mimic their monetization methods. Prasad (2010, p.26) argues that for web content with content of high intrinsic value, a subscription model is ideal, though for low intrinsic value applications, reliance upon advertising is preferred. In his

separating strategy, where high-income users pay a subscription price to not view advertisements, the low-income customers must be dissatisfied with the number of advertisements they view to prevent cannibalization or suboptimal profits. If the low-income non-subscription experience is adequate, high-income users become disincentivized to pay a premium for an incrementally better experience. Additionally, when competition for content viewers exists, media providers have less ability to charge higher subscription prices or increase the amount of advertising. Kumar (2009, p.941) developed a model for optimal revenue generation via a hybrid model of ad-supported and subscription-based monetization strategies for web content providers.

### **Peer Reviews and Application Use Trends**

Hu (2006, p.329) finds online reviews to inaccurately portray the quality of a product. An observed polarizing effect, where users either love or hate a product, is explained with a “brag and moan” model of motivations. The study shows consumers are motivated to write reviews of products when they are in a position to brag about their purchase or are unsatisfied and complain about the product. Those who are merely satisfied with the purchase are not motivated to write a review and are thus underrepresented. A study of the effect of customer reviews upon purchase intent (Chen et al. 2004, p.721) finds word-of-mouth to be a major driver of product sales when quality uncertainty is high and search costs prevent consumers from acquiring firsthand information. When consumers are

faced with the decision to purchase without adequate information about a product's quality, they are likely to seek product reviews submitted by their peers to form a more complete impression of the product. A Harris Interactive study found 32% of respondents reported having told another person about a poor experience they had with a brand's app (Rubinstein 2010).

Interviews of users of a photo-sharing mobile app (Naaman 2008, p.1744) exposed motivations consumers have for choosing mobile platforms over desktop or laptop computers: *multitasking* (low required attention to input allows users to engage in simultaneous activities); *ease of use* (the always-on nature of mobile devices avoids the time-demanding process of booting a computer, launching a browser, and navigating to a web destination); *social interaction* (the ability to easily share content without geographically relocating the social event); and *physical convenience* (the ability to move around easily or use in small spaces unlike a desktop computer). Also, use motivations appeared to satisfy one of three functional needs: Task Time, Down Time, and Killing Time; in descending order of involvement (2008, p.1745). A user engaged in Task Time has a specific function or goal in mind when the application is launched, whereas a user engaged in Killing Time has no superseding tasks to accomplish and is searching only for a way to pass time before her next task demand. As involvement level declines, run time increases. Users in Task Time launch an application, perform their intended duty, and close the application, whereas users Killing Time average a longer amount of time engaged with the application.

### **Sample of Methods**

The following is a sample quantitative experiment design. The research component of my project may include a qualitative study after a quantitative study is completed.

A survey will be administered to consumers with varying amounts of experience with mobile applications. Respondents are asked to report their level of experience as low, moderate, or expert in downloading and using third-party mobile applications. They are then asked to report their experience with different mobile operating systems: iOS (iPhone and iPad), Android, RIM (BlackBerry), Symbian, or other.

Respondents are asked to characterize their level of usage of third-party mobile applications by estimating the number of applications used per day. The survey measures the amount of time spent using third-party applications per day and the number of third-party applications currently installed on the respondents' personal device.

Respondents are asked to name their top five paid and free applications, and indicate whether those applications include advertising. The respondents are asked to recall any number of applications they made a conscious decision to discontinue using, and to indicate why they had reached that decision. They are

asked to indicate whether they currently use (defined as once or more per week) an application that falls into any of the four prevailing revenue models.

Respondents are asked to read the description of a **high-intrinsic content** value application and indicate any of the four prevailing revenue models they expect it to use. The respondents are then randomly asked one of three questions:

- If this app were pay-to-download, how much would you expect to pay?
- If this app requires a subscription for use, how much would you expect to pay per month?
- If this app requires a fee to remove advertising, how much would you expect to pay?

Respondents are asked to read the description of a **low-intrinsic content** value application and indicate any of the four prevailing revenue models they would expect it to use. The respondents are randomly asked one of three questions:

- If this app were pay-to-download, how much would you expect to pay?
- If this app requires a subscription for use, how much would you expect to pay per month?
- If this app requires a fee to remove advertising, how much would you expect to pay?

Respondents are asked, when considering purchase intention of a paid application, the determinant factors that lead to their decision, including: product reviews from the app store, product reviews from a third-party store, application rating, number of indicated downloads, brand name, appearance in screenshots, application description, price, expectation of advertising, opportunity for trial, or recommendation service or engine such as iTunes App Genius.

Respondents are asked to indicate their agreement (on a five-point scale that ranged from strongly disagree to strongly agree) with several statements designed to measure attitudes about consumer reviews, price-quality relationship, willingness to purchase subscriptions, and satisfaction with popular applications.

Upon completion of the survey, respondents are asked to provide demographic information about age, sex, race, sexual orientation, income, and monthly phone bill amount in order to aid in the explanatory power of the researchers' descriptive statistics.

### **Opportunities for Publication**

The completed project report will have incredible value for the marketing and advertising community. Data on mobile application sales and published research is incredibly sparse. Scholarly journals such as the *Journal of*

*Advertising, Journal of Consumer Research, or Journal of Marketing Research*

would be lofty, yet ideal, publication goals. Professional publications such as *Advertising Age* or technology media such as Mashable or Wired are also likely to publish the report. Media Convergence Group, Newsy's parent company, may be interested in branding it as a corporate white paper.

**Sources***Theoretical Framework*

Bennett, Peter D.; Harrell, Gilbert D. (1975) The Role of Confidence in Understanding and Predicting Buyers' Attitudes and Purchase Intentions. *The Journal of Consumer Research*. 2(2), 110-117

Gotlieb, Jerry B.; Grewal, Dhruv; Brown, Stephen W. (1994) Consumer Satisfaction and Perceived Quality: Complementary or Divergent Constructs? *Journal of Applied Psychology*. 79(6), 875-886

Ko, Hanjun; Cho, Chang-Hoan; Roberts, Marilyn S. (2005). Internet uses and gratifications: A Structural Equation Model of Interactive Advertising. *Journal of Advertising*. 34(2), 57

Lattin, James M.; Bucklin, Randolph E. (1989). Reference Effects of Price and Promotion on Brand Choice Behavior. *Journal of Marketing Research*. 26(3), 299-310

Leung, Louis; Wei, Ran (2000). More than just talk on the move: Uses and gratifications of the cellular phone. *Journalism and Mass Communication Quarterly*. 77(2), 308-320

Monroe, Kent B. (1973). Buyers' Subjective Perceptions of Price. *Journal of Marketing Research*. 10(1), 70-80

Olsen, Svein Ottar (2002). Comparative evaluation and the relationship between quality, satisfaction, and repurchase loyalty. *Academy of Marketing Science*. 30(3) 240-249  
<http://www.springerlink.com/content/552m6816103p4107/>

Ruggiero, Thomas E. (2000). Uses and Gratifications Theory in the 21st Century. *Mass Communication and Society*. 3(1), 3-37

Smith, Robert E.; Swinyard, William R. (1983). Attitude-Behavior Consistency: The Impact of Product Trial versus Advertising. *Journal of Marketing Research*. 20(3), 257-267

Tsirulnik, Gisele (2009). Is an iPhone app right for your brand? *Mobile Marketer*. May 12, 2009. <http://www.mobilemarketer.com/cms/news/database-crm/3224.html>

Wei, Ran (2008). Motivations for using the mobile phone for mass communications and entertainment. *Science Direct Telematics and Informatics* 25. 36–46

#### *Literature Review*

148 Apps. Apple iTunes App Store Metrics, Statistics and Numbers for iPhone Apps. Accessed April 6, 2011. <http://148apps.biz/app-store-metrics/>

AndroLib. Android Market Statistics. Accessed April 6, 2011. <http://www.androlib.com/appstats.aspx>

Constantinou, A., Camilleri, E., & Kapetanakis, M. (2010). Mobile Developer Economics 2010 and Beyond. July 2010. Vision Mobile.

Chen, Pei-Yu; Wu, Shin-yi; and Yoon, Jungsun, (2004) "The Impact of Online Recommendations and Consumer Feedback on Sales" (2004). ICIS 2004 Proceedings. Paper 58.

Chu, W., Choi, B., & Song M. R. (2005). The Role of On-line Retailer Brand Infomediary Reputation in Increasing Consumer Purchase Intention. *International Journal of Electronic Commerce*. 9(3), 115-127.

Erickson, G.M., Johansson, J.K. (1985) The Role of Price in Multi-Attribute Product Evaluations. *Journal of Consumer Research*. 12(2) 195-199.

Grundström, Peter. (2010). Mobile Development for iPhone and Android. KTH Computer Science and Communication.

Hu, N., Pavlou, P. A., & Zhang, J. (2006). Can Online Reviews Reveal a Product's True Quality? Empirical Findings and Analytical Modeling of Online Word-of-Mouth Communication. *EC '06 Proceedings of the 7th ACM conference on Electronic commerce* (2006).

- Kumar, S., & Sethi, S. P. (2009) Dynamic Pricing and Advertising for Web Content Providers. *European Journal of Operational Research*. 197 (2009) 924-944
- Lichtenstein, D. R., Bloch, P. H., & Black, W. C. (1988). Correlates of Price Acceptability. *The Journal of Consumer Research*. 15(2) 243-252
- Naaman, M., Nair, R. & Kaplun, V. (2008). Photos on the Go: A Mobile Application Case Study. CHI 2008 Proceedings
- Prasad, A., Mahajan, V., & Bronnenberg, B. (2003). Advertising Versus Pay-Per-View In Electronic Media. *International Journal of Research In Marketing*. 20 13-30
- Rubinstein, David. "Going Mobile? First Understand Why." December 1, 2010. <<http://www.sdtimes.com/content/article.aspx?ArticleID=34987&page=1>>
- Sharma, Chetan (2010). Sizing Up the Global Mobile Apps Market. Study commissioned by GetJar, Chetan Sharma Consulting.
- Szybillo, G. J., & Jacoby, J. (1974) Intrinsic Versus Extrinsic Cues as Determinants of Perceived Product Quality. *Journal of Applied Psychology*. 59(1) 74-78

## References

- 148 Apps. Apple iTunes App Store Metrics, Statistics and Numbers for iPhone Apps. Accessed April 6, 2011. <http://148apps.biz/app-store-metrics/>
- AndroLib. Android Market Statistics. Accessed April 6, 2011. <http://www.androlib.com/appstats.aspx>
- Bennett, Peter D.; Harrell, Gilbert D. (1975) The Role of Confidence in Understanding and Predicting Buyers' Attitudes and Purchase Intentions. *The Journal of Consumer Research*. 2(2), 110-117
- Bruner, Jerome; Postman, Leo. (1948) Symbolic Value as an Organizing Factor in Perception. *Journal of Social Psychology*. 27(2), 203-8.
- Constantinou, A.; Camilleri, E.; Kapetanakis, M. (2010). Mobile Developer Economics 2010 and Beyond. July 2010. Vision Mobile.
- Chen, Pei-Yu; Wu, Shin-yi; and Yoon, Jungsun, (2004) "The Impact of Online Recommendations and Consumer Feedback on Sales" (2004). ICIS 2004 Proceedings. Paper 58.
- Chu, W., Choi, B., & Song M. R. (2005). The Role of On-line Retailer Brand Infomediary Reputation in Increasing Consumer Purchase Intention. *International Journal of Electronic Commerce*. 9(3), 115-127.
- Erickson, G.M., Johansson, J.K. (1985) The Role of Price in Multi-Attribute Product Evaluations. *Journal of Consumer Research*. 12(2) 195-199.
- Gotlieb, Jerry B.; Grewal, Dhruv; Brown, Stephen W. (1994) Consumer Satisfaction and Perceived Quality: Complementary or Divergent Constructs? *Journal of Applied Psychology*. 79(6), 875-886
- Grundström, Peter. (2010). Mobile Development for iPhone and Android. KTH Computer Science and Communication.
- Hu, N., Pavlou, P. A., & Zhang, J. (2006). Can Online Reviews Reveal a Product's True Quality? Empirical Findings and Analytical Modeling of Online Word-of-Mouth Communication. *EC '06 Proceedings of the 7th ACM conference on Electronic commerce* (2006).
- Ko, Hanjun; Cho, Chang-Hoan; Roberts, Marilyn S. (2005). Internet uses and gratifications: A Structural Equation Model of Interactive Advertising. *Journal of Advertising*. 34(2), 57

- Koenigstorfer, Joerg; Groeppel-Klein, Andrea. (2012) Consumer acceptance of the mobile Internet. *Marketing Letters*. 23(4), 917-28.
- Kumar, S., & Sethi, S. P. (2009) Dynamic Pricing and Advertising for Web Content Providers. *European Journal of Operational Research*. 197 (2009) 924-944
- Lattin, James M.; Bucklin, Randolph E. (1989). Reference Effects of Price and Promotion on Brand Choice Behavior. *Journal of Marketing Research*. 26(3), 299-310
- Leung, Louis; Wei, Ran (2000). More than just talk on the move: Uses and gratifications of the cellular phone. *Journalism and Mass Communication Quarterly*. 77(2), 308-320
- Lichtenstein, D. R., Bloch, P. H., & Black, W. C. (1988). Correlates of Price Acceptability. *The Journal of Consumer Research*. 15(2) 243-252
- Monroe, Kent B. (1973). Buyers' Subjective Perceptions of Price. *Journal of Marketing Research*. 10(1), 70-80
- Mort, Gillian S.; Drennan, Judy. (2007) Mobile communications: A study of factors influencing consumer use of m-services. *Journal of Advertising Research*. 47(3), 302-12.
- Naaman, M., Nair, R. & Kaplun, V. (2008). Photos on the Go: A Mobile Application Case Study. CHI 2008 Proceedings
- Nysveen, H.; Pedersen, P.; Thorbjornsen, H. (2005) Explaining intention to use mobile chat services: moderating effects of gender. *The Journal of Consumer Marketing*. 22(5), 247-56.
- Olsen, Svein Ottar (2002). Comparative evaluation and the relationship between quality, satisfaction, and repurchase loyalty. *Academy of Marketing Science*. 30(3) 240-249  
<http://www.springerlink.com/content/552m6816103p4107/>
- Prasad, A., Mahajan, V., & Bronnenberg, B. (2003). Advertising Versus Pay-Per-View In Electronic Media. *International Journal of Research In Marketing*. 20 13-30
- Rubinstein, David. "Going Mobile? First Understand Why." December 1, 2010.  
<http://www.sdtimes.com/content/article.aspx?ArticleID=34987&page=1>
- Ruggiero, Thomas E. (2000). Uses and Gratifications Theory in the 21st Century. *Mass Communication and Society*. 3(1), 3-37

- Sharma, Chetan (2010). Sizing Up the Global Mobile Apps Market. Study commissioned by GetJar, Chetan Sharma Consulting.
- Smith, Robert E.; Swinyard, William R. (1983). Attitude-Behavior Consistency: The Impact of Product Trial versus Advertising. *Journal of Marketing Research*. 20(3), 257-267
- Szybillo, G. J., & Jacoby, J. (1974) Intrinsic Versus Extrinsic Cues as Determinants of Perceived Product Quality. *Journal of Applied Psychology*. 59(1) 74-78