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

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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 (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.

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 (χ^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 (χ^2 (3)= 23.31, p=0.00). Additionally, iOS users reported spending more money than Android users on the apps they had purchased (χ^2 (18) = 31.6, p= 0.02). Males are more likely to have paid money to upgrade an app or unlock extra features (χ^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 (χ^2 **(3)** = 8.19, p = .04).

#	Answer		Response	%
1	My friends, coworkers, or family		79	39%
2	Websites		30	15%
3	Social Media		17	8%
4	Browsing the app store or app market		68	33%
5	Ads in magazines, newspapers, or television		3	1%
6	Billboards		0	0%
7	Other		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.

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