Predicting Mobile Application Success Based on First Impressions

Paola Mariselli
Harvard SEAS
35 Oxford St.
paolamariselli@fas.harvard.edu

Sierra Okolo
Harvard SEAS
35 Oxford St.
sokolo@fas.harvard.edu

Chi Zeng
Harvard College
Harvard Yard Pl.
czeng@college.harvard.edu

ABSTRACT

The factors that govern the success of a mobile application undergo a highly meritocratic and democratized process. The public volitionally invests in applications with superior designs and better utility factors regardless of the amount of money a company had invested in its design. Or do they? If well-implemented application succeed and poorly-designed applications fail, how do a handful of mindless diversions obtain mass favor over seemingly better crafted useful applications? The road to success is risky and slightly unpredictable. For that reason, we initiated this project in an attempt to gain clarity on a wide-scale macroeconomic event that occurs everyday: downloading a mobile application. By examining descriptors on the application page we can determine if a correlation exists between quintessential words, icons, and phrases and the future success of that application. This has the potential to save application designers copious amounts of money in market research geared towards understanding what incentivizes users to connect to applications. First impressions, we argue, really do matter.

Author Keywords

Mobile Applications; First Impression; Prediction

ACM Classification Keywords

H.5.2. Information Interfaces and Presentation (e.g. HCI): User Interfaces

INTRODUCTION

It has long been the goal of many to be able to know ahead of deployment whether a given product will be successful or not. Forecasting the success of a product ahead of deployment could save designers billions of dollars.[4] But the question still remains: How does one predict the success of an application?

Existing approaches involves deploying applications and potentially failing. To avoid the time-consuming and expensive process of deploying an application that might fail, mobile application developers, for example, take many measures to gauge the success of their applications prior to release. The first may be the release of a beta version of their application to a restricted community before the release of that app to the public. This allows them to estimate future interest. However, conducting a meaningful beta test requires a reliable and closed community of trustworthy individuals. Although many large firms have such resources, independent mobile application developers have to deploy their applications and modify them later.[3] They learn through trial-and-error how to make their application more appealing. Our approach has the potential to improve the aforementioned design process by helping designers get the right design prior to deployment.[4]

It has been well-established that first impressions matter. From interviews to website aesthetics, users form an opinion within the first few seconds of viewing a given stimuli. Thus far, first impressions have been used in the context of websites. Since designers know that first impressions matter, independent mobile application developers have tried to obtain feedback on specific features of their application through advertisements and crowdsourcing services. Nevertheless, such services can be costly and the process, being unformalized, does not offer the developer a holistic view of the potential success of their application. It simply offers them an idea of user opinion's regarding a feature in isolation.

Our goal is to combine the insights on product success and first impressions by predicting the success of mobile applications based on users' first impressions. Being able to predict the success of mobile applications based on observable measures will allow us to establish a link between the first impressions of objective measures and the applications eventual success.

For our approach, we will use Android mobile games to test during our experiment. We choose to use mobile games for our experiment as the data was widely available. As users' first impressions of mobile applications are most often made through the application store, our study will simulate the features found on such pages. We seek to establish this link by conducting a series of online studies. Success will be measured by an app's popularity, represented by the number downloads it obtains. Potential measurements to predict success used will be its icon, slogan, the aesthetic appeal of its screenshots, and description. Our studies will also include a demographics survey in order to better assess the mechanisms underlying the connection. For instance, people may think a

given application will be successful because they perceive it as more trustworthy or fun.

We make the following contributions:

- We establish a link between the way users feel about a given application measurement and the application's actual success.

- We deliver a novel approach to predicting the success of mobile applications.

RELATED WORK

Quantifying Visual Preferences around the World

This paper analyzes how people from different demographics react to how colorful web pages are. The experiment collected ratings of visual appeal from about forty thousand subjects on 430 web pages of varying complexities and colorfulness. The qualities that subjects performed ratings on include trustworthiness and of the web page. The experiment found that certain demographics such as Russians and Fins did not find colorful web pages as appealing as did demographics such as Macedonians. This paper relates to our work since we too seek to find factors that heighten appeal. Specifically, we seek factors that maximize the appeal of pages for game and productivity apps on the Android platform. Icon color could be one of the factors we analyze. We could also borrow off of many ideas from the methodology. For instance, the researchers motivated individuals to do their test by comparing their results to other individuals at large. Our method for performing regression might be more complicated though since we analyze more factors than just one (say color saturation of a page). Overall, I enjoyed reading this paper. The results showed that most people preferred a moderate level of color saturation in web pages. I feel that some of the conclusions about specific demographics of people and their color preferences succumbed to a small amount of response bias though. In some countries, only a small portion of residents have access to the internet.

The Business of iPhone App Development: Making and Marketing Apps that Succeed By Dave Woolridge and Michael Schneider (2010)

This book offered us some keen insights on how app developers currently gauge the success of their apps both after and before release. For instance, many services out there such as Mobclix provide rankings of apps based on download figures. App developers also read over the reviews of competitors to determine how well their services will be received. App developers also emphasize first impression a lot according to this book. For instance, they value the layout of their icons. Developers should also value communicating a consistent message to the user. From this book, we determined several factors that could heavily influence first impressions of app pages. I wished that the book discussed how crowd sourcing could help app developers gauge app success though. This book was written in 2010, and gaining knowledge from crowds was not as substantial of a concept back then.[5]

Predicting Users's First Impressions of Website Aesthetics With a Quantication of Perceived Visual Complexity and Colorfulness

This paper examined how different groups of people perceived web pages of varying complexity and color saturations. The experimenters asked 548 participants to rate 450 different websites on a number of metrics. What intrigued me most about this paper was how it used quantitative measures to ascertain such soft qualities as page complexity and colorfulness. Perceived colorfulness even depended on the context of the colors. The experimenters nicely used the sum of the average and the standard deviation of the saturations to measure perceived colorfulness. In our study, we will have to take similar measures. We are also trying to quantitatively gauge the effects of such soft qualities as trustworthiness and fun-ness of an app's page.

Attention web designers: You have 50 milliseconds to make a good first impression This paper examined how viewers of web pages really make their first impressions about a website within a very short amount of time. The paper emphasizes how aesthetics is often neglected in current studies on emotion and design. Apparently, emotional responses can be triggered much more quickly than rational ones. Humans are quick to assign words such as clean, symmetric, and dark to images. This article hence directly relates to our current studies since it discusses how first impressions can significantly impact people's emotional response to an app. Hence, we should ask users to rate their emotional responses to various apps and/or their icons. However, I feel that this paper also somewhat understates the importance of functionality. I wish it could further examine how important this emotional response is.[2]

App Empire: Make Money, Have a Life, and Let Technology Work for You By Chad Mureta (2012)

Since marketing plays such an essential role in the research we intend to pursue, we thought it best to examine literature related to mobile applications marketing research. In this book, Mureta highlights key insights regarding mobile application design and marketing which separate successful apps from non-successful ones. Using raw, forthright diction, Mureta acts as sort of a personal mentor to the reader, using words that convey a sort of familial bond that is greatly disarming, psychologically enticing, but more importantly packed with valuable tips for fellow application entrepreneurs. It is this direct, candid advice that we seek to capture. Furthermore, with his pointed market overviews that focus on mobile application usage and financial statistics and his instructional section on "Sex App-eal" in which he maintains a discourse on the importance of icons, titles, descriptions, screen shots, keywords,and categories, Mureta's work will endow us with the knowledge and references we need to augment our understanding of mobile application design and develop better, more informed hypotheses regarding what makes a mobile application successful. Finally, the reliability of Mureta's claims are backed by his own success in the mobile application industry.[1]

Mobile Marketing Research Priorities: Roadmap to Engaging the 'Connected Customer (2006)
This article provides us with a better depth of understanding behind the theory of market research in the mobile application market. It hits upon several key concepts that will be important to incorporate and distinguish in our research. This work also discusses the current trends and the future of mobile application marketing examining such topics as response fulfillment, research and data collection, store traffic generation, advertising, and branding, which will provide clues towards uncovering the psychological impulses that cause users to select one application over the other. It is a reliable first-hand resource from an organization that specializes in understanding what people want.[3]

APPROACH
In order to tackle this problem we will perform the following:

- Control for difference in application cost by only using free applications

- Obtain approximately 500 mobile applications and 5000 participants

- Utilize the application store: Preference towards Androids since they publicly provide download statistics

- Use samples from games and productivity applications

- Incentivize users by making the study fun to complete and additionally taking advantage of users from Mechanical Turk to cover the remaining numbers required.

- Performing a quick survey for the first five users

- Display applications in different orders to weed out systematic preferences based on order.

- Utilizing apps with roughly the same distribution of dates of release

- Separating applications into two categories: (1) relatively new to the market, so users have not seen them before, and (2) been in the market for a while

- Displaying a mock-up of the application store listing (all must be the same except for the variable being tested)

- Scaping the the names, icons, and descriptions of the aforementioned applications from the Android store

EXPERIMENT
How good is your entrepreneurial gut? We will focus on gamification as an incentive. In addition, we will conduct a survey on application habits of consumers prior to the actual study. Our survey will consist of the following questions:

- How often do you use a smartphone?

- How often do you download apps?

- How often do you use apps?

- How old are you?

- What is your gender?

- Where are you from?

For the actual study, our questionnaire will ask subjects to rate applications based on the different qualities using a Likert scale:

- Does this pages feel fun?

- How clear does the page describe the apps purposes and functionalities?

- How useful do you think the application will be based on its icon?

Participants who have seen the application before will have their answers discarded.

Experiment design: description and 4 apps which app do you think is the most successful one? results given in groups of 5, then do you want to try again? next batch of 5

RESULTS
To be determined.

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