Predicting Mobile Application Success Based on First Impressions

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ABSTRACT
This abstract is in construction.

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Mobile Application; First Impression; Prediction

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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. Knowing whether a product will be a success ahead of deployment could save designers billions of dollars. [**?**] But the question still likes, how do you predict the success of an application?

The existing approach involves deploying an application 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, one of which is releasing a beta version of their application to a restricted community before releasing the app to the public in order 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 (google article source!), independent mobile application developers have to rather deploy their application and modify, if possible, so that through trial-and-error the application might become more successful.

Our approach has the potential to improve the aforementioned design process by helping designers get the right design prior to deployment.

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 obtaining feedback on specific features of their application through advertisements and crowdsourcing services (sources! Ikonica!). Nevertheless, such services can be costly and the process is not formalized and does not offer the developer a holistic view of the potential success of their application, simply of the 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 chose 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 and predicting the success of a mobile application through users' first impressions by conducting a series of online studies. The success of an application is measured by its popularity, represented by the number of its downloads. Potential measurements to predict success used will be icon, slogan, screenshots (aesthetic appeal), 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

CHI'14, April 26–May 1, 2014, Toronto, Canada.

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.

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. [**?**]

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 Appeal" 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. [**?**]

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.

APPROACH

control for difference in application cost by only having free applications 500 applications and 5000 participants (need a

big sample, so results can be generalized) application store: Android since it is the application marketplace that publicly provides download statistics subset of apps: games + productivity (because the use of games is discretionary, so something else that people need to use)

experiment will be completed based on incentivizing users by making the study fun to complete. If not enough users complete the study in this way, we will proceed to obtain some users via Mechanical Turk. setup: quick survey + first batch of 5 show applications in different order to different people (so there will be no systematic differences) try to have roughly the same distribution of dates for when the applications were released separate applications into 2 categories: (1) relatively new to the market, so users have not seen them before, and (2) been in the market for a while show mock-up of application store listing (all must be the same except for the variable being tested)

To obtain data, we plan to scrape the names, icons, and descriptions of aforementioned applications

EXPERIMENT

how good is your entrepreneurial gut? gamification as incentive

survey on app habits first prior to actual study: 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?

questionnaire that asks subjects to rate apps based on the different qualities on a Likert scale: whether the 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?

make sure participants are not biased due to having seen the app before have you seen this app before? (if so, discard their response) 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.