An Exploratory User Study on a New Social Networking Communication Application

Xingyu CHEN, Zhan ZHOU, Wen YANG[1] and Jianhua MA
College of Management, Shenzhen University, Shenzhen, 518060, China

Abstract. This paper presents the results of an exploratory study designed to evaluate Deja, a new mobile application that combined communication and social networking functions. The underlying question of this study is sought to understand how young users, accustomed to using this app, to communicate with friends and conduct other social networking activities. The app was empirically tested by a group of selected participants in Singapore. Multiple ways to collect consumer data were conducted including think aloud, observation, usability tasks, customer satisfaction survey as well as customer behavioral survey. An analysis of the problems experienced by the users was discussed. The results also provided the basis to suggest specific improvements to the application. Beyond the enhancement of the user experience design, the results of this study have significant theoretical and practical implications for enterprise to study young user behavior toward new mobile applications, especially communication and social networking applications.

Keywords. Mobile applications, user behavior, new product design, user experience

Introduction

Use of smart phone is becoming increasingly popular in Singapore [1]. As the penetration of mobile phones in societies increases, there is a large growth in the use of mobile phones [2-3]. Applications, which combined the social networking function of Social Networking Service (SNS) application and the communication function of (Instant Messaging(IM) application, become a new trend in mobile application industry [4-6]. New launch mobile apps such as Line, WeChat gained extremely popular in Southeast Asia countries, especially, Thailand and Japan [7-8]. Among them, young users are a dominated segment in using these apps. According to a latest report, young users (aged from 18-24) are the most active group in using SNS applications [9].

The underlying question of this study is sought to understand how young users (aged between 18 and 24), accustomed to using this app, to communicate with friends and conduct other social networking activities. This study has two objectives. First, this study attempts to find the actual young user behavior in using mobile apps. This may help companies better understanding young users' behaviors, and provide supplementary information about young users' characteristics when doing customer

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[1] Corresponding Author, Mail: wenyang@szu.edu.cn

segmentation and targeting. Second, we examine the effectiveness and outcomes of different roles of both structured and unstructured methods in young user study for product enhancement. To achieve this goal, this study conducted an exploratory user study to evaluate the usability and user experience of this Deja App. An analysis of the problems experienced by the users provided the basis to suggest specific improvements to the application. Beyond the enhancement of the product design, this study also investigated the theoretical and practical implications on young user behavior toward new mobile applications, especially communication and social networking applications.

The rest of the paper is organized as follows. The next section is the research methodology. Section 3 discusses the results and findings as well as their implications for research and practice. The last section concludes the paper and identifies its limitations for future research.

1. Research Methodology

1.1. Participant selection

Empirical data for this study was collected via a combined user study with different methods including usability testing, thinking aloud method, observation, and customer survey. Participants aged from 18 years to 24 years old were invited to gather data. These participants were smart phone users with more than 1 years' experience in using similar social communication app. Participants were asked to conduct the different method to a new developed social networking app. The whole process for each participant was recorded and observed by investigators in long distance at the same time. A voucher of S$50 was given to the participant at the end of the user study.

1.2. Combination methods on user study

A combination of open, semi-open and close methods was conducted for this user study. Participants were put in a high fidelity simulated experiment environment, investigators and user experience experts were only allowed to observe user behavior from long distance. During the open playing around session, participants were not allowed to be interrupted. And they were just put in a comfortable environment to explore freely with the apps. Participants were observed and asked to thinking aloud during this session, a follow-up usability testing was conducted later to collect information more specifically. Before the end of the user study, a questionnaire survey was required to fill in with basic information. Data were analyzed independently by investigators not involved in data collection. Analysis involved identification of action points with comparison of number and type of results identified with each of the four data collection techniques.

The structural usability testing was conducted with fixed tasks prepared earlier. It aimed to check the product design from user experience and human factors perspective. Success, failure rate and time duration was calculated for each task.

When the customer survey was conducted, users were also asked about their usage behavior and attitude towards the app. Investigators also raised questions based on the observation. These questions were changed case-by-case depends on the specific user behaviors. All these questions are marketing related and help companies to make

marketing strategies for this segment. Examples of questions raised during this session are shown in Table 1.

Table 1. Examples of interview questions.

No.	Examples of Interview Questions
1.	"How do you like the design of the smileys?"
2.	"Why do you ignore the "stories" cell under social?"
3.	"Why do you try to swipe when viewing the photos?"
4.	"Why do you skip the user guide?"
5.	"How do you find the entrance to customize your smileys?"
6.	"How do you think the 'clear chat history'?"

2. Results & Discussions

2.1. Data analysis

Data was analyzed from investigators and user experience experts in this study. Results of user behavior from Singapore young mobile user (Table 2), selected high quality inputs for product enhancement (Table 3) and problem shooting (Table 4) were identified and put into action points.

Table 2. Results from Singapore young mobile user behavior.

No.	Description
1.	User tutorial and guide is intrusive to young users.
2.	Singapore young mobile users prefer to separate communication and social networking in different applications.
3.	Singapore young mobile users tend to be impacted significantly by peers to discover new things.
4.	Singapore young mobile users don't accept very cute and stylish design.
5.	Singapore young mobile users show high loyalty to an IM and SNS applications.
6.	Singapore young mobile users tend to express themselves in a more brave way.
7.	Singapore young mobile users prefer social media marketing channels instead of traditional channels such as TV Ads, Radio and direct sales.
8.	Singapore young mobile users prefer the way of viral marketing and word-of-month from peers.

Table 3. Enhancement points.

No.	Action Points	Methods
1.	Show overflow menu for all devices	Think Aloud
2.	Improve Android notification settings, e.g., customized notification forms & tunes	Interview
3.	Add "A-Z" bar in name list	Think Aloud
4.	Remove automated user guide	Think Aloud
5.	Remove compulsory button to proceed	Observations

No.	Action Points	Methods
6.	Design more nice looking smileys	Interview
7.	Make entrance for group chat and broadcast visible	Usability Testing
8.	Send multiple photos in chat	Think Aloud
9.	Swipe to view more photos/videos	Observations
10.	Remember recent smileys and smileys	Think Aloud
11.	Smart recommend latest photos taken	Interview

Table 4. Problems identified by users.

No.	Action Points	Methods
1.	Video sending: shouldn't change oriented direction to vertical	Usability Testing
2.	Send location in chat is crushed	Usability Testing
3.	Couldn't add friends in chats tab	Usability Testing
4.	When add a friend to group chat, reminder of "Your friend didn't support." but still succeed to join this friend	Usability Testing
5.	Receive a new message, click to view and find it is still there after viewing	Observation
6.	Read status is not showing	Observation
7.	Video message has "noise"	Usability Testing
8.	Change gender icon didn't change the colors	Observation

2.2. Discussions

These results suggested that a combination of data collection method may help to collect a rich data. Although similar user study is done to collect mobile user data for smart phone applications, we could still see some differences. For example, compared to traditional way of structured task analysis and structural satisfaction survey, think aloud could get better results on potential enhancements as 45.5% of the enhancements are from think aloud. However, usability testing, which is a semi-structural user study method could help us to identify problems which is easily ignored by Quality Assurance (QA) or testers inside the company. And overall, observations are an effective way for both enhancements and problem shooting as it contributed 26.3% of action points in total. Interview session could be a good supplementary for users to recall the missed needs during other sessions with the facilitating and leading from investigators.

Also, many interesting finding are obtained from this user study regarding young user behavior. As several studies have examined the relative importance of tutorials in app design, many empirical studies have provide some evidence that the link between a better design tutorial and the effectiveness in using the apps from ordinary users. This is because the tutorial information could help those users who lack of expertise of using the product to be more confident and properly tutorial or to guide a necessity from classical usability theory by Nielsen (provide clues to users time to time when using the products). In mobile app design disciplines, users' perceptions of a product are to some degree relying on the tutorial page and introduction to this product. Thus, good tutorial

and guide could help users to have better experience when using the app. However, from the results, we could find that young people hate all kinds of tutorials; they are motivated to play around and find information by their own.

Meanwhile, traditional user experience theory also emphasis on the simplicity and efficiency of using product for ordinary users. For most of young users, the social networking has two major functions: communication and social networking. It is assumed that users could fulfill the need for both purpose from one app, the satisfaction could be much higher. While from the user study results, young users in Singapore wants to separate these two purpose and they find it is much simpler for them to manage two different apps at the same time which is quite out of the expectation from investigators and marketing folks.

Another interesting finding is that young mobile users are affected a lot by friends and they are motivated to be in a group. Most of them admitted that they discover or use a new app from friend's recommendation instead of discovering the new app by their own. Meanwhile, they want to express in a brave way that they are willing to try different styles using expected design combinations in the app. Besides, they are asking multiple smileys to better express their personality. It has implications for application designers to make the design

And the most influential media to them is word of mouth and they prefer online media instead of TV ads or traditional press. Young mobile users use Facebook and Google to search and word of mouth from peers, which are the main source for them to accept a new product.

3. Conclusions

The goal of this study is to identify user behavior of young users in Singapore for Social networking and communication app by developing an integrated user study. Our findings suggest that Singapore young users show certain characteristics that matched classic human factors theory regarding user behavior and marketing studies among this young group of customers. However, as this special segment of users also shows certain behaviors violate the classic theory and conclusions. In addition, the usage of social networking and communication on smart phone are different from usage of other apps. Smart phone i.e., iPhone and android plays a major role in determining users behavior toward the emerging apps. And the bond between apps and those young users are stronger than expected.

While our findings make a significant contribution to understand young users' behavior in using social networking and communication apps, there are limitations of this study that should be considered when designing future studies on related topics. Individual differences among participants are not factored into the research model. Second, future studies may consider to enlarge the sample size, for example, to obtain participants from online resource. For this study, all the participants are from Singapore while the usage of this communication and social networking app is worldwide. Future studies on related topics may extend our findings by addressing the limitations.

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