Sharing Mobile Services: Beyond the App Store Model

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ABSTRACT

The app store model used by Apple's iPhone has presented a successful model for installing new applications; however, only a fraction of current mobile phones have access to a dedicated app store. Thus there is need to investigate alternative ways of discovering and installing mobile services and applications. We performed studies on two services, focusing on the *social* aspects of sharing mobile apps between users. The services were a portrait sharing application prototype called *Portrait Catalog,* and a commercially available chat application called *Hanashi.* They differ not only by functionality and design, but also by their availability to the public as well as the means of distribution they offer. We present initial insights in how users share mobile services between each other, when using a phone that doesn't include mobile application distribution as part of the user experience. We found that factors such as users' habits of downloading and testing new applications, their understandings of the service they are using and the means of distribution the services offer, all affected how the services were shared.

Categories and Subject Descriptors

H.1.2. **[Information systems]**: User/Machine Systems - *human factors.*

General Terms

Human Factors.

Keywords

Mobile services, distribution channels, app stores, sharing, factors.

1. INTRODUCTION

Up until recently, creating and distributing services for mobile phones was very complex, due to the incompatibility between different handsets and the lack of a dedicated distribution channel for applications. However, with the introduction of Apple's iPhone we have seen a revolution in creating, distributing and selling mobile applications and services, and several other manufacturers have followed suit by introducing similar mechanisms, including the Android Market and Nokia's Ovi Store. However, not all phones have access to a dedicated store. According to statistics presented by Gartner Inc. [1] the market share for smart phones in the first quarter of 2009 was 13.5 percent of the total amount of 269 million sold mobile handsets. Of these, about 25 percent were iPhones, meaning that even the most successful app store only can be accessed by about 3,5 percent of users of a newly purchased phone. Yet the model has clearly been successful in creating a new market for services and applications. The Apple App Store has served over 3 billion apps [4], whereas GetJar, one of the largest Java stores, has less than 900 million total downloads [2], despite the fact that Java-enabled phones currently outnumber the iPhone by about 50 to one [3].

Thus, distribution models clearly influence the number of services installed. But is the App Store the only road to success? We believe alternative distribution mechanisms, such as sharing directly between users, can also be viable. In this paper we present results from two experimental studies of two different mobile applications. The aim was to gain an understanding of the factors that influence the distribution of mobile services between users of Java enabled phones. This provides us with a starting point when looking at the practices of mobile application sharing not only from the perspective of distributor-to-user, but also user-to-user. Studying these aspects of mobile service sharing could provide additional insights into service distribution that have not yet been understood, and help us create new mechanisms for distributing and sharing mobile services.

2. SERVICES

The two mobile services that were studied differ in both design and functionality. One is a research prototype named *Portrait Catalog,* it's available for download via a specific webpage for the application. The second is a commercially available service named *Hanashi,* available for download via a specific webpage for the service and additional distribution channels (such as SonyEricsson PlayNow and GetJar). A brief summary of both applications is presented below together with details of the study setups and evaluation.

2.1 Portrait Catalog

Portrait Catalog (www.portraitcatalog.com) is a portrait-sharing application prototype which enables users to send and receive portraits from friends and family already running the application, via Bluetooth. The portraits that are received are collected in a catalog, where each friend or family member receives a position in the catalog containing all portraits received from the particular sender. After receiving a portrait, the user is unable to edit the portrait or send it further, a design choice aiming at creating a value in the received portrait. Using Bluetooth as the means of sharing portraits gives the possibility to provide an application that can be used by many users with varied handsets and with no usage costs. The Portrait Catalog runs on most Java-enabled phones equipped with a camera and Bluetooth.

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2.2 Hanashi

Hanashi (www.hanashi.nu) is a free mobile chat service in which users can chat, send files, send voice messages, locate friends on a map and chat with random Hanashi users in an open chat room. The application is aimed at integrating as much as possible with the content of the mobile phone, enabling users to send and use files already in the handset and browsing contacts from the users own phone book. The user is registered by the phone number as the ID, so there is no need for an account and password. The cost of using Hanashi is by the data traffic, and the service works on most SonyEricsson phones, recent Nokia and a few Samsung models. To invite a friend or family member to try out the application, the user can browse in his/her own phone book and send an automatic invite via SMS containing a direct link to the download page for the application.

3. STUDIES

Two studies were conducted at different occasions for two weeks each, whereafter an evaluation followed to look at different aspects of the users' use of the services, the design and further distribution. The study of Portrait Catalog was conducted with seven youths between the age of 13-16. They received the application and a stack of "invitation cards" containing a web link for downloading the application, which they could give to friends or family member to invite them to try the application. The study of Hanashi was conducted with seven participants between the age of 15-32. They were instructed to download the application and test it freely during the two weeks the study lasted. The evaluation for both studies consisted of a focus group interview, as a focus group interview provides valuable data, in particular after a study where the technology has been used by users [5].

4. FINDINGS

The results from both studies were collected, analyzed and divided into themes, explaining various aspects of the users' use of the services. The findings presented below were gained from the collected data from both studies, divided between the two services.

4.1 Portrait Catalog

- Supporting the sharing with invitation cards gave opportunity for sporadic sharing and testing
- Invitation cards in physical form made it less important to memorize the webpage for the service, leading to a reliance on the cards
- When the invitation cards were misplaced, the sharing was done by the word of mouth
- The explanation of what the service is and how it's used, made friends and family members more or less prone to testing the service
- The interest of friends and family members relied more on how interesting the service "sounded like", than testing first and creating a personal opinion

4.2 Hanashi

- Sharing the service further was supported by the application itself, creating an efficient means of inviting friends to try it
- The SMS invites gave the possibility to invite friends physically distant, without the need of first explaining what the service is and how it works
- The compatibility of the application to a limited set of mobile handsets influenced the amount of invitations sent to friends and family members
- The limited invitations created a closed, but close, communication channel between the users using the service
- Even though the service is available from various distribution channels, none of the participants believed they would have come across it at all, had it not been for the study announcement

5. DISCUSSIONS AND FUTURE WORK

There is a significant difference in how Portrait Catalog and Hanashi could be shared in regards to the means of sharing. While Hanashi users can browse contacts from their own phone books and send invitations via SMS, Portrait Catalog users can invite friends and family by the classical practice of word of mouth, where a suggestion or a link can be shared either between two people physically close or by forwarding a link to download the application via SMS or email (if the user remembers the address or locate the webpage first). But when users don't have the habit of downloading and testing various applications on their mobile phones to begin with, the further distribution of services to friends and family becomes a process in it self, especially if the friends don't have the habit of downloading and testing new mobile applications themselves.

Sharing an application with other users is enabled not only by the practice of word of mouth, but the application also needs to be compatible with several different handsets to be shared in a larger scale. As both Portrait Catalog and Hanashi are social services, they need a critical mass of users. A good distribution can support not only extended social networks, but also casual sharing when i.e. in the subway and sharing the application to enable portrait sharing with a sibling. When a service only runs on specific types of handsets, the amount of user groups decreases. This, however, creates close and closed communication channel between friends that have the possibility to run the application.

The next step in the project will be to map further aspects of mobile service sharing between user-to-user, to see how the practice of mobile service sharing can be supported by the different distribution channels that exist, and what this will mean for users in their everyday use and further sharing of mobile services.

6. ACKNOWLEDGMENTS

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