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RESEARCH ARTICLE

Investigating User's Opinion on Factors Influencing the Usage of New Mobile Services

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Abstract

The advent of technology over the turn of the century has revolutionized and changed how we are as technology consumers. Today, mobile services have become highly sophisticated and ubiquitous. Mobile applications are one of the most useful and enjoyable services that users consume to date. However, there are growing concerns regarding the ethical and moral issues of these mobile services. This paper will discuss user opinions in terms of privacy, security, crime and sensitivity towards mobile services. The work looks specifically at university level to examine the relationship between the varying demographics. The results approved that there is no significant difference across different age groups and IT-affiliations.

I. Introduction

The impact of Mobile Technology is rapidly growing. The growing of cloud computing, affordable mobile devices and ubiquitous broadband have transformed every aspect of our lives. By 2015, mobile phones will overtake desktop computers as the main channel of accessing the Internet (Stark, 2010).

Recent statistics showed that there are more than 139.29 million smartphones sold worldwide between 2007 to 2013 [1]. As a result, smartphone applications have become very popular. For instance, Apple has more than 1,300,000 applications in its store [2] while Android has more than 140,000 applications [3].

The mobile revolution has greatly improved mobile services. Today, mobile devices have become a channel through which many organizations launch and market their services to their users. This provides an enormous opportunity for them to reach a large number of people, thus saving time and cost (Ozok, Gurses, &Wei, 2009).

This vast expanse of opportunity attracts companies and firms from both the public and private. Citizens now are faced with far more sophisticated designs that provide huge amounts of daily applications and site services (United Nation e-government survey, 2012).

However, researchers have become interested in the impact of mobility on ethical issues. In fact, there is a lack of research that investigates the factors of mobile services that determine its usage. (Hoober, & Berkman, 2012). This is especially important when it involves factors such as privacy and security of users that may ultimately affect their satisfaction of usage and loyalty to a specific application or brand.

Lin & Wang (2006) examined the satisfaction levels in mobile services and found that ethical and moral issues are key elements influencing mobile internet usage (Al-alak & Alnamas, 2010). In essence, user satisfaction can be defined as the feelings received from the user before, during, and after communication with a website (Verdegem, & Verleye, 2009). Satisfaction has always been a critical dimension of measurement, especially when an individual or personal attitude is being studied (Ooi et al, 2011).

This study investigates user opinions regarding ethical and moral issues in mobile services and subsequently how these affect the frequency of usage by examining the relationships between these variables to infer their statistical significance.

II. Related Work

Because of the speed of the technology revolution, especially mobile services and information (The Mobile Economy, 2014), mobile technologies have provided new opportunities and challenges to transform electronic

applications in the mobile arena (Heng & Hack-Hai, 2004). In this research case, taxi mobile apps use two type of technology that helps them to handle the services.

Location-tracking of users by mobile device providers via GSM and subsequently GPS with enabled services generates a need of keep privacy issues in relation to the building of location-based technologies and services. There are two types of location-based services: *location-tracking* and *position-aware* (Snekkenes, 2001). Location-tracking services are services used to track locations of individuals by other parties either by mobile device itself, or service providers or both. Ofcourse taxi mobile services need that to track customer location and also customers can track taxi location. Second is a position-aware service which is based on the information a device has of its own position (Barkhuus& Dey, 2003). For example: give a customer the right position he/she in, while also give taxi driver his/her position and the distance between him/her and the customer.

Privacy is a critical issue in these location-based services (Snekkenes, 2001; Bisdikian et al., 2001). The subject is often addressed in terms of how sensitive information is kept secured in the application such as customer location. Some studies have considered positions of users to be a specific attribute of identity such as one's full name or social security number. The major difference between location and most other attributes is that location changes continually and is mostly relevant to mobile computing while the latter remains stagnant. (Langheinrich, 2002).

The concerns are related to the ability of mobile devices to automatically collect real-time information from users. In this case, confidentiality of gathered data such as location, personal identity, and daily behavior (FTC 2009) may prove to be salient privacy threats that are subtly different from online privacy issues (Xu, et all, 2012).

Mobile User's Information Privacy Concern (MUIPC)

Three factors can be used to examine MUIPC (Xu , et all, 2012). First, the users' perceptions of surveillance can be negatively impacted due to aggressive data collection activities from mobile services sites/ application. As a lot of sorties happened such as stilling, raping second, the perceptions of intrusion can be triggered when ownership rules are violated. Third, mobile users' privacy concerns over secondary use of information can be very concerning when linkage coordination rules are violated.

Perceived surveillance

Mobile users may avoid mobile apps for fear that their activities may be watched, recorded, or even transmitted to various entities. Solove (2006) has defined surveillance as "the watching, listening to, or recording of an individual's activities".

Since smart phones contain various functions such as web browsers, emails, social media, applications, and other where its connect to each other which make collecting personal data more much easier. Such functions are powerful means of surveillance, which creates an open boundary structure with high degree of information permeability, while can also use third partly

Perceived intrusion

Solove (2006) defines intrusion as "invasive acts that disturb one's tranquility or solitude" and "involves the unwanted general incursion of another's presence or activities".

Ownership has a rule over data capturing. Ownership could be the government, services provider, or applications ownership. Individual "recipients" are able to make independent decisions about further possessing or not, as its clearly been notified in the join policy agreements. (Child et al. 2009; Petronio 2010). According to Child et al, (2009) rules governing ownership are easily observed when they are violated "when the individuals involved discover they must change or readjust their privacy rules to guard against unwelcome intrusions (Child et al. 2009)." In other words, data subjects' perceptions of intrusion would be triggered when data recipients can make independent decisions about their personal information (Xu , et all, 2012).

Secondary Use of Information

According to Smith et al. (1996), secondary use of personal information refers to the case where information is collected from individuals for one purpose but is used for another purpose without authorization from the individuals.

These information could potentially threaten an individual's right to maintain a condition of limited access to his/her personal information, harm individuals, and subsequently threaten the organization's legitimacy in its interactions with their relevant shareholders (Culnan and Williams 2009).

III. Case study

Uber is a taxi service that uses smartphones to present a new type of mobile service whereby passengers use a GPS-enabled smartphone app to hail a limousine or other passenger carrier.

Currently, Uber online services cover more than 45 countries and more than 200 cities [4,6] and has a market value of US$18.2 Billion with operations being commandeered from the silicon valley in San Francisco, USA.[4,5]

Uber, which launched just 5 years ago, allows users to order taxis by using a smartphone app. The beauty of this service is that Uber does not provide its own vehicles or operators. Instead, it works with existing drivers who have valid driving licenses. Riders can track the car location and check the distance by using the GPS.

Although this novel idea allows users to have convenient access to Uber cars almost everywhere, this means that information regarding passenger trips is broadcasted. In fact, companies that offer this service often collect sensitive personal information, including name, phone number, age, credit card information, and GPS coordinates for a user's location during a ride, from origin to destination.

Granted the policies specified that the applications would not keep a historical log of user location data. Furthermore, developers cannot disclose such data to law enforcement without a warrant. Over time, this information can paint a detailed portrait of a user's identity and travel while using a mobile-based car service – potentially revealing sensitive information such as the user's activities and home as well as workplace addresses. Disclosing these information could subject users not just to inconvenience or embarrassment, but also to fraud or physical danger.

The information that mobile-based ride share service providers collect from customers can be grouped into three categories. First, direct information, such as name, phone number and credit card number that are necessary to register an account. Second, customers who regularly interact with mobile applications often have to provide information such as name, age, credit card number and expiration date, zip code, email address and mobile phone number to track their online activity. Third, the providers collect and retain a history for its third-party advertising partners (Tien, 2013).

Privacy issues

Some of the privacy issues been listed and reviewed by (Tien, 2013). These include:

- The global enforcement police been followed by Uber. However, It still disclose some information that has "reasonable believe".
- Reserves a right to "sole discretion" under some circumstances such as updating, adding, or stopping an activity.
- Uber has strong policies that prevent sharing information with third parties. However, this is legal with an approval or agreement if authorization has been permitted by users.
- Data minimization clime the time to keep information not longer than needed.
- Uber has promised to inform user by email of any changes that have been made
- Users control how data can be used within privacy policies.

IV.METHODOLOGY

The purpose of this study is to investigate the level of awareness and acceptance of mobile application privacy among higher institution students, specifically to highlight their disposition towards these issues and evaluate their perception based on age and whether they belonged to an IT college department not. The sample of this study consisted of undergraduate students from various departments. The instrument of measure used is an online questionnaire was conducted with 3 sections regarding demographics, ethics and security. The subjects were asked to evaluate each item on a 5-point Likert scale. 50 questionnaires were successfully received from the respondents.

A. Validity

The validity is conducted usually to determine weather the research is truly measure what that research intended to measure or not (Golafshani,N., 2003). In quantitative reach mood where initiated concept , questions, hypothesis are generated. The most validity concern in designing surveys is the presence and degree of measurement error and the attitude of participants toward surveys. Minimizing the degree of measurement errors was addressed in this survey.

For that , the researcher structured questionnaire in order to insure each section addressing only one factor. Made each section Covering one factor at a time is to enables participants to understand each question more clearly and answer them more accurately.

The survey items were developed in in a way to answer the research questions and achieve the objectives of the study. Reviewing of existing literature been made to insure the validity of it . To ensure content and face validity of

the scores in the instrument, experts in this field were consulted to evaluate the content of the questionnaire to ensure that the instrument measures what it was designed and intended to do.

B. Reliability

Reliability is to measure the consistent of the result overtime of measurements in order to insure the participants have receive it same overtime. The more consistent the results from a measurement instrument are, the more reliable they are. More consistent items will result in a higher alpha coefficient, representing a higher level of reliability (Shannon & Davenport, 2001). Cronbach' s Alpha was used in this study to estimate the internal consistency of the instrument in this study. To do this, a pilot study was conducted on 20 IT related students and the Cronbach' s Alpha was 0.82.

IV. RESULTS AND FINDINGS

This study used quantitative analysis to describe the level of acceptance and awareness among respondents regarding the privacy issues related to using Uber taxi application. The analysis looks at the frequencies of pertinent activities of women when using Uber. Only women were considered in this study since mostly only women use taxi services in Saudi Arabia.

The respondent's age distribution was such that 78% are less than 20 years old, 21 % are between 20 to 23 years old while the rest of the respondents are above 23 years old.

The results show also approved that most of the participants are using mobile internet for almost 5 hours a day doing searching and entertainment stuff , while 20% of the students spend less than 4 hours per day accessing the Internet. Clearly, majority of the students spend around 5 hours a day accessing the Internet, showing that online presence is considerable. Also, its highlighted that students use mobile internet for different kind of stuff regard their study or joying.

80% agreed that Uber application is easy to use and 90% agreed that they were rendered good customer service. Also, the results show that 70% of the respondents were using the Uber application via their mobile twice, 30% used it once, and 10% used it more than three times. Among the total respondents, 70% said that they would recommend other to use it.

56.7% would sometimes read the privacy policy before using the service. This implies that the majority of the students are quite aware of

the importance of privacy policy but have not actually shown serious concerns.

Moreover, 75% of respondents often have concerns when providing information and credit card details. However, 82% of respondents believed that the company may use their information provided for another purpose. This implies that although majority of users are concerned with security issues, they are willing to overlook it in return for an appropriate degree of convenience.

Only 5% of respondents noted a bad experience with the service such as delay, threat, and provocation..

VI. CONCLUSIONS AND RECOMMENDATIONS

This study addressed the user's opinions toward mobile application privacy by sampling from undergraduate students. It is clear from the results of the survey that there is a difference between user perception and expectation toward privacy. However, the study approved that study felid has no significant effect toward mobile privacy policy. The Results of this study can help better understand of how users are aware regard to online privacy.

However, further work is required to examine the user perception and expectation toward attitude to online privacy.

The study approved that students are vulnerable to displaying their private and personal information on mobile internet sites/ applications. The results also revealed that respondents are sensitive to the negative implications of exposing their private information, especially credit card and GPS information.

The study also suggests that the more the students are aware of how important their private information are, the more sensitive or reluctant they are in giving them out.

Therefore, it is important for University management, parents and the community at large to ensure that students, in particular teenagers, have a thorough understanding of the positive and negative aspects of these new IT tools.

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