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MOBILE APPLICATION FOR INDIVIDUAL IDENTIFICATION AS SOCIAL RELATIONSHIP SUSTAINABILITY DEVELOPMENT IN COMMUNITY AND SOCIETY: 'KNOW YOU APP'

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ABSTRACT

'KNOW YOU APP' was developed for the public to properly identify individuals. An individual in any organization can be identified by simply typing the organization and the individual's name; consequently, the detailed biodata and the photo of that individual will be displayed. Additional, this app include the recording of meetings so that in the future when they meet again, these records can provide information like when, where and why they met before. 30 respondents were selected from among the UiTM Pahang staff to provide feedback as users and by using SPSS analysis, a very positive feedback was found with 95% respondents gave a mean score of 4.0 to 5.0 to show the effectiveness level of this mobile application.

Keywords: *Apps, Person identification, Mobile apps*

INTRODUCTION

People are used to computer application in the modern age of information and communication system. Yet the usage and development of Mobile Application is a new and rapidly growing sector in this millennium. Nowadays, mobile application is fast developing in the age of global Information and Communication Technology. It is simple, easy to use, economical, downloadable and run able in most of the mobile phones in the market. The mobile application has a wide range of use for its vast functioning area like calling, messaging, browsing, chatting, interpersonal organization correspondence, audio, video, game and others.

A mobile application has a positive impact on society such as increasing household income by joining the online marketing, increasing quality time with family where we can reduce time at the shopping mall, improving the relationship among the members of society where any discussion or meeting can be done online and so forth.

All these and other benefits of mobile application usability can be achieved due to several factors such as screen resolution, connectivity issues, hardware limitations data usage and limited interaction possibilities. Now and onwards, the mobile companies are trying hard to develop a mobile device with more screen resolution, more storage, better connectivity which provide better environment for modern mobile application.

Mobile applications can catch on a small hand hold mobile device other than it is lighter, moveable, user friendly and can be accessible anywhere and anytime (Islam et.al 2010). The development of social or community relationship starts from individual involvement in the society and environment. Based on a previous study, this relationship is an important factor in order to create a well-being neighbourhood with scoring 7.80 after 8.28 for family and spiritual component factors (Siti Rasidah, Khalilah & Azran, 2016). These findings indicate the environments within peoples' lives and work. These indicators may deal with issues such as levels of health care provision, crime, education, leisure facilities, and housing.

When we focus on community relationship issues, it looks like the individuals normally are exposed to the act of impersonation. Nearly every

day news related to the acts of impersonation is reported by the media and Malaysia is not excluded. In other words, impersonation is a planned deception in connection with the misuse of personal information for the benefit of the individuals and their targets are not limited to women and the elderly but also professionals (Shahar, 2017). According to Saeed et.al (2014), impersonation attacks are called spoofing attacks and act of pretending to be another person in committing fraud. The attackers assume identification of another node in the network, and acceptance of messages directed to the node it fakes. Usually, this would be one of the first steps to intrude a network with the aim of carrying out further attacks to disrupt operation (Tamilselvan & Sankaranarayanan, 2007).

Some research findings related to fingerprint issues, identified the consumers' legitimate wireless devices equipped with RF fingerprinting mechanism are exposed and vulnerable to the attacks of impersonators through the wireless network. The impersonator would replay the legitimate wireless devices signals in such a way that the physical layer RF fingerprinting scheme in compromised and wireless devices are unable to discriminate between a legitimate and a malicious device (Saeed, Sowerby & Coghill, 2014). There are two types of malicious attackers: (1) Focused attackers that are full time attackers, dedicated professionals who have nothing better to do than target specific enterprise, and (2) Opportunistic attackers that attack a wireless network (a target opportunity with no functional level of security that can be easily compromised) (Gour, Agarwal, Singh & Kumar (2014).

In addition, the consumer uses various mobile services, such as social networking, messaging, shopping, paying bills or entertainment apps for daily trades and this gives more opportunity for impersonators to steal consumers' personal data after a consumer accept permission requests. By accepting the requests, the app often shares personal information such as device ID, call log information, or the address book, especially contacts when they often unwittingly disclose personal information. This might impose a threat to app users' privacy because the shared information can be used to discriminate users in buying situations, to approach them with unwanted commercial solicitations, or for fraudulent behaviours, such as identity theft (Wottrich, Reijmersdal & Smit, 2018).

For some cases related to meeting with unknown individuals, the victims were approached by individuals appearing as policemen, military officers, registered nurses, insurance agents, bank officers or government servants with authority cards. The victims normally are faced with financial losses, trauma and even at times injuries. As civilians with no special tools to detect the validity of the information provided by those personnel and the scarce information available through search engines or websites that can be obtained, this limitation makes them easier to become victims. The statistics in Malaysia stated that almost every year the impersonation cases were reported as shown in Table 1. This situation causes the necessity of providing or creating a special tool in order to overcome these problems especially the issues related to department or agencies involved.

Based on these grounds, 'KNOW YOU APP' was developed for the public to properly identify the originality of the information claimed by any personnel. Any NGOs, government departments or private agencies that wish to protect their institution from scammers or impersonators can provide the information of their employees such as name, department and employee numbers to the database. By using this smartphone application, the public can identify whether the individual really comes from the department mentioned by simply typing the department or the organization, followed by the individual's name; consequently, the photo and information of that individual will be displayed.

In addition, this application also comes with features for users to enter any additional information related to the individuals as reference in the future. It functions as a reminder for users to recall their last meeting and the information can also be shared with other users. This article focuses on the information or raw data that need to be stored in the database for analysis and used for specified purposes. The information related to the software that has been used to develop the database was excluded from the article.

Table 1: Impersonation Case in Malaysia

Date	Case	Department / Agencies Involved	Impact/ Issues	Source
January 4th, 2017	Impersonating Malaysian Anti-Corruption Commission (MACC) officers	Government Agencies	The suspects asked RM20000 from the victim. Integrity of the MACC tarnished.	Shahar, 2017
December 14th, 2016	A 41-year-old woman impersonating the Sultan of Pahang Sultan Ahmad Shah's daughter, Tengku Aisyah.	Royal Institution	The suspect request RM 1.2 million from the victim. Insult the Royal Institution	Khairulrijal, 2016
May, 2nd 2016	Man caught impersonating pilot on Dragonair flight to Malaysia	Private Agencies	Integrity of the company tarnished	Yeung, 2016
May, 23rd 2014	No one knew he was not a lawyer	Professional Bodies	Fraud cases and public trust	Spykerman, 2014

WHY MOBILE APPS?

Environmental communication is the symbol of environment and social, public participation in environmental decisions, conflict resolution, environmental journalism, social media, environmental advocacy campaigns, science communication, environmental justice, and climate justice movements, risk communication, green marketing, and corporate advocacy campaigns. The communication includes the messages to audiences by all means and through all channels (Mekonnen, 2018).

Nowadays, consumers directly (bodily) experience or interact more using touchscreen devices (such as smartphones or tablet computers) to access websites through multiple finger gestures (tapping, pinching, or stretching on the screen) rather than regular computers (Bartikowskia, Gierlb

& Richard, 2018). The variety of devices such as mobile devices was used as a communication to establish the relationship between the people and the environment or the society.

Mobile devices are easy to install and more compatible compared to traditional computers that seems very far-fetched for installing special software such as new sources or check weather. It also allow users to access applications anywhere via virtual 'app stores' or 'markets' (Elberzhager & Holla, 2017). However, the consumers need to understand the key differences between a mobile website and a mobile app even though both applications can be accessed on handheld devices such as smartphone and tablets.

Mobile Website versus Mobile Apps

A mobile website can be described as a version or adaptation of a website specifically created to work well in mobile devices, offering rapid download and respecting the screen resolution of devices to meet users' interaction expectations (Torres-Péreza, Méndez-Rodríguezb & Orduna-Malea, 2016). It is similar to any other website in that it consists of browser-based HTML pages that are linked together and accessed over the Internet (for mobile, it's typically Wi-Fi, or 3G or 4G networks). The obvious characteristic that distinguishes a mobile website from a standard site is in the design, where a mobile app is built for a smaller handheld display and touch-screen interfaces. Like any website, mobile websites can display text content, data, images, and video. They also access mobile-specific features, such as click-to-call (for dialing a phone number) or location-based mapping.

By contrast, mobile apps are programs developed to be installed in mobile devices, designed for use in a particular task or to offer a particular function. The mission of mobile apps is to provide additional value over the mobile web, offering information and services with a single touch. The privacy, security access and 24/7 availability offered by mobile telephone provider also are their principal advantages (Torres-Péreza, Méndez-Rodríguezb & Orduna-Malea, 2016). Users freely visit device-specific portals such as Apple's App Store, Android Market or Blackberry App World to find and download app for a given operating system. The app may pull content and data from the Internet, similar to a website, or it may download the content so it can be accessed without an Internet connection.

The benefits using mobile apps are not limited only for accessing the booming millennial market but it also improves operating efficiency, creates revenue opportunities, reduces distribution cost and fosters customer loyalty and brand recognition (Qin, Tang, Jang & Lehto, 2017). According to the U & G theory, consumers heavily participate in media usage and choose it as a medium of communication based on their previous experience with the media. The theory summarizes that it is possible to understand consumers' needs which motivates them to use the media for consumers' gratification and needs (Lee & Kim, 2018).

In this millennial era, every person uses a multitude of applications as their daily tools especially for those who want to be connected 24 hours. This fact is supported by Venturebeat that the app market has shown an astonishing growth stepping from less than $10 billion annual revenue in 2011 up to estimated $70 billion by 2017 (Roma & Ragaglia, 2016). Roma and Ragaglia (2016) also reported the great market dominated by two players: Apple's App Store and Google Play which have become the most popular stores, retaining together almost 90% of the market. In the context of Electronic Commerce (EC), the online nature of the transactions in the app market is relevant for all generations.

From the mobile apps survey report, it shows that the people worldwide, not limited to the younger generation prefer to use mobile apps. There is a rapid increase of apps usage with the numbers of apps available in Google Play, increasing from 900000 in 2012 to more than 2.8 million in 2017 with more than 50 apps downloaded by each smartphone users (Khairulrijal, 2016; Yeung, 2016). In fact, even banks nowadays choose to come out with their own banking apps as a method to attract users. This has become the motivation for developing this app.

DEVELOPMENT OF KNOW YOU APPS

Several organizations such as Universiti Teknologi MARA and the Central Bank of Malaysia has already listed the staff directories in their websites and it can also be accessed by smartphone with connection to the internet even without using this app. However, the demand for this kind of applications that act as a one-stop centre is higher as it links together the details from

several agencies which include government and private agencies, political parties, NGOs and professional bodies. Furthermore, the details provided through 'KNOW YOU APP' may be more precise, updated and enhanced with photos.

The 'KNOW YOU APP' is an integrated database that gathers the list of organization by categories, such as government agencies, private agencies, political parties, non-governmental organizations, and professional bodies. The selection of these 5 categories is due to two reasons, which are the roles and functions of the organizations in dealing with the public and also the large organization which make it easy for any individual to impersonate as one of their members without being easily noticeable. By impersonating the staff of that organization, they are not only able to earn money, but also properties, power of attorney, certificates, sensitive information or even sabotage the organization they 'represent'. To make it easier for users, 'KNOW YOU APP' is equipped with integrated function buttons to link the screens. Table 2 shows the functions of the screens.

Table 2: Summarize Functions of 'KNOW YOU APP' Screens

Screen	Function
FRONT PAGE	Main interface so that the user knows this is the 'KNOW YOU APP'
LOG IN	The screen to log in to the users' personal account
REMARKS LIST	Official or non-official remarks about the personnel to know the linkage with the organization.
MEMBERSHIP	Basic information on membership in the organization
INFO	Instructions on how to use the 'KNOW YOU APP'
MAIN MENU	The main function menu to of the 'KNOW YOU APP'
SAVE LIST	The list of members in the organization with the remarks
MEMBERSHIP LIST	A list of members in the organization
BARCODE SEARCH	Looking for personnel in any organization using a barcode system
CATEGORY	Organizations by category
CATEGORY LIST	Agency listings according to the organization category
SUB-CATEGORY	List of departments, faculties, units, etc. within any agency.

AGENCY WEBSITE	Link to the agency websites to know more about that agency.
CATEGORY INFO	A brief description of an agency
PERSONEL WEBSITE	Link to the personnel website in order to know more about him / her

Source: Author

The database for this app will be monitored and handled by a control centre that acts as the administrator. Any organization that intends to store their staff details will be required to pay an administrative charge where all the information received will be verified prior to the update of the database to ensure that only valid and relevant information will be stored. This database can be considered as an integrated database for various parties but liable to be in charge on one party. Some organizations such as private companies prefer to keep the information confidential. However they allow the administrator to reveal the identity of their staff based on request or enquiry by the public. So, there are functions available for such occasions where if the public cannot find the details of the personnel from the app, they may still be able to find out the details by interacting with the administrator through the message button. Figure 1 shows the flow of the operations of the 'KNOW YOU APP' and Figure 2 shows the screenshot of the app operation.

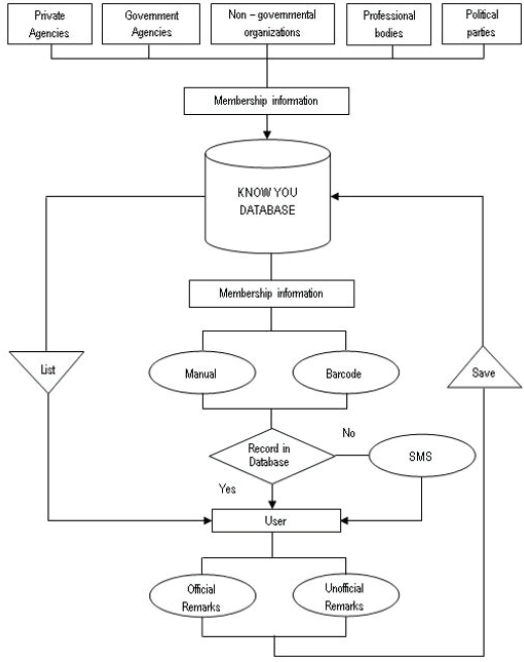

Figure 1: Flow of Operations in the 'Know You App'
Source: Author

Figure 2: Screenshot of the 'Know You App'
Source: Author

FEEDBACK AND DISCUSSION

To find out the users' feedback for this application, a survey was conducted that involved 30 respondents from diverse backgrounds. All respondents were selected from the staff of Universiti Teknologi MARA Pahang. The questionnaire was used to gather feedback from the subjects. All the items use a 5-point Likert Scale from strongly disagree to strongly agree. The analysis of data obtained from the questionnaire was divided into two parts and analysed using Statistical Package for Social Science (SPSS). The first part of analysis is to determine the mean score for each item based on the level of effectiveness (Table 3). Table 4 shows the summary of the respondents' backgrounds while Table 5 shows the mean score for every question asked in the survey.

Table 3: Level of Effectiveness

Level of effectiveness	Score
Strongly disagree	1.0 – 1.99
Disagree	2.0 – 2.99
Not sure	3.0 – 3.99
Agree	4.0 – 4.99
Strongly agree	5.0

Source: Author

Table 4: Summary of the Respondents' Background

Respondent background		Number	(%)
Gender	Male	16	53.3
	Female	14	46.7
Age	20 – 25	6	20
	26 – 30	7	23.3
	31 – 35	6	20
	36 – 40	5	16.7
	41 - 45	6	20

Academic Background	Diploma	7	23.3
	Degree	11	36.7
	Master	8	26.7
	PhD	4	13.3
IT background	Yes	13	43.3
	No	17	56.7

Table 5: Mean Score of the Survey

Item	Mean score	Level of effectiveness
I think the design of this mobile app is attractive	5.00	Strongly agree
I think that I would like to use this mobile app frequently	4.93	Agree
I felt very confident using this mobile app	4.90	Agree
I needed to learn a lot of things before I could get going with this mobile app	4.90	Agree
I found the various functions in this mobile app were well integrated	4.73	Agree
I think that I understand the idea of this mobile app	4.63	Agree
I felt this mobile app is helpful and useful to me	4.60	Agree
I think that I would need assistance to be able to use this mobile app	4.60	Agree
I thought this mobile app was easy to use	4.33	Agree
I would imagine that most people would learn to use this mobile app very quickly	4.33	Agree
I found this mobile app unnecessarily complex	4.23	Agree
I thought there was too much inconsistency in this mobile app	2.27	Disagree
I found this mobile app very cumbersome/ awkward to use	1.17	Strongly disagree

Source: Author

Based on the survey conducted, a very positive feedback of this app can be seen due to mean scores of between 4.0 to 5.0 in terms of effectiveness level for the positive remarks, meanwhile mean score 1.0 to 3.0 for negative remarks. These indicated that most of the respondents agree the apps not only could efficiently achieve its purposes and objectives but is also user friendly. Thus, this proves that the 'KNOW YOU APP' would be in demand

and is marketable because it will help eliminate or at least reduce the impact of impersonation. Statistics from Bukit Aman revealed that more than 11819 scam and fraud cases have been reported in 2016 that causes more than RM 389 million losses in Malaysia (Spykerman, 2014) which is a huge loss. Besides, the users will feel comfortable using the apps since the graphical user interface of the apps was designed according to widely used apps such as WhatsApp and some e-commerce apps.

The feedback also shows that our society is committed in answering the questionnaires, during the execution of the survey. For recommendation of future research, individuals with Malaysian Certificate of Education (SPM) or foundation qualifications or respondents from different positions in a department could also be involved.

CONCLUSION

The 'KNOW YOU APP' is developed as the initiative to eliminate or reduce the impact of impersonation that cause losses to the public and tarnish the image of organizations. Review on the current situation on impersonation cases, acceptance of mobile apps by the public and the feedback obtained for this app shows the significant potential of it to be commercialized. The app also encourages the public to develop community relationship and actively participate in environmental communication using the right channels to avoid any crimes.

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