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Kampus Sungai Petani

Faculty of Administrative
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i-TABUNG

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ABSTRACT

i-Tabung is a brand new service which provides an integrated fundraising box and a web-based application system. The main objective of i-Tabung is to overcome the current limitation of the conventional fundraising box that being used by non-profit institution especially mosques. The additional feature of the product is to provide a better performance and experiences to the organizations while conducting fundraising activities. With the usage Internet of Things (IoT) technology, the product enables users to know the accumulated amount of money gathered in the fundraising box through automated sensor in the box that identify each notes according to their colors and different sizes for coin. The product is equipped with a sensor for it to be able to detect the currency and to transfer the data over the network by using a micro-controller. Person in charge of fundraising may view the amount of money inside the box through the web-based application at any time and place as long as the user has an internet access. The data in the website can only be accessed by authorized user as the system need credential login information such as username and password in order to view the account. It also may reduce the thievery rates since i-Tabung using non-see-through or opaque design as the structure of the fundraising box which people are prohibit seeing the amount of money inside the box that makes it more secure and relevant to be used for a long term. Not only

that, the product operate via wireless network architecture. Therefore, no electrical or network cables will be installed inside the building that can cause people to trip over or electrocute.

Keywords: Internet of Things (IoT), opaque design, micro-controller, web-based application

INTRODUCTION

Money donation or fundraising is an act of money collection handled by a certain organization or institution meant to help other people, organizations or even nations that encounter misfortunes. Fundraising activity is an important pro-social behavior that usually driven by emotional encouragement from advertising (Urbonavicius, Adomaviciute, Urbutyte & Cherian, 2019).

Non-profit organization such as mosque uses fundraising as the source of the income in supporting their expenditures and other usage. Fundraising in mosque often being done by placing the donation boxes in some part of the building such as at the men and women sections, and even at the main entrance. Ideally, the mosque management committees hold the accountability in managing the donation boxes by keeping track from time to time.

Traditionally, the fundraising boxes in mosques come in various sized and design. There are some mosques that uses a wooden type of box, while others used box that made up from steels and as well a clearly visible and see-through kind of boxes. Thus, the conventional fundraising boxed are so vulnerable that makes it become an easy target for crimes like theft and vandalism.

Other than that, it is time consuming to calculate the accumulated amount of money since it was done manually and the process involved people which may lead to human error while doing the counting and record keeping. According to Zakariyah (2016), the accumulated money were counted in private by dedicated person in charge which usually are the Chairman, Secretary and the Treasurer before deposit the money into banks. Problem arise with the situation when it takes a long time to count them and mistakes such as human error may happen while counting the money. In addition, the data of all transaction are kept manually by using a logbook that stored within the mosque's area. The record keeping is not well-secured as anyone can break into the the room any time or the possibility to misplaced the book are high. Hence, a new type of fundraising box which used the technology of Internet of Things (IoT) was introduced to place the conventional system.

PURPOSE OF THE INNOVATION

The main purpose of this innovation is to overcome the limitation of existing fundraising system that practices in non-profit organization which normally used conventional boxed to collect funds. In the product development, the technology that is being used in the architecture is Internet of Things (IoT). It is a new technology paradigm which is visualized the capability of interact of various devices with one another across the network (Lee & Lee, 2015). IoT is an extension of Internet connectivity into physical devices or objects, where no physical manpower is needed in order to connect the application to the network. A type of sensor used to detect the currency value whenever a donor inserted a money into the fundraising box. For example, the sensor will detect the blue color for RM1 notes and green

color for RM5 notes. The box will then generate the calculation before sending the data over the network which it can be accessed through a web-based system from anywhere at any time.

IDEA GENERATION OF i-TABUNG

An idea of web-system or mobile application that can be stored a real-time total collected money inside the i-Tabung was generated due to current technology that was rapidly expand. Before users view the data collected from the fundraising box, users must first register their account in the web system by entering the required information such as username and password that had been registered in the system. Then, users will be directed to the dashboard page and the users can see the display of the page. The page has features such as instance transaction history and staff information or person in charge (PIC) that operates the system. Through appropriate system, all data either current or previous one may be easily track down. It is believed that the life expectancy of i-Tabung can last up to few years if it is being used wisely by the users.

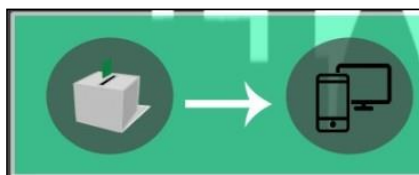


Figure 1. The Framework for i-Tabung

In Figure 1, it explained the main feature of i-Tabung which uses a website system that notifies users the total amount received instantly when person in charge (PIC) opens the website. With this method, it may ease to detect the thievery rates since the website may store data and have ledger recorded history.

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