A Prototype Mobile Application for Informing Disaster Complaint – "Informer on Site"

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Abstract—**Informer on Site is one of the prototype mobile applications for information about disaster complaints with site pictures and location placement using smartphones. The information is automatically delivered to the officer in charge for prompt response to the civil complaint by identifying the location and situation based on information initially provided by the community via the service. The Informer on Site service is focused on disaster cases such as floods, typhoons, haze and landslides. This application can help the authorities handle disasters more effectively and faster. The objective of this paper is to describe the features, benefits and the flow of the application process.**

Index Terms—**disaster complaint, mobile technology, smart mobile phone application**

I. INTRODUCTION

Various disasters have been occurring in Malaysia such as floods, typhoons, landslides and haze. These events occur regardless of the season. Therefore, accurate and timely information from the public is urgently required to help authorities carry out their relief mission. The government agencies involved in disaster relief include the Department of Civil Defense (JPAM), the Malaysian Fire and Rescue Department (Rescue), the Royal Malaysian Police (PDRM) and private agencies such as MERCY and St. John Ambulance.

There are various ways for users to make emergency calls such as the complaints line, called the Malaysian Emergency Response Service (MERS) 999, created to enable the public to report emergencies happening anywhere in the country. MERS 999 is committed to implementing emergency communication. These emergency calls use fixed lines, and users need to dial 999 for emergency assistance such as fire, theft, and accidents [1].

In addition, the Drainage and Irrigation Department (DID) has established a complaint portal system, called e-aduan. Users have to log on and register to make a complaint. In addition to using this portal, users can use SMS, or call directly to the Public Complaints Coordinator DID [2].

The government has also created myMMS to enable users to make a complaint via SMS. myMMS is a multi media service based technology that enables the public to share information, to submit complaints, and to make enquiries for relevant information from participatory government agencies using a multimedia format (images, audio or video) via mobile phones. The myMMS service also allows government agencies to share the latest information to alert the public [3].

Based on the above statement, it is clear that in Malaysia there are various ways for users to report a complaint. Complaints can be made through phone calls and SMS and via websites. However, based on a report on the disaster preparedness during the northeast monsoon [4], people complained that the information conveyed to them about the impending flood came too late. Therefore, the National Security Council (NSC) has proposed creating a buzz in the wider society to alert them about floods.

Currently, the use of mobile technology in creating applications using smart mobile phones has become popular [5] and widely accepted. The high demand for mobile applications has attracted researchers to extend their studies on potential areas in mobile applications [6].

This application is called Informer on Site and is only focused on disasters such as floods, landslides, typhoons, and haze. This application is intended for a community through which the user can make a report about a disaster quickly and accurately, with attached video or photo to and location map(s). For those who need the latest information in areas where there is a disaster, they can use this application as a reference to determine complaints/reports made by the public in regions hit by the disaster. This can help to reduce delays in disseminating information to the public if a disaster occurs. The functions, benefits and processes involved in using these applications will be discussed in this paper.

II. MOBILE APPLICATION 'INFORMER ON SITE"

Informer on Site is a smart mobile phone application that provides a new channel for the community to raise issues regarding a disaster. It allows interaction with other people and with the relevant authorities of an organization if a disaster happens. (Fig. 1)
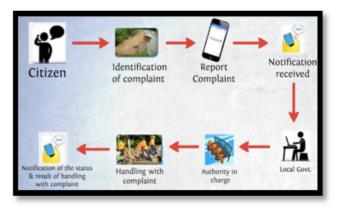

Figure 1. The Process of function Apps

This application could prove to be an effective and efficient tool to facilitate smooth communication and allows for faster emergency response [7]. Smart mobile phones can replace television and radio to communicate, deliver, and disseminate information quickly to a large number of people.

The advent of mobile apps for smartphones can help people save time and reduce costs [8] and can facilitate effective cooperation between the public and the authorities for solving problems faced together. Without the cooperation of the public, it is difficult for the authorities to act constructively due to the lack of accurate information.

Figure 1 shows how the application functions as an intermediary between the authorities and the public when issues/complaints are made about a disaster. In the first stage, the user needs to download the Informer on Site application on his/her smart mobile phone. If he/she is the first to arrive at the scene, he/she can make a report/complaint. After the report/complaint is submitted, the responsible party will be identified and information will be reported to the relevant authorities. Every detail of the scene will be conveyed with a photo or video, including the location map submitted by the member of the public. Local government officials can provide fast responses and accurately identify the location and situation without checking the site. The responsible party will then send a status notification to the user to inform him/her that the authorities have tackled the problem to ensure that the informer/complainant receives feedback. The users can check real time feedback using their mobile phones. This enhances public service transparency and in turn public trust in the authorities/government.

III. FEATURES

This application has its own unique characteristics. It is the first-ever location-based service with nationwide reporting handling coverage in Malaysia using smart mobile phone applications and a share-handling service to identify and alert the local authorities in charge.

Reports/complaints by the user are also accompanied with pictures and location information so authorities can identify the place where the event occurred to resolve the matter quickly. The users can evaluate the level of satisfaction in terms of the service rendered via the quick action/response.by the authorities. This can help to save lives and prevent disasters from becoming worse. The cooperation of the users is necessary for the authorities to perform their jobs more effectively and share information with the community [9].

IV. THE FLOW OF PROCESS

The usage application is quite easy as it is user friendly. Figure 2 shows the process of using the Informer on Site application. First, the user needs to download the Informer on Site application. Then the user opens the application after downloading and writes a message. The details of the message could include name, complaint/type of disaster, etc. After that, the user attaches a photo or video as evidence of the disaster and uploads it. To expedite action by the authorities before they arrive at the scene, the user needs to select (search) using GPS. This application facilitates the GPS location for the authorities. Then the

Figure 2. The flow of the process

user submits the report, and the authorities receive the notification.

All the reports/complaints will appear under the list of reports. Other users can update the information each time under the list of reports. The community is able to check the progress of the reports/complaints, and the results are sent via SMS in real time, thereby enabling the community to evaluate the satisfaction in terms of results through this application.

V. BENEFITS

This application provides benefits to the consumers:

a. Provides quick reporting.
b. Serves as an intermediary for information on disasters between the public and the authorities.
c. Has dual languages (Malay and English).
d. Is easily accessible anywhere and anytime.
e. Provides Information Alerts received from the public to relevant authorities.
f. Shares information on disaster(s) with other members of the public.
g. Provides useful information for the public.
h. Expands community participation through a simple mobile process.
i. Enables the relevant authorities to respond quickly and accurately by identifying the location and situation without site checking.
j. Assists the community in giving information for early preparation as well as prevention.
k. Provides the latest and most accurate disaster information.
l. Encourages each member of the community to be responsible for helping each other by giving relevant information.

VI. CONCLUSION

The Informer on Site application conveys information on disasters with site pictures and location using smartphones. It can assist the public in making complaints/reports quickly and in obtaining immediate feedback from the authorities. Besides assisting the public, it also helps the authorities perform their duties more quickly. This application is currently in the process of

being developed and tested with users. Success in solving disaster issues is dependent on the effectiveness of the response at the scene and, more importantly, in collaboration with various government agencies, the private sector, NGOs, and community groups [10].

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