Question

Recent events such as the protracted wildfires in Australia and the outbreak of COVID-19 suggests that across the globe, we are indeed heading toward a decade of new frontiers in the 2020s which has implications on civil defence, community resilience and emergency response in Singapore. How might we leverage technology to project and come up with upstream solutions to make such events non-events?

Summary, Situational Analysis and Key issues

In these recent events, we observed that there was a lack of direct and quick communication of information between and within countries. Hence, the public were uninformed about the severity of the happenings unless they actively sought information from media sources and continued with their daily activities. This resulted in the worsening of and inability to contain the spread of the event.

For example, the COVID-19 situation had started with an imported case, which then escalated and transmitted locally to the many cases we have today.

There were also many instances of fake news circulating the situation, which caused confusion among the general public and required effort in terms of time and manpower to clarify the misinformation.

Hence, “to make such events non-events” by increasing the awareness and sense of urgency of an event, the main goal of our solution is to create a reliable platform that allows the spread of information more readily, effectively, and accurately.

Strategy and Recommendations

We propose an application that contains 3 main features that will help with the containment of the event to the specific infected areas.

Firstly, identify red zones to contain the event. This inform feature enables information on important and urgent news to reach every citizen so that everyone can take the necessary precautionary measures such as avoiding areas visited by a COVID-19 patient.

Similar to the contact tracing method during the COVID-19 pandemic, we allow users to input data to better retrieve information on the event’s whereabouts, which will demarcate these areas visited as red zones that should not be visited. Furthermore, infected patients will be able to input their location whereabouts for the past 14 days, speeding up the process of contact tracing.

Furthermore, we include the public participation in civil defence by allowing them to immediately report events such as fires, accidents with photo evidence of the area and location information. Once vetted by the emergency response team, the app will list these red areas and inform the public to avoid those areas. This allows the team to assess the severity of the issue, the emergency response to be quicker, and helps regulate unnecessary traffic away from the red zones so that civil servants could work more efficiently without public obstruction. As time is a luxury in these emergency events, reaching earlier to resolve the events would significantly reduce the spread of the event.

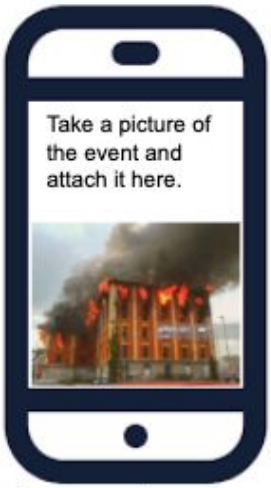
The code is attached in GitHub as “codetoscdf”.

Image view of the application:

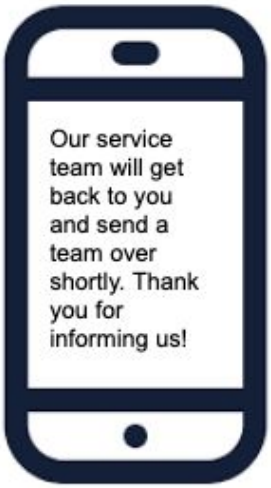
User can ask our chatbot questions.

User input information page

User keys in necessary information



App prompts user to use camera function.



For implementation, we will utilise IBM's Watson assistant service, which functions as a chatbot to convey information to the users. As the Watson assistant service derives information from an external data source and news articles, we will first utilise a code to

collate information collected using our app, afterwhich, this information will be translated into a data source for IBM watson. We will also link news articles and websites containing information related to COVID-19, fire and traffic accidents, such as governmental websites to IBM's discovery service. This enables IBM watson to provide not only information from our app but also information from various reliable sources for the users. Thereafter, IBM watson will be embedded in our application to communicate information to our users.

Secondly, our features include selective information. Users can customise and limit the information in the app to areas that concern them. The app will then notify users accordingly about new information related to that zone immediately depending on personal preferences such as their home or work location. This is to prevent the overwhelm of information that may cause unnecessary public worry.

Thirdly, we can improve the downtime before responding to an event and ensure the safety of citizens by predicting the occurrence of these events. Similar to the predicted forecast of natural disasters like typhoons, and tsunamis and smoke detectors, our app will allow information that is collected to be shared in the app, allowing citizens to take precautionary measures like evacuation before the occurrence of the event. Examples could include heat sensors around the area to measure sudden spike in temperatures and this information will be translated into the app.

Most importantly, all details in the app will be in written or audio format with multiple languages available and in a clear and straightforward manner to target everyone.

Implementation and Plan of Action

One main problem with the spread of fake news can be addressed with our application. The information provided in the application is obtained from reliable government and news sources, and it will be updated every 2 hours to ensure that citizens can have access to updated and accurate information.

There are also many challenges to the usage of the application that we will tackle to make it a more feasible solution. Firstly, the public's use of the application to input information may not be high which will greatly impede the spread of information. One method that we have come up with is to sieve out key words and pictures relevant to the event that are posted on social media accounts, and collate these information into the application. Secondly, language barrier is an issue for some groups of people in Singapore. We will solve this by including an option to choose one's preferred language

in the application, and even include speech audio in the various dialects for the elderly who are illiterate. However, a more significant challenge is the likelihood that some people are not receptive to technology, or are unable to operate the handphone. In this case, we have to work with other more traditional media platforms such as the television and radio, to highlight important news to the people especially the elderly.

Conclusion

To reduce the scale of an event, our solution focuses on the fast and effective dissemination of information to every citizen, so that each and every Singaporean is cognizant of the current situation thus helping us in making informed decisions and preventing ourselves from becoming potential victims.