Chapter 8

Development of SMART MyAgriShop Web Application for Covid-19

Aslina Baharum[1*], Siti Hasnah Tanalol[1], Nur Shahida Ab Fatah[2], Farhana Diana Deris[3], Noorsidi Aizuddin Mat Noor[4]

[1]UXRL, Faculty of Computing and Informatics, Universiti Malaysia Sabah, 88400 Kota Kinabalu, Sabah, MALAYSIA
[2]Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah, 88400 Kota Kinabalu, Sabah, MALAYSIA
[3]Faculty of Social Sciences and Humanities, Universiti Teknologi Malaysia, MALAYSIA
[4]UTM CRES, Faculty of Built Environment and Surveying, Universiti Teknologi Malaysia, Johor Bahru, Johor, MALAYSIA

aslina@ums.edu.my*

ABSTRACT

Kundasang farmer had difficulty finding suitable transport for deliveries because many truck drivers cannot pick the fruits and vegetables from the Kundasang collecting centre due to quarantine measures. Sabah government has been urged to immediately resolve the problem of vegetable dumping in Kundasang since MCO implemented. Many traders lacked support systems in delivering their agricultural product to the end-user and could not properly predict the volume of orders for agricultural products. Another issue in the agricultural supply chain in Kundasang including the uncertainty of the market demand. Thus, this study aims to develop a SMART MyAgriShop Web Application for those affected due to COVID-19. The rapid methodology used in the development. It was hoped that the system's development would help farmers with low technology-savvy sell their products. Thus, an established supply chain, whether direct wholesale in contract farming, government agency intermediaries or private intermediaries, are not viable during a movement control order (MCO).

Key Words: Kundasang, agricultural, supply chain, farmer

1. INTRODUCTION

Kundasang is the major producer of highland vegetables operated by about 1,000 farmers from vegetable farms ranging from one (1) to 400 acres. Not only that, but Kundasang also is well-known as a unique tourism attraction with the highest mountain in South-East Asia. Most of the customer for the agricultural products are the tourist visiting Kundasang. It is estimated that the total output of vegetables in Kundasang at 100 tonnes

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daily. However, since the MCO was enforced to restrain the spread of the Covid-19, Sabah restricts the international border inter-district travel, causing lorries from Sarawak and Brunei to stop from coming in, resulting in a 90 per cents drop in sales. The farmers are unable to sell the vegetables and fruits, which leads to the piling up of spoiled vegetables and fruits to 100–300 tonnes a day. It was reported that more than 300 vegetable traders in Kundasang had suffered losses. The farmers rely solely on the traditional market, making it difficult to sell and distribute their products effectively and efficiently. During this Covid-19 pandemic, the delivery process is expected due to the restriction on travel, as not many vehicles have been allowed on the roads. The harvested agricultural product are piling up with no buyer. Another issue is about the quality of the vegetables, which is still a major concern because the vegetables have been harvested and left in a collection stall at the roadside for some days before the lorries could pick them.

A digital system needs to be developed to link the farmers, traders, distributors, and customers to solve the problem. This alternative solution is connecting the farmers and households during this Covid-19 pandemic and beyond and improving agricultural sale and distribution. This digital system will assist the farmers in having a better deal with the demands from the households and the food industry. The distribution of agricultural products could be arranged through the system once the order is placed, and the immediate delivery could preserve the product quality before it reaches the customers. The provided web services will help the distribution process find the nearest and most suitable route in the shortest amount of time. This will address the problem of receiving spoiled agricultural product due to the exposure to the heat and the long waiting time for the delivery. This study will discuss the development of the SMART MyAgriShop App as one of the alternative solutions that the farmers and traders can use in Kundasang in order to ease the problem encountered during the Covid-19 pandemic and beyond.

2. LITERATURE REVIEW

Several similar apps will be reviewed and compared towards SMART MyAgriShop. The important features are identified. The first apps are My Groser, an online grocery store that delivers throughout the Klang Valley, including in Petaling Jaya, Subang Jaya, USJ, Kuala Lumpur, Shah Alam, Damansara, Bangsar, Mont Kiara, Puchong, Bandar Utama, Tropicana and Ampang. The app is available to be downloaded on PlayStore. From the app, users can shop for groceries, fresh produce and everyday essentials. Second, Tesco Online app is an online groceries app that delivers throughout Johor, Kedah, Melaka, Perak, Pulau Pinang, Selangor, Kuala Lumpur and Putrajaya. The app listed various categories of products (e.g. Fresh Food, Grocery, Drink, Health & Beauty etc.) The app can be used to browse, order and check out. The freshness of the product is guaranteed by Tesco Online. All of the product will be delivered from near Tesco Shop to the user's location. Users can book the delivery slot daily, starting from 8 am to 10 pm. Figure 6 shows the add product interface of Tesco Online. Users can increase or decrease the quantity of the item selected, and they also can add instruction to it. Third, Fruzi is an online platform to get fresh fruits and Vegetables at the doorstep, with no minimum order for free home delivery, time slots, and the delivery process within an hour from ordering. The app is available in Navi, Mumbai and Thane. The app provides Fast and Secure Checkout: Pay by cash-on-delivery (COD), net-banking, credit and debit cards options, and mobile wallets. Besides, the app provides a Scratch Card with guaranteed rewards on every successful fruits and vegetable order. The reward amount will be displayed in the Fruzi wallet that can be fully redeemed on the next order. The reviewed app's findings and the proposed SMART MyAgriShop application show that not all of the app comes with all of the listed features,

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but it certainly performs as it was supposed to be. In comparison, the SMART MyAgriShop app does have all the features. The features are; Manage Order, Notification, Delivery Slots and Reward.

3.   METHODOLOGY

The methodology used in this study is Rapid. Start with an analysis of the objective and goals, then discuss and analyse the technology and software evaluation strategies. Next, develop an initial layout as well as the features and capabilities from interaction and complete several rounds of revisions, reviews and refinements, then define the final design, layout and features. Implement the web application such as graphics, back-end software content, integration with 3rd party or external software. After the system done developed, user testing on functionality testing, performance testing and acceptance testing conducted. Finally, the system or the application can be a launch to the community used.

4.   RESULTS AND DISCUSSION

This system consists of three main roles with three separate applications; first, the seller or the farmer application for managing the seller page. Second, buyer or end-user application for mobile-commerce buying page, third, deliver an application for the delivery system. Figures 1 to 14 show the user interface of the system.
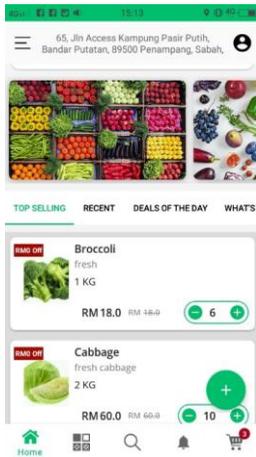
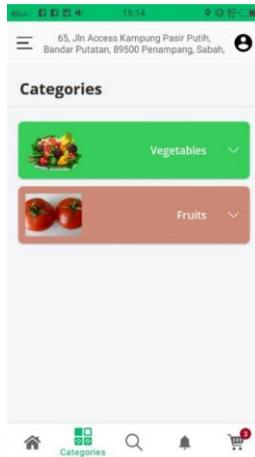### 4.1   Buyer Application: How To Order
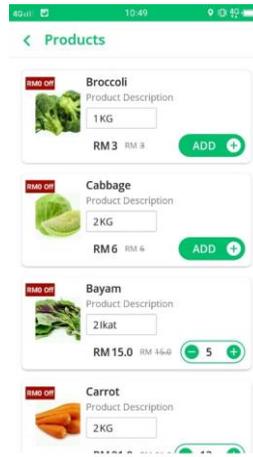

Figure 1: Homepage   Figure 2: Categories   Figure 3: Product Cart

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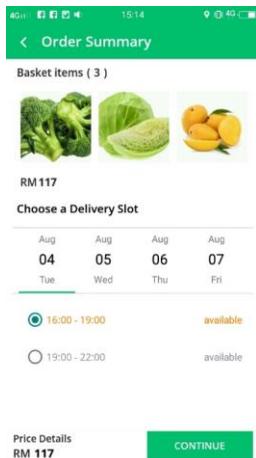

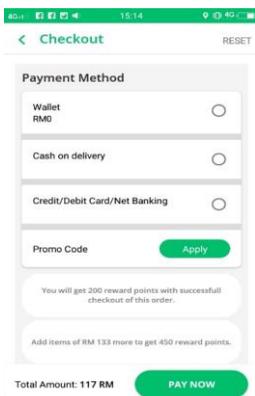Figure 5:
Checkout and Delivery
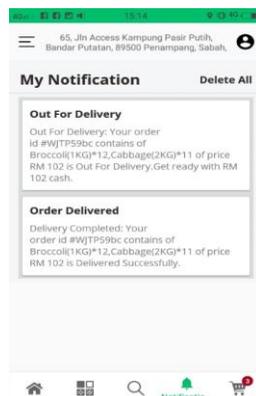Slot

Figure 6:
Payment Method

Figure 7: Notifications

4.2   Seller Application: How To Sell

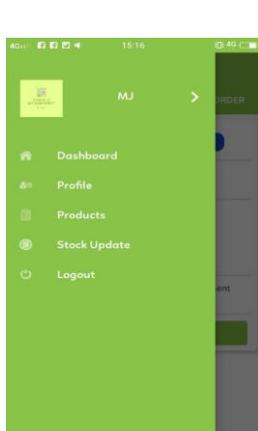Figure 8: Select Product

Figure 9: Add and
Delete product
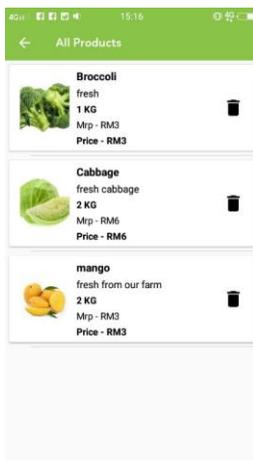
Figure 10: Homepage

Figure 11: Assign
Runner

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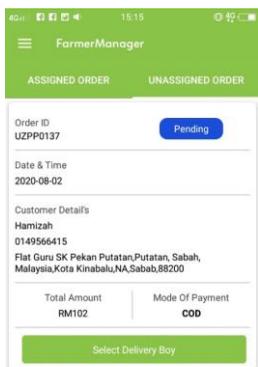
4.3 Runner Application: How To Deliver

Figure 12: Homepage   Figure 13: Launch DeliveryBoy Apps   Figure 14: Click Order Details

5.   CONCLUSION

There is a demand for vegetables and fruits from households who cannot get them during MCO because supermarkets and markets have limited operating hours. Night markets, Tamu, roadside vendors are closed. Farmers who usually sell their produce wholesale to hotels and restaurants either directly or through distributors have a glut of highly perishable produce because there are no customers at the end of their supply chain. Established supply chain, whether direct wholesale in contract farming, government agency intermediaries or private intermediaries, are not viable during MCO. Farmers also lack technological knowledge to prolong the shelf life of their produce. Loss of income during MCO might jeopardise smallholder farmers' ability to make a comeback after the MCO period. As a whole, Sabahan and the larger Malaysian society consume fewer vegetables and fruits than recommended for optimum health. Other than these acute problems, there remain the year-round problems of unsustainable and unsafe usage of pesticides, emphasis on the production of vegetables of 'high economic value' over indigenous vegetables, lack of state-level food security of our staple grains and proteins, and under-utilisation of agriculture waste such as parts that are usually discarded. Thus, a web application system developed that connect the farmers to the emergency distribution network and household buyers. This application is connecting farmers, distribution network and household buyer in Sabah. Future works will look into the usability testing among the three role stakeholders; farmer, buyer and delivery person.

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