

E-FoodCart: An Online Food Ordering Service

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Abstract: Nowadays, mobile devices with wireless technologies has emerged into the hospitality industry especially restaurants with the advancements of food ordering systems. Most restaurants use manual ordering process involving pen and papers in which noting down the orders can be quite slow and can caused errors in noting down the customers' orders. Based on QSR statistics, young generations usually order food online which caused the online ordering traffic to grow 300% faster than dine-in traffic. Moreover, most people preferred to use online ordering system as it is more convenient and reduce their waiting time. Hence, eFoodCart, an online mobile application is a student-friendly application for food ordering in which the idea and concept is similar to some existing applications such as Pizza Hut Delivery, Just Eat, Food Panda and Lazada. eFoodCart gathers different vendors providing different types of food unlike Pizza Hut which only provides their own pizza for delivery. In comparison with Just Eat and Food Panda applications, both covers city areas whereas eFoodCart focuses more on rural areas to give small towns the opportunities to sell food online. Furthermore, Lazada does not supplies any food ordering service while eFoodCart does. The purpose of this application is to allow and assist the residential students of UiTM Perak Branch, Tapah Campus to order their food via mobile devices. This is a secure and time-saving application for students as they are required to register to the application using their own student identification number. Besides the students, vendors are also required to register to eFoodCart application before they can offer their menu to the customer (students). This is to ensure security and prevent any fraudulent act for both parties. Moreover, B40, the lowest income group will also gain benefit from this application as it will help them to set up their food business without having any physical stall due to the limited monetary resources to rent a premise.

Hence, eFoodCart will act as an agent for them to perform any transactions conveniently. The system aims to gather all potential entrepreneurs in food business to use the system as their business starting point in order to expand their business in the future and also to provide convenience for the public to purchase food anywhere in Malaysia.

Keywords: Mobile application, online food ordering, students, vendors.

I. INTRODUCTION

With the advancement of new technologies especially mobile devices has made food ordering via online applications become more popular [1][2][12]. The traditional method of taking orders in restaurants involving pen and papers to note down orders has becoming less as it is quite slow and tend to cause mistakes in taking the orders [1][11]. Based on [3], food ordering online traffic is 300% faster than dine-in traffic among the young generations since it is more time-saving and more convenient in selecting their menus. Moreover, from several observations on online market versus in-store shopping, e-commerce is growing three times faster compared to the traditional retail. Since millennials prefer online shopping, and are the largest generation of consumers, most services focus more on this generation [4]. In addition, virtual card method of payments such as Google Pay and Boost has becoming more popular. It gives advantages such as lighter wallet, safe and secure, easier to use, and paper-saving [5].

Every country needs economic development, social inspiring as well as political balance, thus, SMEs is an important contribution towards achieving those requirements. Some profound adjustments should be applied among SMEs in Malaysia in order to succeed in a competitive environment [6][7]. Living in the modern era with many technologies, Electronic Commerce (E-Commerce) has been introduced to allow SMEs compete [8] in selling their products and services which is also being encouraged by the government. Furthermore, most SMEs still have limited knowledge on environmental management [9] which makes this application useful for green technology as well. Based on these elements of online purchases, eFoodCart application is proposed. The residential students of UiTM Perak Branch, Tapah Campus is chosen as a case study for this research due to several circumstances in getting late night snacks by the students.

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One of the problems faced by the students is that the dining halls and cafeteria in the campus only operated for limited duration of time. Most of the stalls are closed at 7.00 pm in the evening which leads them to take junk foods more often such as instant noodles and high contained sugar snacks to fulfil their hunger. This may also lead to health issues and problem in focusing on their studies. Hence, by using eFoodCart application, they can make online food ordering and transactions without going out of their hostels area.

Besides resolving this issue, eFoodCart application is an innovation to improve the current food ordering system available in Tapah, Perak area. Tapah is a rural area where most of the people falls under the B40 income group, the lowest income group in Malaysia [10]. By having this application, they are able to conduct their food business online without having to pay any rent for premises as it will be difficult for them to obtain monetary resources for a Small and Medium Enterprises (SMEs). Hence, eFoodCart will act as an agent for them to perform any transactions conveniently.

II. FOOD ORDERING SYSTEM

Current Food Ordering System

The current food ordering system available in the campus is through manual food ordering system [11][14][15] which involves students to go to the food stalls at the cafeteria, taking their orders by the person in-charge to be transferred to the kitchen chefs, while the students need to wait for their food and pay for the food once the order has been received. This process consumes quite a long waiting time and mistakes may happen during noting down orders [11][13][14][15]. As a result, buyers will be dissatisfied with the services [11][15]. Thus, eFoodCart application provides the benefit of easy food ordering for the residential students in UiTM Perak Tapah Campus from anywhere in the campus with sufficient choices of menu in less time and less costs.

eFoodCart applies some concepts that are quite similar to the existing food ordering applications such as Pizza Hut, Just Eat, Food Panda, and Lazada. Table 1 shows the differences between eFoodCart application and the other existing applications.

Table 1 Differences between eFoodCart and Existing Application

	eFoodCart	Pizza Hut	Just Eat	Food Panda	Lazada
Product	Fresh food from different vendors	Pizza from own restaurant	Fresh food from different vendors	Fresh food from different vendors	Other products except fresh food
Coverage	Hostels in UiTM Campus and rural areas	All areas	Mostly City areas	Mostly City areas	All areas
Delivery	Door-to-Door	Door-to-Door (except UiTM)	Door-to-Door (except UiTM)	Door-to-Door (except UiTM)	Door-to-Door (except UiTM)
Cash-On-Delivery	Yes	Yes	Yes	No	No
Application Types	Mobile	Web	Web	Mobile	Mobile

From Table 1, eFoodCart application provides the same product as Just Eat and Food Panda whereas Pizza Hut only caters its own food and Lazada does not sell any fresh food to customers. Even though Just Eat and Food Panda caters the same product as eFoodCart, it does not cover rural areas as well as Hostels in UiTM Campus which makes eFoodCart application more convenient in terms of the door-to-door delivery. Besides online transaction, eFoodCart also provides the cash-on-delivery option.

eFoodCart

This mobile app is only available for students and staff who resides in Universiti Teknologi MARA, Perak Branch Tapah Campus as it is a prototype. The idea is to have a virtual shop that can cater the client needs to get food right in front of their room. It is similar to the concept that being used by Pizza Hut and Domino's but DeliCart is only a platform to gather vendor all around the campus into one app so that client can reach to them easier and able to trace back their previous order and vendor can have a proper database

to make sure there is no order that miss out or misplaced.

The idea behind this application is to provide a flexible platform for vendor to advertise their goods to customer as the traditional methods are by posting advertisement through WhatsApp through group which people may ignore them or by pasting poster on the board or wall. Therefore, by having the right platform, advertising their goods to the right customers is not a reverie anymore. It is like the concept that being used by Lazada and Mudah.my when they only provide the platform where other vendor can market their goods for customers to buy.

III. System Implementation

Design

Initially, an open-source web application, App Inventor for Android is used to develop eFoodCart application. This application is built as a native application where the user needs to download the application from Google PlayStore. Fig. 1 shows the prototype of the user interface.





Fig. 1 eFoodCart Interface

From Fig. 1, new customer needs to register into the application for them to log in using the student’s ID as the username. The students who act as the customers of the system should register using their unique student identification number to order food. The users of the system will have a username and a password for regular use and account maintenance. My Account link allows the customer to update their user information. There are four main menu which are Menu, Cart, Tracking and My Account. Menu site displays the food category for the customer to choose from. The customers are able to select all the food and beverages they wish to order by storing the items in a cart. Then, confirma-

tion of purchase by the customers is needed before the payment is made. This will prevent them from making any order mistakes. eFoodCart will obtain RM0.10 per transaction as the fee. The order then will be sent to the registered vendors and food will be delivered in short time to the customers’ room. For the initial deployment, the system will be used among UiTM Perak Branch, Tapah Campus students as the case study.

The final application will have three main components: the administrator’s, vendor’s and the customer’s site. Each site contains several modules which can be concluded in Table 2.

Table.2 eFoodCart Components

Module	Administrator	Vendor	Customer
Login	√	√	√
Dashboard/home	√	√	√
Profile	√	√	√
Advertisement	√		
Cart	√		√
Menu	√		√
Inventory	√	√	
Tracking Order	√	√	√
Sales	√	√	
History	√	√	√

Framework

Customers can make order through this application and they need to confirm their order before their order can be processed and later being sent to their hostel’s room. The goods can also be paid by cash on delivery besides online



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transaction. Customer just need to provide cash money to pay for the food. As for vendors, they need to provide their business license to Universiti Teknologi MARA, Perak Branch registrar in order to start advertising their goods through eFoodCart.

This is to make sure only registered and trusted vendors are allowed to advertise via this application to ensure a more secure and trustworthy business activities. Fig. 2 illustrates the system framework.

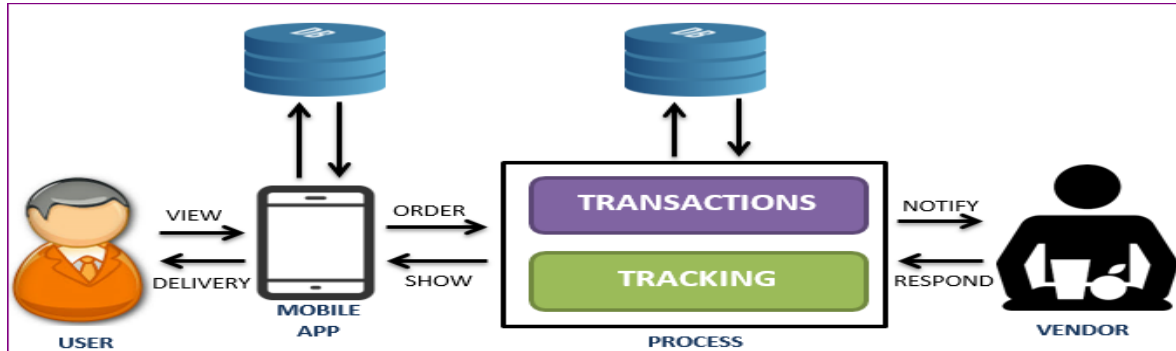


Fig. 2 eFoodCart Framework

Based on Fig. 2, the user will interact with the application by ordering and performing the transactions. All the ordering process will be stored in the database. Completed transaction will notify the particular vendor for them to update the order status to the customers. With this, customers can track down their order status through this application as well as trace their previous orders by referring back to the history module. This helps them when they want to order new goods. In addition, vendors can use this feature to trace back their previous customer orders so that they can perform stock calculation and to check their business profits.

IV. FINDINGS

Several surveys and questionnaires have been conducted among the residential students of UiTM Perak Branch, Tapah Campus in order to observe how often the students have their late night snacks. The results of the responses are shown in Fig.



Fig. 3 Surveys

According to the surveys, most students tend to search for their late night snacks and since it is difficult for them to go out late at night, Fig. 4 shows the students need of a convenient way to obtain their late night food through deliveries.

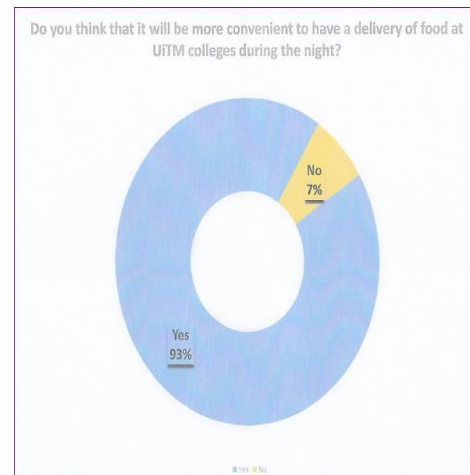


Fig. 4 Students' Responses

Therefore, eFoodCart application is designed to suit the UiTM students' need in getting their late night snacks easier and safer.

V. CONCLUSION AND FUTURE WORKS

This article reports a mobile-based online food ordering application known as eFoodCart. The ultimate objective of developing this application is to provide the customers who are the students to a secure and efficient food ordering service. This proposed approach will definitely give positive impact on the students as well as in increasing the income of the registered vendors. Cooperating the food ordering and technology through IoT definitely achieve the objective of the project in making human life easy and practical. There are some possibilities for upgrading the system with the payment alternative in accepting debit cards as the payment method.



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