Eatsarapph: An implementation of E-commerce framework with route analytics

CHRISTIAN ALFRED M. VILLENA*, JASMIN D. NIGUIDULA, JENNIFER B. ENRIQUEZ
Technological Institute of the Philippines, Manila, Philippines

Abstract

We may not comprehend it but instead development is vastly affecting the human life. It feels so impossible to miss when we hear that it is only quite a while since the essential business cell call was made in the United States, and today there are more than 262 million remote supporters in this country, 83% of the total United States masses. With the growing number of cell endorsers, cell advancement is furthermore ending up being more remarkable. With extending reputation and limit of PDAs, new applications are being moved every day. Today, various things that we can do using PCs we can moreover do with mobile phones. Nonetheless, simply copying PC applications to PDAs does not work, as customer characteristics of PCs and mobiles are extremely phenomenal Kulkarni, Dascalu, and Harris (2009). Today, more individuals than any time in recent memory arrange online because of the smartphones and gadgets. Regardless of whether stuck in heavy traffic, riding the transport or on a break, anybody can put in a request rapidly and effortlessly, instead of holding up until returning home or beginning to call. EatsarapPH is the most ideal approach to look for and find awesome submits to eat at or request in from. It’s a delightfully composed, simple to-utilize social eatery discoverer application that gives you a chance to investigate all the restaurant choices in Batangas zone. Peruse through restaurant menus, pictures, and customers’ favorites to choose where you need to eat, and utilize the guide highlight to guide you Zomato (n.d.).

Keywords: Online Ordering, Android Application, E-Commerce, Route Analytics

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INTRODUCTION

Restaurants are one of the most loved premises. With no respect to the real purposes behind going to Restaurants, customers will make requests and sit tight for the requested dinners. In any case, it is normal if customers whine for not feeling fulfilled about the services offered.

There are many reasons prompting to the sentiment disappointment incorporating being engaged late as far as request taking by the server and meals serving. The issue of being engaged late could be settled with help of the headway in the advances of technologies (Bhargave et al. 2013; Visser 2016).

In the 21st century, innovation has turned out to be perpetually best in class and systematized with PCs and gadgets consistently developing step by step and adjusting in today’s continually changing advanced world. Innovation together with Information Systems has rearranged practically every part of a man’s life today and every last one of us has turned out to be reliant on it. Data Systems have been made open to meet the requests of the cutting edge society. Presently, practically everything can be purchased over the Internet and access to data is only a mouse click away. The solaces and accommodation that Information Systems have conveyed to our everyday lives are quite recently imperative and it is no big surprise that even in the business and business world, Information Systems have had a constructive outcome in business operations and have been broadly utilized and perceived utilized as a part of numerous ventures. Contrasted with manual paper-based frameworks, Information Systems give the advantages of precise and predictable records, convenience and better security as far as keeping private records (Studymode.com 2012).

With the prevalent use of smartphone nowadays due to its convenience and portability, internet and mobile application services gained potential commercial utilization for common needs. The restaurant industry is one area

*Corresponding author: Christian Alfred M. Villena
Email: calf_ville@yahoo.com

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that can leverage these technologies that will help enhance and advance its services to a whole new level. With these, the proponent proposed to develop a mobile app entitled EatSarapPH: An Implementation of e-commerce framework with route analytics. This app will cater all the food enthusiast and food establishments. This app will also serve as the marketing tool for any food establishment. To be able to achieve the primary goal of the study, the proponent aimed to answer the following questions: How to make an application that will ease the ordering and billing in the restaurants. How to create an application that will help customers know all about the food establishments? How to create an application that will reach the standard of Software Quality Characteristics?

Objectives of the study are as follows: To design an online restaurant ordering system that will implement an e-commerce framework. To design an application that will allow clients to view restaurants based on the clients’ desired specialties including the following details: Location, How to get there, Menu Prices, and Best Sellers. To evaluate the application using ISO 9126 in terms of: Functionality, Reliability, Usability, Efficiency, Maintainability, and Portability

RELATED WORK

As per Smith (2016), innovation is massively affecting the restaurant world. Actually, the National Restaurant Affiliation reports that more than 33% of customers say they are liable to utilize innovation related alternatives in a restaurant now contrasted with only two years prior. This demonstrates the considerable capability of taking advantage of innovation to enhance the eating background and in addition the eatery’s main concern.

Clients are utilizing innovation to pay for their suppers with expanding recurrence. The Restaurant Affiliation found that near 33% of all eatery benefactors would want to utilize a cell phone application over a Visa, check card, or money to pay for their supper. For the individuals who still wish to pay utilizing a card, Square, Apple Pay, or comparable versatile installment alternatives permit servers to run the card at the table, expanding security for the eatery benefactor and enhancing the convenience of administration.

Today’s restaurant benefactor is regularly in a rush. While relaxed clients will dependably exist, an expanding number of eatery supporters essentially require a dinner rapidly so they can proceed onward with their day. Utilizing innovation to request, for example, tablets at the table or cell phone applications on the client’s telephone, can expand the productivity of the requesting procedure. It can likewise dispose of blunders because of a server who records the request mistakenly (Smith 2016).

Information Technology and the Internet have dramatically affected business operations. Organizations are taking extensive interests in e-trade applications however are unable to assess the achievement of their e-business frameworks. The Delone and Mclean (2004) Information Systems Success Model can be adjusted to the estimation difficulties of the new e-business world. The six measurements of the upgraded model are a miserly system for sorting out the e-business achievement measurements distinguished in the writing. Two case illustrations exhibit how the model can be utilized to direct the recognizable proof and determination of e-trade achievement measurements (Delone and Mclean 2004; Wartika et al. 2015; Azhani, Yusmarwati, and Pua 2015).

METHODOLOGY

This paper followed the proper System Development Life Cycle. It has five different phases namely; planning, analysis, design, implementation and maintenance. Each phase plays a vital role in the success of the development of the system. Planning was executed through process of observing something or someone carefully in order to gain valuable data.

During data gathering, the proponents ate in several restaurants to observe. The proponents discovered that most restaurants are still using a manual ordering and billing system. The proponents noticed that some menus don’t have pictures or images which will aid them to make their orders accurately. The proponents need to ask the service crew the description of the food to help them realize on what they’re purchasing. The proponents also notice that at 8pm, costumers began to increase in number, occupying the restaurants’ main lobby and other areas as well.
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Figure 1. Software development life cycle

Analysis was executed based on problems encountered, the proponent came up with the following system requirements; the application has a log-in for clients and restaurants as well. The customers and restaurants are the target users of the application. The proponent will serve as the administrator of the application. Through the application, the customers can locate restaurants near him/her, the customers can also know how to get there. The restaurant owners can input their menu and prices and their best sellers as well in order for the customers to know everything about the restaurants. The customers can take order and view their billing on the application for the restaurant can view the order and how much the billing is of their customers. The customers can rate and leave comment on the restaurants they chose using the app for the restaurant can view what their customers’ comments are on their restaurants. Design was executed by creating a customer connectivity framework, restaurant connectivity framework and context diagram of the system.

Figure 2. Customer connectivity framework

Figure 2 shows the connectivity framework for the customers. The customers will have to use android phone to access the application and it goes directly to server and database. With the use of android phones, customers can access restaurants, they can locate restaurants, choose from their menus, and can place comments and ratings and can order and pay online.

Figure 3. Restaurant connectivity framework

Figure 3 shows the connectivity framework of restaurants. Restaurants and admin will use web to access the application and go directly to server and database. With the use of web, restaurants can transact directly to the customers.
Figure 4 shows how Eatsaraph runs as an application. Eatsaraph will give the customers their registration in order to use the application. It also gives the location of the restaurants that the customer chose to dine in, it will also show the menu and prices of the restaurants they want to dine in. The customers can also know what the best sellers of a certain restaurant are. Eatsaraph will also become the order and billing system of the customers. It also serves as the business intelligence tool for the restaurants because each customer can rate and give comments to every restaurant. The restaurant owners can input blogs and events that are happening in their restaurants, they can also view the comments and feedbacks of the client. They can also view the rating of their restaurants. The restaurant owners can also view the order and billing of the customer who picks their restaurants to dine in. Restaurant owners can also register their restaurant to the Eatsaraph app. The owners can also put their menus and prices and their best sellers on the application.

Implementation was executed by doing a testing and testing plan for being able to know if the system is running smoothly. Figure 5 shows the test plan that the proponents used in implementing the system.
Maintenance was executed based on testing of the application during the operation. Eventually, corrective and adaptive maintenance will be done if the clients and restaurants will encounter innovation, new technology and bigger demand.

RESULTS AND DISCUSSION

Figure 6 shows the e-commerce framework that is being used in making the application. The framework is used to answer the first objectives of the study. The framework has 6 phases that the proponent follows in order to create the application.

Requirement analysis phase was executed by conducting interview with some restaurant owners and customers to know what the needs to improve the restaurants dining are and what are the common problems they encountered. Knowing what modules are needed for the mobile application and what platform would be used in creating the mobile application.

Software Design was executed by using System Requirements Specification (SRS) architecture and High Level Design (HLD) in software designing phase. For the SRS architecture, the proponent used the following: Hardware Interface: Android or Smartphones with at least Lollipop 5.0 OS. Software Interface: Angular JS, SQLite databases, Adobe Photoshop and IDE with SDK and ADT installed in it. Communication Interface: Yahoo Mail or Google Mail. Memory Constraints: Android or smartphones have a built-in memory in Gigabytes (GB). The application would need about 256 MB.

Development and Unit Testing were executed by testing each module if it is doing what has to be done. It is done to find what the problems of the developed system are. If some problem arises, it takes a lot of time to fix it. It is also done to know the functionality of the system.

User Acceptance Testing was executed by testing the actual software by the customers and the restaurants. It is done to record and correct the defects of the software.
Implementation was executed by finally deploying EatsarapPH to give convenience to the customers and the restaurants enrolled in the application. In implementing EatsarapPH, proponent bought domain and web-hosting for the web application of EatsarapPH and published it on Google play for the android application. Restaurant owners will use the web application along with the administrator. Restaurant owners and administrator can log on the web using EatsarapPH.com while the customers will have to use smartphones or android phones to access EatsarapPH.

Training and Ongoing Maintenance was executed by training restaurant representatives and customers on how the EatsarapPH application works. Each representative of the restaurant undergoes a demonstration training to learn how to use the application. Representatives and customers were trained step by step on how to use EatsarapPH. Representatives were trained on a web-based application while the customers were trained on mobile application. For ongoing maintenance, the application administration always checks some issues about EatsarapPH.

Figure 7 shows that a restaurant representative was trained to use the web application of EatsarapPH. Each restaurant representative was trained on how they can interact with each module of the application such as order placing, payment verification, creating events and promos, inputting blogs and replying to a comment. Restaurant representative was also trained on how to manage the control panel of the restaurant side especially on manipulating the menus and prices of the food offered by the restaurants.

The other objective of the study is to design an application that will allow clients to view restaurants based on the clients’ desired specialties. To reach the second objective, I used analytics to answer all the questions in the second objective.

Route Analytics are used to know how to get to the desired restaurant. Route analytics analyze the routing protocols and structures. It is also a real-time and accurate discovery of routed networks.

For menus, prices and best sellers, restaurants will have to input all of it in their control panel in order to show to the customers. Restaurant will have to input their menus and prices and give a short description of the menu and a sample picture. For the best sellers of each restaurant, restaurants will have to put a check on the best sellers menu in their control panel in order to show the customers their best sellers.
Figure 8 shows how to locate a certain restaurant that the customers want to dine in. The customer will have to input his/her current location for the route analytics will have to locate the current location and the restaurant location in order to show the path from customer’s location to restaurant’s location.

The last objective of the study is to evaluate the application using ISO 9126. The ISO 9126 is one of the notable quality guidelines accessible in programming building region. This standard which has been characterized by International Organization for Standardization (ISO) is utilized to assess the product item quality. The ISO 9126 is separated into three sections: outside measurements, inner measurements and quality being used (Niknejad 2011).

Table 1: Summary of software evaluation overall mean scores

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Overall Mean</th>
<th>Descriptive Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functionality</td>
<td>4.8</td>
<td>Excellent</td>
</tr>
<tr>
<td>Reliability</td>
<td>4.2</td>
<td>Very Good</td>
</tr>
<tr>
<td>Usability</td>
<td>4.5</td>
<td>Excellent</td>
</tr>
<tr>
<td>Efficiency</td>
<td>4.85</td>
<td>Excellent</td>
</tr>
<tr>
<td>Maintainability</td>
<td>4.65</td>
<td>Excellent</td>
</tr>
<tr>
<td>Portability</td>
<td>4.67</td>
<td>Excellent</td>
</tr>
<tr>
<td>Over All Mean</td>
<td>4.61</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

Table 1 shows the summary of software evaluation overall mean scores. This was achieved by conducting a survey to assure if the application achieved its goal.
CONCLUSION

In consideration of the objectives of the study and the results of the evaluation, the following conclusions were drawn: 1. With the use of e-commerce framework, EatsarapPH was done to give ease to customers and restaurants. In using the framework, proponent follows several phases in creating EatsarapPH: Requirement Analysis, Software Design, Development and Unit Testing, User Acceptance Testing, Implementation and Training and Ongoing Maintenance. With the use of e-commerce framework, EatsarapPH was done with 6 modules; Admin Module, Registration Module, Order Module, Event Module, Blog Module and Store Locator Module. 2. With the help of route analytics, locating a certain restaurant becomes easy to the customers. Showing of menus, prices and best sellers gives ease to customers to choose a food they want. With the use of the API of Google map locating a certain restaurant was made easy, all you have to do is to get the latitude and longitude of the customer’s current location and get the latitude and longitude of the restaurant’s location. 3. The overall mean score is 4.61 which is equivalent to excellent rating. Efficiency got the highest mean score which is 4.85. Functionality follows next; it got a mean score of 4.8 and a descriptive meaning of excellent. Portability and Maintainability got the third ranking and fourth with a mean score of both 4.67 and 4.65. Usability falls on the fifth ranking with a mean score of 4.5. Lastly Reliability has 4.2 mean score and is last in the list. The application gives convenience to customers and restaurants by eliminating ordering queue time, online menu is easier to manage and transaction can be done without any hassle.

REFERENCES


