A MOBILE FAST FOOD MENU SYSTEM: A FLASH LITE APPLICATION

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ABSTRACT

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The main focus of the project is to design a system for fast food restaurant for McDonald. The purpose of this project is to help customers to buy fast food through an easier way and assist the fast food restaurant to work more efficiency. An evaluation was performed to evaluate and investigate human perception and their performance. This quantitative study involved 30 respondents from students of Cognitive Sciences and Human Development. All respondents were evaluated through questionnaire before convert to demonstrate that user satisfaction. Most of the respondents were found satisfied with the system which was developed in this research, despite some minor problems.

ABSTRAK

SISTEM MENU PADA TELEFON BIMBIT: APLIKASI FALSH LITE

LYNN HO ZI WEI

Kajian ini adalah bertujuan untuk menghasilkan sebuah sistem untuk restoren makanan segera. Objektif kajian ini bukan sahaja dapat menyenangkan pelanggan dalam proses membeli-belah tetapi juga dapat mempertingkatkan mutu kerja restoren makanan segera. Sebuah kajian telah dijalankan untuk mengkaji dan memerhati persepsi serta tingkah laku manusia. Kajian kuantitatif ini melibatkan 30 responden dari Fakulti Sains Kognitif dan Pembangunan Manusia. Semua responden menguji dengan kertas soal selidik dan data tersebut ditranskrip sebelum ditukar menjadi hasil kajian yang bermakna. Keputusan menunjukkan terdapat kepuasan daripada segi perepsi walaupun sebahagian peringkat kegunnaan tidak dipenuhi sehingga mempengaruhi kepuasan pengguna. Walau bagaimanapun, sistem yang diprogramkan dalam kajian ini dapat memenuhi kehendak pengguna.

CHAPTER 1

INTRODUCTION

1.0 Overview

This chapter discusses the background of the research and problem statements. Besides that, the purpose of this study, its objective, and the contribution of the research has also been included. The strength and limitation of this study, scope of the project and structure of study are also stated in this chapter.

1.1 Research background

According to Clancy (2003), technology has provided us a way to connect with each other and also extend our learning experience. When using a technology, the right skills and knowledge are needed to allow users to take full advantage of the various features and benefits of the technology. Mobile phone technology is a small and portable communication device that enables people to make phone call regardless of their location. Besides that, mobile phone is also the fastest changing technology that has ever been made in this lifetime. Therefore, most mobile companies aim to fully utilize the technology functions because it is convinent and allowed people can use their mobile at any time and place.

According to 2008 Asia's report Telecoms, Mobile and Broadband in Malaysia and Philippines, there are over 90% of the 27 million people in Malaysia had a mobile telephone service. Through this report, Malaysia is the second highest mobile penetration in South East Asia after Singapore ("2008 Asia Telecoms, Mobile and Broadband in Malaysia and Philippines," 2009). Nowadays, every people kids, teenagers, and adults who are spending increasingly amount of times and money to call, sending text messages, download ringtones, videos and more. In addition, user's mobile application can communicate with desktop client and server applications with minimal effort and without requiring two teams of developers to cater different platforms.

Flash Lite is an implementation of the Flash runtime for mobile phones. It is available in two versions. The first version includes are Flash Lite 1.0 and Flash Lite 1.1 that are based on Flash 4 player. Meanwhile, the second version is Flash Lite 2.0 which is

based on the Flash 7 player (Leggett, Boer, & Janousek, 2006). Flash Lite allows distribution of rich media services such as news, animation, media and games. Flash Lite also provides user interactivity (Leggett, Boer, & Janousek, 2006).

In this project, Flash Lite technology is applied into fast food menu system. This project constitutes the fast food menu concept in mobile telephone which increases the efficiency for both parties – customers and suppliers.

1.2 Problem Statement

In this era, people define fast food restaurant as a quick service restaurants. It is one of the special commercial properties. The nature of this business style is to provide customers with more convenience. Therefore, they operate till late at night or for 24 hours they are mostly located on major thoroughfares for quick service.

Even through fast food restaurants are built to provide quick services, customers still need to walk into the restaurant and queue up to place their orders. The fast food menu is usually placed slightly insides and above of the counter. This could be visibly challenging to some customers, when they are picking and choosing their orders. A customer can only have a good sight when he or she is in front of the counter. If the restaurant has a lot of people, the customers will have to wait to make their order and this, defeat the purpose of the quick service restaurants. In other words, fast food business is no different to the other types of food business.

To improve the walk in problem, some fast food restaurant has provided drive through service. As an example, McDonald fast food restaurant. Customers do not need to find a parking lot to park their car so that they could walk in to the restaurant and take order. With the drive through service, they can just drive into that particular lane and place their orders without having to step out of the car. This is easier for those customers who want to take away the food. The time for queuing is shorter compared to the walk in. But, the menu choice of the fast food for drive though lane are limited. Besides that, high demand of quantity cause customers to wait to pick up their order and also causes traffic jam around the restaurant.

When the restaurant becomes crowded with customers, the income of that fast food restaurant would decrease. It is because, psychologically, people who choose fast food restaurant do not like to spend more time waiting for their orders. Customers are not essential, they are irritants. No one wants to go that extra mile. As a result, customers that visits a crowded fast food restaurant leaves dissatisfied, and would not enjoy the meal. In addition, most of the customers do not bother to complain. They just go away and never return. The slogan of this business wish every customer can enjoy their happy meal, is vanished.

1.3 Purpose of study

The main goal of the project is to help customers to buy fast food through an easier way and assist the worker of the fast food restaurant to work more efficiency. Both parties can take full advantage by using mobile device. This project also aim to design a

fast food menu mobile system by using Flash Lite software. By using this system, customers can save their time when buying fast food. Besides that, the supplier (fast food restaurant) can deliver their information to their customers in a faster and efficient way. Broadcasting advertisements through mobile phone is one of the effective ways for promoting product.

1.4 Objective of study

This objective of this study is divided into two parts, which are general and specific objectives.

1.4.1 General objective

The general objective of this study is to design and develop a multimedia system (Flash Lite) for users to use on their mobile in a more comfortable and convenient way. Besides that, this system could assist fast food restaurant build a better relationship with their customers.

1.4.2 Specific objective

i) To design and develop a fast food menu system by using multimedia Flash Lite 2.0.

ii) To evaluate the effectiveness of the fast food menu system.

1.5 Strength of study

This research is to prove that Flash Lite can be used not only for games application, but also for others purposes. For example, customers can place their order through mobile phone by using Flash Lite application.

Besides that, customers have good perception when they perceive and perform on the mobile system. This is because Flash Lite has a good graphical performance (Potts, 2006). Furthermore, function of mobile system is easy to interact because people nowadays are familiar with the function of mobile phones ("2008 Asia Telecoms, Mobile and Broadband in Malaysia and Philippines," 2009).

1.6 Limitation of study

This research focuses only on fast food restaurants menu system. There is also limitation in this study due to the hardware and physical of mobile devices. For example, the speed of the CPU and the amount RAM of the mobile device will affect the progress of the program and, the resolution, size; color of the screen also will affect the user's perception. Therefore, a mobile application should not be overcomplicated by unnecessary features.

1.7 Contribution

This system is very useful for both participants (customers and supplier). Customers will be able to place their food order through the menu, which is published on their mobile phone. By using this system, customers can spend more time to decide what they want to eat. Besides that, this research maximizes the use of mobile phone. Customers will be able to receive latest information through their mobile phone and on the same time, the supplier (fast food restaurants) is able to release the latest information or promotion to customers. Fast food restaurant that provides efficient service can build better relationship with customers.

1.8 Project scope

Since there are a few limitations in the fast food menu ordering system, Flash Lite could solve the problem by bringing the menu into mobile phone and thus enable users to have more interaction and good perception. The scope of the project is to allow users to use mobile phone to order their food in a more convenient and comfortable way and also assist the fast food restaurants to improve their current situation.

1.9 Structure of the thesis

There are six chapters in this thesis. Each chapter explains and discusses the feature and the process of development of this system. This thesis begins with

Chapter One, which establishes the research topic and research background of this project. Chapter Two consists of literature review whereas Chapter Three will be based on the research methodology. On the other hand, Chapter Four will focus on the system development of the system. Chapter Five consists of the system's evaluation and its results. The last chapter will discuss on the conclusion, discussion and future work of this study.

1.10 Summary

This chapter introduced the research topic and the process of the project. Apart from that, the research background, problem statement, objectives, contribution, scope and the structure of the project were discussed in this chapter. The following chapter will discuss about the literature review of the project.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter describes about several approaches used in developing the technology. These approaches can help user understanding about this project.

2.1 Macromedia Approaches

Macromedia Flash is a platform, a tool and a standard. It has a platform for building rich, interactive movies and applications for delivery over the internet. Besides that, it is a plug to a software which can plays animation and rich media on

many device and channel. Macromedia coined the term Rich Internet Application to describe rich, web- deployed client in real time and interaction with server, providing all manner possibilities (Leggett, Boer, & Janousek, 2006). Flash is a high performance runtime for code, content, communication and interface tools. There is a flash in mobile device which also known as Flash Lite (Leggett, Boer, & Janousek, 2006). In traditional way, using markup language has resulted in poor user interface and disappointing users' experience. Therefore, to improve this particular problem, flash technology was applied, because it could deliver rich applications to mobile devices (Leggett, Boer, & Janousek, 2006). Besides that, these applications can be developed and deployed across multiple platforms with much less effort. It maximizes the content assets, cost saving while delivering compared to native development (Leggett, Boer, & Janousek, 2006).

Moreover, compare with J2ME (Java 2 platform, Micro Edition), the strength of Flash Lite is the speed application is faster than Java application (Burnette, 2007). Using Java application, it could tax device with slow processing speed, minimize memory and will limit the battery life (Burnette, 2007). Furthermore, Flash has a small footprint to make specific performance to mobile devices. In addition, the strength of Flash is it is rich user interfaces effort (Leggett, Boer, & Janousek, 2006). This system can assist users to use full advantage on their mobile phone in more efficient and convenient way.

2.2 Graphic and Animation

Multimedia approaches consist of various elements such as text, graphic and animation. The use of graphic is to make sure that the users has good perception to choose their desired order through a menu in their mobile phone by having graphic (Sparre, 2007). Besides that, graphic is one of the best elements in explaining complex concept such as paying process (n.a, 2010). According to Andy Ju An Wang (2005), multimedia animation and graphic will make certain concept more easier to understand and retained.

2.2.1 Color

Color is used to differentiate the graphic image and animation with the background colors. Color plays an important role in users' perception (Cialer, 1986). Various colors combination has different perception. According to Cialer (1986), high contrast color provide user with better perception whereby low contrast color challenges the users visibility when viewing any text or image content. For example, color in black and white is high contrast and red and orange is low contrast.

2.2.2 Text

Besides that, text is another important element in graphic and animation. Text is the communication medium between system and users. Text needs to be

clearly stated so that information is clearly understood by the users (Galer, 1986). Button in the text also needs to be labeled clearly. This is to ensure that users will choose the correct button to achieve his or her goals (Galer, 1986).

2.3 Usability

Usability is an approach to product development that can be used to achieve specific goals such as effectiveness, efficiency and satisfaction in a specific context of use. In this research, it is an important factor in designing the system, because the usability of multimedia interface is the first key to give effect in this project. If the technology cannot attract users to use it, therefore the system is not usable and the implementation of the system fails. To achieve the goal of usability, user friendly is necessary. It is because a user friendly system can motivate users to continue with the system and be immersed in the system. According to Marisa Peacock (2010), usability can be defined by five quality components. First, the usability design of the product need to be easy so that users can accomplish basic task during their first attempt to use the system. Next, the usability of the product needs to be efficient. This means that users can learn the available functions in a short time. Reestablish proficiency of the product also needs to be considered. Besides that, the recovery of the product need to be faster and lastly, the use of the system needs to achieve user satisfaction.

Besides that, utility, which refers to the functionality of the system is also important. There are certain global usability principles which consist visibility, memory load, navigation, legibility and satisfaction. Visibility is an important part in multimedia interface. This is because perception is usually defined as conscious awareness of the objects and events in perceiver environment (Blake, & Sekular, 2006). It is a fundamental psychological process, which successfully provides users accurate information (Blake, & Sekular, 2006). For instance, visibility assists users to form correct mental model of the "food". It is especially useful when the fast food restaurant have "new food promotion". The labels in the system should be cleared for the users to read (Galer, 1986). Legibility refers to readability of the text in that system. The font type font of the text used in the system should be readable and straightforward. Besides that, high contrast between the text and background can increase legibility (Galer, 1986).

In this research, usability of a system is given a higher value in Human Computer Interaction. According to Nicky Danino (2001), human computer interaction is the study, planning and design of a system which can work together with human. The developers must understand the factors of the way people use technology (Danino, 2001). Then, develop tools and techniques to build a suitable system which is efficient, effective and safe interaction. As its name implies, users are the main key to designing the product (Danino, 2001). Therefore, psychology applied to concern human users of interactive computer system. This research show