



Fakulti Seni Gunaan dan Kreatif

## **MOBILE APPLICATION FOR KLIA2**

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# MOBILE APPLICATION FOR KLIA2

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This project is submitted in partial fulfillment of  
the requirements for the degree of Bachelor of Applied Arts with Honours  
(Design Technology)

Faculty of Applied and Creative Arts  
UNIVERSITI MALAYSIA SARAWAK  
2015

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## **Abstract**

This research project is based on the problems faced by visitors to Kuala Lumpur International Airports 2 (KLIA2). The research will apply on mobile applications that focus on the layout, navigation, and information architecture of the application. This project focuses on user interface design, particularly in terms of visual design and user experience.

Keywords: Kuala Lumpur International Airports 2 (KLIA2), mobile application, user interface, user experience.

## **Abstrak**

*Projek penyelidikan ini berdasarkan permasalahan yang dihadapi oleh pengunjung Lapangan Terbang Kuala Lumpur 2 (KLIA2). Hasil penyelidikan adalah rekaan aplikasi mudah alih yang menitikberatkan susun atur, navigasi, serta seni bina maklumat aplikasi tersebut. Projek ini memberi tumpuan kepada reka bentuk paparan skrin terutamanya dari aspek rekaan visual dan pengalaman pengguna (User Experience).*

*Kata Kunci : Lapangan Terbang Kuala Lumpur 2 (KLIA2), rekaan aplikasi, reka bentuk paparan skrin, pengalaman pengguna.*

## **CHAPTER 1**

### **INTRODUCTION**

The technology nowadays like mobile application has been a part of our daily life. The main purpose of mobile application is to provide convenient to make our life easier. It is easy to use, highly functional, rich of user experience (UX) and user interface (UI). That is the reason why mobile application is very important nowadays.

This interactive design is a new initiative for KLIA2 mobile application. This research will focus on product development process, user interface, and user experience of mobile application. Through all the pages of interface design and

also the user experience to give visitor a new awareness of KLIA2.

## **1.1 Research background**

Kuala Lumpur International Airport 2 (KLIA2) is a low cost carrier terminal at the KLIA in Sepang, Selangor, Malaysia. The KLIA2 was opened officially on 9 May 2014. It is designed to cater 45 million passengers a year. It is built with bigger capacity and superior facilities. KLIA2 is larger as compared to KLIA, it has a built-up area of 257,000 sqm with 68 departure gates, 8 remote stands, 80 aero bridges, plus a retail space of 35,000 sqm to accommodate a total of 160 retail and food and beverage outlets throughout the main terminal, with additional 170 retail and dining outlets.

The concept of sustainable transportation is derived from these general terms that imply movement of people and goods in ways that are environmentally, socially, and economically sustainable (Rassafi & Vaziri, 2005). Moreover, this airport is connected with the Express Rail Link (ERL) service and also known as KLIA Ekspres. The KLIA Ekspres is connected to the KL Sentral station in the city.

Mobile phones have become a popular device in people's daily life. Trends in the Information Technology (IT) and purchasing policies indicate that individuals use their personal phone for work (Baharuddin, Razali & Singh, 2013). This project is focus on the research towards the interactive design and intend to create a better user experience (UX) and user interface (UI) design for visitor of KLIA2. The better UX/UI design have great accessibility and capability which can help to solve a lot of problems. This research will based on the needs of the target audience which is the visitors of KLIA2 and also provide a convenient media environment for them like stores guide, facilities, services, transportation hubs, events, car parking area and so on.

Design is a fundamental part for every new product. It is a design process which has a user perspective and drives development based on customer needs. In modern society, aesthetic sensibilities are relevant to all product (Anton & Deniz, 2008).

Furthermore, the usability is also part of mobile application. Usability is defined as the capability of a product to be understood, learned, operated and be attractive to users when used to achieve certain goals with effectiveness and efficiency in specific environments (Baharuddin, Razali & Singh, 2013).

## **1.2 Problem Statement**

KLIA2 is the biggest airport in Malaysia because this airport was designed to be an airport within a mall. Most of the visitors from KLIA2 complained about the poor designed airport and one of the reason is the distance of location. It is extremely long walk from one end to the other. Moreover, the inappropriate placement of escalators also considered inconvenient. The signages in the KLIA2 is very complex and confusing. This will cause the air traveller from KLIA2 miss their flight and wasting their time to find the locations. This research will collect all the data analysis from visitors in KLIA2 to create a location aware airport mobile application.

## **1.3 Research Question**

- 1) What is the current problem faced by visitors in the KLIA2 ?
- 2) How to make visitors understand the structure of KLIA2 building and the information of KLIA2 by using the mobile application ?
- 3) What kind of user experience and user interface design are suitable for visitors in KLIA2 ?
- 4) What is the most needed information by the visitors in KLIA2 ?

#### **1.4 Research Objectives**

- 1) To identify the current problem that faced by visitors in KLIA2.
- 2) To analyze data from feedback of KLIA2 visitors.
- 3) To design a new user experience and user interface design mobile application which is suitable for visitors in KLIA2.
- 4) To validate the information of the mobile application towards the visitors in KLIA2.

#### **1.5 Research Scope**

The research scope will basically cover all the things that are related with the project title. The problem of the visitors in KLIA2 airport will be identified and an aware mobile application will be created. The outcome which is the KLIA2 mobile application needed knowledge such as layout, navigation, information architecture, wireframe, colour and usability testing. Besides, this study will also focus on the interactive design to create interest and apply on the website, mobile application and motion graphics video.

## **1.6 Target Audience**

Target audience for this research will be focus on the visitors in the KLIA2 with both male and female in the age group of 20 – 50 years old. This is because majority of them within this age are using smart phones. The data will also collect from the visitors in KLIA2 with different background, races and religions in order to complete this research.

## **1.7 Media**

The media in this research includes promotional posters, web design, mobile application design and motion graphics video. The web design and motion graphics video are to introduce the function of KLIA2 mobile application and advantages of the mobile application.

## **1.8 Limitation**

In this research, the limitation is the time to do research in KLIA2. This is because long distance of walk is required in KLIA2 to do observation, to distribute questionnaires, and to conduct interview. Furthermore, this research also need to find the target audiences which can give the full cooperation and propose

a complete data. Interviews were carried out in KLIA2 in different languages to communicate with respondent depending on their race because some of them do not speak English.

### **1.9 Significant of research**

The significance of this research is to find the problems in KLIA2 and collect all the data. All the data will be analyzed and applied on a new mobile application design to help them to get better information in KLIA2 and make them more convenient.

### **1.10 Conclusion**

As a conclusion, the goal of this research is to find out the problems in KLIA2 and create a mobile application which serves as a guidance tool to encourage people when visiting KLIA2. Furthermore, this research will study how to create the aesthetically pleasing of user interface and good usability of KLIA2 mobile application.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In this advanced era, technology has been part of our everyday environment such as smart phones. It has changed the way to attract consumers and create advantages to them and create a new business. Moreover, it plays a significant role in the management of relationship between nation, whether economic or social event, or daily life. (Alkhazali, 2012). The goal of mobile application is to provide a right tool to make our life easier. KLIA2 is the biggest airport in Malaysia and a lot of visitors from KLIA2 complained about the poor designed

airport and the long distance from one location to the other end. The inappropriate placement of escalators had also make them very inconvenience and the signages in the KLIA2 is very complex and confusing. This research will collect all the data from visitors in KLIA2 to create a location aware airport mobile application with user experience (UX) which is focus on usability and user interface (UI) design.

## **2.2 Design**

“Design is an iterative process and design thinking is present in each stage of the journey from client brief to finished work...” (Harris, 2010, Basics Design 08: Design Thinking, p. 5). According to Harris (2010), different solutions can be produced for given brief and these can differ widely in levels of creativity, practicality and budget. Therefore, the creativity and practicality of the mobile application design for KLIA2 will be going through the iterative process and design thinking which is important for a better design.

Paul Laseau (1980) described the design process as a symbiotic relationship between idea elaboration and idea reduction. In the beginning of this project needed to have elaboration, which mean to generate solutions and creates opportunities to solve the problems in KLIA2. At the same time, the project needs

to have idea reduction at the end as well to decide on the one worth pursuing, and then elaborate those solutions.

### **2.3 User Interface**

In the UI design process, it is important that the interface designers give thoughts on the overall hierarchical menus, icons design, and its screen and display layout arrangement based on the user's mental model rather than designer's mental model (Wong, Khong & Chu, 2012). User interface (UI) is the design of websites, computers, machines, mobile communication devices, and software applications with the focus on the user's experience and interaction. This project will design a new mobile application which is rich of user interface design to create awareness of KLIA2 and provide the information through mobile application.

In user interface design, icon is a small pictorial symbol which represents an application, concept, capability and gives user message by using the simple design. Icons can reduce complexity, therefore making the interface easier to learn (Alty, Diaper & Guest, 1993). To bring the message to the target audiences, icon design in this project should be as simple as possible, but also maintain the aesthetic looks at the same time.

## **2.4 User experience**

Usability has been an important quality in the development of application as well as product (Baharuddin, Razali & Singh, 2013). Usability is very important in order to develop a mobile application which can test the user or target audience whether they are comfortable to use the mobile application. Through this usability testing, problems related will be identified and then overcome with solutions. This research will study the KLIA2 visitor's behaviour and try to create a mobile application which is easy and comfortable for them to use. Through the usability testing, it remains a central way of determine whether users are accomplish their goals.

Nowadays, all people are using smart phones, tabs and tablet to get information and communicate through digital information. Interaction design is designing interactive products to support the way people communicate and interact in their everyday and working lives. In another way, it is about creating user experiences that enhance and augment the way people work, communicate, and interact (Preece, Rogers & Sharp, 2011). Therefore interaction design will play a very important role in order to create a new KLIA2 mobile application development.

Mobile applications use interactive interfaces, which are apparently complex and often faced with usability issues such as information overload, screen clutter lack of task support and limited interaction mechanisms (Wesson *et al.*, 2010; Ali *et al.*, 2012). The main purpose of interactive design is to reduce the negative sides such as frustration and trouble of the user experience while enhancing the positive sides such as enjoyment of getting the information through the mobile apps.

## **2.5 Conclusion**

In the conclusion, before the project started, we need to plan the design process. Target audiences at KLIA2 who are facing the problem are selected and their problems were solved according to the data collection in this research. The user experience and user interface are the key elements to create a mobile application.