ONLINE MALAYSIA CUP TICKETING SYSTEM (OMaCTS)

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Abstract

Technology is developing rapidly nowadays. Thus, online shopping in business industry has become the new approach for companies to gain more benefits. E-commerce is a platform that has a very large market network. In recent years, online ticket sales for football are implemented to facilitate customers to purchase the tickets, but the tickets will be sold and distributed only at the final stage of the match. Football fans need to queue up at the counter to purchase the tickets. Having to queue up for tickets is time consuming and it often creates inadvertent stress among the football fans. The staffs at the stadium face many challenges to manage the ticket sales at the counter when the tickets are sold out while the fans are still queuing. Such frustration may lead to unforeseen calamities. In this work, I propose Online Malaysia Cup Ticketing System (OMaCTS) to give benefits to the organization and football fans. The system provides facilities for customers to make the ticket reservations online and print out their tickets by themselves. The methodology used in the development process is waterfall model which consists of five phases. The evaluation for users is categorized into six construct which are usability, trust, ease of use, understandability, efficiency, and interface. The result shows that most users are satisfied with the interface of OMaCTS with the highest mean of 4.61 (SD = 0.487).

Keywords: e-ticketing; e-commerce; barcode; web-based application

1.0 INTRODUCTION

One of the most popular sports in Malaysia is football and Football Association of Malaysia (FAM) functions as the governing body for this sport in Malaysia. They are responsible for organizing Malaysian national football team and other major football tournaments within the country. There are four main national football competitions in Malaysia. The most prestigious one is Malaysia Super League (MSL) and the others are Malaysia Premier League (MPL), Malaysia Cup, and FA Cup. Malaysia Cup (*Piala Malaysia*) is an annual association football tournament in Malaysia. The competition is currently held at the end of every year's football season and it is joined by sixteen most successful teams in Malaysia's football league that year.

For the time being, the organization uses a manual method to manage their ticket sales for Malaysia Cup matches. Based on the situation, staffs will be placed at the stadium for every match in different states. Usually, they have to provide two different counters for each team to avoid unwanted incidents to happen. The number of fans will increase based on the increasing number of stages especially during the semi-final until the final match. Furthermore, by using a traditional way in ticket sales, the problem will occur when football fans need to queue up at the counter and sometimes they have to wait for a long time to

purchase the tickets. The latter is compounded when the tickets are sold out while the fans are still queuing up. The incident leads to frustrated fans because they have sacrificed their precious time and may lead to stress among them.

In this work, an online e-ticketing system is developed to enable football fans to purchase the tickets at their convenient. The developed system is hoped to assist the organization as well as the football fans in conducting the process.

2.0 LITERATURE REVIEW

2.1 E-commerce

E-commerce system is a dynamic system and one of its important features is it uses urbanization, information technology, and network technology to produce the products required by the market in the quickest way. Therefore, a depth understanding about the customers' needs and timely customer feedback into the design of products, services, in providing customers with more personalized product will be the key to the success of e-commerce businesses in the uncertain market demanded by the environment (Chaffey, 2011).

E-commerce is a new type of trade which relies on modern information technology and network technology. It integrates the material flow, capital flow, and information flow in harmony. E-commerce is based on the survival of the internet. Netizens are the basis for the development of electronic commerce software. Determining the number of users of e-commerce market size is the main body of the electronic trading market (Fjermestad & Romano, 2003). E-commerce has impacts on almost all commercial activities such as gathering the information, shopping, brokering, trading, banking, accounting, auditing, financing, auctioning, negotiating, collaborating, marketing, material supplying, training, partnering, scheduling, manufacturing, distributing, servicing, and retailing (Ismail & Hussin, 2013).

2.2 E-ticketing

E-ticketing can be defined as a model that allows the approved agents to transmit ticketing information directly to the database and all the details of the customers will be stored in it. It means that all the transactions will be done electronically using a website and the customers will give a unique code (booking number / flight number) via internet such as e-mail or over the phone if any (Ruihua & Weiya, 2009). In addition, e-ticketing is becoming popular vastly compared to other online shopping because it gives many benefits to both the company and the customers. One of the benefits is it can reduce the cost in term of printing the paper tickets at once and can save time for both sides. Other than that, buying tickets online is also more convenient because the customers do not need to carry a paper ticket. Recently, many airlines companies also allow their customers to check-in via online over website and can choose their favourite seats (Wang, 2005).

2.3 Online Payment

With the rapid development of e-commerce, online payment becomes more common and third-party payment platform has been developed rapidly (Yang, 2007). Online payment is when the sellers and the buyers do the business through the e-business system on the Internet. The bank or the third party payment platform offers them the online fund settlement service. Generally, we can divide online payment into two types which are the mode based on the IBPG and the mode based on the third party payment platform. The former is a direct payment mode, where the customers will be notified about the online payment through the e-business system which links to the banking system. And the latter is to transfer the fund from the buyer's accounts to the seller's through the third party payment platform (Zheng & Chen, 2010).

2.4 Barcodes

In recent years, barcodes have been used almost everywhere such as in manufacture, postal, transportation, health care, government, retail business, and trade show. The most common barcodes are known as one-dimensional barcodes (1D barcodes) which represent information only on the horizontal direction. For the sake of storing more information on the same surface area, two-dimensional barcodes (2D barcodes) were invented which store information on both the horizontal and vertical directions. Compared with 1D barcodes, 2D barcodes have larger capacity, higher density, and higher reliability. Moreover, they are capable of encoding all types of data.

3.0 METHODOLOGY

3.1 Design

Entity Relationship Diagram (ERD) is a data modeling technique that creates a graphical representation of the entities and the relationship between entities within an information system. Figure 1 shows the ERD of OMaCTS. This system consists of five Entities. The ERD shows the relationship between those entities namely user, admin, games, payment, and ticket. Each entity has more than one attributes and relationships. Each table has its own primary key.

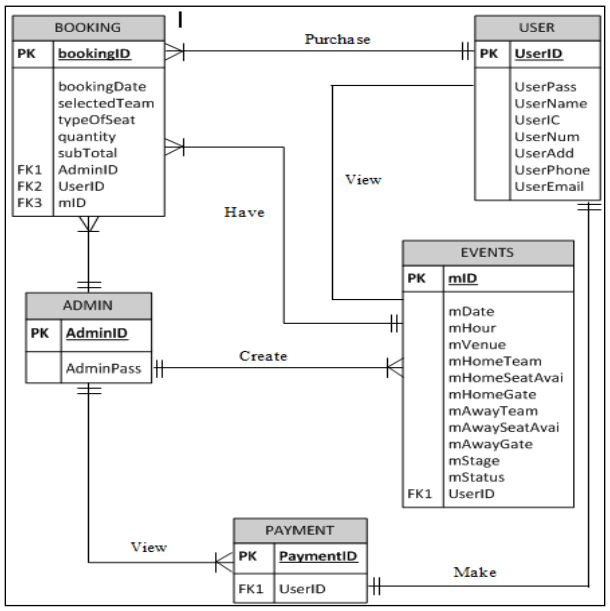

Figure 1 Entity Relationship Diagram (ERD)

The flowchart for ticket purchasing is shown in figure 2. Upon being logged in to the system, the users can view the match schedule and select the desired match. The users then can select the team, type, and quantity of seats for the match. The users can proceed with the payment and followed by the ticket printing. The flowchart for the administrator was shown in figure 3. Upon being logged in to the system, the administrator can update the match schedule, the time, the date of the match, and other details. In order to determine the availability of the ticket for that particular match, the administrator must get the information from the stadium staffs for seats availability. Once this is done, the administrator can set the

ticket as “available”. The administrator can also view all the tickets that have been purchased by the customers to check and validate the tickets. The tickets that have been checked by administrator can be issued to the customers for printing purpose.

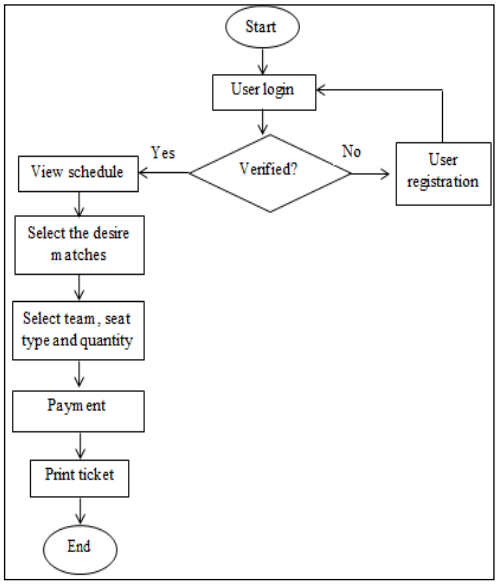

Figure 2 Flow Chart of Ticket Purchasing

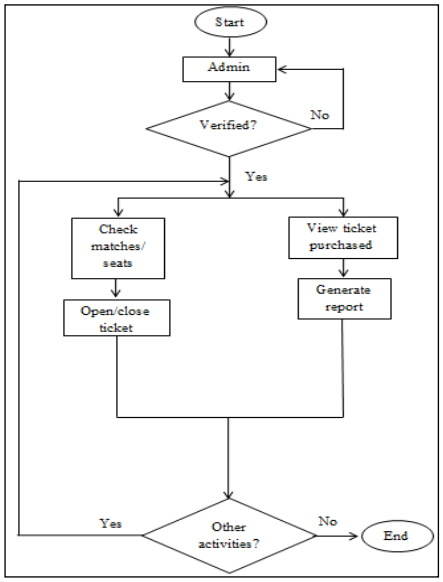

Figure 3 Flow Chart of Administrator

3.2 Development Process

User interface design is a visual part of computer application with the focus on the users’ experience and interaction. In terms of accomplishing users’ requirements, the goal of user interface design is to make the users’ interaction as simple and efficient as possible. A better user interface design is when users feel attracted and can use the system easily. Bad interface affects the users’ time, emotions, and effort when using the system. The interface for users to view the forthcoming matches is shown in figure 4. All the information regarding the matches is updated by admin is displayed on this page.

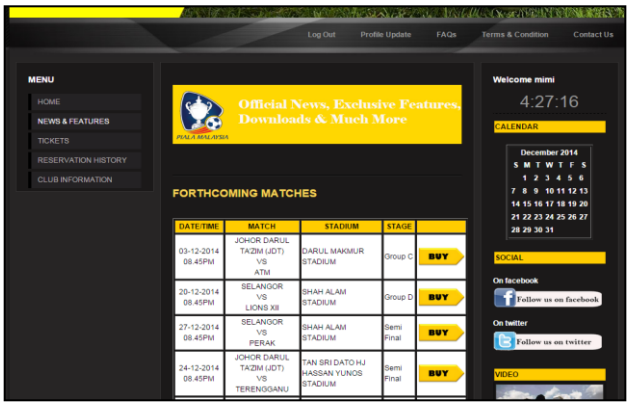

Figure 4 The Page for Users to View the Forthcoming Matches

The interface for users to purchase the tickets is shown in figure 5. They have to choose the team, types of seating, and quantity on the list before they can proceed to the next page.

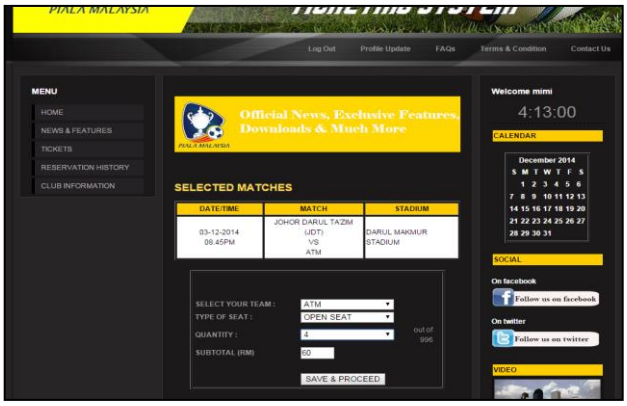

Figure 5 The Page for Users to Purchase the Tickets

3.3 Testing and Evaluation

The questionnaires were distributed to thirty (30) respondents among the students in UiTM (Terengganu) and the process was conducted in December 2014. During the evaluation process, experts and users were involved to test and evaluate this system. Table I shows the system required for this system.

Table 1 The Part of Test Plan

User	System Requirement
Admin	Users can create the events/matches.
	Users can update the events/matches status.
	Users can view the booking details.
	Users can print the report.
Customer	Users can view the tickets via Online.
	Users can reserve the tickets via Online.
	Users can make the payment using a credit card.
	Users can print the purchased ticket.
	Users can edit their personal information.

4.0 RESULT AND DISCUSSION

4.1 Users' Evaluation

The evaluation of the users is categorized into six constructs which are usability, trust, ease of use, understandability, efficiency, and interface. Figure 6 shows the graph of a summary for the highest construct. The highest mean for usability construct is 4.45 (SD = 0.836) which most of the respondents are satisfied with the usability of this system. The highest mean for trust construct is 4.03 (SD = 0.782) which most of the respondents moderately trust this system. The highest mean for ease of use construct is 4.52 (SD = 0.615) which most of the respondents agree that this system is easy to use. The highest mean for understandability construct is 4.32 (SD = 0.736) which most of the respondents agree that they understand the flow of this system. The highest mean for efficiency construct is 4.45 (SD = 0.664) which most of the respondents report that this system is efficient. The highest mean for interface construct is 4.61 (SD = 0.487) which most of the respondents are satisfied with the interface of this system. As a conclusion, the whole result shows that most of the users are satisfied with the interface of OMaCTS with the highest mean of 4.61 (SD = 0.487).

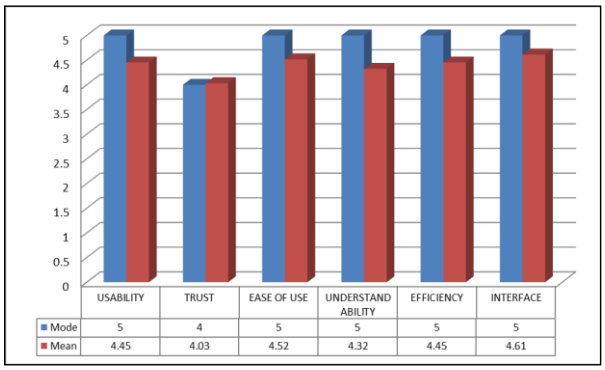

Figure 6 The Summary of the Highest Construct

4.2 Experts' Evaluation

In order to strengthen this system, three expert users have evaluated this system. Table II shows the comments and suggestions from the three expert users.

Table 2 Comments and Suggestions of Expert users

Expert	Comment	Suggestion
1, 2	- Wrong format usage of the date. - Menu list is not sorted out alphabetically. - Wrong term usage on the button. - Ticket is not complete without the barcodes.	- Change the date format from mm/dd/yy to dd/mm/yy. - Sort menu list alphabetically. - Change "Book ticket" to "Buy ticket". - Prepare the barcodes.
1, 2	- Admin should not view the customers' details because too many customers will register. - The icon used in the system is not suitable because the icon does not represent the purpose.	- Delete "View Customer" in the system. - Change the icon. For example, drop down menu.
3	- In the payment form, expiration year must have month and year, not only year. - System should detect the expiration date of the credit card.	- Add month field. - Detect the expiration date of the credit card.

4.3 Test Plan

The test plan is carried out by two types of tester which are admin and customer to test the usability and functionality of this system. The result is shown in Table III.

Table 3 Test Plan

User	System Description	Developer	Tester
Admin	Users can create the events/matches.	Pass	Pass
	Users can update the events/matches status.	Pass	Pass
	Users can view the booking details.	Pass	Pass
	Users can print the report.	Pass	Pass
Customer	Users can view the tickets via Online.	Pass	Pass
	Users can reserve the tickets via Online.	Pass	Pass
	Users can make the payment using a credit card.	Pass	Pass
	Users can print the purchased ticket.	Pass	Pass
	Users can edit their personal information.	Pass	Pass

5.0 CONCLUSION

There are a few suggestions for the improvement construction to enhance the ability and quality of the "OMaCTS" website in the future. First, expand the system to be more user-friendly and to provide a form so the customers may give the feedback and suggestions in terms of service provided by this website. Second, expand the system by providing the shopping cart so football fans may purchase many tickets at one time but still limit the purchase. Lastly, in the payment field, the system should detect the credit card number so the customer cannot buy the same ticket for many times and it can prevent from the ticket tout. As a conclusion, it is highly recommended to continue enhancing this project in the future to make it

more effective, attractive, functional, and more usable. It is hoped that this project will give benefits to people.

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