MOBILE E-TICKETING RESERVATION SYSTEM FOR AMMAN INTERNATIONAL STADIUM IN JORDAN

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ABSTRACT

This research introduces a Mobile E-Ticketing system for Amman International Stadium in Jordan to provide the crowded with an E-ticket for watching matches without losing time and effort. Fans usually buy the tickets manually from shops or out the gates of the stadium, this process tiresome because the huge number of the crowd, as it would take long time to wait in lines, choose the match time and seat, and the most disappointing is reaching the stadium and cannot get tickets. The design research methodology or sometimes called "improvement research" contained the major steps: Awareness the problem, suggestion, development, evaluation and conclusion. Therefore this study proposed a mobile system that enabled booking while Crowed are at home or else where can get tickets easily and save time and efforts. From the testing and evaluation conducted, the prototype fulfills the requirements needed by the mobile users.

Key words: E-ticket, mobile booking, m-commerce, prototype, reservation, M-Ticketing.

1. INTRODUCTION

Mobile technology is most famous portable technology. The mobile devices include laptop computers, Personal Digital Assistances (PDAs), and mobile phones. The mobile services are different from the usually mode in the capacity to provide services of temporal and spatial constraints. They are also different from the usually interpersonal services that are delivered in spot, or from other types of e-services, such as online services, where the service delivery is linked to a specific LAN network. Mobile applications allow users to use the Information Technology without being bound to a single location; furthermore providing users with the flexibility, accessibility, and the ease of use. M-Ticketing is one of these applications for client services such as: sporting games, movie theaters, and public transportation [1]. This research will propose a Mobile E-Ticketing Reservation system for Amman International Stadium; it is the largest stadium in Jordan with a supposed capacity of 25,000 seats.

E-Ticketing is one of the most important services in E-Commerce. An E-Ticket is a paperless electronic document used for ticketing travelers, mainly in the commercial airline industry. There are some examples of Internet ticketing all over the world, especially in the airline industry. E-Ticketing is "the foundation" on which airlines can reduce costs and improve customer service [2]. The E-Ticketing strategy has been well exploited in the airline segment [3], however in public transportation as a whole, especially the railway, metro, bus, implementation techniques have been mixed due to the varying business environment and travel culture. E-Ticketing makes customers' lives easier, and that can make you their carrier of choice [4].

Nowadays the internet becomes one of the most important communications; marketing and business become medium in the world. It shows a collection of new ways to reach the customers for what he asks for [5]. Mobile Commerce is the use of information technologies and communication technologies for purpose of mobile integration of different value chains a business processes, and for the purpose of management of business relationships. [6] , also that M-Commerce is similar to E-Commerce in that the customers make purchases through the internet. [7] Levels that the E-Commerce refers to the use of electronic means and technologies to conduct commerce, including even it were -business, business-to-business, or business-to-consumer interaction. Mobile E-Commerce is the arena in which innovation and powerful solutions are anticipated [8]. The success of mobile communication is changing the e-commerce into m-commerce and the mobile devices users are considered as a large group of possible market [9]. [10] says by 2010, over 300 million will be using mobile phones and PDA’s.

Technology acceptance model (TAM) expected wide support through validations, applications, and replications. TAM is the most powerful research model in the studies of the determinants of information technologies (IT) acceptance. Users to accept and using the technology, the model TAM is the most cited. According to TAM, apparent usefulness and perceived ease of use are the primary inspiring factors for the adoption and use of new technologies. One of the apparent usefulness are using technology will bring better results are considered to have a degree. Useful capacity is being used advantageously. However, perceived ease of use a specific need to use the system, the degree of effort is about the recognition. In this case, the great difficulty and the freedom from work is the concept of ease. Perceived usefulness in TAM model at first refer to task related efficiency, performance, and effectivenes [11].

Figure 1 shows the TAM model, a key purpose of the TAM to give a basis for tracing the contact of external issues on internal values, attitudes and intentions [11]
2. RESEARCH METHODOLOGY

The research methodology used in this study is an agreeable method, excellently chosen, described and accepted among many researchers in Information System Research Design. According to [12], the design research methodology includes the major steps as shown in Figure 2.

2.1 Awareness of Problem
The most important thing in the methodology is the understanding the objectives and the scope, and also the problems which you are trying to solve. So, the awareness of the problem rises because of the need to reserve tickets for Amman international stadium by fans using mobile devices. After that the problem statement, the objective and the scope will be clear.

2.2 Suggestion
This study suggests using Mobile to make booking for Amman international stadium in Jordan, so the fans can easily access and get the ticket information, the output of this phase will be the temporary Design. The design of the system includes UML diagrams. The UML diagrams are general use case diagrams, detailed sequence diagrams for each use case, and class diagrams.

2.3 Development
The prototype is developed using ASP.net (Microsoft Visual Web Developer 2005 Express Edition (VB)) programming language environment. In this level the booking for Amman international stadium Prototype will be developed. The prototype will be use as method. The prototype process include three steps: interacting between the prototypes and the users, users can have a good idea of their information requirements. The users approved the application if it can be used as a final system [13].

2.4 Evaluation
The prototype will be evaluated after the development phase is done, through the interview with the stadium management if it matches their acceptance and through distributing questionnaire on the respondents.

2.5 Conclusion
No one can deny the importance of the mobile it is like the backbone of our society and one of the best solutions to make everything easy and effective on the users. In this study using mobile to get a ticket for watching match will simply make everything is possible and done in a short time.
3. SYSTEM DESIGN

The design of the system includes UML diagrams, and a sketch of the system's architecture. The UML diagrams involved arouse use case diagram, class diagram and sequence diagrams. Use casediagram, as displayed in Figure 3 describes the overall interaction between the prototype and its fans as how the fan will start the steps for ticket booking for watching a match in Amman international Stadium.

![Use case diagram](image)

**Fig. 3. Use case for the prototype**

The main use case diagrams model the functionality of the mobile user as the actors in the system. The functionality of the mobile user is the ability to interact with the system by viewing the capability information of his device and to be able to get a ticket.

### 3.1 Design Interfaces for the Prototype.

![Main page](image)

**Fig. 4. Main page**

The main page includes two options; the information and the ticket booking, when you select the ticket booking button the next figure will appear then fan can enter data such as his name phone number, age, and the class that he wants as shown in figure 4. After filling the data the fan will press on the pay button to display the payment method and this prototype provide tow method; Prepaid and Credit, card as shown in figure 5.

![Payment method](image)

**Fig. 5. Payment method**
4. RESULT DISCUSSIONS

The evaluation was performed after the system has been developed to determine the level of usefulness and operability of the system; it is tested through a questionnaire which was distributed to the public. The sample size was 30 respondents; each participant was given a brief description of the functionality of the prototype system. Afterwards, they were allowed to practice and explore the prototype, finally were given a set of prepared questionnaire to obtain their perceptions. The aim was to see the level of satisfaction and perception of the developed prototype ease of use and operability of the prototype system. The questionnaire consisted of two main sections, firstly General information which intended to gather demographic data about the sample and its distribution. The second part included questions about the perceptions of the participant regarding different dimensions of usability (Usefulness, Ease of Use, and Over All satisfaction), the questions were close ended and scaled from "Strongly disagree" to "strongly agree". The data collected through the questionnaire was analyzed using SPSS software, version 12 is the available. Two different techniques were used (Descriptive statistics), the following figures and tables shows the results obtained from the data analysis. The following table will show the reliability statistics for this study and it is = 65.5 % which it is mean acceptable. According to [14] when the cronbach alpha is more than 60% the study is acceptable.

Now we will elaborate the general question part as in figure 6 the percentages for the gender in case male or female, frequency and percentages of the age range in this study the most range was 21-30 and 31-40, the frequency and the percentage for the education case and as you can see the most percent was given to the master, frequency and the percentage for the period of using mobile as you can see the most percentage was given to the people where they use the mobile more than 3 years.

Fig. 6. General information of fans

5. CONCLUSION

Mobile Ticketing for Amman international Stadium Prototype helps the public by gaining an easier way to make their reservation by providing them with the necessary information of the ticketing and allow them to make reservation for watching the football match. From the testing and evaluation conducted, the prototype fulfills the requirements needed the mobile user. However, improvements has to be made for the prototype to be more user friendly by adding some images and colors to the prototype which needs a graphics designer.

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