Implementation process the design model business of e-ticket transportation bus in Medan

Desilia Selvida, Muhammad Zarlis

Fakultas Ilmu Komputer dan Teknologi Informasi, University of Sumatera Utara, Medan, Indonesia

desilia.selvida@gmail.com, m.zarlis@usu.ac.id

Abstract. One of the concepts of E-Ticket Bus is the application of information technology to simplify process of public services so that it can help public service users and have an important role for government and entrepreneurs. Bus is an important public transport. Bus is an important transportation of metropolitan residents. The urbanization process becomes faster than usual. In this case the payment of bus tickets on buses station of located in Medan, especially for the city of destination Medan-Banda Aceh is still using the ticket paper. Traditional way like this has a weakness, because the passengers have to queue up 2 times, which is queuing at the ticket purchasing counter and queuing at the bus entrance. From this research will encourage bus companies, especially in Medan to include E-Ticket for Bus in the existing service to repair and improve transportation services. Mobile of E- Bus was developed to help passengers to order tickets by mobile. The business model built can provide benefits for the company, and passengers. Transportation services can be made available to users anywhere, anytime and any device in booking bus tickets.

1. Introduction

One of the concepts of e-ticket bus is the application of information technology to simplify the process at public facilities so that it can help public service users and the important role for government and entrepreneurs. One of it is the payment of ticket with information technology and reporting process that is accountability and accurate.

Bus is an important public transport. Bus is an important transportation of metropolitan residents. urbanization process becomes faster than usual. The level of urban public service also increases. For bus services other than the main purpose of carrying passengers, but there is a business model for the company [1].

The platform is described as a multisided market, where the value is made for all network members. So that, the purpose of a platforms is to facilitate the exchange of products, can be stuffs, services or even social currency.

Although the business model has been an integral part of trade and economic behavior since pre-classical times, the term was first mentioned in an academic article in 1957. The concept of business model became prevalent with its emergence from the internet in the late 1990s. Where business models are growing like platforms, startup, with the concept of marketplace and so forth [2].

Currently, the payment of bus tickets on bus station in Medan, especially for the city of destination Medan-Banda Aceh is still using the ticket paper. Traditional way like this has a weakness, because the passengers have to queue up 2 times, which is queuing at the ticket purchasing counter and queuing at the bus entrance. The most complicated is during the
recapitulation and reporting of ticket usage which must be recalculated with irregular accuracy and take a very long time.

Therefore, it is necessary to apply information technology especially for bus ticket of Medan - Aceh is needed to support the process of managing and selling tickets. With web-based and mobile application based on android.

2. Research Background

Sathananthan Suthamathy, et al [5], applying the business model is a business description, and is shaped to realize the potential value of business operations when the company expects to become increasingly digital.

Apanasevic Tatjana and Jan Markendhal [2], implements mobile ticketing services into a platform to integrate airline tickets, parking, bicycle and car rentals. The results show that there are a number of challenges related to services, technology, and finance of mobile ticketing domains because of this, with the help of policy pricing, many public transport companies are pressing their choices against customers [3].

Nor Alina Binti Ismail and Husnayati Binti Hussin [4] told the implementation of e-ticket can help facilitate online transactions between companies and customers. This study examines the satisfaction of e-ticketing system of airlines in Malaysia. Where the respondent’s target for this study is among internet users who have used other Malaysian flight services.

From previous research, there have been many studies that have implemented e-ticket such as e-ticketing airlines in Malaysia, and some other research also apply some models such as platform and startup model with business model offer to the company. In this study the authors will apply e-ticket bus in Medan with some business models that have advantages to be offered to the company.

3. Methodology

Research methodology is a process or scientific way to get data to be used for research purposes. The methodology is also a theoretical analysis of a method or method.

a. Flow Of Analysis

Problem analysis was done by using fishbone.. The problems that emerged were identified by using the fishbone diagram shown in figure 1.

Figure 1. Fishbone Diagram
Ishikawa diagram (fish bone) is used in analyzing a problem. This diagram is indeed shaped like a fish bone whose muzzle is facing right. This diagram will show an impact of a problem, with various causes. Effect is written as a muzzle of the head. While the fish bone filled with the causes in accordance with the problem approach. The structure and function of Ishikawa diagram is as follows.

The head of the fish is usually always on the right. In this section, written output of the intended research is in the form of e-ticket bus. While the event is influenced by the causes that will be written on the fish bone.

This event is often a problem or a topic to be found out cause. Parts of fish bones, written categories that can affect the event. The most common categories are used such as everyone involved from a process, a method for knowing how the process is done, the engine, and the company.

4. Analysis and Design System

With regard to bus ticket booking transactions, the company has several lists of bus fleet and information related to ticket price, destination city, bus facility, seat number, etc.

When customers come to the bus station to make bus ticket reservations, the customer will get a reservation confirmation bus ticket in the form of departure schedule and seat number that has been ordered. This figure is a flow of document, explaining the flow of ticket purchasing process at the moment shown in Figure 2.

![Figure 2. Flow of document ticket purchasing process](image)

4.1. Implementation of system

From this research resulted a system for e-ticket bus with business model offered, implementation of some activity, existence of action, action or mechanism of a system, expression of mechanism not merely activity, but a planned activity and done in structured.

To illustrate the proposed system, the author uses the use case diagram. Use case diagram is a diagram that presents the interaction between use case and actor. Use case is used to facilitate in analyzing scenarios that we will use in subsequent phases by assessing the scenario. It is the use case diagram of e-ticket bus shown in figure 3.
In the table 1 below will explain about use case diagram of e-ticket bus business model design in Medan. There are several access rights of the system to be designed, the access right can be used by 3 actors in the form of User, Super Admin, and Admin. The following explanation of the activities of each actor in performing the following access rights.

Table 1. Table Use Case User

| Use Case | System |
|----------|--------|
| User     | Users open the system via mobile apps or websites and then choose the purchase of bus tickets or bus rental. After that, user searches the route, chooses the schedule, chooses the seat number, and register themselves. Once completed, the user will make payment via credit card or atm. After paying, the user will receive an appealed ticket from the system. Furthermore, the user only scan the code at the ticket on ‘barcode scan of bus’ counter before departure without having to queue up at the ticket booth anymore. |

Table 2. Table Use Case Super Admin

| Use Case | System |
|----------|--------|
| Super Admin | Super admin has full access rights to the system, super admin to login, manage ticket data, then manage the passenger data who have done registration, and manage payment transactions from passenger data who have made ticket payments. Super admin also manages admin data that has access to the system, and then manages data reports transaction, ticket, and data of passenger. |
Table 3. Table Use Case Admin

| Use Case | System |
|----------|--------|
| Admin    | Admin has multiple access rights to the system, first admin logs in, manage ticket data, passenger data, and admin has access to view payment transaction reports, ticket data, and data of passenger. |

4.2. Enterprice Business Model

A business model is a method of doing business in order for a company to generate revenue to maintain its existence. The business model also determines how the way and value can be added by a company in offering products or services contained in the company. Simply put, a business model is a plan of how a company will make money. The following is the business model enterprise as shown in figure 4.

![Enterprise Business Model](image)

Figure 4. Enterprise business model

Figure 4 explain the form of business model within a company. In this research there are several business models that will be applied from the system to be designed. Here are some business models offered to Companies, Passengers, and Systems. Business models offered to companies such as finance, global partnership, digital development and others.

The business model offered to companies is the company will get ads for free, the company can also monitor passengers entering and leaving the bus so that it will minimize illegal passenger fraud. The company can also know the route of the bus, so that if there are obstacles in the way the company will know the position of the bus. With the business model E-Ticket Bus directly the company can know the financial statements clearly.

The business model for passengers, which will automatically get promos or discounts when buying tickets online. Passengers will also get notifications a few hours before departure. Passengers will also know the cities that are traversed to the destination city. Passengers also only perform barcode scans without having to queue up on ticket exchange anymore.
5. Conclusion

From this research will encourage companies of bus, especially in Medan to include system of e-ticket bus in the existing service to repair and improve transportation services. Mobile ticketing for bus are developed to help passengers book their tickets via mobile devices. The business model built can provide benefits for the company, and passengers. Transportation services may be available to users anywhere, anytime and any device for booking of bus tickets.

6. References

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