# Leveraging on MyTransporter Mobile Apps to Enhance the Quality of Life: A Conceptual Solution

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**Abstract -** *The usefulness, dependency, and the criticalness of mobile applications have increased greatly in recent years, allowing public to perform useful tasks in the fly. This increase in usefulness and dependency in enhancing human quality of life is facilitated by these smart mobile devices. Through the use of self-service mobile devices and apps, the traditional marketplace interaction is being replaced by a digital and ubiquitous marketspace transaction, in which the foundation of customer-company interaction has changed. This paper discusses the use of mobile applications, called "MyTransporter", in the transportation services sector as a platform to make the public transport services timely, effective, and convenient. The purpose of this mobile application is to help customers to provide and find transport service providers. MyTransporter app will become a platform which allows the public with smartphones to make trip service requests, whereby available transport service providers can respond to these requests. Another option is where customers can view the transport service providers availability and book the service through MyTransporter app. A literature review was conducted on studies that evaluate mobile applications. The findings from the reviews were compared against our proposed conceptual mobile application in the public transportation sector based on the suite of business tools – Business Model Canvas (BMC), Value Proposition Design (VPD), and Environment Map (EM).*

*Key Words: Public Transportation services, Business Model Canvas, VPD, EM, Mobile Application.*

## 1. INTRODUCTION

Nowadays, the public need to be mobile and move around to access education, jobs, events, recreational activities, and social and cultural networks. However, there are individuals and families in the society that face challenges in getting and using public transportation either because they do not have their own vehicle or the lack of public efficient transportation services in their area. There will be issues if there are emergencies cases where they need to reach the destination in time.

In responding to these problems, an application app named 'MyTransporter' is being introduced to solve the problems. There are various problems that can be solved by using the app. Firstly, the apps can save time. The public can have the drivers (or the transport service providers) within minutes after they booked the driver they wish to have, by using the app. So they will not face the same problems e.g. difficulty in reaching certain destinations on time.

Secondly, the public will minimize their transportation costs. If the cost of riding a taxi is to be compared with the cost when using the apps, it will show a significant saving. Thirdly, the public would not need to waste energy as they do so when they need to wait for the public transport. It is quite troublesome to walk a distance just to wait for the public transport. Sometimes the public transportation is not timely. It is more comfortable and safer to use and leverage on the app. So by using the MyTransporter app, problems and inconveniences can be avoided or reduced.

## 2. BACKGROUND

MyTransporter is a mobile application to help the public to provide and find transporter service. Nowadays, most people especially students have started to use transporter service as their medium of transportation since it is much more comfortable and cheaper than public transport. This was supported by Andreassen (1995) where he stated that

"in most countries public agents are losing relative market share to private alternative due to perceived of service quality". One of private agents that has challenge the market is transporter service which provide a personal transporter for the user from user current location to any destination.

This is one of the opportunities to promote MyTransporter app to the public as there is still no specific platform for transporter service despite the increasing number of the service's customer. Students who provide transporter service usually will advertise their services through social media like Facebook and WhatsApp. Meanwhile, students who need a transporter service which is the 'customer' will go through social media and find the transporter's advertisement and randomly choose available transporter. The problem with this method is the customer will have to personally contact the transporter and ask if his/her service is available for the requested time. If not, the customer will have to find another transporter and repeat the same steps until the customer find the available transporter. Looking at this problem, we find the need of an official platform for the transporter to advertise their services and for the customer to search for the available transporter.

Therefore, searching for available transporter for the requested time can be frustrating and time consuming. As for the trend nowadays, people tend to find the easiest, simplest, and least time consuming way to complete a task by using internet and wireless technologies that make it a good opportunity to develop the app. This is supported by Andreassen "time traveling seems to be a quality area which high frequency users of tram and train find critical with regard to improvement" (1995). This statement prove that user find time are very worthy and their will use whatever service that is time saving. Regarding this matter, transporter service has taken the opportunity to stand tall within the public transportation services. Indirectly, this has become an opportunity to provide an official platform for booking and promoting transportation services which will maximize user time saving.

Among public transportation services, taxi service stand as the closest competitor to transporter service as the service offered is almost the same. However, transporter service can overcome taxi service in term of service price and quality. This is because, it is known that taxi service can be pricey with the quality of the service cannot be guaranty. Meanwhile, with transportation service the price is affordable and the service quality can be guaranty as customer can choose their transporter. Andreassen (1995), stated that "users judge the offer to be low service quality and in this respect they feel that the price is too high", which means that customers can judge the service quality and have a freedom of choice. However, as for now the freedom of choice is still limited as there is no way to know the feedback about a transporter. This is also is an opportunity for MyTransporter app as through this app customer can rate and give feedback about the

transporter. Then, other customers can view it and choice their transporter based on the feedback. This way, customer will feel more secure and confident to take transporter service.

## 3. PROBLEM STATEMENT

This section will explain the current challenges and problems that customers and transporters are facing. The problem statements are based on observation and survey:

a) **Security and comfortability**
   As the provider for transporter service is increasing, the customer will have variety of choice for their transporter. However, there are limited information the customer can get about the transporter. Usually, the transporters will only provide information about their gender, contact information and car type. However, this is not enough to ensure a comfortable and secure service from the transporter to the customer. Customer will need a rating and feedback information to be able to ensure the comfortability and security of the services.

b) **Time consuming**
   Time is a major problem for both side of transporter service user and provider. Since the transporters do not have a formal platform to advertise their service, the transporter will have to keep updating their advertisement time by time. Meanwhile, the customer will have to personally contact the transporter to discuss about the service. The possibility is either the transporter service is available for the customer requested time or not. If not, the customer will have to search for another transporter and repeat the step until the find the available transporter. This can be very time consuming for the customer. Customers will need a system that they can see the transporter availability so that they will not waste time just to search for the transporter.

## 4. METHODOLOGY

A survey was conducted to gather the opinion of International Islamic University Malaysia (IIUM) students and the residents near IIUM Gombak main campus about the usage of mobile application for transportation service. The method of sampling that was used is the cluster random sampling. This is because there are certain areas that need to be covered in doing the survey. Besides, 20 passengers from the undergraduate students of IIUM and 10 passengers from the residents around Gombak area where chosen as a sample of this study. The questionnaire has 10 questions or respondents to answer.

## 5. OBJECTIVE

The main objective of this mobile application is to provide a mobile platform which allows consumers
with smartphones to submit a trip request, which is then routed immediately to transport services providers easily without wasting consumers and transporters valuable time. In this era of high impact and fast moving lifestyles, the effective and efficient transport service providers are really important and become the first choice for everyone.

## 6. LITERATURE REVIEW

Many of us aware that the usage of smartphones keep increasing not only in urban region but also in rural area because of the emergence of Android and Apple's iOS operating system. This theory is supported by Sardey, Deshmukh, Mandlik, Shelar and Nerkar (2014) when they highlighted that Android is the latest and have a rapid growth of technology accessible by all people around the globe since end user acceptance toward the usage of Android spiked [1]. This kind of development is comparable with the growth of technology in these modern days. All of these modern technologies with a lot of amazing gadgets had change our lifestyle as well as changing the way we interact with transportation system. Transportation system, with a rapid and fast growing of technology, plays a role as important as the many other important sector like education, tourism and business sector. Research made by T. Murray, Davis, J. Stimson and Ferreira(1998) shows "the transportation system has a great influence and impact on regional patterns of development, economic viability, environmental impacts, and on maintaining socially acceptable levels quality of life". This hypothesis clearly shows that transportation system is necessary either for anticipated future growth or development. The increasing population in terms of numbers and urban planning gives great challenges for the transportation since a more strategic transportation system needs to be created, implemented and sustained.
The system that we propose which is a hybrid application, MyTransporter app allows the users or passenger to reach for transporter easier than taking public transportation such as buses, light rail transit (LRT), and taxis. Android and iOS are the chosen operating system for the application because both are mobile technology and easy to gain access. According to Sardey et al, "Android is a user friendly platform, thereby enabling ease of access for all the users" (2014). Besides, increasing the chance of transportation system to be more reliable, this application can also help those who in need. T. Murray et al (1998) stated that it is important in providing transportation options for those who does not have access to a motor vehicle. Furthermore, T. Murray et al 1998 argued that (as cited in Nash, 1982; May and Roberts, 1995), "the importance of public transport services in a successful

transportation system is widely recognized". However, not all public transportation have easy access to go anywhere anytime because public transportation is only provided in certain area but it is different with the application, MyTransporter app.
T. Murray et al highlighted "transportation planning is a critical element in the evolution and growth of metropolitan regions" (1998). However, there are a few constraints that need to be fulfilled for using Android and iOS as the platform to make transportation system easier.

According to Sardey et al, those constraints are:
- Users or passengers need to have GPS connected in their phones.
- The platform users must be Android and iOS users only.
- The application must be user friendly for the user to comprehend and able to use it.
- The application needs a good internet connection.
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Not only that, Sneha and Chaitra (2014) also provided a few constraints for the application such as:
- The Android version must support the application.
- The application should work offline while showing the information regarding the availability of the transporter and others.

Since the project will be using Android and iOS as the platform for mobile, choosing hybrid application is the best choice. Setiabudi and Tjahyana (2015) supported the hypothesis by stating that "hybrid application or Cross Platform mobile application is considered to be the right solution for developer to build iOS and Android application without mastering many programming language and downloading any SDKs (software development kits) for each platform".

## 7. CONCEPTUAL SOLUTION

'MyTransporter' is a mobile application develop to solve the problem of transportation service among IIUM student and residence around Gombak area. Business model canvas, value proposition canvas and environment map have been utilized as a suite of business tools to solve the problem conceptually.

**Business Model Canvas**



*Figure 1- "MyTransporter" app Business Model Canvas*

The conceptual solution based on business model canvas (BMC) shown in Figure 1, is as follows:

1.  Value Preposition
    The Value Propositions Building Block describes the value in the service that MyTransporter app creates for Customer Segments. This included:
    *   MyTransporter app can save customer's time and energy in both searching for customer and transporter service provider.
    *   MyTransporter app allow customer to choose their type of transporter.
    *   Transporter service is cheaper than taxi.
    *   MyTransporter app is convenience to the user in term of time management and flexibility.
    *   Regular member will get a member privilege.

2.  Customer Segments
    The Customer segments Building Block defines the two groups of people MyTransporter app aims to serve. The focus customer segments are:
    *   The first customer segment is the people who use transporter services.
    *   The second customer segment is transport service providers.

3.  Customer Relationship

The Customer Relationship Building Block defines the values that MyTransporter app will offer in order to maintain the relationship with the customer. The values are:
    *   The punctuality from both types of customer.
    *   MyTransporter app stands as self-service app.
    *   MyTransporter app will always be available. However, the customer can set their own availability.
    *   MyTransporter app serves as transporter service advertisement platform.

4.  Channels
    The Channels Building Block describes how MyTransporter app will deliver its value proposition to the Customer Segment through the channel. The main channels include:
    *   MyTransporter app can be downloaded through PlayStore.
    *   The satisfied customers can spread the word about MyTransporter app and recommend it to new potential customers.
    *   The power of social media – An app with good feedback on social media can easily get a lot of customers.

5.  Revenue Streams

The Revenue Streams Building Block represents how MyTransporter app will generate revenue and profit from each Customer Segment. This included:

- Subscription fee from each Customer Segment.
- Interest from PlayStore for every times the app get downloaded.

6. Key Partners

The Key Partnerships Building Block describes the suppliers and partners that help MyTransporter app to function and deliver its value proposition. The key partner is:

- All transporter service providers, individuals and companies.

7. Key Activities

The Key Activities Building Block describes the most important things MyTransporter app must complete and focus on, so that MyTransporter app business model can work. The key activities included:

- Providing a robust platform for the public to book for transporter services.
- Providing a stable digital platform for the transporter to promote their services.

8. Key Resources

The Key Resources Building Block describes the most important assets required to make MyTransporter app working. The key resources include:

- The availability of the MyTransporter app to the each customer segment.
- The availability of the transporter's service.

9. Cost Structure

The Cost Structure describes all cost incurred to operate MyTransporter app which include:

- The cost for the application regular maintenance and updating.
- The cost to promote MyTransporter app to each customer segment.
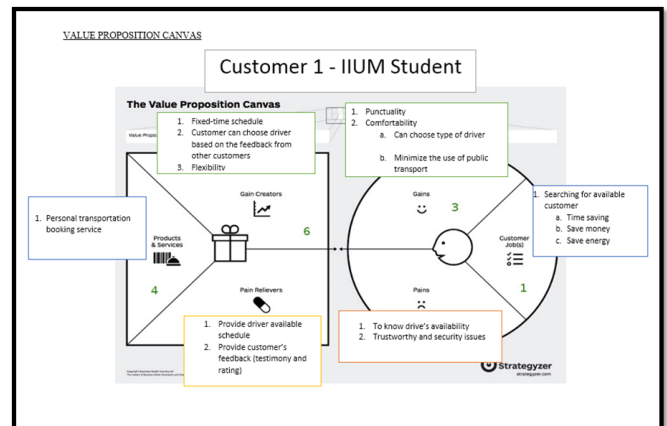
## Value Proposition Canvas (VPD)



*Figure 2.1 – VPC for Customer 1 (IIUM Student)*

Figure 2.1 describe the each Customer Segment for MyTransporter app in details through Value Proposition Canvas (VPD). VPD is the canvas and information gain we will use to figure the hardship and need of our targeted customers. Figure above is the VPD that explain the Customer Job(s), Gains and Pains and how MyTransporter app responds to each segment. This VPD explained on 'IIUM Student' customer segment.
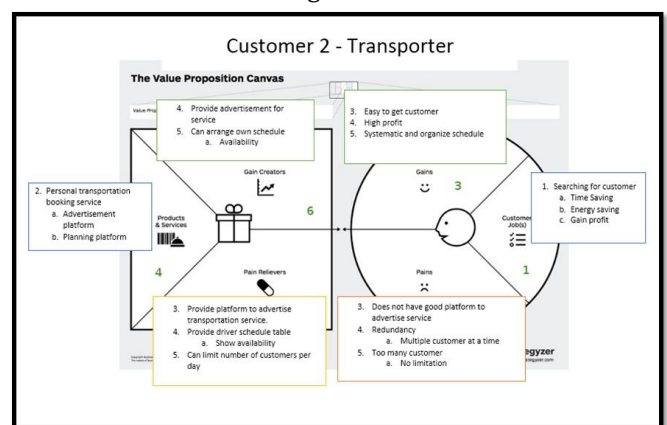


*Figure 2.2 - VPC for Customer 2 (Transporter)*

Figure 2.2 describe the each Customer Segment for MyTransporter app in details through Value Proposition Canvas (VPD). VPD is the canvas and information gain we will use to figure the hardship and need of our targeted customers. Figure above is the VPD that explain the Customer Job(s), Gains and Pains and how MyTransporter app responds to each segment. This VPD explained on 'Transporter" customer segment.
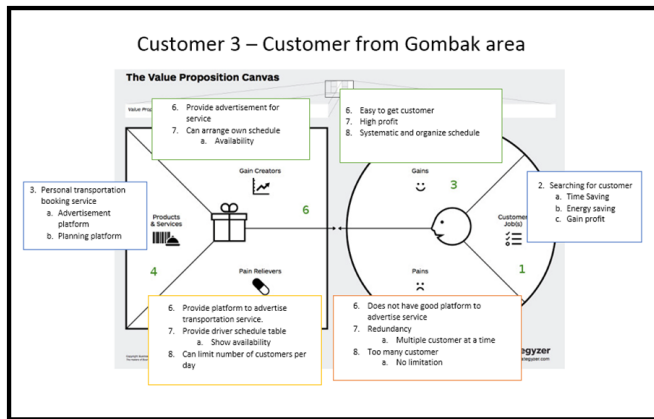
*Figure 2.3 - VPC for Customer 3 (Gombak Area)*

Figure 2.3 describe the each Customer Segment for MyTransporter app in details through Value Proposition Canvas (VPD). VPD is the canvas and information gain we will use to figure the hardship and need of our targeted customers. Figure above is the VPD that explain the Customer Job(s), Gains and Pains and how MyTransporter app responds to each segment. This VPD explained on 'Customer from Gombak area" customer segment.

**Environment Map**
The Environment map will explain the marketing opportunity, the current trend, the demand and treats of industry, and also the general factors in global that can affect MyTransporter business model.

i.   Market Forces
   - Market segments
     - Users with an interest in tech-based convenience
     - Users who value time; People who appreciates having a ride confirmation shortly after the need arises
   - Need and demands
     - customer want to travels frequently without wasting time just for waiting to the taxi
     - looking for the cheaper convenience
   - Market issues
     - Trust and Safety Issues
   - Switching costs
     - Get the best services from the transporter with the cheaper price compared to using taxi services.
   - Revenue Attractiveness
     - The app that can easily use and see how far away the nearest cars are, set a meeting point on the screen, and hail a car to meet you there and can even see the driver's information (including ratings).

- No more waiting for a long time.

ii.  Key Trends
   - Technology Trends
     - The increasing use of gadgets with android
     - Almost everyone regardless their age know to use gadgets
   - Regulatory Trends
     - The introduction of new tax (GST) urge people
   - Societal and Cultural Trends
     - People tend to find cheapest, easiest and the very least time consuming way to complete tasks and widely use of internet make it possible to achieve
   - Socioeconomic Trends
     - The current generation always want things to be better- today the system might ease them but no guarantee in the future
     - Changing of needs- In the future almost each and every one would have their own transportation

iii. Industry Forces
   - Competitor(Public Transport)
     - Bus :
       - i. Advantages
         : Cheaper than personal transportation service
       - ii. Disadvantages
         : Comfortability and time flexibility
     - Taxi :
       - i. Disadvantages
         : Expensive
   - Substitute product (MyTaxi)
       - i. Advantages
         : Availability in term of pick up place
         : Free of charge app
   - Stakeholder (IIUM Management)
     - Giving permission to bring car in IIUM
       - i. Permission is only for 4th year students
       - ii. Limited driver

iv.  Macro-Economic Forces
   - Global Market Conditions
     - Rate of inflation
     - Economic fluctuation
     - The rate of pollution keeps arising make less people use public transport
   - Capital Markets
     - Market uncertainties since the application is only for local and cover certain areas.
     - Daily lifestyle use smartphone for comfortable life
   - Commodities and Other Resources

- Oil price increasing – transportation fees tend to increase
- Unemployment rate cause less people to go out.
- Economic Infrastructure
  - Easy to get access to the transporter without having to search everywhere

## 8. CONCLUSION

MyTransporter is a conceptual mobile application developed to solve the transportation service problems among students and residence around IIUM Gombak main campus. The application has the transport service providers' database where customers can access and choose for their transportation needs. The information about the transporters will include their gender, types of car used, availability and feedback from previous customers. Based on the previous customers' feedback, new customers can make timely comparison and make quality decisions on selecting transport service providers. At the same time, MyTransporter provides an advertisement platform for transport service providers to use for promotions.

## REFERENCES

[1] Yasha Sardey, Pranoti Deshmukh, Pooja Mandlik, Saurabh Shelar, & Minal Nerkar. "A Mobile Application for Bus Information System and Location Tracking using Client-Server Technology." (2014). International Journal of Emerging Technology and Advanced Engineering.

[2] Alan T. Murray, Rex Davis, Robert J. Stimson, Luis Ferreira. (1998). "Public Transportation Access."

[3] Sneha M & Chaitra N Urs. (2014). "Darideepa: A Mobile Application for Bus Notification System". International Conference on Contemporary Computing and Informatics(IC31).

[4] Djoni Haryadi Setiabudi & Lady Joanne Tjahyana. (2015). "Android and iOS Hybrid Applications for Surabaya Public Transportation Route". International Journal of Science and Engineering Applications.