

Car4U Transportation Service - Modern Technology Based Alternative Ride Solution for Passengers to Travel Across Malaysia

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Abstract: With the emergence of technology integration and long-existent complaints from passengers and taxi drivers, demands for alternative ride services have seen a momentum in many urban cities. This article proposes a new technology based car rental business model, Car4U, to serve passenger go anywhere and anytime they want either having their own car or ask for a driver to get them to their destination in Malaysia. Car4U offer car with driver and without driver to passengers who do not own any car or want someone else to drive for them. Car4U also provides opportunity for people who want drive only or give car for rent for a period of time to earn money. Car4U aim is to facilitate travellers and commuters who want to commute and travel daily from one place to other. Besides that customers can request for a ride or car using Car4U app or website.

Keywords: technology, Car4U, car, Alternative ride services, driver, Biz model, Business model canvas (BMC), Value proposition canvas (VPC), Environment Map (EM).

I. INTRODUCTION

In most urban cities, getting a taxi that is reliable and safe drive can be a major challenge. Being overcharged, refused to go by meters, refused to take passengers, did not know the directions, and lacked of service mind are some common scams that most of taxi passengers have long suffered[1] However, nowadays, many different transportations are available for people to commute such as taxi, Uber, GrabCar and so on. Many people would like to have their own car to drive and go anywhere at any time they want. But other people want someone else to drive for them. To elaborate, there is also people to give their own car for rent for some amount time daily. For example lecturers, students, staffs are busy full time. Many of them wish to give their cars for rent while they are not using it. Furthermore, there is also poor people who don't have money to travel daily. While there is other volunteers who want to give their car to those poor people for a period time to use. Thus, we are going to create a general car rental company, Car4U, in Malaysia that will contains all above mentioned areas in order to ease people's daily traveling.

II. BACKGROUND

With the advancement of technology people are no longer have to wait for hours and hours in a bus stop to get from one place to other. Nowadays, almost everyone has a smart phone and access to internet. People are no longer have to go to restaurant to eat or go outside for shopping to shop. They just order in a minute by pressing a button in their smart phone. Similarly, now people tend have a car to travel with driver or without driver using their mobile phone. But not everyone can afford. Therefore, Car4U will be quite efficient and helpful by providing cars available and affordable for everyone both kind with driver and without driver.

III. PROBLEM STATEMENT

"I love to spend some me-time on the road while being stuck in traffic," said no one ever. Having everyone his own car create traffic jam problems in cities. Malaysia, bucks the trend, with 93% car ownership, placing third in the world. The country also has the highest incidence of multiple car ownership globally with 54% of households having more than one car[2]. Furthermore, there is also poor and disabled people living with us in the same society and need from time to time to tour and commute. Furthermore, many other people want their car to be used instead of parking for hours and hour in the park. Therefore, Car4U is the best solution for the problem as it covers all those areas as well as enriching the culture of donation in Muslim countries and provides opportunities for economics' improvement.

IV. LITERATURE REVIEW

- **Avis.com:**

Avis was founded in 1948 by Warren Avis with three cars at Willow Run Airport in Detroit, US. This is the first car rental operation located at an airport. The purpose of this company was catering to those people who wanted to rent their own vehicles as soon as they flew into a city. Although Hertz was already offering a transportation service, its branches were located in the city, not at airports. Later on, within two years, the business was doing very well, and Warren opened a number of outlets in various business areas of the city. Soon Avis became a leading car rental company in Europe, Africa, the Middle East and Asia. It also has 11 rental locations in Malaysia namely Glenmarie Shah Alam, Kuala Lumpur International Airport (KLIA), Kuala Lumpur International Airport 2 (KLIA2), Kuala Lumpur Downtown, Penang Airport, Kuantan Airport, Johor Bahru, Malacca, Sabah, Sarawak & Senai International Airport.

In Avis, one of the value propositions is to deliver high quality and unwavering services under the slogan "we try harder". This is where their mission matched, "We will ensure a stress-free car rental experience by providing superior services that cater to our customers' individual needs...always conveying the 'We Try Harder®' spirit with knowledge, caring and a passion for excellence." Besides, they are focusing on due respect to their customer and getting feedback from time to time. "We will embrace a diversity of ideas, cultures, ethnicities, and backgrounds to enhance our promise and value to customers", Avis claims [15]. Furthermore, today Avis Malaysia offering variety of services. Short term car rental service is available on a daily, weekly and monthly basis. Long term car rental service is for anyone or any business who want to rent a car for more than a month. International car lease service is for those who need a car overseas for holiday or business trip with over 5,000 locations in more than 160 countries worldwide.[3],[4].

One of the ways for Avis to deliver services and keep interacting with their targeted customers is through an official website at www.avis.cz. Through this website they deliver general information about their vehicles, location, services and so on. Besides, customer can book a car anytime using their website. Moreover, Avis's facilities are available in more than 150 countries. So, another way for them to keep in touch with their customer is they offering a list of phone number for each region in order for a customer can call and reserve car. [5]

- **Uber.com:**

Uber is an American private car hire company headquartered in San Francisco, California, United States, operating in 633 cities worldwide. Uber was founded by Garrett Camp, the cofounder of StumbleUpon, and Travis Kalanick, as UberCab, year 2009. Uber is a technology company that offers a free software-platform available on a mobile device for those wishing to request a ride. At its core, Uber seeks to match passengers to drivers. The platform is able to track a user's GPS coordinates, even if the user does not know where she is, and within minutes, an Uber driver will arrive. The user is able to track the arrival of her ride, and receives a text message confirming when the Uber driver is arriving. From the driver's end, the driver is able to hit a button on his own app that says "Arriving Now" which sends the text message. The driver is never given the user's phone number directly, but is able to contact the user if he is unable to find the user. UberX typically costs less than a normal taxi in most markets. However, in times of high demand, like New Year's Eve and snowstorms, "surge pricing" kicks in, and rates become anywhere from 1.5 – 8 times as high.

In Uber, one of the value proposition that they try to deliver to their targeted customer is they minimize waiting time in compare to bus and normal taxi. Their cars are available all over a city. A customer can grab a car within few minutes using their app. Moreover, most importantly, the price they offer for their customer is lesser than the normal taxi fares. In most cities, Uber offer upfront pricing, the fare the rider will pay is determined before requesting the ride. While, in some

cities, Uber charge the rider based on the time and distance of the ride as measured by GPS. At the end of the ride, payment is made based on the rider's pre-selected preferences, which could be a credit card on file, cash, or, in certain cities, other methods such as via Google Wallet, Airtel mobile wallet, or UPI. Besides, they are also an additional source of income to people who want to drive with them part time. They provide flexible working schedule in order to work part time, easy payment procedures where drivers get paid to be online even without can request. [6].

One of the ways for Uber to keep in touch with their targeted customers is through an official website at www.uber.com. This website is utilized by Uber agency to communicate with their customers and promote their biggest objective, mission and vision. The website has two sections, the driver section and the ride section. [7].

- **Go-jek:**

Go-jek business model is actually quite similar to other transportation booking services like Grabtaxi or Uber where user can book transportation from one location to another. The main difference is the transportation method is motorcycle instead of the typical car/taxi route. This method of transportation in Indonesia is unregulated and mainly operated by individual. As it is unregulated and operated individually there no fix standard on the pricing

Go-jek value proposition is on time arriving, easy to book, convenience since there is huge traffic jam in Indonesia, using car and other transportation vehicles creates problem for people. Therefore, most of people prefer using Go-jek motorcycle rather than other transportation. [8].

Strength:

As one of the pioneer, Go-jek has advantage of broader network of drivers compared to Grab Bike. As a local start up, they have high brand recognition and better understanding of the local market. Go-jek multiple service options can be considered as strength as it makes them as good option for its customer. Go-jek food delivery and express courier service are very popular and could be a major source of income in the future [8].

Weaknesses:

Although Go-jek strength can create barrier of entry but those barrier can easily be overcome with large capital spending. Grab Bike is a perfect example, they managed to be strong competitor because they are able to spend large amount of money for incentive and promotion. Currently they serve only the transportation segment but they could change that in the future [8].

Improvement:

Customer service is one of the key factors that Go-jek has to improve. Their customer service call centre is hard to reach and not informative enough [9].



Figure 01: GO-JEK Bikes

- **nationalcar.com:**

National Car Rental was named the primary contracted vendor for car rental services by the Big Ten Travel Managers Group. Following are some specific terms of the agreement in term of performance measures, business functions and potential process improvements. You can use NCR BIM [Business Impact Modelling] to demonstrate how new solutions

will affect your bottom line and quickly identify whether the benefits outweigh the expense. Smarter business decisions are made faster and easier ensuring you meet your internal goals and maintain your competitive position.

NCR Business Impact Modelling analyses the impact of new solutions in relation to cost reductions which could ultimately result in lowered operating costs, tax incentives, and improved cost savings from multiple-to single-point contact, improved asset utilization and avoided planned purchases.

By quantifying how revenue and profit margin can be impacted by your new solutions, significant bottom-line increases can be realized. The positive impact on your business could include loss prevention, incremental growth in customer accounts and new accounts, lost revenue reduction through downtime avoidance, and creation of new revenue sources.

Operational efficiency is key to the productivity and value of any business operation. By quantifying the operational efficiencies of your new solutions, you understand the impact of driving down the cost and complexity of routine operations. You also understand how much labour you can redeploy to new high-value initiatives and how to improve customer throughput.

Value proposition for NCR are positive impact on your business could include loss prevention, incremental growth in customer accounts and new accounts, lost revenue reduction through downtime avoidance, and creation of new revenue sources.[10]

V. ENVIRONMENT MAP

- **Key Trends:**

According to the Kuala Lumpur Population (2017)" Kuala Lumpur has an estimated 2016 population of 1.76 million people in an area of just 94 square kilometres (243 square kilometres). This gives the city proper a very high population density of 17,310 people per square mile, or 6,890 per square kilometre. So, the city's population is set to grow to 2.2 million by 2020 and to triple to 4.8 million by 2050" [11]. According to Jamila MOHAMAD and Amin T. KIGGUNDU (2007) "Number of vehicles registration (in '000s) in Federal Territory Kuala Lumpur and annual growth rate (1983-2004) is average of 10 %" [12]. According to Frost and Sullivan (2015), "Malaysia to have 125 million connected devices in 2025 with over 58 million mobile subscribers. Ninety-five percent of all netizens, or internet users, will be active social network users, presenting a huge potential for digital marketing and ecommerce" [13].

Therefore, Car4U by using technological platform such as website, mobile application to make easy use of services. Besides that Car4U provides golden opportunities for customers in order to do ideal driving and prevent from vehicles growth rate registrations which cause traffic jam in Kuala Lumpur city.

According to ABDULLAH AB RAHMAN" A traffic count in 1980 showed that out of a total of 2.3 million person trips entering/leaving the city on a typical weekday, 65% were made by private cars. The remaining 35% were divided between buses 32 % and taxis 3 %" [14].

- **Market Forces:**

All commerce help our country economic especially e-commerce. According to Frost and Sullivan (2015),"Sales from online retail (eTail) to grow seven-fold to US \$6.1 billion in 2020 since in this technological era most of Kuala Lumpur citizen are using technological devices which is a golden opportunities for our company for gaining more profit.

According to ABDULLAH AB RAHMAN "The rates of increase in car ownership are generally higher for Kuala Lumpur than that of the entire country and Selangor, the state in which Kuala Lumpur is located. Between 1982 and 1984 Kuala Lumpur recorded increases ranging from 25% to 34% compared to 10% in case of the entire country and only 6% to 8% in the case of Selangor"[14].

According to ABDULLAH AB RAHMAN" A traffic count in 1980 showed that out of a total of 2.3 million person trips entering/leaving the city on a typical weekday, 65% were made by private cars. The remaining 35% were divided between buses 32% and taxis 3 %" [14]

Therefore, Car4U provides services like public transportation which all people can use of that but in different concept from public transportation which is driving by them and can go everywhere which they want.

- **Macro-economic forces:**

There are lots companies which do cars renting services but the thing which they don't have is donating for people, ideal driving, cars' renting from car's owners and taking cars for rent donating. Therefore, Car4U is a company which consists of the combination of all the mentioned factors and provides opportunities for poor people, disabled people, those who want to drive by themselves and those who want which someone else drive to them. [11]

- **Industry forces:**

Car4U industry is becoming one of the famous companies among people since by increasing population and traffic jam. Besides that most of the Kuala Lumpur citizens are using technological devices, so, using technological devices also help us to promote our business such as releasing advertisement through social media and so forth. There are many competitors in this industry; however there not many companies to give freedom to customers to drive by themselves such as Grab and Uber. Thus, Car4U come out with different concept but same like OBike by promoting the rental car as public transport to provides facilities and provide opportunities for all who want to drive themselves. This concept of combining the services from car owners, travel planner as well as Car4U centre to organize cars' booking, make Car4U different from other competitors. [14]

VI. FOUR LENSES OF INNOVATION

- **Challenging Orthodoxies:** find credible solution for future improvement of the company.

Can I have more customers? - How to become top website? - How to make people trust on my product?

- **Harnessing Trends:** Using Car4U prevents from traffic jam in the city and the donation system will increase dramatically since Car4U provides opportunities for car's owner.
- **Leveraging competencies & strategic assets:** Car4U by using people car and their own car going to continue current business.
- **Understanding Customer Needs:** the needs of our customer are mostly driving by themselves for does that doesn't have the ability to have their own car.

VII. INITIAL BUSINESS CANVAS

Key Partners: -Car owners -Drivers with their cars. -Travellers Operators. - Car manufacturer company - Payment gateway	Key Activities: -Marketing for increasing customer demand - making the customer come again - Recruitment of key partners -IT maintenance Availability Key Resources: -Marketing team, IT specialist, Skilled drivers. -PCs, Internet, printers.	Value proposition: Customer 1. Safe travel with affordable price 2. Customers can travel the way they want, when they want wherever they want. 3. Volunteer to give cars to poor and disabled people. Drivers -They can work part time based on our flexible schedule and earn more money. - Easy payment can get paid to be online. Car owner -Car safety insurance - Returning car and payment on time.	Customer relationship: -Social Media -Website -Promotional fares - Loyalty card Channel: -Portal - Web & mobile application -Shop	Customer Segment: -Leisure trippers -Customer who needs car urgently. -Daily Commuters People Paid -Car Drivers (part time, full time) -Donor
Cost structure: -Office rent expenses -payment to Car owners and drivers. -IT development expenses		Revenue Stream: -Car rentals -Advertisements - Donation		

Figure 02: shows the initial business model canvas of Car4U which has been produced

VIII. INITIAL VPD

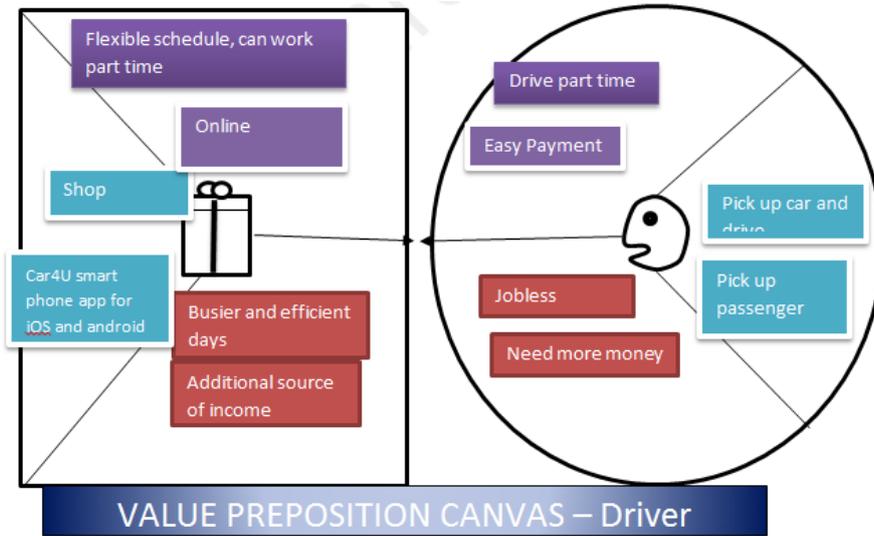


Figure 03: Initial value proposition for driver

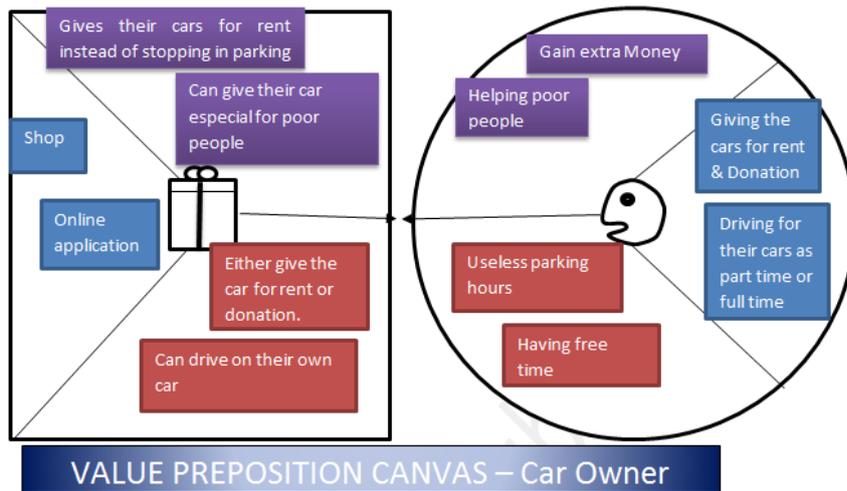


Figure 04: initial value proposition for car owner

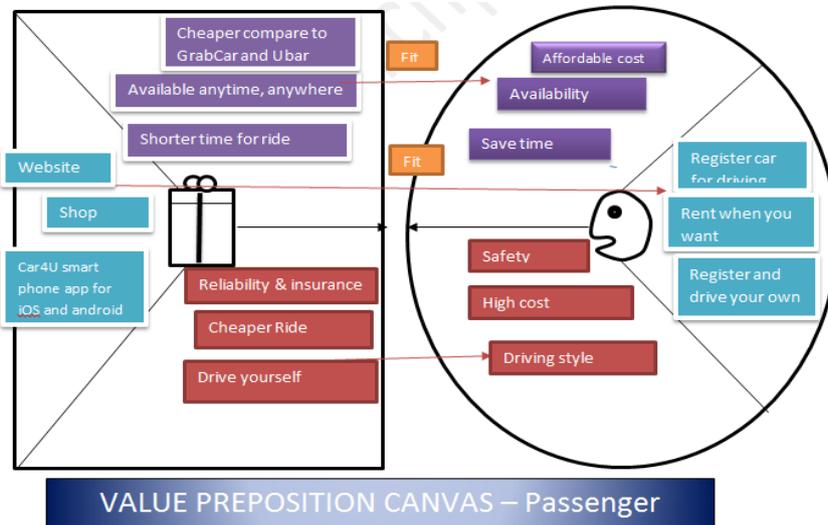


Figure 05: initial value proposition for car passenger

IX. VALIDATION OF INITIAL BUSINESS MODEL

INTERVIEW AND QUESTIONNAIRE RESULT:

Primary research has been conducted through interview and questionnaire to gather more information from specifically target desired groups which are the customer segment of Car4U. The interaction of with diverse of people and passengers segments helps Car4U in getting new ideas. Customer segments including passenger car drivers and car owners have participated in answering the questionnaire and interviews. The questionnaire were distributed to daily commuters, leisure tripper business customers and poor and disabled people to fill in. The questionnaire were distributed online in order to survey diverse types of people who need a car daily, weekly or monthly to travel. Besides that we also conducted interviews with car owners and people who want to work as a car driver full time or part time.

Generally, the questionnaire shows that most of the people in Kuala Lumpur having a trip monthly as well as weekly. Most of them prefer to use GrabTaxi or Uber for their trip. They claim that using GrabTaxi or Uber is easy to grab and more comfortable with fixed price. Not only that, it also save our time as it shows the arriving time based on their map to the destination, they claimed. While the second most people prefer to drive their own car as it is claimed that they can drive the way they want and feel safe. To elaborate, based on the survey, a vast majority of people prefer to have cheap transportation in compare to fast and friendly transportation. Besides that Car4U team also wanted to know whether people prefer to rent a car for self-driving or want someone else drive for them. This is because Car4U biz model consider to offer both types of transportation. In the survey, we found that car for self-driving and car with driver is almost equally important and desired to targeted customer. Moreover, there is also a need to know how what percent of people cannot afford to travel using the current available transportation. In the survey, 59% claimed that they can afford to travel using Uber or taxi, while 9% still cannot afford to travel using the current transportations We have also interviewed some car owners and drivers whether or not they are willing to register their car with us or not. People also can register for a specific period of time daily, weekly or monthly.

Specifically, the result of the survey from customer in figure 02 shows that majority of people every month, while only few people having travel once a year. The second most people travel every week. Figure 03 shows that most of the people utilizing GrabTaxi or Uber for their trip. However very few people using taxi to travel. From figure 04, it can be clearly seen that a vast majority of people prefer cheaper transportation. While only few care about friendly and professional services. In figure 05, its shown that both self-driving and driving with a driver is equally important. Figure 06 shows that there is 9.1 percent people who have no money to travel using the current available transportation types.

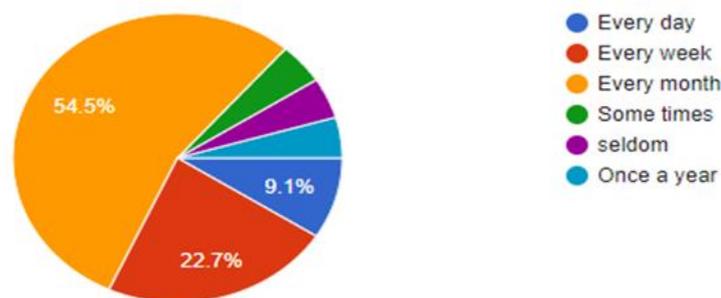


Figure 06: time for travelling

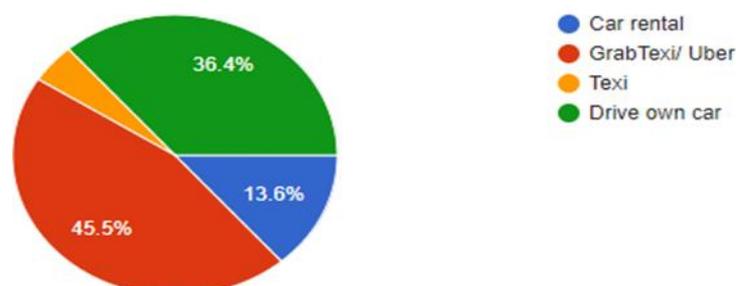


Figure 07: Types of transportation use

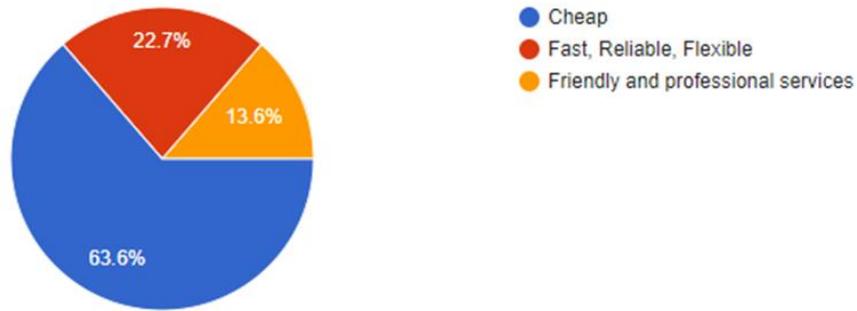


Figure 08: what people want from a transportation

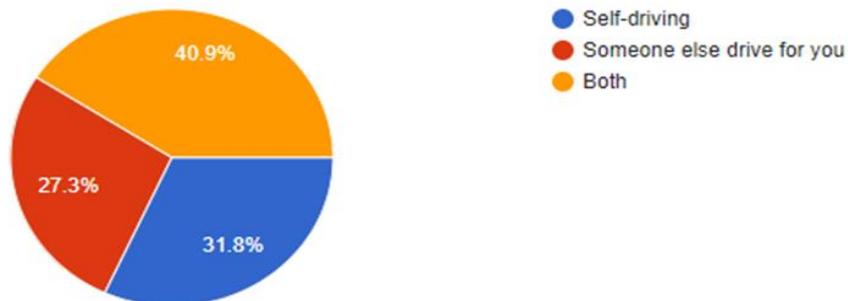


Figure 09: what method people prefer

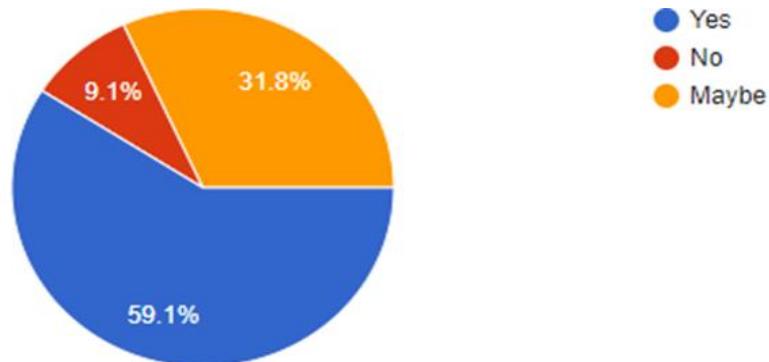


Figure 10: who can afford to travel with current transportation available

INTERVIEW RESULT:

TABLE 01: NUMBER OF CARS PEOPLE HAVE

Number	Question	One	Two	Three	Four	Total
1	How many cars do you have?	50%	25%	10%	15%	100%

TABLE 02: FREE TIME

Number	Question	1-3 hours	3-5 hours	5-8 hours	8-12 hours	Total
2	How long do you park your car in a parking per day?	15%	25%	40%	20%	100%
3	How many free hours do you have in a day?	25%	30%	25%	20%	100%

TABLE 03: CAR TO BE GIVEN TO CAR4U

Number	Question	Drive by yours	Drive by customers	Donation/ Charity work	All of the above.	Total
4	In what condition will you register your car with Car4U Company?	30%	35%	15%	20%	100%

TABLE 04: FINDING CAR

Number	Question	Yes	No	Total
5	Would you like to give your car for rent while you do not use it?	78%	22%	100%

I. CONCEPTUAL SOLUTION

ENHANCEMENT BUSSINESS MODEL CANVAS

Key Partners: -Car owners -Drivers with their cars. -Travellers Operators. - Car manufacturer company - Payment gateway	Key Activities: -Marketing for increasing customer demand - making the customer come again - Recruitment of key partners -IT maintenance Availability Key Resources: -Marketing team, IT specialist, Skilled drivers. -PCs, Internet, printers.	Value proposition: Customer 1. Safe travel with affordable price 2. Drive & drop your car - Customers can travel the way they want, when they want wherever they want. 3. Volunteer provides free service to poor/disabled people. Drivers - work part time Flexible schedule and earn more money. - Easy payment Car owner -Car safety insurance - Returning car and payment on time.	Customer relationship: -Social Media -Website -Promotional fares - Loyalty card Channel: -Portal - Web & mobile application -Shop	Customer Segment: -Leisure trippers -Customer who needs car urgently. -Daily Commuters -Business Customer - Poor/Disabled People Paid -Car owner (period of time i.e. 9am- 5pm) -Car Drivers (part time, full time) -Donor
Cost structure: -Office rent expenses -payment to Car owners and drivers. -IT development expenses		Revenue Stream: -Car rentals -Advertisements - Donation		

Figure 11: Enhancement Business Model Canvas Car4U

A. Customer Segment:

In Figure [11], lists cars as one of the targeted user in Customer Segment's block. The current customer segment consist of Leisure trippers, Customer who needs car urgently, daily commuters, business Customer, Poor/Disabled People, car owner (period of time i.e. 9am- 5pm), car drivers (part time, full time) and donor.

B. Value Proposition:

Enriching Car4U as transportation Company, especially for those who stop their cars for long times in parking lot during the day. . The current value proposition consists of drive and drop your car, . Safe travel with affordable price, volunteer provides free service to poor/disabled people, work part time flexible schedule and earn more money, easy payment, car safety insurance, Returning car and payment on time.

C. Channel:

Car4U provides facilities for people regarding transportation through Portal, Web & mobile application, and physical Shop.

D. Customer relationship is basically describing the value that a company offers to maintain the relationship between the company and other customer segments. Any offers or promotion from Car4U will be advertised directly through social media. Plus, other customer segments can view the review, rating and feedback about the services and facilities from the previous customers.

E. Key Resources:

Key resources describe the assets needed by company to assure the business model works effectively and profitably. Those resources are a good technological platform, high quality of vendor and Car4U supporter as well as trusted and professional workers in shop.

F. Key Activities:

Key activities are also one of the vital blocks for a company to run successfully. As for Car4U, it includes marketing for increasing customer demand and making the customer to come again, recruitment of key partners and portal, web & mobile apps maintenance.

G. Key Partners:

Key partners describe the network of suppliers and partners that a company associate with to make the business effectively and profitably. Thus, the key partners of Car4U are Car owners, Drivers with their cars, Travelers Operators, Car Manufacturer Company and Payment gateway.

H. Cost Structure

Cost structure explains the cost that must be spent by the company in order to maintain the business. For Car4U, the cost comes from Office rent expenses, payment to Car owners and drivers and IT development expenses.

I. Revenue Stream:

Revenue stream explains the revenue will be generated. Basically, revenue will be generated by Car Rental, advertisement and donations.

II. ENHANCEMENT VPD

Figure 12 shows the value propositions canvas for driver. Car4u helps the car owner and those who know driving by providing opportunities of driving for customer. So, it can be an additional source of income for those car owners who are willing to do driving by them and drivers. After conducting the survey most of was agreed on part time working in order to extra money to solve their routine problems.

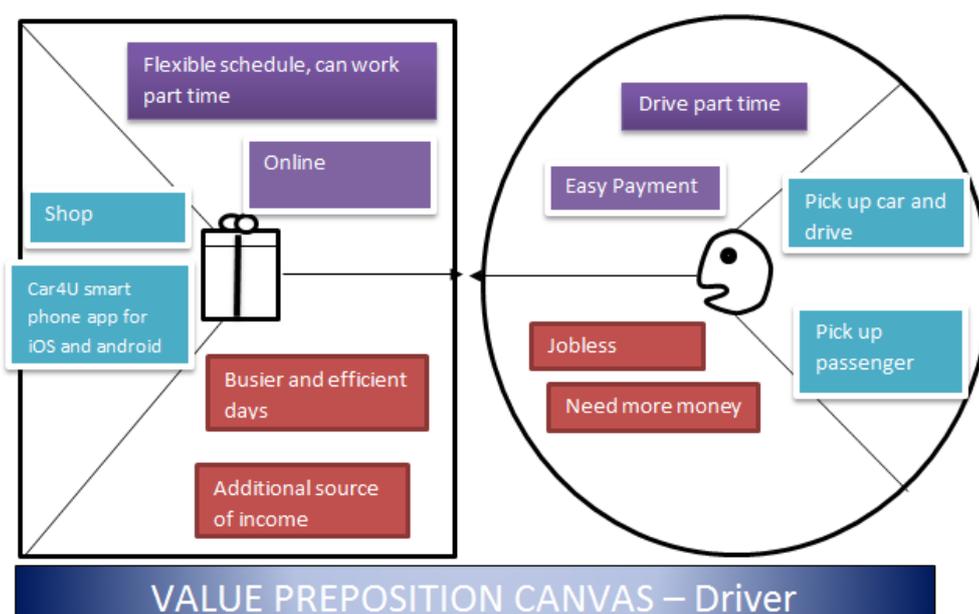


Figure 12: Enhancement Value Proposition for driver

Figure 13 shows the value proposition canvas for car owner. car4u can help the car owners to give their car for rent. Car4u not only prevent from traffic jam but also provides facilities to poor people. After conducting the survey most of them have complain about useless parking hours and having almost 5 hours free of work every day. The problem which they usually face is poor people they cannot find any car even in emergency cases. The gain which car4u provides is the cars for rent and donation and providing opportunities for both car owner and driver in order to from their free time.

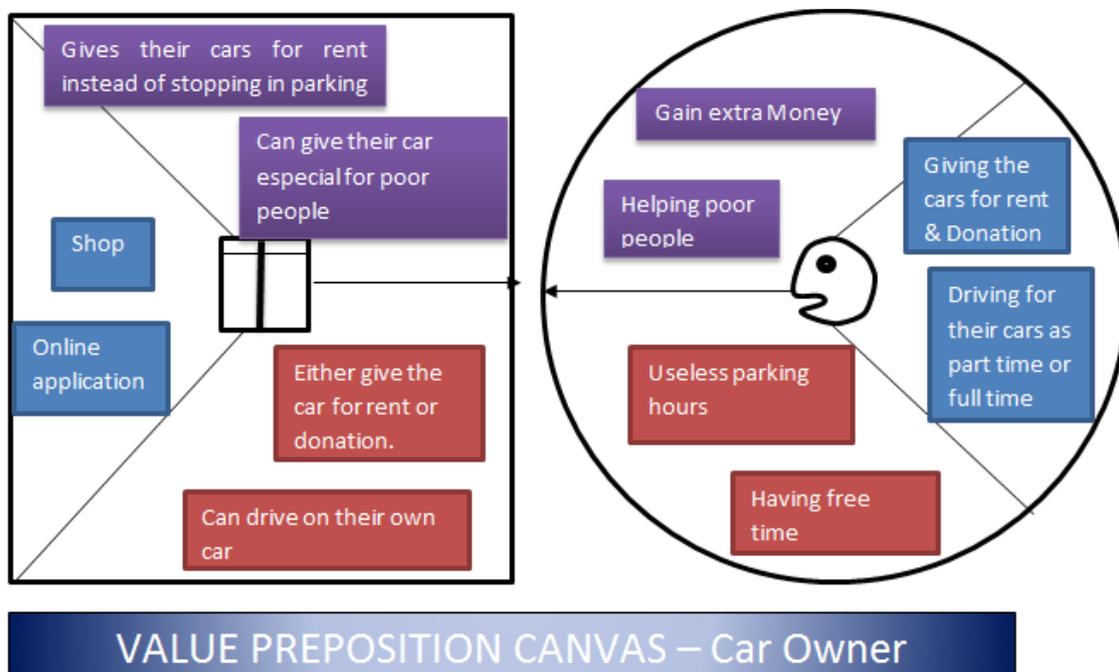


Figure 13: Enhancement value proposition for car owner

Figure 14 shows the value propositions canvas for passenger. Car4u help the passengers to find the car easily and do ideal driving for the purpose of convenience. Car4u provides golden opportunities for all types of customers such as rich people, poor people and other types. After conducting the survey we got the result about most of they are agreed on both and after that on self-driving and finally someone drive for customer got the lowest percentage. The gain which car4u provides for passengers are many options such as ideal driving, cheap price and giving for donation and using as donation.

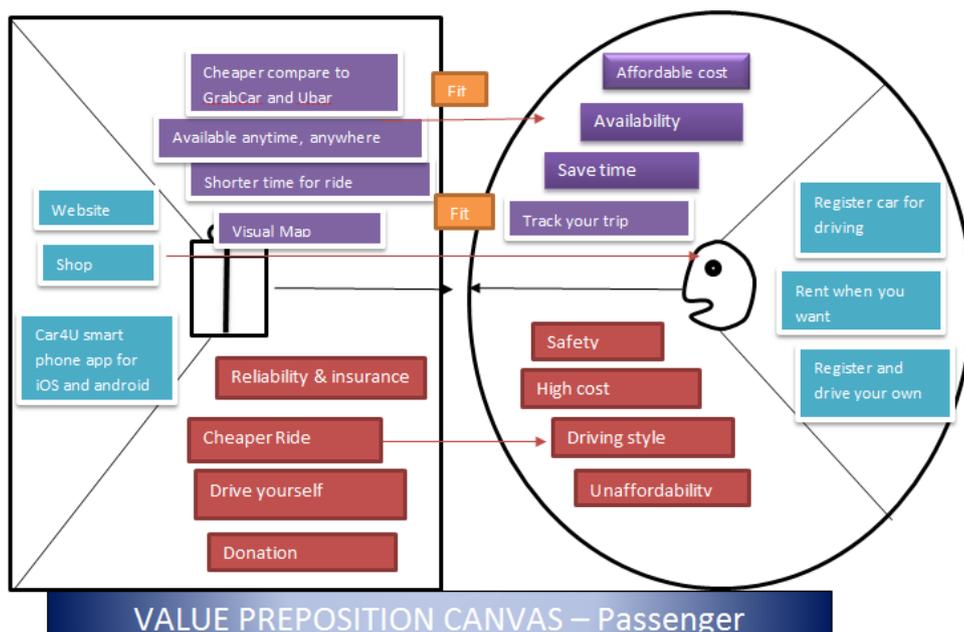


Figure 14: Enhancement value proposition for passenger

X. CONCLUSION & FUTURE WORKS

In conclusion, this conceptual solution can give benefits and provides new opportunities for people in Malaysia by making it possible for everyone to travel across. Car4U many value propositions for customer such as ideal driving, cheap price, on time arriving, “drive and drop your car” and donation for poor people. Therefore, Car4U are very important for enhancing the culture of donation among Muslim countries. In the future plan, Car4U are going to develop a complete business plan by applying the V2MOM (Vision, Values, Methods, Obstacles and Measures) Model as well as we are going to widen our business all around the globe.

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