

Smart EV Bus

Mongkol Company

Project Phase #2

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Phase 1 Revision

1.1. Overview

At present, the number of people who use public transportation in Bangkok is very high, based on the statistics on public transportation usage. In Bangkok, 50% of the residents travel by bus because of its flexibility, expandability, low cost, and accessibility. However, there are still problems in many areas. For example, a few years ago, there was an epidemic of COVID-19, which required us to maintain a distance from each other and wear a mask all the time. Therefore, our company has invented a system of buses and an application for cashless payments, both scanned by palm or having a QR code as an alternative for all passengers. Our method is convenient for getting on and off the bus and relies on speed and accuracy. In addition, we want to sell our system to companies that make electric buses (EV) to help reduce pollution.

Our business owners of electric buses have jointly prepared a business plan to understand the direction of the organization's work. The next work plan will begin to lay out a clearer customer plan to make the solution set to your target customer. We started with a prototype bus design and application plan. In this round, there will be a marketing plan to start finding ways to hit the market and reach all types of customers by promoting bus services through various channels. including the use of capital and the start of investing money to calculate the cost of buses and other expenses and income that will occur to manage income and expenses. And finally, we will have plans for future goals in order to make the organization have clear goals at work.

Purpose of a business plan

- To manage fares and service levels in bus transport or electric buses (EV).
- To create an application that meets the needs of those waiting for the bus, including cashless payment and the matter of seating available or reserved seats for the disabled.
- To be able to register in many areas, whether it is a bank or counter service. (Palm recognition)
- To attract foreigners and tourists by providing conveniences such as cashless payments and short bus wait times.

1.2. Pain / Need

1.2.1. Payment:

The present buses have fewer approaches to pay because they have only cash and visa cards (some buses). The first problem is some passengers have only banknotes of high value, but the fare collector does not have enough money to change back. The second problem is in the peak time of the bus, the collector cannot collect payment from some passengers, then the passengers arrive at their destinations without paying their fares. In our point of view, it should be cashless in the future.

1.2.2. Technology:

At present, elders mostly do not use technology in many situations, but we now want our life to be a cashless society and think that the problem is the elders do not understand the technology and think that it's hard for them. Therefore, what about we make it easy using technology?

1.2.3. Security:

In Thailand, it's not that safe because of thieves or criminals. We are concerned about our securities. If bad things happen to us, what can we do? How can we find the criminal? What about if it happens to the kids?

1.2.4. Pollution:

In this age, there are many kinds of pollution in Thailand, for instance, PM2.5 is critical, and it increases every day. Moreover, carbon dioxide from cars. Some buses still have no air conditioner and make people get the pollution directly. Even if they are waiting for the bus, they also get polluted besides the street.

1.2.5. Appearance:

The recent buses were used 30 years ago until now, so we think their appearance makes people feel uncomfortable using them. For example, the bus looks dirty, and people may think it can have a disease or think some accidents might have happened by the bus. Sometimes, there are people who don't want to use the bus because it looks old, and some

people want to look hi-so or civilized. Thai people who have medium-to-high financial standing want to look good and smart. Moreover, employees or certain groups choose not to use the bus service, partly because it reflects poorly on their image, so they do not want to use it and don't want people to see them use old buses. That reason makes us design buses to have a positive image, which is important to consider. If there are two buses that are functionally identical except that one of them looks better, a good-looking car will be a good choice for most people.

1.2.6. Concession:

The concession of the bus is one of the problems. This problem makes Thai people or foreigners get confused because there are many buses for some routes. Furthermore, private companies have a few buses to drive for passengers, so they use the peak time of the bus to gain passengers.

1.2.7. Global warming and climate change

Global warming and climate changes are concerned by people around the world nowadays or in the future, so we convince people to change our life by helping the world and fixing climate change. Because we think that if we use EV buses which means 100% electric power for our transportation, it is the proper way to solve this problem. From the EV survey, Krungsri researches, around 73% of people are interested in using EV-car because it is good for the environment (Leingchan, 2022). Furthermore, we want to support people who have money in the middle class or higher to care about the world, the environment, and pollution.

1.2.8. Lack of route

Some routes are needed by many people but there's no bus working in that area. This situation is a problem that makes people must pay more to go to their desired destinations. We decided to add new bus routes. This will increase our revenue due to the high demand in transportation route.

1.3. Solution (Product/Services)

1.3.1. The overview of your solution

We designed the new look and new use of public buses to change the concept of the traditional public bus by incorporating technology inside the bus and developing a program to address the problem that people were experiencing. Passengers must register their palmprint and identify themselves before using the touchless scanning innovation on the bus. The way to register is to go to Bank or counter service that places scanning devices. Once enter the bus, scan the palm print with touchless technology through the scanner to pay for the fare. When exiting, the vehicle then performs another scan to checkpoint the location and calculate the fare. In the case that the passengers do not register in our system, this bus system allows QR-code for passengers. The transaction will happen via our application. In addition, it can top-up so that cash is not required. The application will link your scanned palm on the bus to the database in our bus system to access the wallet in your bus account. Passengers can also contact us and use our app to track the bus, which has more features to help them. This allows people to use the bus service comfortably and conveniently. The route of the bus we choose will depend on the targets. The area we consider will be the place that people who have an education, work, and high income live in, so the route will be in the city, such as Thonglor, The Customs Department, Central Rama 3, L&H Villa, Chong Nonsi, Thanita Plaza, Benchakitti Park, Phetchaburi, and Emquartier. The primary goal is to make the payment system cashless. All of these options can encourage Thai people and tourists to use the service, which will improve this industry.

1.3.2. The features of your solution and which pain that these features can solve.

Feature in Application

- 1. Payment:** We implement the payment system within the app to enable users to top up their prepaid expenses on the bus. The payment in the application will link to your account that has been registered by the scanned palm technology. Passengers can still use the service even if they don't have money in their wallets in case, they already use our service at least 1 time, but they can only use it once. Passengers must top up their accounts after the notification of not having enough money. We also have the history of the transaction for passengers too. The payment page in the app uses the

same logic as the banking and food delivery apps. The issue of passengers who don't carry cash will be resolved by this. (We use service of Omise (opn payment) to supports all payment types: API for bank)

2. **The nearest bus for the best path and arrival time:** Nowadays, it is difficult for foreigners to determine which bus refers to which location. As a result, tourists now use other transportation options instead of buses. This is a problem that affects not only foreigners but also Thai people. This is why we want to implement these features. Passengers can enter their source and destination, and the app will locate the bus that best fits their route. Passengers can use this to determine which bus to board. It will display the arrival time too. Most passengers use this type of transportation to get to work. That means one of our targets is the employee. If we add this feature, the workers who use this service will be better able to manage their time. (Used Google Map API to locate the place)
3. **Chat for feedback:** Feedback is very important to our startup technology, so we need to know all the concerns of the passenger and create a channel for them. Only then we can determine how to improve our features. We must ensure that every passenger understands how to utilize this service because some of the features are quite new to many individuals.
4. **Notification of your destination [Subscription-Based]:** This feature is very interesting and very useful. If the passenger is sleeping or doesn't know the destination, they can acknowledge it from this notification, as it will send you the message that this is your destination which you mark it in the application. This will lead people to get off the bus without mistakes for the wrong place.
5. **Showing price [Subscription-Based]:** Customers can use this feature to prepare money in their wallets, so they don't have to worry about not having enough money to pay the fare in the case of people who set up the source and destination on the application.

6. **Number of available seats [Subscription-Based]:** This feature seems simple, but that's one of the things we want to highlight. Passengers can decide whether they want to use this car by seeing the number of available seats. If they prefer not to ride in a crowded bus, they can use an alternative method that we've included in this app, which is the arrival time of the car that is closest to them.

*** Important ***

In PDPA law there is some sensitive personal data called biometrics in that we must collect the passenger's palm print to pay, However, we also have a consent base to solve the problem of "freely given" by creating an alternative to get on the bus by scanning the QR code in the app to pay instead of using your palm print.

This application must ask for request consent for the use of personal data (Consent: palm print) before getting into the application. We mention that we take the data to analyze lines of palm to use it in financial operations. In case of not consent, It will not affect the use of buses and the use of our application because it records only for payment processing by palm print. Customers can use QR-Code instead. Furthermore, we respect customers' right to privacy, and to make it less concerning to customers, we have a box for the one who gives consent to revoke the data subject.

Bus

- **Technology:**
 1. **Computer vision:** We use computer vision for payment by having passengers scan their palms to pay when entering and exiting the bus.
 2. **Deep learning:** Deep learning, which powers computer vision and trains algorithms to work on the program to correctly identify passengers.
 3. **AI weapon-scanning technology:** Weapon scanning is the technology that increases safety for passengers who come to use it. They can be sure that it reduces the risk of using weapons to cause physical harm.

4. **EV car:** Make an electric vehicle to reduce smoke. Most Thai buses today are filthy and very old with long service life. Buses without air conditioning have been in service for 10 to 20 years, which has led to the engine malfunctioning and degrading to create soot. We use this as a solution to this and create an eco-friendly automobile.
5. **Sensor by microwave:** Motion sensors use radio waves or radio frequencies by working with CCTV to detect the number of people and there is a device to send data to an automated software system that has the ability to manage data. This sensor works with a chip on the back of the seat to determine the position of the chair. This sensor is used to determine the amount of space in the passenger compartment.

- **Features:**

1. **Free Wi-Fi:** Provide an extra service.
2. **The luggage storage area:** This is for travelers or persons who carry a lot of luggage to store their bags, so it doesn't block the walkway.
3. **Informing passengers of the next station's arrival time and location:** This helps them know where they are on the way. Passengers can prepare to get ready to exit the bus. Additionally, it shows the schedule in order to inform you of its arrival time. People who are unfamiliar with the path or can't remember the way would benefit greatly from this. Moreover, the display will include a voice that mentions the location when it arrives.

4. **Appearance**

- **Stairs up low automobiles:** If the height of the steps is adjusted when getting in and out of the bus, older persons and kids can get in and out of the bus more easily.
- **Look:** Even if it's a little issue, the design must also take this into consideration. Another crucial factor is the bus's appearance. It had to be

contemporary and usable when we designed it. We love the look of the BTS, MRT, or the widely used bus in London and may have a design in that pattern. The itinerary display will be digital.

5. **A scanning weapon** helps to increase safety within the vehicle. When you enter the automobile, the scanning gadget we installed in the door will look for weapons.
6. **A scanning palm device** is what we design to process payments. This device will connect to the application to top up money in your account. When you board this electric bus, your palm must be scanned. Then, this equipment will compare your palm print to the palm you used to register to determine whether they are identical or not. Scanning your palm, will identify you and access your account. Before getting out of the car and scanning once again.
7. **Charger:** There will also be charging cables in the bus. In case the customer's phone has a low battery, it can be charged. Customers mainly pay with the phone, so if the phone suddenly runs out of battery, customers will not have to worry about this part. There will be a 3-in-1 charging cable, designed to come in the form of a USB A cable with a port on the other side that can be changed to multiple heads, including USB C, Lightning, and Micro USB, however, the customer cannot be removed from the car as it attaches along the window side to prevent the customer from stealing the cable.
8. **SOS Call Point:** To accommodate emergency events that may occur, such as violent quarrels or there is sexual harassment and you need help or cause of the fire. This signal is linked same as an anti-armor sensor system which the system will send a signal to the driver, and if the driver can analyze the situation, that this is not good now. The driver will confirm the incident. The system will send a signal to the company in order to proceed urgently.

How can we become known?

By advertising this in public on LED screens and on social media such as YouTube, TikTok, and Twitter. We can encourage people to utilize it because it represents the modern bus transportation style. Our bus will initially be highly intriguing to people. As a result, it is anticipated that a client group of Thai people and foreign people will use it. People take an interest, just like the well-known buses in London. Once some time has passed, if our service is practical and effective, customers will come back and utilize it again.

1.4. Revenue Model

Our company's revenue model defines how businesses charge customers for products or services to generate revenue. The revenue model prioritises the most effective monetization methods based on what is offered and who pays.

Our Revenue Model Framework:

1. Who pays
 - a. Customer or passenger paying to go by bus.
 - b. Advertisers pay on platforms to reach audiences.
 - c. Partners paying to work with our company. (E.g., EA Anywhere (charge power))
 - d. Sponsors paying to host events with our company.
2. What is paid
 - a. Money
 - b. Other value generation such as data or insight.
3. For what is paid
 - a. Transaction revenue (i.e., fee)
 - b. Cost per Result
 - c. Pay per use
4. How is paid
 - a. Subscription per month/year
 - b. Paid directly
5. How much is paid

- a. Fares vary depending on distance/ Dynamic Pricing
- b. Volume Discounts pricing

The types of revenue models that our company employs include such as transactional revenue, subscription revenue, advertising revenue, and sale revenue.

1. Transactional Revenue Model

How it works: Our business chose this model because our business sells products or services directly to customers (B2C), that is, customers will have to pay through palm print recognition or QR-Code on the bus.

2. Subscription Revenue Model

How it works: our company earns money in this way means that we will have regular payments. But there may be an additional option when applying for membership (within the app and pay) will receive special privileges in terms of expenses with buses. There may be coupons (discounts on buses) for members monthly or yearly.

3. Advertising revenue model

How it works: Advertisements may also come in the form of e-mail if the user of the Application has chosen whether to receive information via email. Another format may be to promote with a billboard or a sign on the buses to promote their product or service.

4. Sales revenue model

How it works: Our business has to sell products or souvenirs within the application to support our company to continue. For example, a keychain or souvenirs belonging to the company.

1.5. Others – The other matters we are concerned about. We consider the laws and concessions.

1.5.1. PDPA

In PDPA law there is some sensitive personal data called biometrics in that we must collect the passenger's palm print to pay. However, we also have a consent base to solve the problem of "freely given" by creating an alternative to get on the bus by scanning the QR code in the app to pay instead of using your palm print.

1.5.2. Funds

This technology has a high investment. Our business focuses on making long-term profits because the technology is expensive, and we want to control the fare that passengers must bear.

1.5.3. Concession

- GPS - Our application service has a detailed description of every bus. Even though the bus has the same number, there are differences in routes such as taking the expressway and not on the expressway. The weakness that we encounter from using applications that are available today. And it's become our competitive advantage.
 - Limitations of GPS tracking buses. Currently, in Thailand, there is GPS bus tracking only for BMTA.
 - Same car number but different routes, for example, taking the expressway and not on the expressway, In the application, there are no details.
- Route - When we came into the role of public bus service, there must be an auction of bus routes that respond to more users than the existing companies that exist today.

Currently, during the past year, 2022, the Department of Land Transport has begun to allow many private individuals who won the bidding route to enter the bus service instead of the BMTA, the state enterprise that provided the service. But for private companies that come in to provide service, the right to reduce fares for the elderly cannot be used in the new shared vehicles that come into service. The private sector chooses to run only during peak times which makes more profit than normal, but during the normal time when people wanted to use the service, there was no running.

2. Customer Information

Students

Demographic

- **Age:** 13-22 years old
- **Status:** single
- **Location:** Sukhumvit or Thonglor
- **Type of living:** house
- **Travel by:** bus, air conditioner bus, MRT, or BTS

Occupation

- **Job:** Student
- **Industry:** High school or University
- **Income:** Below 15,000 baht
- **Time of travel:** 05.00 am. – 18.00 pm.

Problem/ Pain

- **Frequently take bus**
 - Paying with cash is a major concern, as we prefer paying via the phone.
 - Waiting too long for the bus, sometimes we have to wait 1-2 hours because the buses that run are too few.
 - There is no seat in the morning on the way to school or in the evening on the way home.
- **Rarely take or never use the bus**
 - Traveling alone feels unsafe sometimes.
 - The bus was dirty and there was a lot of smoke from outside.
 - Don't understand the meaning of each label. Which bus we should take.

Purpose to use bus

- Go to school.
- Go to take pictures: café, park, museum.
- Go to the mall.

Wish to have

- We wish the bus had a charging cable because we sometimes forget to bring a power bank.
- We want to be able to transfer money to pay because we don't want to keep coins or maybe there is no cash.

Consideration Part

Fare



Safety



Cleanliness



Payment Method



Wait time



Air pollution



Seat



Understandable Signpost



Working people

Demographic

- **Age:** 23-55 years old
 - **Status:** single
 - **Location:** Sukhumvit, Thonglor, Ekamai, Chong Nonsi, or Phetchaburi Road
 - **Type of living:** townhouse, dormitory, condominium
 - **Travel by:** bus, air conditioner bus, MRT, BTS, Taxi, or private car
-

Occupation

- **Job:** Employee
 - **Industry:** Company that is in Bangkok
 - **Income:** 15,000-25,000 baht
 - **Time of travel:** 06.00 am. – 20.00 pm.
-

Problem/ Pain

- **Frequently take bus**
 - Waiting for a bus for a long time because there are too few buses on the line.
 - The bus did not arrive on time according to the stated schedule.
 - The driver brakes too hard, and we feel that it might cause an accident.
 - **Take other transportation (having education)**
 - The bus in Thailand is very dirty.
 - We do not want to go to work in conditions that are not ready for work. For example, having a meeting with a group of business partners must look good. If we get on the bus, we might get messy, sweaty, or smell smoke from the car.
-

Purpose to use bus

- Go to work (the company is in Bangkok)
 - We don't have driving license or car.
 - We want to save money.
-

Wish to have

- We wish there was a toilet on the bus.
 - We wish there were empty seats on the bus. because we want to sit.
 - Hopefully, the price will not be too expensive.
-

Consideration Part

Fare



Safety



Cleanliness



Payment Method



Wait time



Air pollution



Seat



Understandable Signpost



Foreigners or tourists

Demographic

- **Age:** 25-54 years old
 - **Status:** single, married (with family)
 - **Location:** Sukhumvit, Thonglor, Ratchadaphisek Road, Benchakitti Park, or Phetchaburi Road
 - **Type of living:** hotel, condominium
 - **Travel by:** MRT, BTS, Taxi, tuktuk, or private car
-

Occupation

- **Job:** Tourist, Employee
 - **Income:** 30,000-70,000 baht
 - **Time of travel:** 10.00 am. – 22.00 pm.
-

Problem/ Pain

- Buses in Thailand are difficult to use because we don't really understand which stop we have to get off at.⁹
- Thailand's bus signs have been translated not very well which is confusing. It makes us want to use other public transportation more because it's easier to find travel information and have that information as well. Finding information about bus routes in Thailand is not easy.

Purpose to use bus

- Go to work (the company is in Bangkok)
 - Travel in Bangkok
 - Attend event
-

Wish to have

- Hopefully, the sign of Thailand buses communicates more clearly.
 - We would like for the sign to show information about each location in the bus so that we will not get lost and can be confident that we get off at the right place.
-

Consideration Part

Fare



Safety



Cleanliness



Payment Method



Wait time



Air pollution



Seat



Understandable Signpost



Advertiser or advertising agency: Our last target group is **advertisers**. We are service providers for the advertisement to businesses who want to do public relations through our buses will be used as an advertising medium to reach the public with messages and promote commercial brands. For example, they contact our company for political or promotional campaigns as a tool for commercial companies.

Demographic

- **Type:**
 1. Company that wants to be promoted by our bus, and to be seen by many people.
 - General Company
 - Company with NET ZERO
 2. Fanclub/Fanbase that wants to promote their favorite artists and to show their supporting by making a birthday project.
 - **Location:** Everywhere that can be seen by the fans who support this project or by many people.
 - **Type of advertisement:** Screen in public or Sign on the bus
-

Occupation

- **Job:** Advertising Company, Company, Fanclub/Fanbase
 - **Income:** 30,000-300,000 baht
-

Problem/ Pain

- The price of advertisements would be one of the pains that this target customer encountered. Especially, Fanclub, they mostly are students or adults who do not get much income raise funds to support their favorite artists.
-

Purpose to use bus

- To promote, advertise, or publicize.
 - To be seen by people inside the bus and outside the bus.
-

Wish to have

- For Fanclubs, they wish the price will be cheaper, so they can use our bus in many occasions.
- For the companies and Fanclubs, they want their campaign or project to be seen, noticed, and remembered by many people.
- Promote companies with the same goal.

Target customers from the company that wants to promote their product by using our bus.

- Student
 - Worker
-

Example product

- | | |
|--------------|-------------------|
| SCG-cement | FANBASE-superstar |
| GRAB-service | CALBEE-snack |
-

3. Prototype

EV Bus

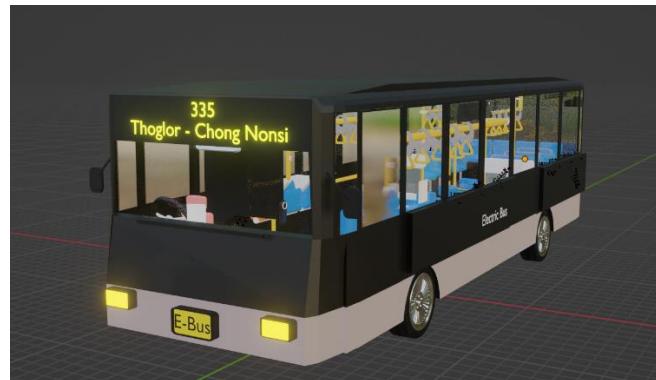
➤ Outside Bus



Front View



Back View



Left Side View



Right Side View



Left



Right

➤ Inside Bus



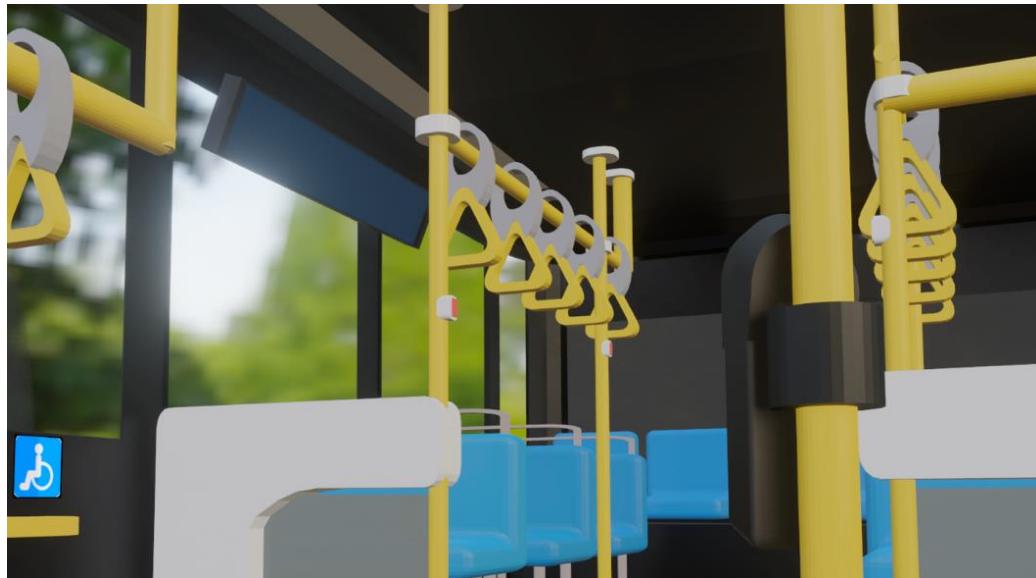
TV1

Inside the bus, we will have a TV set up to promote commercials and show the name of the next station. This is the **first screen on the right of the center of the bus**



TV2

This photo shows the **second screen set to the left of the center of the bus**.



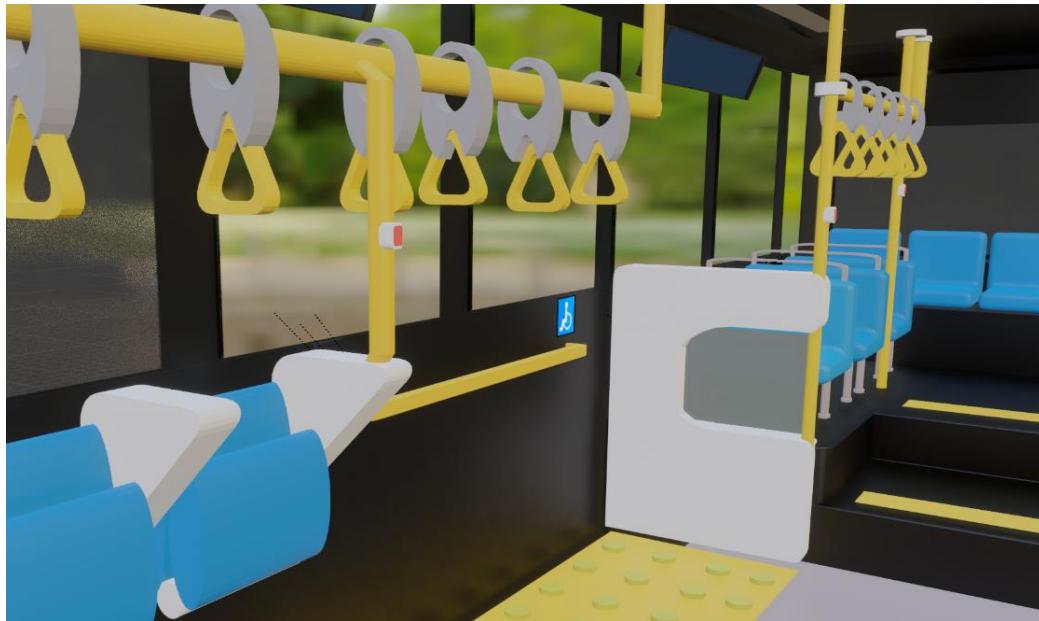
TV3

This photo shows the **third screen set to the right of the back of the bus.**



TV4

This photo shows the **third screen set to the right of the back of the bus.**



View1

This picture will be the view that when you arrive at the bus and look in, you will see this point first.



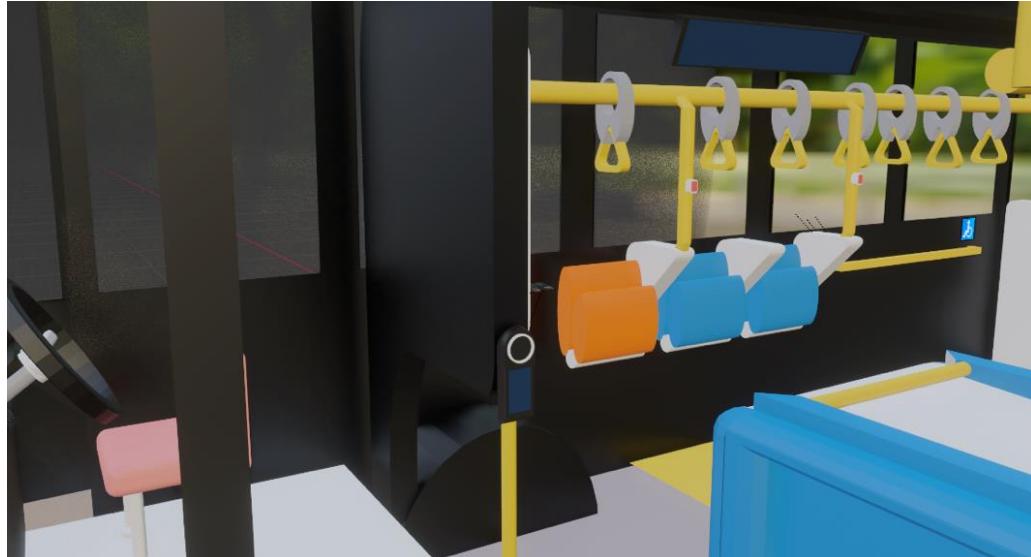
View2

This picture is when you walk in and look to the right you will see the seats and the second screen.



View3

This picture is when you walk in and look forward you will see the storage area and the second screen as well.



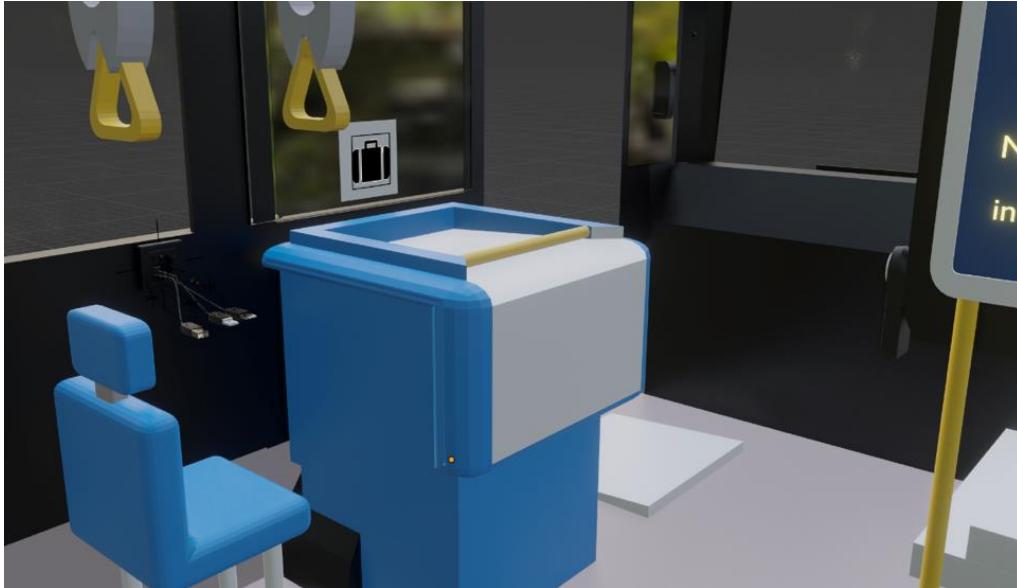
Palm Scan

This picture will be **the first point** when you get on our bus, you will find the **first palm-scan** or if you are not registered, you can open the QR code and scan with this machine as well.



Screen showing next station

This will be the **second point** once you arrive. It's a screen that tells the **station of the sign/station ahead** and tells you how many **minutes you'll arrive**.



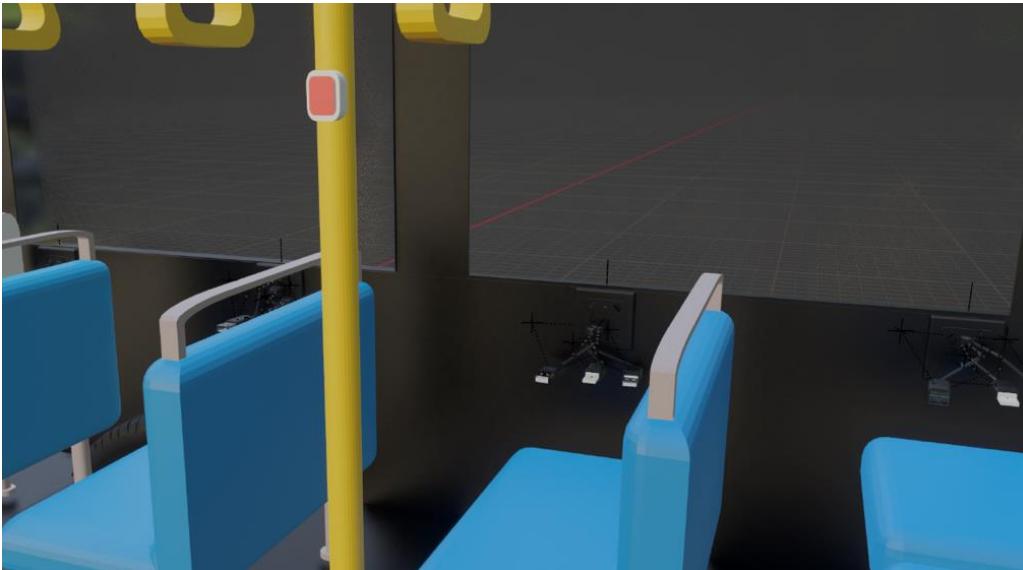
Luggage/ Bag

This will be the **luggage/bag point** when you get on the bus and have scanned with palm-scan. You'll see this point in second place. So, you can put your things or bag in it.



CCTV

At the top, we will have **two** CCTV installed, that is, at the **front door** and the **back door**, in which the CCTV can detect seats as well.



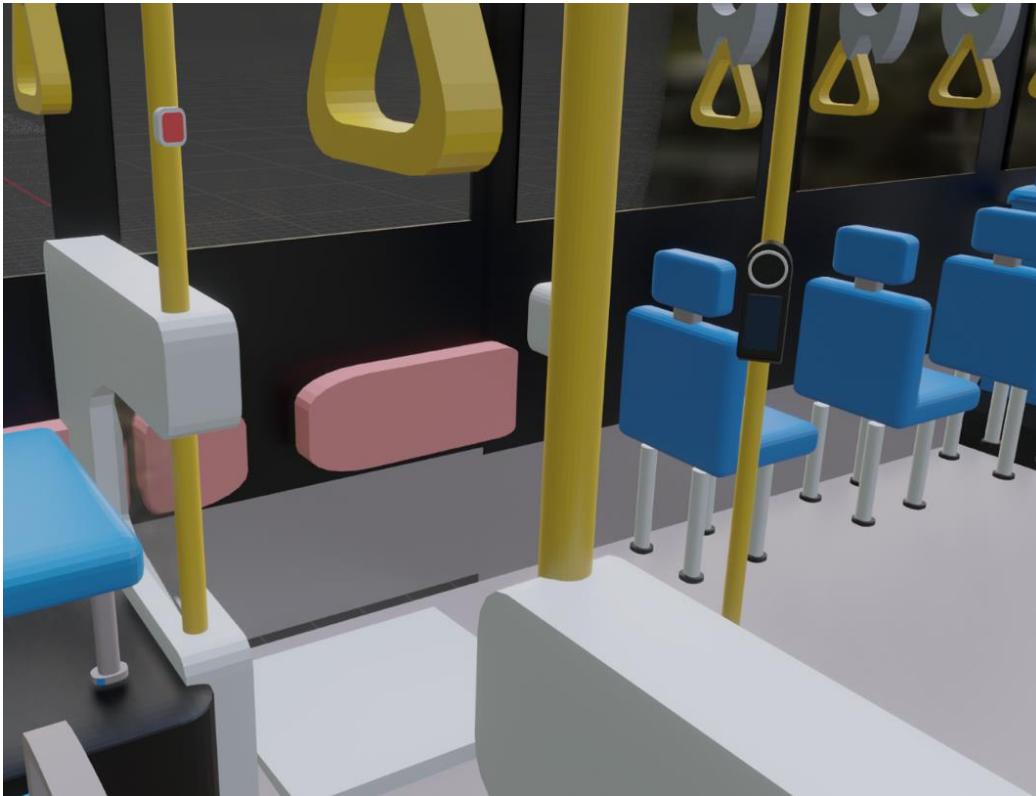
Plug 3-in-1

This picture is a picture that says that our bus also has a **battery charging service**. We will attach a charger with **Three in One charger**: **Type-C**, **Micro USB**, and **Lightning**, and customers cannot pull it out because we have it attached to the bus.



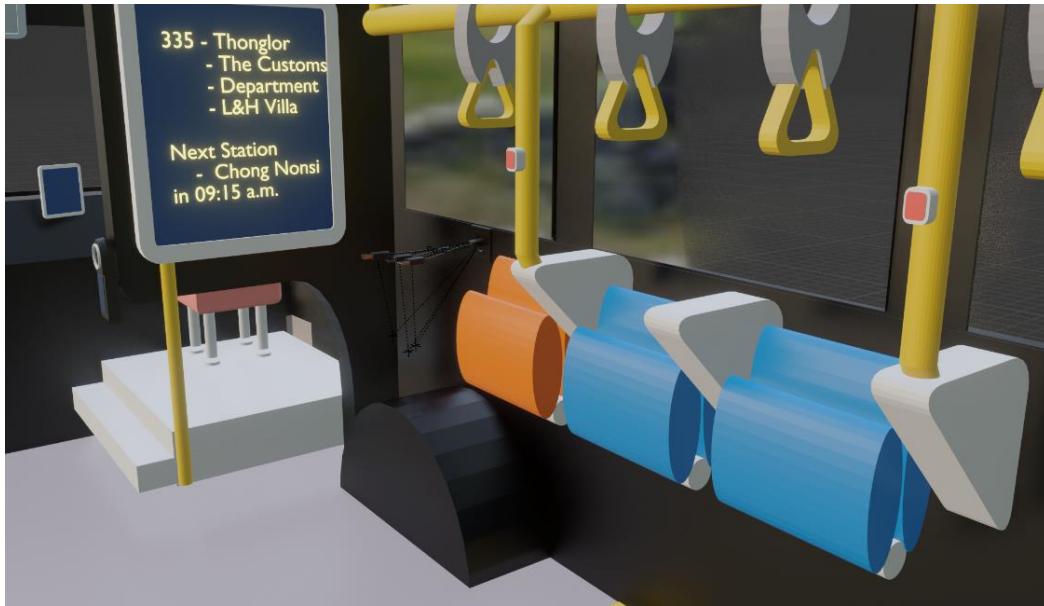
Door Open

This picture will tell you that in the case of reaching each sign/station, the doors will **open at the same time** with an opening to the side. By **allowing passengers to go up through the front door only**. As for the **back door**, there will be a **small door** blocking it.



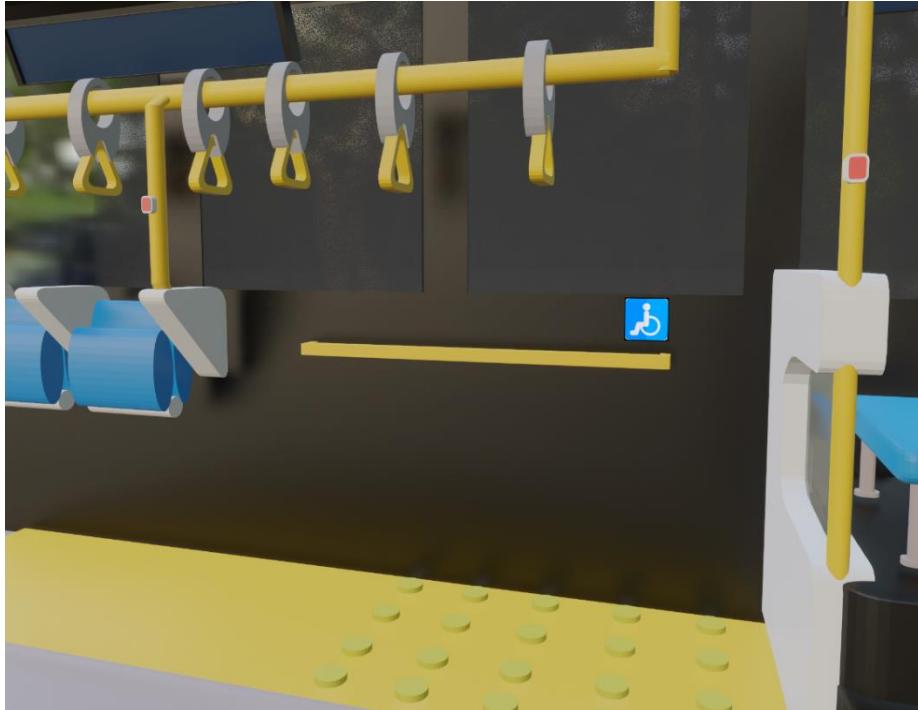
Second Door

This picture is of a **back door** that will have **a second palm-scan** attached. Well, you'll need to be scanned first then a small door will open for you to go down. We have a small door and this scanner to take into account and calculate your fare which sign/station you get on and which sign/station you get off.



Priority Seat

This will be a picture of the **Priority Seat**. That is, it will be the seats that we **reserve for children, pregnant women, the elderly, the disabled, and the monks**.



Wheelchair Seat

This picture will be a reserved for a **wheelchair passenger**. We will also have a **button** on the floor to **lock the wheel** so that the **wheelchair does not move**.

Application



Figure 1



Figure 2

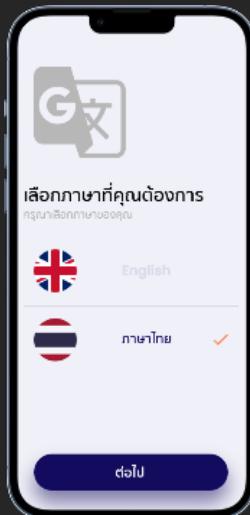


Figure 3

Once the user opens the E-BUS mobile application, it will bring the user to select language to use first [figure 1] and [figure 2].

Priority Seat Start page

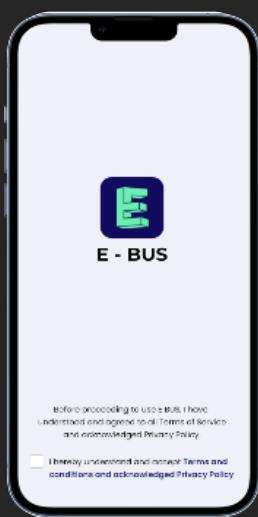


Figure 4

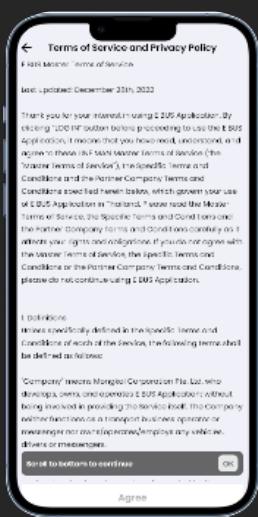


Figure 5

After that, user will then be taken to the page Terms of Service and Privacy Policy [figure 4] and [figure 5].

Terms of Service and Privacy Policy

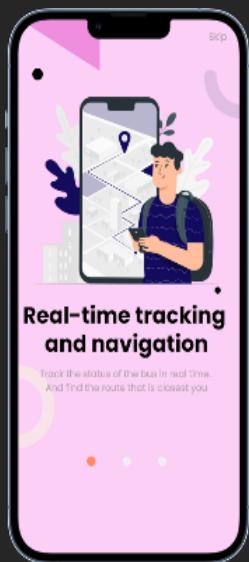


Figure 6



Figure 7



Figure 8

When the user accepts the terms of use. User will be taken to the 'user onboarding UX' page [figure 6, 7, 8], which is the in-app experience of new users when they sign up to test or use our product.

User onboarding UX

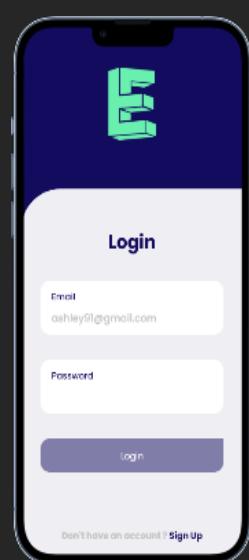


Figure 9

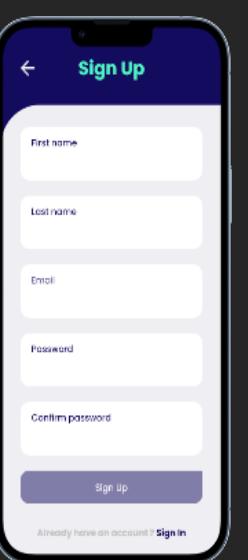


Figure 10

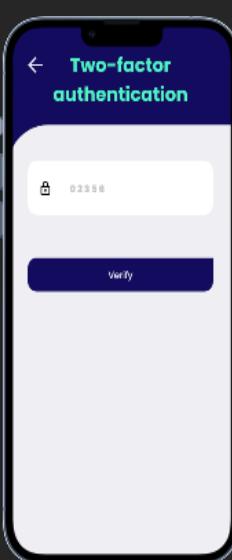


Figure 11

Enter the login page. In addition to the email address and password, the user will be prompted to enter an additional Two-factor authentication (2FA) for added security for the user [figure 11].

Login and Signup [1]



Figure 12

This means that on the user's mobile phone, the 'Google Authenticator' [figure 12] app must be installed as well.

Login and Signup [2]

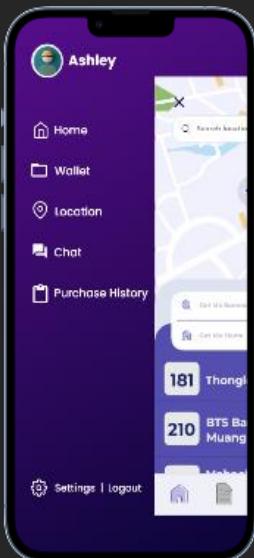


Figure 13



Figure 14

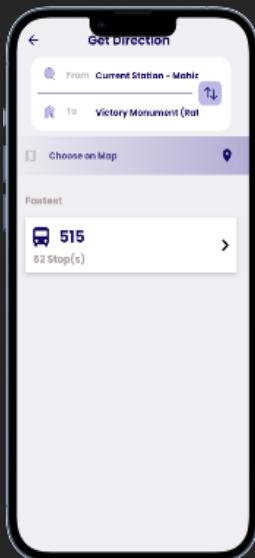


Figure 15

When entering the app, user will see the home page [figure 14], which will indicate the user's location. And the bus line closest to the user's location appears.

Or the user can search other routes that do not appear on the map based on the user's location. By clicking on Search location in [figure 14], then the location will appear as in [figure 15].

Menu bar and Home page

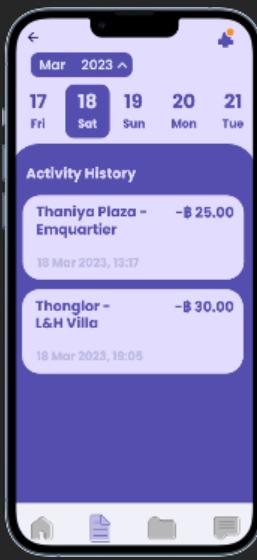


Figure 16



Figure 17

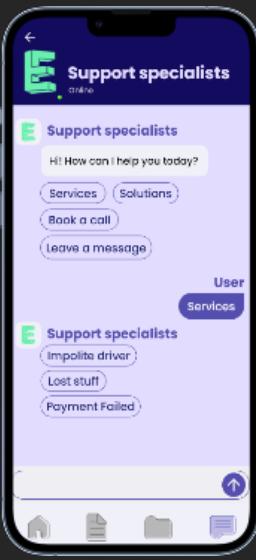


Figure 18

In the menu bar below is another option that users can press immediately as well as the menu bar on the left [figure 13]

Bottom menu bar

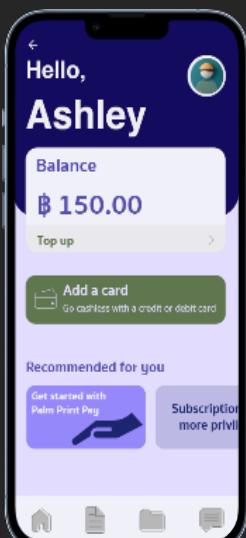


Figure 19

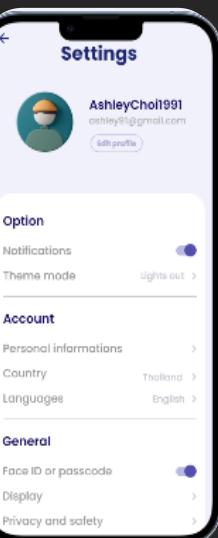


Figure 20

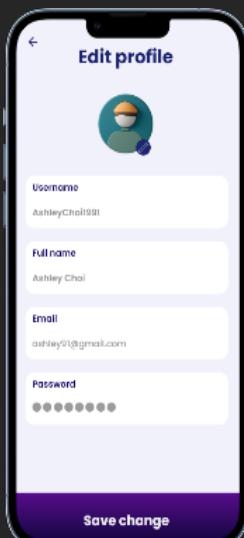


Figure 21

Profile page can be accessed by returning to the home page and click on the bar at the top left. Then a menu bar will appear on the side and have a user profile appear. To edit the profile [figure 20, 21], scroll down to the bottom of the menu bar. and click into Setting [figure 13]

Profile

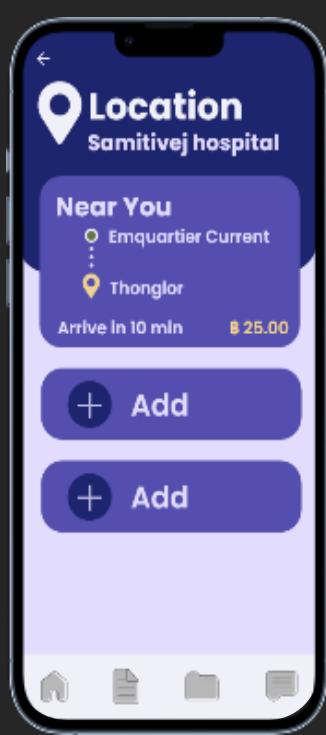


Figure 22

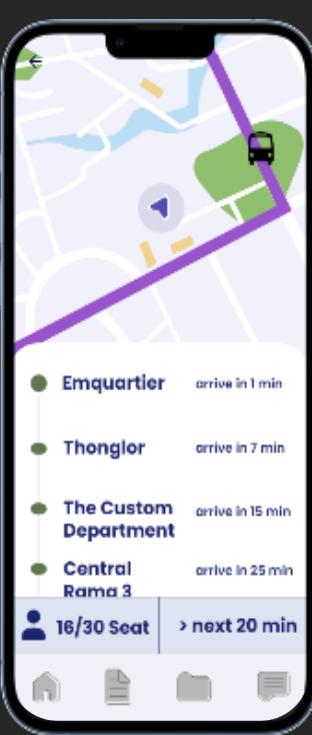


Figure 23



Figure 24

If the user frequently uses the service. Users can choose to use the feature to add routes that users travel frequently in the 'Location' features to indicate the location of the bus in another way, which will also calculate the fare price [figure 22].

Once you get on the bus, you can sit back and enjoy the view without worrying about missing the stop. In addition to the sign on the bus that will tell the next destination to arrive. You can also receive this notification on your phone. Because this feature has real-time notifications for you or called 'Live Activities' [figure 24] via your mobile phone screen, it's very convenient.

And another feature that is very useful for users is 'Bus seat availability' feature [figure 23]. Waiting for the bus will no longer have to be unpredictable, like buying a lottery ticket whether there will be seats for you or not. Just apply for membership and you can enjoy use this feature

Subscription privilege

4. Customer Interview

1. Student



Name: Punnapa Kuljieorangsri (Poon)

Age: 19

Occupation: Student

Used Route: Rama3 – Chong Nonsi - Silom - Phayathai

Interviewed Location: Empire Tower

Question 1: How can your solution help them to solve/alleviate their pains/needs?

She feels that our solution makes her life easier by waiting for the bus. Because we will know when the car will arrive and can adjust the time. In terms of scanning palm print to pay, there is a response because when she has a lot of things, she may not be able to pick up money or a phone.

Question 2: What and why do they like your idea, your solution, and the prototype?

She likes the idea in terms of application and palm-print technology because the application is easy to use, and the technology has come to facilitate waiting for the bus and paying.

Question 3: What and why don't they like your idea, your solution, and the prototype?

She doesn't like the idea in terms of in-app sales because she thinks that she is not interested in buying something such as a keychain.

Question 4: What and why should your business be improved in their opinion?

According to her opinion, there is nothing to improve or fix because she thinks that the applications and technology on the bus are just fine, no more, no less.

Summarize:

Poon is a Mahidol student who is studying in Phayathai area but lives in Rama III. The public transport that she used for the trip was a bus, motorcycles and BTS for going to university or traveling. The problem she encountered with buses was that they were crowded and perhaps inconvenient to pay. So, she agreed to pay with the palm-scan of her hand as it doesn't need to carry cards or cash making it more convenient to pay. In addition, she agrees to pay more in the application for more functions because when traveling she wants to plan the trip to arrive at the destination within time.

2. Student



Name: Kongphob Mek-aroon (Rob)

Age: 22

Occupation: Student

Used Route: Saint Louis - Chong Nonsi - Silom

Interviewed Location: Silom complex bus stop

Question 1: How can your solution help them to solve/alleviate their pains/needs?

From his opinion. He said that our solution helps in terms of payment convenience as much as possible.

Question 2: What and why do they like your idea, your solution, and the prototype?

The idea that he likes is the sensor that tells the number of seats how many seats are available in the application and the application is easy to use.

Question 3: What and why don't they like your idea, your solution, and the prototype?

The idea that he doesn't like is about giving consent in terms of bios to collect data. because he saw that the QR-Code was already convenient and in term of souvenir, he thinks it's something that is unlikely to be bought by many people. And he thinks that in terms of scanning weapons, it is not necessary.

Question 4: What and why should your business be improved in their opinion?

He would like to improve might be in terms of in-app purchases. He suggested that we might do it as a giveaway in the beginning. and would like a function to reserve seats. He thinks it will answer more questions. Therefore, there is an offer in the matter of NFC that thinks it would be better to replace the palm scan and customers would not have to worry about the PDPA as well.

Summarize:

Rob, he is a student who lives in Chong Nonsi area, Rama 3. Usually use a private car to travel because people in the bus are crowded, making it inconvenient to travel. But our bus can help answer the question of paying. In terms of improvement, he would like to add that seats in the bus may be reserved as a reserve, and in the matter of souvenirs, it may be made as a giveaway to let people come to our bus.

3. Worker



Name: Netnarin Chanthakan (Oar)

Age: 40

Occupation: Maid TCS at Skywalk

Used Route: Chong Nonsri

Interviewed Location: Chong Nonsri Skywalk

Question 1: How can your solution help them to solve/alleviate their pains/needs?

Our company answered Aunt Oar's problem a lot because of the problems that Aunt Oar encountered from using buses in Thailand were not having seats on the bus and taking a long time to wait for the bus. We explained earlier to the aunt about the bus availability feature which Auntie likes and agrees very much.

Question 2: What and why do they like your idea, your solution, and the prototype?

She liked almost every idea we put forward because Auntie has problems from using the bus that matches our pain point. She really liked the fact that we had a charging cable on the car. She loved the available seat feature too. Paying with the palm of her hand was something she was excited about. She told us many times that she wanted this to be real. Our ideas is very convenient and comfortable to her. And the price is not too high for her. She can afford this.

Question 3: What and why don't they like your idea, your solution, and the prototype?

She didn't show concern in the part of security, so the scanning weapon isn't answer to her needed. And the way we sell the souvenir is not interesting to her because it is not useful, so she won't buy it.

Question 4: What and why should your business be improved in their opinion?

She wanted us to improve in terms of application to have the Thai language because she felt like we did this thing for only foreigners, and she also suggests that putting restrooms on the bus would be very great. And we consider that this will be our future plan.

Summarize:

Aunt Oar is a maid TCS at Skywalk who uses the route around Chong Nonsi on a regular basis. Due to the problem that she faced on the Thailand bus, which is that there is no available seat for her, Aunt was greatly in agreement with our idea and greatly wanted this to be real in Thailand. She liked the solution of the palm-print scanner for easier payment too. She stated in part of the palm print register that it is a bit cumbersome, but it is worth getting to use this bus. She didn't have a problem with wanting to be safe in the car. Therefore, we did not give much opinion on this part. But say it's good if there is. For the bus prototype, she was amazed that we have USB chargers and loved to hear that solution. The thing she recommended in the application prototype was that she wanted the application to have Thai language, too. She is willing to pay for a premium account for the seats available feature and the showing price, which are shown in the application. It had a few things she wanted us to add in for the future plan, including the restroom in the bus.

4. Foreigner/Tourist



Name: Jacob Juul (Jacob)

Age: 47

Occupation: Entrepreneur

Used Route: Travel in BKK

Interviewed Location: Silom Complex

Question 1: How can your solution help them to solve/alleviate their pains/needs?

It must be noted that our business may not meet the needs of Jacob directly, because from the interview, even though Jacob is one of our target customers, Jacob does not use public transportation such as buses to visit and work in Bangkok. Most of the time, he mainly uses Grab because it is more convenient for him than buses. But at some point, he agreed with us to change from the oil bus to EV bus. Because from the picture he saw in Thailand, there was a lot of dust and smoke from the buses. He felt that ours answered him in this aspect.

Question 2: What and why do they like your idea, your solution, and the prototype?

Even if Jacob doesn't use the bus. But we introduce Jacob with our problems and solutions. Jacob was most interested in pay via palm print scanning technology. And he was fascinated with our prototypes, including the bus and an application that can see the number of available seats on the bus.

Question 3: What and why don't they like your idea, your solution, and the prototype?

What Jacob didn't like at all was weapon scanners on the bus. He mentioned that it was not necessary for buses.

Question 4: What and why should your business be improved in their opinion?

Even Jacob prefers to pay by palm print, but because before it can be used, it must be registered at the bank or counter service. Jacob said it is quite difficult for foreigners to register

because they do not know how Thai banks work. Or staying in Bangkok for a short time may not be worth going to register your palm for use on the bus.

Summarize:

Jacob is from Denmark. He came to Thailand to travel and do business at the same time. The problem Jacob faces with buses in Bangkok is pollution from the exhaust pipes of petrol buses. But the first thing we started to solve is to change from a petrol bus to 100% electric vehicles bus, which can meet Jacob's needs in this aspect. He liked every prototype we showed, especially the palm print payment. Even though it was difficult for him to register. But if he really used it, he was ready to pay with his palm. He commented that it was just a way of payment that would make it more convenient and excited about the new technology. He is not serious about PDPA at all because he is confident in the safety of our customer data collection.

5. Advertiser



Name: Wanachaya tantivipawin (Nana)

Age: 20

Occupation: Student, Staff of Cravity Fan Base in Thailand

Used Route: -

Interviewed Location: Online

Question 1: How can your solution help them to solve/alleviate their pains/needs?

For this person, she did not have pains, but her need is the price of advertisement. It should be cheaper than this because fans mostly are students and adults who do not have much income.

Question 2: What and why do they like your idea, your solution, and the prototype?

She likes the idea and prototype of the bus, especially, the location of advertisements for all inside and outside of the bus because passengers in the bus can clearly see advertisements and many people outside the bus also can clearly see advertisements because of the route, and she greatly likes the route that we chose and presented to her. She thinks it can gain attention from the diverse location of people's residences.

Question 3: What and why don't they like your idea, your solution, and the prototype?

The only thing she dislikes about E-Bus is the first price we decide to use for the advertisements. She gave the reason that the fans are mostly students and adults who have too little income to be able to support this price of advertisements. However, all things are fine for her.

Question 4: What and why should your business be improved in their opinion?

She gave opinions that we should provide more options, for example, contract 2-week advertisement for 30,000 Bath. Because the options that we provided there're not alleviate their needs as much as possible.

Summarize:

Nana is a student and staff member of Cravity Fan Base in Thailand. She said that members in the Cravity fan base would select some approaches to advertise her project about Cravity. Sometimes, members will select what and where to put the project on the advertisement on the bus or on the screen somewhere, but sometimes they post on the page to allow many fans to comment and vote on approaches to advertise the project. It would be great if we reduce the duration of advertisement and its price, therefore, we can get more customers for this target.

Bus Time Table Plan

Round	Time	Rush Time
1	4.30 am. - 5.20 am.	
2	5.20 am. - 6.10 am.	
3	6.10 am. - 7.10 am.	
Charge: 35 min / Bus Cleaning		
4	7.45 am. - 9.00 am.	✓
5	9.00 am. - 10.00 am.	
6	10.00 am. - 11.00 am.	
Charge: 35 min / Bus Cleaning		
7	11.35 am. - 12.55 pm.	✓
8	12.55 pm. - 13.55 pm.	
9	13.55 pm. - 14.55 pm.	
Charge: 35 min / Bus Cleaning		
10	14.55 pm. - 15.55 pm.	
11	15.55 pm. - 17.10 pm.	✓
12	17.10 pm. - 18.25 pm.	✓
Charge: 35 min / Bus Cleaning		
13	19.00 pm. - 21.15 pm.	✓
14	21.15 pm. - 22.15 pm.	
15	22.15 pm. - 23.15 pm.	
Charge: 35 min / Bus Cleaning		

Bus NO.	Bus Stop Name								
	Thonglor	Customs Department	Central Rama 3	L&H Villa	Chong Nonsi	Thaniya Plaza	Benchakitti Park	Phetchaburi	Emquartier
335	4.30 am.	4.35 am.	4.45 am.	4.50 am.	5.00 am.	5.05 am.	5.10 am.	5.15 am.	5.20 am.

5. Financial Estimation

- Starting on January 2023

————— 1 - Starting Point ————

Fixed Assets

Fixed Assets	Amount	Depreciation (years)	Notes
Real Estate-Land	1,000,000	Not Depreciated	Bus Parking
Real Estate-Buildings	690,000	20	Office
Leasehold Improvements		7	-
Equipment	50,000	7	Computer
Furniture and Fixtures	20,000	5	Table, Chair etc.
Vehicles		5	-
Other		5	-
Total Fixed Assets	\$ 1,760,000		

We first buy land for the bus parking near the EA station which is the point of charging the electric vehicle. It must be near to our route and the office too. We have the office near MRT Sukhumvit. Then we need some equipment and furniture to decorate the office in order to be suitable for a company and provide employees with equipment

Operating Stuff

Operating stuff	Amount	Notes
Pre-Opening Salaries and Wages	138,000	Total salaries for 8 employees
Supplies (Bus)	707,200	Supplies cost of bus
Vehicle Assembly	450,000	Usage the service from EA company
Research and Development (Bus)	190,000	Research for new technology and new product
WIFI Rent	3,000	Rent for WIFI
Insurance	81,300	Total insurance cost (1 Year): bus, personnel
Souvenir Expenses	56,000	Cost of production
Advertising	198,000	For promote the bus (1 Month)
Advertisement Video Production	80,000	Short clip: 1 minute (1 Month)
API	4,760	
Register Machine	50,000	For registering palm print
Software License	510,000	(3 years)
Training Cost	20,000	Training customer support staff course
Working Capital (Cash On Hand)		
Total Operating Capital	\$ 2,488,260	
Total Required Funds	\$ 4,248,260	

- **Pre-Opening Salaries and Wages**

To implement efficient buses and quality applications, we need these expert personnels, so this salary cost is needed. As we have to do research and development work to improve our cars, research and development staff are hired. This staff studies new innovations and improves products. The production engineering staff will take care of assembling the bus. They will check the quality of the material to see if it is standard or not. To have a quality application, we need software development staff to develop the application, make it easy to use, and create an application security system. The marketing staff is important to our business because we are a start-up and we need to announce our service to others, so we have to have this staff to help us in this part. This staff will study the trend and share the information with the software development staff too, to make an application that is suitable for the user. We want to provide good service to our customers, so we have to have customer support staff to assist customers. Our business has new technology that people in Thailand may not be used to, so some of the customers may not understand the way it works. They can contact us, and our customer support staff will take care in this part to explain what to do and how to use. We hire three drivers to split the morning shift and the evening shift, and they have to have at least three years of experience driving a bus, a certificate from their employer, and pass a background check.

- **Supplies (Bus)**

Material costs					
Type	Name	Detail	Quantity	Price/per bus	Price
Bus interior parts	Seat	25 seats (including the driver seat)	25	1,200.00	30,000.00
	Screen 1 (Front)	Size: 25 inches	1	8,500.00	8,500.00
	Screen 2 (Side)	Size: 122.0*23.8 cm	4	10,400.00	41,600.00
	Speaker	Power Amplifier: 70 Watt	5	4,000.00	20,000.00
	CCTV	Embedded with sensor chips for motion detection.	2	8,500.00	17,000.00
	Charger	Three in One charger: Type-C, Micro USB, and Lightning	13	700.00	9,100.00
	Scanning Weapon	Placed in the door of the bus	1	50,000.00	50,000.00
	Body	- Width 2.55 meters - Length 9.7 meters	1	130,000.00	130,000.00

Bus exterior parts		- Height 3.15 meters - Made with Aluminum			
	Car tire	Size: 275/80R22.5	4	8,000.00	32,000.00
EV powertrain	Elective drive module (Motor)	Induction Motor	1	50,000.00	50,000.00
	Battery	- Battery type: Lithium Battery - Battery capacity: 170.0 kWh - Charging time: 35 min - Charging pile: 240kW/700V	1	220,000.00	220,000.00
	Battery Management System	Maintain balance cell battery	1	12,000.00	12,000.00
	Thermal Management	Cooling	1	9,000.00	9,000.00
	On-board charger	Converts alternating current to direct current	1	10,000.00	10,000.00
	Electric Power Control Unit (EPCU)	Inverter/converter	1	18,000.00	18,000.00
	Other components	e.g., cables, controller	-	50,000.00	50,000.00
				Total	707,200.00

The cost of the whole bus, such as the material for the bus interior, the material for the bus exterior, the material for the EV powertrain, and other indirect expenses that involve the bus, is our main cost item. Instead of buying the bus from another company or importing it from another country, if we make it ourselves, it will save money because we can control the price. The first thing is material cost. We buy material from multiple suppliers and make a deal that we will order more later and get a reduced price.

- **Vehicle Assembly**

we will have the vehicle assembly expense that is needed, and it has to be up to efficiency standards.

- **Research and Development (Bus)**

This cost will decrease year after year, and the cost will decrease over time. This is important to our business in that we have to research the things that are associated with the electric vehicle bus so that we can improve our bus, such as if we can make our own charger in the future so we don't need to pay another company for the charger point.

- **WIFI Rent**

Overhead costs					
Type	Name	Detail	Month	Price/per month	Price
Rent	WIFI	<ul style="list-style-type: none"> - Wireless router - 4G Unlimited Speed & Data - Rental price for 1 year: 36,000.00 baht 	1	3,000.00	3,000.00
				Total	3000.00

- **Insurance**

Overhead costs					
Type	Name	Detail	Quantity	Price/per year	Price
Insurance	Public transport insurance	For 60-70 Passengers <ul style="list-style-type: none"> - Accident - Natural Disasters - Third Party Losses - Passenger Accident - Expense for 1 year: 60,000.00 baht 	1	60,000.00	60,000.00
	Employee insurance	10% from Salaries	1	21,300.00	21,300.00
				Total	81,300.00

This is the insurance price of bus and personnel. We buy the public transportation insurance package for public transportation with 60–70 passengers. This covers accidents, natural disasters, third-party losses, and passenger accidents too. All of the staff will have employee welfare insurance that accounts for at 10% of their salary.

- **Souvenir Expenses**

Our business will have its own product to increase revenue, so we will have this cost of production. Now our plan is to sell keychains. But in the future, we plan to sell glasses of water, and postcards. In the beginning, we will order keychain production. We have two types of keychains that we order: a 3D PVC keychain and an acrylic keychain. We order in large quantities to get a low price. We believe that the 3D PVC keychain will be the best seller because it has a flashlight and is designed in the shape of a bus, so we order more 3D PVC keychains than acrylic keychains.

- **Advertising**

Marketing and advertising costs					
Type	Name	Detail	Month	Price/per month	Price
Advertising costs	LED Screen	Billboard LED Screen EmQuartier (Short clip 1 minute per hour)	1	90,000.00	90,000.00
Type	Name	Detail	Clip	Price/per clip	Price
Advertising costs	Influencer	YouTube - Spin9 (Long clip video 20 minutes)	1	100,000.00	100,000.00
		TikTok – ຂົມແກ້ວ Content: lifestyle Request: using E-bus (Short clip 1 minute 30 seconds)	1	5,000.00	5,000.00
		Twitter – ununfah (Reviews based on real use)	1	3,000.00	3,000.00
				Total	198,000.00

Advertising is important to our business. We need people to know about us and show our product to people. The video we hire the video production will be presented on the billboard LED screen at EmQuartier, the shopping mall in Thailand, to let people who are around that place see it due to playing the clip in the city center. This place is on our route too and we will play on this LED screen for only one month. So we have to pay for this billboard. After that, today, the influencer has a great influence on people. We will hire Wu, who is

the creator on a YouTube channel of Spin9 whose content is mostly about IT and automotive. We want a long clip of 20 minutes from him. And other platforms are considered too, such as TikTok and Twitter. For TikTok, we want Chinmafe, who is the creator, to do the lifestyle clip video, but she has to use our bus to get to the destination too. We don't want the clip to be too direct sales. For Twitter, we want the account of 'ununfah' to give us a review based on her real use so people can believe in our service. All of this marketing is good for our company, and this could invite many people to use our bus.

- **Advertisement Video Production**

Overhead costs					
Type	Name	Detail	Clip	Price/per clip	Price
Utilities	Advertisement Videos	Advertisement Videos Production (1 minute)	1	80,000.00	80,000.00
				Total	80,000.00

We hired a video ad company to make a short clip video within 1 minute.

- **API**

Overhead costs					
Type	Name	Detail	Month	Price/per month	Price
Utilities	Google Maps	Dynamic Maps (20,000 requests)	1	4,760.00	4,760.00
				Total	4,760.00

E-Bus Application has the map and the bank for payment, so we need to buy the API from those. We buy dynamic maps for 20,000 requests from Google Maps.

- **Register Machine**

Overhead costs					
Type	Name	Detail	Amount	Price/per amount	Price
Utilities	Palm print register machine	AWS infrastructure (placed 5 branches in Bangkok)	5	10,000.00	50,000.00
				Total	50,000.00

we have a machine for registering. We buy it and place it in five branches in Bangkok.

- **Software License**

Overhead costs					
Type	Name	Detail	Year	Price/per year	Price
Utilities (Software License - Commercial Software)	Palm print scanned	AWS infrastructure	3	100,000.00	300,000.00
	AI-weapon-scanning	Evolv company	3	70,000.00	210,000.00
				Total	510,000.00

Technology is also the main cost that delivers the value proposition to our business, since the highlight that makes us different from others are the palm prints scanned for payment. The cost of technology is that we buy the software license, which is commercial software, for three years from AWS infrastructure. Same as Evolv's AI weapon scanning, it is also required, and we take 3 years for the software license. This can guarantee security, as we mentioned in this part of phase 1. In the meantime, we will study to have this palm print technology or another new method for easy payment, which will mean we don't have to pay for a license in the next few years.

- **Training Cost**

To provide the best service for customers, we will have a training course for customer service staff every year to increase their work potential and update the staff on some of our services.

Sources of Funding: we have outside investors to issue 4 shares of capital stock at 1250,000 per share.

Sources of Funding	Percentage	Totals	Loan Rate	Term in Months	Monthly Payments	Notes
Owner's Equity	0.00%					
Outside Investors	117.70%	5,000,000				
Additional Loans or Debt						
Commercial Loan	0.00%		9.00%	84	-	
Commercial Mortgage	0.00%		9.00%	240	-	
Credit Card Debt	0.00%		7.00%	60	-	
Vehicle Loans	0.00%		6.00%	48	-	
Other Bank Debt	0.00%		5.00%	36	-	
Total Sources of Funding	117.70%	\$ 5,000,000	Cell D 42 must equal cell C31		\$ -	
Total Funding Needed		\$ (751,740)	Your funding exceeds your needs (Not Balanced)			

2 - Payroll

Payroll Year 1

Employee Types	Number of Owners /Employees	Average Hourly Pay (to 2 decimal places, ex. \$15.23)	Estimated Hrs./Week (per person)	Estimated Pay/Month (Total)
Owner(s)				\$ -
R&D staff	1	200.00	40	\$ 34,667
Production Engineering staff	1	270.00	40	\$ 46,800
Software development staff	1	280.00	40	\$ 48,533
Marketing staff	1	220.00	40	\$ 38,133
Customer support staff	1	120.00	40	\$ 20,800
Driver	3	115.00	35	\$ 52,325
Part-Time Employees				\$ -
Independent Contractors				\$ -
Total Salaries and Wages	8	\$ 1,205.00	235	\$ 241,258
Total Salaries and Related Expenses				\$ 241,258

All the staff that work at the office will work 8 hours for one day and 5 days per week, so the number of hours per week will be 40. And the driver will work 5 hours for one day and work 7 days per week, so the hourly rate per week will be 35 for one person. We separate the working hours of each driver to 5 because buses will go for 15 laps per day.

Expenses for Paying Salaries to Full-Time Employees

- R&D staff (1 employee) 34,667.00 baht per month
- Production Engineering staff (1 employee) 46,800.00 baht per month
- Software development staff (1 employee) 48,533.00 baht per month
- Marketing staff (1 employee) 38,133.00 baht per month
- Customer support staff (1 employee) 20,800.00 baht per month
- Driver (3 employees) 52,325.00 baht per month

Employee Types	January	February	March	April	May	June	July	August	September	October	November	December	Annual Totals
Owner(s)	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
R&D staff	34,667	34,667	34,667	34,667	34,667	34,667	34,667	34,667	34,667	34,667	34,667	34,667	\$ 416,000
Production Engineering staff	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	46,800	\$ 561,600
Software development staff	48,533	48,533	48,533	48,533	48,533	48,533	48,533	48,533	48,533	48,533	48,533	48,533	\$ 582,400
Marketing staff	38,133	38,133	38,133	38,133	38,133	38,133	38,133	38,133	38,133	38,133	38,133	38,133	\$ 457,600
Customer support staff	20,800	20,800	20,800	20,800	20,800	20,800	20,800	20,800	20,800	20,800	20,800	20,800	\$ 249,600
Driver	52,325	52,325	52,325	52,325	52,325	52,325	52,325	52,325	52,325	52,325	52,325	52,325	\$ 627,900
Part-Time Employees	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Independent Contractors	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Total Salaries and Wages	\$ 241,258	\$ 2,895,100											
Total Salaries and Related Expenses	\$ 241,258	\$ 2,895,100											

The total cost for paying salaries is 2,895,100.00 baht per months.

Payroll Year 1-3

Employee Types	Year 1 Totals	2	Second Year	3	Third Year
Owner(s)	-	20.0%	-	30.0%	-
R&D staff	416,000	10.0%	457,600	20.0%	549,120
Production Engineering staff	561,600	7.0%	600,912	11.0%	667,012
Software development staff	582,400	10.0%	640,640	15.0%	736,736
Marketing staff	457,600	10.0%	503,360	13.0%	568,797
Customer support staff	249,600	3.0%	257,088	7.0%	275,084
Driver	627,900	5.0%	659,295	8.0%	712,039
Part-Time Employees	-	10.0%	-	30.0%	-
Independent Contractors	-	3.0%	-	3.0%	-
Total Salaries and Wages	\$ 2,895,100		\$ 3,118,895		\$ 3,508,788
Payroll Taxes and Benefits					
Social Security	289,510	5.0%	303,986	10.0%	334,384
Medicare	86,853	10.0%	95,538	20.0%	114,646
Federal Unemployment Tax (FUTA)	-	20.0%	-	30.0%	-
State Unemployment Tax (SUTA)	-	20.0%	-	30.0%	-
Employee Pension Programs	-	0.0%	-	0.0%	-
Worker's Compensation	-	3.0%	-	3.0%	-
Employee Health Insurance	-	3.0%	-	3.0%	-
Other Employee Benefit Programs	-	10.0%	-	10.0%	-
Total Payroll Taxes and Benefits	\$ 376,363		\$ 399,524		\$ 449,030
Total Salaries and Related Expenses	\$ 3,271,463		\$ 3,518,419		\$ 3,957,818

- R&D staff**

It is necessary to develop our services and products. Every year, this income must increase more and more.

- Production Engineering staff**

We increased the salary by 7% after the first year and by 11% after the second year. The initial production of the vehicle must meet the standards, which means we must have skilled personnel, therefore employing skilled personnel in this field at high wages. After the first year, there has been growth in this group, but not as high as the growth of R&D employees.

- Software development staff**

This has the highest salary because the application is the main focus to our company, it must be easy to use and meet the needs of customers as much as possible. Every year, there is high growth in this type of personnel to always improve the application to be easy use.

- **Marketing staff**

We use new technologies that Thailand has never had before. So, we must have this department to communicate with customers. They have to access the market to our target in the first year. And the salary growth in the next year will not grow much because we will focus on marketing only the first two years.

- **Customer support staff & Driver**

Two of these don't have high growth of salaries.

We also add social security and Medicare for employees too, every year we will have high growth of these benefits.

3 - Sales Forecast

Complete This Chart First:				
Product Lines	Units	Sales Price Per Unit	COGS Per Unit	Margin Per Unit
Fares	Trip per time	\$ 34.00	\$ 11.55	\$ 22.45
Souvenirs - Keychain with flashing light	Keychain	\$ 75.00	\$ 55.00	\$ 20.00
Souvenirs - Keychain tag location	Keychain	\$ 45.00	\$ 35.00	\$ 10.00
Advertisement - on bus 2 week	Advertisement	\$ 30,000.00	\$ 14,000.00	\$ 16,000.00
Advertisement - on app 2 week	Advertisement	\$ 60,000.00	\$ 14,000.00	\$ 46,000.00
Subscription	Subscription	\$ 49.00	\$ 15.87	\$ 33.13

- **Product Lines of our business**

- For this part, we focus on the main revenue streams of the business which are Fares, Souvenirs: Keychain with flashing light and Keychain tag location, Advertisements: on the bus and on the application with contract 2 weeks, and Subscription on the application. [from 3a-SalesForecastYear1 page in excel]

- **Sale Revenue**

- **Fare**

0 – 4 km.	25 Bath
4 – 8 km.	28 Bath
8 – 12 km.	31 Bath
12 – 16 km.	34 Bath
16 – 20 km.	37 Bath
20 – 25 km.	40 Bath

Prediction: Our bus starts work at 4.30 a.m. until 11.15 p.m., totally 15 times in a day including 5 peak times. Max is 60 including wheelchair seat. However, based on the real situation, people get in and get out the bus at the same time, so, our bus can support the passengers more than 60 persons.

50 people/round in the first month

$50 * 15 = 750$ people/day

$750 * 30 = 22,500$ people/month

Fares - COGS per unit

Fares	month	price	1 month
Bus	120	\$ 1,157,200.00	\$ 9,643.33
Bus maintainance	1	\$ 1,500.00	\$ 1,500.00
Electricity Expense	1	\$ 4,162.50	\$ 4,162.50
WIFI	1	\$ 3,000.00	\$ 3,000.00
Bus Insurance	1	\$ 5,000.00	\$ 5,000.00
R&D Cost	12	\$ 190,000.00	\$ 15,833.33
Salaries and Insurance	12	\$ 3,271,463.00	\$ 272,621.92
Training Course	12	\$ 20,000.00	\$ 1,666.67
Software License	36	\$ 510,000.00	\$ 14,166.67
Register Machine	60	\$ 50,000.00	\$ 833.33
API Google	1	\$ 4,760.00	\$ 4,760.00
		Total price /month	\$ 333,187.75

Total price/ month = 333,187.75 baht

Expected customer = 32600

Expense from using the OMISE API = 3.65% of transaction with VAT7%

Sales price per unit = 34.00

COGS per unit = $(333,187.75/32600) + (34.00 * 3.65\% * (1+7\%))$

= **11.55**

- Year 1 [from 3a-SalesForecastYear1 page in excel]

Product Lines	January	February	March	April	May	June
Fares						
Trip per time Sold	22,500	27,000	29,250	29,250	31,750	31,750
Total Sales	765,000	918,000	994,500	994,500	1,079,500	1,079,500
Total COGS	259,838	311,806	337,789	337,789	366,660	366,660
Total Margin	505,162	606,194	656,711	656,711	712,840	712,840

July	August	September	October	November	December	Annual Totals	Category Breakdown	Category / Total
31,750	36,000	36,000	36,000	40,000	40,000	391,250		98.7%
1,079,500	1,224,000	1,224,000	1,224,000	1,360,000	1,360,000	\$ 13,302,500	100.0%	93.5%
366,660	415,741	415,741	415,741	461,934	461,934	\$ 4,518,293	34.0%	93.8%
712,840	808,259	808,259	808,259	898,066	898,066	\$ 8,784,207	66.0%	93.3%

- Year 2 [from 3b-SalesForecastYrs1-3 page in excel]

Product Lines	Year 1 Totals	January	February	March	April	May	June
Fares							
Trip per time Sold	391,250	24,075	28,890	31,298	31,298	33,973	33,973
Total Sales	\$ 13,302,500	818,550	982,260	1,064,115	1,064,115	1,155,065	1,155,065
Total COGS	\$ 4,518,293	278,027	333,632	361,435	361,435	392,326	392,326
Total Margin	\$ 8,784,207	540,523	648,628	702,680	702,680	762,739	762,739

July	August	September	October	November	December	Year 2 Totals	Category Breakdown	Category / Total
33,973	38,520	38,520	38,520	42,800	42,800	418,638		98.7%
1,155,065	1,309,680	1,309,680	1,309,680	1,455,200	1,455,200	\$ 14,233,675	100.0%	93.5%
392,326	444,843	444,843	444,843	494,270	494,270	\$ 4,834,574	34.0%	93.8%
762,739	864,837	864,837	864,837	960,930	960,930	\$ 9,399,101	66.0%	93.3%

- Year 3 [from 3b-SalesForecastYrs1-3 page in excel]

January	February	March	April	May	June	July
28,890	34,668	37,557	37,557	40,767	40,767	40,767
982,260	1,178,712	1,276,938	1,276,938	1,386,078	1,386,078	1,386,078
333,632	400,358	433,721	433,721	470,792	470,792	470,792
648,628	778,354	843,217	843,217	915,286	915,286	915,286

August	September	October	November	December	Year 3 Totals	Category Breakdown	Category / Total
46,224	46,224	46,224	51,360	51,360	502,365		98.7%
1,571,616	1,571,616	1,571,616	1,746,240	1,746,240	\$ 17,080,410	100.0%	93.5%
533,811	533,811	533,811	593,123	593,123	\$ 5,801,488	34.0%	93.8%
1,037,805	1,037,805	1,037,805	1,153,117	1,153,117	\$ 11,278,922	66.0%	93.3%



Figure 1 Graph of the First Year

We can see from the graph of ‘fares’ that it increases.

- Souvenirs

Keychain with flashing light	75 Bath/each
Keychain tag location	45 Bath/each
Prediction: The souvenirs we have recently are keychain with flashing light and keychain tag location which will be sold in the application only. In our opinion, most of the target customer for this kind of souvenirs will be tourists or people who want to support our business. Consequently, we probably get the high revenues on December because this month has many festivals and travel season. Based on the interviews, people are not interested in keychains recently, but we will find the way to make the souvenirs that people like.	

3D PVC keychain - COGS per unit

3D PVC keychain	one	price
PVC Finish goods	1	55
Total price /month	\$	55.00

COGS per unit = **55.00**

Acrylic keychain - COGS per unit

Acrylic keychain	one	price
Acrylic Finish goods	1	35
Total price /month	\$	35.00

COGS per unit = **35.00**

- Year 1: Keychain with **flashing light** [from 3a-SalesForecastYear1 page in excel]

Souvenirs - Keychain with flashing light	January	February	March	April	May	June
Keychain Sold	40	30	30	25	20	20
Total Sales	3,000	2,250	2,250	1,875	1,500	1,500
Total COGS	2,200	1,650	1,650	1,375	1,100	1,100
Margin	800	600	600	500	400	400

July	August	September	October	November	December	Annual Totals	Category Breakdown	Category / Total
25	20	20	30	35	40	335		0.1%
1,875	1,500	1,500	2,250	2,625	3,000	\$ 25,125	100.0%	0.2%
1,375	1,100	1,100	1,650	1,925	2,200	\$ 18,425	73.3%	0.4%
500	400	400	600	700	800	\$ 6,700	26.7%	0.1%

- Year 2: Keychain with **flashing light** [from 3b-SalesForecastYrs1-3 page in excel]

Souvenirs - Keychain with flashing light	Year 1 Totals	January	February	March	April	May	June
Keychain Sold	335	43	32	32	27	21	21
Total Sales	\$ 25,125	3,210	2,408	2,408	2,006	1,605	1,605
Total COGS	\$ 18,425	2,354	1,766	1,766	1,471	1,177	1,177
Margin	\$ 6,700	856	642	642	535	428	428

July	August	September	October	November	December	Year 2 Totals	Category Breakdown	Category / Total
27	21	21	32	37	43	358		0.1%
2,006	1,605	1,605	2,408	2,809	3,210	\$ 26,884	100.0%	0.2%
1,471	1,177	1,177	1,766	2,060	2,354	\$ 19,715	73.3%	0.4%
535	428	428	642	749	856	\$ 7,169	26.7%	0.1%

- Year 3: Keychain with **flashing light** [from 3b-SalesForecastYrs1-3 page in excel]

January	February	March	April	May	June	July
51	39	39	32	26	26	32
3,852	2,889	2,889	2,408	1,926	1,926	2,408
2,825	2,119	2,119	1,766	1,412	1,412	1,766
1,027	770	770	642	514	514	642

August	September	October	November	December	Year 3 Totals	Category Breakdown	Category / Total
26	26	39	45	51	430		0.1%
1,926	1,926	2,889	3,371	3,852	\$ 32,261	100.0%	0.2%
1,412	1,412	2,119	2,472	2,825	\$ 23,658	73.3%	0.4%
514	514	770	899	1,027	\$ 8,603	26.7%	0.1%

- Year 1: Keychain **tag location** [from 3a-SalesForecastYear1 page in excel]

Souvenirs - Keychain tag location	January	February	March	April	May	June
Keychain Sold	30	30	30	25	20	20
Total Sales	1,350	1,350	1,350	1,125	900	900
Total COGS	1,050	1,050	1,050	875	700	700
Margin	300	300	300	250	200	200

July	August	September	October	November	December	Annual Totals	Category Breakdown	Category / Total
25	20	20	30	35	40	325		0.1%
1,125	900	900	1,350	1,575	1,800	\$ 14,625	100.0%	0.1%
875	700	700	1,050	1,225	1,400	\$ 11,375	77.8%	0.2%
250	200	200	300	350	400	\$ 3,250	22.2%	0.0%

- Year 2: Keychain tag location [from 3b-SalesForecastYrs1-3 page in excel]

Souvenirs - Keychain tag location		Year 1 Totals		January	February	March	April	May	June
Keychain Sold		325	32	32	32	27	21	21	
Total Sales	\$	14,625	1,445	1,445	1,445	1,204	963	963	
Total COGS	\$	11,375	1,124	1,124	1,124	936	749	749	
Margin	\$	3,250	321	321	321	268	214	214	

July	August	September	October	November	December	Year 2 Totals	Category Breakdown	Category / Total
27	21	21	32	37	43	348		0.1%
1,204	963	963	1,445	1,685	1,926	\$ 15,649	100.0%	0.1%
936	749	749	1,124	1,311	1,498	\$ 12,171	77.8%	0.2%
268	214	214	321	375	428	\$ 3,478	22.2%	0.0%

- Year 3: Keychain tag location [from 3b-SalesForecastYrs1-3 page in excel]

January	February	March	April	May	June	July
39	39	39	32	26	26	32
1,733	1,733	1,733	1,445	1,156	1,156	1,445
1,348	1,348	1,348	1,124	899	899	1,124
385	385	385	321	257	257	321

August	September	October	November	December	Year 3 Totals	Category Breakdown	Category / Total
26	26	39	45	51	417		0.1%
1,156	1,156	1,733	2,022	2,311	\$ 18,779	100.0%	0.1%
899	899	1,348	1,573	1,798	\$ 14,606	77.8%	0.2%
257	257	385	449	514	\$ 4,173	22.2%	0.0%

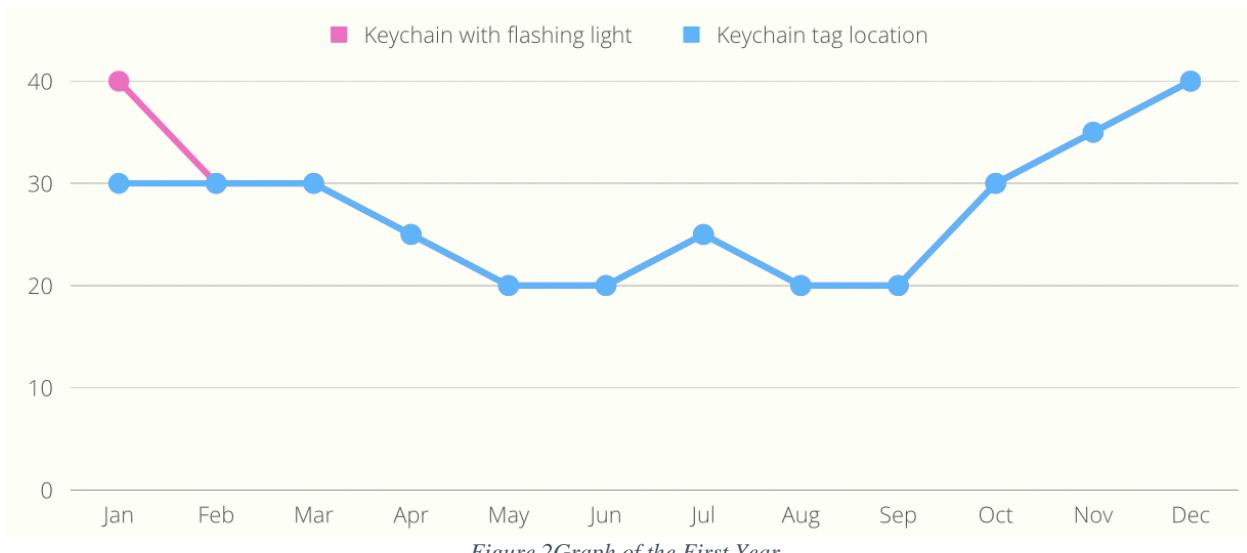


Figure 2 Graph of the First Year

- Subscription Revenue
 - Monthly Subscription

More features in application	49 Bath/month
Prediction: According to ViaBus, there are 40,000 people download their application in the first year. Therefore, we think the amount number of people download our application should be around as much as ViaBus. However, we cannot find the information of people subscription. So, we decided to predict in the small number of people who subscribe our application. But we hopefully think that the number of people subscribing will become larger.	

COGS per unit = 15.87

- Year 1 [from 3a-SalesForecastYear1 page in excel]

July	August	September	October	November	December	Annual Totals	Category Breakdown	Category / Total
400	425	450	500	600	700	4,600		1.2%
19,600	20,825	22,050	24,500	29,400	34,300	\$ 225,400	100.0%	1.6%
6,346	6,743	7,140	7,933	9,520	11,106	\$ 72,984	32.4%	1.5%
13,254	14,082	14,910	16,567	19,880	23,194	\$ 152,416	67.6%	1.6%
	Margin		3,313	6,627	8,283	9,940	10,769	11,597

- Year 2 [from 3b-SalesForecastYrs1-3 page in excel]

Subscription		Year 1 Totals		January	February	March	April	May	June
Subscription Sold		4600		107	214	268	321	348	375
Total Sales	\$	225,400		5,243	10,486	13,108	15,729	17,040	18,351
Total COGS	\$	72,984		1,698	3,395	4,244	5,093	5,517	5,942
Margin	\$	152,416		3,545	7,091	8,863	10,636	11,522	12,409

July	August	September	October	November	December	Year 2 Totals	Category Breakdown	Category / Total
428	455	482	535	642	749	4,922		1.2%
20,972	22,283	23,594	26,215	31,458	36,701	\$ 241,178	100.0%	1.6%
6,791	7,215	7,640	8,488	10,186	11,884	\$ 78,093	32.4%	1.5%
14,181	15,068	15,954	17,727	21,272	24,817	\$ 163,085	67.6%	1.6%

- Year 3 [from 3b-SalesForecastYrs1-3 page in excel]

January	February	March	April	May	June	July
128	257	321	385	417	449	514
6,292	12,583	15,729	18,875	20,448	22,021	25,166
2,037	4,074	5,093	6,112	6,621	7,130	8,149
4,254	8,509	10,636	12,763	13,827	14,890	17,018

August	September	October	November	December	Year 3 Totals	Category Breakdown	Category / Total
546	578	642	770	899	5,906		1.2%
26,739	28,312	31,458	37,750	44,041	\$ 289,414	100.0%	1.6%
8,658	9,167	10,186	12,223	14,260	\$ 93,711	32.4%	1.5%
18,081	19,145	21,272	25,526	29,781	\$ 195,702	67.6%	1.6%



Figure 3 Graph of the First Year

- **Advertising Revenue**
 - **On the bus**

2 weeks	30,000 Bath
1 month	60,000 Bath
3 months	60,000 Bath/month
6 months	40,000 Bath/month

Prediction: According to TrueID.com about the advertisements on bus, in our opinion, we think there's not many ads that want to be on the bus for a year or for too long, so we only calculate on 2 weeks contract, so, if the advertising companies or customers sign for 1 month, it's equal to 4 weeks in terms of the price. On the first month, we think that E-Bus is not well known in the public, so we think we will promote our bus first instead of promoting other advertisements.

Advertising - COGS per unit

Advertisement	one	price
Bus Sticker	1	5000
Car Service Stickers	1	9000
Total price /month		\$ 14,000.00

COGS per unit = **14,000**

- Year 1 [from 3a-SalesForecastYear1 page in excel]

Advertisement - on bus 2 week		January	February	March	April	May	June
Advertisement Sold		0	2	2	2	2	2
Total Sales		-	60,000	60,000	60,000	60,000	60,000
Total COGS		-	28,000	28,000	28,000	28,000	28,000
Margin		-	32,000	32,000	32,000	32,000	32,000

July	August	September	October	November	December	Annual Totals	Category Breakdown	Category / Total
2	2	2	2	2	2	22		0.0%
60,000	60,000	60,000	60,000	60,000	60,000	\$ 660,000	100.0%	4.2%
28,000	28,000	28,000	28,000	28,000	28,000	\$ 308,000	46.7%	5.9%
32,000	32,000	32,000	32,000	32,000	32,000	\$ 352,000	53.3%	3.4%

- Year 2 [from 3b-SalesForecastYrs1-3 page in excel]

Advertisement - on bus 2 week		Year 1 Totals	January	February	March	April	May	June
Advertisement Sold		22	0	2	2	2	2	2
Total Sales		660000	-	64,200	64,200	64,200	64,200	64,200
Total COGS	\$	308,000	-	29,960	29,960	29,960	29,960	29,960
Margin	\$	352,000	-	34,240	34,240	34,240	34,240	34,240

July	August	September	October	November	December	Year 2 Totals	Category Breakdown	Category / Total
2	2	2	2	2	2	24		0.0%
64,200	64,200	64,200	64,200	64,200	64,200	\$ 706,200	100.0%	4.2%
29,960	29,960	29,960	29,960	29,960	29,960	\$ 329,560	46.7%	5.9%
34,240	34,240	34,240	34,240	34,240	34,240	\$ 376,640	53.3%	3.4%

- Year 3 [from 3b-SalesForecastYrs1-3 page in excel]

January	February	March	April	May	June	July
0	3	3	3	3	3	3
-	77,040	77,040	77,040	77,040	77,040	77,040
-	35,952	35,952	35,952	35,952	35,952	35,952
-	41,088	41,088	41,088	41,088	41,088	41,088

August	September	October	November	December	Year 3 Totals	Category Breakdown	Category / Total
3	3	3	3	3	28		0.0%
77,040	77,040	77,040	77,040	77,040	\$ 847,440	100.0%	4.2%
35,952	35,952	35,952	35,952	35,952	\$ 395,472	46.7%	5.9%
41,088	41,088	41,088	41,088	41,088	\$ 451,968	53.3%	3.4%

- o On the application

2 weeks	2,500 Bath
1 month	5,000 Bath
Prediction: In our opinion, after people have used our application, we can track data and time that people mostly use. Therefore, after we know what the period that people used the most, we could manage the price properly to randomly pop up on the screen. In the peak time, we can get more expensive than the normal one. Moreover, it depends on the size of the ads, but for now we only have one size. As we told above in on bus part, in the first month, we think E-Bus	

is not well known. In the future, we hopefully think might be interested to sign a advertising contract with us.

COGS per unit = 14,000

- Year 1 [from 3a-SalesForecastYear1 page in excel]

Advertisement - on app 2 week		January	February	March	April	May	June
Advertisement Sold		0	2	2	2	2	2
Total Sales		-	120,000	120,000	120,000	120,000	120,000
Total COGS		-	28,000	28,000	28,000	28,000	28,000
Margin		-	92,000	92,000	92,000	92,000	92,000

July	August	September	October	November	December	Annual Totals	Category Breakdown	Category / Total
2	2	2	2	2	2	22		0.0%
120,000	120,000	120,000	120,000	120,000	120,000	\$ 1,320,000	100.0%	8.5%
28,000	28,000	28,000	28,000	28,000	28,000	\$ 308,000	23.3%	5.8%
92,000	92,000	92,000	92,000	92,000	92,000	\$ 1,012,000	76.7%	9.8%

- Year 2 [from 3b-SalesForecastYrs1-3 page in excel]

Advertisement - on app 2 week		Year 1 Totals	January	February	March	April	May	June
Advertisement Sold		22	0	2	2	2	2	2
Total Sales	\$	1,320,000	-	128,400	128,400	128,400	128,400	128,400
Total COGS	\$	308,000	-	29,960	29,960	29,960	29,960	29,960
Margin	\$	1,012,000	-	98,440	98,440	98,440	98,440	98,440

July	August	September	October	November	December	Year 2 Totals	Category Breakdown	Category / Total
2	2	2	2	2	2	24		0.0%
128,400	128,400	128,400	128,400	128,400	128,400	\$ 1,412,400	100.0%	8.5%
29,960	29,960	29,960	29,960	29,960	29,960	\$ 329,560	23.3%	5.8%
98,440	98,440	98,440	98,440	98,440	98,440	\$ 1,082,840	76.7%	9.8%

- Year 3 [from 3b-SalesForecastYrs1-3 page in excel]

January	February	March	April	May	June	July
0	3	3	3	3	3	3
-	154,080	154,080	154,080	154,080	154,080	154,080
-	35,952	35,952	35,952	35,952	35,952	35,952
-	118,128	118,128	118,128	118,128	118,128	118,128

August	September	October	November	December	Year 3 Totals	Category Breakdown	Category / Total
3	3	3	3	3	28		0.0%
154,080	154,080	154,080	154,080	154,080	\$ 1,694,880	100.0%	8.5%
35,952	35,952	35,952	35,952	35,952	\$ 395,472	23.3%	5.8%
118,128	118,128	118,128	118,128	118,128	\$ 1,299,408	76.7%	9.8%

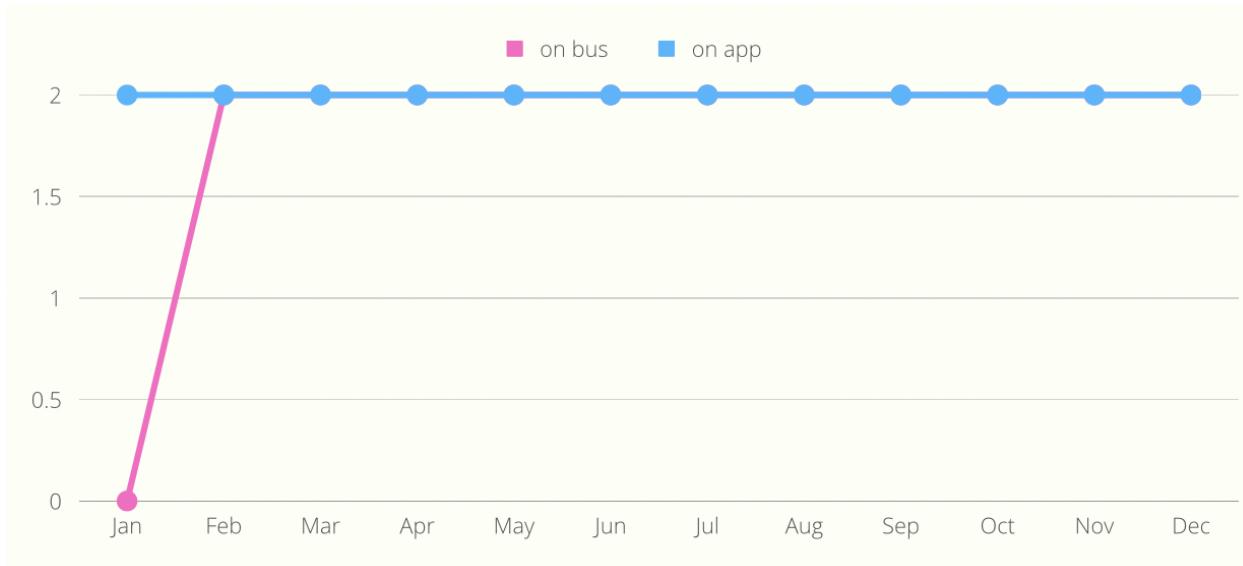


Figure 4 Graph of the First Year

4 – Operation Expense

	January	February	March	April	May	June	July	August	September	October	November	December	Annual Totals
Expenses													
Supplies (Bus)	707,200	-	-	-	-	-	-	-	-	-	-	-	\$ 707,200
Vehicle Assembly	450,000	-	-	-	-	-	-	-	-	-	-	-	\$ 450,000
Research and Development (Bus)	15,833	15,833	15,833	15,833	15,833	15,833	15,833	15,833	15,833	15,833	15,833	15,833	\$ 190,000
VWIFI Rent	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	\$ 36,000
Insurance (Bus)	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	\$ 60,000
Electricity Expense (Bus)	4,163	4,163	4,163	4,163	4,163	4,163	4,163	4,163	4,163	4,163	4,163	4,163	\$ 49,950
Bus maintenance	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	\$ 18,000
Training Cost	20,000	-	-	-	-	-	-	-	-	-	-	-	\$ 20,000
Electricity and Water Expense (Office)	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	\$ 168,000
Souvenir (Finished Product)	56,000	-	-	-	-	-	-	-	-	-	-	-	\$ 56,000
Advertising Expense	278,000	-	-	-	-	-	-	-	-	-	-	-	\$ 278,000
API	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	\$ 57,120
Software License	170,000	-	-	-	-	-	-	-	-	-	-	-	\$ 170,000
													\$ -
													\$ -
Total Expenses	\$ 1,729,456	\$ 48,256	\$ 2,260,270										
Other Expenses													
Depreciation	\$ 3,804	\$ 3,804	\$ 3,804	\$ 3,804	\$ 3,804	\$ 3,804	\$ 3,804	\$ 3,804	\$ 3,804	\$ 3,804	\$ 3,804	\$ 3,804	\$ 45,643
Interest													
Commercial Loan	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Commercial Mortgage	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Credit Card Debt	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Vehicle Loans	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Other Bank Debt	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Line of Credit	-	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	\$ 107,150
Bad Debt Expense	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Total Other Expenses	\$ 3,804	\$ 13,544	\$ 152,793										
Total Fixed Operating Expenses	#####	\$ 61,800	\$ 2,413,063										

Operation expense in each month:

In the first year, we had to pay for the associated bus expense and the software license three years in advance. We also have the R&D cost for each month to study and update the quality of the bus. We do the prepaid training cost for each year. Electricity and Water Expense from office is paid too as we have the office to do the job. The souvenir cost will be paid only in the first month, and we will determine from the sale of each year whether it was good or not. It will be used to determine the production of souvenirs in the next year. Advertising expenses will be paid for only the first year and for the advertiser in the future will be considered from the sale of fares. And API of google map will be paid each month. The last one is the prepaid three years of software license. Other expenses will be computed from the fixed asset too.

Line Item	2023	Growth Rate 1 to 2	2024	Growth Rate 2 to 3	2025
Supplies (Bus)	707,200	-	-	-	-
Vehicle Assembly	450,000	-	-	-	-
Research and Development (Bus)	190,000	5.0%	199,500	5.0%	209,475
WIFI Rent	36,000	3.0%	37,080	3.0%	38,192
Insurance (Bus)	60,000	3.0%	61,800	3.0%	63,654
Electricity Expense (Bus)	49,950	3.0%	51,449	3.0%	52,992
Bus maintenance	18,000	5.0%	18,900	5.0%	19,845
Training Cost	20,000	3.0%	20,600	3.0%	21,218
Electricity and Water Expense (Office)	168,000	3.0%	173,040	3.0%	178,231
Souvenir (Finished Product)	56,000	-	-	-	-
Advertising Expense	278,000	3.0%	286,340	3.0%	294,930
API	57,120	3.0%	58,834	3.0%	60,599
Software License	170,000	3.0%	175,100	3.0%	180,353
0	-	-	-	-	-
0	-	-	-	-	-
Total Expenses	\$ 2,260,270		\$ 1,082,642		\$ 1,119,489
Other Expenses					
Depreciation	45,643		45,643		45,643
Interest					
Commercial Loan	-		-		-
Commercial Mortgage	-		-		-
Credit Card Debt	-		-		-
Vehicle Loans	-		-		-
Other Bank Debt	-		-		-
Line of Credit	107,150		116,891		116,891
Bad Debt Expense	-				
Total Other Expenses	\$ 152,793		\$ 162,534		\$ 162,534
Total Operating Expenses	\$ 2,413,063		\$ 1,245,176		\$ 1,282,023

Year 2–3 is a forecast of future expenses. In year 2, we don't have to pay for the bus production, technology, and souvenirs that we already paid for the first year. We don't have any advertising expenses too for the year 2-3. As for the product cost, it depends on the feedback from each year that will allow us to decide whether to add products or reduce products. After the third year, we can produce our own payment scanning technology. Therefore, there is no need to purchase software licenses from other companies.

5 – Cash Flow

Year 1

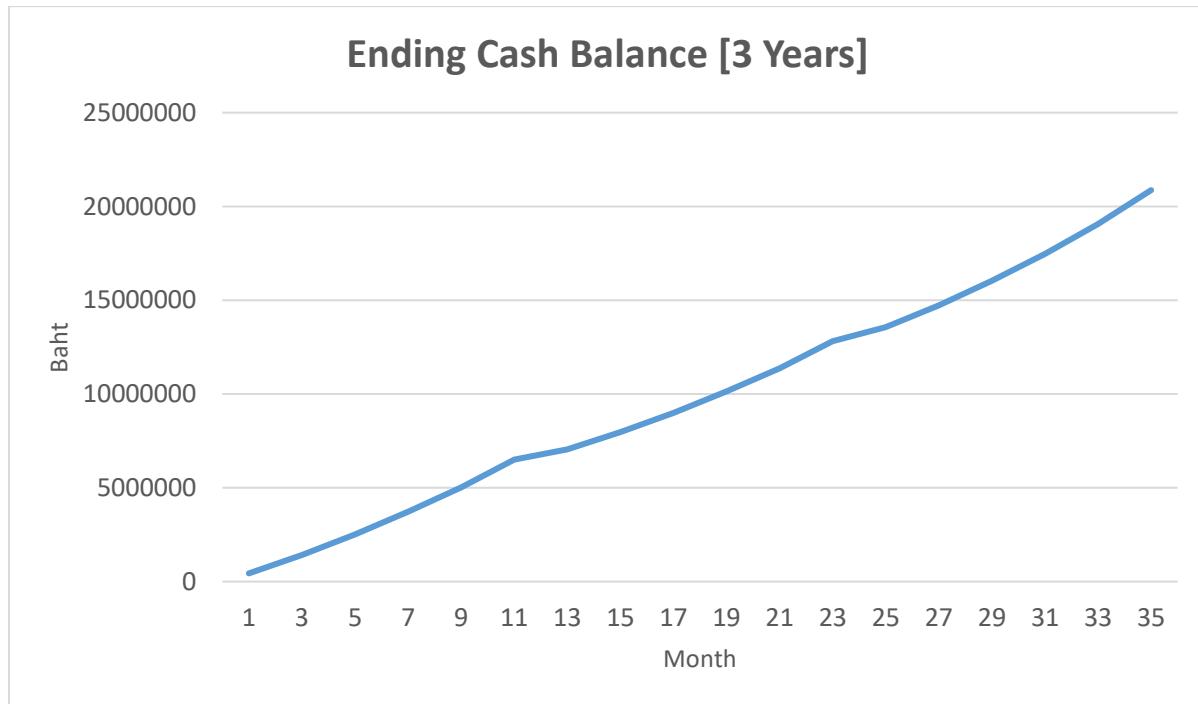
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Beginning Balance	\$ -	\$ -	\$ 438,466	\$ 929,105	\$ 1,421,251	\$ 1,970,204	\$ 2,519,986	\$ 3,071,574	\$ 3,719,260	\$ 4,367,775	\$ 5,018,246	\$ 5,761,987	
Cash Inflows													
Cash Sales	774,250	1,111,400	1,190,350	1,192,200	1,277,825	1,279,050	1,282,100	1,427,225	1,428,450	1,432,100	1,573,600	1,579,100	\$ 15,547,650
Accounts Receivable	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Total Cash Inflows	\$ 774,250	\$ 1,111,400	\$ 1,190,350	\$ 1,192,200	\$ 1,277,825	\$ 1,279,050	\$ 1,282,100	\$ 1,427,225	\$ 1,428,450	\$ 1,432,100	\$ 1,573,600	\$ 1,579,100	\$ 15,547,650
Cash Outflows													
Investing Activities													
New Fixed Asset Purchases	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Additional Inventory													\$ -
Cost of Goods Sold	264,675	373,679	400,456	400,799	429,617	430,013	431,257	480,284	480,680	482,374	530,604	532,640	\$ 5,237,077
Operating Activities													
Operating Expenses	1,729,456	48,256	48,256	48,256	48,256	48,256	48,256	48,256	48,256	48,256	48,256	48,256	\$ 2,260,270
Payroll	241,258	241,258	241,258	241,258	241,258	241,258	241,258	241,258	241,258	241,258	241,258	241,258	\$ 2,895,100
Taxes	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Financing Activities													
Loan Payments	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Owners Distribution													\$ -
Line of Credit Interest		9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	\$ 107,150
Line of Credit Repayments													\$ -
Dividends Paid													\$ -
Total Cash Outflows	\$ 2,235,389	\$ 672,934	\$ 699,711	\$ 700,054	\$ 728,872	\$ 729,268	\$ 730,512	\$ 779,539	\$ 779,936	\$ 781,629	\$ 829,859	\$ 831,895	\$ 10,499,597
Net Cash Flows	\$ (1,461,139)	\$ 438,466	\$ 490,639	\$ 492,146	\$ 548,953	\$ 549,782	\$ 551,588	\$ 647,686	\$ 648,514	\$ 650,471	\$ 743,741	\$ 747,205	\$ 5,048,053
Operating Cash Balance	\$ (1,461,139)	\$ 438,466	\$ 929,105	\$ 1,421,251	\$ 1,970,204	\$ 2,519,986	\$ 3,071,574	\$ 3,719,260	\$ 4,367,775	\$ 5,018,246	\$ 5,761,987	\$ 6,509,191	
Line of Credit Drawdown	\$ 1,461,139	\$ -	\$ 1,461,139										
Ending Cash Balance	\$ -	\$ 438,466	\$ 929,105	\$ 1,421,251	\$ 1,970,204	\$ 2,519,986	\$ 3,071,574	\$ 3,719,260	\$ 4,367,775	\$ 5,018,246	\$ 5,761,987	\$ 6,509,191	
Line of Credit Balance	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139

Year 2

	January	February	March	April	May	June	July	August	September	October	November	December	Year 2 Totals
Beginning Balance	\$ 6,509,191	\$ 6,661,274	\$ 7,057,474	\$ 7,509,498	\$ 7,963,134	\$ 8,477,554	\$ 8,992,861	\$ 9,510,100	\$ 10,130,165	\$ 10,751,116	\$ 11,374,160	\$ 12,097,003	
Cash Inflows													
Cash Sales	828,448	1,189,198	1,273,675	1,275,654	1,367,273	1,368,584	1,371,847	1,527,131	1,528,442	1,532,347	1,683,752	1,689,637	\$ 16,635,986
Accounts Receivable	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Total Cash Inflows	\$ 828,448	\$ 1,189,198	\$ 1,273,675	\$ 1,275,654	\$ 1,367,273	\$ 1,368,584	\$ 1,371,847	\$ 1,527,131	\$ 1,528,442	\$ 1,532,347	\$ 1,683,752	\$ 1,689,637	\$ 16,635,986
Cash Outflows													
Investing Activities													
New Fixed Asset Purchases	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Additional Inventory													\$ -
Cost of Goods Sold	283,202	399,836	428,488	428,855	459,690	460,114	461,445	513,904	514,328	516,140	567,746	569,925	\$ 5,603,673
Operating Activities													
Operating Expenses	90,220	90,220	90,220	90,220	90,220	90,220	90,220	90,220	90,220	90,220	90,220	90,220	\$ 1,082,642
Payroll	293,202	293,202	293,202	293,202	293,202	293,202	293,202	293,202	293,202	293,202	293,202	293,202	\$ 3,518,419
Taxes	-	-	-	-	-	-	-	-	-	-	-	-	
Financing Activities													
Loan Payments	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Owners Distribution													\$ -
Line of Credit Interest	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	\$ 116,891
Line of Credit Repayments													\$ -
Dividends Paid													\$ -
Total Cash Outflows	\$ 676,364	\$ 792,999	\$ 821,650	\$ 822,018	\$ 852,853	\$ 853,277	\$ 854,607	\$ 907,066	\$ 907,491	\$ 909,303	\$ 960,909	\$ 963,088	\$ 10,321,625
Net Cash Flows	\$ 152,083	\$ 396,199	\$ 452,024	\$ 453,636	\$ 514,420	\$ 515,307	\$ 517,240	\$ 620,064	\$ 620,951	\$ 623,044	\$ 722,843	\$ 726,549	\$ 6,314,361
Operating Cash Balance	\$ 6,661,274	\$ 7,057,474	\$ 7,509,498	\$ 7,963,134	\$ 8,477,554	\$ 8,992,861	\$ 9,510,100	\$ 10,130,165	\$ 10,751,116	\$ 11,374,160	\$ 12,097,003	\$ 12,823,552	
Line of Credit Drawdown	\$ -	\$ -	\$ -	\$ -	\$ -								
Ending Cash Balance	\$ 6,661,274	\$ 7,057,474	\$ 7,509,498	\$ 7,963,134	\$ 8,477,554	\$ 8,992,861	\$ 9,510,100	\$ 10,130,165	\$ 10,751,116	\$ 11,374,160	\$ 12,097,003	\$ 12,823,552	
Line of Credit Balance	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139								

Year 3

	January	February	March	April	May	June	July	August	September	October	November	December	Year 3 Totals
Beginning Balance	\$ 12,823,552	\$ 13,044,997	\$ 13,559,382	\$ 14,140,756	\$ 14,724,065	\$ 15,380,314	\$ 16,037,627	\$ 16,697,260	\$ 17,480,283	\$ 18,264,369	\$ 19,050,968	\$ 19,957,325	
Cash Inflows													
Cash Sales	994,137	1,427,038	1,528,409	1,530,785	1,640,727	1,642,300	1,646,216	1,832,557	1,834,130	1,838,816	2,020,502	2,027,564	\$ 19,963,183
Accounts Receivable	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Total Cash Inflows	994,137	1,427,038	1,528,409	1,530,785	1,640,727	1,642,300	1,646,216	1,832,557	1,834,130	1,838,816	2,020,502	2,027,564	\$ 19,963,183
Cash Outflows													
Investing Activities													
New Fixed Asset Purchases	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Additional Inventory													\$ -
Cost of Goods Sold	339,842	479,804	514,185	514,626	551,628	552,137	553,734	616,684	617,194	619,368	681,295	683,910	\$ 6,724,407
Operating Activities													
Operating Expenses	93,291	93,291	93,291	93,291	93,291	93,291	93,291	93,291	93,291	93,291	93,291	93,291	\$ 1,119,489
Payroll	329,818	329,818	329,818	329,818	329,818	329,818	329,818	329,818	329,818	329,818	329,818	329,818	\$ 3,957,818
Taxes	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Financing Activities													
Loan Payments	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Owners Distribution													\$ -
Line of Credit Interest	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	9,741	\$ 116,891
Line of Credit Repayments													\$ -
Dividends Paid													\$ -
Total Cash Outflows	\$ 772,692	\$ 912,653	\$ 947,035	\$ 947,476	\$ 984,478	\$ 984,987	\$ 986,583	\$ 1,049,534	\$ 1,050,044	\$ 1,052,218	\$ 1,114,145	\$ 1,116,760	\$ 11,918,605
Net Cash Flows	\$ 221,445	\$ 514,384	\$ 581,374	\$ 583,309	\$ 656,250	\$ 657,313	\$ 659,633	\$ 783,023	\$ 784,086	\$ 786,599	\$ 906,357	\$ 910,804	\$ 8,044,577
Operating Cash Balance	\$ 13,044,997	\$ 13,559,382	\$ 14,140,756	\$ 14,724,065	\$ 15,380,314	\$ 16,037,627	\$ 16,697,260	\$ 17,480,283	\$ 18,264,369	\$ 19,050,968	\$ 19,957,325	\$ 20,868,130	
Line of Credit Drawdown	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ending Cash Balance	\$ 13,044,997	\$ 13,559,382	\$ 14,140,756	\$ 14,724,065	\$ 15,380,314	\$ 16,037,627	\$ 16,697,260	\$ 17,480,283	\$ 18,264,369	\$ 19,050,968	\$ 19,957,325	\$ 20,868,130	
Line of Credit Balance	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139	\$ 1,461,139



6 – Income Statement

To summarize:

- Year 1 Revenue: It is clear that our main revenue is fares, and the second is advertisements, following by subscription and souvenirs. [from 7a-IncomeStatementYear1 in excel]

	January	February	March	April	May	June
Revenue						
Fares	765,000	918,000	994,500	994,500	1,079,500	1,079,500
Souvenirs - Keychain with flashing light	3,000	2,250	2,250	1,875	1,500	1,500
Souvenirs - Keychain tag location	1,350	1,350	1,350	1,125	900	900
Advertisement - on bus 2 week	-	60,000	60,000	60,000	60,000	60,000
Advertisement - on app 2 week	-	120,000	120,000	120,000	120,000	120,000
Subscription	4,900	9,800	12,250	14,700	15,925	17,150
Total Revenue	\$ 774,250	\$ 1,111,400	\$ 1,190,350	\$ 1,192,200	\$ 1,277,825	\$ 1,279,050

	July	August	September	October	November	December	Annual Totals
Revenue							
Fares	1,079,500	1,224,000	1,224,000	1,224,000	1,360,000	1,360,000	\$ 13,302,500
Souvenirs - Keychain with flashing light	1,875	1,500	1,500	2,250	2,625	3,000	\$ 25,125
Souvenirs - Keychain tag location	1,125	900	900	1,350	1,575	1,800	\$ 14,625
Advertisement - on bus 2 week	60,000	60,000	60,000	60,000	60,000	60,000	\$ 660,000
Advertisement - on app 2 week	120,000	120,000	120,000	120,000	120,000	120,000	\$ 1,320,000
Subscription	19,600	20,825	22,050	24,500	29,400	34,300	\$ 225,400
Total Revenue	\$ 1,282,100	\$ 1,427,225	\$ 1,428,450	\$ 1,432,100	\$ 1,573,600	\$ 1,579,100	\$ 15,547,650

- Year 2 (2024) and Year 3 (2025) Revenue: [from 7b-IncomeStatementYear1-3 in excel]

Revenue	2023	2024	2025			
Fares	13,302,500	14,233,675	17,080,410			
Souvenirs - Keychain with flashing light	25,125	26,884	32,261			
Souvenirs - Keychain tag location	14,625	15,649	18,779			
Advertisement - on bus 2 week	660,000	706,200	847,440			
Advertisement - on app 2 week	1,320,000	1,412,400	1,694,880			
Subscription	225,400	241,178	289,414			
Total Revenue	\$ 15,547,650	100%	\$ 16,635,986	100%	\$ 19,963,183	100%

- 3 Years Revenue

3 Years Revenues (2023-2025)	
Fares	44,616,585 Bath
Souvenirs - Keychain with flashing light	84,270 Bath
Souvenirs - Keychain tag location	49,053 Bath
Advertising on bus 2 weeks	2,213,640 Bath
Advertising on app 2 weeks	4,427,200 Bath
Subscription Revenue	755,992 Bath
Total	52,146,740 Bath

Breaking Even Point

Gross Margin % of Sales		
Gross Margin	\$	10,310,573
Total Sales	\$	15,547,650
Gross Margin/Total Sales		66.3%
Total Fixed Expenses		
Payroll	\$	2,895,100.00
Operating Expenses	\$	2,413,063.03
Operating + Payroll	\$	5,308,163
Breakeven Sales in Dollars (Annual)		
Gross Margin % of Sales		66.3%
Total Fixed Expenses	\$	5,308,163
Yearly Breakeven Amount	\$	8,004,353
Monthly Breakeven Amount	\$	667,029

In the part of the concession, we will ask for the capitalist group to invest in this concession. We will make a company plan and price and expenditure trend to present to investors to co-invest with us in terms of concessions.

And the part of storage of the palm print we will store in Azure Blobs which is mainly keep the picture and when we want to use it can retrieve by using string so this will help in term of too high data in the storage.

6. E-Bus Future Plans

How do you plan to improve from the customers' suggestions?

- Installing USB ports**

Since our bus is EV bus, and our payment depends on a palm and electronic devices, installing USB ports would allow our passengers to charge their electronic devices, for example, smart phones, tablets, iPads, or laptops. This would attract more customers because nowadays people almost everybody carries an electronic device at least they can charge while they are on a trip before arriving their destinating station.

- Adding a restroom**

To make more convenience, we would like to add a restroom in our bus for supporting convenience to passengers. Because some passengers do not use the restroom before getting on the bus or there is a force majeure. This can lead to them feeling uncomfortable when going on a long trip. Furthermore, it would waste other passengers' time to stop at a nearby place with restrooms for a passenger. All things considered, we think we should add a restroom within our bus.

- Adding a seat booking feature in the application**

Our application has a function to see the available seats on their desired bus, but currently, there's no method to tell if the desired seat will be taken while we wait. Adding the function to book bus seats will make our passengers more comfortable because they can ensure their seats won't be taken. However, our bus is a public transportation, it may make following consequences and disorder. But we will keep considering on this topic.

New services/features/target customers?

- Monthly Fares**

We got inspiration from BTS, to make monthly fare options for passengers who use our bus as a main transportation in their daily routine to go to school or work. This could match their life because you can use our bus in the lower price than you pay in each time. For this happens, we will track the data and information of the passengers from year 1 or maybe until the end of year 2, and analyze them to create the proper price of the monthly fare in the future.

- **New public transportation vehicles**

We want to produce other types of public transportation such as electric taxis or electric motorcycles. Then expand our transportation service through those vehicles.

- **Create our own palm print scanner**

Since our palm print scanner is under Amazon's license, we would like to create our own palm print scanner technology within the next 3 years.

- **Transportation route recommendation**

Some customers are worried about transportation time. We would like to add bus route recommendations to our application to show which path would take the shortest transportation time.

- **Discount for customers**

Since we want our customers to use our service for a long period, we are adding discounts for customers who have used our service for a long time, or those who have purchased subscriptions.

- **Destination route recommendation**

Some tourists can have trouble finding attractions they want to go to. The Destination search and recommend function will help the tourists to find the destination they would like to go to.

New market?

- We would like to expand our market to other public transportation services. We want to invite motorbike or taxi drivers into our company and implement our palm print scanner in their vehicles or persuade them to use our electric transportation vehicles.

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