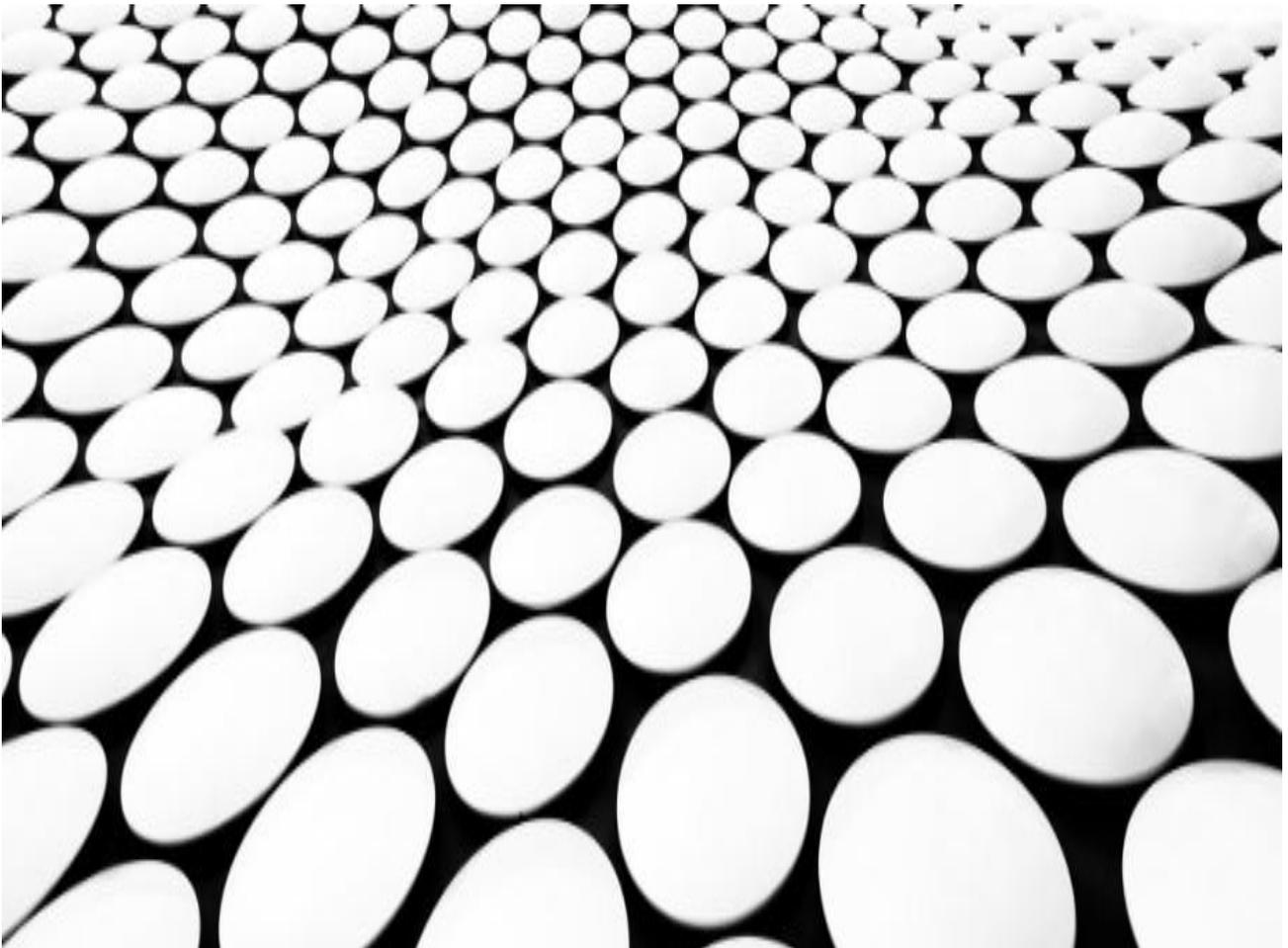

FINAL FEASIBILITY PORTFOLIO

JUNHONGQU

RENT A RESTROOM ANYWHERE!

MOBILE APP DEVELOPER



Executive Summary

Concept Description

The main issue in this pandemic is that there are no public restrooms, and those who do, unwilling to give it for free. 70% of Americans say they have unpleasant public restroom experience. This is a serious issue, and it has been heavily researched. People have written white papers about the lack of public restrooms and the problems they impose. No one is doing anything to solve this issue. Restrooms locator apps are unreliable, that's why they are free. The App allows the users to find open public restrooms and restrooms from local restaurants for a fixed fee per user. This will enable local businesses to get revenue and traffic they deeply desire in exchange for their bathroom. With the App, users can go into the restaurants and scan the restaurants' barcodes with their phones. Show the barcode for proof, and it's done.

Opportunity

People have written white papers about the lack of public restrooms and the issues they impose. No one is doing anything to solve this issue. 70% of Americans say they have unpleasant public restroom experience. This is a serious issue, and it has been heavily researched. Restrooms locator apps are unreliable, that's why they are free. Also, we can see all the methods restaurants rely on to get revenue and traffic. Data can show bankruptcy records of all the restaurants around the US. The more restaurants participate, the more opportunity we have. I also did the demographic evidence on the previous assignments that can be added in this section. There are over 1 million restaurants. If each of them participates, I can make a million-dollar target revenue in no time.

Innovative Solution

There's a tremendous value in leveraging third-party marketplaces. I want to incorporate mobile elements and consumer experience together (most differentiated position). I am using a similar concept to Airbnb but for public restrooms. Specifically, I would like to connect restaurants with users where users can pay to use the toilets. My research shows people have no problems paying to use restrooms.

Another similar successful concept is "Meal Pal" where users can go to any restaurant, skip lines, and scan the Meal Pal barcode to get the preordered meal immediately, no problem. That's all it takes, scanning a barcode (this is a proven strategy). Everything started with them, giving users free food with no waiting time, and everyone downloaded the App. This is a successful strategy, and all it takes is an App with barcode scanning and payment systems. Barcode scanning is cheap and easy to make in the App. Anyone can type "restaurants" in Google Maps and get contact information. All the information for public restrooms and local restaurants is free.

Value Proposition

Currently, people would have to buy something to use the restrooms, and sometimes they still can't allow anyone to use the toilets. Grocery stores are doing the same thing as well. All the public restrooms are closed, and businesses have empty offices with no one inside. Gas stations are not allowing bathroom usage, and we will not talk about hospitals or hotels. They are not a solution to this problem. This is very painful for many people who are like delivery drivers, where they have field jobs and always consistently need to use the restrooms. They need to install the App and get a couple of free trials. I think the barcode technology is super easy, and the users will be impressed.

Competitive Advantage

I want to be the first to market my product. We are dealing with the human's most essential need to use a restroom (Maslow's hierarchy of needs). I am making a product through differentiation (as suggested in this class), so my competitors are not exactly like me. They can steal my users, but their products are "free and unreliable". This is the problem. My competitors can't guarantee the users. I think my competitors would think, "Wow, why didn't I think about that before". It's essential to create an extensive partner base to strengthen the capability of the App. We can always quantify how many people use public restrooms outdoors, and we can monetize that. I can talk about the numbers later.

Entrepreneurial Team

I need a team that can build my App. I need experts that can ensure that my App can run with no issues. I have decided to outsource the App to an app company, and the details are written in my week 11 assignments. I need to create the first partner base for a dry run, and this will require some effort on my end before I truly decide to hire a marketing person. In a nutshell, there are so many companies out there offering to make an app. Many companies offer to give you leads in whatever venture you choose (outbound marketing: contacting all restaurants with customized email, etc). I can leverage their services through outsourcing.

Financial Highlights and/or MBV Outcomes

My concept is currently just an idea. I have not developed a screen or visuals. I want to move forward with a working prototype and eventually launch the App. However, this will need some work on the outsourcing companies to create a complete set of mockups and designs for me. Most of this has been answered in my week 11 report, and the results are below. I will talk in further detail about this later.

Target revenue = Price * Quantity

\$1M = \$1 * Q

Quantity required for \$1M = 1,000,000

Breakeven point = 15 users per day, 103 per week, 446 per month, and 5349 per year. Margin = \$0.70

Burned rate = \$312

Financial investment required (the biggest component)=

Initial cost = \$7500 development cost

Yearly cost = \$1125 annual maintenance cost

Feasibility Plan

1. Consumer problem

Main consumer concept: solve shortage of public restrooms that impact everyone's life by creating an app that allows consumers to rent restrooms.

Narrative direction

In the beginning of 2020, we saw the initial impact of covid-19. We have seen how much this pandemic has impacted all of us. To summarize, we have seen this decline in the healthcare quality, especially in terms of public goods and social services. We have seen a huge decline in public goods like libraries and public restrooms for example. We know that public goods are divided into two, pure and quasi. I won't go into details, but I will be talking specifically about a decline in the supply of public restrooms.

The lack of public restrooms during the pandemic is impacting people's mobility. The absence of public bathrooms and criminalization of public urination and defecation create a huge inconvenience for people (homeless people in particular are affected severely). In the grocery stores, the personnel often have to use the same restroom as visitors causing them to close the bathroom for visitors. In restaurants, people have to purchase something to use the restrooms. Private businesses usually never share restrooms. Furthermore, cities are facing budget issues with building more public restrooms to compensate for the closed ones. Toronto build a self-cleaning toilet for \$250,000 each, Los Angeles spent about \$182,000 for two stalls, and Portland spent about \$100,000 for just one bathroom. In Chicago for example, they can't even keep their elevators free of pee.

The consumer archetype for the app will be the Seeker and the Detective. These consumers can be restaurant or bar owners who are struggling with revenue generation, or individuals who often cannot find bathrooms during essential activities. Their mindset is all about transparency and fairness (e.g. service to contract length), whereas the mindset of the individuals would be experience (how easy and reliable the app is).

2. Product problem

If 2019 was not terrible enough, we have gone from bad to worse now. Everything is closed, and it gets harder for people to find restrooms. This is a basic needs issue. It affects all walks of life, and it creates negative impacts in the society. Underproduction of public goods is a form of market failure. A decline in the Food, Beverage, and Entertainment industry really impacted the supply of public restrooms.

What solution you are providing?

Bathroom access is a public health issue. The app will allow individuals to have access to free public restrooms that are available in the vicinity. Furthermore, the app also has features that allow private businesses such as restaurants and bars to offer public restrooms with a reasonable "pay as you go" policy. Requirements include hand-washing station, sanitary conditions, running water, soap and hand towels or air dryers. There will be time limit, and this is already common in Europe and Latin America. The app can bring potential traffic

and great reviews that may offset financial losses.

Currently the app is in a product concept stage still, and we can outsource to build the app. I have chosen this method, and I will capitalize this cost. Furthermore, I will outsource lead generations from a marketing agency as well, and this will be a fixed fee and will be part of the burn rate.

3. Market problem

Consumer experience

There's a tremendous value in leveraging third-party marketplaces. I would like to incorporate mobile elements and consumer experience together (most differentiated position). I am using similar concept to Airbnb but for public restrooms. Specifically, I would like to connect restaurants with users where users can pay to use the restrooms. Another similar successful concept is "Meal Pal" where users can go to any restaurant, skip lines, and scan the Meal Pal barcode to get the preordered meal immediately, no problem. That's all it takes, scanning a barcode (this is a proven strategy). This will allow local businesses to get revenue and traffic they deeply desire, in exchange for their bathroom.

Laws of opportunity

There's currently no solution for this problem that works. I am trying my best to create a platform so the market can function better. Research shows that people would pay to use restrooms. The key is to be opportunity minded, and it's not necessarily about success and failures, it's about better and worse. I want us to adopt this mindset throughout. Basically, this is going to be an app that consumers use, and they can just scan the barcode using the app and use the restrooms in our partner location. I won't bore you guys with a barcode picture; anyone can imagine scanning a barcode with their phone from an app. It's that simple. This is my product differentiation.

4. Business model problem

Problems with current solution

There are many "free" public websites and apps where we can locate public restrooms, the list is endless. They all have static database, where they only store restrooms location. This is the reason why users can access the data with no internet. However, with the pandemic, my research shows that most public restrooms are closed, and the information is not reflected. There are so many problems associated with this. My thought is if most of the public restrooms are unavailable, then the App would not make a great impact, just like all the other apps. This is the main problem. It's like going to a grocery store with an App to purchase but they don't have what you are looking for. What's the point of the App? Many people are suffering and can't even find restrooms around them.

MBV Assumptions

As mentioned before, my research shows people have no problems paying to use restrooms. Barcode scanning is cheap and easy to make in the App. No one has done this before in the industry. I was able to research some of the cost elements related to my App in Google.com. I use Crowdbotics.com to estimate the

cost for the outline requirements of my App. They asked 10 different questions, and I chose the most appropriate plan (see appendix). This brings my app development cost to be \$7,500 (capitalized cost – Fixed). They even offer free work for the first 60 hours, free hosting, and free version controls. My Google research shows that the industry norm for software maintenance is about 15% of the development cost. Therefore, I assume that my yearly maintenance cost would be about \$1,125 (\$94 monthly – Fixed). Annual fees for having the App sold in the Google app store would be \$100/year (\$9/month - Fixed). The transaction fee for the restaurants is 30% for all the total revenue they receive from users using their bathrooms. Also, I will avoid paying commissions to the Google play store, because I will redirect users to my own simple website to offer subscriptions. This is what Netflix has done.

There are also websites that don't charge commissions like LetGo. I will pay the cheapest cost possible. Assumptions Following basic accounting principles, we have to capitalize the development cost of the App for its number of useful life. The professor mentioned 3 years \$1M target revenue, I will assume this is the useful life of the App ($\$7500/36 = \209 monthly). Burn rate would be $\$209 + \$94 + \$9 = \312 . The book mentioned that we have the discretion to make our own cost structure and business model. I couldn't allocate maintenance cost, development cost, and hosting cost of the App to a single app purchase in form of materials and direct costs.

Breakeven point = 15 users per day, 103 per week, 446 per month, and 5349 per year. Margin = \$0.70 Burned rate = \$312

5. Operations problem

Product Hypotheses

| PRODUCT | Critical Hypothesis | Issues, Criteria, & Results |
|----------|--|---|
| 1 | The app can improve the overall cleanliness of the city from people urinating and defecating in public and open areas | The homeless people are the main reason for this issue since they don't know the location of the public restrooms |
| 2 | | |
| 3 | The app will encourage cities to build more public restrooms when they see that they have very few public restrooms compare to other cities. | Public restrooms are public goods, lack of public goods is a real problem in todays world. The app will hopefully help cities recognize the problem. |
| | | |
| CONSUMER | Critical Hypothesis | Issues, Criteria, & Results |
| 1 | The app may lead the user to public restroom that require keys, do not have disabled access, not baby friendly, etc | The cities do not adequately publicize the availability of the public restrooms, we will work on making an accurate centralized list of bathrooms they maintain |
| 2 | | |
| 3 | Public restrooms are not all maintained, so the app may be leading people to a journey that results in a bad experience. | We make sure that the app has correct ratings on each public restroom, and this will encourage the cities to deploy resources to clean the public restrooms that are rated badly. |
| 4 | | |
| 5 | Many people may can just not use the public restroom, and go use the private restrooms in any store by buying a cheap product, like Cheesecake Factory for example | The app will be very meaningful to those who need it, hopefully this can improve user adoption through word of mouth or social media |

How will the product be designed? Manufacturing questions from developer

1. From what platforms and devices will a user access your application?
2. How far are you currently in the app development process?
3. How polished does the application's visual appearance need to be?
4. How complicated are the logic and workflows of the application?

5. Does your app share most of its features with an existing application?
6. Are any special features required for your use case or industry?
7. Does the application require a developer with specialized knowledge, or a developer located in a specific geographic region?
8. How many basic API integrations are you expecting?
9. How frequently will updates and improvements need to be made to the application?
10. How important is support from a product manager?

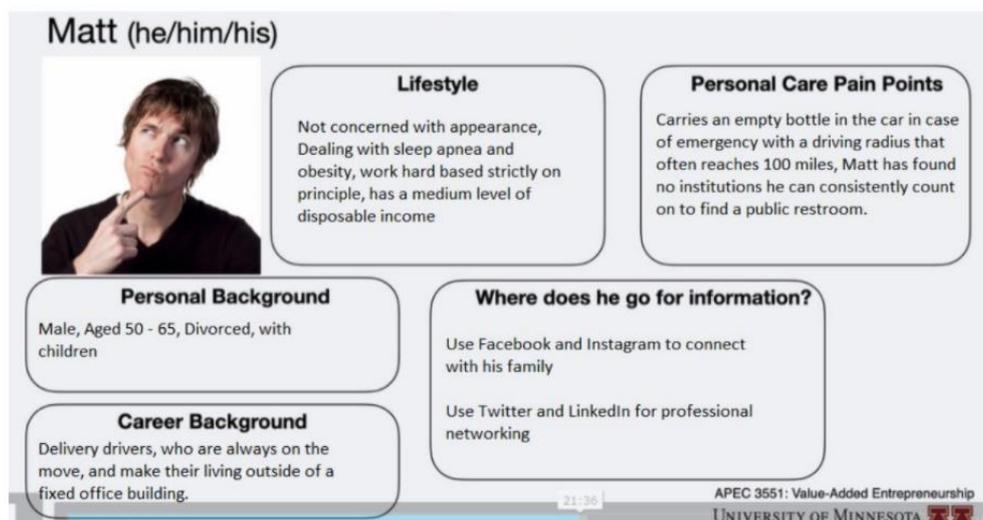
6. Recommendation

My recommendation is a GO. We need to build the app, and anyone can find people to build the app of their dreams. It will cost thousands of dollars and the cost will be capitalized. We will also employ a third party to do marketing for lead generation. Many companies do this for a fixed fee, and it is not that expensive. This is another fixed cost that will be capitalized. There's always a chance, a small chance, that things will go back to normal. This will allow the supply of public restrooms to increase and reduce the efficiency of my app.

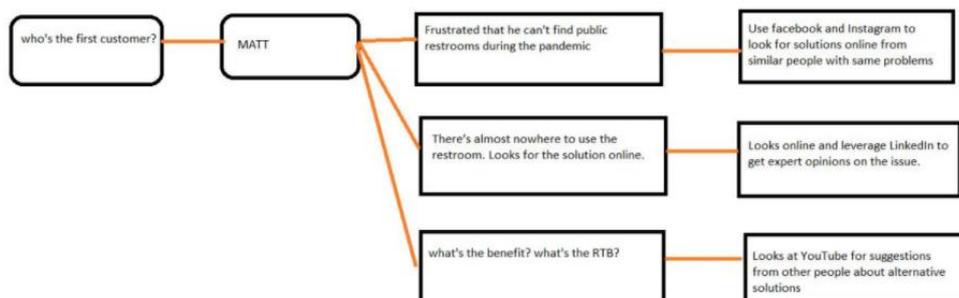
Concept Portfolio (Appendix)

Infographics

Persona



Decision Tree



TOILET FOR ALL

display the nearest toilets to you



1 60%

60 percent of Americans say they use a public restroom one to five times a week. 21 percent use public restrooms six or more times per week



2 18 - 34 YEARS OLD

18 to 34-year-olds utilize public restrooms the most frequently with three to 10 stops a week.



3 ONE THIRD WOULD PAY

One-third of Americans say they would pay to use a restroom if they were assured it would be clean and well stocked. Public restrooms are a space that's important to everyday life for hundreds of millions of people.



4 52%

52 percent of Americans said they'd likely spend more money at a business with a well-maintained bathroom.



5 55%

55 percent are unlikely to return to a business after a bad restroom experience.



6 70%

70 percent of Americans reported having an unpleasant restroom experience.

Images of the APP



MBV analysis

| Module A | | METRICS | | | | |
|-------------|-------------------------------|-------------------|---------------------------------|----------------------------------|------|---------------|
| BASELINE 1: | <i>If We Charge This:</i> | \$1.00 | | | | Your Biz Idea |
| BASELINE 2: | <i>And Our Costs Are:</i> | \$0.30 | LABOR + COMMISSIONS + ROYALTIES | | | |
| | | \$0.00 | MATERIALS + DIRECT MFG COSTS | | | |
| | | \$0.30 | TOTAL DIRECT COSTS | | | |
| BASELINE 3: | <i>Gross Profit per unit:</i> | \$0.70 | 70.0% | <i>Gross Contribution Margin</i> | | |
| BASELINE 4: | <i>Monthly Burn Rate is:</i> | \$312 | | | | |
| BASELINE 5: | <i>Breakeven at:</i> | 5,349 | 1,337 | 446 | 103 | 15 |
| | | <i>Per :</i> YEAR | QTR | MONTH | WEEK | DAY |

VOC research

These questions are more geared towards the consumer archetype of the Detective with a position as bar and restaurant owners who rarely have any traffic these days.

1. Managing restaurants must be tough during this crisis, how busy are you these days?
2. Would you say that it's hard to break even every month?
3. How do you deal with all of that? Did you try reducing your prices?
4. Which tools and services do you currently use to solve it?
5. Walk me through what happened the last time you didn't get a single consumer?
6. Putting your signs around the block, what would that let you do?
7. What other ways you employ to redirect pedestrians to come into your restaurant?
8. Do you think this "post and pray" method to bring traffic is working?
9. Have you looked into what your options are in terms of bringing traffic and revenue? 10. Have you tried making more money on other things?
11. What would you think if people offer you money to use your restrooms?
12. Would you be willing to use the app for a non-trivial period?

For the consumer archetype of the Seekers, we still do not want to give our ideas easily. We want to make sure that there's a realized need by continuously anchor and dig. The question needs to end with a clear time commitment, or it would be meaningless. The book says that this can include using the product themselves for a non-trivial period. Therefore, that's the last question I would ask if I have a strong signal.

1. How often do you spend time outside? Driving? Walking?
2. You spent a lot of time on the field, what's your biggest problem?
3. Time management is certainly a problem for you. What makes it so awful?
4. How are you coping with it?
5. Do your coworkers have the same problem?
6. How much time do you spend each week looking for a public restroom?
7. What are you already doing to improve this? 8. Well that's an inconvenience certainly, how much does that cost? 9. What parts you love and hate about it?
10. Would you rather save your time and pay to use one?
11. How would that fit into your day?

- 12. Do you use your phone a lot during work?
- 13. Would you be willing to use the app for a non-trivial period?

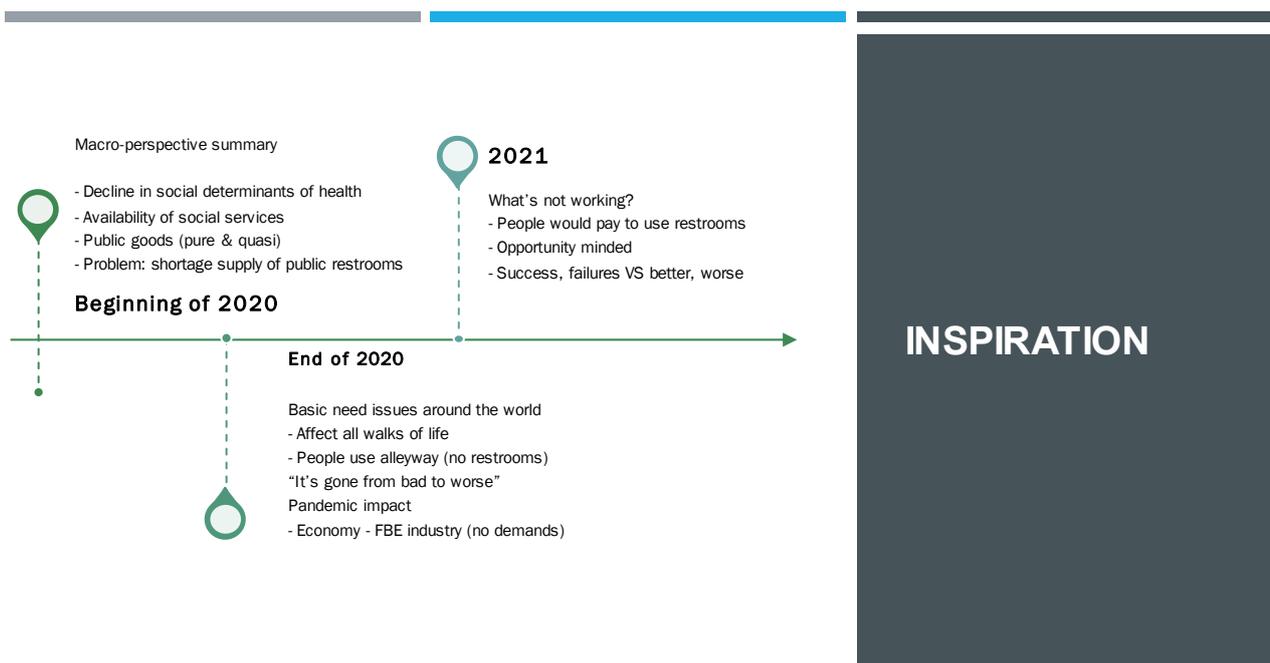
Customer journey map

| Journey | Realize need | Inform | Learn | Decide | Use | Enjoy |
|-------------------|--|--|---|--|--|--|
| Consumer Actions | Going to many parks today with my friends. There's no toilet there, will I need a public restroom during this trip? | I read online that average Americans use public restrooms up to five times a week. | If I can't find a public restroom, I worry that I will have to urinate in public and run the risk of getting caught by the police for indecent exposure | I need an app that can tell me how many public restrooms are available in the area so I know where to go | Wow the app is so awesome. I was able to find public toilet everywhere. | I was able to go to places that have restrooms nearby, since I went with a group of friends, we need access to public restroom |
| Consumer Thinking | I always need to use the public restroom, maybe I can hold myself later | I can't imagine if there's no restroom for me to use, I am afraid that I won't have no choice but to urinate in public or hold myself. | I wonder if this app work. I like the idea of being able to find public restroom | I'm going out with friends today to the park, 2 of them are girls, so they will need to use public restrooms. I need to make sure this won't be a problem. | We really had to go to use the public restroom, and I didn't have Wi-Fi or internet on my phone. Thankfully, the app works without internet data. | Wow! I didn't have to worry at all about finding a restroom. I felt stomachache today and I was able to locate a public restroom easily. |
| Consumer Feelings | It's hard to find a public restroom in the park. Many times I couldn't find one and my friends kept asking where's the restroom. | We wasted so much time all the time looking for public restrooms during our trip. I am worried that this time it will be the same. | If this app doesn't work, I'd rather not download it on my phone. It's a huge file! | I can't wait to try this app. I think it will make me feel less worried. When my friends need to go to the restrooms, I can't wait to tell them about the app. | We had to use the public restrooms several times, but I had the app running smoothly even when I had no data. I will never have to worry about finding a restroom. | Glad I can focus on hanging out with my friends and not wonder where the public restrooms are located. |

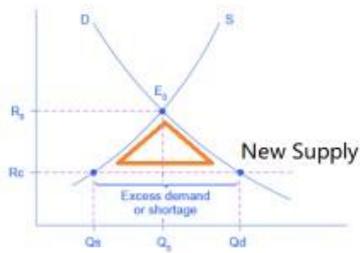
Manufacturing process (questions from the developer)

1. From what platforms and devices will a user access your application?
2. How far are you currently in the app development process?
3. How polished does the application's visual appearance need to be?
4. How complicated are the logic and workflows of the application?
5. Does your app share most of its features with an existing application?
6. Are any special features required for your use case or industry?
7. Does the application require a developer with specialized knowledge, or a developer located in a specific geographic region?
8. How many basic API integrations are you expecting?
9. How frequently will updates and improvements need to be made to the application?
10. How important is support from a product manager?

Presentation Slides



RESTROOM MARKET



**- PRICE CEILING IS THE
NEW SUPPLY CURVE**

- SOLVE SHORTAGE

Proven strategy in addressing shortage in different industries

- Finance industry
 - connect people with excess of money and people with shortage of money, and in the middle, they make money (financial intermediary)
- Rental industry (Airbnb)
 - anyone can rent their property
- Food industry (Meal Pal)
 - skip the line and get food by scanning a barcode using their phone
 - Pay cheaper price
- Grocery industry (Amazon)
 - Barcode scanning and shop

Solution

- Providing location of public restrooms (basic feature)
- Allow partner restaurants to allow users to use their restrooms for a fee (differentiation)
- Provide extra traffic for the restaurants and revenue

HOW WE WILL MAKE IT & SELL IT

Build the App

- Build the App (capitalize cost for the number of useful life – 3 years) – added to Monthly Burn rate
- Outsourcing

Build the leads

- Build leads for partners (Outsource leads from third party – email list for partners around the US)
- Outsourcing (cheaper cost)
- Free trials (incentives)

HOW IT WORKS

- Combine proven strategies from various industries in addressing the shortage
- Competitor's solution: provide public restrooms location
 - Does not solve shortage of supply, but a necessary feature nonetheless
 - Information comes from static website: offline capabilities for people with no data
- Leverage third party providers (partners) for providing restrooms (differentiation)
 - Barcode system (Amazon grocery)
 - Scan and use restrooms
 - People would pay to use restrooms

WHAT DO WE DO NEXT?

Current status of the product

- Prototype
- Need to be built professionally

Build the leads

- Build leads for partners (Outsource leads from third party – email list for partners around the US)
- Outsourcing – first stage will focus on identifying local partners

QUESTIONS?

1. SANITARY CONCERNS

2. LEADS GENERATION

3. MARGIN

- Sanitary concerns: pre-existing issues that's not incremental. They are already facing this problem for the people that are using their restrooms. There's latest emerging technologies that purifies air and antibacterial product.
- Lead generation marketing activities outsourced (capitalized cost - accrual accounting vs cash basis accounting)
- MBV: Price \$1, and partner gets 30% (Industry standard - Service fee for Uber), Cost: capitalized cost of building the app, lead generation (marketing email list)