

CSC291 Integrated Project II

MOT (Miracle Of Trash) Application

Group members

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Project Background & Motivation

“MOT (Miracle of Trash)” is established from the concept of waste management problems. In Thailand, there is no serious waste separation system at the household level. We noticed that there was a lot of waste that was not screened, for example, fruit debris, fruit peel, leaves, meat debris. The waste management problem has not been resolved as much as it should have. The waste separation or good waste management can cause the advantages of being able to use waste to be useful, for example “composting” or “biogas”. And not just only the household segment there are disposable food problems within the restaurant, the market each day as well.

So we want to solve the problem of compostable waste , want to bring waste to make the most benefits, and want people to see the benefits of waste separation.

Problem

The problem of biodegradable waste (food waste), that is not dealt with effectively and it cannot be used for any benefit. That makes the garbage left in the household unable to be disposed properly and causes accumulated waste problems.

Target SDGs

SDG11: Sustainable cities and communities (Waste management)

SDG15: Life on land

How can our application solve SDGs

In SDG11, our application will reduce the amount of waste from proper disposal and create the most benefit of it. So in this part we reduce the waste in the right way our app has handled. Including when people are aware of the waste problem, the city will be cleaner and better.

In SDG15, waste management can make terrestrial ecosystems better and more organized. And also make it possible to take the most advantages from compostable waste. It makes people more aware of waste management problems. Then people will be able to sustainably improve the terrestrial ecosystem.

Solution

Application for receiving and managing biodegradable waste (food waste) from households, markets, and small restaurants.

Advantage of our Application

1. Take advantage of biodegradable waste (e.g. food, fruit waste) by using them to create biogas.
2. Users benefit from separating waste and delivering waste to us then they will get some special deal from a variety of sources that we have provided like vegetables, desserts or vouchers.
3. Create more options for household users in order to dispose of biodegradable waste.

* Benefits of biogas

1. Biogas is eco-friendly
2. Biogas generation reduces soil and water pollution
3. Biogas generation produces organic fertilizer
4. It's a simple and low-cost technology that encourages a circular economy.

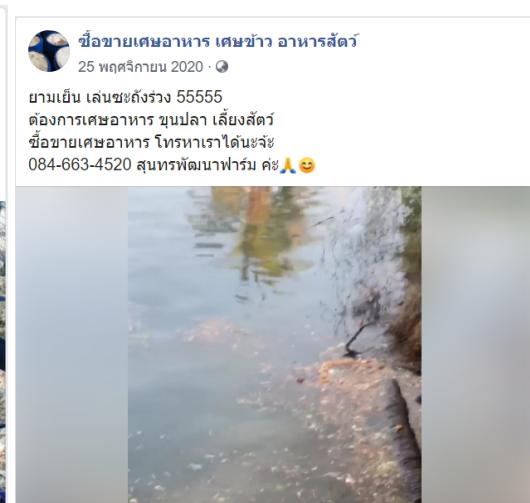
(<https://www.homebiogas.com/advantages-and-disadvantages-of-biogas/>)

Related project and product (Literature review)

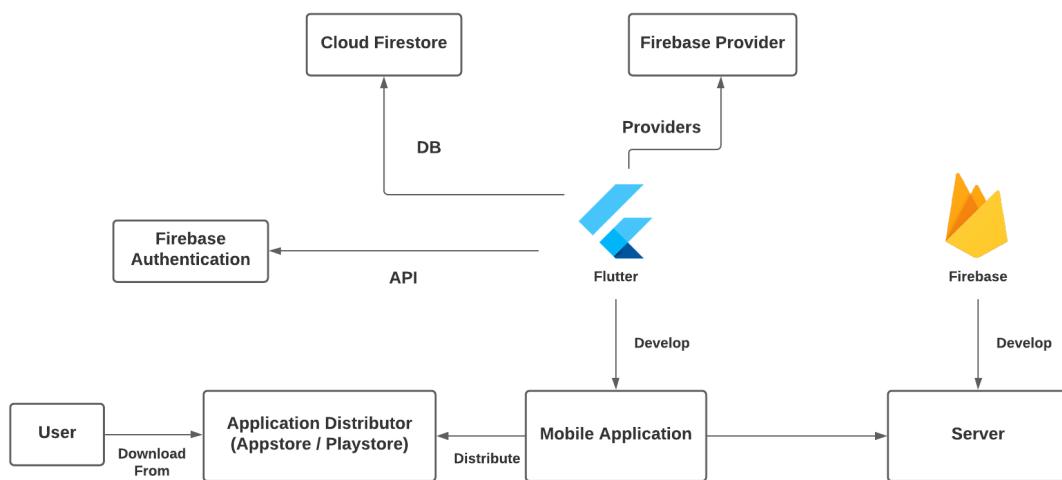
1. KoomKah application : It is an application for waste sorting and collecting from community and members. An app buys garbage to be processed (recycled) and used again for the target audience of that app. The waste received therefore focuses on bottle, can or other recyclable waste.
2. ‘ชื่อขายศษษาหาร เศษข้าว อาหารสัตว์’ (Facebook page) : It is a facebook page that buy food waste from people and they will use them for animal feed, such as fish or pigs. But the food waste that the page will pick up needs to

be a lot of volume. And they don't have the application to communicate with the users. They communicate through chat boxes or contact numbers.

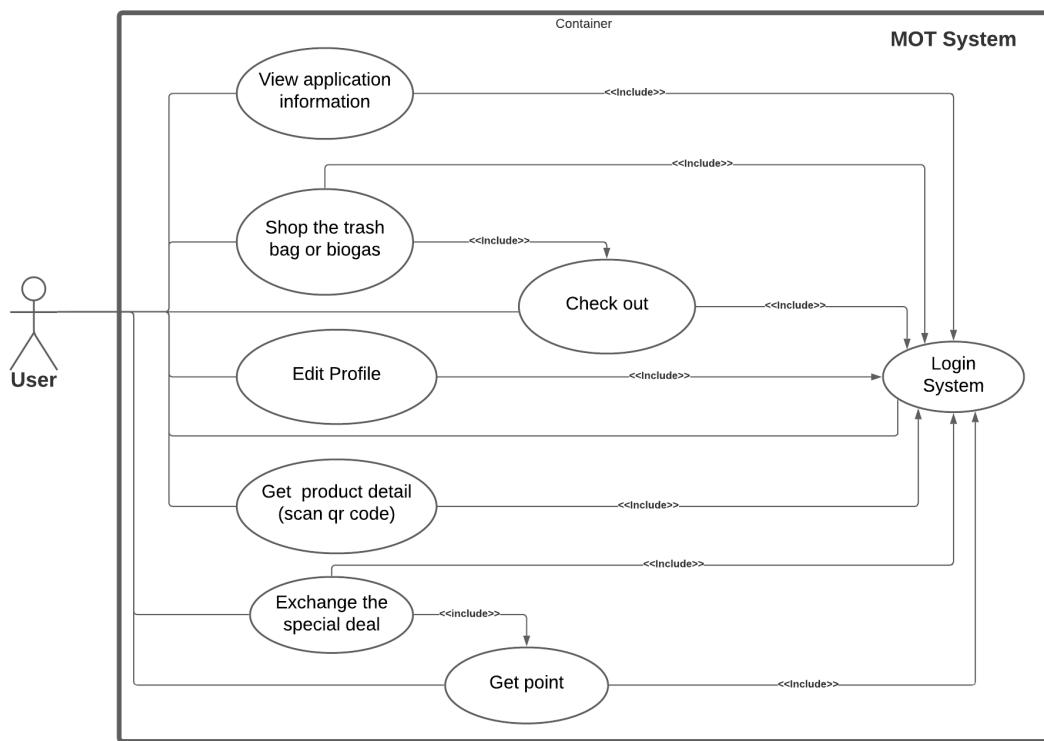
Software / Feature	Pick up garbage service	Advantage for users	Services that reach users : Application	Product from changing waste process	Receive biodegradable waste (food waste)
MOT application	O	O (biogas, food, other deal)	O	O	O
KoomKah application	O	O (money)	O	O (recycle product but not provide to users)	X
“ชื่อขายเศษอาหาร เศษข้าว อาหารสัตว์” (Facebook page)	O (large amount)	O (money)	X	X (just for feed animal)	O



System Architecture



Use case diagram



Persona

NAME

Andrea Pirlo



65 %

TYPE

Rational



Goals

1. He needs an agency or whatever that can help his waste to be used effectively.
2. Hopefully by following the steps, he can actually get rid of the garbage.
3. The interface or software is not too difficult or too chaotic.
4. Food waste in the house can be exploited.

Demographic

 Male 42 years

 Bangkok, Thailand

Married

Project Manager

80,000 Bath/Month

Quote

"When I search till I find your app, I hope it turns out as good as me and you wanna see."

Skills

Management skill 85

Communication skill 80

Problem solving skill 50

Searching skill 80

Background

He is currently a project manager in a company in Thailand. He is a very hardworking person because 7 years ago he worked as an exchange project manager from Italy. He is unable to communicate well in a country where most people cannot speak English well. So he has been learning for 7 years to communicate and work together smoothly. During that time, he married a Thai wife and lived together until he became a full-time project manager in Thailand. But over time, he had a child. Each week, he has a lot of food waste to throw away until his cleaning was not effective anymore because he didn't know how to clean more debris. But he realized that food scraps or whatever, once thrown away, would be useless anymore. So he need an agency or something that can actually put these waste or food scraps to be useful instead of throwing them away meaninglessly.

Motivations

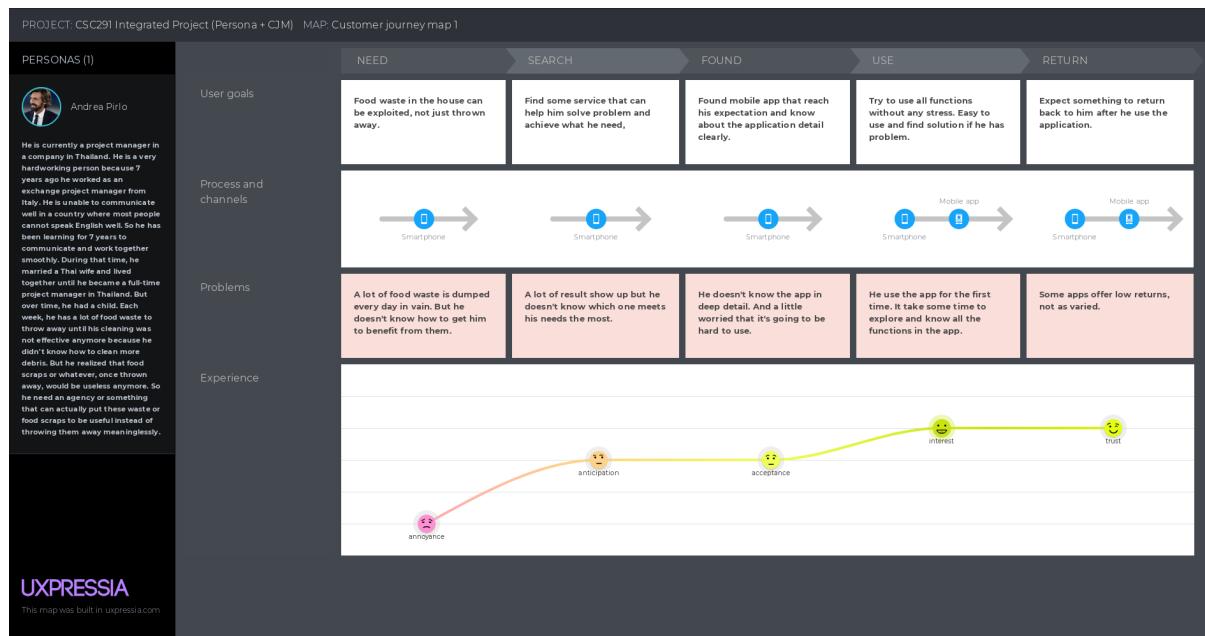
1. The app is easy to use and suitable for real use.
2. He can recognize that waste is used effectively.
3. Get some rewards from app.

Frustrations

1. Whole house rotten food scraps.
2. There is no point in eliminating waste.
3. Can't manage food waste effectively

Technology



Project Achievements

1. CSC231 Agile Software Engineering: We apply many of the knowledge from this course which are project management theory and agile method in order to create a plan in our project about what to do first or next and prioritize them. We set the scope and did the job according to the plan so we can finish the job on the day that we set.
2. CSC234 User - Centered Mobile Application: We used knowledge from UX/UI design to design our application. Then, we used knowledge from the flutter programming part to build our application and also to connect with google service like firebase.
3. GEN352 Technology and Innovation: We used knowledge from SDGs, troubleshooting and business to build our application in part of business.
4. Figma: We used figma to design our application. It's also a place to work together and make collaboration with the team members.
5. GEN351 Modern Management and Leadership: Learn how to collaborate with others, leadership and project management.
6. CSC217 Operating System: We used knowledge from OS to build system architecture and know about each server.