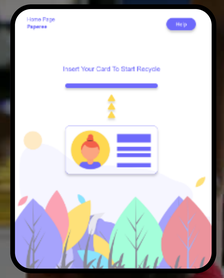
Project 2

Paperee

Sevice Design / UX Design

Paperee is a service design that aimed to improved the paper wasting phenomonon in education industry, especially in elementary schools, by encouraging students to jion the paper recycle activities. Students will also have chances to learn about the science behind the recycle industry, ad well as donate the paper goods that directly made by their used paper to people who need help.



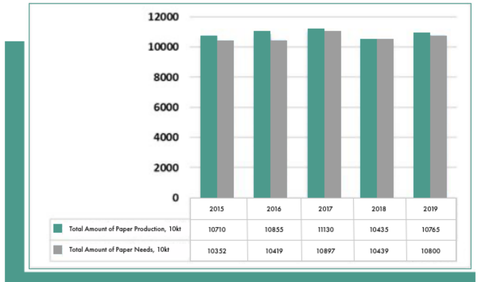
The Phenomenon

In an official report of the Guangdong Province, the minster of the government pointed that the educational based paper product has became a new major resource of wasting that has impacted the local environment system as well as the economic market.

Stationary based paper wasting has became a controversy issue since the beginning of the 21st century. With more children enrolled in school in recent 10 years in China, the educational based paper stationary has consumed more than ever. However, this phenomenon has significantly struck the natural environment, since there is no efficient recycle system currently that could collect the used paper and prevent its potebtial chemical pollution.

Background

More paper has been produced in the past 5 years. However, not all of them could be sold on the market or used by the customers. According to this chart from the 2019 Guangdong Government paper industry report, paper production was kept excess its capacity in the last 5 years. To be more simplified, we didn't used all of the paper the market could offer, but the industry has kept making more, which has caused serious resource wasting.



	2015	2016	2017	2018	2019
Total Amount of Paper Production, 10kt	10710	10855	11130	10435	10765
Total Amount of Paper Needs, 10kt	10352	10419	10897	10439	10800

The Papermaking Fact of China

10765 / 10k Ton of paper has been produced last year, 70% of the paper products were brand new that made by the fresh wooden resource, 15% of those paper products were sent to the educational industry eventually.

70% more paper products has been consumed since last year, 65% of the consumed product was made by fresh woods. 55% more wooden resource has been used in the paper making industry compare to the last 3 years.

A tree can produce about 100000 pages of A4 paper, according to the government report. However, it is very often that even a textbook could contain over 120 pages of A4 paper in the educational industry. A 1st grade student will be given at least 7 textbooks per semester.

Summary

The paper making industry is still using fresh wood to make paper, and the paper consuming rate is rising on the yearly basis. Education industry seems like a popular buyer on the paper market

The paper production rate is rising, alone with the increasing of the wooden resource costing, which means more trees were cut off in the past years. This has damaged the nature system.

The education industry has consumed huge amount of paper. Since most of the paper products such as textbooks and workbooks could only be used once, numerous of used paper has been produced with the development of this industry, which caused serious paper resource wasting.

Educational Paper Wasting

11.38 percent of the total wasted paper in mainland China in the year of 2019 comes from the educational background, such as testing paper and textbooks.

123.01 percent of educational based paper stationary product has been sold in the market in the year of 2019, compare to 2018.

There are usually more than 7 essential textbooks a primary student in China will use per semester, each textbook contains about 150 pages and it will be only be used for a semester.

Current Paper Recycle Process

Normally, citizens will be asked to drop the used paper into the recycle bin. However, this requirement has been ignored quiet often. People usually just throw the paper away despite the regulations.

The special carrier will collect the used paper from each recycle paper bin and ship it to the paper recycle factory. They will only pick up the paper from the designed recycle bins.

The factory will recycle the used paper based on its type. Not all of the paper could be recycled. The recycled paper could become the major resource to make new paper products.

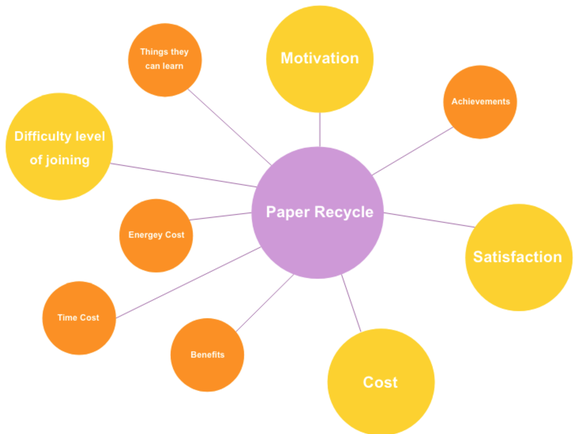
Problem of the Current System

1. People are not interested in recycle their used paper. They are lack of motivation to keep following the recycle rules.

2. It's hard for the recycle carieers to collect the paper from the recycle bin because people just don't pay attention to what they have threw. Some people will just use the paper recycle bin as the normal trash can and throw whatever they want.

3.The recycle factoires have to spend a lot of time to categoize the collected paper before select the right type to get recycled.

Touch Point



Paper Recycle Fact in School

1. Schools are one of the major customers on the paper market, about 55% of the paper stationaries and educational paper products such as textbooks and workbooks has been bought by different schools last year.

2. Students often got at least 10kg of paper products in each semester. About 2/3 of thoes paper product could only be used for once. Thoes paper won't be recycled typically, it will just be threw away or selling to the discard product station in a very low price according to the interview results we have done with 30 families.

3. The schools usually held at least 1 educational event each semester to enage students to join the paper recycle activities. However, it seldom works because there's no permanent recycle station in school, and schools basically have no idea what to do with the collected used paper other than sell it to the recycle station since there's no goverment regulation could be followed. There's no service taht designed for school to help them recycle the used paper, as well as create a learning loop that eventually enchance students' schema of how paper recycling could benefits the society.

Multi-Skateholder Analysis

Schools needs to find a way to deal with the used educational paper products since huge number of them will be produced on a daily basis.

The recycle industry don't usually cooperate with the education industry. Thus, the used educational paper resources couldn't be collected efficiently. It is a weakness for both the recycle industry and the schools.

The used educational paper products could potentially become the major resource of the recycled paper. It often cost less to use the recycled paper to make new educational paper stationaries. More importantly, it is more environmental friendly to use those paper resource to make new goods compare to the traditional way of paper making. However, no avalible service is working currently to connect the education industry with the recycle togenter to create a healthy recycle loop.

Insight

1. Schools needs to set strong visible motivations to engage students in this event, not just tell them what to do without further guidence. Students needs to see their achievements to insist joing the paper recycle practice.

2. Schools and recycle industry should work more closly to better help each other.

Target User

Primary school students has been selected as the major target in this project. Most of them are in the Preoperational Stage and the Concrete Operational Stage, in which students are more easily to accept new ideas and willing to try different experience than the older generation. Moreover, students in this group tend to be more easily influnced by the more knowledgeble others, which could be their parents, teachers, or older peers. New information comes from the more knowledgeble others will be obserbed faster by thoes kids. They like to copy what others do typically. Thoes characteristics could be used in this case which means students in the selected group will be able to form the recycle habit mush easier than anyother groups.

Defined Problem

The current recycle experience between the education industry and the recycle industry have these problems:

1. There is no siginificant method for schools to encourage students to keep recycling the used educational paper products.

2. There is no advanced guidence for schools to take further actions with the collected used paper.

3.There is no connection between the recycle factoires and the schools to better cooperate together to collect the used educational paper goods.

Persona

Judy Chang

Age: 6

Grade: 1st

Major educational paper product used:

Textbooks Workbooks Testing Paper

Bio

Judy is a second grade student from Shanghai. Judy loves his class and really enjoy taking each of the different courses. One of his favorite class is the Art Making, which he could make so many fabulous art pieces with different types of paper when doing the homework. His mother is not that happy with this class because she has to clean up all of the paper Judy used everytime. She often have no idea how to deal with those used paper other than throw it away.

Pain Points

No place to drop the used paper other than the trash bin, which is also not a good choice because thoes paper only be used for a little bit.

Kids have no idea about their wasting habit.

Needs

A place or service to deal with the used educatiobal paper goods.

Need better opportunity to learn about paper recycle knowledge in order to prevent further paper wasting habit

Solution

Based on the problem statement and user needs, I decide to design a service that could:

1. Give students strong and visible motivation to join the recycle practice. Help students to form a good habit of paper recycling by letting them choose what kind of paper products their recycled paper could be. Students will also be able to choose where to send the new paper product to, it can be the low income area. In this way they can both prevent the resource wasting phonomenon as well as doing charity.

2. Help reduce the paper cleaning pressure for the schools.

3. Recycle factories will be able to recycle the right type of paper resource more effciently.

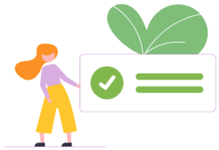
Service Feature

1. Service is highly customizable and easily engageble. A recycle installation in a form of a tree will be placed in each school to help schools collect the used paper. What students need to do is just take their used paper to the recycle installation and insert the paper to it. They can choose what kind of paper good they wish their recycled paper to be, as well as where to sent those goods to. No extra energy required. Students will be guided by the desigend app attacted to the recycle unstallation to finish the recycle practice smmothly.

2. Service is easy to use. Schools only need to pack the collected paper from the installaiton and hand it to the carriers to finish the paper transfer.

3. The collected paper is all in the same type, which saves the time for the recycle factories, let them recycle paper faster.

Service Flow



1. Student take the used paper to the Paperee tree recycle installation
2. Insert the Student ID to activate the recycle service
3. Insert the paper into the installation to finish the designed recycle program

1.School will collect all of the used educational paper stationary that stored in the recycle installation on a weekly basis
2.School will contact the carrier to deliver the used paper to the recycle factory

The carrier will take all of the used paper to the recycle factory

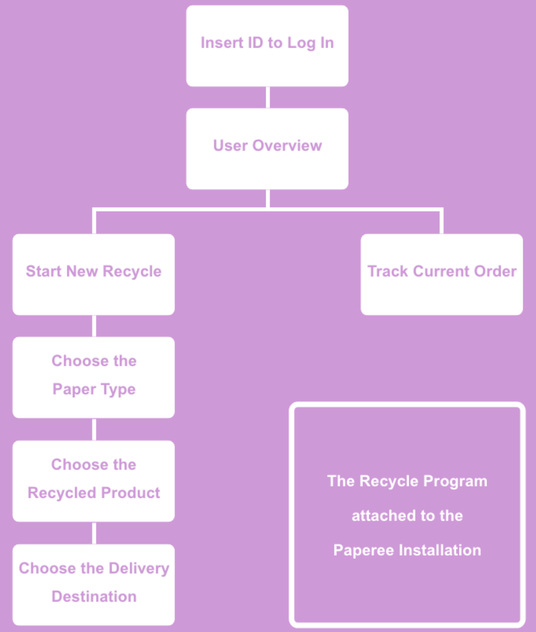
The recycle factory will recycle all of the used paper and turn it into brand new paper gifts based on

The brand new paper based gifts will be sending to all those people who needs help

Service Blueprint

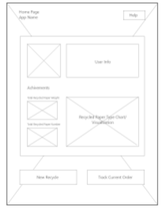
	Before Recycle	During Recycle	After Recycle
School	Teaching students knowledge and facts about paper recycling, encourage students to join the recycle event, set up the recycle tree.	Organize the recycle event, collect the used educational stationary, connect with the logistics company and the recycle company to take the paper	Help students to form the habit of recycling and reducepaper wasting.
Student	Learn the knowledge and facts about paper recycling, collect the used educational paper stationary	Take the educational paper stationary to the recycle station (The Paperree Tree) to finish the recycle process and chose the where to send the recycled paper gift.	Tracking the recycled paper gift Keep collecting the used paper stationary and keep joing the recycle event
Logistics Company		Take the used paper to the recycle company	Deliver the paper gift to the chosen people
Recycle Company			Recycle the used paper Use the recycled paper to make new products based on users' choice

Information Architecture



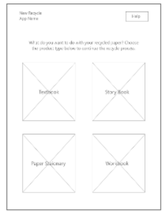
Wireframe

Service Activation Page



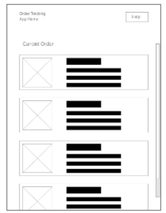
Homepage

Insert Paper Page



Recycle Page

Destination Page



Order Tracking

Service Activation Page

to activate the recycle service, students needs to insert their student ID into the recycle installation

Homepage

User info include the recycle record and the order tracking will be shown on this page, so does the gate to start a new recycle

Insert Paper Page

Student will insert their paper products under the instruction of this page

Recycle Page

The recycle page contains two major parts: first, students needs to chose the type of the paper they are about to recycle. Then, they can choose what kind of new paper product they want their recycled paper to be

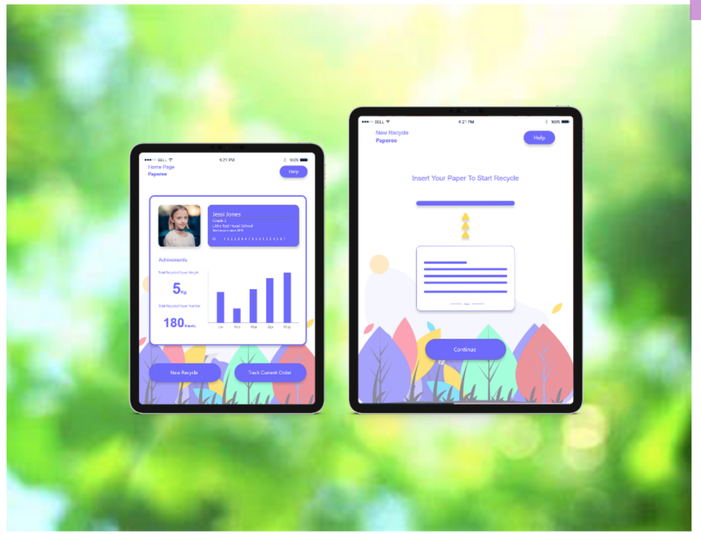
Destination Page

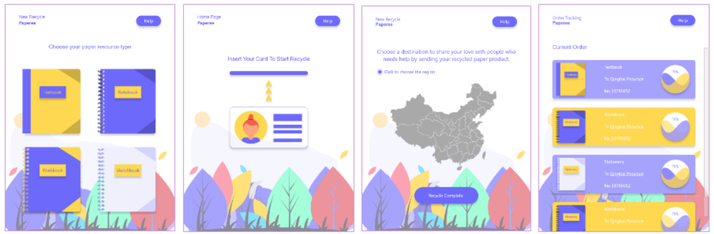
Student will be able to choose where they want the new paper product to be sent to

Recycle Page

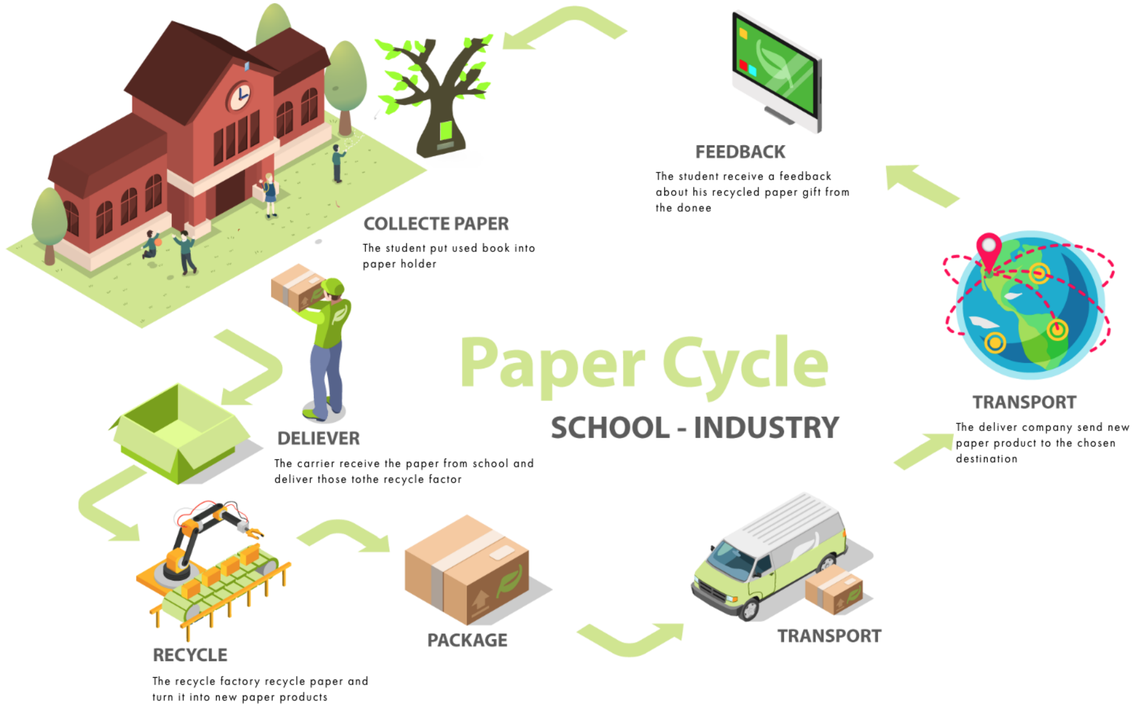
Students can check the state of the current order and the older orders on this page

UI

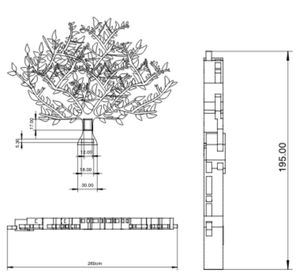




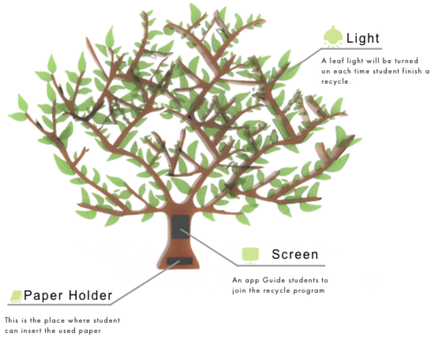
Service Overview



Installation Overview



The height of the tree is designed to be 1.95m
The wide of the tree is designed to be 2.6m



Using Scenario Overview

Before turn on: the leaf light are dark. Put one book turn on one leaf.

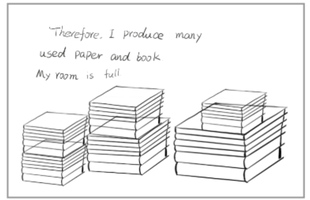
After turn on: After one year, the tree could be turn on by every students effort.

Storyboard

I'm a second year primary school student.

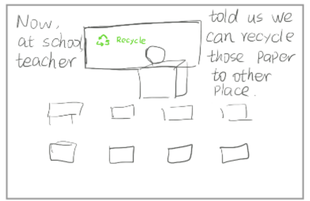
In my daily life, I need do homework and writing paper in school.

Also, I like read books. I have lots of different types of books, like story book, comic book and novel.



Therefore I have lots of used up notebooks.

In the past, I throw those paper into trash bin. It is the only way I can produce the paper.



Now, at school teacher told us we can recycle those paper to other place.

Now I can take these paper to the paper recycle insead of throw away

After my friends and I put the paper, these tree light are all turn on in our school. That represent we saved one three for the society.

User Feedback

Enji Kang

I really like the way we can make new stuff out of the used paper and send it to kids like me who really needs help, the experience was fun, I have learned a lot by doing the paper recycle. I wish I could help more people.

Jie Song

My mon was annoyed by my testing paper and workbooks because she has to clean all of the used educational stationaries at the end of each semester, you know we have huge amount of them in my home. Now seems like my mom won't be bothered by those paper anymore!

Xiaoyu

I really enjoy turn on the leaf light!
I could do this everyday!
I'll keep recycle my used paper!
I hope I can send more story books to girls who are in my age! No one would ever refuse to read story books!