

IHCI First Project Submission

Rules

- Submit a Google Doc, NOT a PDF or a Google slide.
- Use the default fonts, line spacing, and font size unless specifically required in the assignment.
- After submission, the Google Doc will get automatically locked, so you won't be able to make any changes.
- Standard plagiarism rules apply.
- Your submission will not be considered for grading and feedback if you do not follow these guidelines.

Names of Group Members: Rachit Bhandari, Nakul Grover, Parv Goyal, Pratham Bansal, Nishant Tomer

Project Group Number: B_G8_P1

HCI Group No.: 8

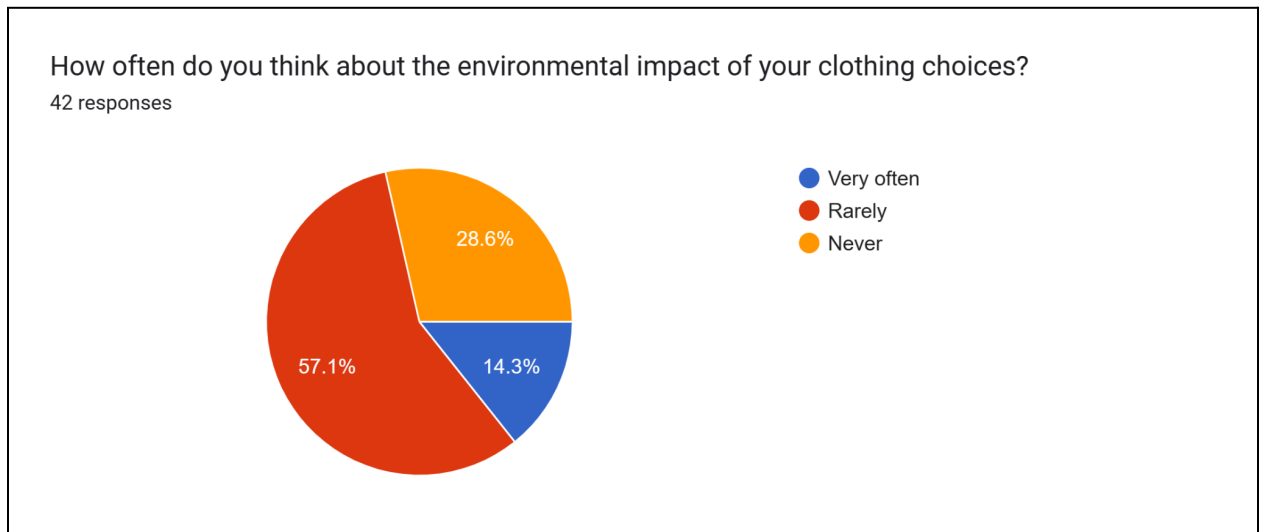
Requirement Gathering

Stakeholders Mind Map



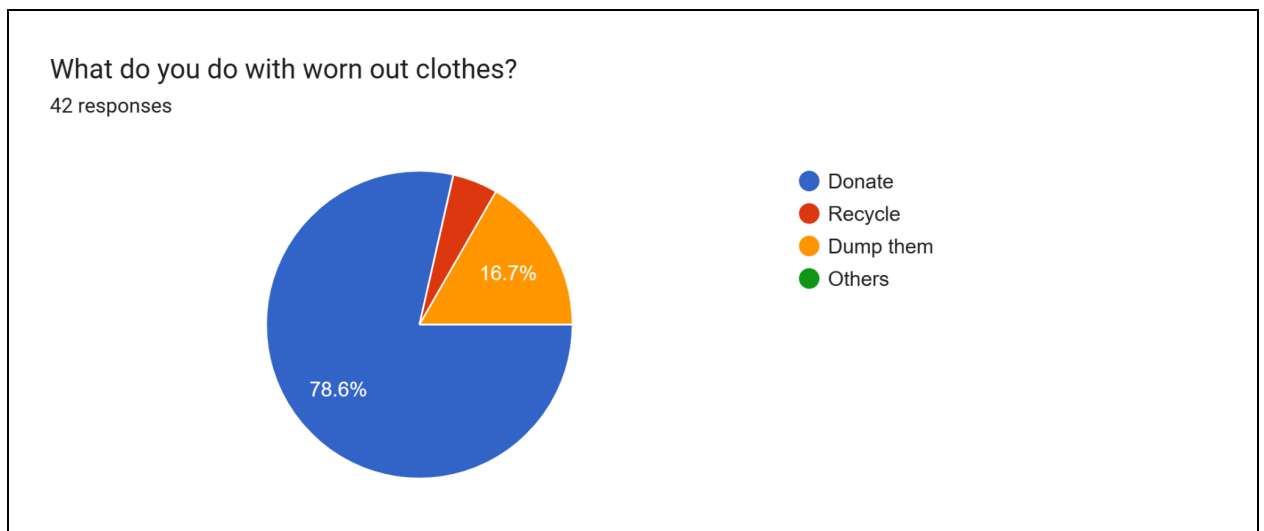
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See what our questionnaire responses have revealed.



1.

It's not just us, but over 57% of our respondents who 'rarely' think about the environmental impact of their clothing choices. And, and, over 1/4th of the respondents 'never' think about the same. So, a huge problem exists but when people don't even think about it... now that is a problem of a magnitude which is inexpressible.

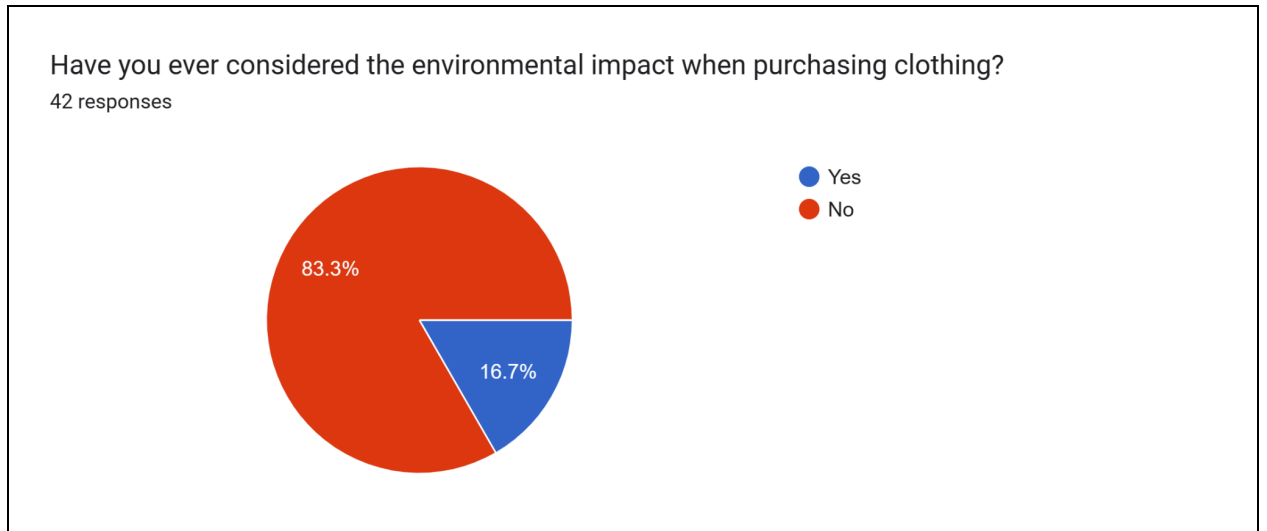


2.

If you donate your clothes to the maids, then don't worry you got good company... Over $\frac{3}{4}$ th of our respondents have said that they do donate their used clothes. This is a positive response which indicates that the problem is smaller on the users' ends. Hence, our focus is more on the manufacturers.

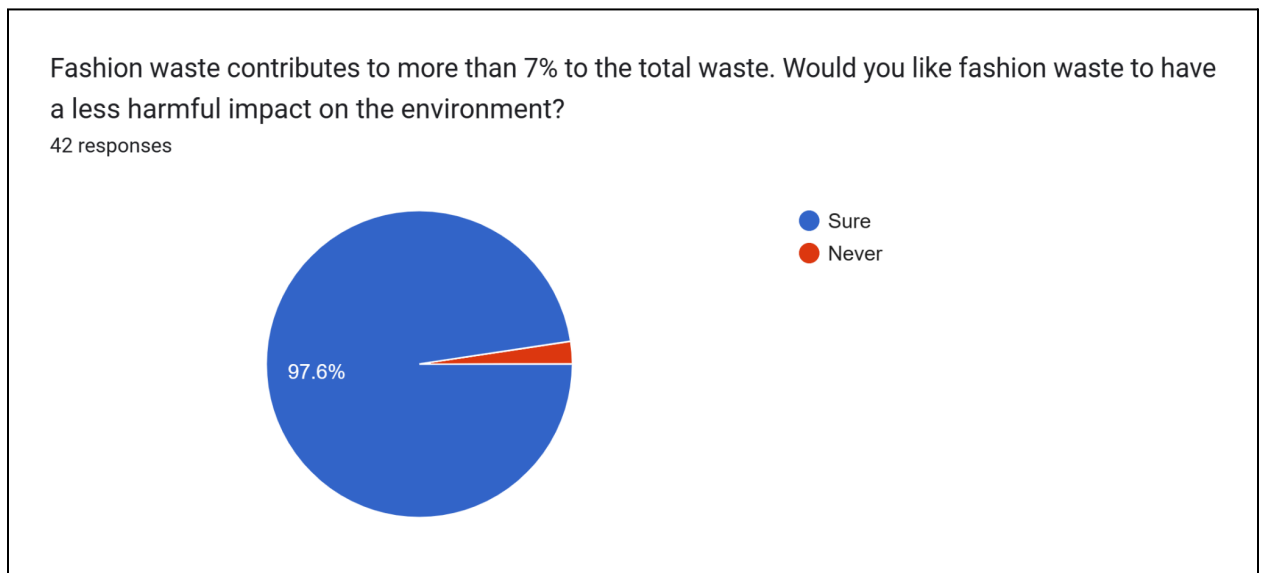
(There is however a healthy group of 16% respondents that dump their clothes, hence the problem cannot be ignored altogether as well)

3.



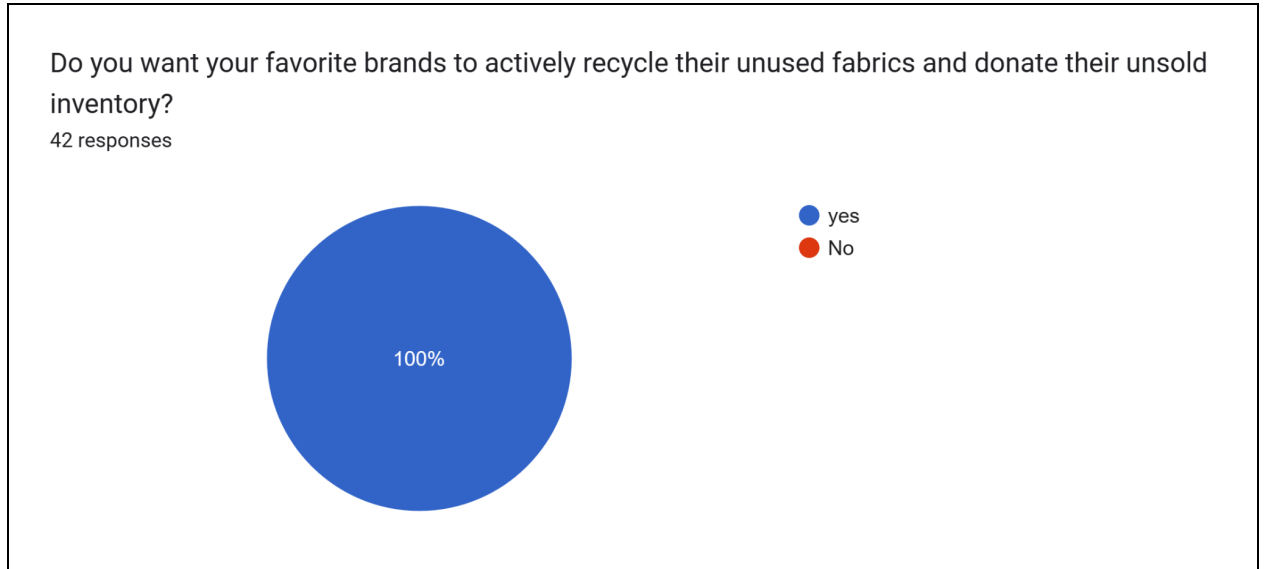
Clearly... environmental impact does not hold much importance when making cloth purchase decisions. Over 80% of our respondents have said that have never considered the environmental impact of clothes while purchasing them.

4.



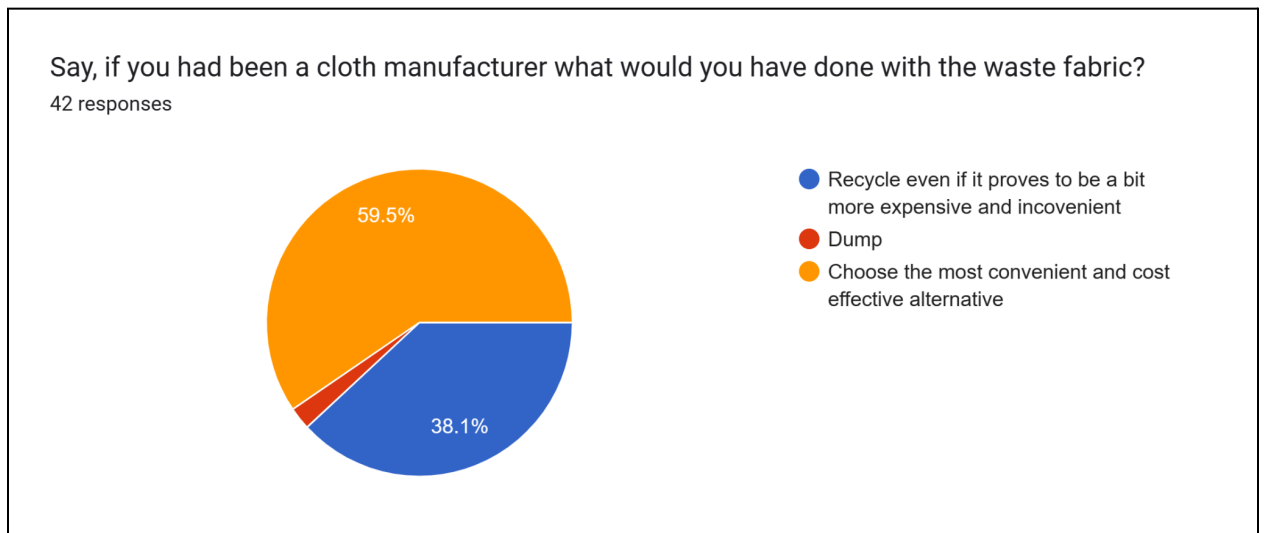
Now that is not a debate! Overwhelmingly, people want that fashion waste should cause less harmful impact on the environment.

5.

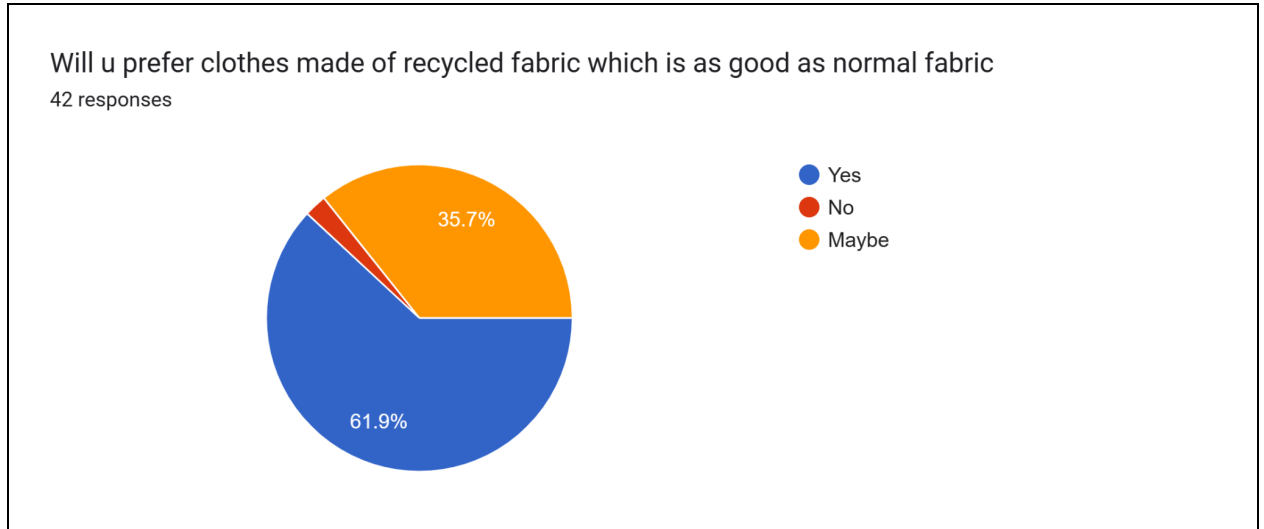


So, why aren't companies doing it!! Reason being there aren't many cloth recycling firms and it is very difficult to collaborate with those who do recycle.

6.



The 'cost effective and convenient alternative' -is what we aim to become.



Just some additional information, but it does show that customers won't mind buying recycled-fabric-made-clothes.

INTERVIEW

LINK-

https://drive.google.com/file/d/1B5VuGhjl731jSq8AWxF9i_7FAmg-RYHh/view?usp=sharing

SUMMARY- The stakeholder we interviewed has a family business of garment manufacturing and she faces a problem with the cloth cutout waste which gets accumulated in her factory. She can't recycle the waste as the scrap dealers don't accept such waste. She was willing to use an app which helps recycle waste which helps her save money and make the environment clean.

Personas and Scenarios

Personas

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VIKRAM

**"DONT COUNT THE DAYS
MAKE THE DAYS COUNT"**

PROFILE

Gender: Male

Age: 23

Designation: Tailor

Location: Delhi

Education: Graduated

Company: Sri Sai Stich Work

GOALS

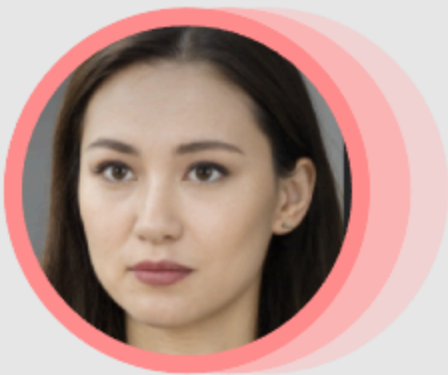
- 1)Wants to expand his business, also aims to build a loyal customer base.
- 2)Continuously want to improve and upgrade tailoring skills.

FRUSTRATIONS

- 1) So much capital is being used while purchasing clothes.
- 2)Huge amounts of cloth waste gets accumulated daily.

NEEDS

- 1)Wants to connect with various cloth recycling companies which can sell them at reasonable prices.
- 2)Need consistent solution so that daily cloth waste can be recycled easily without any dedicated effort.



VEENA

**"THERE IS NO CHARM EQUAL
TO TENDERNESS OF HEART"**

PROFILE

Gender: Female

Age: 24

Designation: Employee

Location: Delhi

Education: Graduated

Company: Pal Manufactures Ltd.

GOALS

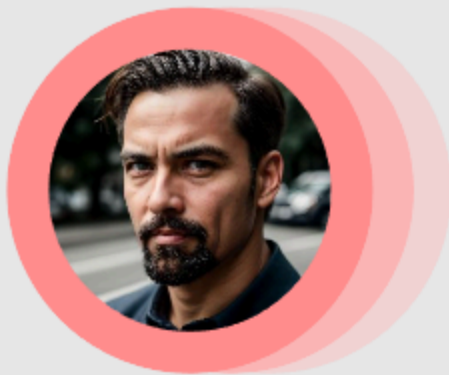
- 1) To find suitable solution for recycling fashion waste produced by the company.
- 2) Ensuring that fashion waste reaches recyclers.

FRUSTRATIONS

- 1) All the fashion wastes goes to dumping fields or burns out.
- 2) Not enough connections with recyclers so clothes go to waste.

NEEDS

- 1) Need proper connections with recyclers so that fashion waste produced by the company can be easily recycled.
- 2) Need flawless medium between company and recyclers so that everything happens smoothly.



JHON

**"LIVE YOUR BELIEFS AND
YOU CAN TURN THE WORLD
AROUND."**

PROFILE

Gender: Male

Age: 27

Designation: Chief Manager

Location: Delhi

Education: Graduated

Company: Viens Recyclers

GOALS

- 1) To supervise the company that recycles fashion waste in Delhi.
- 2) To recycle more than 80 percent of fashion waste of Delhi NCR.

FRUSTRATIONS

- 1) Lack of availability of fashion wastes that we can recycle
- 2) Not enough connections with big manufacturing firms

NEEDS

- 1) Need proper connections with big fashion manufacturing firms so that waste produced by them can directly be recycled by us at Viens Recyclers.
- 2) Also needs a platform where all fashion manufacturing firms (small scale and large scale) can directly connect with recyclers.

EMPATHY MAP

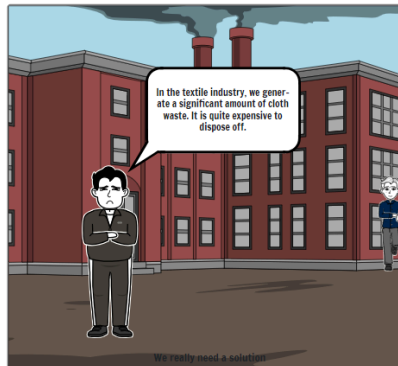
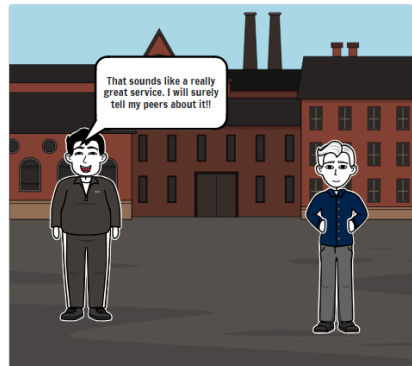
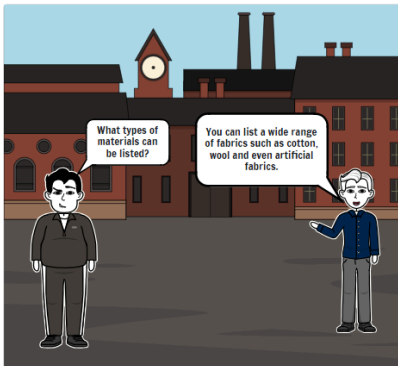
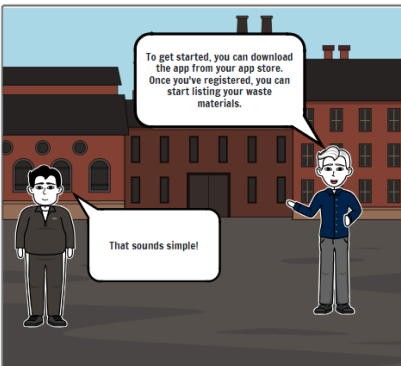
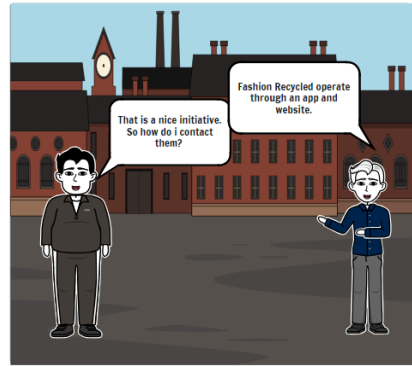
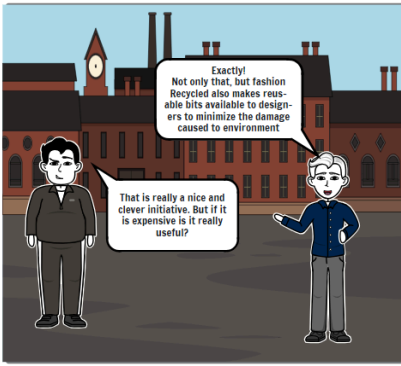
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Scenarios

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STORYBOARD ***Manufacturer's perspective***



Recycler's perspective



Problem Understanding

Have a look at your wardrobe. You will find multiple clothes that you have stopped wearing but they still lie there. Let's go deeper. Find that place of your house where all the old clothes are stacked. The ones that you outgrew, the ones which can't be worn anymore, the ones which are kept to be converted to dusting cloths. A rough guess, but you would have

found at least 10 pieces of clothes which pass any of these criteria. How many of these will be recycled? Let's imagine half of these go to the maid, one or two are converted to dusting clothes, but the rest. Won't they be thrown away? How many households have you heard of that give their clothes for recycling?

This is just one aspect of the problem. Let's go deeper into this issue. How much cloth do you think is wasted making a single tshirt that you wear. If you don't know the answer, ask a tailor. He/she may probably say much more than what a large manufacturer may say. But a small waste of cloth on millions of tshirts that may be manufactured multiplies into tonnes of cloth being dumped each year.

Some staggering facts:

1. **92 million tonnes** of textile waste is produced every year.
2. The average US consumer throws away **81.5lbs** of clothes every year.
3. The number of times a garment is worn has declined by around **36% in 15 years**.
4. It takes **20,000 liters** of water to produce **one kilogram** of cotton.
5. **\$500 billion** is lost **each year** because of under-wearing and failure to recycle clothes.
6. Nearly **10%** of microplastics dispersed in the ocean **each year** come from textiles.

Clearly, fashion waste is a problem. But what action are you and me taking for it? What action are manufacturers taking for it? Now this is the bigger problem.

Currently, the majority of the waste disposal system for fashion waste is largely **unorganized**. The presence of multiple **small scale players** in this industry has led to the current state of mismanagement. Further, there is **no proper way** for manufacturers to contact recyclers.

We, at '**Fashion Recycled**', aim to solve this problem by **bridging the gap** between **manufacturers, designers and recyclers**.

Ideation and Brainstorming

Our proposed solution is a simple website (could be transitioned to an app in the future) where cloth manufacturers and recyclers can register themselves and be connected with each other through our platform.

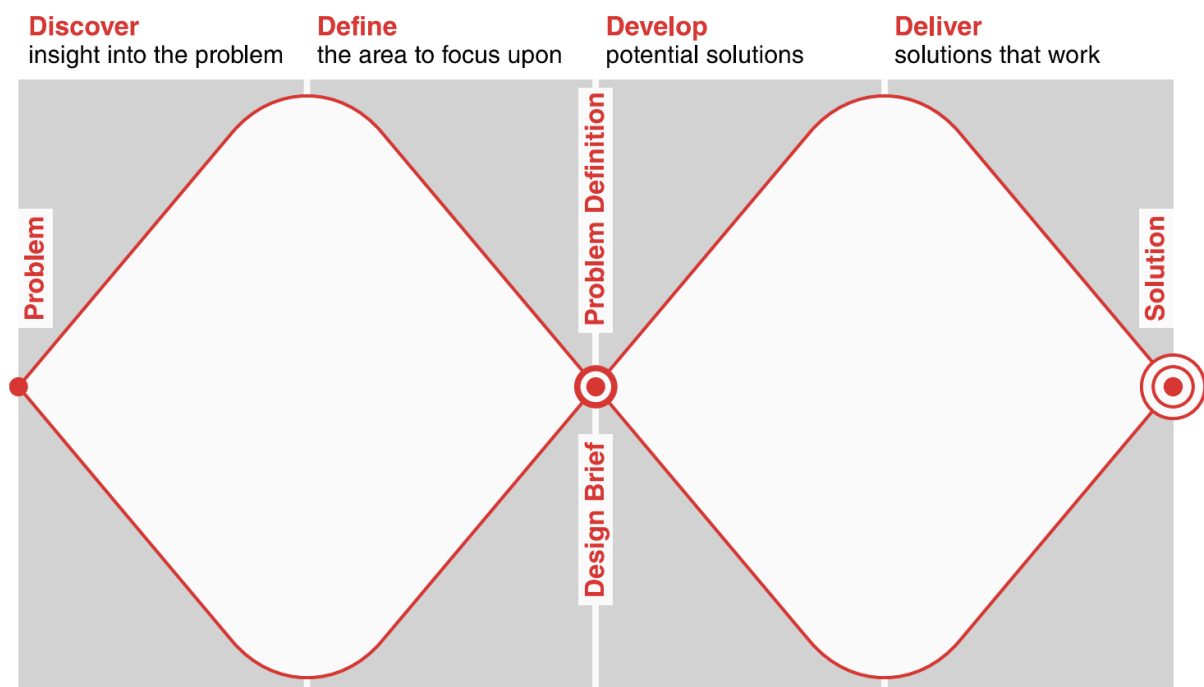
Let's look at both the interfaces:

1. **Manufacturer:** A cloth manufacturer would login in to our website. There he/she would enter some basic details such as his/her name, the company's name, contact details, password, etc. After that, their account would be registered in our database.
To place an order for collection of fashion waste, they would simply have to enter details about the consignment such as its weight, material type and color, pickup address and payment mode. The list of available dates and time slots would be displayed along with the exact price that would be paid for the consignment. The manufacturer can confirm the order and the consignment will be picked up. The payment will be made at the time of pickup via the predetermined payment mode.

2. **Recycler:** A separate registration page shall be made for the recyclers. They initially register themselves on the platform by entering their basic details such as their name, the firm's name, their location, contact and password. After the verification, their account is created where they will further enter some details about their firm such as their recycling capacity, past clients and experience in the industry. An initial visit is done to their warehouse to check the authenticity and then orders received from the manufacturers are allotted to them through the website. They are informed about all the details of the consignment along with the payment that they must make to the manufacturer. A successful pickup of the consignment is made by them and a commission is paid to us for the same by the recycler.

We may expand the service to include individuals and small designers as well who may want their clothes to be recycled.

DOUBLE DIAMOND APPROACH AND ITS APPLICATION



Discover→ We at “Fashion Recycled” are resolving the issue that a huge amount of fashion waste produced by manufacturing firms is not being recycled. So we aim to solve this problem by bridging the gap between manufacturers, designers and recyclers.

Prior to this we **physically interviewed people**. Also conduct various **public surveys via google forms** and found that the public wants a **proper connection** between recyclers and manufacturing firms .

Manufacturing firms want to connect with Recyclers

Recyclers want to connect with various manufacturing firms

HERE WE BECOME BRIDGE BETWEEN THEM AND CONNECT THEM !!!

We also did background research and found that **Fashion waste** accounts for **at least 7 %** of the total waste produced globally and **less than 1% of this is recycled**.

We have observed that this problem is not bound by any regional or national boundaries hence it is a global crisis to be resolved.

Define→Our public surveys and interviews highlight that we need to provide a flawless medium between manufacturers and recyclers so that every bit of fashion waste can be recycled easily.

We made personas of few people who are related to this field highlighting their goals, needs and their issues regarding “Fashion wastes”.

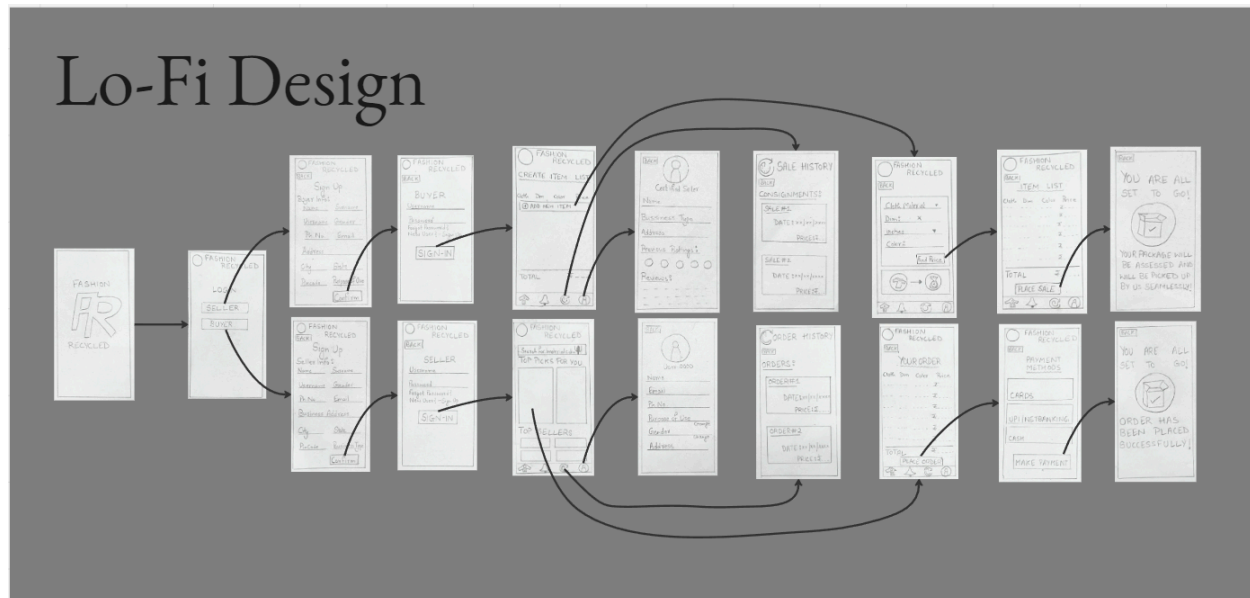
We also tackle various scenarios and situations which can occur after the prototype of the product.

Develop→We **develop Low-Fidelity design** of our application which briefly explains the features and architecture of our application . We also tested it and it works smoothly and users find it very intuitive and user friendly. By testing and getting feedback we improve our interface which is best for all. We also make various **alternating designs/ prototypes** for different users and cases .

Deliver→After further consideration we will deliver an application in the future.

Low-Fidelity Designs

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Low-Fidelity Testing and Testing Methodology

We tested the Low-Fidelity design by interviewing two randomly selected people and asked about their opinion on our application design.

PERSON 1-

LINK-

<https://drive.google.com/file/d/1LTIttoHb-eerWn4BwABH3zmr0f79On2t/view?usp=sharing>

SUMMARY- As she mentioned, the overall design seems good. The home page is perfectly fine as it helps users get top picks and top sellers in their location. But there is an issue with the “Order Created” page as no clear spaces are provided in between the elements on the page.

PERSON 2-

LINK1-

<https://drive.google.com/file/d/1yzPU1ZYiN1Km1iw1Eiw8MrzDjmUm8hfK/view?usp=sharing>

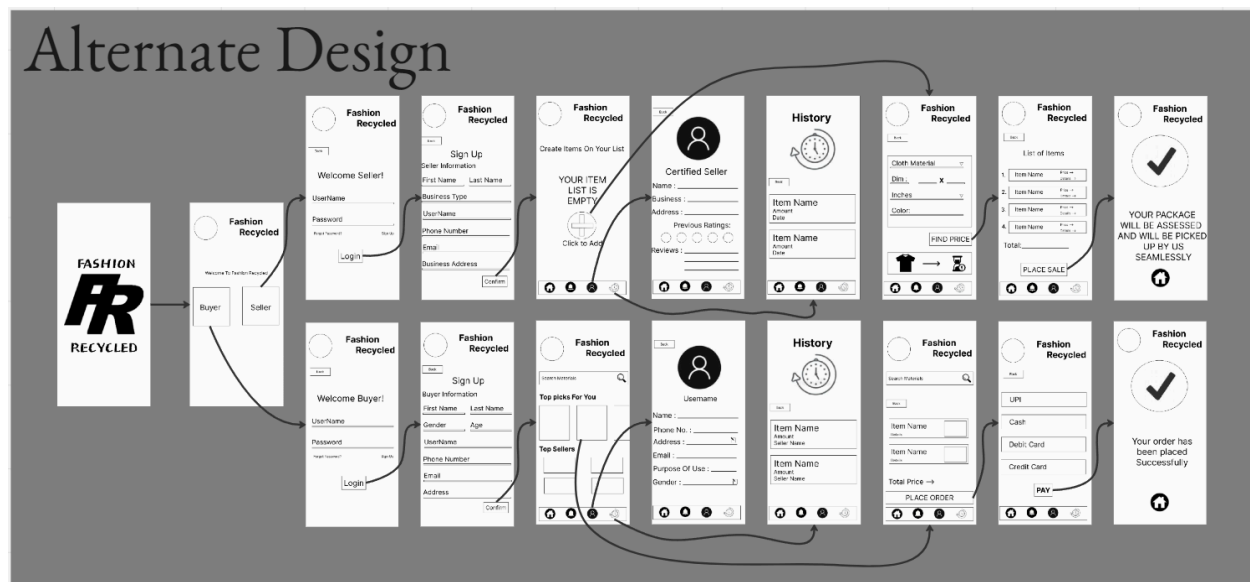
LINK2-

https://drive.google.com/file/d/1a9VNv5HMzRw15QI0bIJR5_ePkIjp6T6K/view?usp=sharing

SUMMARY- As she mentioned, the overall design is pretty nice. The ratings and review system on the “Seller Profile” page is a great feature in the app and the page is also neat and precisely spaced. Talking about the negatives, the “Checkout” page is cluttered and requires some amount of information to be deleted or hidden inside another button which could be further expanded when needed.

Alternate Design

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Contributions

RACHIT BHANDARI- LOW-FI DESIGN, INTERVIEWS, ALTERNATE DESIGN AND PERSONA REVIEW

NAKUL GROVER- REQUIREMENT GATHERING, BRAINSTORMING, GOOGLE FORM

PARV GOYAL- GOOGLE FORM, ALTERNATE DESIGN, ANALYSIS OF SURVEY

PRATHAM BANSAL- PROBLEM UNDERSTANDING, REQUIREMENT GATHERING, EMPATHY MAP

NISHANT TOMER- PERSONA, DOUBLE DIAMOND