

MENGYU
CAO



Lunhui

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Lunhui

Mengyu Cao

Abstract

Lunhui is a tech startup proposal that functions as a platform for bringing together city residents and craftspeople. It supports up-cycling and creates art and design objects by providing unwanted material pick-up service and by matching the inventory to craftspeople to support their creations. It helps to give unwanted objects new life cycles, away from landfills. I would like more people to be involved in up-cycling and creativity circles by providing easy and efficient technology.

Keywords - waste, up-cycle, recycle, creations, creativity, unwanted items, life cycles, rebirth, crafts, craftspeople, inventory, matching, making, bots, service, pick up.

Chapter I Introduction

Impetus

I am researching the reasons and results of unbalanced resources, the causes, and effects of solid waste, and Cradle to Cradle design. I am studying how design and technology can help the solution of recycling and up-cycling to reduce the waste and create value from it, how to attract people to join in the up-cycling products loop by providing convenient and simple experience, and how to offer clever products to fulfill their satisfaction, thrift, and resourcefulness. Many people take resources for granted. As a consequence massive solid waste is a slow death for the planet. The waste of food, clothes/ fabric, paper for example really affects our planet. Landfill

disposal of municipal solid waste represents one of the largest factitious global methane emission sources¹.

My project is focusing on coming up with new solutions for waste and helping people form a habit of treasuring resources and changing their behavior of throwing things out. Also, I have been exploring the question of waste since my first semester. I came up with a new mobile marketplace for easily matching old items to new owners to help people save money and to recycle items to save resources. However, I feel that there is a lot of room for up-cycling since only a small part of the unwanted clothes can be sold a second time. Most of them are down-cycled and disposed to landfills. Take Goodwill as an example. They can only sell 20 percent or less of their donations in retail stores. If up-cycling can help raise the value of waste, that could be a good thing and a potential solution.

Concept

Lunhui is a platform to drive demand for up-cycling by bringing people together through technology. The service connects individuals who are decluttering with craftspeople who make products from recycled materials. The goal is to reduce waste, create value, fulfill customers' feelings of satisfaction, thrift, and resourcefulness, as well as bring support and encouragement to cooperators who are artists, designers, and craftspeople.

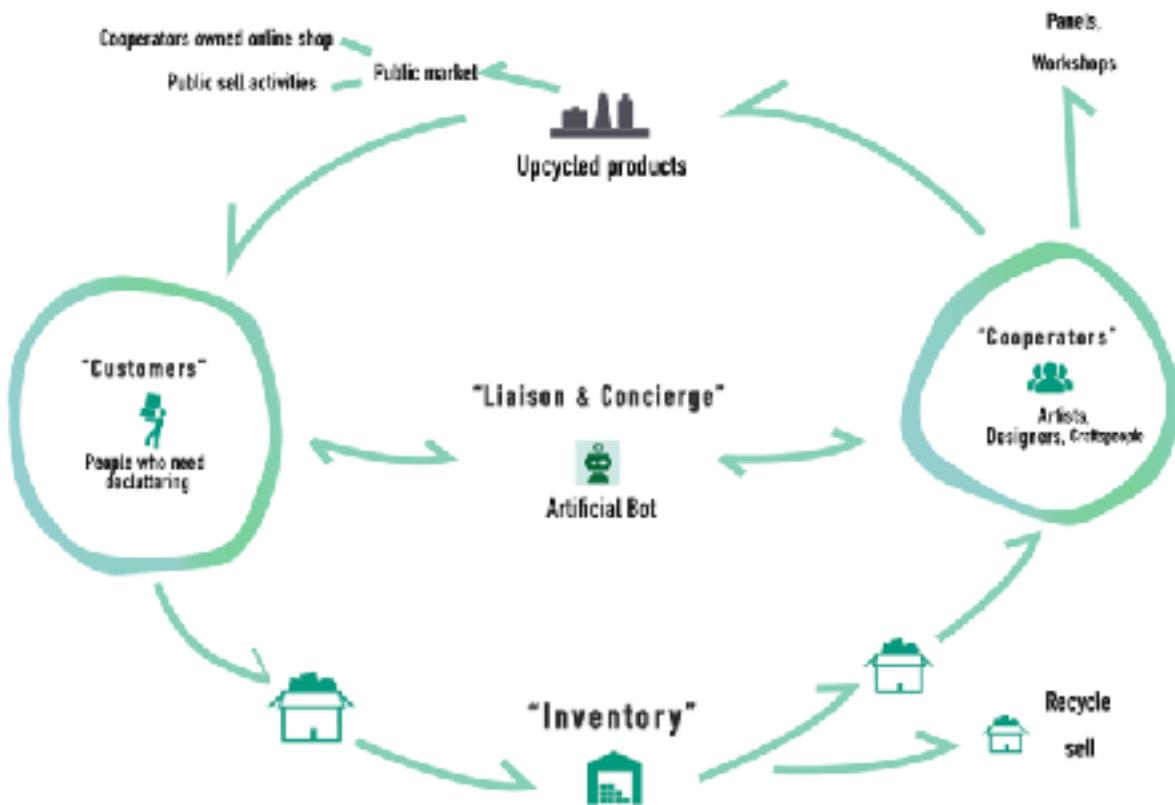
Four questions drive my solution.

- Why is up-cycling a good solution for waste problems?
- How can we create an up-cycling loop to turn waste into new products and bring people who throw things away and craftspeople who can reuse waste into this loop?

¹ IPCC in Climate Change 2013: The Physical Science Basis (eds Stocker, T. F. et al.) (Cambridge Univ. Press, 2013).

- What is the best way /media /platform to connect all the things together to build the loop?
- Can up-cycled products be attractive, fashionable, and accepted by the majority of people?

The final output of my project is an artificial bot-centered up-cycling service that connects customers (people who need decluttering) and cooperators (artists, designers, craftsmen, who are working on recycling and up-cycling). The service gets unwanted stuff from customers and sends matched items to cooperators who create new products from the waste. After their creations, the service also helps the cooperators to sell these products in a new marketplace. The creations are then redistributed to customers via the bot. Customers can get points by giving their stuff away and the points can be used toward the price of new creations that they buy. I believe that there is a marketplace in waste and demand for up-cycling. My project is a new way to facilitate up-cycling with a convenient decluttering service for customers and efficient material supply to craftspeople.



Audience and Setting

My audience includes two groups of people. One is customers who need a decluttering service to remove unwanted stuff from their homes. This includes millennials in NYC and especially parents with young children. The other group is cooperators, including designers, artists, and craftspeople who can use the unwanted stuff to create new pieces/ products. These cooperators are working on recycling and up-cycling, and they have the skills of turning old things into new products.

Character description (customer 1)



Name: Marina T
Lives in NYC
Occupation: Master's student at Parsons School of Design, majoring in fashion strategy. Freelance photographer.
Interests: photography, fashion
Unwanted stuff: 15+ items per season, such as clothes, decorations, and hangers.

Character description (customer 2)



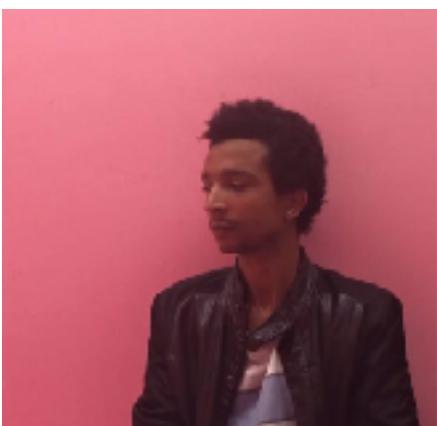
Name: Angela B
Lives in NYC
Occupation: media designer, film maker.
Interests: film, social media, fashion
Unwanted stuff: 30+ items per season, such as clothes, packaging, and household items.

Character description (customer 3)



Name: Yue Y
Lives in NYC
Occupation: User Experience designer
Interests: cooking, traveling, fashion
Unwanted stuff: 10+ items per season, such as clothes and accessories

Character description (cooperator 1)



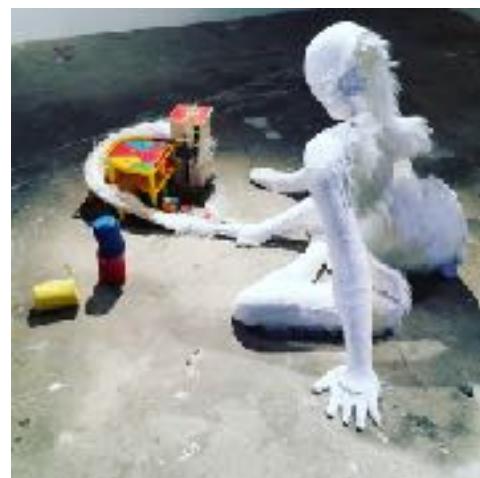
Name: Justin S
Lives in NYC
Occupation: Student in Parsons School of Design Fine Arts program
Interest: street art.
Works on recycled art, walks on the streets to find unwanted stuff to work with.



Character description (cooperator 2)



Name: Justin C
Lives in NYC
Occupation: Student in the Fine Arts program at Hunter College
Interests: art made from recycled items
Works on recycled art, gathers old objects and toys to recreate new pieces.



Character description (cooperator 3)



Name: Eric K
Lives in NYC
Occupation: Student in the Fine Arts program at Hunter College
Interests: food, art, shopping, fashion
Works on recycled art, fashion, and food.



Context:

My project is a service that utilizes an artificial bot, which is embodied in different chat applications, such as Messenger, WeChat, Slack, etc. There are also separate online platforms for presenting and selling up-cycled products, including a website, a Facebook page, and an Instagram account. People can find it on chat applications or on social media and public promotions.

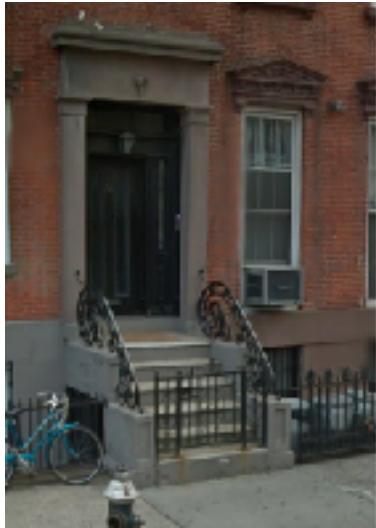
The bot is a concierge that meets demands from both customers and cooperators. From the customer side, the bot schedules pick-up times, collects addresses, calculates points in the point system, and sends points to customers. According to how many points the customer has accumulated, the bot sends new creations made by cooperators to customers for them to exchange or buy with discounts. From the cooperator side, the bot learns their interests, suggests items that they are interested in frequently, and processes their orders.

User Cases:

1) Marina T

- She saw a public poster about the decluttering bot service. Then she opened Messenger to search for the bot. She chatted with the bot and made a schedule to pick-up the possessions that she didn't want.
- When our staff went to the building at the appointed time, Marina left all her unwanted items at the front of her building.

- After we picked up her items, Marina received 20 points that can be used to get discounts on up-cycled creations that we have. The bot suggested several new creations. She really liked an up-cycled purse. She bought it with a discount from her points.



2) Justin S

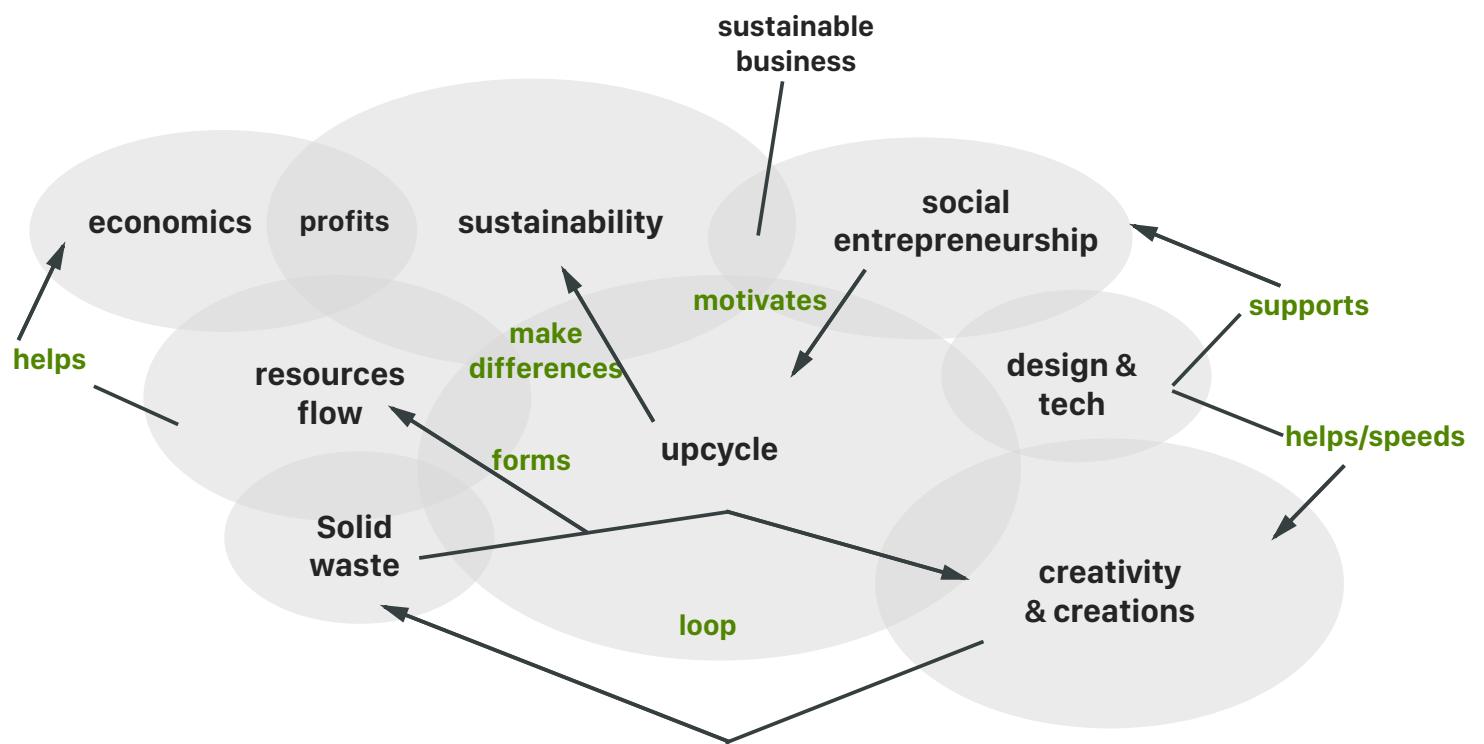
- He found the bot service on Facebook and felt that he could use the bot to discover and receive more materials for his art.
- He searched and added the bot on Messenger. The bot suggested 5 different kinds of items. He chose household items.
- The bot kept suggesting household items to Justin to see if he needed any of them.
- After receiving several rounds of pictures, he found 2 items he wanted to use and made an order with the bot.
- He received the items and created 2 art pieces with them.
- He then sent the pictures and prices of the two pieces to the bot. The bot helped to post the art pieces to the online platform to sell.

3) Katie C

- She heard about the bot from her friend Justin, and she added the bot on Messenger.
- She chose the category of fabric.
- The bot continually suggested clothes and fabric to her.
- She finally found interesting material through the bot and made an order.
- She received the material and created a cool vintage style jacket.
- The bot helped to post her products to the online platform to sell.
- She talked to Justin about her experience. They shared tips with each other.

Chapter II Domains and Precedents

Domains and Precedents



This is my domain map, including economics, sustainability, resources flow, solid waste, design and technology, up-cycle, creativity, and social entrepreneurship.

We live in a time of throw-away consumerism. In 2007, Americans threw out about 570 billion pounds of solid waste. Compared to other nations, the United States has a record of generating waste at an alarming rate. Home to only 4% of the global population, we are responsible for more than 30% of the planet's total waste generation.² Solid waste includes scrap metal, furniture and toys, appliances and vehicles, cans, fabric, and so on. However, the focus of the project is wasted clothes and fabrics, accessories, decorations, furniture, paper and books, and electronic products, because these are things that are easier to find for up-cycling solutions.

I read two books from William McDonough and Michael Braungart that help to understand economics and sustainability. These books are *Cradle to Cradle*³, and *The Upcycle- Beyond Sustainability - Designing for Abundance*⁴. *Cradle to Cradle* is an inspiring account of ecologically minded design. It calls for people to not only rethink the way we make things, but to rethink the way we work against the natural world, rather than working with the natural world. They also point out that instead of designing products that are destined for the landfill, imagine products that can be re-used again and again in the same form or different forms through up-cycling. *The Up-cycle* is a follow-up to *Cradle to Cradle*, which puts the concept of up-cycling into practice with business, governments, and people. William McDonough and Michael Braungart envision the next step in the solution to our ecological crisis: we don't just use or reuse and recycle resources with greater effectiveness; we actually improve the natural world as we live, create, and build.

There are organizations and companies that work on recycling clothes and household items. Goodwill and The Salvation Army accept donations of unwanted stuff. The donators can get a tax deduction according to the value of what they

² "The problem of waste," Toxics Action Center, <http://www.toxicsaction.org/problems-and-solutions/waste>

³ William McDonough and Michael Braungart, *Cradle to Cradle* (North Point Press, April 2002).

⁴ William McDonough and Michael Braungart, *The Upcycle- Beyond Sustainability - Designing for Abundance* (North Point Press, April 2013).

donate. Many clothes and shoes bins are placed throughout the city, such as Planet Aid Bins and USAgain Bins. However, the fact is that Americans throw away 25 billion pounds of clothing every year, only 15 percent of which ends up donated or recycled⁵. One of the reasons for this is that these organizations can typically only sell 20 percent or less of their donations in retail stores. Textile recyclers buy up the rest to sell overseas and to companies that tear clothes up and remake them as industrial rags, insulation, and carpet padding⁶. Also, textile recycling bins are both non-profit and for-profit. Many people place their unwanted clothing in the convenient bins, and they have no idea of where these clothes go, which raises concerns for nonprofit organizations like The Salvation Army and St. Vincent De Paul⁷. More efforts for recycling are needed here, and up-cycling is a potential solution for getting value from waste.

In the fashion industry, retail companies like H&M and Levi's are also doing recycling programs in their stores. They provide a discount on new products for those customers who donate their unwanted clothes. Then they recycle this fabric into materials that can be used to produce new products. However, it is not possible today to close the loop and recycle all types of materials into new textile fabrics. According to its newest sustainability report, in 2015, recycled fabric rose to 1% of the materials H&M used, up from 0.2% the previous year.⁸ For H&M, a fast fashion company, it is hard to become a company with a sustainability label. Given the limitations of current technology, it would likely take H&M up to 12 years to use just 1,000 tons of clothing waste. Meanwhile, it produces that same volume of new

⁵ Ask Umbra, "What really happens when I put clothing in a donation bin?" Grist, Oct 15, 2015, <http://grist.org/living/what-really-happens-when-i-put-clothing-in-a-donation-bin/>

⁶ Ask Umbra, "What really happens when I put clothing in a donation bin?" Grist, Oct 15, 2015, <http://grist.org/living/what-really-happens-when-i-put-clothing-in-a-donation-bin/>

⁷ LINH TA, "For-profit donation bins create issues for nonprofits" CVBusinessMonthly, Jul 15, 2013, http://wcfcourier.com/business/local/for-profit-donation-bins-create-issues-for-nonprofits/article_64f6a0c0-ea56-11e2-9b02-001a4bcf887a.html

⁸ Marc Bain, "Is H&M misleading customers with all its talk of sustainability?", Quartz, April 16, 2016, <http://qz.com/662031/is-hm-misleading-customers-with-all-its-talk-of-sustainability/>

clothes in a matter of days⁹. Both H&M and Levi's work together with Worn Again to search for new solutions. Worn Again is developing a chemical textile-to-textile recycling technology that will enable used clothes and textiles to be collected, processed, and made back into new yarn, textiles, and clothes again and again. Even though Worn Again's ultimate goal is to close the loop, it will take a long time to develop the technology. Therefore, up-cycling is the best possible way to handle waste right now.

TerraCycle is another recycling company with a more technology advanced recycling loop. They have different recycling programs, such as the Binder Recycling Program, the Air Care Recycling Program, and the Cleaner Packaging Recycling Program. As you can tell, they recycle specific things rather than receiving everything. Basically, customers go to the website and open the collection program they are interested in. Customers collect waste and ship it to the company for free, and then they get credits for shopping for recycled products made from waste in the online store. The products include Billboard Cell Phone Cases, Vinyl Record Picture Frames, fertilizers, gardening products, and so on. It also receives things that they have recycling solutions for, so they can use most of the waste received from people to produce new products. Customers can then see how their waste becomes more valuable.

FABSCRAP is a company in New York City that provides convenient pick-up for textile waste in businesses and recycles this. I am always thinking about a solution that can let people give their waste as easy as throwing it away. FABSCRAP provides the pick-up service for businesses. The business has to pay them 35 USD per bag of fabric waste for recycling. To comply with current laws, customers can use FABSCRAP as a resource. In New York City, if 10% or more of your commercial waste is textile materials, you are required by law to recycle it. I do not think that it is a good reason to motivate customers to pay for this recycling service.

⁹ Marc Bain, "Is H&M misleading customers with all its talk of sustainability?", Quartz, April 16, 2016, <http://qz.com/662031/is-hm-misleading-customers-with-all-its-talk-of-sustainability/>

However, it does point that pick-up services need money to support. I was thinking about offering free pick-ups. If that is the case, I have to make some profit from other parts of the loop. To realize a feasible loop is not easy. Many factors need to be considered and tested, such as whether the target audience will use it and whether the profits can support the program.

I also found a journalist, Lucy Siegle at The Guardian. Siegle focuses on sustainability issues and environmental problems. She writes about how fast fashion is the slow death of the planet, what's happened to charity clothing banks, H&M's sustainability report, etc. Many of the articles are relevant to my research.

Interviews with experts on the subject

I reached out to Otto von Busch, a professor in the Fashion Strategy Program at Parsons. He is an Haute Couture Heretic and DIY-demagogue, but also a researcher in fashion, design, and craft. He has a background in arts, craft, design, and theory. His Ph.D. project called *Fashion-able: Heretic Journeys in Engaged Fashion Design* (2008), explores, with hands-on projects, how participatory practices can render fashion inclusive, still exclusive. He did many crafts about recycling. The one called Recyclopedia can be visited at <http://www.selfpassage.org/>. Many practice models are provided, such as changing normal pants to zip pants and changing rain boots to wrapped boots. He also worked on many workshops to teach people the craft skills to help them to recycle their own items.

The transcript below is part of our conversation.

Otto: What are the unwanted stuff that you want to receive? Do you want to receive one subject or multiple subjects?

Mengyu Cao: I am thinking to receive all the unwanted items that customers have at one time to help them declutter better and easier. They don't need to think about where they should put all these unwanted clothes, old furniture, toys, etc separately.

Otto: I think that it will be easier for people to understand your work if you start with one subject, such as clothes or furniture. Then people can know what they can give to you exactly and what they can get back.

Otto: I think you can also think about different levels of decluttering services. For the lower level services, people just want to pack all the things that they don't want and let you bring them away. For the higher lever services, for example, people probably want you to help them to look at their wardrobe to help them do the decluttering, and they may also want suggestions about what styles fit them.

Otto: And for the unwanted stuff, parts of them are things that people don't care about and want to get rid of. Other parts of them are things that people don't want to wear, but they are meaningful to them. People may want these items back after being up-cycled and redesigned. These are just things that came to my mind after listening to your work.

Cao: How much value do you think can be created from recycling and up-cycling?

Otto: Let's look at the two recycling stores on the street, Goodwill and Beacon's Closet. The clothes at Beacon's Closet would be probably more expensive than clothes at Goodwill. When people give their unwanted stuff, they may go to Beacon's Closet first. If something cannot be accepted from Beacon's Closet, people may send that to Goodwill. I am not sure, just guessing. Let's see Beacon's Closet, it owns a style and an attitude. The environment is cooler and more special. People who work there are cooler. All these things make it different and raise the value of their products. It makes their products a lifestyle. Compare to it, Goodwill seems not that cool. It is just a recycling and donating place. Therefore, how you can make the service a style and an

attitude with fashionability is a way to raise the value of the products. For example, you make all your up-cycled products glamor style versus punk style. Does that fit more to your target customers? What if all your deliverers wear in black, or punk or other styles, as same as the products you are making. What if, let's say all the items that you get, you will dye them in black. Just make it a lifestyle and an attitude.

Cao: How important is sustainability education?

Otto: It is essential for the development of the society. There is sustainability education about stuff and material. For example, how to use minimized garment to make clothes? More important, there is sustainability education about social justice, social sustainability, and psychological sustainability. For example, how people surrounding you make you feel that you are fashionable or not. Do they influence your behavior? How much do you care about what others are saying? How can we educate people to be fashionable from the psychological aspect? We offer redesigning and sewing skills to help you to make your own fashionable items, to let you feel a sense of wise, and to help you to become more confident and feel better yourself. We help you to be fashion-able and to be able to build a fashion style for yourself. Don't be influenced too much by the social justice.

I have two important takeaways from the conversation with Otto. First, the psychological aspect of sustainability education is very important. Teach people from a psychological side to help them to form a habit to be fashionable. That can help people feel better and become more confident than just giving them trendy clothes all the time. That can also help them to stick with their clothes and items longer. Second, giving the business a recognizable attitude and lifestyle can help raise product value and make people stay with your brand. Making the aesthetic stronger, clearer, and more recognizable is essential for a brand.

I also found a Ph.D. student, Kyungeun Sung, on Research Gate. She posted several papers on the subject of up-cycling. She is at Nottingham Trent University in the

United Kingdom. She is at School of Architecture, Design and the Built Environment. In her paper "A Review on Upcycling: Current Body of Literature, Knowledge Gaps, and a Way Forward", she analyses and summarizes the current body of literature on up-cycling, focusing on different definitions, trends in practices, benefits, drawbacks and barriers in a number of subject areas. She gives suggestions for future research by illuminating knowledge gaps in the area of up-cycling. In her paper "An Exploratory Study on the Links between Individual Upcycling, Product Attachment, and Product Longevity", she talks about individual up-cycling, product attachment, and the situation of up-cycling. Up-cycling has been recently advocated by many as a means to reduce waste, but it is still marginal. The most relevant question at this point is how to scale up this marginal practice into mainstream practice to make a bigger impact in society and environment. In another paper named "An Exploratory Study on the Consequences of Individual Upcycling: Is It Worth Making People Feel Attached to Their Upcycled Products?", she mentions that product attachment, the emotional bond experienced with a product, is an emerging concept for sustainable production and consumption. The logic behind it is that people are more likely to handle the product with care and to postpone its replacement or disposal when they are attached to the product.

I reached out to her on Research Gate. We had a video call on Skype. There is the transcript from part of our conversation.

Cao: You mentioned individual up-cycling and product attachment in the paper. Do you think that product attachment is the most important motivation for individual up-cycling?

Kyungeun: Product attachment could encourage people to reuse their possessions by up-cycling, but the most motivated factor for up-cycling is people's consciousness. The conciseness of reusing and up-cycling is also the way to keep their product attachment.

Cao: Do you have any question or suggestion for my project?

Kyungeun: I think that you should think about your business model. Where do you get money? Where is the benefit from? How much are the cost? Do you want to cooperate with big corporations or investment companies? I don't have the answer for it, but you should really think about that. If you give points back to people who give their items, how are you going to calculate the points from different things? Will you calculate by weight, quantity, or volume?

Cao: Yes, these are questions that I really need to think about. The standard for points is really hard. Calculating by weight, quantity, or volume all works unfairly. It is also hard to calculate by each item. However, the points are just an add-on for customers. The main point for them is that we provide convenient decluttering services to help to get all their unwanted stuff away easily. So the expectation of getting something back for them is not high. The points just provide them accesses to up-cycled creations.

Kyungeun: You can also think about giving their items back. You connect their stuff with people who can change them to new products. After they create new products, you can send these products back to customers. This will help people who have strong products attachment to keep using their stuff in a new way. They may not have the skills, time, energy to do up-cycling themselves, so they may want people to help them to do so.

My biggest takeaway from the conversation with Kyungeun is that I should think about the economic questions. I should think about how much the decluttering service will cost, how much the storage (inventory) will cost, and how much the transit will cost. Where can I find benefits or profit in the loop? How can I split the money with artists/ designers/ craftspeople? How can I calculate the points that the service gives back to customers? How can the points be deducted from the price of up-cycled products? Another takeaway is that I should think about how my thesis can increase people's consciousness and motivations.

Chapter III Methodology

Branding

Visual Identify



Lunhui is the Chinese term for reincarnation. The original meaning of reincarnation is the revolution of the soul from body to body whether animal, human, angelic, or of the gods. Here, I think that objects have reincarnation as well. People throw many things away. Landfills should not be the end for unwanted stuff. There are many craftspeople, artists, and designers who are working on recycling and up-cycling, giving objects new life circles. As a platform, Lunhui helps to enlarge the up-cycling and creation loop.

The logo is transformed from Hui (回), the Chinese character which means over and over again. And the two circles represent a material circle and a creativity circle. Lunhui merges the two together to use unwanted materials to support creativity.

The logo color features green and light blue gradients to support an attitude or feeling of sustainability and the acts of recycling and up-cycling. These colors bring people a sense of life, cleanliness, and new growth.

Primary

CMYK: 53, 0, 53, 0
RGB: 121, 209, 156
HEX: #79D19C

CMYK: 38, 4, 11, 0
RGB: 155, 207, 129
HEX: #9bcfdb

CMYK: 0
RGB: 255, 255, 255
HEX: #ffffff

Secondary

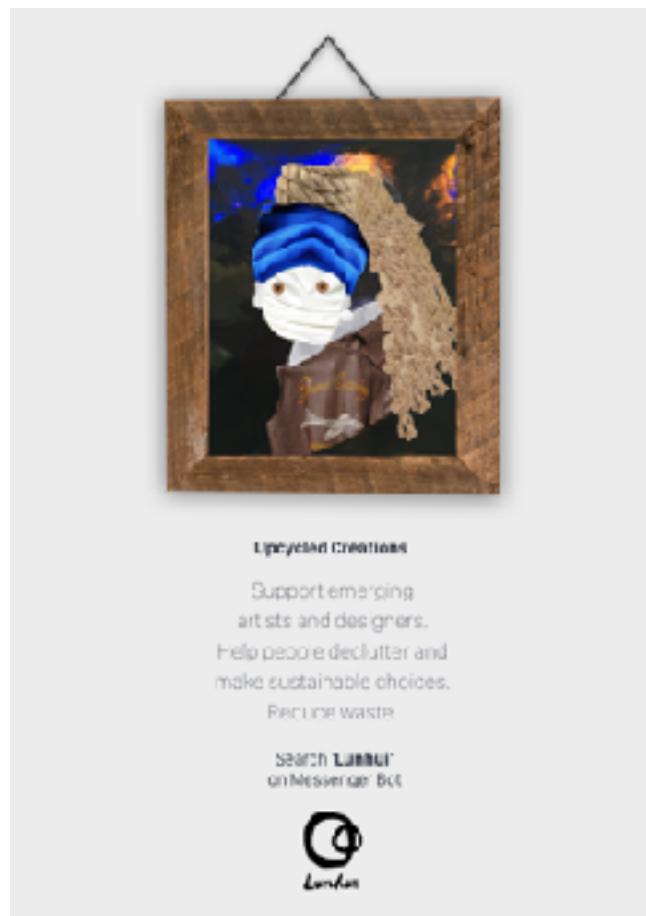
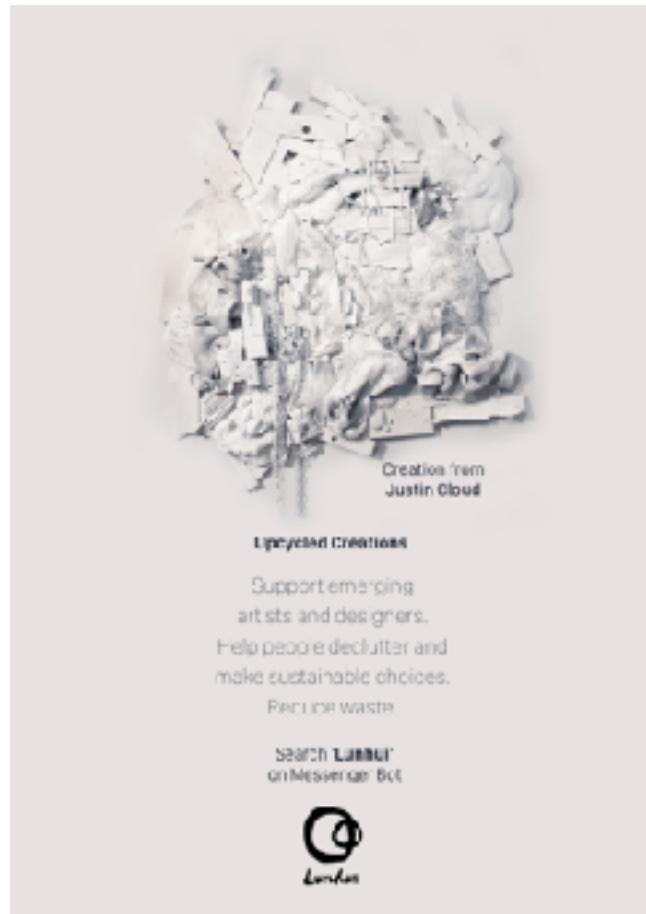
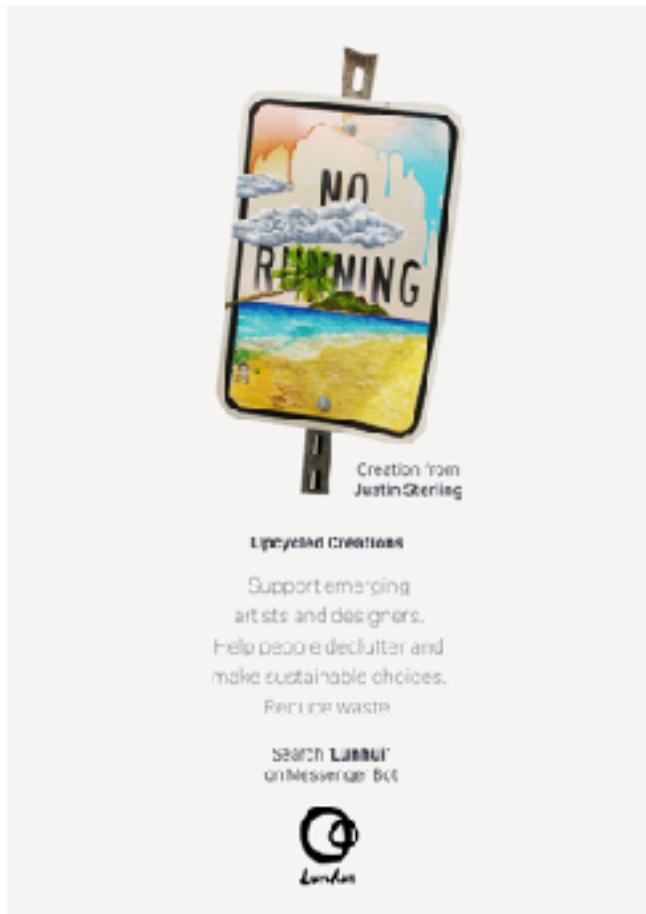
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RGB: 102, 102, 102
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CMYK: 69, 63, 62, 58
RGB: 51, 51, 51
HEX: #333333

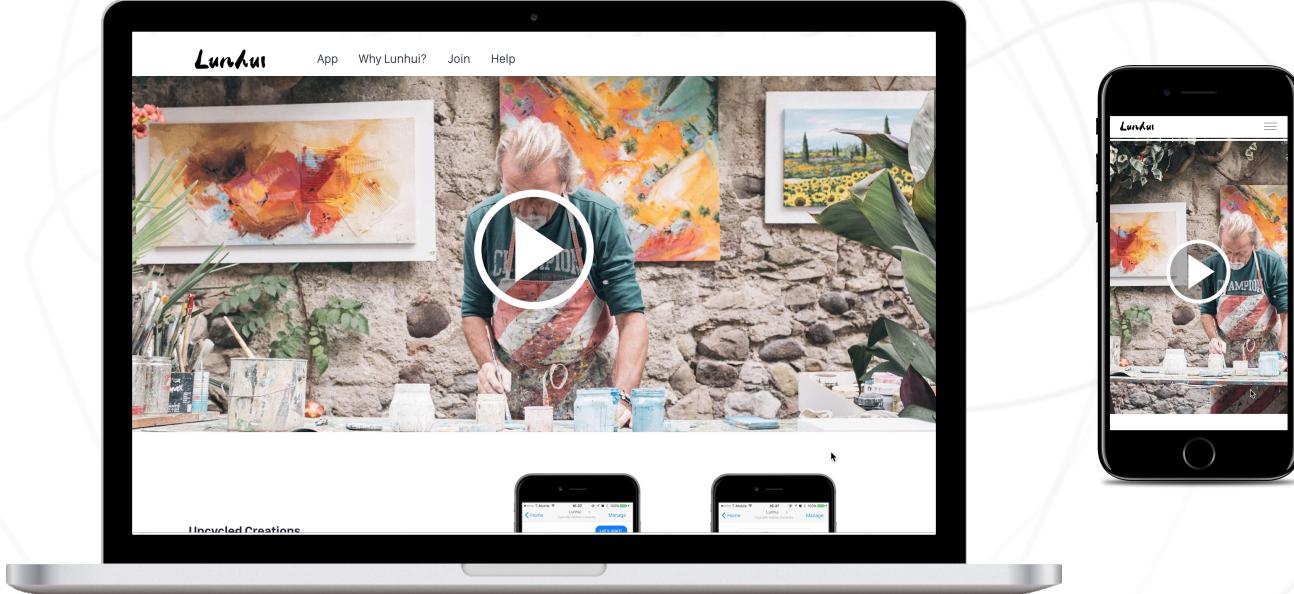
CMYK: 100
RGB: 0, 0, 0
HEX: #000000

Posters

By displaying posters on public streets, subways, and art I can spread my idea and the brand.



Website



The website (<https://www.lunhui.online/>) is one of the official places to explain how the Lunhui platform works and how people can engage with Lunhui to get involved in the cycle. On the top of the website, there is a video to show the process of how craftspeople create their projects from waste. That will help raise customers' interest and let them know what creations their unwanted items can support.

After the video section, there is the introduction of the product, the messenger bot where we tell people how they can join the cycle from two different perspectives. One is to help customers to declutter by giving away all of their unwanted objects away. The other is how creators can be supported to create their projects by ordering material from Lunhui. Then users can click the 'get started' button to begin the process. That will lead them to Lunhui's messenger account to start chatting. On the bottom of the website, all pictures from social media are showed to present more up-cycled creations.



SUPPORT CREATIONS

- Support emerging artists and designers.
- Help people declutter and make sustainable choices.
- Reduce waste.



DECLUTTERING PICK-UPS
Schedule on Messenger Bot

I work with my LunAru artists to clean up your old pots, vases and art pieces. Materials will be repurposed or recycled and turned into unique projects. That will support upcycled creators.



MATERIAL RECYCLING
Chat on Messenger Bot

We have 10 different categories of items and materials. Take a look at the video. Please get rid of more items to generate proceeds. You support your LunAru artist.

SUPPORT CREATIONS

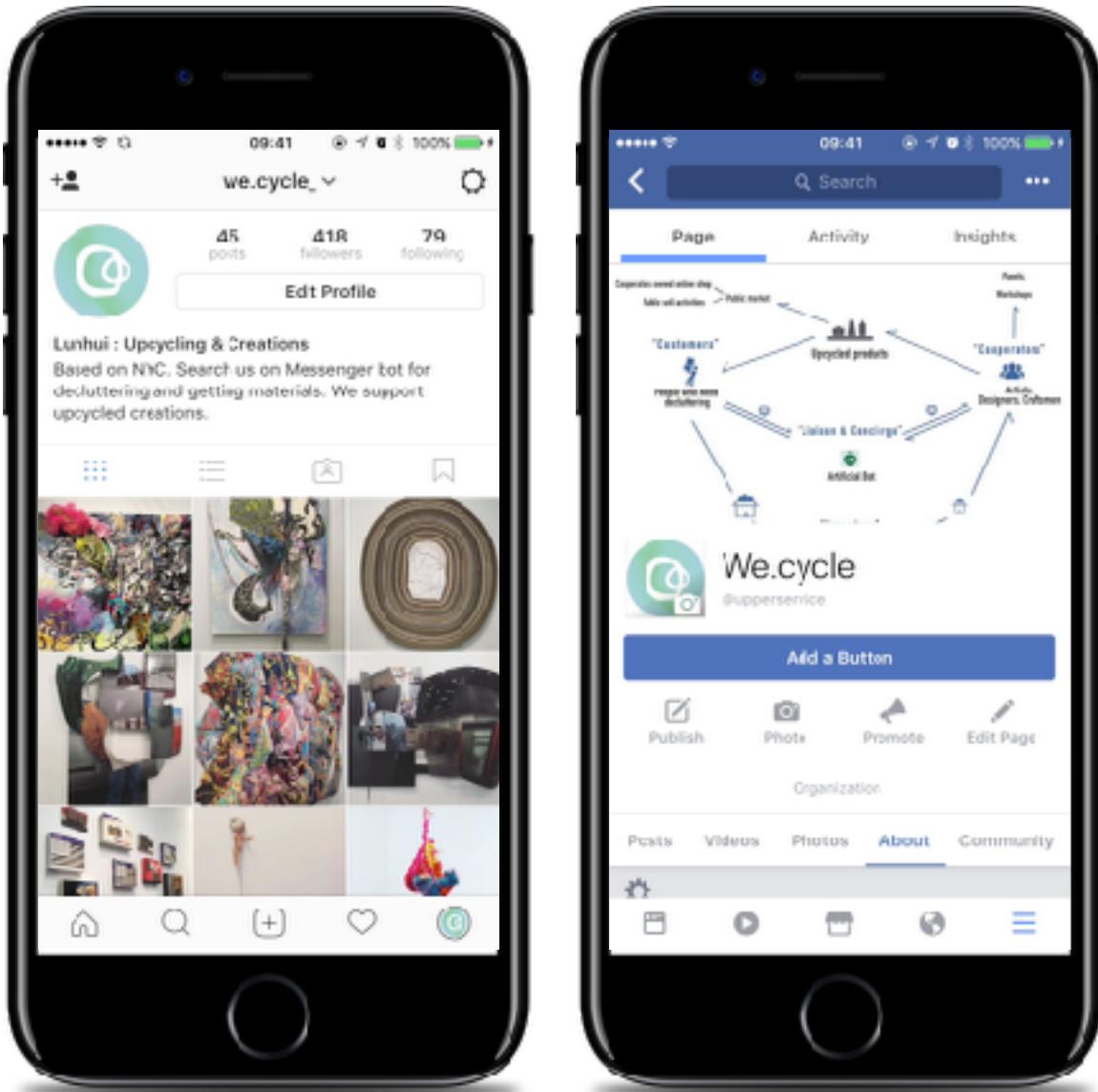
Get involved in the circle of upcycling and creation.

[Get Started](#)



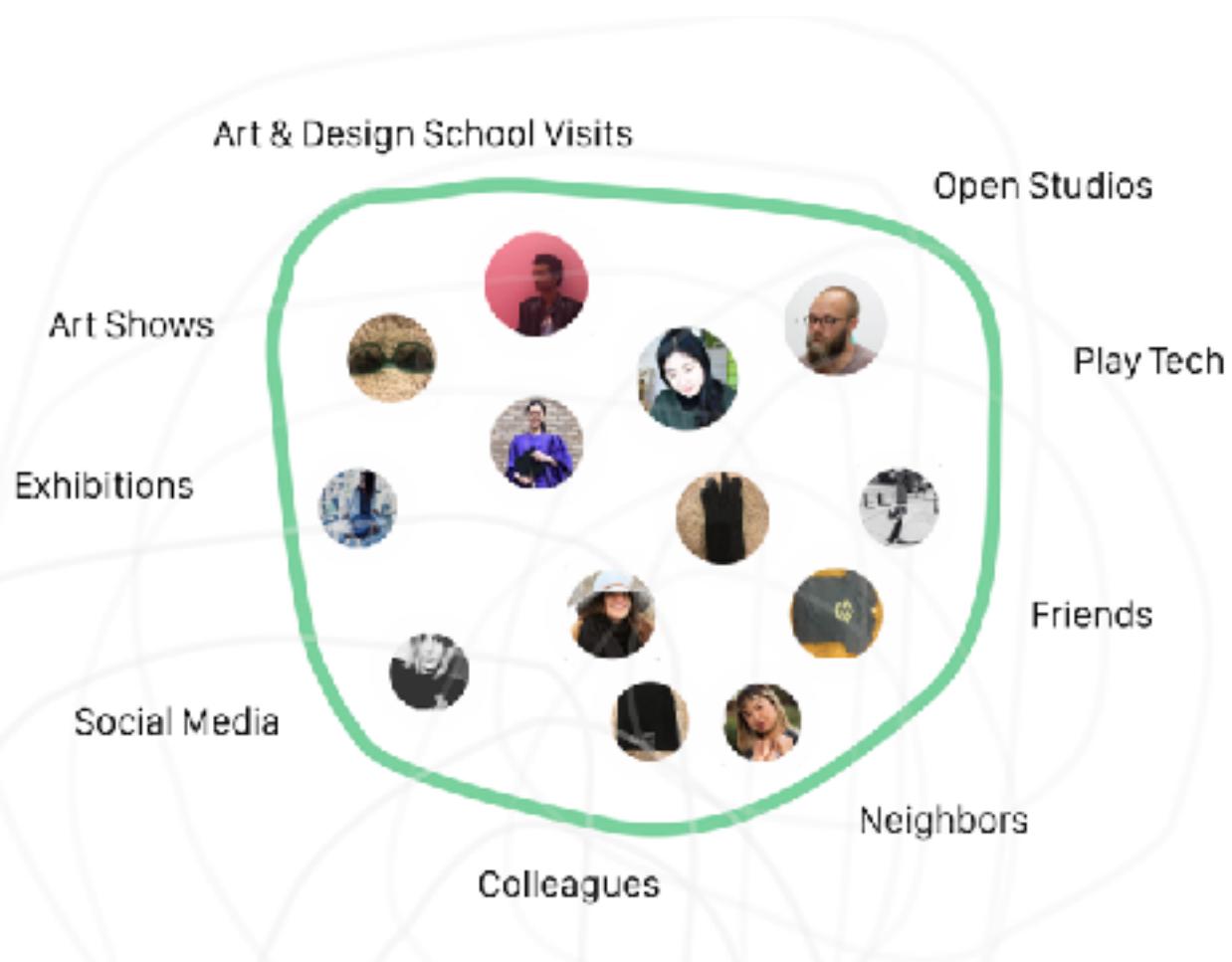
NARR

Social Media



I created a Facebook page and an Instagram page to reach out to a larger potential audience and to spread the brand. The Facebook page is an introduction page. It shows the brand concept, the up-cycling loop, and the artificial bot. The Instagram page collects up-cycled creations from different designers, artists, and craftspeople. If people are interested in the field, they can search Lunhui by going to Messenger as explained on the Instagram page.

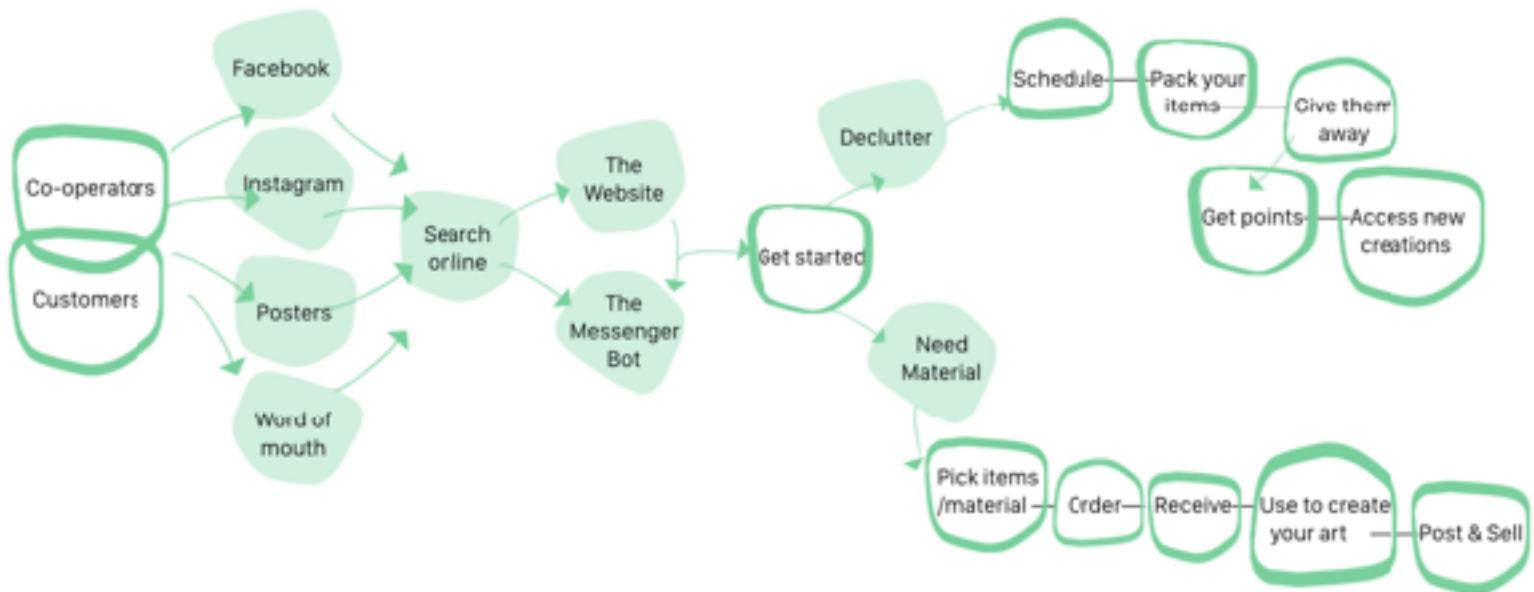
Networking



Networking is very important for the brand. I have to cooperate with different creators to accomplish the making goal. I need to network to meet more creators to tell them how Lunhui can support their creations by applying materials that they want and they can order materials via Messenger Bot. There are many resources in New York City. Art shows, college open studios, exhibitions, and fair markets are all good places to find creators and up-cyclers. For customers, networking is a good way to tell more people that they can declutter with Lunhui by making a pick-up appointment on Messenger Bot. I can start to talk to neighbors and friends to try the service and get more customers by word of mouth.

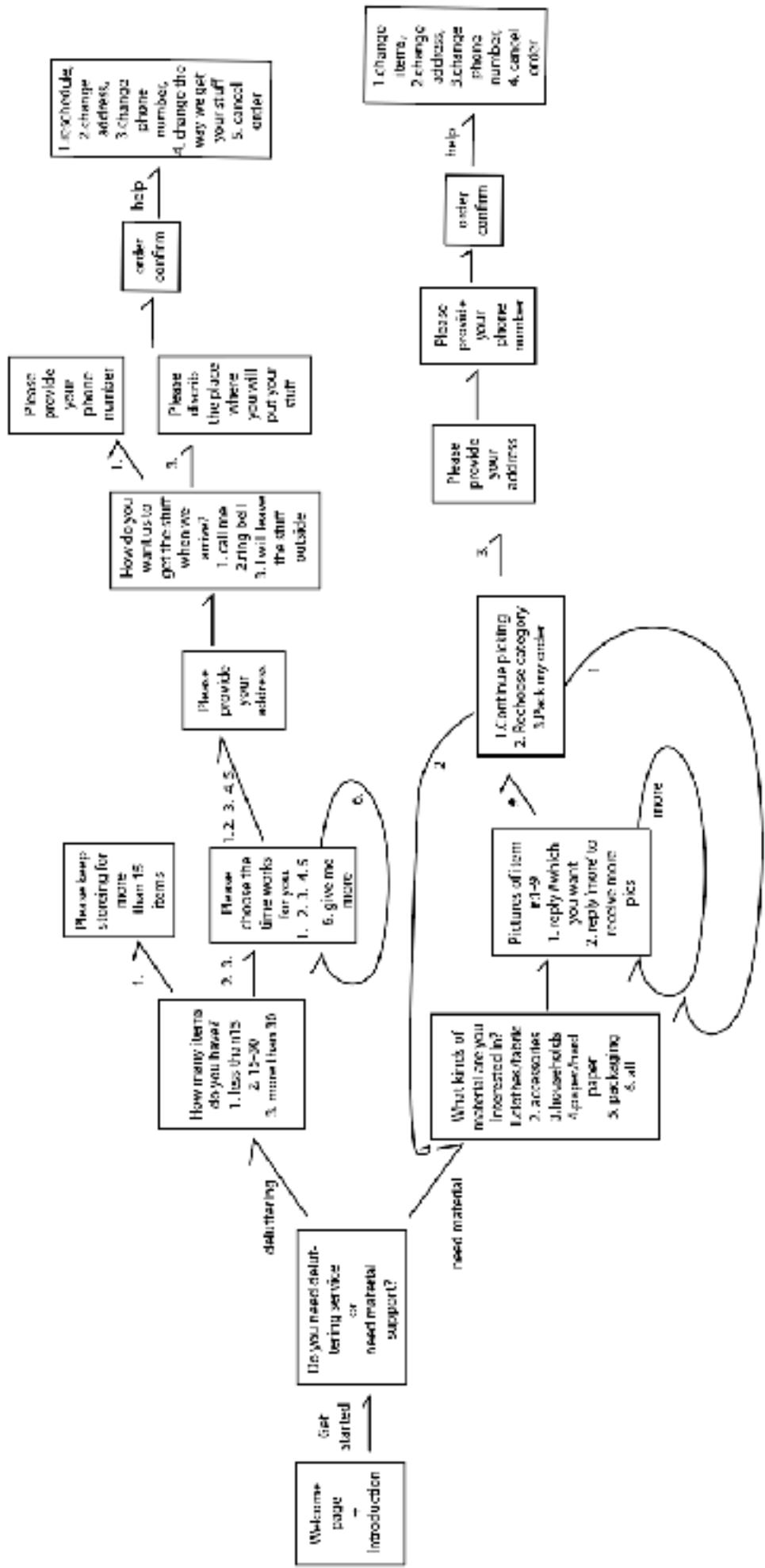
User Journey

This is how people can get to know Lunhui and start their user journey to get involved in the up-cycling loop.



User Interface and User Experience

I started with user flows by mapping out two of the user experience lines for both people who need to declutter and people who need material. Then I based my research on user interface and functions that can be accomplished in Messenger bots, I created the interface for each step. After several rounds of user testing and iterations, I created the latest design.



We.cycle > Typically replies instantly Manage

We.cycle
Organization

Typically replies instantly

Deer Mengyu, welcome to this bot. caca

When you tap Get Started, We.cycle will see your public info.

Get Started

14:26 We.cycle > Typically replies instantly Manage

We.cycle
1 person Likes this Organization

14:26 Get Started

Do you need decluttering service or need material support?

Declutter

Need Material

Send a Message

14:26 We.cycle > Typically replies instantly Manage

Get Started

Do you need decluttering service or need material support?

Declutter

Need Material

Declutter

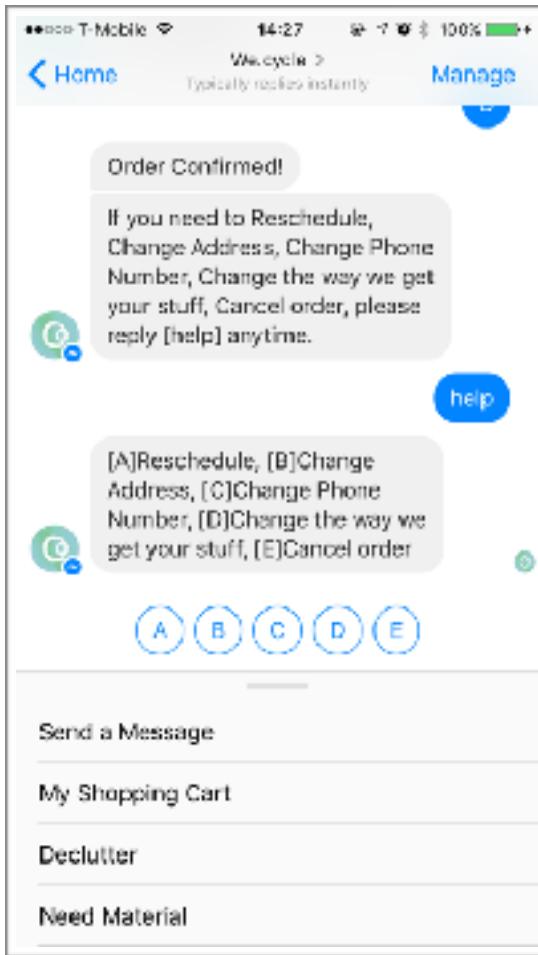
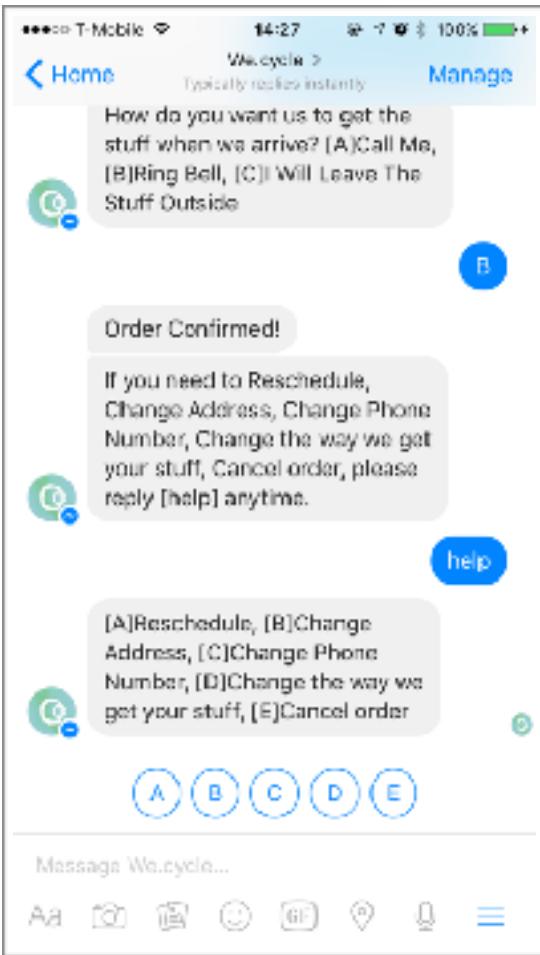
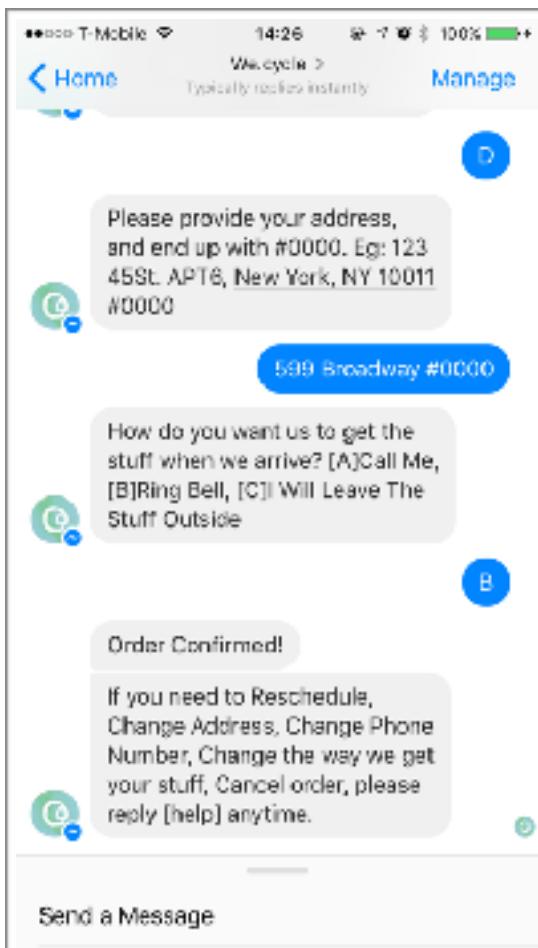
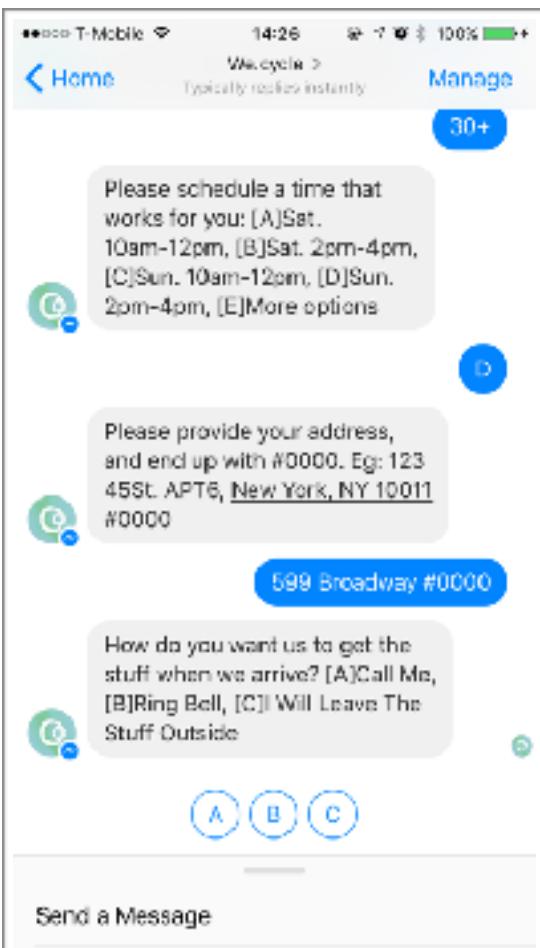
How many items do you have?

30+

Please schedule a time that works for you: [A]Sat. 10am-12pm, [B]Sat. 2pm-4pm, [C]Sun. 10am-12pm, [D]Sun. 2pm-4pm, [E]More options

A **B** **C** **D** **E**

Send a Message



Boost T-Mobile 14:28 82° 7 8 \$ 100%

[Home](#) [Manage](#)

Wecycle > Typically recycles instantly

[Need Material](#)

What kinds of material are you looking for?
Please choose an option.

- [Paper + Package](#)
- [Household Items](#)
- [Fabric](#)

[Fabric](#)

No.1001 ... secure.ypseek.com	
Select No.1001	
No.1002 ... secure.ypseek.com	
Select No.1002	

[Send a Message](#)

Boost T-Mobile 14:28 82° 7 8 \$ 100%

[Home](#) [Manage](#)

Wecycle > Typically recycles instantly

[Fabric](#)

No.1001 ... secure.ypseek.com	
Select No.1001	
No.1002 ... secure.ypseek.com	
Select No.1002	
No.1003 ... secure.ypseek.com	
Select No.1003	
No.1004 ... secure.ypseek.com	
Select No.1004	

[Send a Message](#)

Boost T-Mobile 14:28 82° 7 8 \$ 100%

[Home](#) [Manage](#)

Wecycle > Typically recycles instantly

[Fabric](#)

[Close https://secure.ypseek.com/messen...](#)

Boost T-Mobile 14:28 82° 7 8 \$ 100%

[Home](#) [Manage](#)

Wecycle > Typically recycles instantly

[secure.ypseek.com](#)

[Select No.1002](#)

No.1003 ... secure.ypseek.com	
Select No.1003	
No.1004 ... secure.ypseek.com	
Select No.1004	

[Select No.1003](#)

The item(s) has been put into your order.

[Continue picking](#)

[Choose another categor...](#)

[Pack my order](#)

[Send a Message](#)

••••• T-Mobile 14:29 87% 100%

[Home](#) [We.cycle >](#) [Manage](#)

Typically replies instantly

[Check my orders](#)

Please provide your address, and end up with #0003. Eg: 123 45ST. APT6, New York, NY 10011 #0003

522 Broadway #0003

Please provide your phone number, and end up with #0004. Eg: 123-456-7890 #0004

112-232-456 #0004

Order Confirmed! Your order should arrive in 3-5 days. Thank you!

If you need to Reschedule, Change Address, Change Phone Number, Change the way we get your stuff, Cancel order, please reply [help] anytime.

[A]Reschedule, [B]Change Address, [C]Change Phone Number, [D]Change the way we get your stuff, [E]Cancel order

If you need to Reschedule, Change Address, Change Phone Number, Change the way we get your stuff, Cancel order, please reply [help] anytime.

Please schedule a time that works for you: [A]Sat. 10am-12pm, [B]Sat. 2pm-4pm, [C]Sun. 10am-12pm, [D]Sun. 2pm-4pm, [E]More options

Message We.cycle...

••••• T-Mobile 14:39 87% 100%

[Home](#) [We.cycle >](#) [Manage](#)

Typically replies instantly

number, and end up with #0004. Eg: 123-456-7890 #0004

112-232-456 #0004

Order Confirmed! Your order should arrive in 3-5 days. Thank you!

If you need to Reschedule, Change Address, Change Phone Number, Change the way we get your stuff, Cancel order, please reply [help] anytime.

[A]Reschedule, [B]Change Address, [C]Change Phone Number, [D]Change the way we get your stuff, [E]Cancel order

Message We.cycle...

Prototyping, testings, explorations through making

Prototype 1 (paper prototype)



Test content

Will people be willing to give their waste instead of throwing it away if there is a simple way for them to do that?

Feedback and summary

The main question from the prototype experience is why people would choose this decluttering service rather than another recycling organization? City residents oftentimes put their unwanted things outside the door for others to take. Why would they want to schedule an extra pick-up? These questions show that I don't give people enough motivation to choose my service. There is a lack of product demonstration on telling the whole story and tapping into users' desire to make ethical and sustainable choices. People want to know narratives rather than several interface screens. A complete UX experience is much more important than UI.

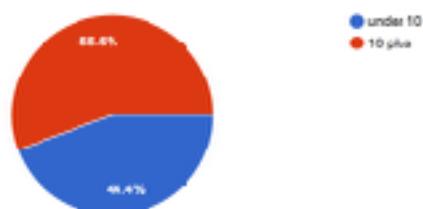
Prototype 2 (user research for targeting right audience)

Chinese millennials

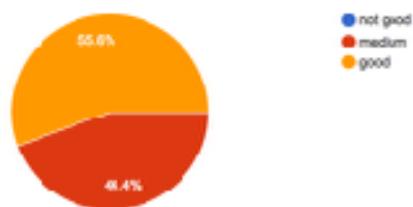
Resources are from my connections in NYC. This is a conversational Q&A. I used Google form to analyse and present it.



How many unwanted items do you usually have per season? (9 responses)

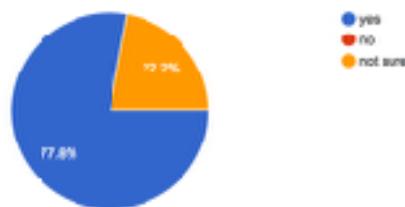


What's the condition for most of the unwanted items? (9 responses)



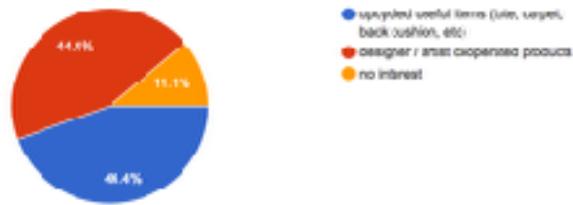
If there is a upcycling program, you can schedule a time online to help you bring your unwanted stuff away from your door for free, are you willing to join?

(9 responses)



If the program will give a thing back to you each time, what do you think mostly will encourage you to keep joining the program?

(9 responses)



Summary

The reason why I chose to survey Chinese millennials is that most of the Chinese people cannot accept second-hand items. There are only a few vintage stores in China. The research shows that they have less consciousness of recycling and donating. The things that they can get back by giving their unwanted stuff is more important and more attractive. Social effect is a positive motivation for them to do a certain thing.

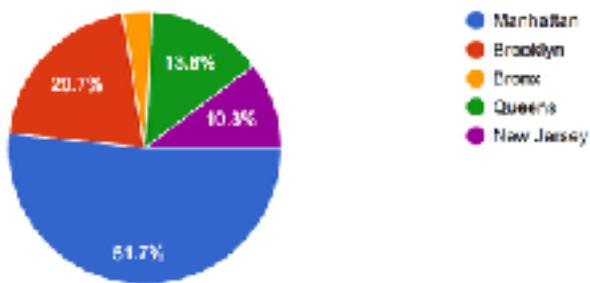
Women working professionally in NYC

Resources are from people on LinkedIn. I sent my target audiences personal messages to ask for a help with filling out a survey on Google form. I used Google form to analyse and present it.

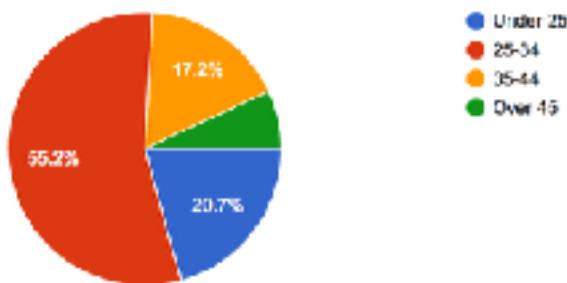
29 responses

SUMMARY INDIVIDUAL Accepting responses

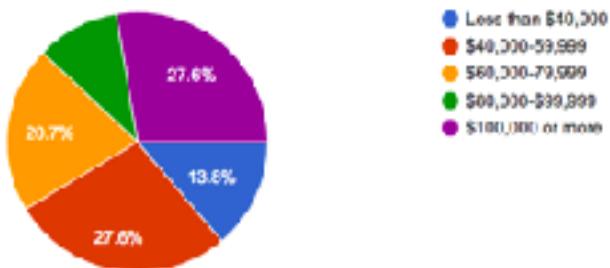
Where are you living? (29 responses)



What is your age? (29 responses)

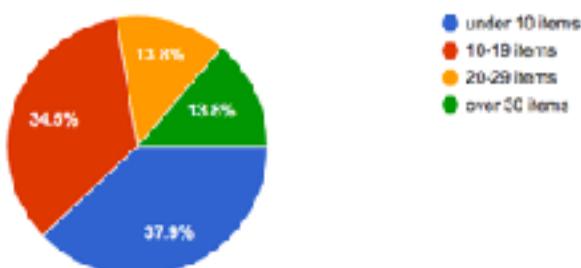


What is your / your household income? (29 responses)

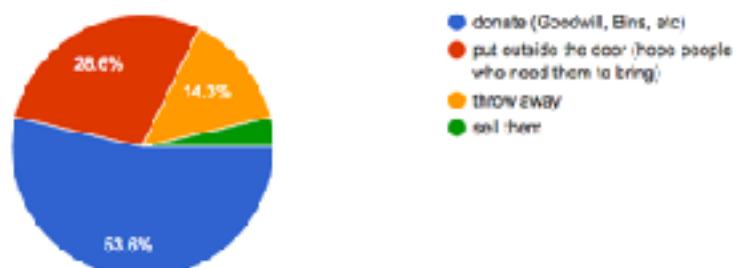


How many unwanted items (clothes, fabric, furniture, decoration, toy) do you / your family usually have for a season?

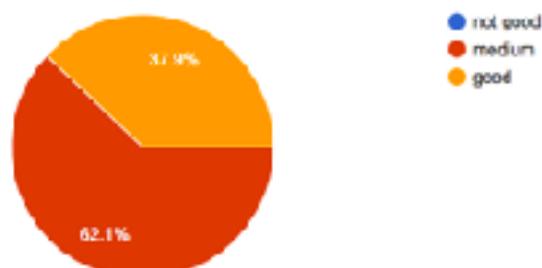
(29 responses)



How do you usually deal with these unwanted items? (28 responses)

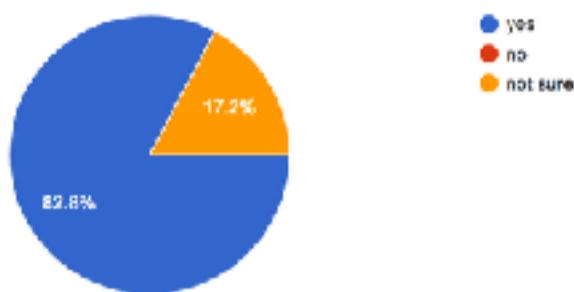


What's the condition for most of the unwanted items? (29 responses)



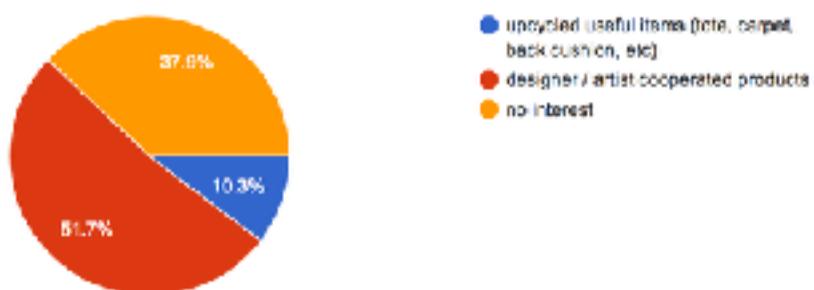
If there is a upcycling program, you can schedule a time online to help you bring your unwanted stuff away from your door for free, are you willing to join?

(29 responses)

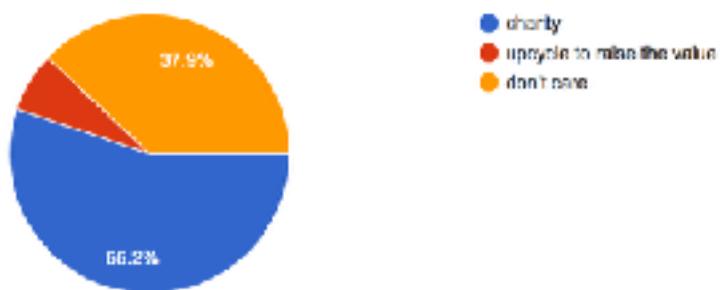


If the program will give a thing back to you each time, what do you think mostly will encourage you to keep joining the program.

(29 responses)



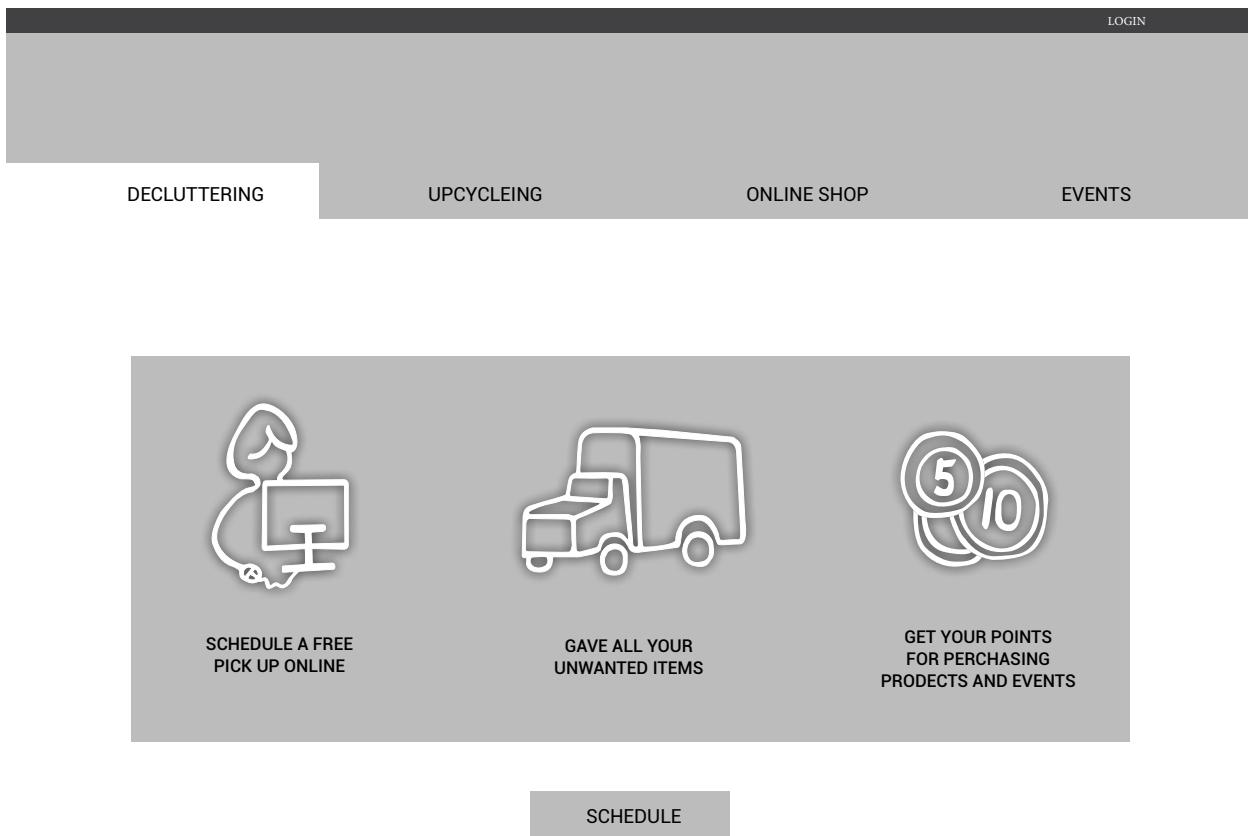
Where do you want your stuff go after giving to the program? (29 responses)



Summary

Millennials in NYC have a stronger consciousness of recycling and donating. Charity is a positive motivation for them to recycle with us. The convenient and simple experience is much more important than other factors.

Prototype 3



Test content:

Can this website explain the up-cycle loop? Is this form easy enough for people to declutter?

Feedback and summary

The website may not be the ideal platform for people to get involved in the up-cycling loop. From the conversation between potential customers and myself, we can see that the conversation has helped to build a connection and to schedule a pick-

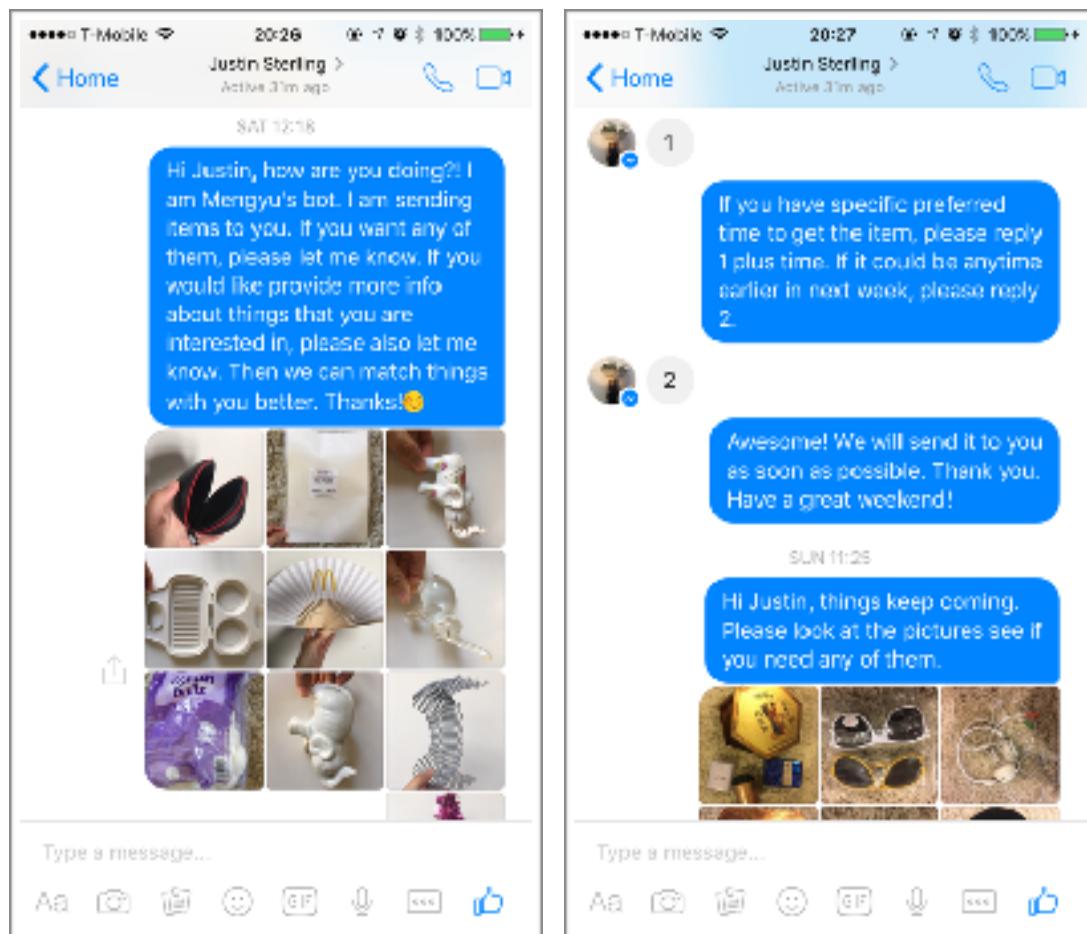
up. People don't need to visit a new website and fill out all the questions to make an appointment.

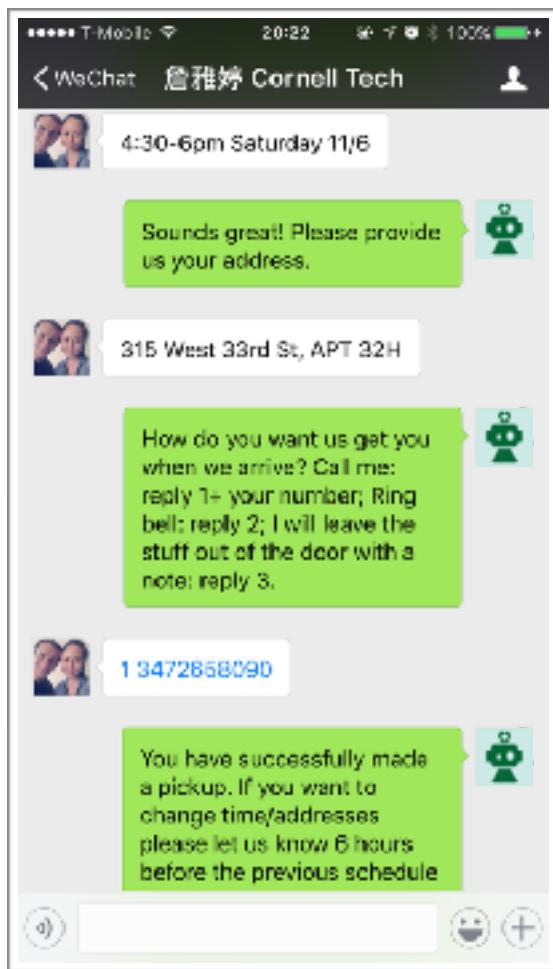
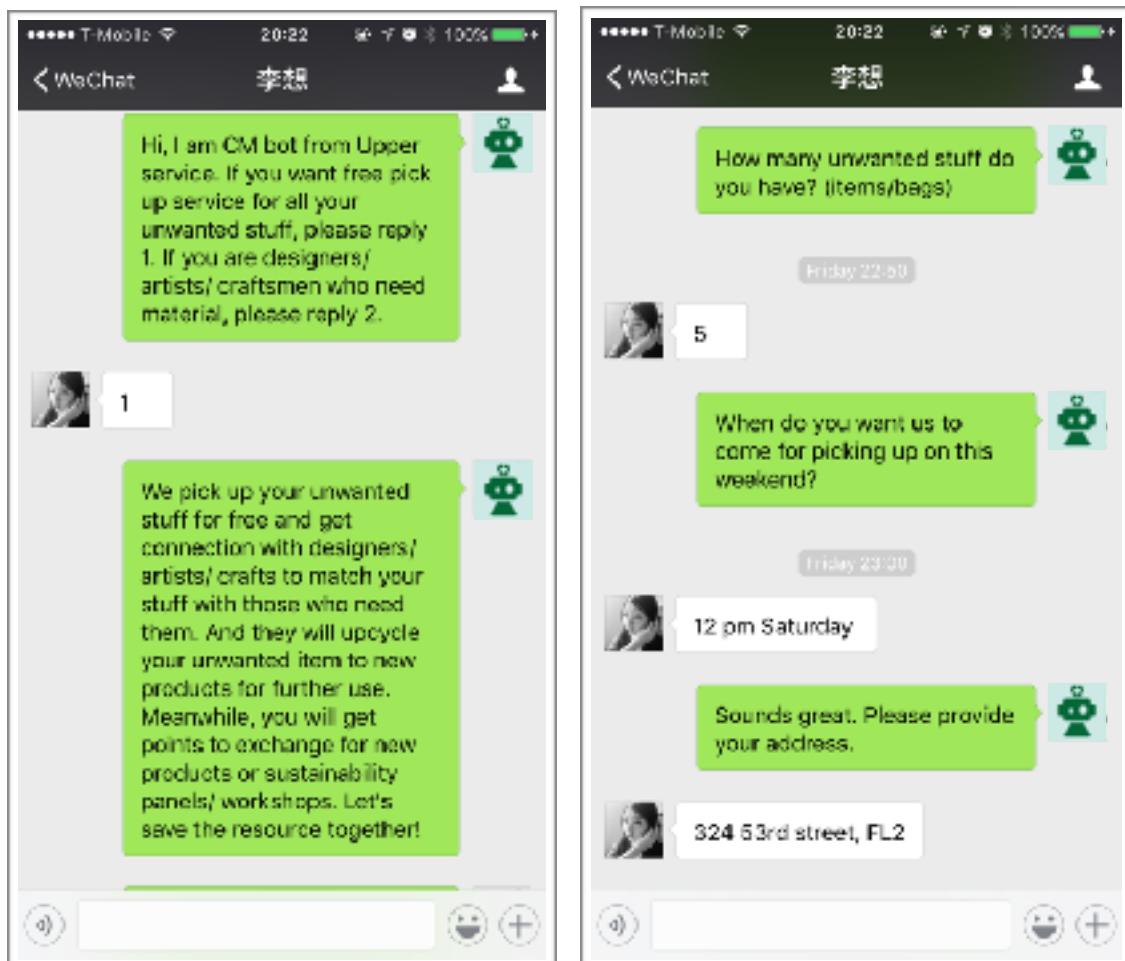
An artificial bot which can be embodied in different chatting applications may be a better platform solution for my project, such as Messenger, WeChat, Slack, Snapchat, etc. I can build connections with people in applications that they are already using frequently, which is easier and simpler. Also, the bot acts as a broker to connect consumers who are decluttering and up-cyclers who need materials, helping to grow the network and facilitate transactions.

Prototype 4

Test content

I pretended to be a bot to communicate with customers and cooperators to see if the conversation idea works. I tried to learn their needs for an up-cycling service at the same time.





Feedback and summary

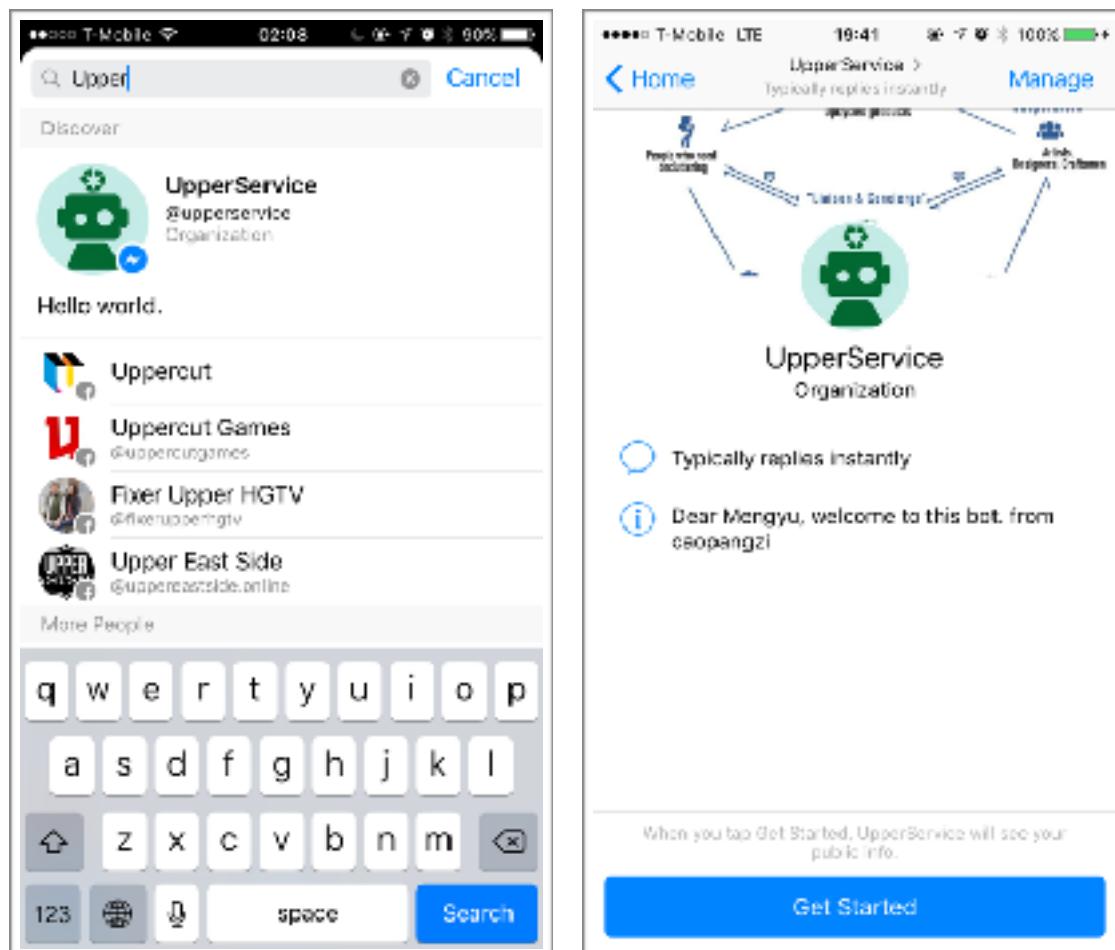
The conversational interaction works well. It is easier for people to get involved with the service. Many user needs are learned from the testing. For customers, they need schedule options rather than asking for their free time. They need a reschedule function. They need pick-up options, such as some people want to put their items somewhere outside the house instead of being called. Order confirmation needs to be applied.

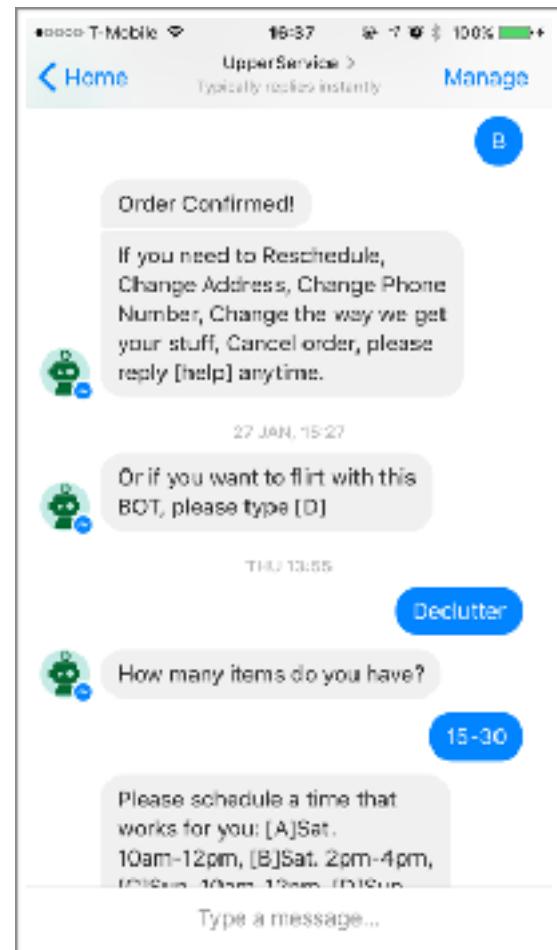
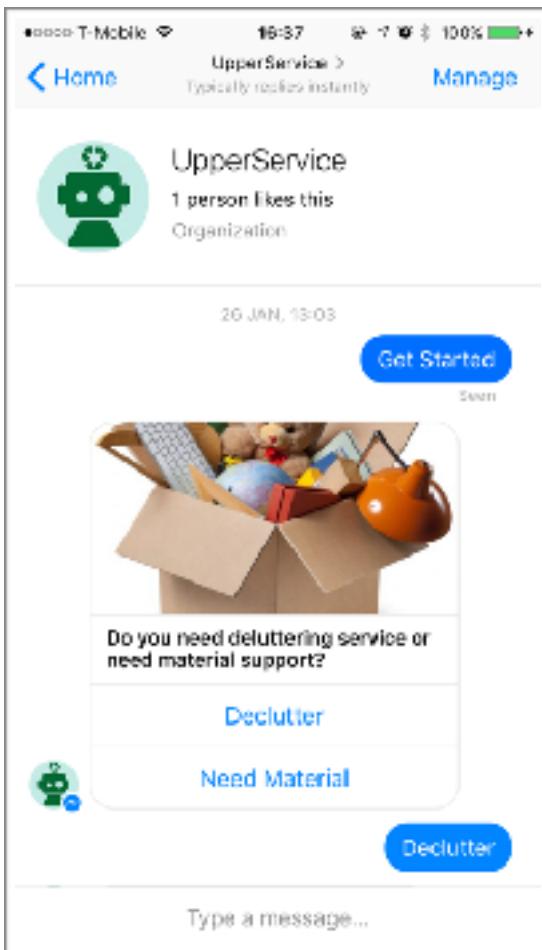
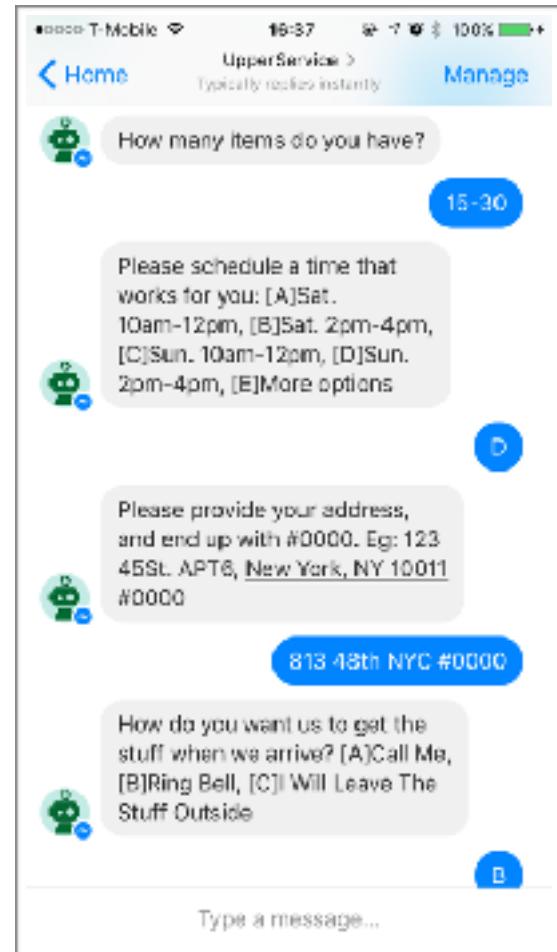
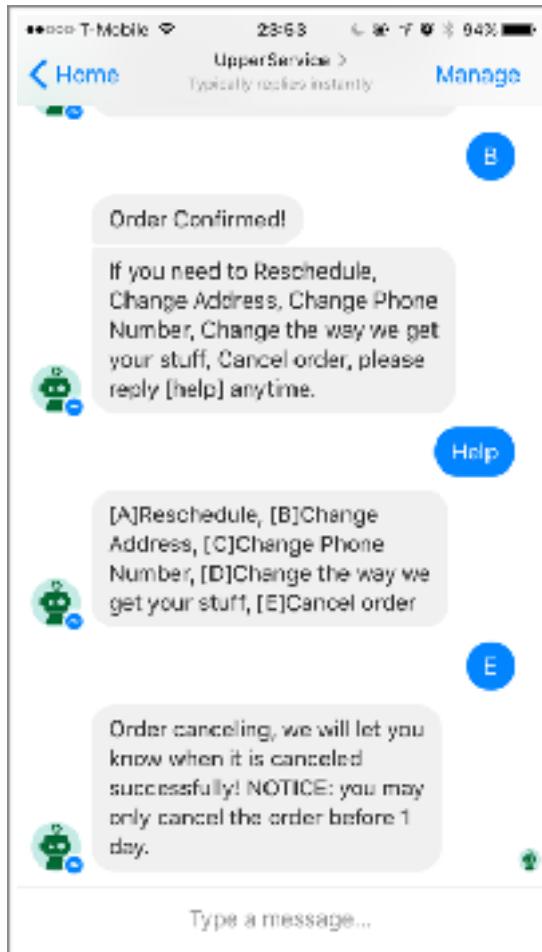
For cooperators, each picture needs to be numbered and labeled clearly. The bot needs to learn their interests to know what kinds of items they want, such as clothes, household items, furniture, etc. Combining order function needs to be offered.

Prototype 5

Test content

A coded Messenger Bot is used to approve that the project can work technically.





Feedback and summary

The user interface needs to be improved. More user testing needs to be done to refine the user experience. The conversational interaction is efficient, convenient, and simple. Branding needs to be redesigned with a stronger aesthetic and clearer attitude.

Prototype 6

Test content

After finishing all the UI UX design for all the user flows, I would like to test with users to see if each step makes sense and if there is anything else that I need to consider. I tested with paper prototypes. That can help me to find problems and help me to refine them quickly.



Feedback and summary

Testers felt it was easy to either schedule a pick-up or make a material order. Also, they felt that it was really convenient to find it on Messenger. They didn't need to go to a new webpage or download a new app. Few suggestions are provided. First, after people make an order for material, we should send them a tracking number once we mail the package. Second, it is better to allow people to see their shopping cart while playing with the bot. The shopping cart can be listed in the bottom navigation. Third, images of all the materials should be in a good quality with clean backgrounds and labeled with details, such as size, weight, material, and so on.

Chapter IV Evaluation

I started the exploration from my interest in crafts and materials. I have been exploring the question of waste, recycling, and up-cycling since my first semester at Parsons. I have passion on this topic. I always keep an eye on the waste situation, recycling, and up-cycling. I did up-cycling products myself during this two years at the program. I up-cycled shirts to totes and printed on self-created sustainable related patterns. I could even feel a sense of achievement after I finished one tote, seeing that an old shirt became a new tote that could be used again. So I would like to propose a project that can get people together to make a bigger impact than I do it myself. After a yearlong development, I am pleased with the outcome of Lunhui as my thesis project in the MFA Design and Technology program at Parsons School of Design.

The concept is well-formed. People today need recycling and up-cycling services that allow them to make ethical and sustainable decisions in an easy manner. The Lunhui platform provides the audience with a new and easy way to declutter and get involved in up-cycling with creative initiatives. The branding and design work help tell the story of Lunhui and to promote it in multiple and attractive ways. The core technology is developed. The Messenger Bot works to facilitate conversations and connections with users and subsequent engagement with the platform. Customers

can use Lunhui to make a decluttering appointment. Creators can use the same service to pick and order materials.

As the creator of Lunhui, I view it as a long-term concept development, design iteration, and technology exploration. I think this project has strong potential and various possibilities. I look forward to opportunities to carry it out in the future. I would like to find a business partner to collaborate with in solving the details of the business model and financial questions. From the very beginning of development, I started to think about the costs and revenue of the idea. Transit, labor, technology, and storage. How much money do all of these components cost? Where should I store the materials? Where should I hire labor to do transportation? How can I cooperate with mailing companies to get the best price to send materials to creators? The question of where the business could make money to support the loop is very important. One solution is from helping to sell new creations from cooperators. I could then split the money from each sold item. I also thought that I could charge a small amount of money for pick-ups and materials. Alternatively, I could make Lunhui a nonprofit organization and receive funds from the government. Other remaining questions include how to make the pick-up service safe enough for both the deliverer and customers, and how to solve the concern from costumers about giving their personal information via the Bot. For these questions, I am continuing to brainstorm possible answers and solutions. The addition of a business partner would also help in this aspect.

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