



Waste and Reuse

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1. Initial POV
2. New Interviews
3. Brainstorming
4. Experience Prototypes
5. Summary



We met Kimberly, a sustainably-minded adult whose work often involves environmentalism.

We were amazed to realize that Kimberly shopped almost exclusively at thrift stores while she was in college (despite being able to afford buying items new) but now only thrifts rarely as an adult—as if it somehow became inconvenient and socially unacceptable.

It would be game-changing to make thrifting more accessible and appealing to adults and college students alike.



4

more
interviews



Michelle



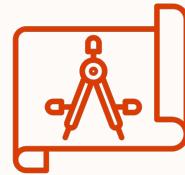
Olivia



Alice



Kathryn



3

experience
prototypes



Vlad



Isabelle



Grace



Kathryn

IT Department Analyst

“It can be expensive to shift everything in my life to zero-waste at once.”

Struggles to find quick and convenient solutions for sustainable life choices.

“No one is ready to be 100% zero waste right away. But it's about trying to figure out the simple things I can start shifting.”

Overwhelmed with options to minimize waste.

“With shoes you have a better time of finding without trying them on because you know what size your feet are.”

Often afraid to purchase items without trying them on first.



Alice

User experience researcher

“[I like] buying an item that has history beyond my own, that has had a life before my own.”

She prefers buying used items to new items because of their unique histories.

Alice has purchased items secondhand and sold them third hand when she no longer needs them.

Items can have several owners during their feasible lifespan.

“[I feel] wasteful all the time.”

She is ashamed of how wasteful she is.



Michelle

U.S. college student from Hong Kong

“Shipping used items isn’t a thing here [in HK]. I just meet up at a local train station to exchange items.”

She is *comfortable* meeting people to exchange items.

“We often give our stuff away to relatives if they need it.”

Her family owns items they’re willing to give away *if asked*.

“My parents think buying used clothes is unlucky.”

She worries buying used will violate her family’s *cultural norms*.



Olivia

U.S. college student

“I’m never super excited about sustainability specifically, but I do get very excited when I find good deals.”

She *deeply values* good deals; sustainability is just an added upside.

“My parents are very against me thrifting. They have a weird thing about me wearing old clothes when I don’t have to. It might be an immigrant thing.”

Her parents are *embarrassed* about her wearing other people’s clothes, and—as immigrants—are proud that they can afford to buy her new ones.



POVs



We met

Michelle, a Hong Kong student who goes to college in the United States.

We were amazed to realize



that Michelle thinks shipping used items is “weird,” both at home and in the U.S.: Hong Kong is so small that local pickups are the norm.



It would be game-changing

to bring Hong Kong's hyper-local reselling model to other parts of the world.



We met

Olivia, a Chinese-American college student who lives in Chicago and is passionate about fashion.

We were amazed to realize



that despite her interest in fashion and buying second-hand, she avoids thrifting because her parents disapprove of it—they view it as unnecessary and dirty, especially considering that they can buy her new clothes.



It would be game-changing

to destigmatize thrifting in the eyes of her parents.

We met



Dan, a semi-professional dumpster diver who hasn't bought groceries since October, and bought a deep freezer to store goods through next Winter.



We were amazed to realize

that most of what Dan finds in dumpsters is practically new, and is only thrown away to make room for new items on the shelves.



It would be game-changing

if grocery stores had alternative ways to dispose of items that didn't involve the dumpster.



How might we...?



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How might we make buying items from far away unnecessary?



We met Olivia, a Chinese-American college student who lives in Chicago and is passionate about fashion. **We were amazed to realize** that despite her interest in fashion and buying second-hand, she avoids thrifting because her parents disapprove of it—they view it as unnecessary and dirty, especially considering that they can buy her new clothes. **It would be game-changing** to destigmatize thrifting in the eyes of her parents.

How might we repackage thrifting so (her) parents find it acceptable?



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How might we make sure everything gets bought before it's thrown away?



Solutions

Lots of ideas...

*Pokemon GO but for thrifting;
instead of gyms there are
locations one can thrift items.*

*People who throw old items at
people.*

*“Dumpsters—but, like, free.
Free-sters. In the store.”*

*Teleportation system where you
can scan items and spawn them
elsewhere.*

*Pulley system through
neighborhoods to exchange
goods locally.*

*Make it impossible to skip
YouTube ads for thrifting stores.*

HMW make sure everything gets bought before it's thrown away?

An app that enables consumers to buy grocery stores' soon-expiring items at a discounted price—or even for free.

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Assumption consumers are willing to buy older items if it means getting a great deal.

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**We wanted to
know**

whether people would choose older items

We built

a Google Form survey to test consumers' comfort levels and preferences.



Pretend You're Buying Groceries

This is an experience prototype for a student project in CS147 at Stanford University. This form will only take a moment to complete!

* Required

How often do you grocery shop?

- Multiple times per week
- About once per week
- Sometimes with other people (e.g., parents, roommates)
- Never (I eat in a dining hall, only my parents grocery shop, etc.)

How old are you?

Your answer

Eggs *

- N/A (I don't eat eggs)
- 18 organic eggs, expires in 3 weeks – \$3.99
- 18 organic eggs, expires in 2 days – free

Classic Pringles (Chips) *

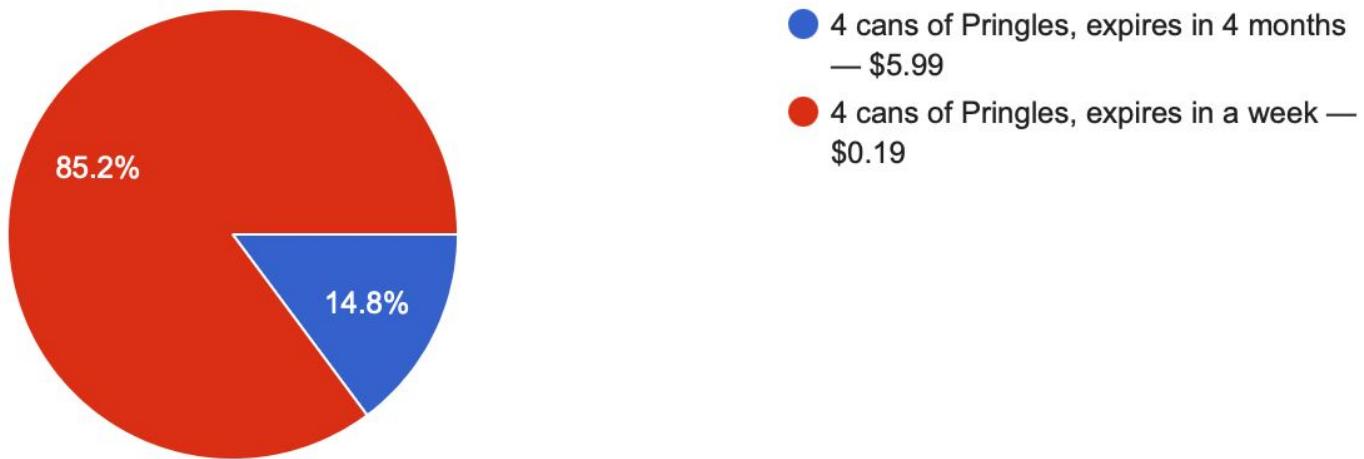
- 4 cans of Pringles, expires in 4 months – \$5.99
- 4 cans of Pringles, expires in a week – \$0.19

Raw Chicken *

- 4 large pieces of chicken, expire today – \$1.99
- 4 large pieces of chicken, expires in a week – \$9.99
- N/A (I don't eat meat)

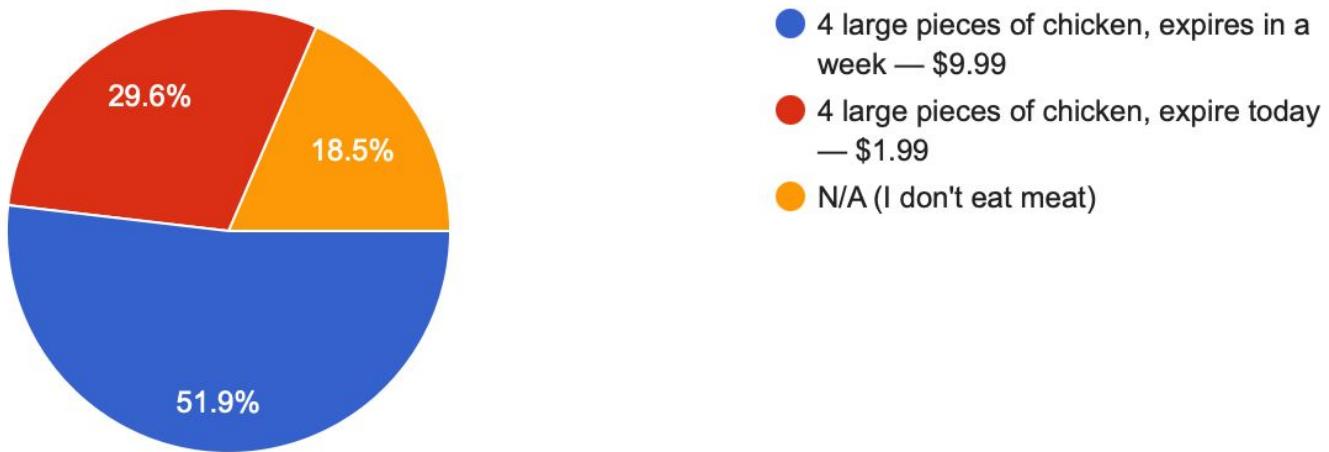
Classic Pringles (Chips)

27 responses



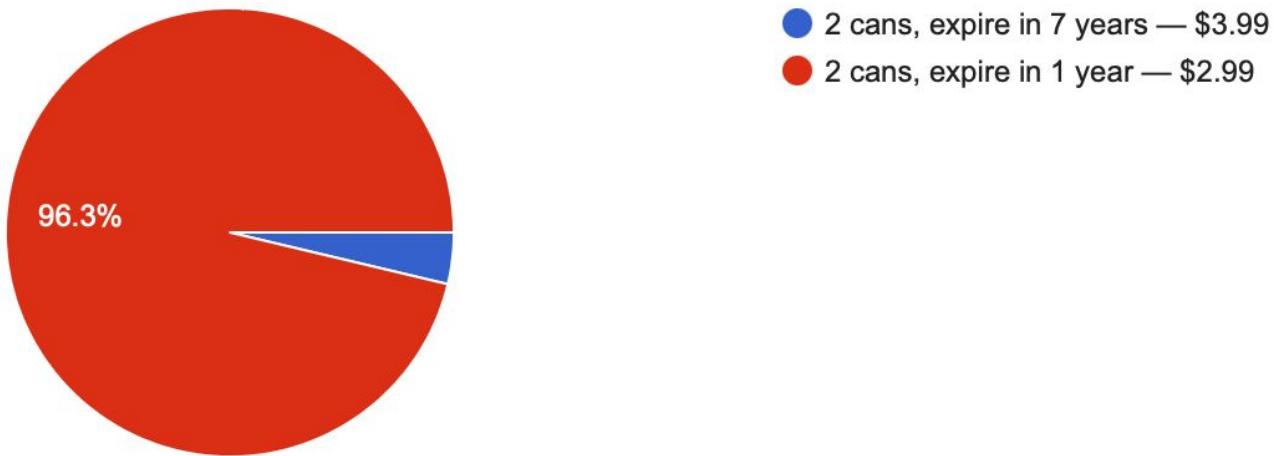
Raw Chicken

27 responses



Canned Tomato Soup

27 responses



(1 year may seem like a lot, but Dan saw this happen!)

Frozen Pizza

27 responses





Vlad

An active baker

“[If the price was the same], I would choose the product that has more shelf life left.”

“Chips don’t expire.”

What worked

People overwhelmingly chose the older, cheaper item.

What didn't work

Few chose to buy older produce, meats, and dairy.

Surprises

There were no items where people *overwhelmingly* chose to buy the newer item.

New learnings

For some discerning chefs, items go bad even before they technically expire (e.g., a baker's eggs).

Assumptions validated

Most respondents were willing to buy older items if there was a discount.

Smaller discounts pushed respondents toward the newer items—discounts matter!

New assumptions

Grocery stores would be willing to sell items at the prices we evaluated.

Expiration dates are the main criteria for discounts (some items have no listed expiration date, like produce).

HMW make buying items from far away unnecessary?

A **reverse marketplace** for college campuses,
where *buyers* post what they need and potential
sellers respond—no shipping required.

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Assumption

people would be willing to sell certain items if they had a buyer, even if they weren't originally planning on selling it.

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**We wanted to
know**

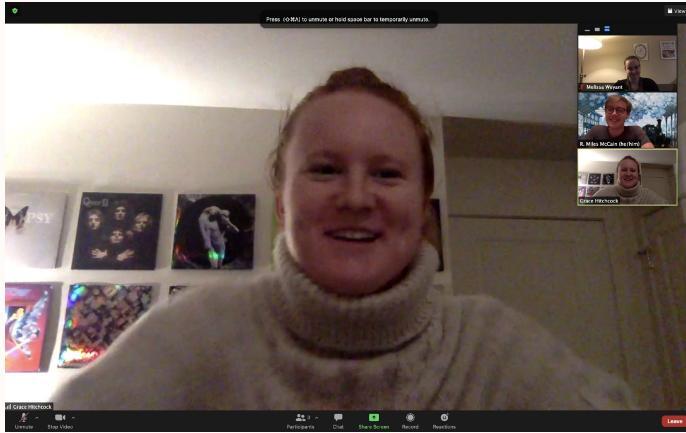
whether people would sell items if someone asked

We set up

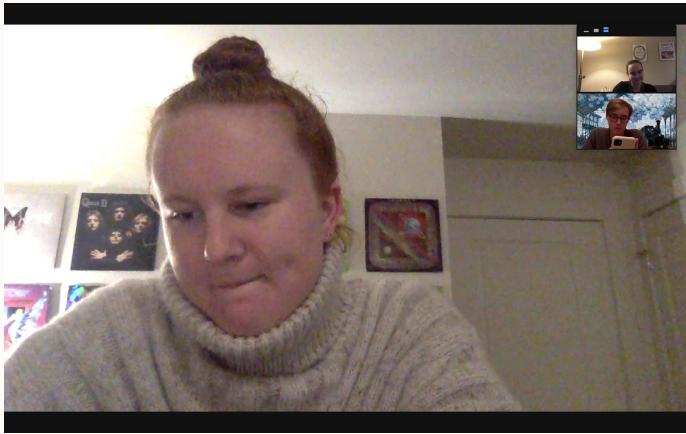
a group text scenario to evaluate just that

The premise

Miles posted that he needed a copy of “Make Russia Great Again,” and Grace responded because she has a copy.



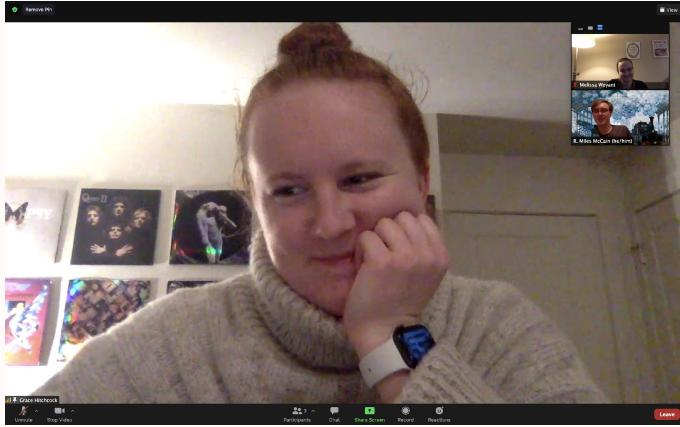
Meet Grace, who owns a copy of "Make Russia Great Again" — the book Miles wants to purchase. They are about to be connected via text message!



The texting begins...



Negotiating..!



A deal has been made! Grace sold Miles her copy of “Make Russia Great Again” and some Christmas lights to help him with his lighting dilemma!

Hey! So I guess you have a copy of Make Russia Great Again? I'm reading that for my sociology lit class — could I buy it from you? 🙏

Also looking for some room decor if you have any btw

sure! where are you located? would i be shipping it or dropping it off?

happy to sell it to you for its original price
— \$25

I think we live in the same dorm, I'm one flight up

I can come pick it up

Original price — for sure. Cash or Venmo?

perfect! and what type of decor are you looking for?

venmo is preferred if that works for you

She's willing to sell!

Honestly it's a bit dark in my room

Any funky lights?

And I totally get it if you don't want to sell
haha

(Also, have you read Make Russia Great
Again?)

yeah i've got some extra christmas lights
that make for good ambient lighting — i've
got the usual white and some multicolored
ones

Oh sweet

would you be interested in either?

I'm in a ~multicolored~ kind of mood

Miles didn't even
know what he
wanted! Just "funky
lights."

when would you like to come pick up the
lights & book?

Oh wow that's super cool

R u free tmrw morning? Around 10?

yeah that's perfect

Sweet I'll Venmo you

What worked

She has things she's willing to sell, even though she wasn't actively looking for a buyer.

A surprise benefit

Miles wasn't sure exactly what he needed to brighten his room, but Grace suggested he buy her old string lights—a win win!

What didn't work

Some items have sentimental value, and being asked to sell them can be unpleasant.

New learnings

Sellers who have items they're willing to part with can help buyers who don't know exactly what they need—for example, Grace suggesting string lights.



Grace

U.S. college student

“I think it’s a **mutually beneficial situation** — potentially more so than in a seller-centered marketplace. Knowing that I’m selling to someone who needs it and will **make good use of it** — there’s something satisfactory about it.”

“There’s a Yogi ball in my room that’s the bane of my existence. Every day I wake up and I’m like I should put this on eBay. **But I haven’t yet.**”

Assumptions validated

There were plenty of items lying around that she would be willing to sell, but she hadn't put in the effort to list them online.

She was able to solve Miles' general need for room decor in a way that was mutually beneficial.

New assumptions

Potential sellers would reach out to buyers' postings, even though it's the *buyers* with the immediate need.

HMW repackaging thrifting so (Olivia's) parents find it acceptable?

A **subscription service** where you receive used and/or thrifted items according to your responses to a short survey—a personalized “mystery box,” but used!

A subscription service where you receive used and/or thrifted items according to your responses to a short survey—a personalized “mystery box,” but used!

Assumption

The fun of a curated gift box exceeds the fun of just going to the thrift store yourself.

A subscription service where you receive used and/or thrifted items according to your responses to a short survey—a personalized “mystery box,” but used!

**We wanted to
know**

whether the gift would be fun.

We set up

a real-life mystery box of used items!

A subscription service where you receive used and/or thrifted items according to your responses to a short survey—a personalized “mystery box,” but used!

Clothing size small/medium, shoes size 9

Favorite color blue

Favorite 1900's decade the 20's







The reveal!







What worked

Selecting items that matched her preferences went smoothly.

Surprises

\$15 was *more than enough* to put together a large gift box, at least at Miles' local thrift store.

Thrift stores have bulk discounts, so if this were a real-world service, the \$15 would stretch even farther.

What didn't work

She wasn't interested in keeping most of the items. It was all just novelty.

New learnings

Thrift stores already have an element of surprise, but leave you in control. Our service wouldn't.



Isabelle
Stanford student

“It felt like a
disappointing birthday
as a kid.”

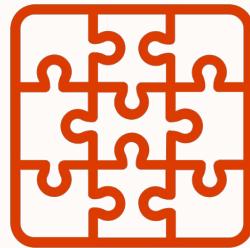
Assumptions invalidated

There was an element of surprise, but there's an element of surprise at thrift stores as well.

She didn't want to keep most of the items in her mystery box.

Plus...

This solution is not interface-driven.



**Best
solution...**



The reverse marketplace

Why?

It solves **multiple needs**:

- No shipping (our HMW)
- Unlocks hidden supply for buyers
- Eliminates sellers' need to explicitly list all items
- Supports buyers who don't know *exactly* what they need

It's **novel**. We've never seen a formal reverse marketplace.

It's **interface-driven**. It could be a web platform or app.

Summary

Our **1st** and **2nd** prototypes had the most satisfying results.

Our **3rd prototype**—the mystery box—was a dud. “Disappointing birthday.”

Our **1st prototype**—expiration discounts—would require buy-in from grocery stores; further testing and interviews are needed here.

Item transparency emerged as a key issue across prototypes.

Our **2nd prototype**—the reverse marketplace—had the most enthusiastic response.

We think our **2nd prototype** is the right direction going forward.

Appendix: Michelle's HMWs

- HMW encourage local pickups and exchanges?
- HMW make face-to-face exchanges more convenient?
- HMW make local pickups faster and less time consuming than shipping?
- HMW build well-stocked local trading economies?
- HMW make buying items from far away unnecessary?
- HMW adjust expectations so that local pickups are the default?

Appendix: Olivia's HMWs

- HMW repackage thrifting so her parents find it acceptable?
- HMW make thrifting cleaner?
- HMW get parents involved in thrifting themselves?
- HMW make thrifting more trendy?
- HMW make thrifting feel like an ecological necessity?
- HMW make other people less judgemental about thrifting?

Appendix: Dan's HMWs

- HMW redistribute grocery store waste that is still usable?
- HMW repurpose excess items into other new products?
- HMW make sure everything gets bought before it's thrown away?
- HMW encourage consumers to buy items about to be thrown out?
- HMW eliminate surplus inventory?
- HMW make waste more useful?