WastePlacer

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Problem

- People don’t know where to throw what
  - Don’t think much about it because they never see it again
- People don’t know the impact of their actions
  - If one non-recyclable is found in a bag of recyclables, whole bag gets thrown out
  - Food thrown in landfill generates large amounts of greenhouse gases
Problem

- Plastic never fully breaks down (even the recyclables)
  - Strangles and poisons animals, contaminates water, ingested by humans
- 40% of all food produced in US is thrown out
  - Wastes numerous resources
  - Produces greenhouse gases
Design Research

- Diary Studies - 3 Days
  - All 11 participants tracked:
    - What they purchased
    - What and Where they disposed of their waste

- Contextual Inquiry
  - Observation of shopping and cleaning out a fridge/pantry
  - In their own home

- Pre + Post study interview questions
Design Research

Observation of Participant shopping + picture of waste
Design Research - Participants

- Young adults (college students)
  - Individual consumers
  - Communal waste bins - Trash, Recycling, Compost
  - Knew recent times they didn’t properly dispose of something

- Family homes (Mom/Dad in a household)
  - Buys and disposes for more than 1 person
  - Personal Waste bins - Trash, Recycling, Compost*
    - *One participant did not have a Compost bin
Design Research - Themes

- Food would spoil and be wasted most often
- Idea their waste habits were better than most people
  - Still know they have bad habits
  - Content with being better than most
  - No clear external incentive to go above and beyond
- Lack of understanding of sorting
  - Hard to know specifics
  - Logic to guess where something goes
  - Don’t want to spend too much time
Task 1

**Sorting waste** into the appropriate bin (Trash, Compost, Recycling)
Task 2

Tracking the amount of waste for each category disposed over time, highlighting and comparing trends
Task 3

Providing real-world context for the environmental impact of an individual’s disposal habits
Task 4

Providing tips for reducing waste based on the individual’s tracked waste habits
Task 5

Planning purchases so people know exactly what they need to buy and won’t purchase things that will eventually be thrown away.
Task 6

**Preserving foods** by arranging/storing them in a manner so they don’t go bad as quickly
Design 1: Smart Bins
Design 2: WastePlacer

1) Sorting Waste
   - User attempts to sort the waste on the phone

2) Tracking Waste
   - Scan picture of waste
   - View waste disposal over week/month

3) Simplifying Consent
   - Ask specific questions to ensure proper consent

4) Understanding Impact
   - Get user to input one piece of garbage
   - Ask about its intended use
   - Before using app, deliver “fun fact” to help people understand the impact of waste
Design 3: Smart Shopping List
Our Chosen Design

We decided to further our WastePlacer design, as it focuses critical tasks based on our research.

- Sorting Waste: has the biggest environmental footprint
- Tracking Waste: good to see how habits have changed over time
WastePlacer - Sorting Storyboard

1) Tray of waste

2) Doesn't know where to throw what

3) Pulls out app

4) Scans items with app
5) Selects compost

6) Selects items that belong in compost

7) Receives points for correct identification

8) App labels items with proper disposal bin

9) Sorts waste according to app
WastePlacer - Tracking Storyboard
Learnings

- Speed is a key element
- Everyone thinks that they are an above average sorter although sorting quality varies widely
- People need to understand their environmental footprint
- Small, easily implemented changes could make a big difference
Thank you!