

# Distribution of Human Intelligence Tasks

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# Overview

Research

Process

Ideas

**Problem**

Demand for solving problems  
beyond computer capabilities





Poverty  
Unemployment

# Solution

Mobile Microtask platform

# Process

# Contextual Inquiry

Client

vs

User



# Client 1

C.B. - Part-time Assistant in the Psychology Department



# Client 2

J. C. - Senior Product Specialist at LinkedIn, Trust &  
Safety Officer



# User 1

D. C. - Stanford Student working at BOSP





# User 2

M. E. - Philippines Cook





# Task Analysis Results

# Who is going to use the system?

Two sides of the equation:

- “Clients” who leverage the application to find people to fulfill their micro-tasks
- “Users” who use the application to find and complete micro-tasks for compensation

# What tasks do they now perform?

- Clients
  - Make sure surveys make sense and are understandable
  - Search for demographically random and representative survey takers
  - Figure out if an image or message contains anything regarding human trafficking, child porn, spam, or any other inappropriate content

# What tasks do they now perform?

- Users:
  - Occasionally fill out online, optional surveys from Stanford Psychology Department to make money
  - Performing daily tasks / Cooks for a family
  - Asking people for referrals to get jobs

# What tasks are desired?

- Clients
  - Find representative participants to take surveys and obtain those results
  - Automate parsing of photos to determine whether or not they are “inappropriate”
  - Identify when a user is taking advantage of invitation requests (essentially sending invitation spam) on LinkedIn
  - Teach people how to access their accounts
- Users
  - Make money while performing short tasks
  - Escape boredom

# How are the tasks learned?

- Clients
  - Through professional lab training and learned experience in the Psych lab
  - Through employee training sessions
    - Challenge: how to figure out how much / little training to give, how to figure out if humans are consistent in their decisions
- Users
  - Through mailing lists from the Psych department advertising surveys
  - By reading the material and instructions
  - Hands on doing - experience

# Where are the tasks performed?

- Clients
  - On a computer in Stanford Psychology laboratories
  - On a computer at LinkedIn offices
  - On premises
- Users
  - Online, usually in the comfort of their home
  - Downtime at work
  - Wherever they are bored

# What's the relationship between customer & data?

- Clients
  - Use the survey results to draw conclusions about psychological behavior
  - Customer makes judgements on different LinkedIn user accounts and different LinkedIn products based on the data
- Users
  - Provides data based on personal experience
  - Money maker



# What other tools does the customer have?

- Clients
  - Emails or paper postings
    - Credit (Stanford students paid for participation)
    - Paid (general public paid for participation)
  - Reporting from other LinkedIn members/employees
- Users
  - Other opportunities for making money available to students, including paid surveys from other departments, student jobs, etc.
  - Job referrals

# How do users communicate with each other?

- Clients
  - Communicate with participants through Qualtrics surveys to obtain data and advertise to participants through email, paper postings, or mTurk
  - LinkedIn individuals communicate and set common practices / ground rules in team meetings
  - Relationships
- Users
  - Communicate results to the surveyors via survey responses

# How often are the tasks performed?

- Clients
  - Distribute roughly 5 to 10 surveys a week
  - Multiple times a day
- Users
  - Roughly once a month (and receive emails about survey once a week)

# What are the time constraints on the tasks?

- Clients
  - Prefer to receive all comprehensive survey results within a month
  - Depends on what the priority of the “ticket” is
- Users
  - Prefer not to complete survey in less than 10 minutes
  - No real time constraint because participation in survey is completely optional

# What happens when things go wrong?

- Clients
  - Manually weed out survey results that seem scammy
  - LinkedIn representatives have to go and figure what went wrong. Go look into individual LinkedIn user profiles
- Users
  - Small negative repercussions
  - Loss of income

# Common Themes:

- Clients
  - Abstract → discrete (0 to 1)
  - Input → output (quantifiable)
  - Unique challenge that requires human to do (machines can't do this)
  - Worried about reliability (skills and authenticity of users)
- Users
  - Motivations: income, boredom
  - Inconsistent schedules
  - Downtime

# Representative Tasks

# Simple

Determining appropriate/valid content  
(images, messages)



# Medium

Sharing information about human behavior  
and personal preference  
(hard to access information)

# Complex

Discovering micro-tasks to earn an extra  
disposable income

# Application Ideas



# World Mapping Application

- Lack of satellite coverage, topographical information
- Explorers, people with free time, adventure-seekers
- Better graph out the world

# Crowdsourced Predictions

- predicts events around the world
- Google Glass app, clients asks a question and provides parameters
- i.e. “What is the sentiment surrounding Ukraine conflict?”

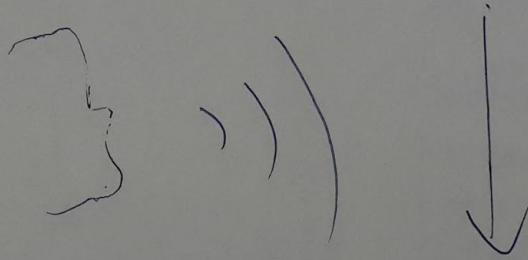
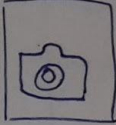
# Mobile MTurk

- similar to Amazon MTurk
- Use social media channels in developing nations
- location based requests

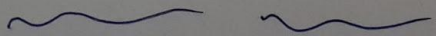
# Sketches



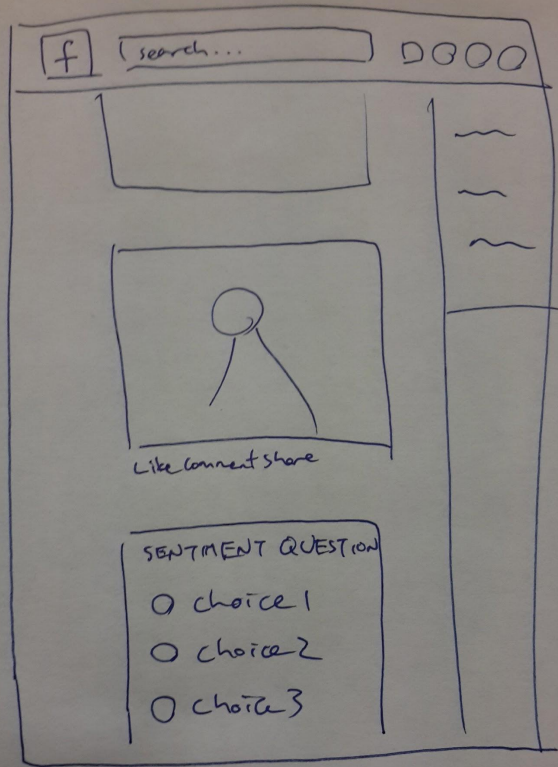
What do you think about the safety in Ukraine?  
 Very safe  Moderate  Unsafe



Thank you for your response



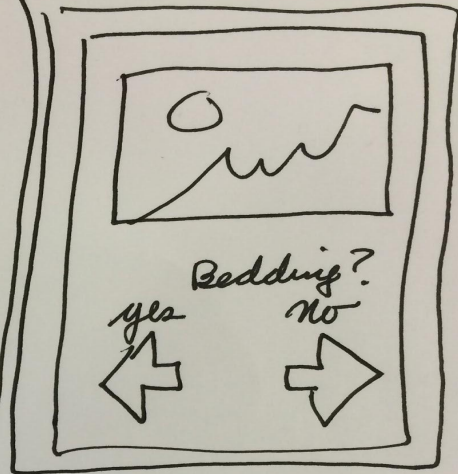




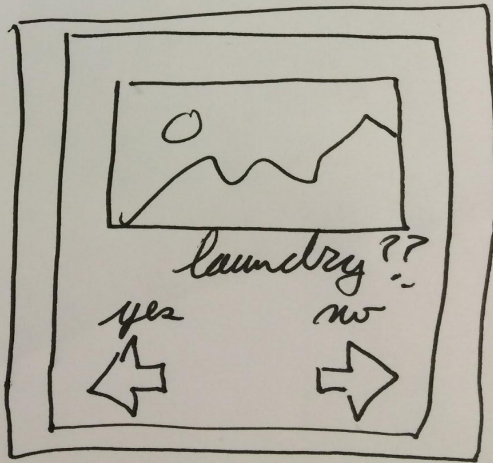
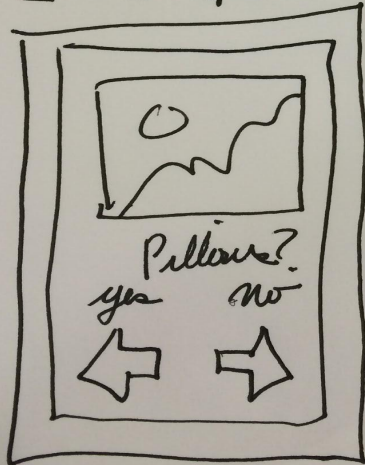
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SENTIMENT QUESTION

- choice 1
- choice 2
- choice 3



← Swaps →



# Summary

- How to enable the larger workforce?
- What will “work” look like in 50 years?