Distribution of Human Intelligence Tasks
Overview

Research

Process

Ideas
Demand for solving problems beyond computer capabilities
Poverty

Unemployment
Solution

Mobile Microtask platform
Process
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
- Insecure

Thank you for your response
Summary

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