The Future of Crowd Work

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What would it take for us to be proud of our children growing up to be crowd workers?
cognitive psych, management, computer science, design, sociology, economics
Crowd work
Tasks completed online by a distributed, elastic workforce in exchange for pay.
About 20% of current jobs have a work product that could be sent “down the wire” [Blinder 2006]
estimated future volume [Blinder 2006, Horton 2013]
$454,000,000,000 per year
91,000,000,000 hours per year
45,000,000 full-time workers
### Total Earnings

**Rewards You Have Earned**
- Approved HITs
- Bonuses
- Total Earnings

**HIT Totals**

<table>
<thead>
<tr>
<th>HITs You Have Accepted</th>
<th>Value</th>
<th>Rate</th>
<th>HITs You Have Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>HITs Accepted</td>
<td>124</td>
<td>—</td>
<td>HITs Submitted</td>
</tr>
<tr>
<td>... Submitted</td>
<td>90</td>
<td>72.6%</td>
<td>... Approved</td>
</tr>
<tr>
<td>... Returned</td>
<td>16</td>
<td>12.9%</td>
<td>... Rejected</td>
</tr>
<tr>
<td>... Abandoned</td>
<td>18</td>
<td>14.5%</td>
<td>... Pending</td>
</tr>
</tbody>
</table>

(If you're not Michael Bernstein, click here.)

Your WorkQueue

**Introduction** | **Dashboard** | **Status** | **Account Settings**

Find HITs containing that pay at least $
Crowd work: Present
Intellectual framing of low-cost results & exploitative labor

Requesters view workers as exchangeable and untrustworthy

Workers view requesters as distant and capricious
Crowd work: Future

• Much real work is complex, creative, and interdependent
  • Writing a news story
  • Programming software
  • Composing a symphony
Interdependencies
Required expertise
Drop out
Low quality work
Propagation of errors
Unpredictability
distributed organizations

distributed computing
Decompose task

Assemble teams

Execute workflow
Future Model of Crowd Work

task decomposition ➔ platform ➔ job design ➔ task assignment ➔ workflow ➔ output

- WORK
- WORKERS
  - platform
  - motivation
  - hierarchy
  - reputation

- crowds ➔ AI
- collaboration
- real-time work
- quality assurance
Outline

• Brief flavor of three core areas:
  • Crowd Workers
  • Crowd Work
  • Crowd Computation
Crowd Workers: credentials and education
“I graduated from Stanford.”
“I work for Google.”
Alexei L.

Senior PHP/HTML5/Magento/Wordpress/Joomla/Drupal Developer

Don't miss chance to work with me! 24/7, RAPID DEVELOPMENT, HIGHEST QUALITY, EXACT DEADLINE Support

The Hourly rate would be negotiable for long term relationship.

I've developed a wide range of websites using PHP/Mysql ...

David A.

Agency Contractor

eCommerce Architect, Oxwall & Web Rockstar

I'm well-experienced and highly qualified in standard and cross-browser compatible programming. Over 2400 hours of work on oDesk, not a single unsatisfied customer and always a high quality work, this is the way I do work. I look forward to build a ...

Groups: AspDotNetStorefront, BigCommerce
“I have 4.2 stars out of 5 as a composer!”
Reputation

Goal: mechanisms as straightforward to deploy and interpret as today’s affiliations and degrees
Education

“hello world!”
Education

“hello world!”

expert
Education

Goal: crowd work = education
Crowd Work
CROWD WORK hierarchy
Hierarchy

goal: crowd work as good as the best managers
Tim Cook
CEO, Apple
$378,000,000
John Doe
CEO, Crowd
$378,000,000
{John, Jane, Joe, ...} Doe
CEOs, Crowd
$378,000,000
CROWD WORK:
hierarchy
workflow
Workflow

CrowdWeaver [Kittur et al. 2012]
Find-Fix-Verify [Bernstein et al. 2010]
TurKit [Little et al. 2009]
CrowdForge [Kittur et al. 2011]
goal: as complex and high quality but faster and more dynamic than traditional workflows

Workflow

- Flexible: dynamic and flexible
- Predictable: time and monetary costs
- Shareable: libraries, design patterns
Crowd Computation: platforms
Goal: crowd platforms replace firms
Platforms determine work
Platforms

• Create platforms that enable new kinds of work and new kinds of careers

• There are problems that only a platform can solve: e.g., reliability of long-term employment, setting and achieving wage goals
Crowd Workers
Crowd Work
Crowd Computation
Workers

Work

Computation

Education & credentials
Motivation & rewards
Job design
Hierarchy
Workflow
Task assignment
Realtime, synchronous work
Quality control
Platform
Crowds guiding AIs
AIs guiding crowds