• **What we know and do not know**
• Literature review, expert interviews, survey data
• Draft report available now
• Full report around February 2011
All one needs is a computer, a network connection, and a bright spark of initiative and creativity to join the economy.

Don Tapscott and Anthony D. Williams in Wikinomics (p.12)
New problems and challenges arising from the digital world

• Transforming, categorizing and labeling abundant amounts of data
  - Converting handwritten records into digital form
  - Determining if two pictures are of the same product

• Overcoming hurdles placed by designers
  - Obtaining 1,000 “likes” for a new music artist
  - Developing a strong online game character

Scarce supply + Demand = Markets
Virtual Economy
- Exchanges of virtual goods, currencies, links, digital labor

Digital Economy
- Online services, communities, games
- Online shopping, eCommerce, eGov

ICT infrastructure
- Broadband connectivity
- Wireless networks
Sectors of the Virtual Economy

Online gaming services

 Microwork

“Cherry blossoming”
- Facebook fans, Twitter followers, recommendation engines, votes, links

Micro-content production
- Second Life designers, IMVU
Online gaming: major pastime

• $12.6 billion market (2009), 20% yearly growth (KOCCA 2010)
• 24% of British and American adult Internet users play online games on Facebook etc. (PopCap 2010)
• 265 million online gamers in China (CNNIC)
Ultima Online Atlantic UO Felucca *CASTLE* near Britain

Winning bid: **US $510.00**

Ended: Feb-15-06 23:38:50 PST
Start time: Feb-08-06 23:38:50 PST
History: 19 bids (US $300.00 starting bid)
Winning bidder: **mysticgbj** (23 ★)
Item location: Lynn
United States
Ships to: United States
Shipping costs: FREE -- Standard Flat Rate Shipping Service

Similar items from all eBay sellers

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Price</th>
</tr>
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<tbody>
<tr>
<td>Ultima Online UO Atlantic 10 Million Gold</td>
<td>US $60.00</td>
</tr>
<tr>
<td>Ultima Online Atlantic 5K Recall Scrolls 5,000 UO</td>
<td>US $6.99</td>
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<tr>
<td>Ultima Online Atlantic 20K Blank Scrolls UO</td>
<td>US $6.99</td>
</tr>
<tr>
<td>UO Ultima Online Atlantic 50,000 BOARDS</td>
<td>US $9.79</td>
</tr>
</tbody>
</table>
Professional gaming studio outside Beijing, China. Photo: Jared Psigoda
Online gaming services

• “RMT”: Selling virtual goods and currencies for real money

• “Powerleveling”: piloting a players’ character on their behalf

• $1.3 - 2.0 billion market

• Legal status contentious
Online gaming services value chain

- Low entry barriers for producers ⇒ intense competition and low wages
- Higher entry barriers in retail
- Threat of entry from game operators
Online gaming services value chain

1. Initially only domestic production and retail
2. Production subsequently moved to low labor cost countries (China foremost)
3. Eventually developing countries acquired capacity to take over retail as well
4. Retailers diversify to other goods and services
Microwork

Samasource workers in rural Kenya. Photo: Samasource
Microwork

• Transforming, categorizing and labeling data
  - Converting handwritten records into digital form
  - Transcribing audio records into text
  - Determining if two pictures are of the same product
  - Labeling images, products and other content

• Information retrieval tasks

• Advertising and miscellaneous tasks

• Emerging industry
  - Paid crowdsourcing: $500 million (2009)
  - Business process outsourcing: $100 billion (2009)
Microwork value chain

- **Transformers**: transform clients’ problems into human-addressable microtasks
- **Aggregators**: distribute microtasks to thousands of workers & compensate them
- **Infra provider**: Internet cafés, ISPs, mobile operators
<table>
<thead>
<tr>
<th></th>
<th>Task size</th>
<th>Source of workers</th>
<th>Workers’ tools</th>
<th>Skills</th>
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</thead>
<tbody>
<tr>
<td><strong>Crowd-sourcing</strong></td>
<td>From tiny tasks to large</td>
<td>Open calls</td>
<td>Workers may require external tools</td>
<td>Basic computing skills to language and professional skills</td>
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<td></td>
<td>projects</td>
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<tr>
<td><strong>Microwork</strong></td>
<td>Tiny tasks (2-30s)</td>
<td>Open calls, staff members, contractors, BPO providers, online gamers, ...</td>
<td>All tools and information embedded into worker UI</td>
<td>Basic computing skills to language skills</td>
</tr>
</tbody>
</table>
Microwork value chain

- Low entry barriers for microworkers ⇒ intense wage competition likely
- Can developing country actors upgrade their positions in the microwork value chain?
  - c.f. gaming services industry
Online gaming vs Microwork

• Online gamers paid in virtual currency to complete microtasks
• Microwork (and indeed all work?) becoming more game-like to maintain motivation?
  - “Gamification”
Conclusions

• The “virtual economy” emerges from scarcities in the digital world

• *Online gaming services* is a mature sector of the virtual economy
  - 10 year history, $1.3-2 billion/year, profits successfully captured in developing countries

• *Microwork* is an emerging sector with similar potential
  - will upgrading strategies allow profits to be captured in developing countries?

• Regulatory issues significant Q in the future
The discussion continues online 😊

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@leila_c  http://samasource.org
@TomChatfield

Jared: http://rmtguru.com

Workshop materials online: