Mobile Applications: Issues for Developing Markets

CFSP Mobile Banking Panel
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April 16, 2012
• http://mig.mit.edu

• Platform competition, innovation, and entrepreneurship

• Scraped applications data from iTunes, Android, Blackberry, Nokia Ovi, Windows

• In the iTunes applications dataset, we now have 13 million observations cover 381,000 applications by 86,000 developers.
Observations on Mobile Apps

- Platform environment is a huge spur for innovation
  - Lowers entry for entrepreneurs: manufacturing, marketing, distribution
- Entrepreneurs are atypical
- Many different revenue models; still unclear what works
  - Freemium (8% of Android)
    - Versions vs. price changes
  - Subscription (Apple: content only)
  - Advertising
  - In-app sales (8% of Android)

Data from AppBrain, 2/12
Caveats to Mobile Apps in Developing Markets

- **Products sold are exclusively digital**
  - Download sizes can be large, especially for video content
  - Processing in the cloud

- **NO CASH**
  - Credit Card Payments drive these platforms

- **Telecom carrier power has been surpassed by device/OS platform**
  - Apple & Android; Apple takes 30% of revenue & they WANT to promote 3rd party innovation!

- **Is there enough money in advertising or volume for cheap, paid apps?**

Data from AppBrain, 2/12
Issues & Speculations for Developing Markets

- Digital products must be smaller, local
  - Fit on low-end phones, adapted to low-end graphics, small screen size
  - Intermittent connectivity favors on-device processing (less power), ability to utilize SMS
- Nokia likely to be more of a market for mobile apps
  - Will costs be low enough for atypical entrepreneurs?
- Telecommunications carriers will play a large role
  - What does this mean for value-capture of entrepreneurs?
- How do apps complement non-digital and cash-based transactions?
Sample Solutions

• Digital products must be smaller, local
  – Allow users to share the apps via Bluetooth, USB or Infrared. http://www.greenspek.com

• Nokia likely to be more of a market for mobile apps
  – Device attributes: Multiple users address book
  – Free mobile app developer training in Nigeria. Samsung also sponsors app competition there.

• Telecommunications carriers will play a large role
  – Peer-to-peer solutions might get around this, but security/trust is tricky

• Amazon Mechanical Turk
  – Earning money by using mobile device?
Mobile Banking Issues

• **Biggest limitation to scaling: ties to cash**
  – Need to have network of agents, or an already established network
    • Banks, telecom carriers, retail outlets have the advantage
  – This makes it more economical to have one platform
    • Difficult to coordinate fragmented networks of agents
    • Unless protocol is standardized, interconnectivity between networks difficult to achieve ex-post
  – The complementary asset of a physical network limits the benefits from atypical entrepreneurial innovation
    • Peer-to-peer in this case may be very risky

• **Security & Latency**
Recent Developments

- **Frontline SMS: Credit** ([http://credit.frontlinesms.com](http://credit.frontlinesms.com))
  - Middleware to integrate current mobile payment systems with SME and MFI.
- **Visa & MasterCard partnering with MTN**
- **Standard Chartered Bank Kenya upgraded mobile banking platform to use SMS** (allows delayed communication).

**Inertia/Trust**
- People go with what they know
  - Hard to discover new technologies/solutions
- May not have resources to multihome
  - May promote fragmentation