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# (When) is information power?

## Lessons from the ICT-for-development field

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School of Information  
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# Structure of my presentation

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- ◎ ICT4D: Lessons of the past 15 years
- ◎ Opportunities and challenges: the case of ICT and smallholder agriculture
- ◎ New possibilities: Promising trends and a look ahead
- ◎ Digging deeper: ICT, power, poverty, change

# Lessons of the last 15 years

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- The ICT4D field and the Gartner technology hype cycle
  - [http://en.wikipedia.org/wiki/Hype\\_cycle](http://en.wikipedia.org/wiki/Hype_cycle)
  - Technology trigger: World Wide Web
    - Surge in donor interest in “information for development, information society” in mid-90s; first wave of major conferences (ISAD, GK97, etc.); sharp rise in donor funding of pilots
  - Inflated expectations: the lead-up to WSIS 1 (2001-2003)
  - The turn toward disillusionment: 2003-2005: donor fatigue mounting by WSIS II: significant donor dis-investment in ICT4D by 2006
  - The slope of enlightenment (?) 2007-present: what has changed?
  - Plateau of productivity? Not there yet, but some ‘green shoots’
  - NOTE: not everyone has been in the same place on the cycle at

# What went wrong

- Mis-framing the problem (“the digital divide”)
- Hammer-wielders looking for nails (cf. Maslow)
- Lessons unlearned from IT4D and Comm4D (particularly since ICT4D was by nature more complex in its ambitions)
- Lots of pilots that proved unsustainable/unscaleable with weak evidence of impact
- As donor budgets decentralized, central resources for ICT initiatives dried up, without uptake from regional/sectoral units
- The real lessons are lessons about development and poverty reduction and its complexity, and lessons about development *practice*
  - *The tool is not the change; start by understanding why the end result you desire is **not** happening already, and be explicit about your theory of change*
  - *Understand local context, power structures, information and communication practices*
  - *Engage/empower the beneficiaries*
  - *Create conditions for local innovation/adaptation*
  - *Enabling environments (policy, regulation, infrastructure, institutional capacity) are important*
  - *Beware of technology-enabled condescension*

# Remaining puzzles

## ● Impact

- Impact assessment seeks to identify changed actions, capabilities or performances by individuals, groups or institutions **as a result of** a project/program/intervention --the difficult goal of **isolating the effect**. (particularly hard with ICT)
- From impact to policy choice: IA tells you about the difference between “A and not-A” but not about B and C (particularly important in resource-constrained environments)
- Some recent efforts and their limitations:
  - Natural experiments (e.g. mobile rollout: Jensen & Aker papers)
  - Randomization (e.g. MIT Poverty Action Lab)
- Demand as a proxy for impact, but complicated by the aspirational nature of demand for ICT and the question of who pays

# Remaining puzzles

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## ◉ Replication (trying it elsewhere)

- How can we know if the same intervention will lead to similar outcomes and impacts in different contexts, and at different times? How much do local context/enabling conditions/practices matter?
- Rapid innovation in ICT devices/applications/services and the peril of replicating yesterday's success; duplicating innovation or re-creating the conditions for innovation elsewhere?

## ◉ Scale (going from pilot to broader implementation)

- If we want to achieve the same outcomes/impacts at scale, would we necessarily use the same intervention/inputs? Would it have different outcomes/impacts at scale, or even “wash out” (e.g. farmer price information and its impact on farmer incomes)
- In what cases is the pilot a “detour” around the impediments to the desired impact at scale, which would best be addressed with another intervention, even a non-technical intervention (e.g. policy changes, shifts in public finance priorities, institutional capacity, improved environment for private-sector provision?)



# Remaining puzzles

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## ◎ Sustainability

- Basically a shorthand for “who pays and how?”
- Answers will be different for different kinds of interventions in different sectors
- *Demand responsiveness* is key, but the puzzle of how to gauge that when the pilot is publicly funded (free is a popular price)
- When the “good” at stake is quasi-public, who is the “customer”? The individual recipients? The agency paying for it? The “governance” issues when the donor/solution provider leverage the former to pressure the latter
- Do we have to think about sustainability differently in a rapidly-evolving field like ICT?
- Thinking about sustainability from the start, and linking it to a theory of change

# ICT and Smallholder Agriculture

- Why focus on smallholders?
- The vicious circle of rural poverty
  - Physical isolation; poor infrastructure; few services; few assets; weak access to appropriate and affordable inputs
- The significant *intangible* dimensions of rural poverty
  - Weak access to information and communication; poorly-functioning markets and institutions; poor knowledge flows; weak opportunities for collective action; high information and transaction costs
- The growing challenges, and opportunities, of “the new Agriculture” (global, higher value-added)
  - The growing importance of timely information and response
  - The increasing integration of regional and global agricultural value chains
  - The volatility of commodity markets and the challenge of food security
- The mounting evidence that ICT-enabled services, wisely adapted, can make a difference for smallholders.

# The complex uncertainties of smallholder agriculture

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- The information intensity of smallholder decisions throughout the year, and their interconnected nature:
  - Market trends
  - Crop selection
  - Acquiring inputs (seeds, fertilizer, etc.)
  - Planting and applying related inputs
  - Crop protection and cultivation
  - Harvesting, packing and storing
  - Transport to market
  - Selling
  - Managing risks (weather, price volatility, pests)
- The impact of uncertainty on farmer choices (particularly given family vulnerability and weak assets/financial services)
- The intensification of these challenges as smallholders participate in globalized markets

# How can ICT help?

- Increasing smallholder productivity and incomes (by helping them better manage the complex decisions listed above)
  - *Market information for farmers the current hot topic (e.g. Reuters Market Light in India), but when does market information translate into market power?*
- Making agricultural markets more efficient and transparent
- Linking poor farmers to urban, regional and global markets
- Providing access to financial services
- Improving public services and governance for the rural poor
- Promoting – and including smallholders in – agricultural innovation
- Helping farmers manage a range of risks
- Improving land and natural resource management and addressing environmental pressures
- Helping poor farmers participate in higher-value-added agriculture
- Supporting the emergence of a more diverse rural economy, and supporting rural family decisions about their mix of productive activities

# Core principles for effective interventions

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- Remember that the problem is not “lack of ICT”. Focus on the information, communication, transaction, networking, etc. dimensions of the problem being addressed, and how ICT – appropriately adapted and sustainably deployed – can assist
- Start with a clear understanding of the *agricultural information and service economy* (particularly for smallholders) in a given place and its constraints. How is information – broadly defined – *produced, valued, exchanged and consumed* in a given context?
- Remember that ICTs don’t produce valuable information or services: people, markets, firms and institutions do, and the goal is to facilitate their more effective performance and communication
- Focus on applications and services, not devices (the importance of “platform agnosticism”)
- The newest tool or application is not automatically the best (the continued relevance of radio)
- Think from the start about scalability and sustainability

# Promising trends

## ● Mobile/Wireless

- The virtuous circle of access, affordability, appliance innovation and applications
  - Access: the growing mobile coverage of developing country populations thanks to innovations in network design, hardware, financing, and an increasingly pro-competition policy and regulatory environment
  - Affordability: the combination of pre-paid service and cheaper devices
  - Appliance innovation: multi-format, multi-function (the growing pointlessness of the “mobiles vs. computers” debate)
  - Applications: the unanticipated virtues of low-tech (SMS) and the explosion of new services across several sectors (financial services, health, market information, governance and public services, etc.)
  - The importance (and multi-sector impact) of mobile financial services
- Avoiding the temptation to view mobile as the new magic solution
  - Focusing on mobility, not mobiles, and understanding when and why mobility is a virtue (Timeliness? Customization? Empowerment? Multi-directionality?)
  - Distinguishing the (expanding) wireless *coverage* from the mobile (or fixed!) *device* and the *services offered*, and focusing on the applications/services, not the device

# Promising trends

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## ◎ Connectivity in Africa

- The dramatic increase in Africa's global connectivity over the next few years
  - [http://manypossibilities.net/wp-content/uploads/2009/07/cable\\_map18](http://manypossibilities.net/wp-content/uploads/2009/07/cable_map18)
- its implications for bandwidth, cost, access and innovation
- First major impact likely to be in cities/towns and in networking of large public and private institutions (ministries, universities, hospitals and clinics, firms, etc.)
- BUT, the crucial policy, regulatory and investment decisions necessary to bring that access to all and assure innovative, affordable and competitive services (particularly in rural areas)

# Promising trends

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- Local innovation and the tools to support it
  - The importance of providing adaptable tools for local innovation and action rather than “engineering” innovation from outside
    - Mobile banking before there was mobile banking: lessons from Sente (Uganda) <http://www.janchipchase.com/sharedphoneuse>
  - When simpler is better: the explosion of SMS-based tools for a range of poverty/development/social action goals , e.g.
    - [www.mobileactive.org](http://www.mobileactive.org), [www.frontlinesms.com](http://www.frontlinesms.com),  
<http://medic.frontlinesms.com/>
- Mainstreaming ICT in sectoral work
  - Donors and country partners now much more focused on ICT applications/policy/capacity within core sectors (education, health, agriculture, governance, etc.)
  - Considerable wariness persists in most donor agencies, but there are signs of progress



# Digging deeper: ICT, power, poverty, change

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- ◉ We continue to need a more rigorous understanding of how ICT can contribute to broader processes of economic, social and political change, and what are the institutional, structural, political and cultural (including gender) enablers of and impediments to that contribution
- ◉ Understanding the difference between information, intention, agency and impact (even if I decide to act on new information, can I, and do I achieve the desired effect? If not, why not?)
- ◉ The need for more rigorous research on, and experimentation with, *sectoral* ICT applications (agriculture, health, education, governance, etc.) and the drivers and constraints that shape their impact
- ◉ The vital importance of local/national context, including the political economy of pro-poor change

# A few more resources

- Searching for ICT4D research/resources
  - The ICT section of the ELDIS site ([www.eldis.org/ict](http://www.eldis.org/ict)) provides annotated links to a vast array of articles and resources on ICT4D issues
  - See the research and other resources at <http://www.infodev.org>
  - The Communication Initiative has good resources: <http://www.comminit.com/en/ict4d.html>
- Measurement/impact assessment
  - I tried to sketch out some ideas in a presentation last year that you can access here, along with other interesting presentations: <http://www.bcoalliance.org/node/439>
  - The Partnership on Measuring ICT for Development, hosted by the ITU, is doing interesting work on indicators/data:
    - <http://www.itu.int/ITU-D/ict/partnership/>
- ICT for Agriculture and Rural Development
  - See the references in my short piece for the World Bank earlier this year: go to <http://go.worldbank.org/BTLOZUIPZ0> and download ARD Note #47, “Improving Agricultural Productivity and Markets: The Role of Information and Communication Technologies”
- Interesting Blogs (just a sample!)
  - Ethan Zuckerman on international development, the Internet, etc. etc. [www.ethanzuckerman.com/blog](http://www.ethanzuckerman.com/blog)
  - Richard Heeks & colleagues at U. of Manchester: <http://ict4dblog.wordpress.com>
  - Mike Trucano of the World Bank on ICT in Education: <http://blogs.worldbank.org/edutech/>
  - An interesting group of Austrian ICT4D bloggers: <http://ict4d.at/>