

***Reflection and amplification,
disruption and appropriation***

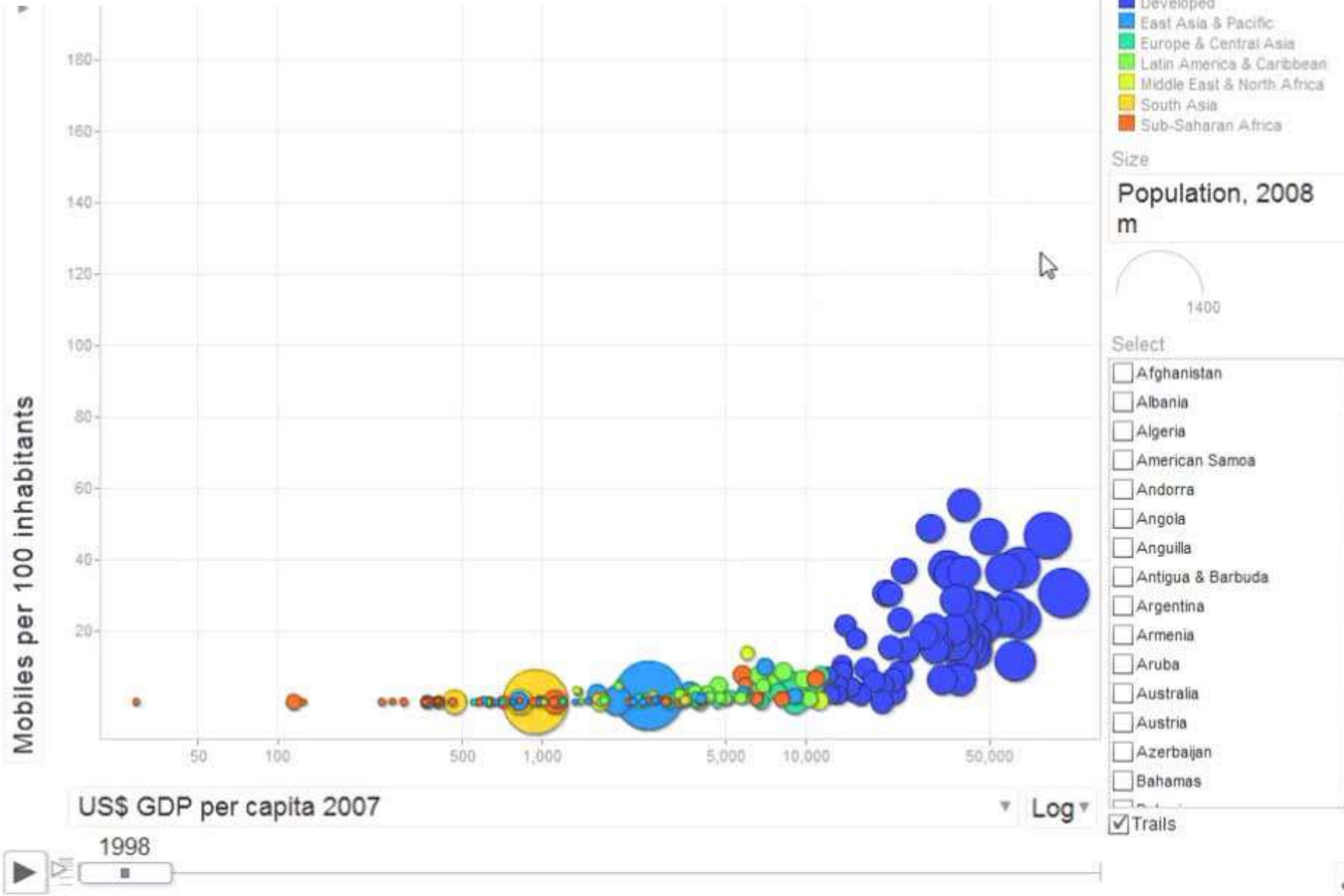
***Technology, society, and the
case of the mobile phone***

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TEM summer school
13 June, 2010

Trend Analysis of Mobile Penetration, 1998-2008

ITU data, re-run of concept by Richard Heeks (<http://is.gd/8v7XO>)



Beeping

Blurring

Getting Online

So What?

NO PARKING

in front of this gate

For Any **INFORMATION** in Bangalore

Just Give A **MISSED CALL**

(080) 4016 [REDACTED]

WWW. [REDACTED]

“When someone beeps you, you know the reason”

- Rwandan University Student

“I was angry with my so-called friends who ‘beep’ me all the time – blackmailing me into calling them back....I can understand someone beeping me once and a while. My problem is that so many Ugandans have turned beeping into a profession”

- Ugandan Columnist

“Beeping is a habit that transcends all social classes” – Tanzanian Columnist

“I got loads of flashes on my phone in the days following my arrival. So many, dear reader, that I almost got blinded by them”

– Ghanaian Columnist

“When someone beeps you, you know the reason”

- Rwandan University Student

“Sometimes I just scan through the mobile phone book and see who I have not seen in a while and beep them. Sometimes they call back, but I don’t expect it.” - Nicole, Student

“With customers I have to take care, because it’s me who wants their orders, and mostly they can’t spend their airtime on me, so it’s me who always calls. I can’t beep them” - Patrick, Chicken Farmer

“Here in Rwanda people are not rich enough to call every time. That is why they beep you. Many people only have access cards. When they want to call someone, they go to a public kiosk or use their mobile to beep someone...it is cheaper.” - Ranseria, Jeweler

“There are times I can give my wife a ride and I leave her somewhere, then we’ll agree that when I am back at the spot, I’ll just flash her number...she meets me there without calling.” - Liban, Taxi Driver

“If you are chasing after a lady, you cannot beep. You have to call. Beeping is for friends. When a girl you do not know well beeps you, you have to call back if you are interested. You cannot even text. She has to see that the effort is being made. Borrow a friends’ phone if you do not have airtime” - Filicien, Student

The Rules of Beeping

1. Usually, a beep means “call me back”

2. Sometimes, beeps can mean something else

- A beep can convey a short message for free – “pick me up now”
- A beep can mean “I’m thinking of you”

3. “Rich guy pays” (Dymond)

- The one with more money should pay for the call
- The one with airtime on their mobile should pay for the call
- Customers send beeps, they don’t receive them
- Women send beeps to suitors, they don’t receive them

4. Do not beep too frequently, or at the wrong time

5. Explain these rules to new users

Language and Society: The meaning of an empty beep

Kinds of beeps

Callback

Pre-negotiated
Instrumental

Relational

Relational and contextual cues

- Beeping happens between known relational partners
- Meanings vary between relationships
- Meanings vary within a relationship, according to context/time of day
- Meanings and appropriateness evolve, with relationships, over time

A form of restricted code

- Bernstein's (1971) restricted code, vs. elaborated code for all to see
- Thousands of "micro-negotiations" and "micro-calculations" each day **reflect** and **reinforce** existing relational and social cues (Hymes, 1964)

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So What?

“The phone, in short, adds to human freedom, but those who gain freedom can use it however they choose. Rather than constraining action in any one direction, the telephone is an agent of effective action in many directions”

“[its study] demands a logic more complex than that of simple causality—a logic that allows for purposive behavior as an element of the analysis.”

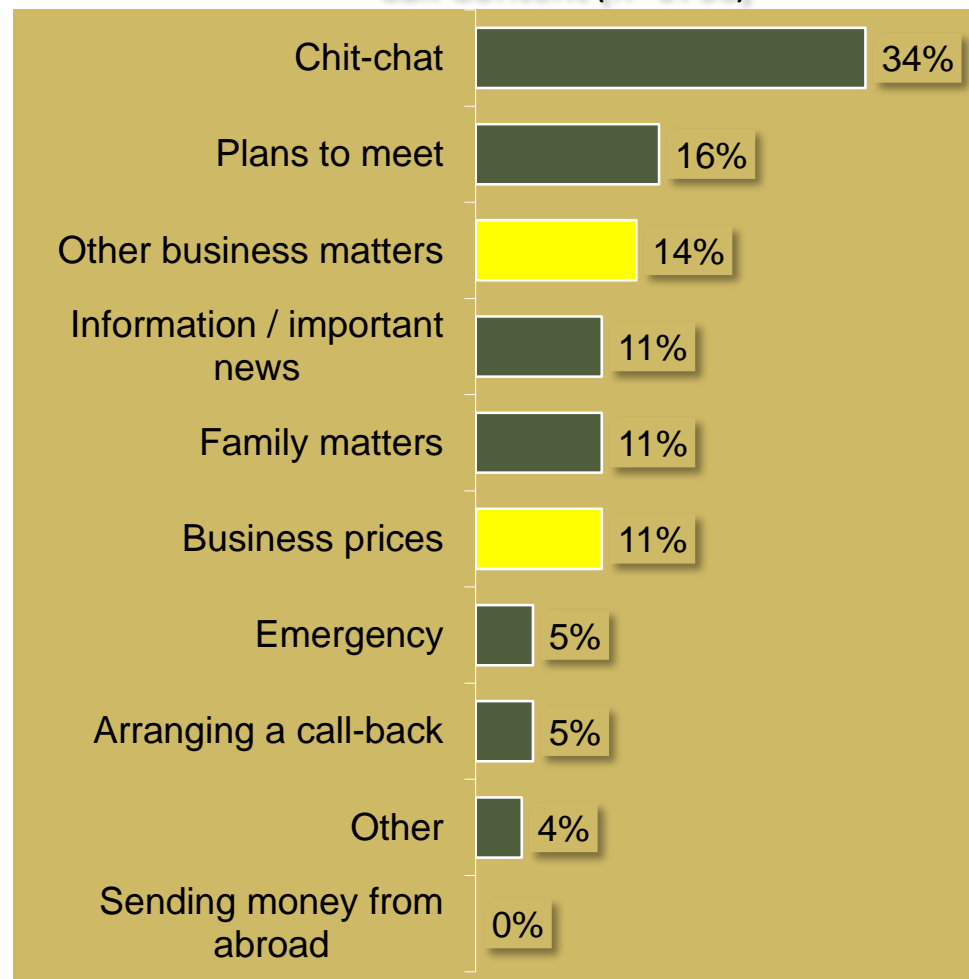
Ithiel de Sola Pool,
Introduction, *The Social Impact of the Telephone*, 1977

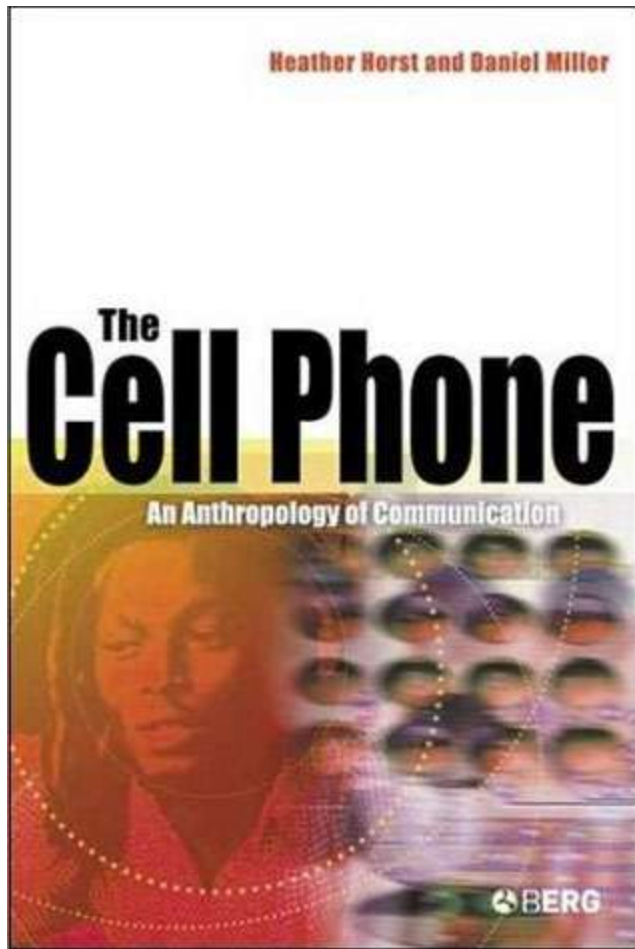


Romanticizing the Instrumental?



Survey of Rwandan MSEs, 2005
Call Content (n=1755)





Horst, Heather, & Miller, Daniel. (2006). *The Cell Phone: An Anthropology of Communication*. Oxford: Berg.

In low income Jamaican households:

“there is no new spirit of enterprise based on either the cell phone or the internet” (Horst and Miller 2006)

“more than half of household income is accounted for by who you know and not what you do. So the mobile phone is not much used for making money, but it is vital to getting money.” (Miller 2006)



On Instrumental and Non-instrumental content

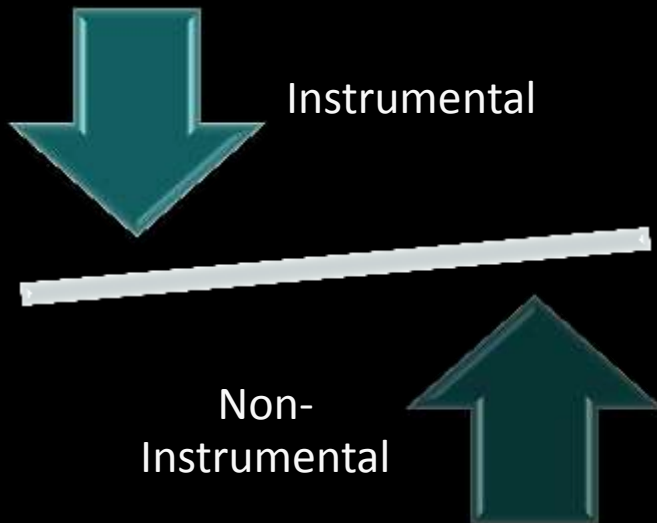
Copresent



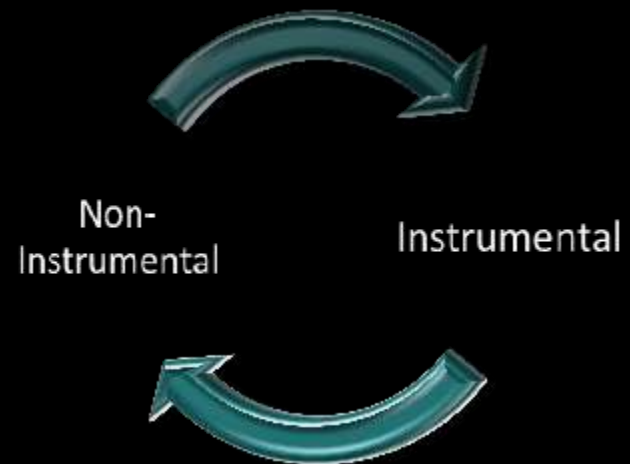
Combined



Competitive



Complementary



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So What?

MXIT

1 South African cent (.001 USD) per message, vs. 15 cents per SMS

13m+ registered users in South Africa

Free to download

“About the same time I got my phone, I was at home and friends came to visit me and showed it to me. She showed me how to download and to get the MXit on my phone, and I just started using just like that, so when I got my other phones I was able to go to the MXit website and download it for myself” - Kafesha, Teenager in Cape Town

Development impacts (pilots)

Maths on MXit

Remote drug counseling

Civic engagement

New path/draw to internet use



James, a Fundi

See Campbell & Russo (2003) on the importance of social influence and mobile use



- Small scale trader, 33rs, Kenyan immigrant.
- A high school graduate, attended technical college
- Learned about mobile internet and WAP from reading a booklet on ringtone downloads
 - Sets up at least one phone per week
- Referred to as ‘fundi’ Swahili for expert
“...talk to fundi he knows everything there is to know about the internet and phones...”



In-Depth Training

- 8 internet “never-ers”
- Assistance from livelihoods NGO Learn to Earn
- Ethnographic Action Research
- Adaptive training, 13 weeks of participant observation
- Follow-up interviews after 6 months

Participants live in Khayelitsha (pop 2m)

- HH income \$150-\$960 month.
- Most were migrants from the rural Eastern Cape
- Most had not completed high school



Job Search



Hopes

I have tried everything, absolutely everything to find a job, I need a job, like, yesterday as the money in the house is not enough...

...I went to this place in the morning and they told me put my CV here in the web, but I do not know how to do that, they do not consider me, if I do not know how to use internet.

Non-instrumentality

Gospel Music

Tindi's first search was for her favorite gospel musician *lindiwe*. Phyllis sought the same. Her initial searches were successful, although surprising: "I found the gospel music, but I must have R16 to get it..."

News and Information

News about home, gossip, exchange rates
"when I hear something, I do not have to wait until evening for the news I can access it there and then."

Facebook & Mxit; Self Presentation

"then they ask I put email address and password and they send me code in email...I even went there and found Neyo [a HipHop Musician] and sent him a message, and I chatted with this guy from Australia"

Offline Contexts



Social Capital

"I told my husband see, I found internet on my phone, he told me to find his company...I saw his boss and other people, and he was very happy and said 'my wife is clever'..." -- Tindi

Tension and compromise

"I cannot use that [MXit] anymore because my husband begun to become jealous that I am going to meet new people." – Beatrice

"I am so busy when I got home, I do the other work, then I cook and things like that...but I try going and seeing if I find something there in the Google." -- Tracy

Tricky Things for Mobile-only Internet Users

On the Handset

GPRS Settings

Complex multistep menus require a help from a phone shop or friend

Crowded Screens

EULAs, banners and footers restrict the screen

Menu/Hard Key Confusion

Every phone has a different route to WAP/internet. Even between same providers

In the Environment

Webmail chicken & egg

Email identifiers are difficult to originate on handset

Unfamiliarity with passwords

PINs vs. passwords

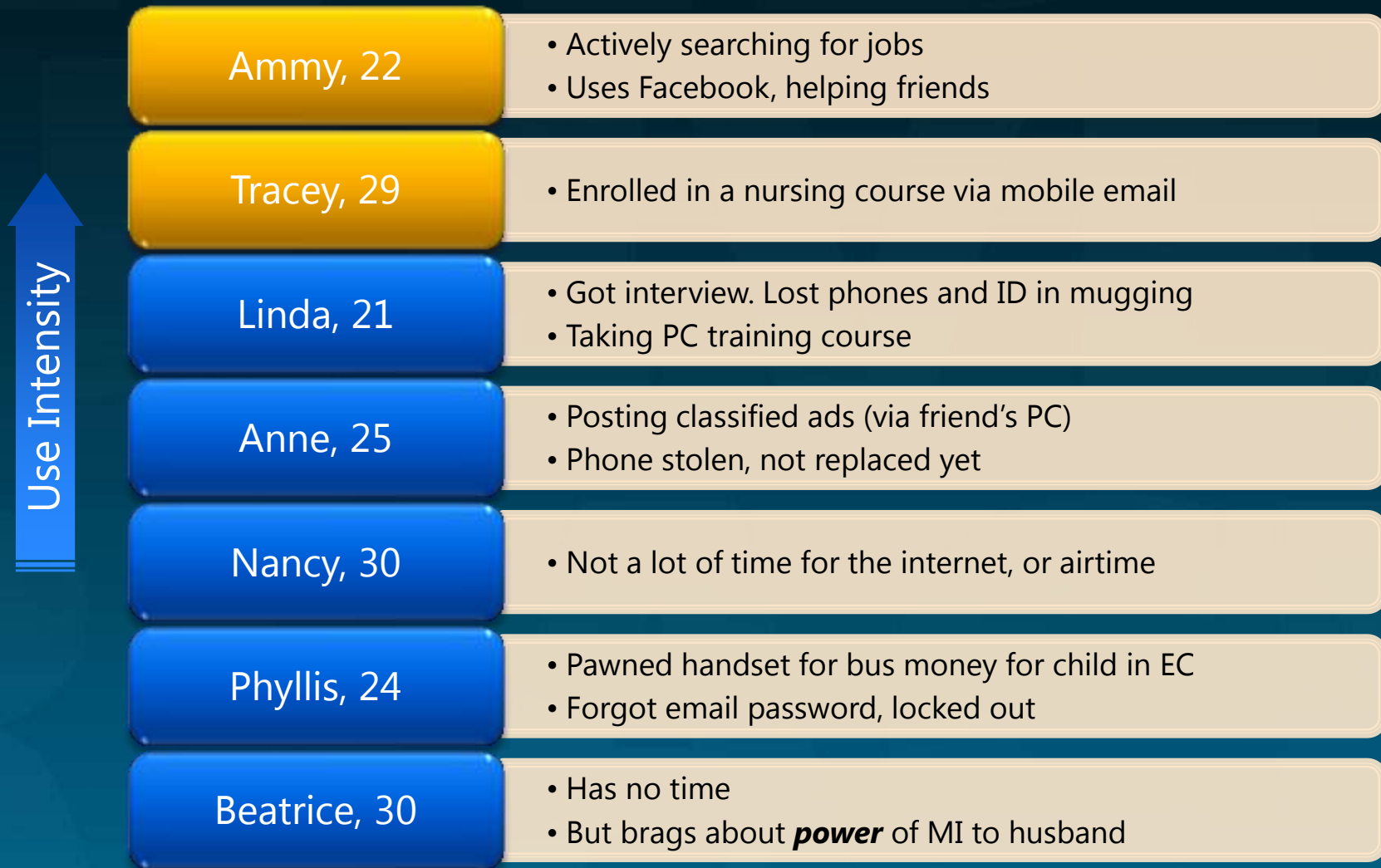
Few mobile-friendly websites

Opera Mini scales many websites, but not on all phones
Few NGOs have WAP site

Limited Functionality

Uploading photos, composing CVs, resetting passwords

Who Got a Job?



Meet *Two* Mobile-Centric Internet Users

COST CONSCIOUS | LEARN FROM FRIENDS | SOCIAL/EXPRESSIVE



Mobile Primary

- Nuanced PC vocabulary
- Tradeoff big screens for private control
- Storage and bandwidth issues (good cloud candidates)



Mobile Only

- May not know they are 'online'
- Draw on only phone experiences
- Work around limited functionality

Mobile Internet for Development? (M4D)

- Sporadic access
- Limited affordability
- Nonstandard interfaces
- Limited functionality
- Offline dynamics
- No guarantees

We are only now
exploring its symbolic
and practical power

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So What?

Not all instrumental use requires an 'M4D' intervention

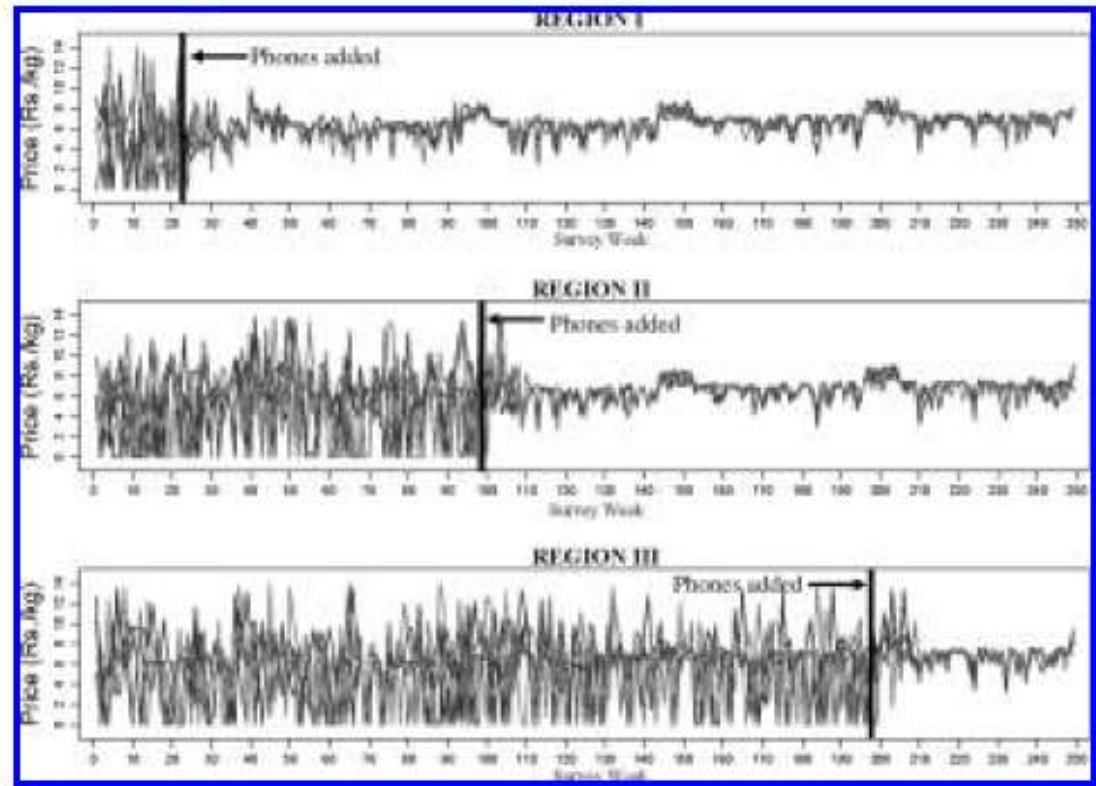


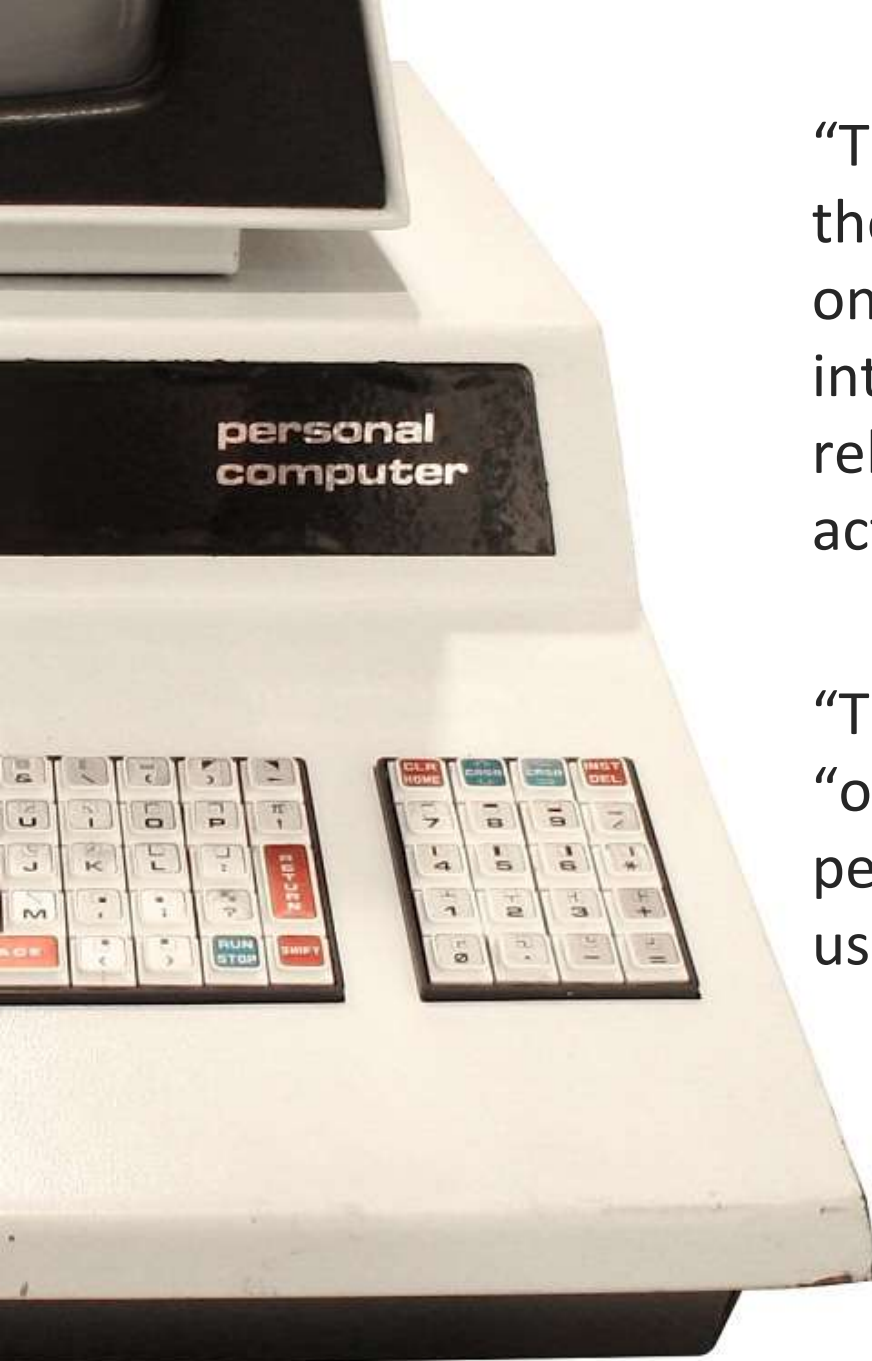
FIGURE IV
Prices and Mobile Phone Service in Kerala

Jensen, R. (2007). The Digital Divide: Information (Technology), Market Performance, and Welfare in the South Indian Fisheries Sector. *Quarterly Journal of Economics*, 122(3), 879-924.

Don't let enthusiasm for apps and services crowd out needed research on basic connectivity

Over the long-term, basic connectivity is re-shaping cities, countrysides, and economies





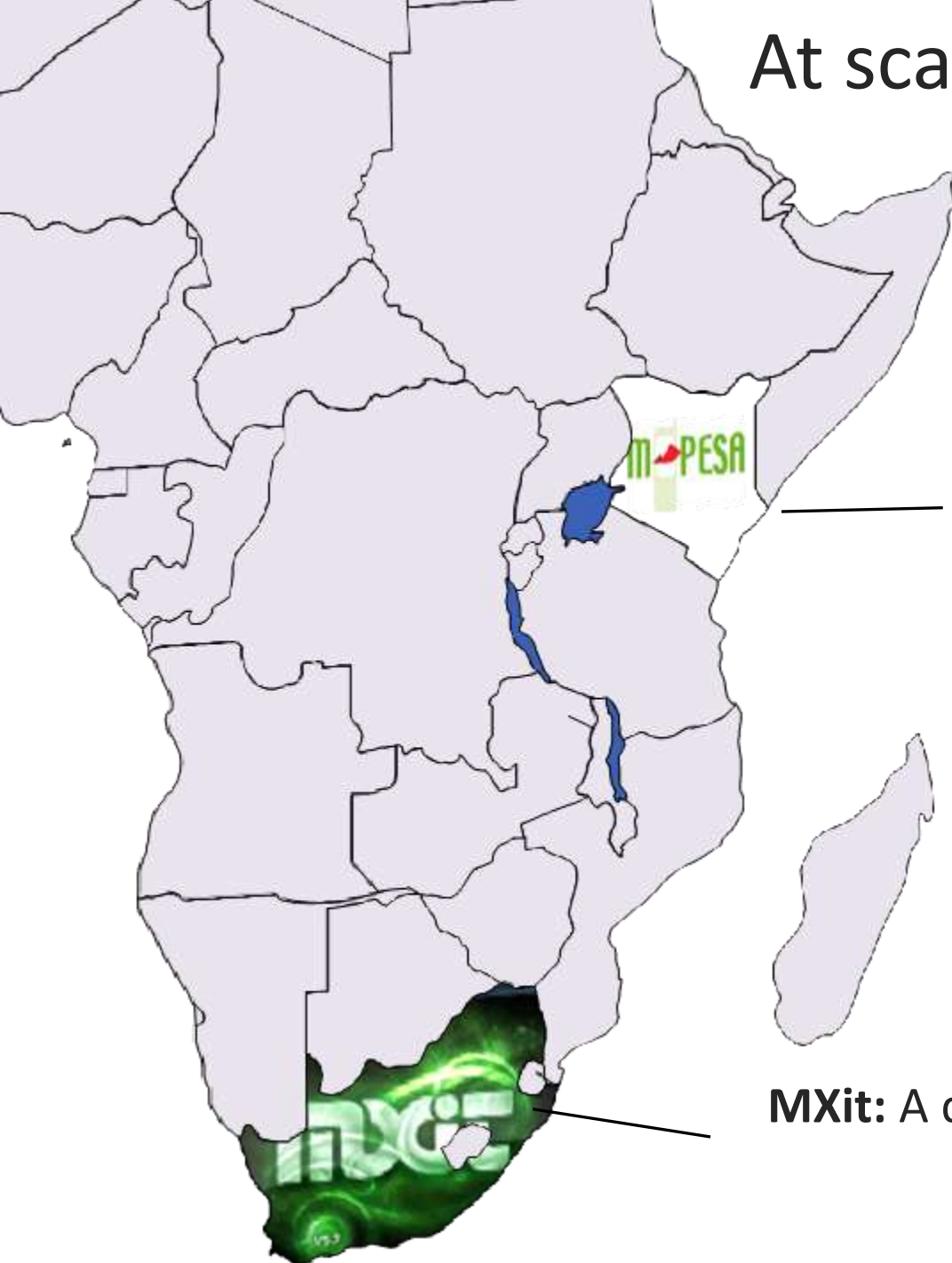
“There are structures in technology, on the one hand, and structures in action, on the other. The two are continually intertwined; there is a recursive relationship between technology and action, each shaping the other.”

“The spirit of the feature set” is the “official line the technology presents to people regarding how to act when using the system”

DeScantis and Poole (1994),
Adaptive Structuration Theory

At scale, woven into society

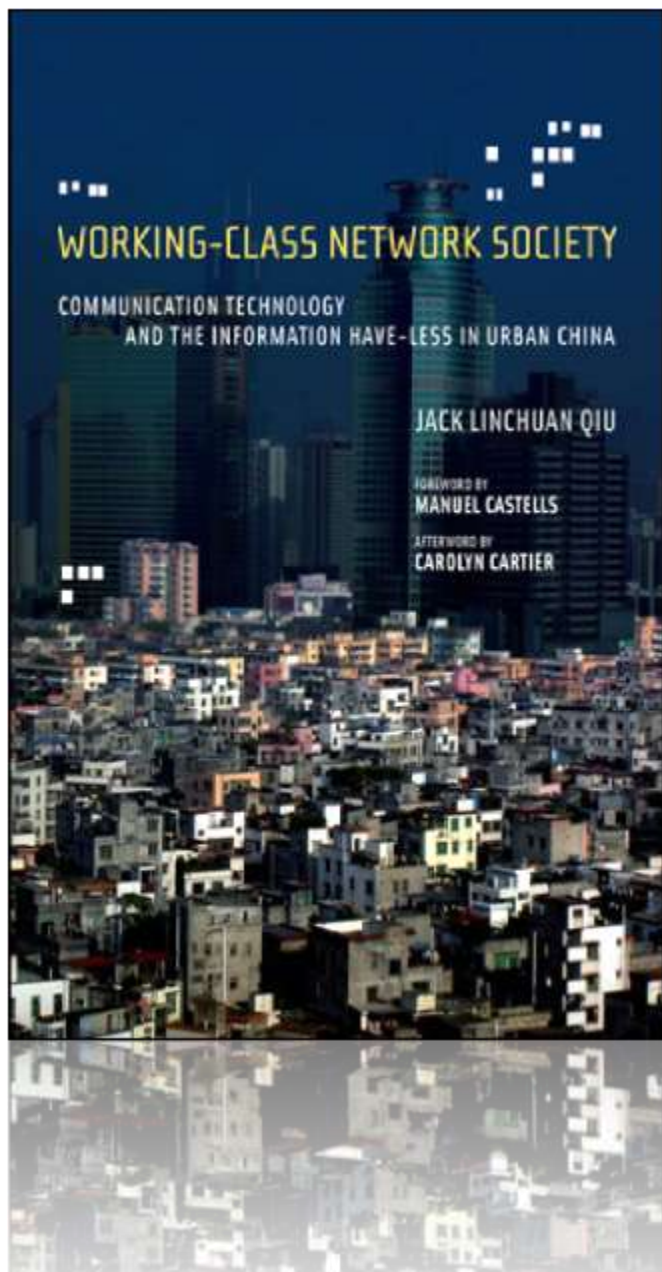
Evolving practices,
Pilots no longer



M-PESA: The developing world's leading mobile money provider. 8.3 million users

MXit: A downloadable chat application. 13+ million registered users

Power matters



Qiu, Jack Linchuan. (2009). Working-class network society: Communication technology and the information have-less in urban China. Cambridge, MA: MIT Press.



Resist M4D (as a research term)

De-fetishize and disaggregate
the device

Seize instead the once-in-
century opportunities to deepen
our understanding of underlying
social processes;

- Communication
- Coordination
- Information
- Mobility

What's happening?

140

update

Latest: CAS Annual Conference 2010: ICT: Africa's Revolutionary Tools for the 21st Century? <http://is.gd/8la93> date change to 4-5 may, CFP extended about 5 hours ago

Real-time results for #m4d

+ Save this search

 **mkfc**: Five billion people to use mobile phones in 2010: <http://bit.ly/bQdgrH> #m4d
about 2 hours ago from TweetDeck


 **tmsrue**: RT @phat_controller: #M4D 2010 Conference Kampala, #Uganda. November 2010 <http://bit.ly/1gJqff> #mobile #ict4d
2 days ago from Tweetie

 **subirendra**: RT @phat_controller: Grameen AppLab Uganda is hiring: Interested in fighting information poverty? <http://bit.ly/awLhCa> #m4d #digitaldivide
2 days ago from HootSuite

 **i4donline**: RT @phat_controller: Grameen AppLab Uganda is hiring: Interested in fighting information poverty? <http://bit.ly/awLhCa> #m4d #digitaldivide
2 days ago from HootSuite

 **phat_controller**: Grameen AppLab Uganda is hiring: Interested in fighting information poverty? <http://bit.ly/awLhCa> #m4d #digitaldivide
2 days ago from TweetDeck

 **granludo**: 2nd International Conference on Mobile Communication Technology for Development <http://bit.ly/b1V1B> #m4d #ict4d (via @ictlogist)
5 days ago from Tweetie

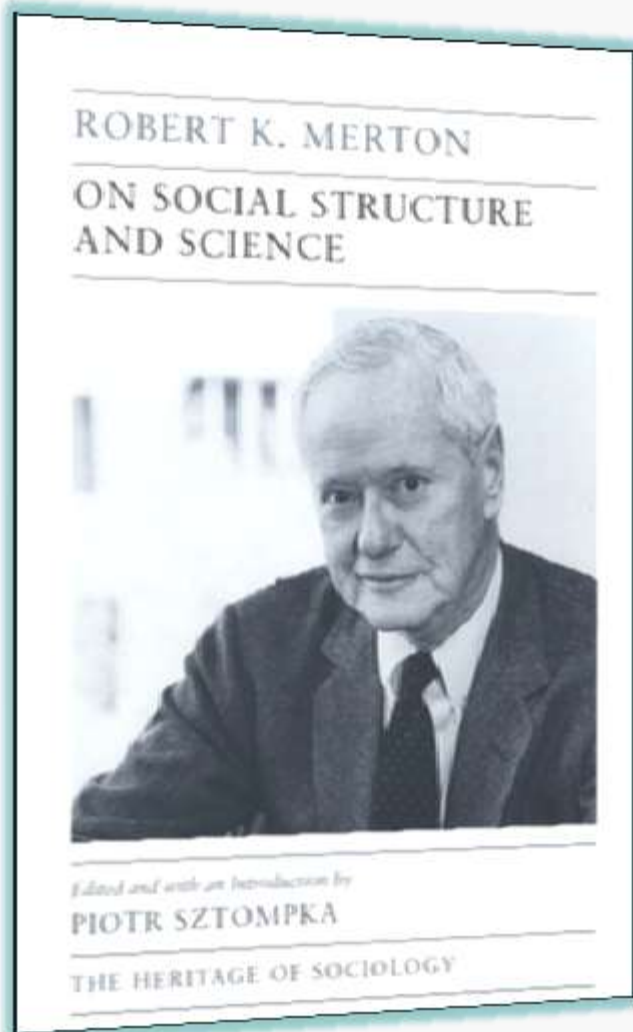
 **joshuahaynes**: in Barcelona, getting ready for #MWC and convincing the world on importance of #M4D (mobiles 4 dev), and talking to me about my thesis. :)
5 days ago from web

 **Think_Macro**: RT @ictlogist: 2nd International Conference on Mobile Communication Technology for Development <http://bit.ly/b1V1B> #m4d #ict4d #ictd
6 days ago from Echofon

Older tweets are temporarily unavailable.

OK, at least *explicate* the '4' in M4D

The '4' demands explicit, testable, additive models to guide intervention, design, investment and policy



Merton's (1949) call for ***theories of the middle range*** still rings true:

“theories that lie between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all-inclusive systematic effects to develop a unified theory” (p. 41)

Understand and *influence* convergence

1 billion mobile broadband users by 2011 (ITU)

“Emerging markets have material potential for mobile Internet user growth. Low penetration of fixed-line telephone and already vibrant mobile value-added services mean that for many EM users and SMEs, the Internet will be mobile” (Morgan Stanley)

Huge implications for if and how poor communities will participate in the informational (network) society. Our theory has to move fast to stay current

Distinguish mobility from connectivity

Overall mobilities have been a black box for social scientists, generally regarded as a neutral set of processes permitting forms of economic, social and political life that are explicable by other more causally powerful processes....further there is a minimization of the significance of such movement *for* the nature of work relations, family life, leisure, politics and protest

-- Urry , Mobilities, 2007



Summary

Users interact with systems in ways which reflect, reinforce, and sometime reshape societies

Mobiles are particularly flexible and pervasive, leading to rich, complex social dynamics

New platforms will strain narrow definitions of “M4D” and “ICT4D”, and demand new theoretical (and practical) approaches

Related Papers at <http://jonathandonner.com/>

Gitau, Shikoh, Marsden, Gary, & Donner, Jonathan. (2010). [After access – Challenges facing mobile-only internet users in the developing world](#). *Proceedings of the 28th international conference on human factors in computing systems (CHI 2010)* (pp. 2603-2606). New York: ACM.

Donner, J., & Gitau, S. (2009, 30 September). [Four frames of social software use by mobile-centric internet users](#) Paper presented at the GLOBICOMP Workshop: A preconference workshop of UBICOMP2009, Orlando.

Donner, Jonathan. (2009). [Blurring livelihoods and lives: The social uses of mobile phones and socioeconomic development](#). *Innovations: Technology, Governance, Globalization*, 4(1), 91-101.

Donner, Jonathan. (2007). [The Rules of Beeping: Exchanging Messages Via Intentional “Missed Calls” on Mobile Phones](#). *Journal of Computer-Mediated Communication* 13(1).



Thank You

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