

Research Approaches to Mobile Use in the Developing World: A Review of the Literature

Jonathan Donner
Microsoft Research India

Workshop on Mobiles and Development
IDPM, University of Manchester.
16 May 2007

Mobile Penetration by Income Category (2005)

World Bank 2006 Categorization (GNI Per Capita '05)	5 Largest Countries	Population 2005 (millions)	Mobiles, 2005 (millions)	Mobiles per 100 people, (category median)
Low Income <\$875	India Pakistan Bangladesh Nigeria Vietnam	2,364	177	5.2
Lower Middle Income \$876-\$3,465	China Indonesia Brazil Philippines Egypt	2,489	754	26.1
Upper Middle Income \$3,466-\$10,725	Russia México Turkey South Africa Argentina	606	398	58.5
High Income >\$10,726	US Japan Germany France UK	989	816	91.4
World Totals		6,473	2,168	40.0

ITU (2003) "Mobile Overtakes Fixed"

"In countries where mobile communications constitute the primary form of access, increased exchange of information on trade or health services is contributing to development goals;

in countries where people commonly use both fixed-line and mobile communications, the personalized traits of the mobile phone are changing social interaction."



Gather studies specific to mobiles in developing countries

- Limited to peer-reviewed articles, chapters, books
- Focus on mobiles, not ICTs/telephony in general
- Interdisciplinary subject is difficult to bound
- 125 studies as of Sept 2006



Summary: Research Approaches

General Approach

Mobile Adoption
(mobile as
dependant variable)

Mobile Impact
(mobile as
independent variable)

Interrelationships
(emergent, ensemble
approaches)

Common perspectives on technology in society, as discussed in:

Fischer, 1992. *America calling: A social history of the telephone to 1940.*

Orlikowski & Iacono. 2001. Research commentary: Desperately seeking "IT" In IT research - a call to theorizing the IT artifact. *Information Systems Research* 12:2.

Markus & Robey. 1988. Information technology and organizational change: Causal structure in theory and research. *Management Science* 34:5.

Summary: Research Approaches

General Approach	Mobiles for Development (ICTD)	Mobiles in Developing Countries
Mobile Adoption (mobile as dependant variable)	Digital Divide Universal Access	Liberalization Diffusion/Adoption
Mobile Impact (mobile as independent variable)	Economic Growth (macro and micro)	Education; Emergencies; Social Change
Interrelationships (emergent, ensemble approaches)	Evaluation of ICTD Projects	Appropriation; 'Everyday Life'; Globalization

Archetypal ICTD Approaches

Mobiles for Development (ICTD)	Examples
Adoption: Digital Divide Universal Access	<p>Mbarika, 2002. Re-thinking information and communications technology policy focus on internet versus teledensity diffusion for Africa's least developed countries. <i>Elec. J. on IS in Developing Countries</i> 9:1.</p> <p>Dymond & Oestmann. 2003. The role of sector reform in achieving universal access. In <i>Trends in telecommunication reform 2003</i>: ITU.</p>
Impact: Economic Growth (macro and micro)	<p>Waverman, Meschi & Fuss. 2005. <i>The impact of telecoms on economic growth in developing nations</i>. The Vodafone Policy Paper Series #2</p> <p>Abraham, R. 2006. Mobile phones and economic development: Evidence from the fishing industry in India. Paper presented at ICTD 2006, Berkeley, CA.</p>
Interrelationships: Evaluation of ICTD Projects	<p>Molony, 2005. Food, carvings and shelter: The adoption and appropriation of information and communication technologies in Tanzanian micro and small enterprises. Dissertation, The University of Edinburgh.</p> <p>Aminuzzaman, Baldersheim, & Jamil. 2003. Talking back: Empowerment and mobile phones in rural Bangladesh: A study of the village pay phone of Grameen bank. <i>Contemporary South Asia</i> 12:3.</p>

Archetypal "Information Society" Approaches

Mobiles in Developing Countries

Adoption:

Liberalization
Diffusion/Adoption

Impact:

Education;
Emergencies;
Social Change

Interrelationships:

Appropriation;
'Everyday Life';
Globalization

Examples

Frempong & Atubra, 2001. Liberalization of telecoms: The Ghanaian experience. *Telecommunications Policy* 25.

Hamilton, J. 2003. Are main lines and mobile phones substitutes or complements? Evidence from Africa. *Telecommunications Policy* 27.

Mutula, S. M. 2002. The cellular phone economy in the SADC region: Implications for libraries. *Online Information Review* 26 (2):79-91.

Idowu, Ogunbodede, & Idowu. 2003. Information and communication technology in Nigeria: The health sector experience. *Journal of Information Technology Impact* 3

Tall, 2004. Senegalese émigrés: New information & communication technologies. *Review of African Political Economy* 31.

Horst & Miller, 2006. *The cell phone : An anthropology of communication*. Oxford: Berg.

Ellwood-Clayton, 2005. Texting and God: The lord is my textmate - folk Catholicism in the cyber Philippines. In *A sense of place: The global and the local in mobile communication*, edited by K. Nyiri. Vienna.

Rafael, 2003. The cell phone and the crowd: Messianic politics in the contemporary Philippines. *Public Culture* 15.

Zhao, 2004. Between a world summit and a Chinese movie: Visions of the 'information society'. *Gazette* 66.

Implications

Cultural, social, economic, and regulatory factors structure the use of billion handsets in the developing world

Mobile use is part of *information society processes*: “modernization”, and “globalization”

Increase integration between ICTD and “Info society” studies

“people’s lives cannot be compartmentalized into separate categories such as economic, social, religious and cultural...they are all part of the same person’s experience and concerns” (Miller and Horst, 2005)

Understand linkages between rich and poor communities

Remittances, informal (family) subsidies, economic integration, migration

Disaggregate the artifact.

Pricing and network effects
Mobility vs. connectivity



Additional Thoughts: Info. Society

Though there are lots of interesting studies under development

More of the broad 'information society' theory should integrate users (and non users) living under severe economic constraint

Over a decade into the mobile literature, yuppies and teens still dominate



Additional thoughts: m-ICT4D

Segment benefits and uses by livelihoods

Examine intra-community dynamics w/unequal access

Tackle the whole communication ecosystem, including F2F (and TV/Radio)

Understand transitions and barriers between informal and formal economies

Assess historical contrasts with landlines

Thank You

Jonathan Donner

Microsoft Research India

www.research.microsoft.com/~jdonner

jdonner@microsoft.com

For a current version of the review
please contact me by email

