

# The Co-Evolution of the Mobile Phone and Its Users in Rural Uganda

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# Questioning the 'impact' of Technology on Society

- 1. Process of tech development does not escape social forces** [*historical examples – automobile, bicycle, refrigerator*]
- 2. Engineers are members of society** and their ideas and efforts are subject, in part, to their socialization.
- 3. Technological forms are often malleable and can be used in unanticipated/subversive ways** – *the 'impact' of society on technology?* [*examples – telephone*]

# Sub-Saharan Africa: A Technological Desert

Africa seems to be the “lost continent” of the information technologies (IT). The second largest continent is the least computerized,<sup>1</sup> and its more than twoscore countries have an average telephone density that is an order of magnitude smaller than that of the European Community. A recent graphic on world computer densities used the map of Africa simply as a place to display the overflow data for Europe [7].

It may be argued that deficiencies in the use of IT are the least of the problems of a continent plagued by a history of exploitation, postcolonial political difficulties, bloody civil conflicts, and extensive health, educational, demographic and economic problems. Nevertheless, attention should be given to the fact that more than 500 million people have largely been left out of the “global information society.”

“International Perspectives” brings three Africans together—notably

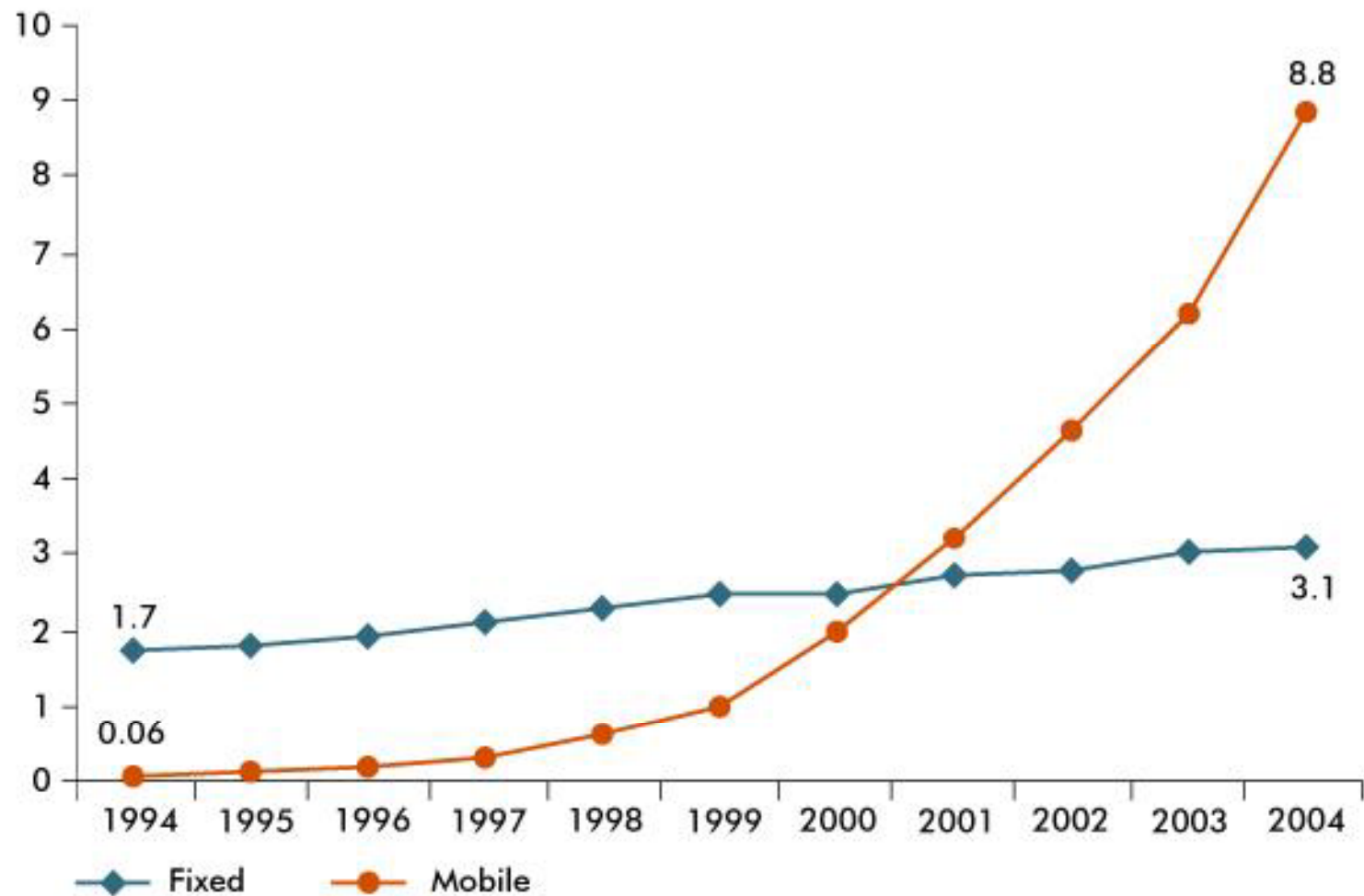


computing at Rhodes University in Grahamstown, on the southern coast of South Africa, and Mark Bennett,

little communication across ex-colonial lines. All three of our African writers are from former British colonies; this choice being influenced by

[Source: Communications of the ACM, 1993]

Telephone subscribers per 100 inhabitants, Africa 1995-2004





Source: International Telecommunication Union

# Indigenous Innovation

**A Ugandan Housewife's Homemade Mobile Phone Charger**

Posted: February 2nd, 2009 By: [Erik Hersman](#)



She uses ordinary size D batteries that are readily available in the village to power radios and torches. She wrapped five (5) batteries together, then removed the plug from the phone charger and attached the bare wires to the + and - terminals of the batteries.

1) Innovation under constraints using locally available resources

...but also...

2) Uncovering latent possibilities in modern technologies

# Method and Field Sites

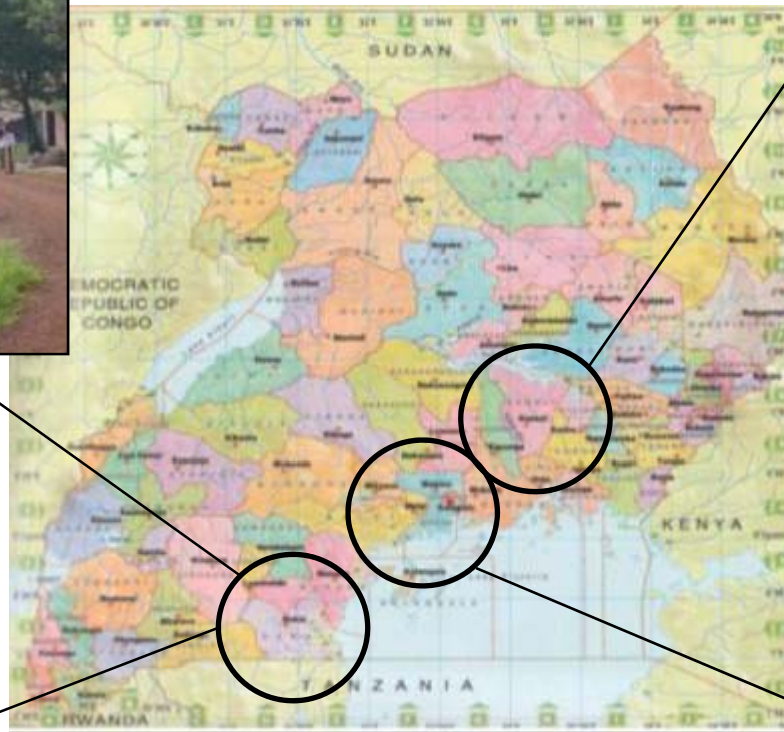


## Village C:

- Rakai district
- farming and trade
- school, health facilities

## Village B:

- Rakai district
- mid-size trading town



## Village A:

- Kamuli district
- fishing village
- very remote

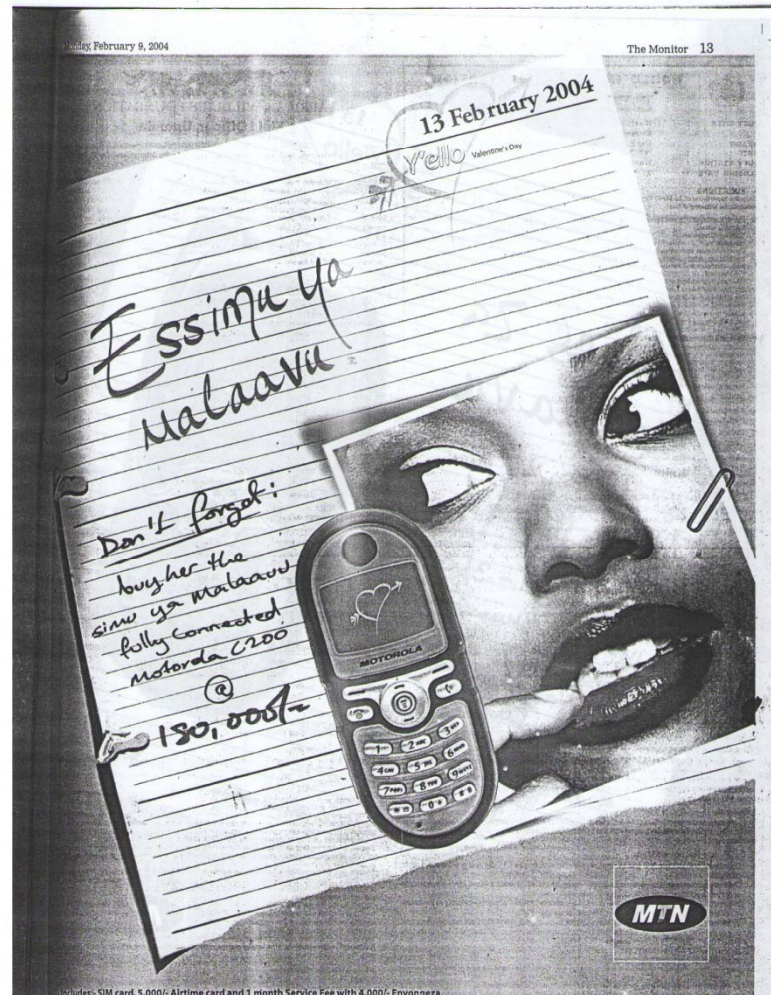
## Village D:

- Mukono district
- fishing village and landing site

## Three Strategies for Examining Local Innovation

- 1. Local Social Commentary** – news media, videos, television, jokes, colloquialisms, rumors, etc. about a given technology
- 2. Tracing the Circulation of Technology** – who obtains access and how? How do normative social arrangements come into play in the way benefits from the technology are realized? What local small businesses / entrepreneurs play a role?
- 3. Reinvention through Practices of Use** – distinct capabilities of the technology discovered by a population of users.

# 1) Social Commentary



## 2) Tracing the Circulation of Technology

### Phone Gifting and Sharing



### 3) User reinvention: the case of money transfers



# The Standard Nokia Brick Phone



**features:** Connectivity + a bit of processing power + a bit of data storage

**why design for the brick phone?**

- efficient use of resources
- broader scope of influence
- tuned in to the current practices of users

# Mobile Financial Services





**Question Box –**  
employing a call center  
model for information  
delivery to remote, rural  
regions

<http://www.questionbox.org/>

Credit for this project goes to  
Rose Shuman and the Open  
Minds NGO.

# Persistent inequalities in the circulation of phones



- not all sharing configurations are the same
- women marginalized from SMS
- the pro-social benefits promoted by tech intervention projects may be *amplified* or *undermined* by the normative social arrangements of users

Questions?



# BACKUP

# Mobile Phones in Uganda

- **Remarkably rapid and widespread diffusion**  
*(125,000 subscriptions added per month 2006-07)*
- Mobile phone services and equipment is a business venture for 350,000 (est.) small-scale entrepreneurs
- **The value to rural Ugandans?**
  1. maintaining connections within existing social network
  2. coordinating trade/business activities
  3. saving money on transport.



## Compelling, but Unrealized Potential

- **Could a phone become an ‘information delivery’ device?**
- Beyond technology access and literacy issues there is a **conceptual gap** around the idea of ‘information’ in rural Uganda



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# Rapid Ethnography

- *In situ* interviews
- Mobile Phone 'Tours'
- Participant-observation
- Understanding the *priorities, values, concepts, models* of rural Ugandans
- Inductive (bottom-up) analysis



# Typology of Livelihoods

## Agriculture

- Farming
- Livestock Rearing
- Fishing

## Trade

- Fish
- Bananas
- Maize
- Plastics
- Second-hand clothing
- Cassette tapes

## Small-Scale Manufacturing

- Scrap-metal repurposing
- Furniture making

## Service industry

- Boda-boda drivers
- Traditional birth attendant
- Barber shop
- Shared phone operator