

“Hybrid Technologies in the Era of HIV and AIDS: Hoes and Mobile Phones in Rural Africa”

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Synopsis of Study

Dueling billboards and cellphone masts tower over the landscape of Kenya (fig 1), while new kiosks line rough streets of market towns serving the rural farmer and trader. The entrepreneurial spirit is evident from mango traders to handset retailers to colorful accessories, to perhaps the most important service: the mobile phone charging shop (Fig 2). The mobile phone, hardly seen outside Nairobi just a few years ago, is taking off among a range of rural and poor users—although you see every aspect of the technology but the handsets themselves, which are often tucked away, turned off, and kept safe in a pocket.



Figure 1. Celtel (left) and Safaricom billboards tower over Bungoma town

The serious data collection is just getting underway, so findings I report now are necessarily suggestive rather than final. Some insights emerge from a pretest of the mobile phone module of the upcoming (village) household survey. The pre-test reached a convenience sample of 40 individual adults at local markets and a rural health center:

- The “mobile” is a phone, often the only telephone, as well as a time-saving substitute for bus travel (4 hours, 100 Kes) and postal services (saving two weeks, 40Kes).
- While signal access (from Celtel or Safaricom, one of two providers) is now found in *most locations where most people live*, electricity is not. In rural areas, lacking electricity connections, people cannot keep their batteries charged. This hinders their usefulness for *receiving* calls as owners keep them turned off. We will explore when, why, and how they decide to turn them on, and ways they eke out the charge.
- Cost is always a barrier to purchasing mobile phones, but Celtel and Safaricom have dropped prices and introduced 75 cent scratch cards (Fig 3). The industry is responding to market demand among the poorest.
- Surprisingly, pretest respondents report using Voice more often than the much cheaper ‘text/SMS functions that are hugely popular among the urban educated (and much more affluent) mobile users. This is not completely unexpected, owing to illiteracy, confusing menus, no Kiswahili



Figure 2. Typical phone charging kiosk & Barber shop (in Webuye market)

dictionary, and needing to have immediate response). Martin, in Figure 4, is one rural user I will be interviewing in-depth over coming months over voice/text, charging and other details.

Specific Research Activities to Date:

- Documented much improved network access in study site, other rural locations (Oct 2006) .
- Meeting with members of the village to inform about the study (October 2006).
- Updated literature review on trends in the cellphone industry in Africa, telecommunications policies in Kenya, and handset and wireless technologies
- Interview with Celtel representative about network technologies (Oct 2006)
- Recruiting and training of Kenyan research assistants (Nov-Jan)
- Pre-tested the mobile phone portion of the village survey in Bungoma District (January 07)
- Transect walk, reviewing maps, and gathering GPS coordinates for the village study site to plan the census (Jan 07)
- Developing characteristics of rural users (age, occupation, means of encountering the technology) to identify detailed use patterns, interactions and barriers to capture in the survey and interview instruments (Nov-Jan)
- Developing “mobile phone diary” technique to gather data on individual users’ schedules, content and use (Jan 07)



Figure 3. Safaricom's tiny new Kes 50 (\$.75) "Bamba" scratch card is a roaring success

Plans:

The study is proceeding ontime. Intensive village level field research (village census, selected in-depth interviews, and focus group discussions) begins January 28 2007 to last about two months.

Survey data alone will allow us to quantitatively and rigorously link (at the family and household level) mobile phone technologies with agricultural implements and activities, intensification of land use, the impacts of HIV and AIDS (i.e., suffering disease and death, caring for orphans) as well as agency interventions (ie., training, cash flows, airtime).

In-depth interviews, mobile phone diaries, and group discussions will allow us to tease out issues related to handset ergonomics, charging and power management, use of text/SMS vs. voice, cost and tariff structures, and othe issues as experienced by different classes of users.



Figure 4. Martin --, resident of the study site, displaying his (turned off) Nokia in front of his sweet potato patch.

Murphy (PI). Hybrid Technologies. VERY Preliminary Findings from The Marakaru Sub-Location Field Site, Western Kenya

Demographic *Kikwechi Sub- Village Residents, February 2007*

Larger than expected population. Village elders estimated 350 homesteads in 2005, the census revealed nearly 900 unique households, and an estimated 6000 residents. Nuclear household size varies from 1 to 14 (not including extended households and multiple wives)
 HIV/AIDS affected households are less visible, with less than 10% recorded in the baseline as infected or affected (through illness, fostering, prior death). This will be updated through key informant interviews, as stigma still prevents open discussion.
 Polygyny (men with multiple wives) is found among younger and older men



Livelihoods *Below, Sunflower harvest, January 2007*

Land size varies greatly, from virtually landless (evicted, grabbed, disinherited) to 53 acres
 Almost all residents rely on a mix of activities to make a living: subsistence farming for own-consumption does not generate sufficient food and cash
 Sisal rope, hand made from sisal on the farm, selling for \$.30 per 3 meters, is a source of cash income for most poorest households. Other activities are brick – making, charcoal production, beer brewing, casual farm work



Technology *Below left, Charles--- with his Nokia and Dairy Cow ("Bill")*

Hand-hoes are need for most form tasks. Large fields are ploughed with the Sungura plough and oxen. Most respondents remark on the lack of seeds for planting.
 Mobile phones are found among about 20-30% of households, including households with no other visible assets, no outside work, and little education. In 2005, only 6 households were known to own a mobile phone.



Environment *Above Right, Lone Native Tree coppiced for Fuel and Construction . Middle; Serious Gully Erosion*

Large trees are rare. Only 3 acres of virgin natural forest, a remnant of the Mt. Elgon Forest remain in 13 square miles of the 200 year old village. Soil fertility is reportedly declining. Intensive tracing is becoming visible on farms to Stem soil erosion.