

Computer Forum Mobile Workshop Stanford University, April 4, 2012

m4d* meets hcd**

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* mobile for development

** human-centered design

Outline

1. what's the problem?

2. mobile for development

3. human-centered design

4. Some projects and lessons

can projects involving deliberate applications of ict (ict4d) make significant improvement in human well-being?

why mobile development?

(m4d?)

we know six things

thing 1.

technological change is a big driver of
economic growth

thing 2.

economic growth is important for
human development

thing 3.

mobile phones: the most rapidly
adopted new technology in history

thing 3.1.

subscriptions near six billion

thing 3.2

subscribers near 4 billion

60+% is not everyone

but mobile now indigenous in much of
the world



**Parachute Remote Access
1998**

thing 4.

high mobile penetration in low-income settings: so you don't need lots of economic growth before mobile growth

sub-Saharan Africa:

- 65+% can get mobile signal
- 610 million subscribers

kenya

≈ 50% own mobile phone

67% penetration

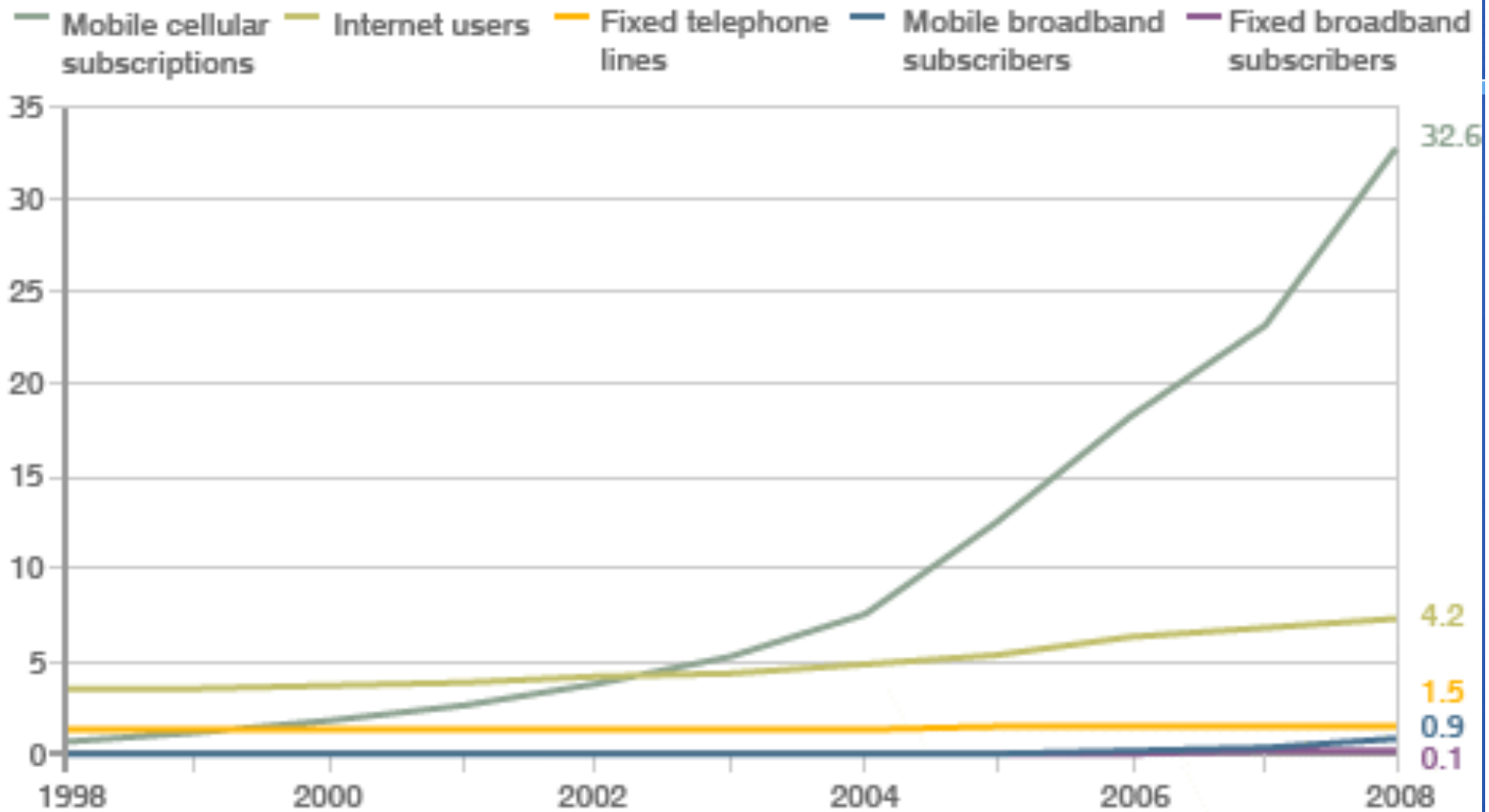
80+% have access

thing 5.

mobile adoption rates are vastly higher
than fixed internet or broadband
penetration (internet = mobile internet)

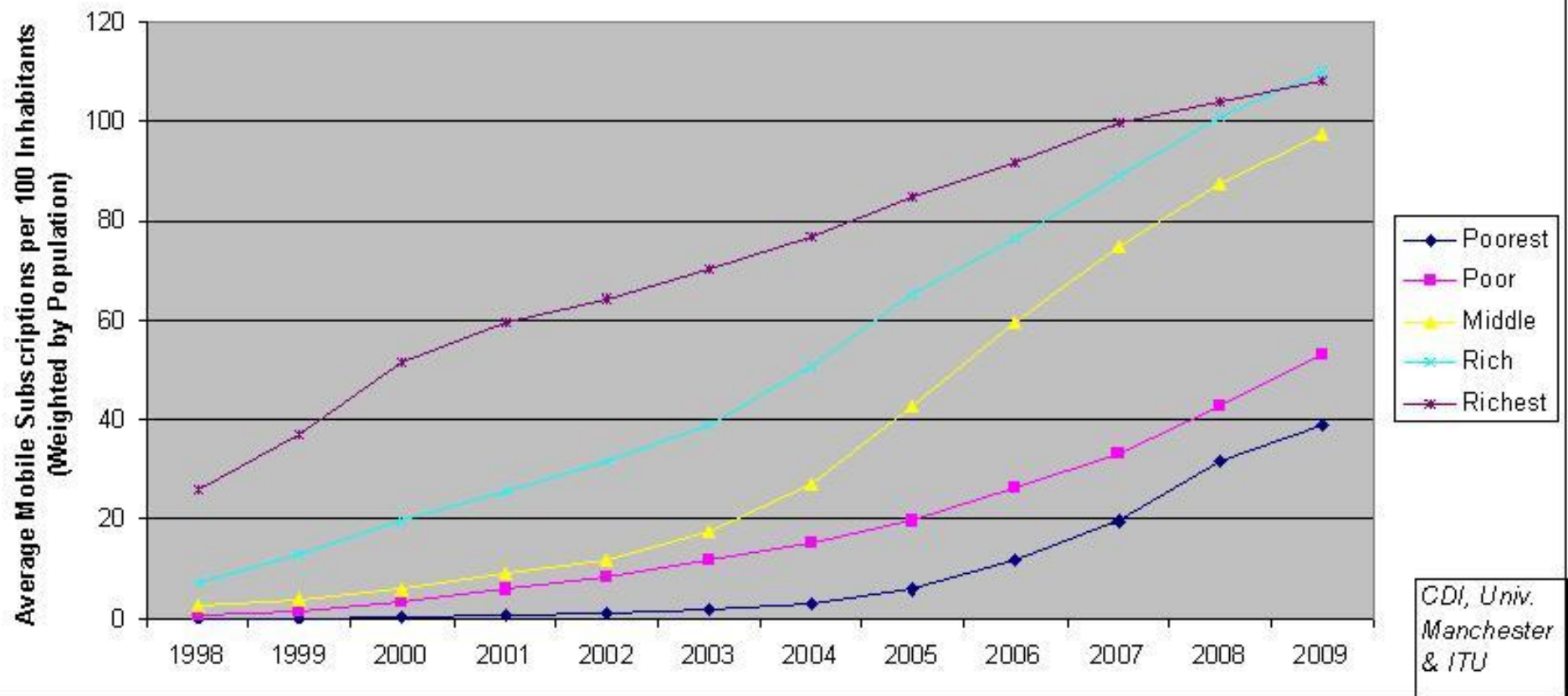
Communications growth in Africa

Per 100 inhabitants

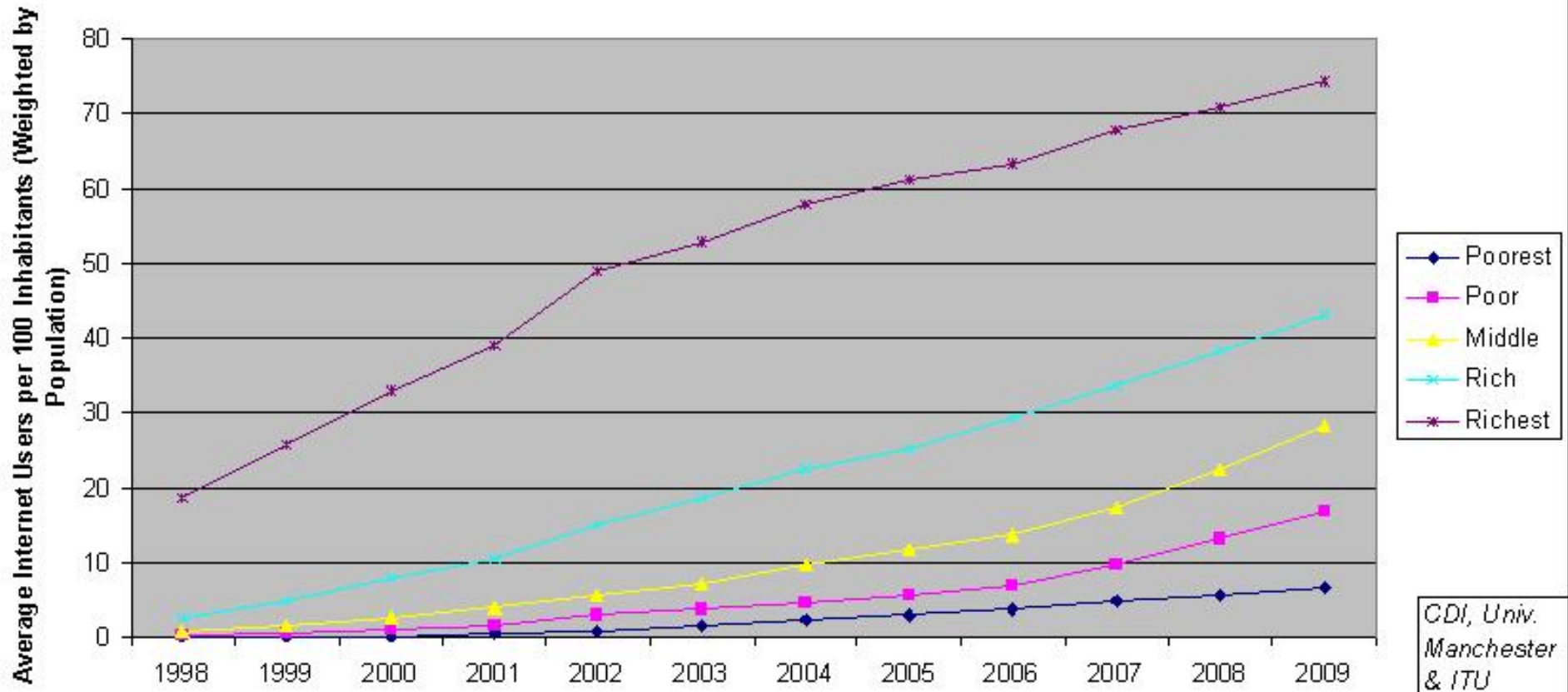


SOURCE: ITU World Telecommunications/ICT Indicators database

Mobile Subscriptions by GDP per Capita Category



Internet Usage by GDP per Capita Category



thing 6.

**Mobile can cut information/search
costs**

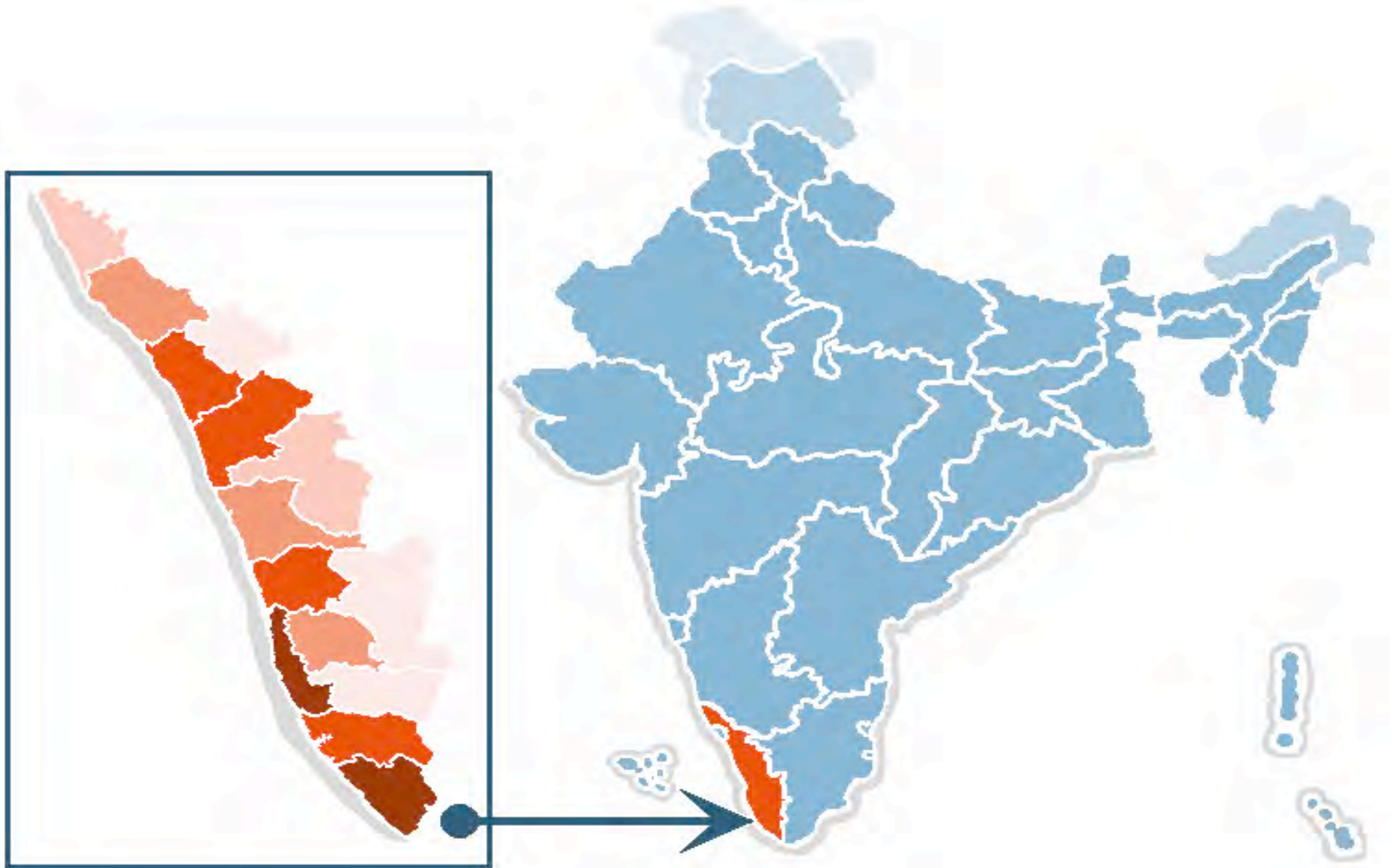
So...

maybe you can jumpstart growth and

make some gains on human
development through innovative uses
of mobile

mobile phones in Kerala
(Jensen 2007)

Entry of cell phones, in Kerala (Jensen 2007)



- mobile towers built in three regions along coast in 1997; 1998; 2000.
- 2/3 of fishermen quickly adopted cells

before....

- ① sold at market closest to home
- ② price varied a lot between markets
- ③ buyers go home, fisherman get 0

... after

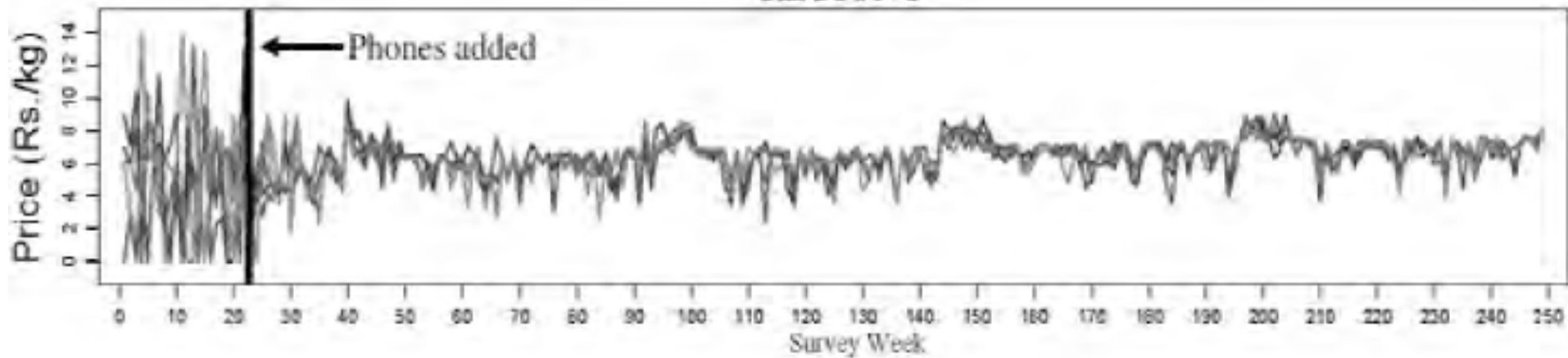
- ① phone buyers from boat to find best price
- ② prices equalize across markets
- ③ fewer wasted fish

does this matter?

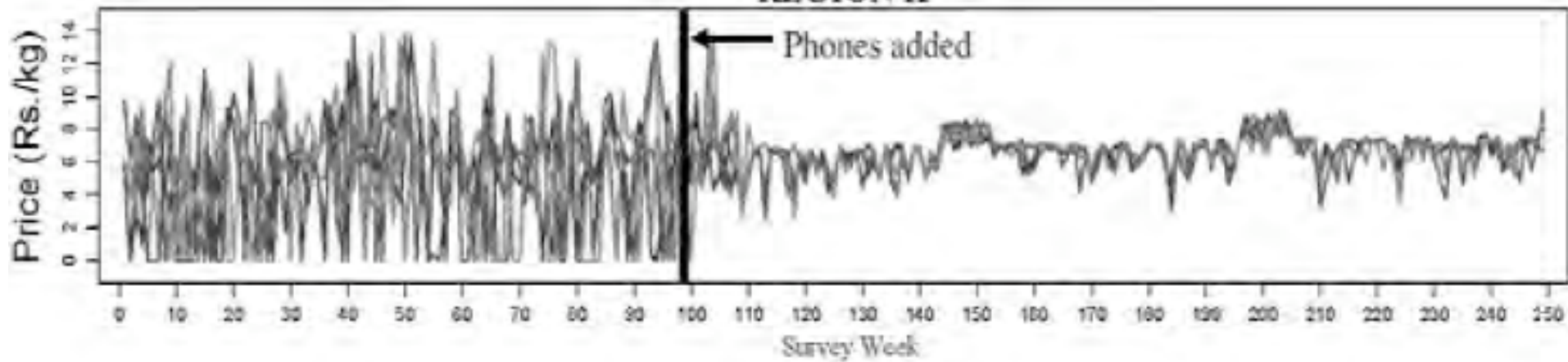
- consumers: lower prices (5%), less price variation
- fishermen: toss fewer fish; profits up (9%)
- externalities: good for users and non-users

yes

REGION I



REGION II



REGION III

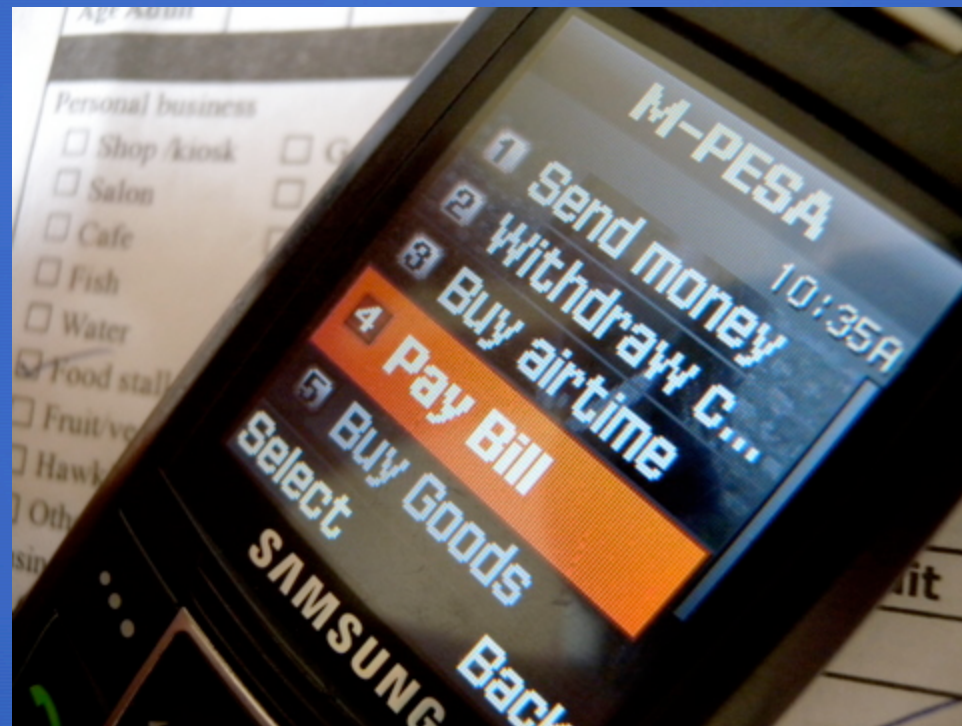




M-Pesa

- ① mobile money transfer/payments
- ② set up by Safaricom
- ③ more than half the adult population
- ④ more than 200 transactions/second
- ⑤ 50% of users are unbanked

- ① deposit money in account on phone
- ② SMS transfers to other users
- ③ redeem your “efloat” for shillings



ture.

91%

shutting it would be a
“large negative”

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Designing Liberation Technologies – 2012

CS379L/PoliSci337T/Law498 - Spring quarter at the d.school

Interdisciplinary student teams, working together with students from the University of Nairobi, will create mobile applications that can accelerate economic and social development in Kenya.



M-Maji – using mobile phones to improve access to water

The course will be taught by Joshua Cohen, Terry Winograd, and Zia Yusuf who bring a mix of social science, computer science, and business backgrounds. It will bring together students with diverse interests and experiences, including computer science, medicine, anthropology, political science, law, and business.

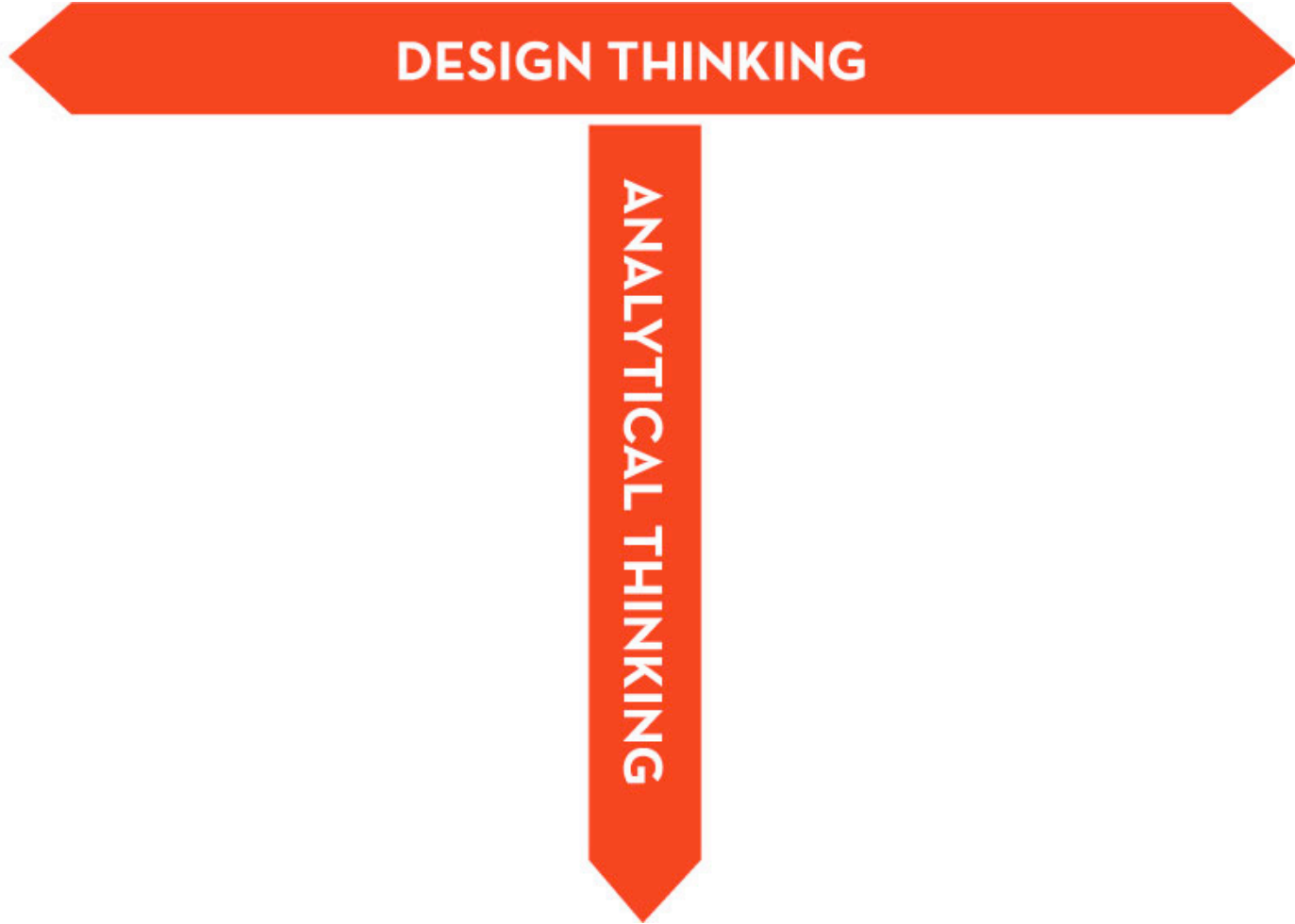
No special expertise is required. What you need is simply a passion for design, a commitment to creative problem solving, and an enthusiasm for working with interdisciplinary project teams and NGOs innovating in tools for human progress.

Apply Now: By January 20



Design Thinking: Design from a Human Perspective





T-shaped people:
Building both kinds of muscles

what is design thinking?

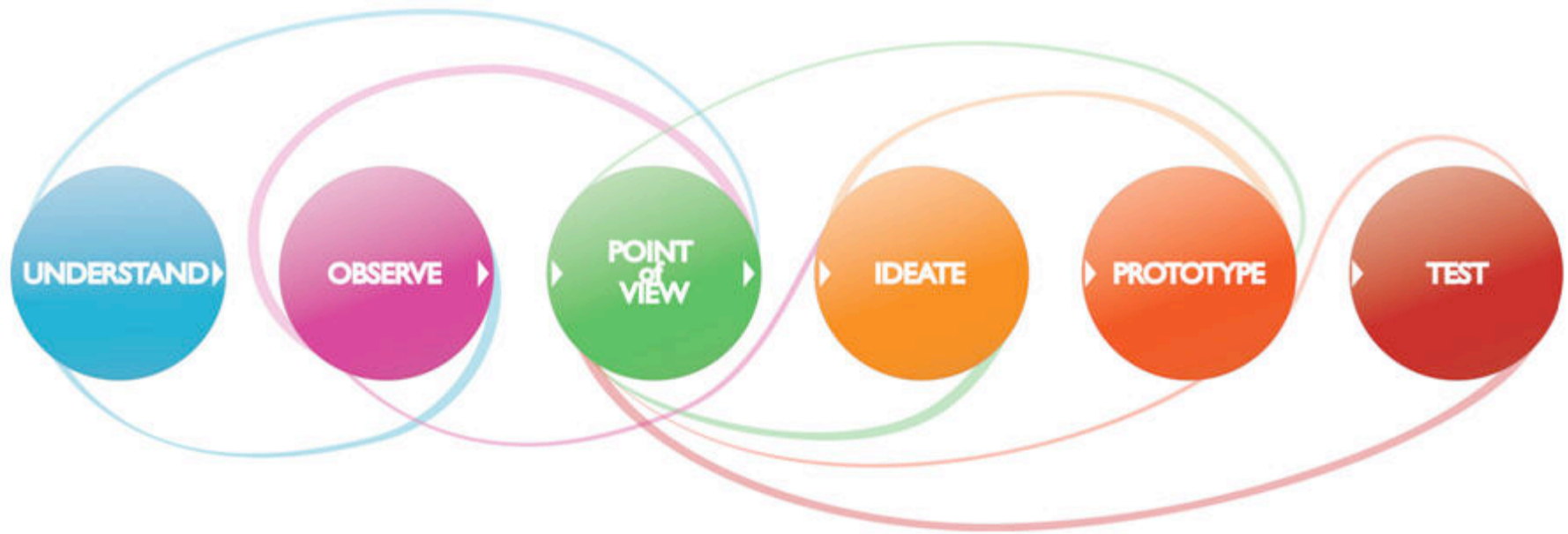
- **Process**

- Methods for designing, which can be articulated and taught

- **Orientation**

- An attitude that shapes your approach to the world you are designing in

Design Process





the d.trinity

1. empathy: user-centered
2. imagination: innovative
3. reason: solve problems

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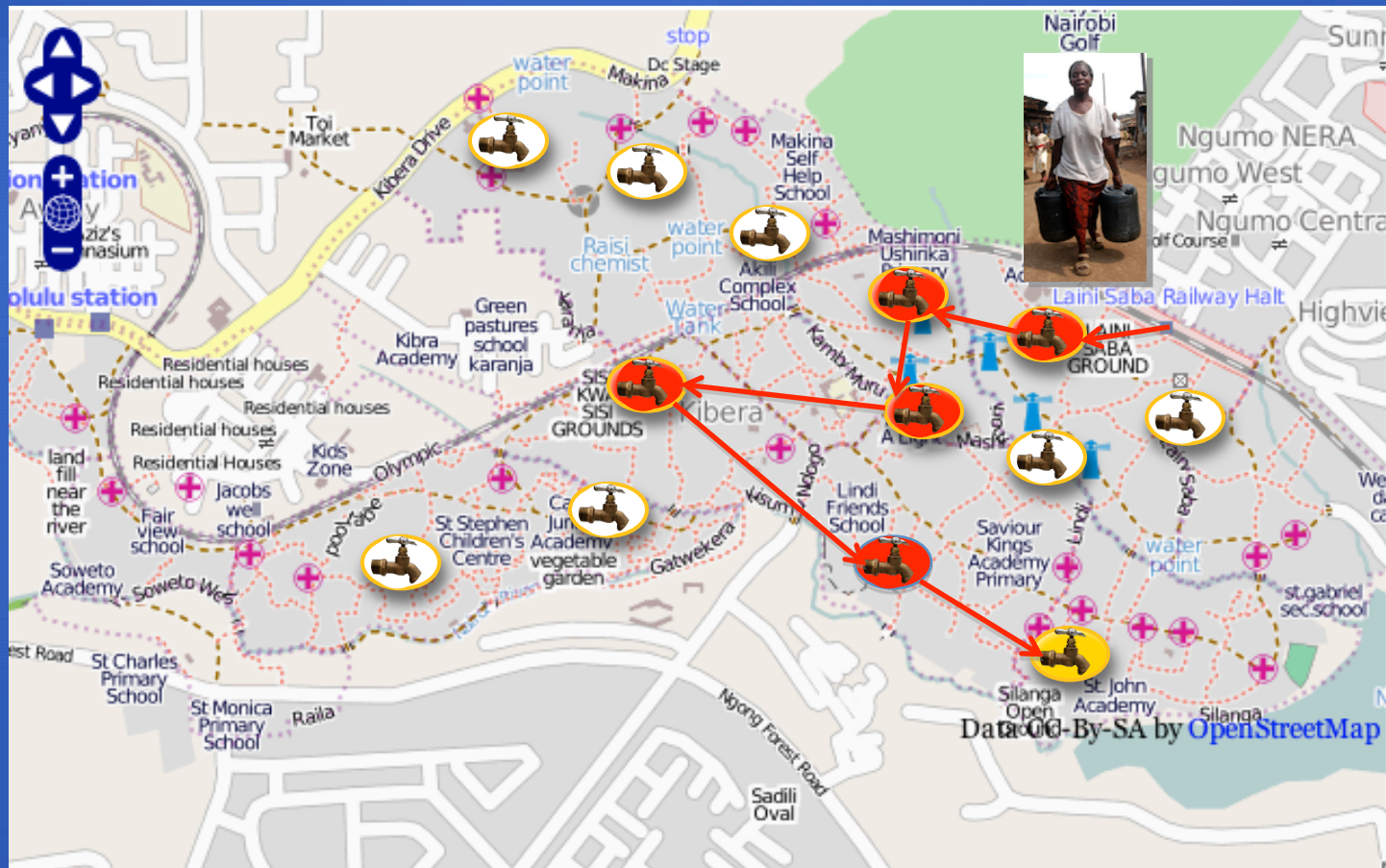
4. some projects and lessons

m-maji



Anuraag Chigurupati, Stanford University, Computer Science
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Katherine Hoffmann, Stanford University, International Policy Studies
Richard Maloba, University of Nairobi, Computer Science
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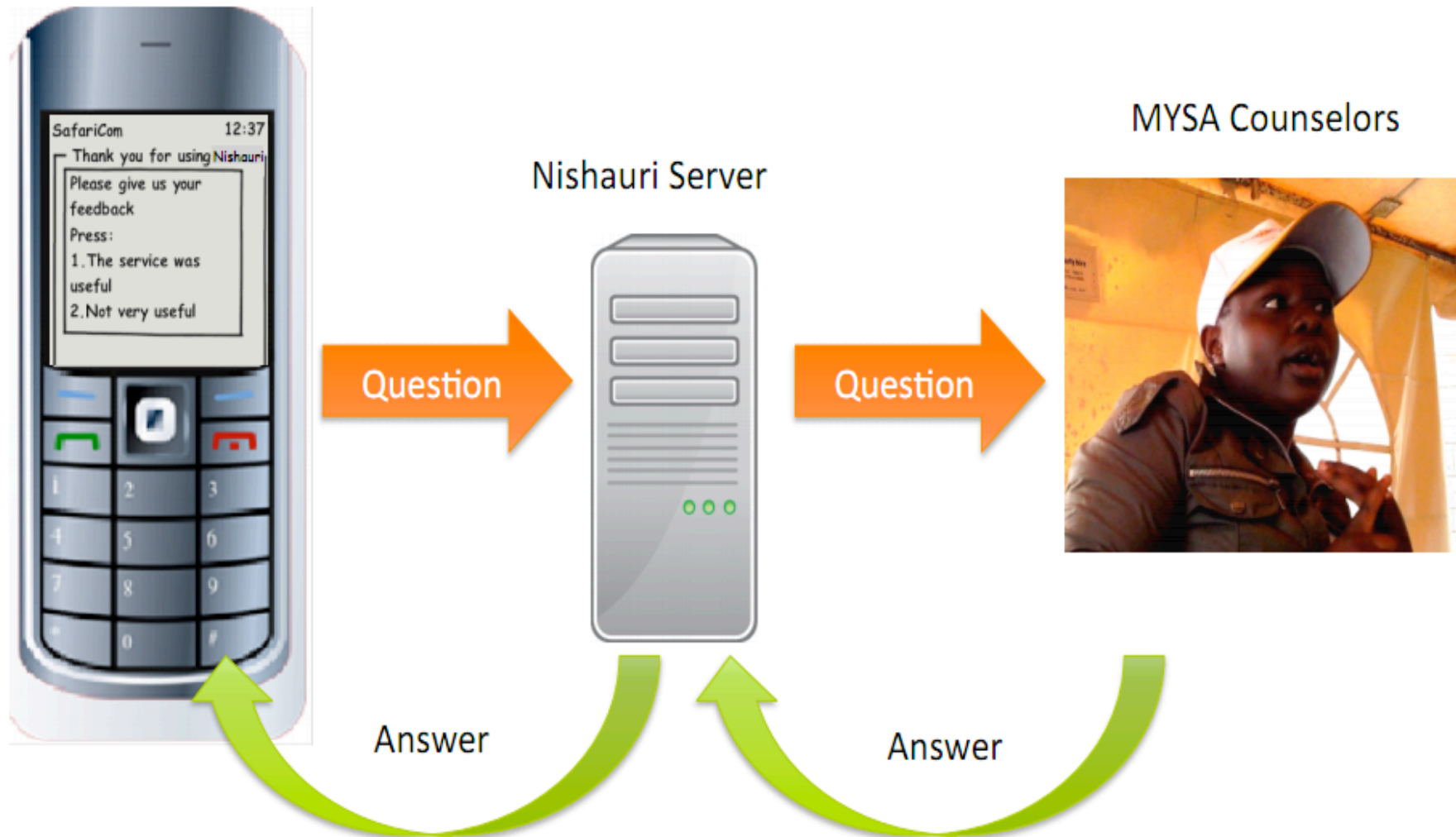




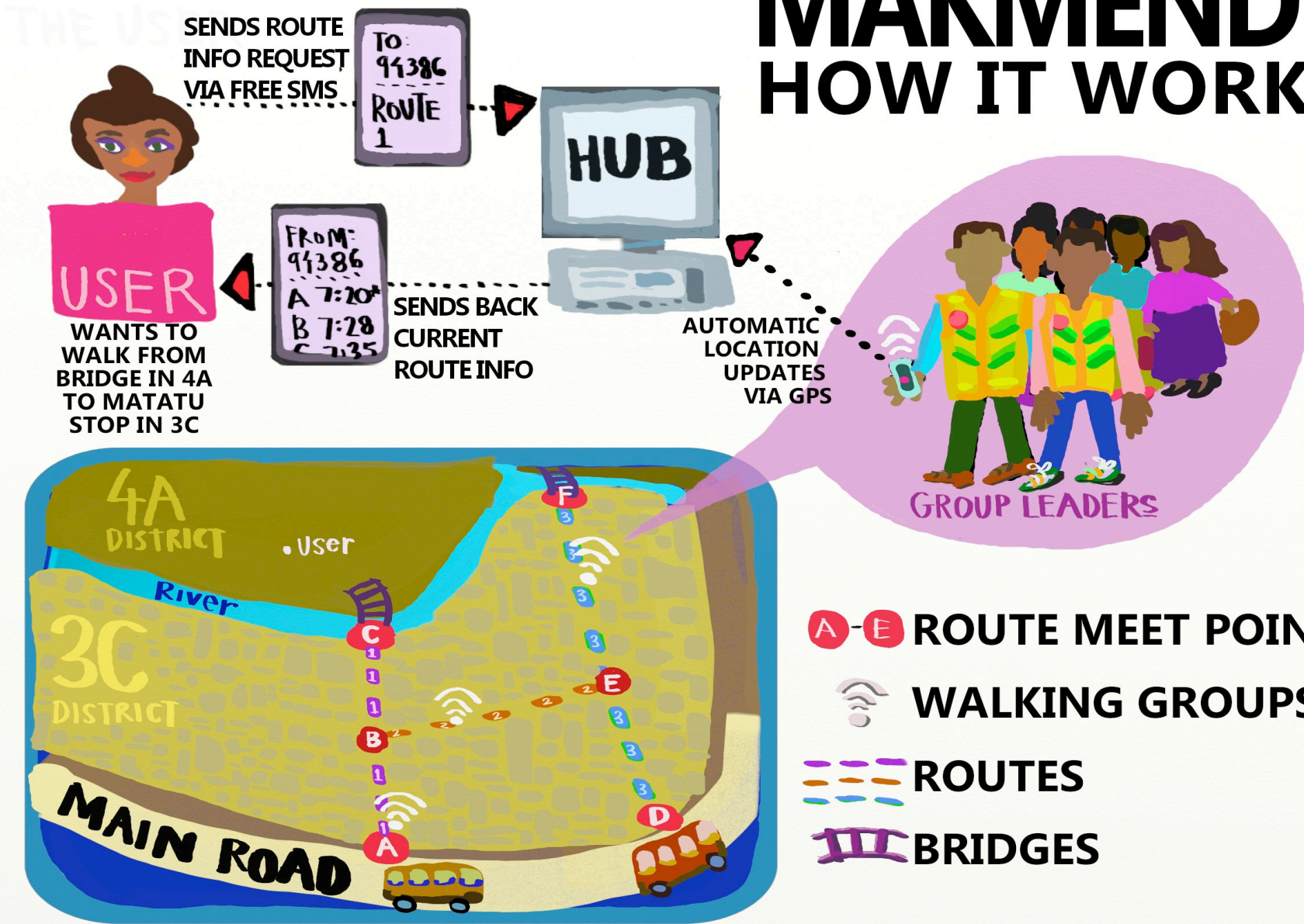
nishauri

Youth User

Confidential & credible answers, when there's no one else to ask.



MAKMENDE HOW IT WORKS







Some lessons

1. The complexities on the technical side are often in the interactions with the communications provider

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2. The complexities of making a project work are deeply social and political

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1. The complexities on the technical side are often in the interactions with the communications provider
2. The complexities of making a project work are deeply social and political
3. The relevant factors can be identified only through real-world testing