Charles Bundu (UDSM) and Yola Georgiadou (UT)
19-21 August 2014

https://sites.google.com/site/sematanzania/
Sensors, Empowerment, and Accountability (SEMA)

• How we started
• The SEMA research project
• Our approach
• A lesson ... out of many...
• SEMA software development
Zanzibar - Human Sensor Web

Web server
Process:

SMS alert community

Community

Google Maps

Jeroen Verplanke and Robert Becht
1. Will citizens (or COWSOs) report / update a WP status? Under which conditions?
2. Will LGAs listen / improve the WP status? Under which conditions?
3. How to model the context of the updater and the listener to validate the report?
4. How to manage the human sensor web, and which strategies can scale it up?
5. Which policy options for feasibility, effectiveness, social acceptability for the human sensor web?
Our approach

• PhD researchers: young promising scholars from this region
• Understand social practices and contexts of updating / improving and model these contexts

• SEMA software a research instrument
  – All software development is local = @ UDSM
  – Software = Free, open-source, interoperable

• Let a thousand interoperable flowers blossom!
SEMA PhD students: Habtom, Jesper and Kapongola in the Netherlands
A lesson ... out of many ...

• All information systems are dramatic simplifications of social practices
  – We must understand EXISTING social practices of UPDATING and IMPROVING and build the system around them. Else, the information system will fail.

• Successful information systems flourish because of their (un) acknowledged dependence on improvisations and social work by officials and citizens
Example: Social practices of updating and improving a Water Point
6. Develop smart open source software and deploy-and-learn in the field.
And now to ....

• Charles Bundu, Computer Scientist @ UDSM and software developer in SEMA
SEMA WPM Mobile Updating System

How it works

- A DWE registers mobile numbers of the Water Point reporters (COWSO / Technician)
- A WP reporter initiates a mobile session
- A list of assigned WPs is displayed
- The Reporter chooses a WP
- A list of WP Status options is displayed
- The reporter chooses a WP status option and adds notes
Step 1: User sends special text to the operator.

Step 2: Shortcode operator forward the message to a USSD URL server.

Step 3: USSD app server process message and store values to a local database.

Step 4: DHIS2 server receive data value as webAPI from a local USSD server.
The Bunda District Case Study

- Testing sites:
  - 4 villages: Nyamuswa, Mcharo, Balili and Kasahunga

- Connectivity:
  - All villages have excellent mobile network signals

- Availability of Mobile Phones
  - 60% of the citizens have mobile phone and make use of SMS services. Lower end mobiles are common
The Bunda District Case Study

Mobile App Test Results

Reporting of Non-Functional Water Point
11/11/2013 Mon

Water

06:36

Please Choose Language/
Chagua Lugha tafadhali

1. English

2. Kiswahili

06:37

Write password

06:37

06:38

Samuela
Select water point
1. Kisima Cha Shule ()
2. Kisima Ndoo (Karibu na Shule)
3. Kisima Ndoo (Karibu na Zahanati)

Select Reporting Period
1. This week
2. Last week
3. Last two weeks
Select Status of the water point

1. Functional
2. Non-Functional
3. Need Repair

Select reason for breakdown

1. Dry
2. Broken
3. Stolen
4. No Fuel
1. Dry
2. Broken
3. Stolen
4. No Fuel

Write any short comments

Imeharibika mkono wake.

Thank you for reporting
The Bunda District Case Study
Mobile App Test Results

Reporting of Functional Water Point
Select water point
1. Kisima Cha Shule ()
2. Kisima Ndoo (Karibu na Shule)
3. Kisima Ndoo (Karibu na Zahanati)

Select Reporting Period
1. This week
2. Last week
3. Last two weeks
2. Last week
3. Last two weeks

Select Status of the water point

1. Functional
2. Non-Functional
3. Need Repair

Thank you for reporting
Disruptive apps

Apps for Commerce
- M-PESA
- Amazon
- Netflix
- eBay
- Google Earth

Apps for social interaction
- Skype
- Twitter

Apps for collaborative production of knowledge
- Wikipedia
- Linux
- Green Map
- OSGeo

Apps for public administration
- Ushahidi
- SEMA

Non-disruptive apps
The end!

Ahsanteni Sana
Thank you for listening