



Big Data for SDGs

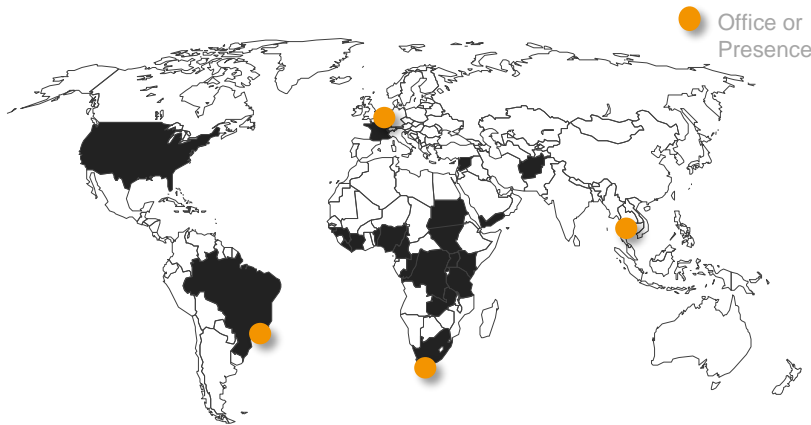
Presentation document

International Conference on Big Data for Official Statistics

Dublin, September 1, 2016

Born in Africa and leveraging a young and entrepreneurial approach

Clients across the world reaching over 400 million people



- Average age is 31 years old and founding team is VERY FUNNY and made of highly talented complementary and generous people – McKinsey, Harvard, MIT, World Economic Forum, Bain, Business consulting, Engineers and PhDs, US, Global people, Big Dreams
- **Commercial approach** – We operate relations with 5 out of the top 10 telecom operators in the world through about 30 countries and develop global product portfolio in Big Data
- **Social approach** – We work with the largest and most innovative donors in the world and have secured access to telecom data in 22 emerging countries, mostly in data-poor environments

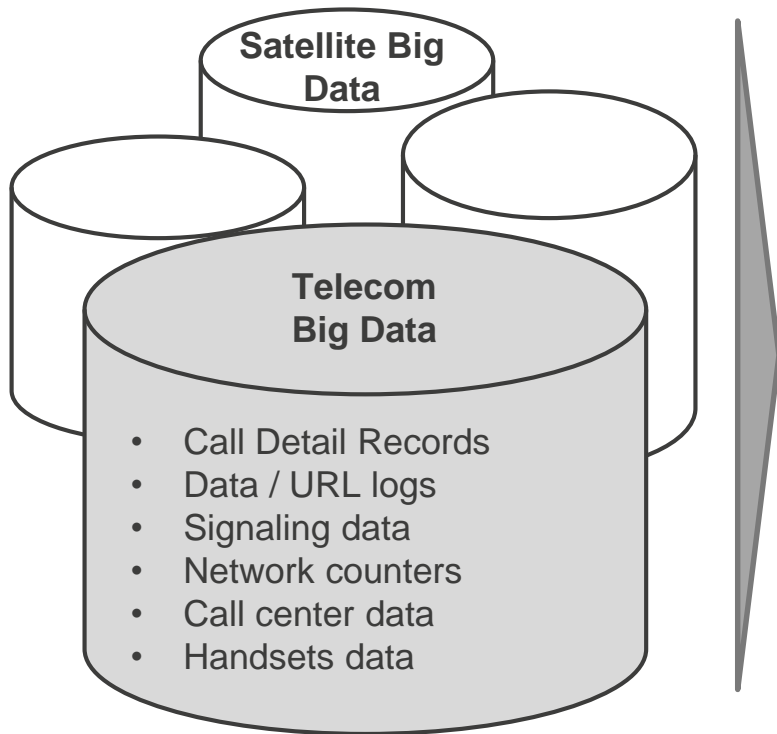
Trusted by 5 of the largest global telecom operators



... and the largest donors



Innovate with our clients and co-create a global market for social products



Support the work on Sustainable Development Goals in **emerging countries**



Support the mobility and social inclusion strategy in **Western Europe**



How to initiate a market for social products?

Operational partners



Financial partners



Value

- Generate recurrent revenue

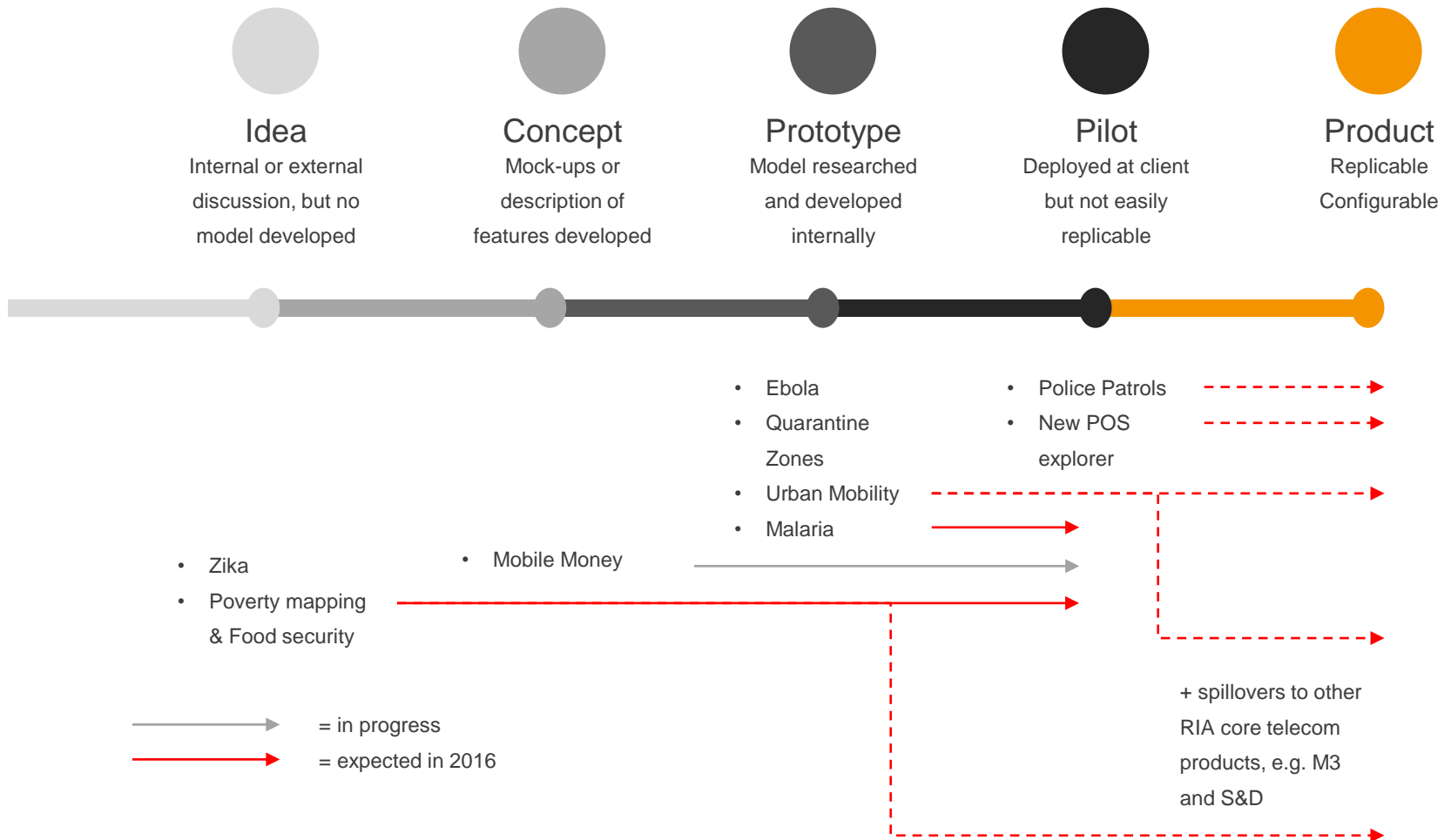
Technical stability

- Integrate different Apps into one platforms
- Stabilize the existing tools and transform from MVPs into products
- Bring additional data sources, e.g. satellite data with FB

Scale up and learn

- Launch one additional country, preferably in Asia
- Roll out tools on multiple countries

We aim at developing scalable Apps and shape a Platform



Working on several topics in Uganda



Financial Inclusion

**United Nations
Corporate
Development
Fund (UNCDF)**



Urban Mobility

**Kampala Capital
City Authority
(KCCA)**



Food Security

**United Nations
World Food
Programme
(WFP)**



National
Stats/SDGs

**Office of the
Prime Minister
(OPM) &
Ugandan
Bureau of
Statistics
(UBoS)**

Example of SDG app

Short Description

The monitoring and reporting of the 169 indicators for the 17 SDGs requires solid data sources to monitor progress, inform policy and ensure accountability of all stakeholders. A subset of SDG indicators can be computed and tracked over time, using Call Detail Records (CDRs), which can be used as proxy for e.g. poverty, migration mobility, urban mobility, urban density, food spending

Persona: Chief Statistician (UBoS), Specialists in Coordination, Monitoring & Evaluation at OPM

Mission: Monitor and report progress towards sustainable development

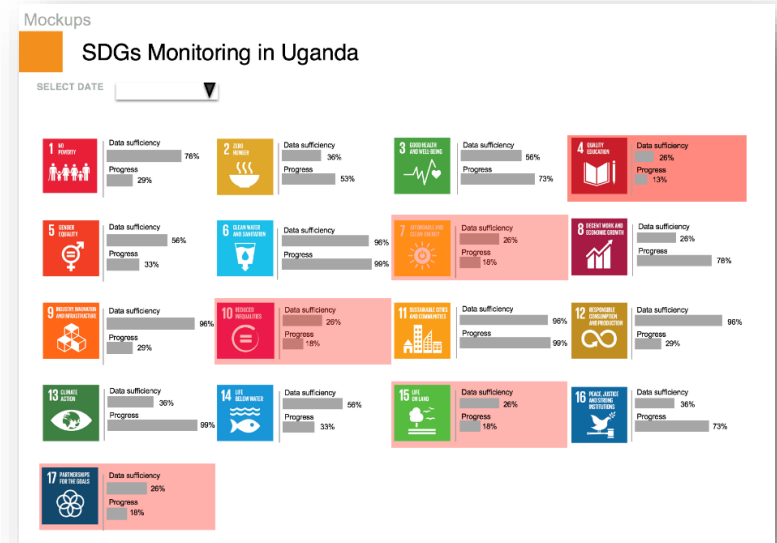
Functionalities

- Monitor progress for mobile data relevant SDGs indicators, such as: Proportion of individuals who own a mobile telephone, by sex and Proportion of individuals using the internet

Scalability Potential

high

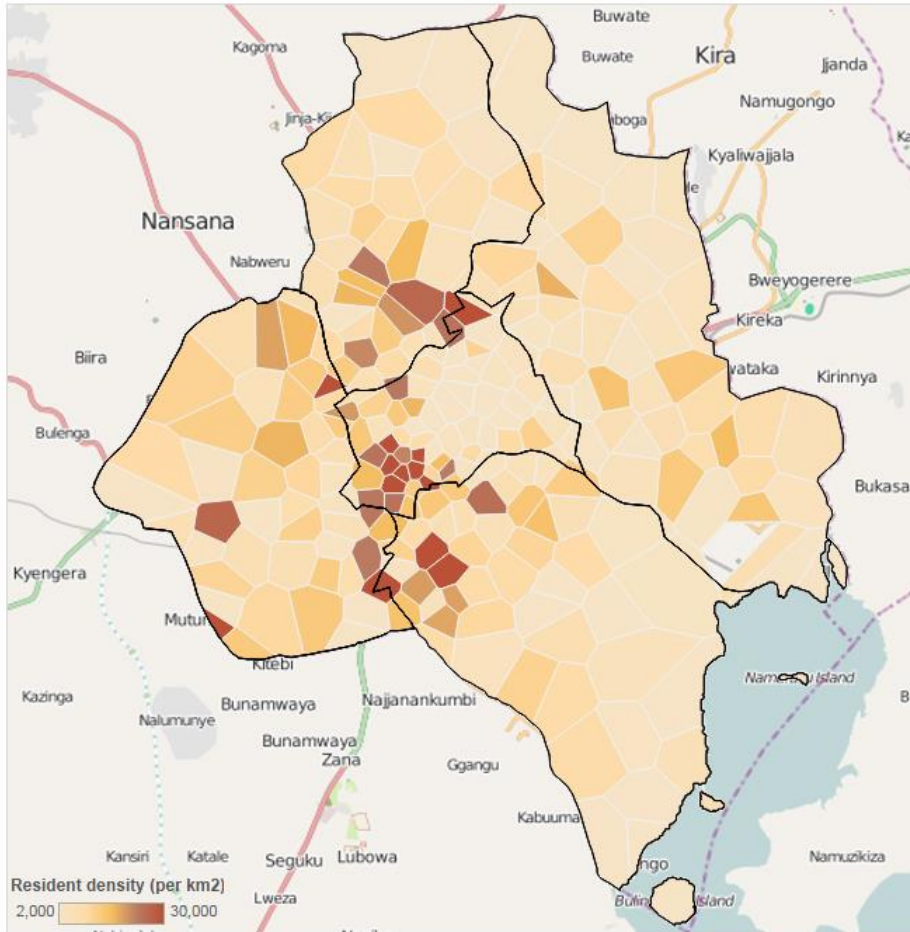
Reaching the SDGs indicators is a major goal for development organizations and governments in 189 countries. If we proof success with a pilot in Uganda, we are certain that the vast majority of the developing countries can benefit from this approach of measuring indicators.



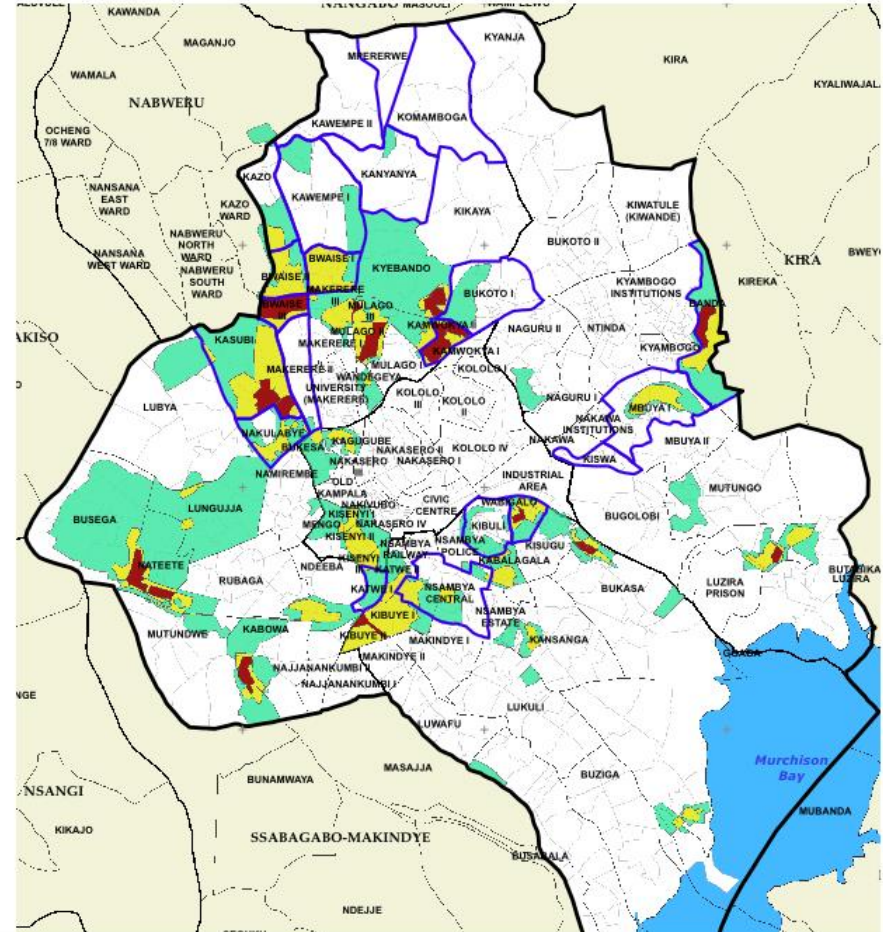
Identify the poor neighborhoods

D | Density of residents compared to slums areas

Density of low spending profile



Slums area reported by 1,2 and 3 sources

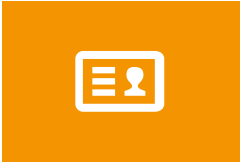


Identify female communities



Women are reliable and efficient users of microcredit loans, but how do you target them to increase financial inclusion?

➤ **We can identify women through their phone usage patterns.**



Data

- Airtel Uganda (39% women): CDRs, Top-ups + CRM data for the whole customer base
- Dataset A (28% women): outgoing CDRs, Top-ups + CRM data for ca 160 000 users
- Dataset B (42% women): CDRs, TOP-UPS + CRM for ca 160 000 users



Methodology

- Over 150 features summarizing usage patterns, social network, mobility and top-ups
- Trained random forests and support vector machines based on a labeled training sample



Results

- 3 key variables determining female gender: call duration, number of outgoing calls and number of contacts for incoming calls
- Predicted gender accuracy of 70-75% and option to better target one gender group
- Lowering the coverage increases the accuracy: for dataset A we are 90% sure of the gender for 30% of our sample



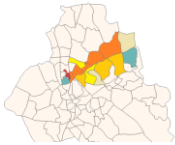
Improve mobility and infrastructure footprint

Short term (2016)

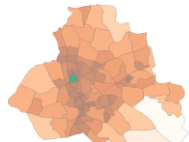
Where are people commuting to and from?



Using which routes?

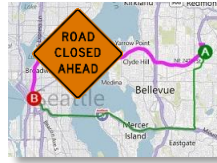


Where is traffic slow?



Medium term – 2017-18

What is the impact of an event or road closure?



Where should we improve/build roads?



How do I plan my public transport network?



Long term – after 2018

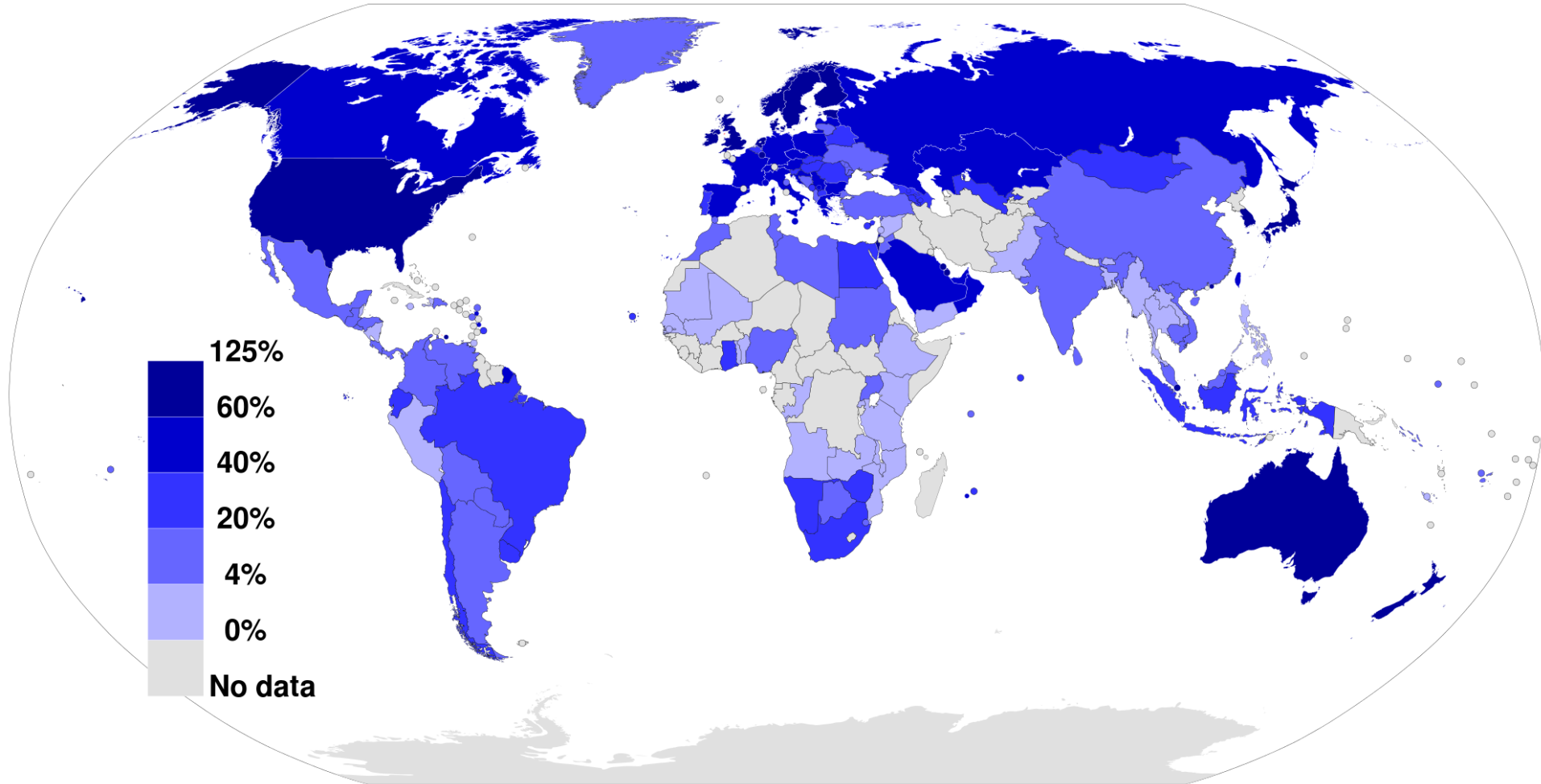
Switch from telecom to GPS data



Offer leading Datacom offering in Africa/Middle East



Improve connectivity for fragile populations





Demo

Initiating a market requires to exogenously coordinate stakeholders

Understand end-users needs and collect key learnings from the field



Identify key levers to put in place for a scale-up of the market



- Engage the **philanthropic and social angle**
- Take part to a **global eco-system**
- Create **private-public partnerships**, e.g. Ministry of Cooperation & Development
- Develop an **integrated approach** under the leadership of the Global Partnership for Sustainable Development Data

Leverage cutting-edge innovation and set up collaborations on relevant vertical



Shape the global agenda of Data-for-Good and secure right priorities



Secure the access to the telecom data



Examples of opportunities and challenges



- New data sources
- Increase the frequency of refreshing the data – dynamic data sources
- Reducing the cost of collecting data and deriving insights



- Multiple biases
- New skills and capabilities to develop within NSO
- New governance to develop
- New relations to set up involving regulators and private companies
- Need to find a way to share and open IP
- Need to protect strategic and commercial insights from data providers



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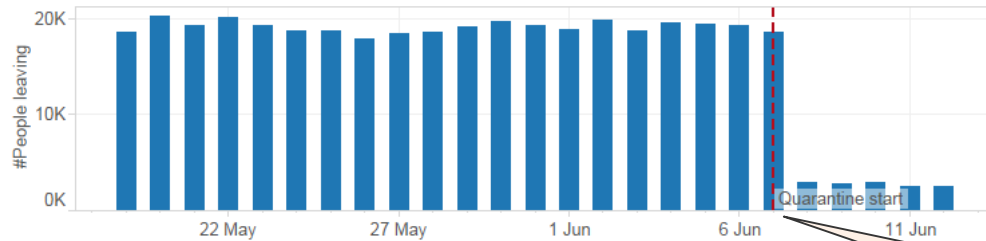
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Quarantine and curfews during the Ebola outbreak

B| Deep-dive on Teso

1| How many people left the area each day?



2| Non-compliance ratio



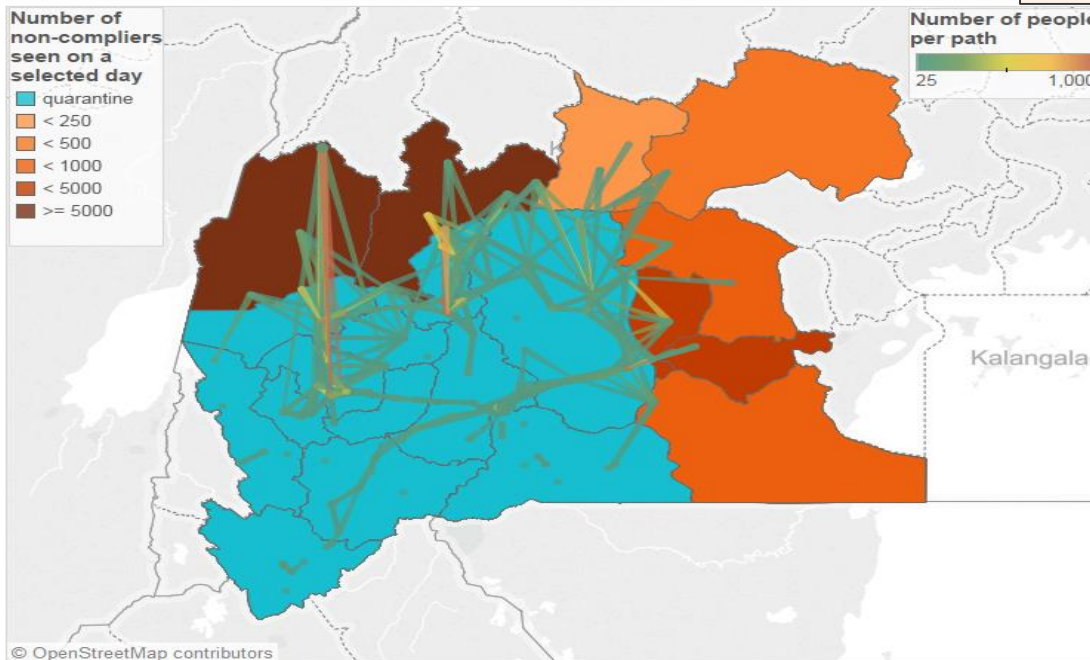
Estimated percentage of people not respecting the quarantine

Select a date for the ratio

12/06/2015

See how the numbers of people leaving the area changed after the quarantine was imposed

3| Where are people leaving to?



Select a date for which you would like to see the destinations

9 June 2015

Show History

Non-compliers' destinations by district

