Establishing Effective Partnerships: Potential and Limitations of MNO CDR Data

GSMA Disaster Response Workshop
Legazpi, Philippines June 19, 2013

Erik Wetter, PhD

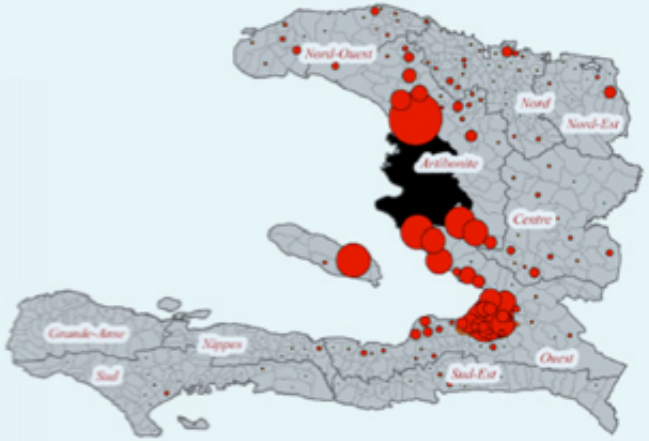
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Providing priceless information for free for the benefit of those who need it the most

Improving disaster response by collecting, aggregating, analyzing, and disseminating anonymized mobile phone location data in industry standard geographic information system (GIS) formats to NGOs and relief agencies in near real-time. Learn more »



NEWS

MIT Technology Review

MAY 3RD, 2013

Flowminder research 2013 Breakthrough Technology

In the MIT Technology Review listing 2013 Breakthrough Technologies, Flowminder research is mentioned in Big Data from Cheap Phones as "A powerful demonstration...

Science

JUNE 20TH, 2012

Science article about Flowminder team research

Flowminder co-founders Xin Lu and Linus Bengtsson are interviewed about their latest research in the Science Magazine article: Where Do People Flee When...

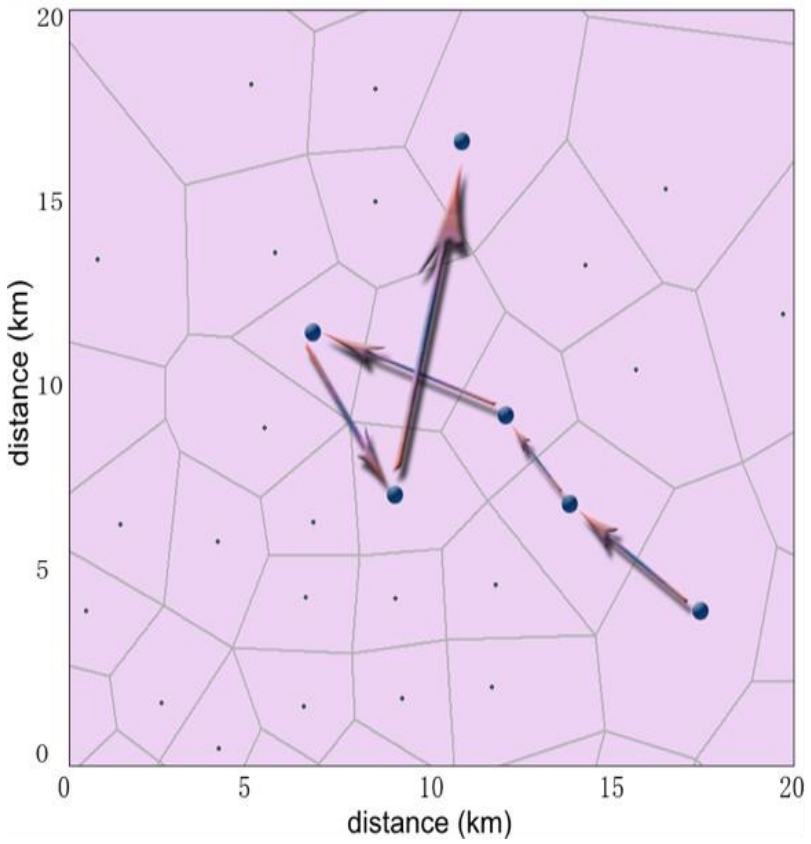
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NOMINEE

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Haiti case: Anonymized CDR data to analyze movement at the cell (tower) level

- Anonymous CDR data: anonymization in operator's system
- Data points – once per day
- Resolution: cell tower



Predictability of Population Movements

Predictability of population displacement after the 2010 Haiti earthquake

Xin Lu[a,b,1,2], Linus Bengtsson[a,1,2], and Petter Holme[a,b,c,d]

[a]Department of Public Health Sciences, Karolinska Institutet, 17177 Stockholm, Sweden; [b]Department of Sociology, Sto
Stockholm, Sweden; [c]Department of Physics, Umeå University, 90187 Umeå, Sweden; and [d]Department of Energy Scier
Suwon 440-746, Korea

Edited by* H. Eugene Stanley, Boston University, Boston, MA, and approved May 16, 2012 (received for review March

Most severe disasters cause large population movements. These movements make it difficult for relief organizations to efficiently reach people in need. Understanding and predicting the locations of affected people during disasters is key to effective humanitarian

run can cause populations to mo
rather than moving away from th

The increased use of mobile ph
income countries (16), offers a ne

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by Nicholas St. Fleur on 18 June 2012, 4:36 PM | 2 Comments

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Madame Bertil, 88, packed up what little she had left in the one-story house her son had built for her and prepared to leave Port-au-Prince. It was 21 January 2010, 8 days after a magnitude-7.0 earthquake ravaged the capital of Haiti, killing between 65,000 and 300,000 people and leaving over 1.8 million people homeless. Scared and unsure,

ENLARGE IMAGE

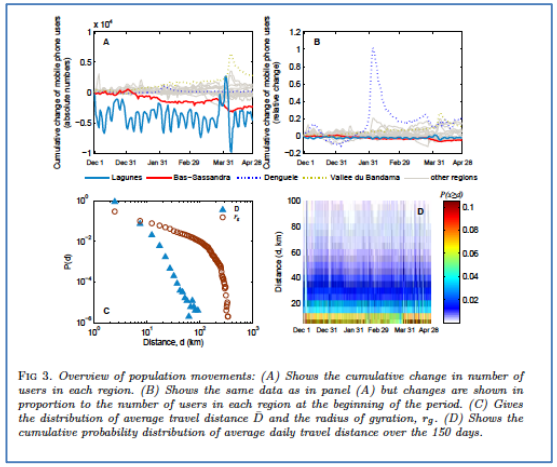


FIG 3. *Overview of population movements: (A) Shows the cumulative change in number of users in each region. (B) Shows the same data as in panel (A) but changes are shown in proportion to the number of users in each region at the beginning of the period. (C) Gives the distribution of average travel distance $\bar{D}$ and the radius of gyration, r_g. (D) Shows the cumulative probability distribution of average daily travel distance over the 150 days.*

Donating CDR Data: Value proposition for operators

- Privacy/location tracking significant PR challenge for most telcos
- Goodwill vs government – telcos become providers of most critical information
- Goodwill vs subscribers – helping customers in time of need
- Preempting regulation
- Revenue preservation (saving subscriber lives)

TECH | 9/20/2011 @ 4:05PM | 4,375 views

Data Philanthropy is Good for Business

Forbes

The New York Times

BBC Mobile | News | Sport | Weather | Travel | TV

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2 September 2011 Last updated at 16:22 GMT

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Mobile phones help to target disaster aid, says study

GLOBAL UPDATE

Haiti: Cellphone Tracking Helps Groups Set Up More Effective Aid Distribution, Study Says



Hector Retamal/Agence France-Presse — Getty Images

Research Areas: Epidemiology/Disease Control

- Current themes
  - Cholera
  - Malaria
  - Influenza
- Collaborations
  - European Center for Disease Control
  - Chinese Center for Disease Control





Main Takeaways: CDR Data is Great – But Not A Silver Bullet

- Baseline/seasonal understanding needed
  - snapshots are not enough
- Representativeness
  - how well the SIMs match the population
- Validity
  - real value when combined with other data sources
- Presentation
  - has to feed into UN/relief agency format(s)