Accessing corporate data: are PPP’s the solution for closing SDG data gaps?

Johannes Jütting
Manager, PARIS21 Secretariat
3 mistaken assumptions about PARIS21

We are in the 21st arrondissement of Paris

We are connected to COP21

We were founded in 1921
Who we are

A global partnership of institutions and countries which promotes the better use and production of statistics in developing countries
Outline

1. Introduction – PPPs for data
2. The pros and cons
3. Business models to access corporate data
4. Emerging solutions to overcome incentive problems
5. Conclusion and the way forward
Motivation

SDG implementation and data gaps:
• Important data gaps – quality, timelines, granularity and interoperability
• Partnerships as a solution ...but
• ... access as big problem...

Question:
Can PPP’s help to facilitate access to private data?
Emerging literature on PPPs for data

- Robin, Klein and Jütting (2016): generic types of PPPs
- Ballivian and Hoffman (2015): taxonomy of risks and benefits of data sharing
- Events/Reports specific to telecom data
  - UNECA 2015 conference on the “Use of mobile technology for statistical processes”
  - Meersman et al. (2016) on “win-win” partnership between MNO Proximus and Statistics Belgium
What are PPP’s in statistics?

• Public-Private Partnerships for Statistics:
  ▪ Voluntary, collaborative agreement
  ▪ aimed at increasing an NSS’ capacity to provide new or better statistics.

• Distinguishing features:
  1. Long-term agreement that defines concrete roles, responsibilities & rights
  2. Central role of proprietary and privacy risks
  3. Can cover any stage of “data value chain”
2. The pros and cons

Corporate Data from an NSO perspective

- Web crawling, web scraping, web search analysis
- Social media
- Telecom data
- Sensor and geospatial data
- Commercial transactions (scanner data, credit card data)

And combinations of these, also with established source such as censuses, surveys, administrative records
Corporate data for SDGs

**Projects by type of data source**

- Mobile phone data: 20
- Satellite imagery data: 18
- Other social networks: 12
- Web data: 12
- Scanner data: 11
- Twitter data: 11
- Financial transaction data: 11
- Facebook data: 8
- Sensor data: 6
- Smart meter data: 5

**Feature that indicator improves on**

- Frequency: 26
- Disaggregation: 23
- Validity: 20
- Bias correction: 9

**Source**: PARIS21 et al. (2015). Global Survey on Big Data projects for SDGs.
Benefits & Complementarities

• For existing statistics
  - Cost effectiveness
  - Timeliness
  - Granularity

• In new areas
  - Data in new areas
  - Increased responsiveness e.g. crisis situation
Risks & Challenges

• Access
• Incentives and sustainability
• Privacy and ethics
• Technical and statistical challenges
3. Business Models

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<td>• Ad-hoc analyses in case of natural disaster, research projects (e.g. Orange with D4D)</td>
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• Positium as third-party aggregator/distributor
  ▪ MNO has commercial contract with a third party aggregator responsible for distribution of the data
  ▪ Fixed price / rev-sharing agreements
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| **Remote access** | • Users develop their algorithms within the corporate systems | • Allow broad access to individual data | • RIA, Flowminder |
Operators Call Detail Records’ (CDRs) including low-resolution location data (nearest tower location) anonymized on separate server hosted by operator.

Flowminder researchers conduct analyses under operator supervision, de-identified raw data always behind operator firewall.

Mobile operator firewall

Non-sensitive aggregated mobility estimates are exported,
Flowminder (cont’d)

Nepal 2015 earthquake:

• Data access/analysis within 14 days
• Information on above normal population flows
• Life-saving information for disaster response

Source: Flowminder/Ncell project
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| **Move algorithms** | • Users develop publicly available algorithms and extract results from corporate system | • Allow broad access to 1st layer algorithms | • OPAL, e.g. Orange, universities/research institutes |
4. Corporate sector incentives

• What does it take for “win-win” partnerships?
• NSO incentives
  ▪ data access to produce statistics
  ▪ operators can provide: technical expertise, data storage, processing infrastructure and use cases
• MNO incentives
  ▪ increase commercial value of MNO data from collaboration with NSO and geocoded NSO data
  ▪ statistical and domain expertise of NSOs
  ▪ Corporate social responsibility (public good)
Estimates of population density per km² for Belgium
Rho = 0.85

Based on mobile phone data
Based on 2011 Census
5. Conclusion

• Establishing PPPs holds promises and caveats – no miracles to be expected
• Critical question: PPP for what? – profit vs. CSR vs. true “win-win” partnership
• Our survey shows: In developing countries, most business models rely on ad-hoc data exchange
• To be scalable for official statistics, need to create a standardised safe environment for sharing data
The way forward

- Define a **decision tree** to inform the choice of business models dependent on context, intended use and data type
- Corporate data access is facilitated by "**data stewards**" that act as a first point of contact
- Harnessing the potential and engaging with other actors requires new skills from all actors involved – “**capacity development 4.0**”