

Official statistics and mobile network operators: a business model for partnerships

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Overview

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2. Who needs mobile phone data?
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Context: big data and the third data revolution

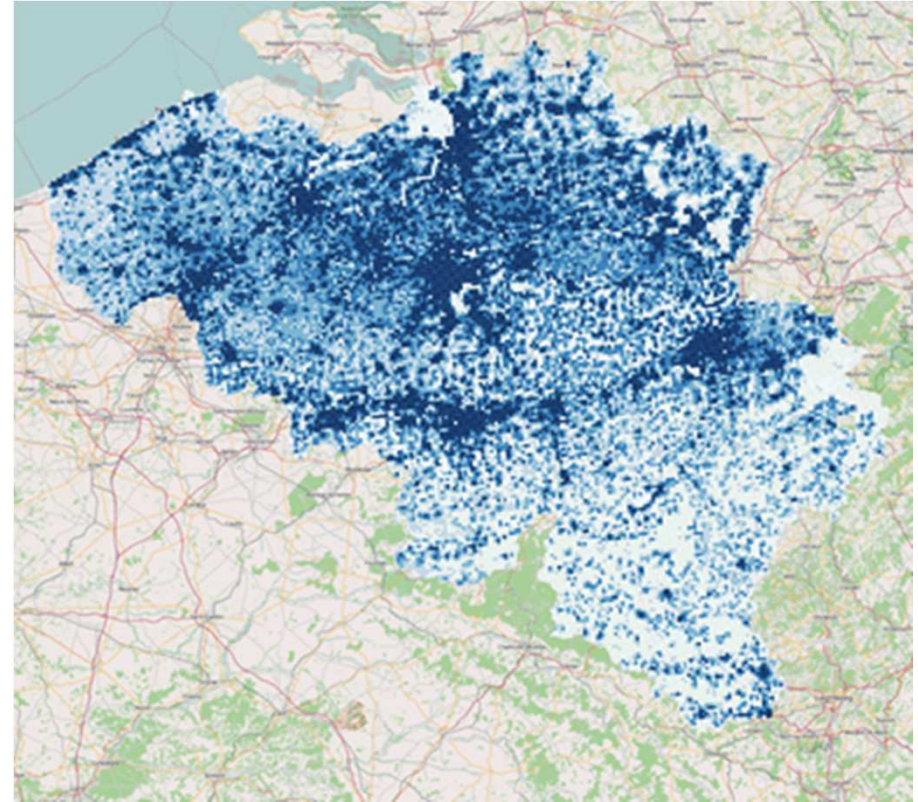
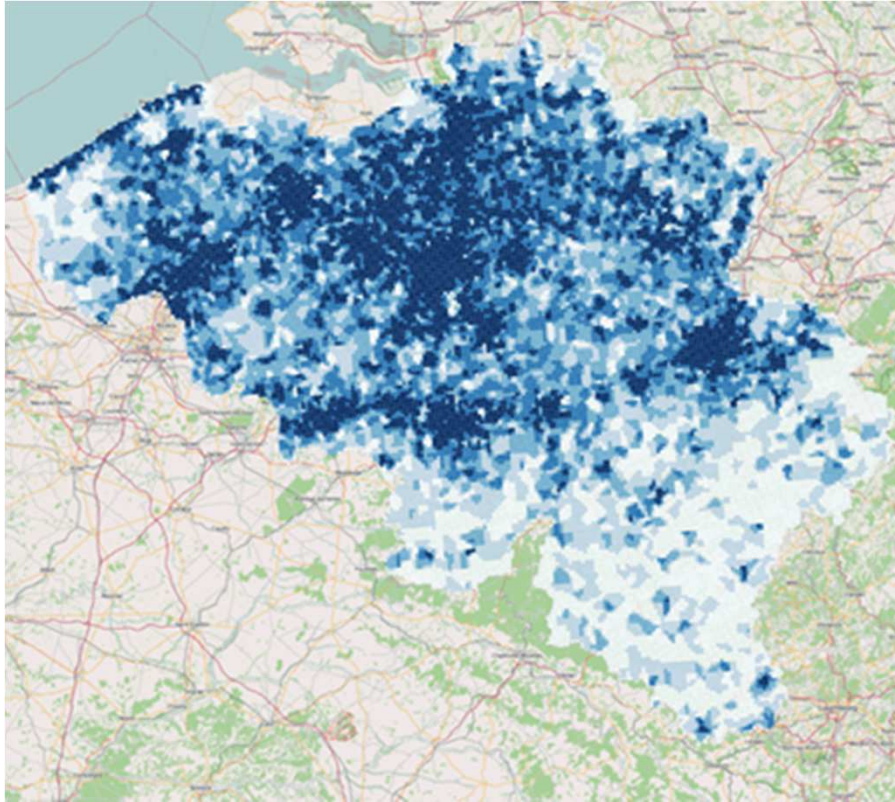
- ▶ Data explosion: big data
 - ❖ Immense increase in volume, velocity, variety (complexity)
 - ❖ 'Digital footprint' of persons and 'things'
 - ❖ Relevant to statistics: real time, objective, new possibilities
 - ▶ The third data revolution in official statistics
 - ❖ Early 19th- late 20th century: (almost) exclusively surveys
 - ❖ Late 20th century-.....: (also) administrative data
 - ❖ Early 21st century-.....: (mainly) big data
 - ▶ Specifically: mobile phone data
 - ❖ Byproduct of operating mobile networks
 - ❖ Owned by mobile network operators: private & profit-oriented
 - ❖ Considerable investment needed to 'prepare' them
- 

Who needs mobile phone data?

I Statistical institutes

- ▶ Reducing response burden
 - ▶ Reducing cost
 - ▶ Faster or even real-time results
 - ▶ Objective, no response bias
 - ▶ Complete coverage
 - ▶ Last but not least: new possibilities!
 - ❖ New statistics (e.g., real as opposed to registered population)
 - ❖ Testing concepts and definitions (e.g., short vs. long-term migrant)
 - ❖ Validation of survey or administrative data
 - ❖ Detail previously impossible (e.g., commuting per weekday, weather conditions, ...)
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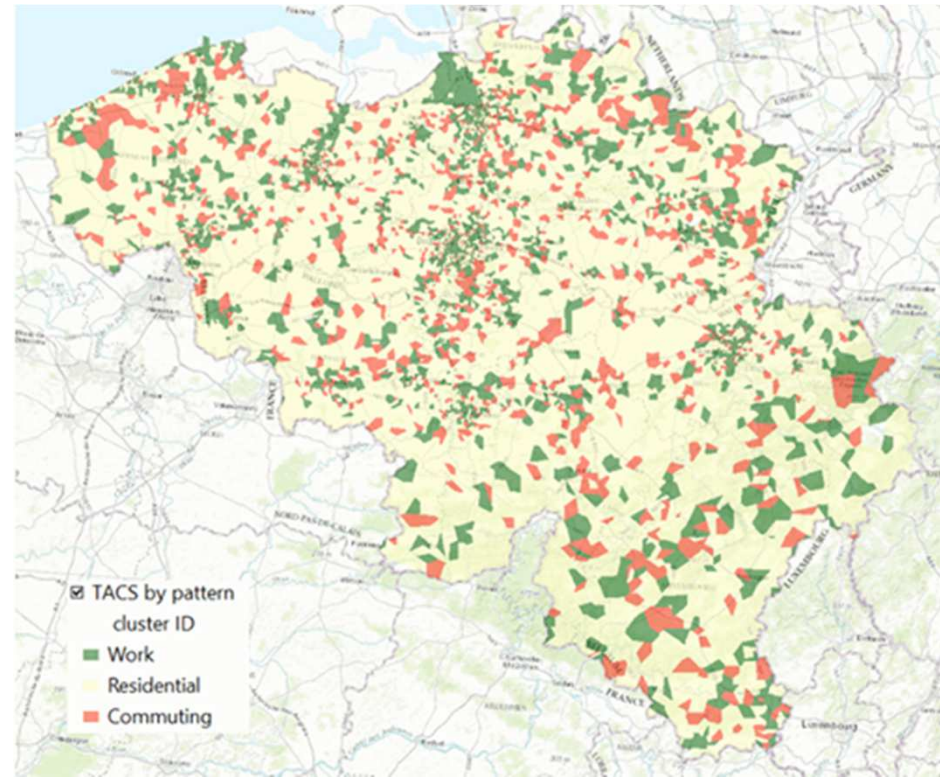
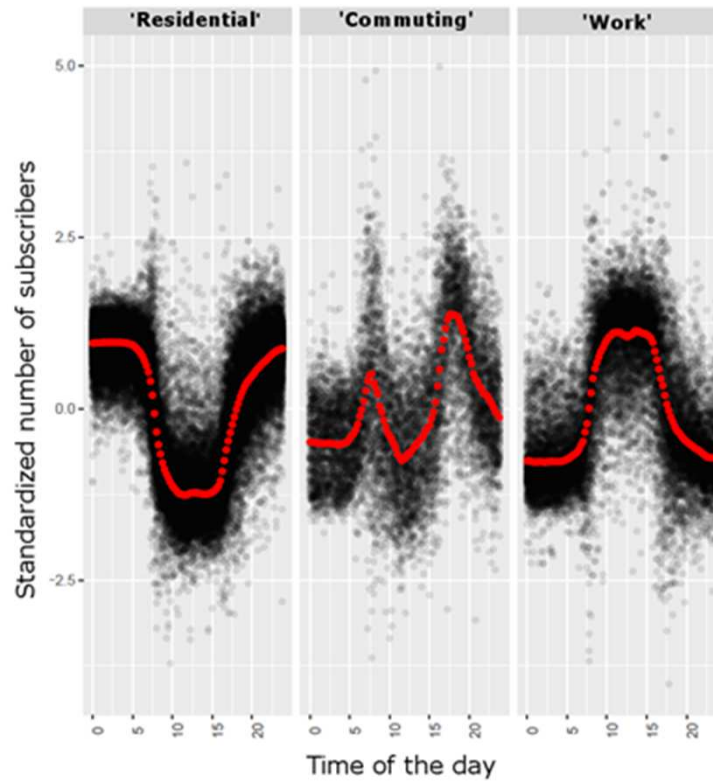
An illustration ...



Belgium: population density per km² based on mobile phone data (left) and 2011 Census (right).



And another one ...



Weekday TACS identified as 'work', 'residential' or 'commuting', with mapping.

Who needs mobile phone data?

I Statistical institutes cont.

However ...

- ▶ No data ownership
- ▶ No experience with data
- ▶ No IT infrastructure to store and handle them
- ▶ No legal arrangements (yet) ...
- ▶ ... and investment to exploit too large to impose

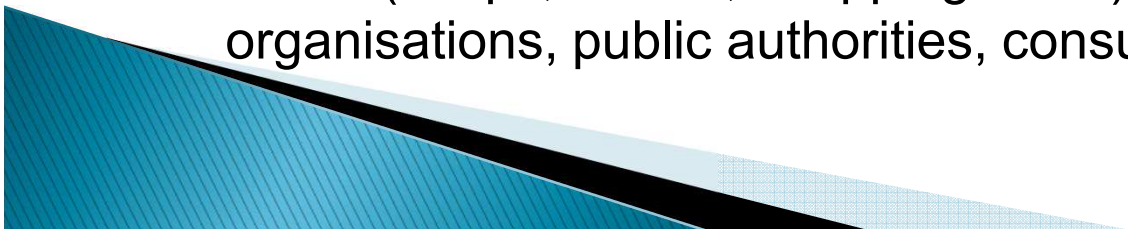


Who needs mobile phone data?

II Mobile network operators

- ▶ Private companies, profit-oriented
- ▶ Telecommunication = common commodity, mobile data = extra high-added-value business!
- ▶ Some use cases:
 - ❖ Tracking people for 'footfall', event attendance, crowd management, shop location, ...
 - ❖ Traffic, mobility, transport studies and management
 - ❖ Mobile marketing, 'geo-fencing', targetings ads, ...
- ▶ Potential clients:

Retail (shops, chains, shopping malls), national or local tourist organisations, public authorities, consultancy firms, ...



Who needs mobile phone data?

II Mobile network operators cont.

However ...

- ▶ Considerable investment to exploit
- ▶ Lack of experience to turn data into accurate & valid information
- ▶ And it's only mobile phone data ...



Basic requirements for a partnership

- ▶ Needs are complementary & non-competing

- ❖ Official statistics at general level

versus

specific, topical business cases

- ❖ Borderline cases can be arbitrated

- ▶ Partners able to solve each other's problems

- ❖ Lack of data access, metadata, infrastructure

versus

lack of data treatment & domain expertise and of additional data



Partners' contributions

I Mobile network operators

- ▶ Mobile phone data!
- ▶ Metadata
- ▶ IT infrastructure for storing and treating
- ▶ Technical expertise
- ▶ Use cases



Partners' contributions

II Statistical institutes

- ▶ Geocoded statistical datasets
- ▶ Statistical & methodological expertise, data science
- ▶ Expertise on data warehousing and IT tools
- ▶ Domain and subject expertise
- ▶ National and international network
- ▶ Data summation and integration for benchmarking
- ▶ 'Official' quality stamp
- ▶ CSR opportunity for mobile network operators



The business model: characteristics

- ▶ Joint exploration and exploitation
- ▶ Aimed at distinct non-competing outcomes
- ▶ Pooling of resources
- ▶ Division of labour and investment
- ▶ In principle long-term and stable over time
- ▶ Formalised in written agreement

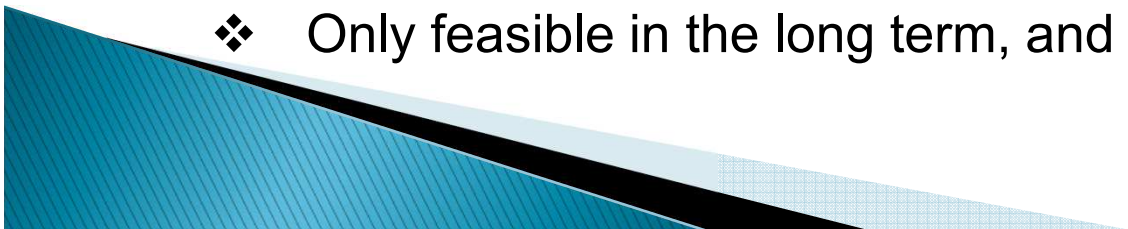


The business model: alternatives

With flaws and shortcomings ...

- ▶ **Going solo: no or suboptimal outcomes**
 - ❖ Statistical institutes have no data, IT infrastructure
 - ❖ Mobile network have insufficient data and lack expertise
- ▶ **External integrator: risk for official statistics**

Statistical function but without impartiality and other quality safeguards
- ▶ **Legal obligation: not (yet) feasible**
 - ❖ Investment for exploitation can hardly be imposed
 - ❖ What data to ask for?
 - ❖ Enforced compliance lowers data quality
 - ❖ Only feasible in the long term, and data need is now ...



A user's guide for statistical institutes - based on experiences so far ...

- ▶ **Talk to the right people**
Business development, not research or marketing
- ▶ **Get across the benefits you can provide**
Operators, beset by ignorance/arrogance, often have no clue
- ▶ **Guarantee absolute confidentiality and build trust**
Operators must be sure their data won't end up with competitors
- ▶ **Be attentive to legal issues, especially privacy**
- ▶ **Invest in geocoded datasets = bargaining chips**
- ▶ **Start low-threshold quick-result exploration project**
- ▶ **Find (international) partners in statistics, academia**



References

- ▶ **F. De Meersman, G. Seynaeve, M. Debusschere, P. Lusyne, P. Dewitte, Y. Baeyens, A. Wirthmann, C. Demunter, F. Reis, H.I. Reuter (2016):** *Assessing the Quality of Mobile Phone Data as a Source of Statistics*, Q2016 Conference paper (pdf download, <http://www.ine.es/q2016/docs/q2016Final00163.pdf>)
- **N. Robin, T. Klein & J. Jütting (2016),** *Public-Private Partnerships for Statistics: Lessons Learned, Future Steps: A focus on the use of non-official data sources for national statistics and public policy*, OECD Development Co-operation Working Papers, No. 27, OECD Publishing, Paris, DOI:<http://dx.doi.org/10.1787/5jm3nqp1g8wf-en>



Questions?
Feedback?
Comments?

