

Open data as an accelerator and enabler for cities

Dr. Sven Maerivoet



CITIES AND REGIONS NETWORKING
FOR INNOVATIVE TRANSPORT SOLUTIONS



TRANSPORT
& MOBILITY
LEUVEN

Overview

- Making data open and accessible
- Example applications
- How to accelerate ideas?

- Founded in 2002 as a spin-off company (NV):
 - KU Leuven & TNO research institute (The Netherlands)
 - Multidisciplinary team (18 people)
 - Independent and open (cf. www.tmleuven.be)
 - Clients: cities and regional governments, Flanders, Belgium, Europe
 - Relations: ITS Belgium (BoD), VIM (advisory council), EC 7FP, ...
- Quantitative and policy supporting:
 - Traffic flow theory (incl. ITS measures, congestion estimation, ...)
 - Transport economics (incl. **impact assessments**, SCBAs, ...)
 - Private road, rail, public transport, inland waterways, air, ...
 - Environment, public health, traffic safety (incl. legislation, infrastructure, vehicle technology, ...)
- Regular appearances in the press

The requirements to open up

Introducing TML
Making data open and accessible
EC|Trending|Big and open
Example applications
How to accelerate ideas?

- 1942 Merton → 2007 O'Reilly & Lessig
- **EC Directives**
 - EC ITS Directive (2010/40/EG)
 - EC INSPIRE Directive (2007/E/EC)
 - EC PSI Directive (2013/37/EU) [REUSE]
 - Mandatory ITS Action Plans for MS
 - (ITS Action Plans for Cities)



L 345/90

EN

Official Journal of the European Union

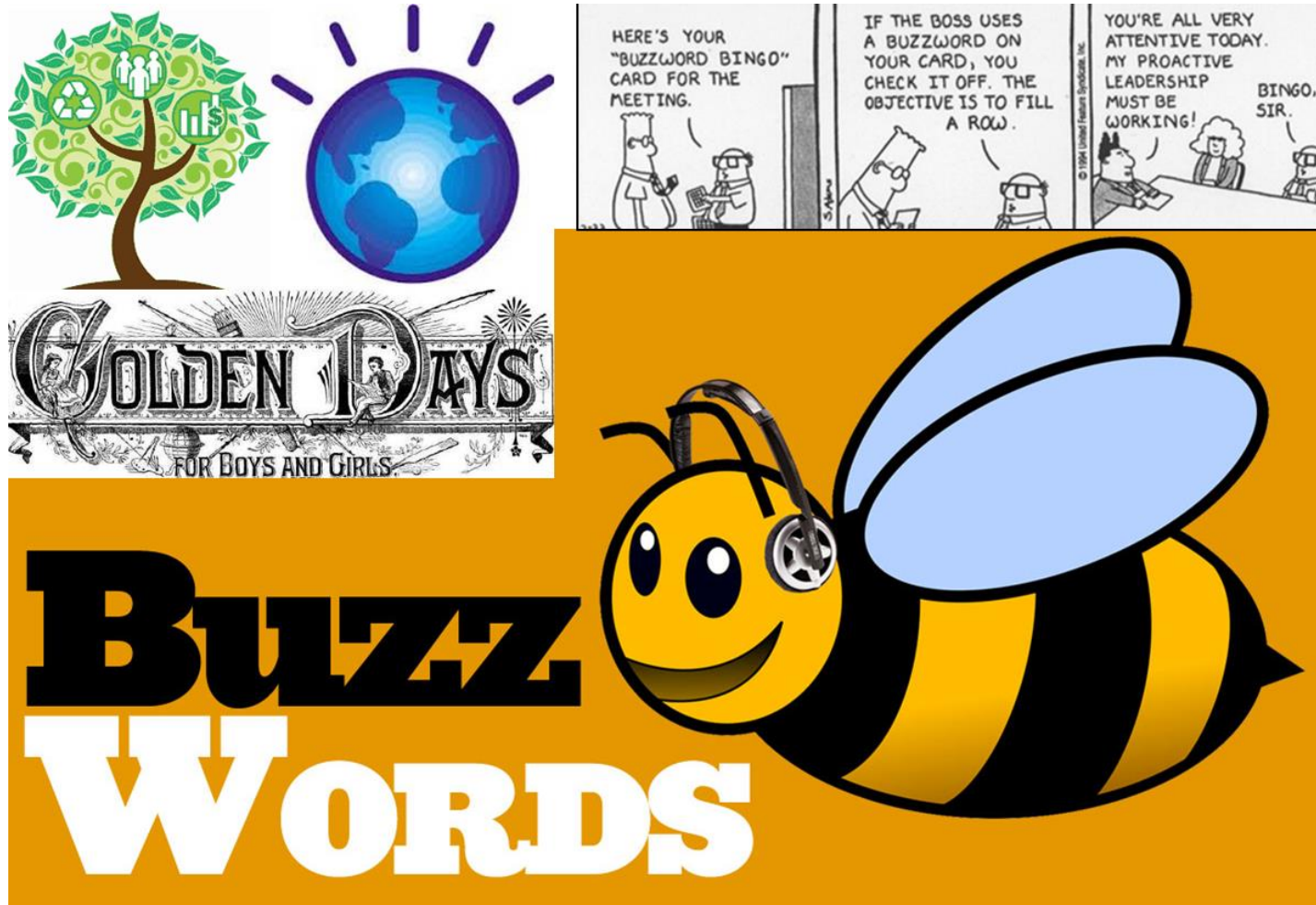
31.12.2003

DIRECTIVE 2003/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 17 November 2003
on the re-use of public sector information

- (Uniform) implementations due to **Delegated Acts**

A new trend is being set

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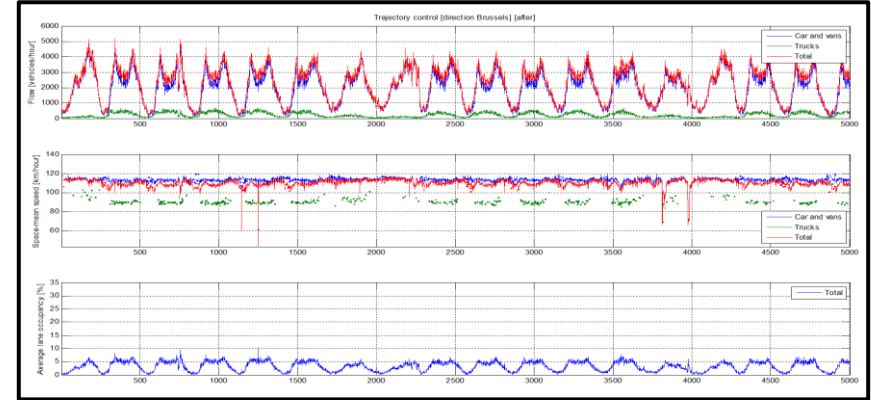
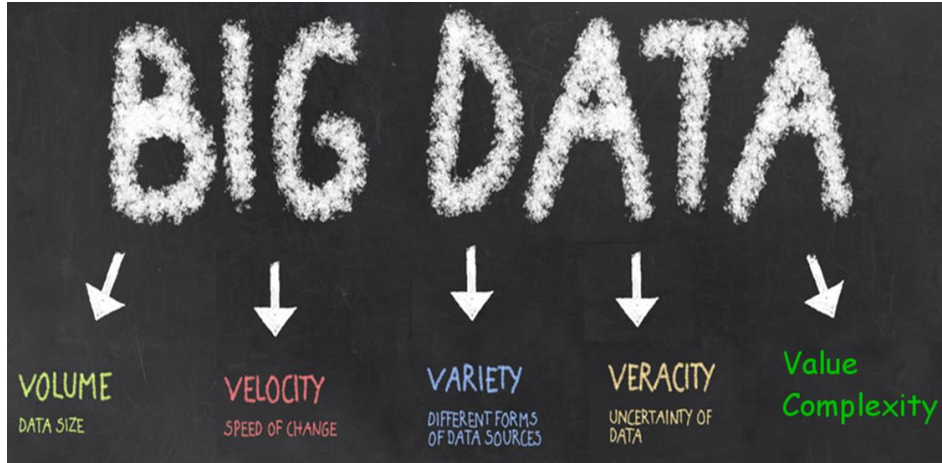


Smart is the new sustainable!

Want some data!?

Yes, big and open please!

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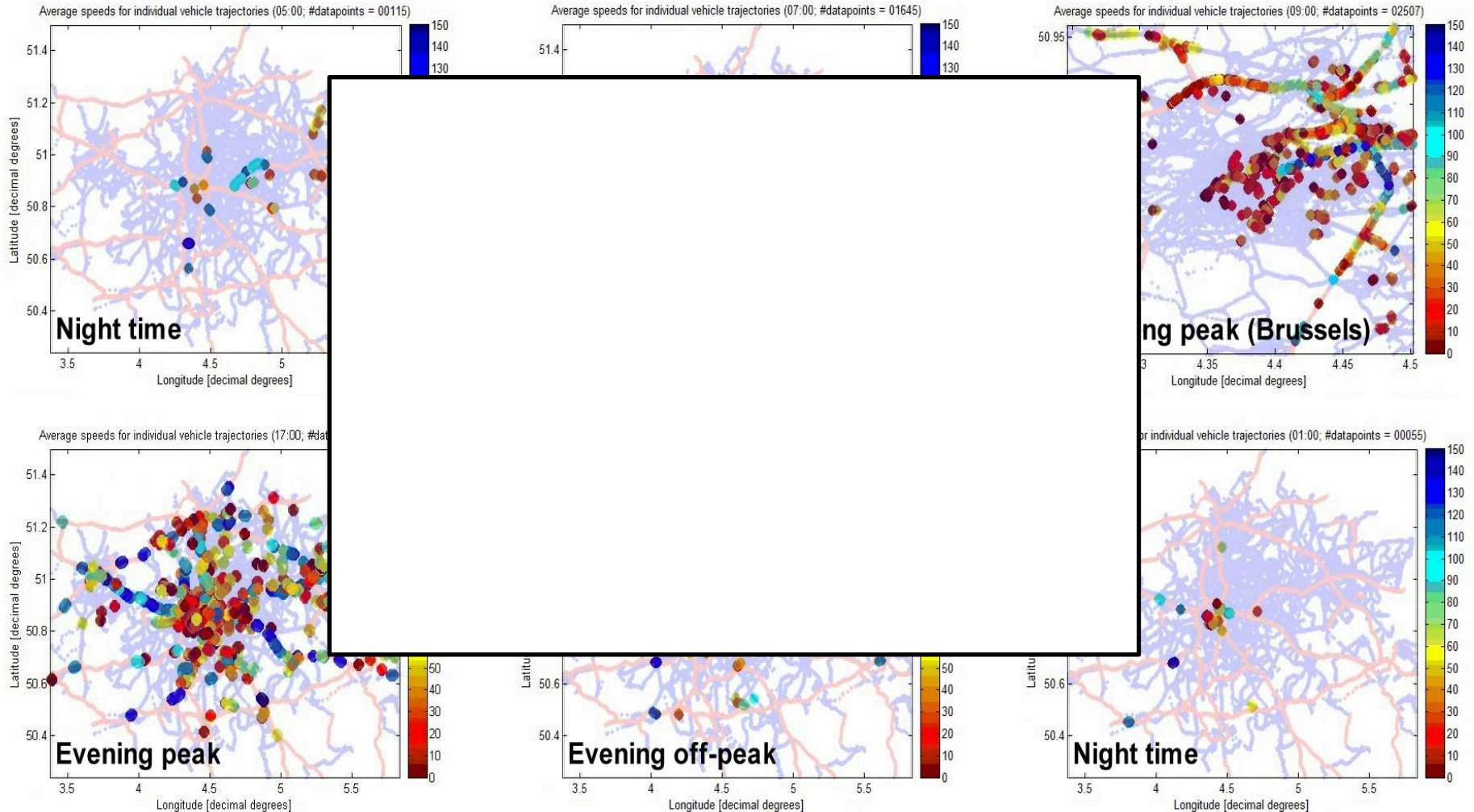
"Big" is an evolving, yet relative concept

"Big Data" enters the picture



Mobility just seems Large, but is becoming Big: patterns

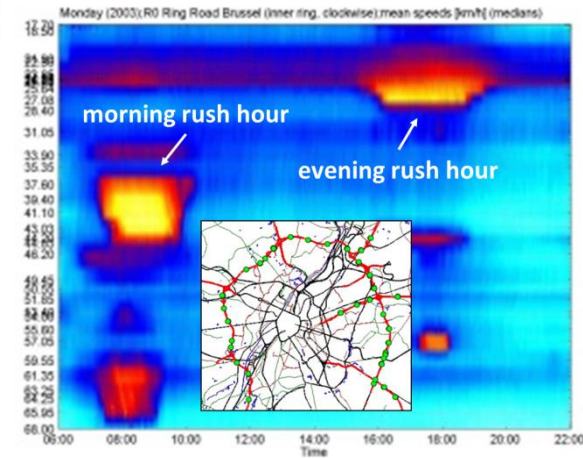
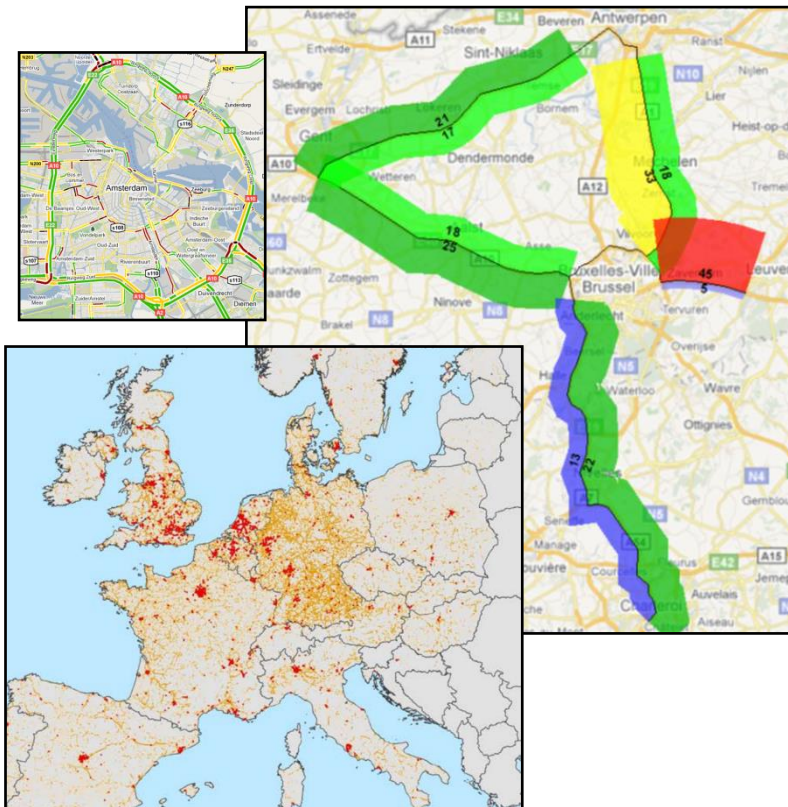
Introducing TML
Making data open and accessible
Example applications
 [Patt.](#) | [Sust.](#) | [Impacts](#) | [μData](#) | [RP&P](#)
How to accelerate ideas?



Monitoring sustainable mobility across cities

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 How to accelerate ideas?

- Obtaining information on congestion:
 - Congestion barometers
 - Proprietary developed scorecards (INRIX, TomTom, ...)



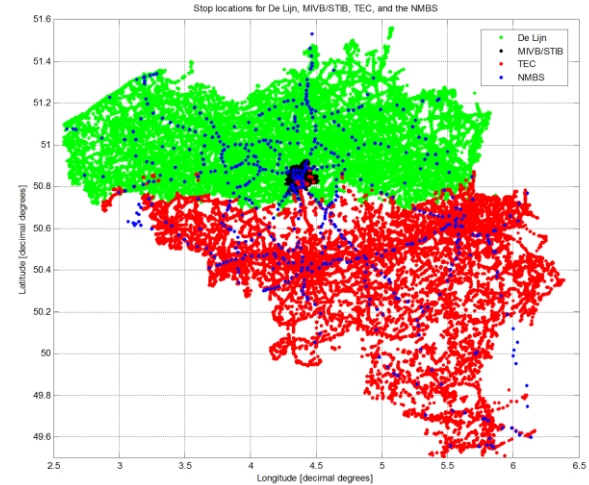
EC JRC, Technical Notes: Measuring Road Congestion, 2012
 Maerivoet, Estimation Travel Time Losses, 2010
 Inrix, Urban Mobility Scorecard Europe, 2014
 Maerivoet, Modelling Traffic on Motorways, 2006

Potential impacts on travel behaviour

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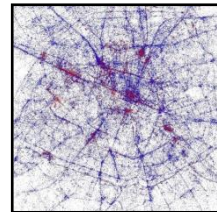
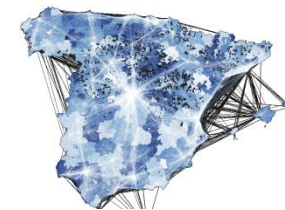
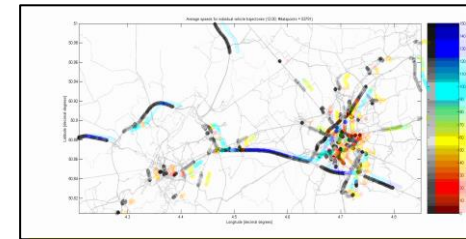
- Potential of public transportation:

Public transport	Modal shift	CO ₂	Travel time	Cost impact
Max PT	19%	-32%	+36%	none
Realistic PT	8%	-16%	+6%	-2%



Maerivoet et al., A Study on Co-Modality and Eco-Driving Mobility, 2014

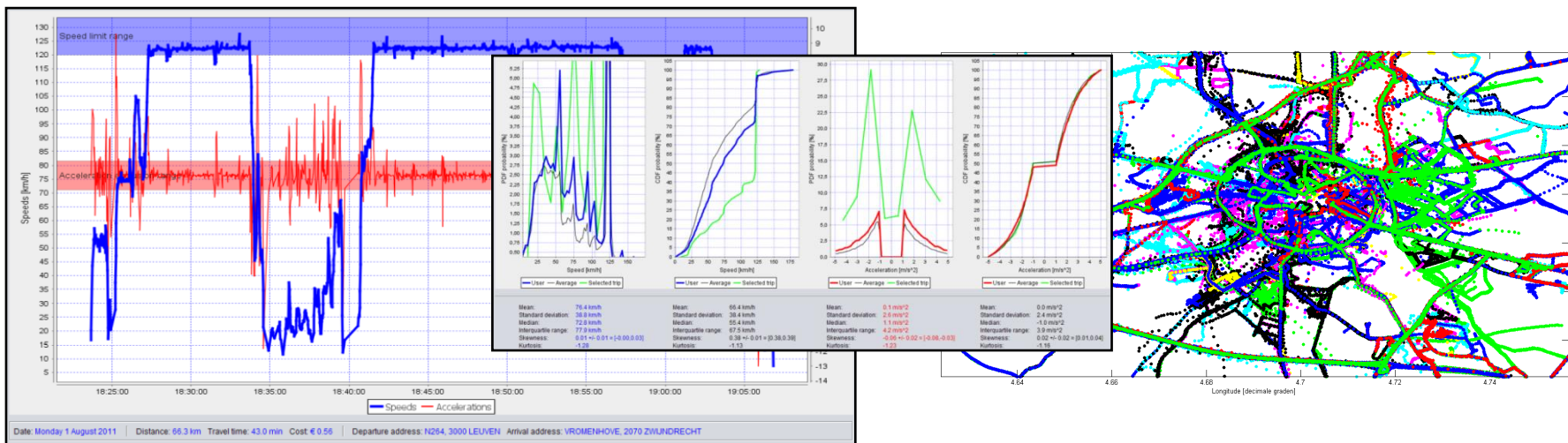
- Potential (and impacts!) of EVs and AVs
- Car-pooling v2: dynamic ride sharing
- Big Data: citizens' behaviour, commuter patterns, ...



From large to really big

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How to accelerate ideas?

- The new generation of mobile data
 - GSM is kinda 'out', GPS is more than in!
 - Less and less problems with estimation of traffic volumes.
 - ➔ Fusion with available measurements (via traffic centres)



- Going beyond (X-)FCD:
 - E.g., mobility patterns from Bluetooth-scanners, Twitter feeds, Android locations, ...

An new generation of urban route planning and parking

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How to accelerate ideas?

- Next-generation route planners:
 - Incl. green and predictive routing
 - Incl. tourist planning

Join our workshop!
27/10 (Karlsruhe, DE)



- Culminating in:
 - Incl. Integrated Fare Management (IFM)



- Smart parking apps:



A city's first step: making data available to the public

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Example applications
How to accelerate ideas?
Brussels | Ghent | Antwerp | Global

- Example: Brussels
- Created an **Open Data Portal**
 - 508 open data sets (incl. metadata!)
 - Search functionality
 - Access through API (JSON)



- Specific licence governing (re-)use
 - Citation
 - Liability waiver
 - No previous IPR on the data



- Events

- Hackathon (best prototype/business model/data use)
- GirlsCodeEU workshop



17-18/10/2014

Next step: sharing ideas and solutions

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Brussels|Ghent|Antwerp|Global

- Example: Ghent



- Upgraded portal:

- Access through API (JSON, XML, CSV, KML, ...)
- Including dynamic information (real-time parking occupancies)

- Developers:

- Can share/supply their own app
- Can propose ideas



- Note: just making the data available is not enough to incentivise the market



Incentivising developers

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- Example: Antwerp
 - Over 270 datasets
 - Provide better services
 - Stimulate the creative economy
 - Fusing data
 - Simple licencing (cf. Brussels)
 - Incl. catalogue of available/shared apps

- Organise a yearly **challenge**: Apps for Antwerp
 - Best developed app
 - Best concept
 - Distinction between amateurs and professionals



Example results of such a challenge

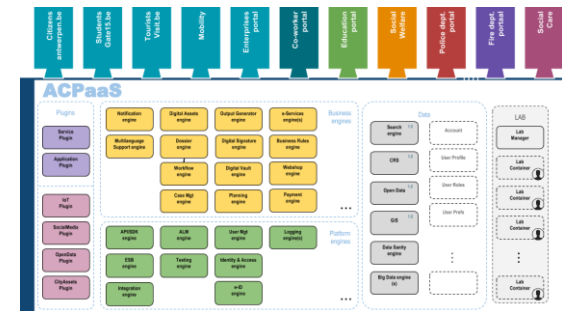
- Tracking moving signs
- Quality of living in a neighbourhood
- The 'emotional state' of a location
- "Let's fix it" and "Pinitag"
 - Signal older, damaged, or annoying locations
 - Citizens can propose to help
- ACleanCity: centralises info wrt. waste sorting, disposal, and collection
- Where to put (extra) garbage bins?
- Locations of (public) toilets for disabled persons
- Geoplus: easier access to GIS data
- ...



Going even further: ACPaaS

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- ACPaaS = Antwerp City Platform as a Service
 - The goal is to re-use components and prevent from creating or buying them over and over again
 - Develop the platform in cooperation with startups
 - Reaching out via Meetups
- Stimulate co-creation and innovation
 - Separate apps (changing) front-ends from their back-ends
 - Back-ends move into (stable) engines
 - Accessible through APIs

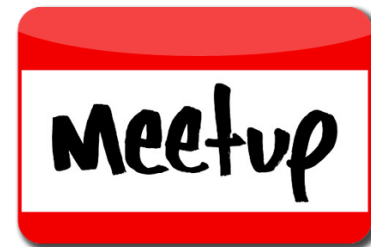


- “Everyone can participate in building a digital city!”

Open Data in cities is a global phenomenon

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- Various emerging Open Data movements and PPPs
 - Flanders' Open Data Day (incl. funded innovation projects)
 - Triangle Open Data Day
 - Open Data Education
 - Hacking for civic good
 - International Open Data Hackathon
 - Write applications
 - Liberate data
 - Create visualisations
 - Publish analyses
- Open Data Meetups:
 - Education
 - Sharing ideas
 - Incentivise politicians



An aerial photograph of a large parking lot filled with cars. A magnifying glass is positioned over a specific section of the parking lot, focusing on a cluster of cars. The background shows the vast expanse of the parking lot with many cars parked in rows.

Sven Maerivoet
Transport & Mobility Leuven
svn.maerivoet@tmleuven.be
+32 16 31 77 33

Q: “But why did you analyse that?”
A: “Because there was data!”