



A VÁROSI ÉLET LENYOMATA

A HÁLÓZATBA KAPCSOLT TÁRSADALOM ÉS A SMART CITIES
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GÓDOR ISTVÁN PHD
TUDOMÁNYOS MUNKATÁRS

TARTALOM



- › Mit gondolunk az 5G-ről (külön fájl)
 - Miért érdekes ez az okos városokban
 - Háttérben álló technológiai területek
- › A mobil forgalomról röviden (külön fájl)
- › Városi élet lenyomata a forgalomban
 - Városok struktúrája, közös jellemzők és különbségek
 - Mit tanulhatunk más városoktól, például milyen hatása van sporteseményeknek
- › Városi élet egyéb érdekességei
 - Kommunális hulladék, közvilágítás és úthálózat érdekességei szenzor szemmel
 - Közlekedés: távolságok relativitása utazás közben; vonatozás, taxizás és autós közlekedés

Külön fájl: Ericsson mobilitás
jelentés magyarul
<http://www.ericsson.hu/mobility-report/201411>

VÁROSI ÉLET LENYOMATA A FORGALOMBAN

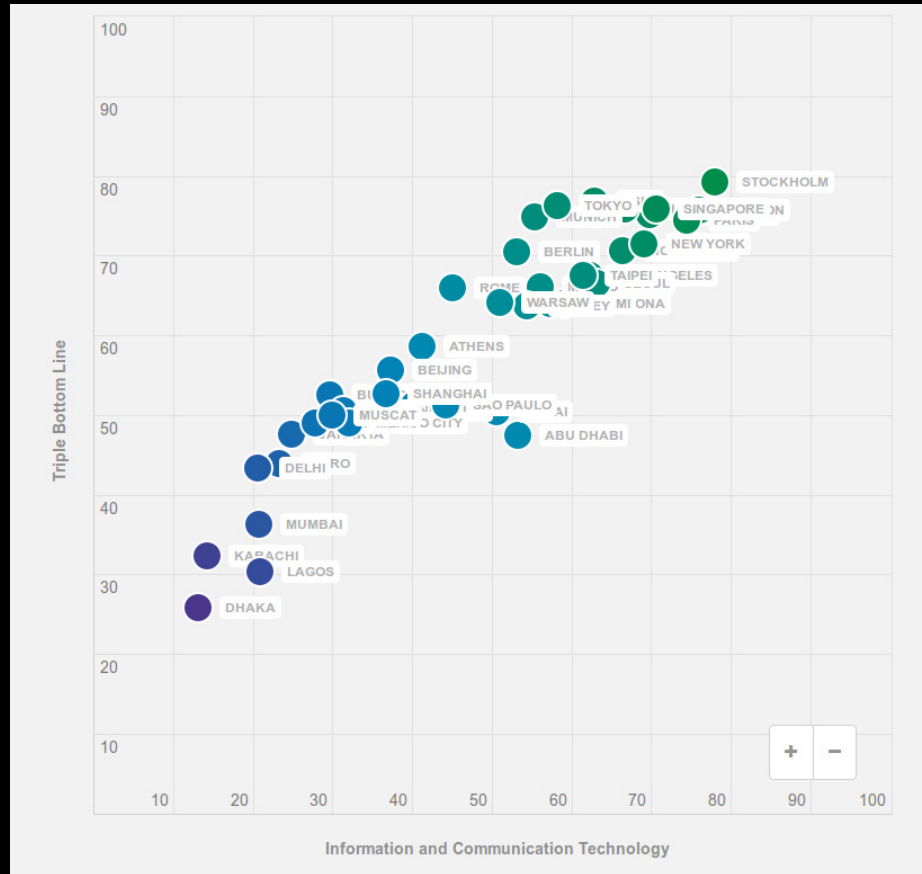
Városok struktúrája, közös jellemzők és különbségek
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NETWORKED SOCIETY CITY INDEX

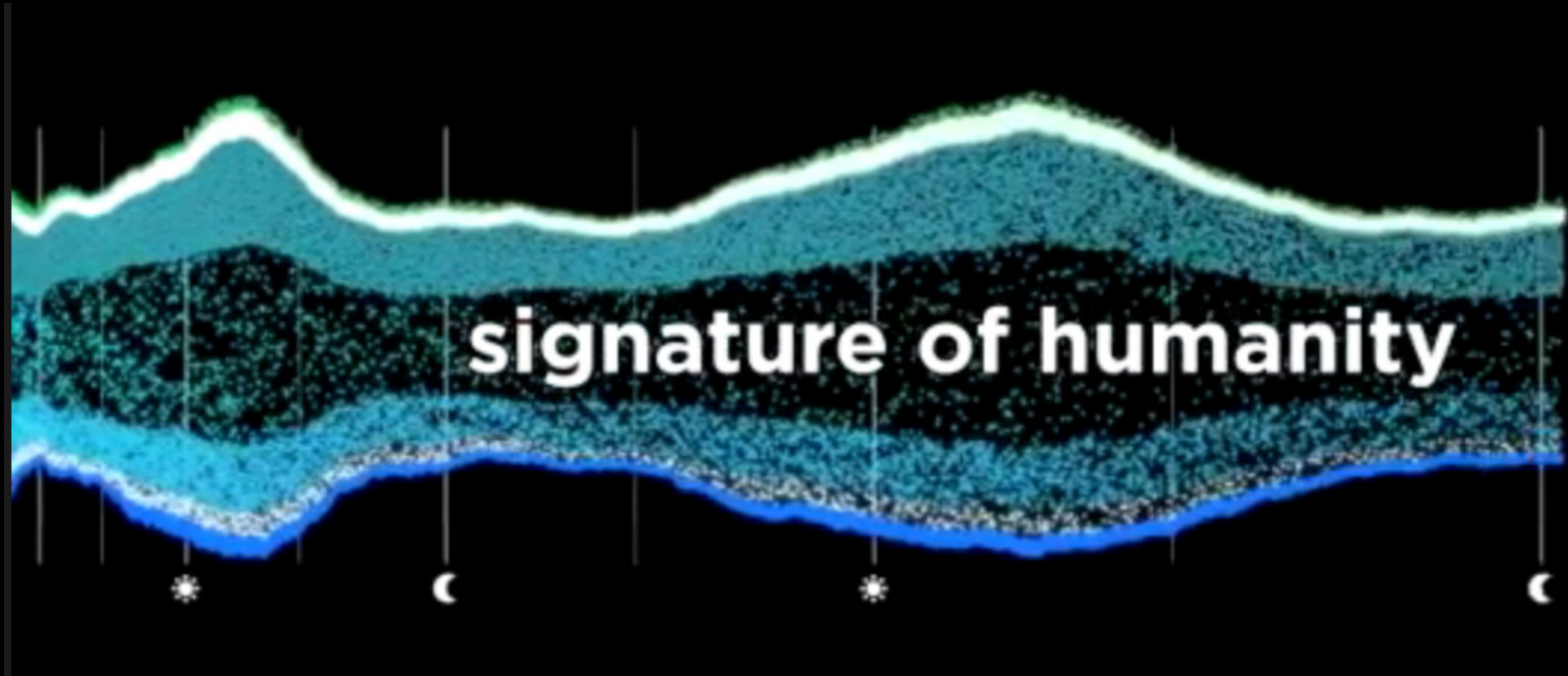


- › The Networked Society City Index shows a strong correlation between ICT maturity and Triple Bottom Line development (social, environmental and financial)
- › Cities that show high ICT maturity include Stockholm, London, New York, Paris and Singapore

Source:
http://www.ericsson.com/thinkingahead/networked_society/city-life/city-index/graph



SIGNATURE OF HUMANITY PROJECT

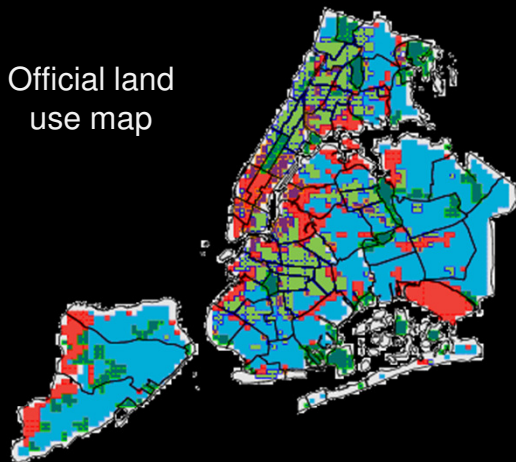


STRUCTURE OF CITIES

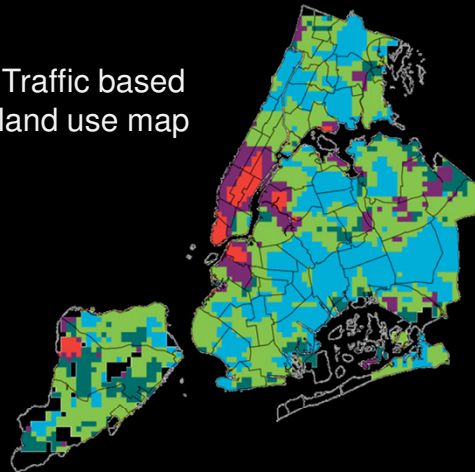
EXAMPLE OF NEW YORK



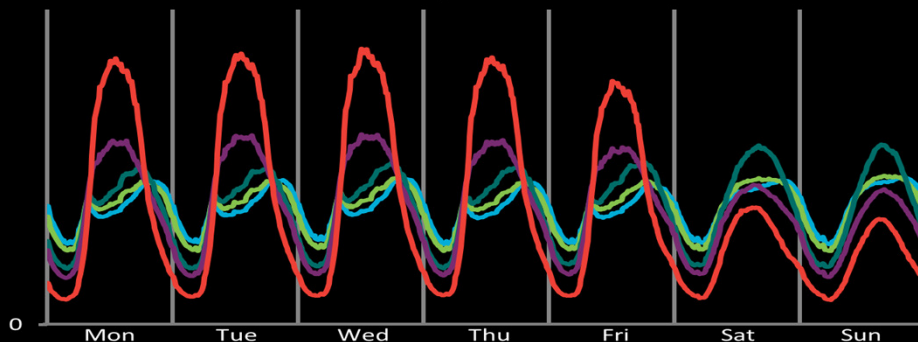
Official land
use map



Traffic based
land use map



- Residential
- Mixed/residential
- Recreational
- Commercial
- Business



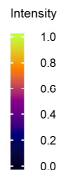
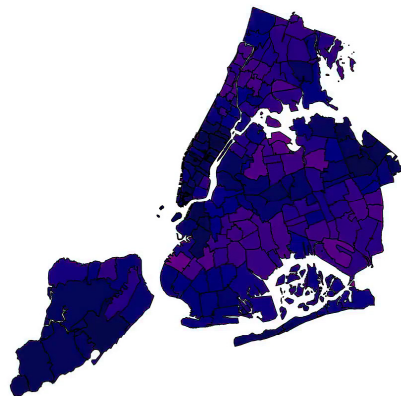
Normalized signaling
activity over a typical
week

STRUCTURE OF CITIES

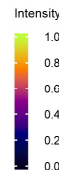
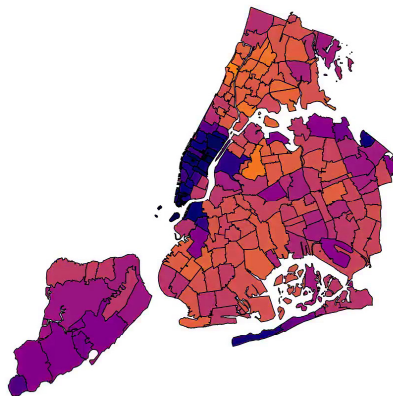
EXAMPLE OF NEW YORK



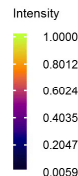
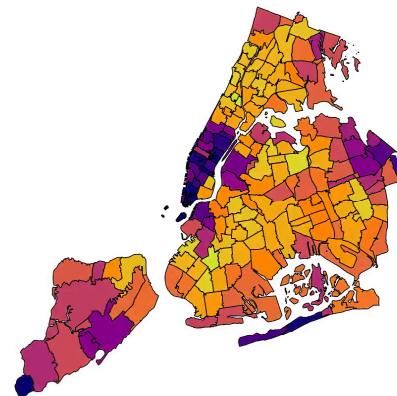
New York (regions)
Calls (normalized)



New York (regions)
SMS (normalized)



New York (regions)
DL data (normalized)



senseable city lab ::: + ERICSSON



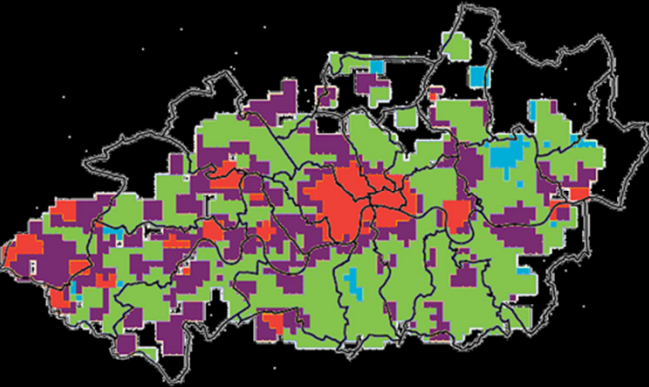
Source: <http://www.ericsson.com/research-blog/data-knowledge/tale-many-cities/>

DO CITIES SHARE A COMMON BEAT?



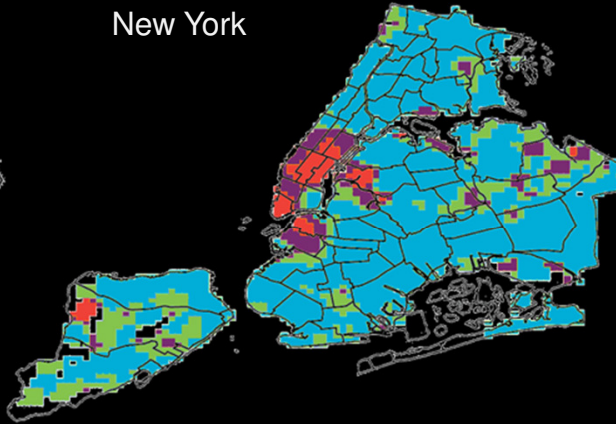
- › One single beat for all cities' core business centers
- › City-specific residential signatures

London



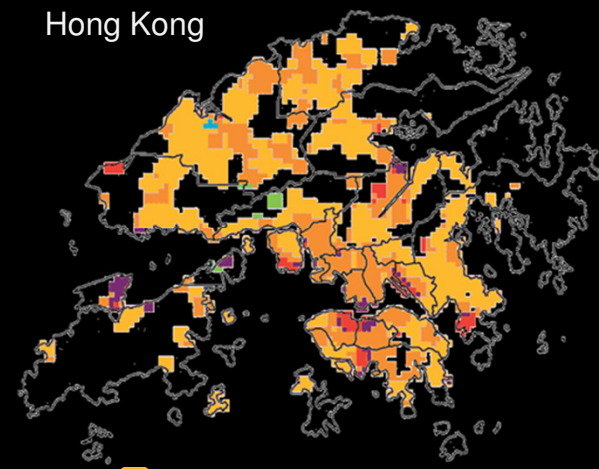
- Residential & recreational
- Commercial & commuting

New York



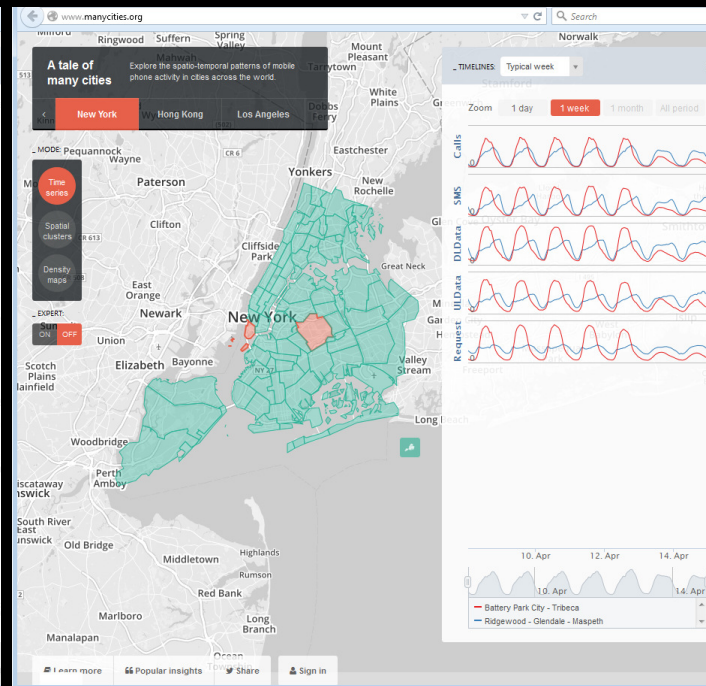
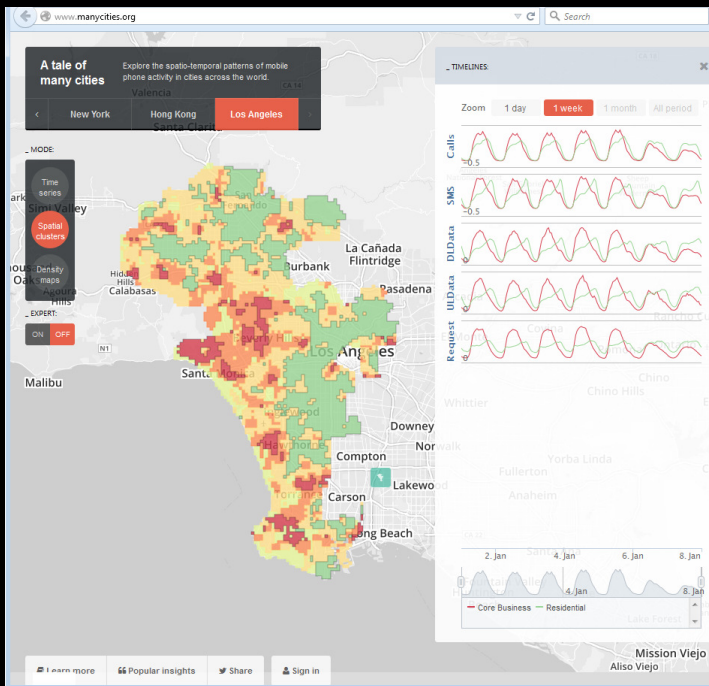
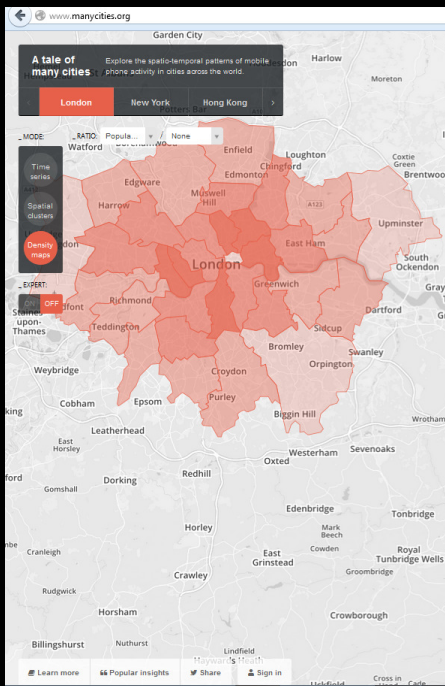
- Core business in cities
- Residential in New York

Hong Kong



- Residential in Hong Kong
- Other mix in Hong Kong

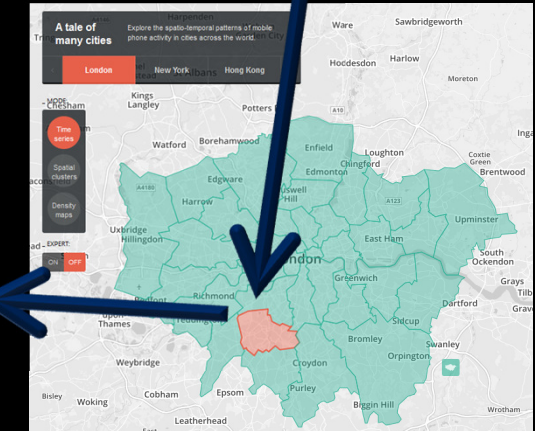
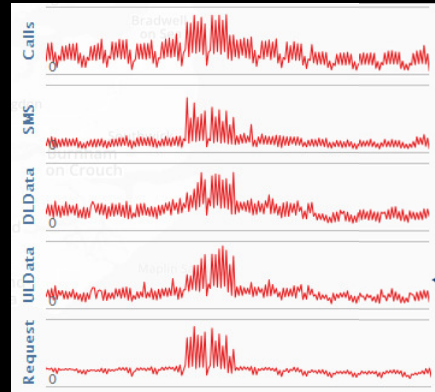
MANYCITIES.ORG



WIMBLEDON TENNIS TOURNAMENT



- › Impacting not just on the close region, but the whole Borough of Merton
- › Different impact on different types of traffic:
 - Less impact on call
 - Great impact on request for data bearer (~signaling load), uplink data (Facebook, Twitter) and SMS



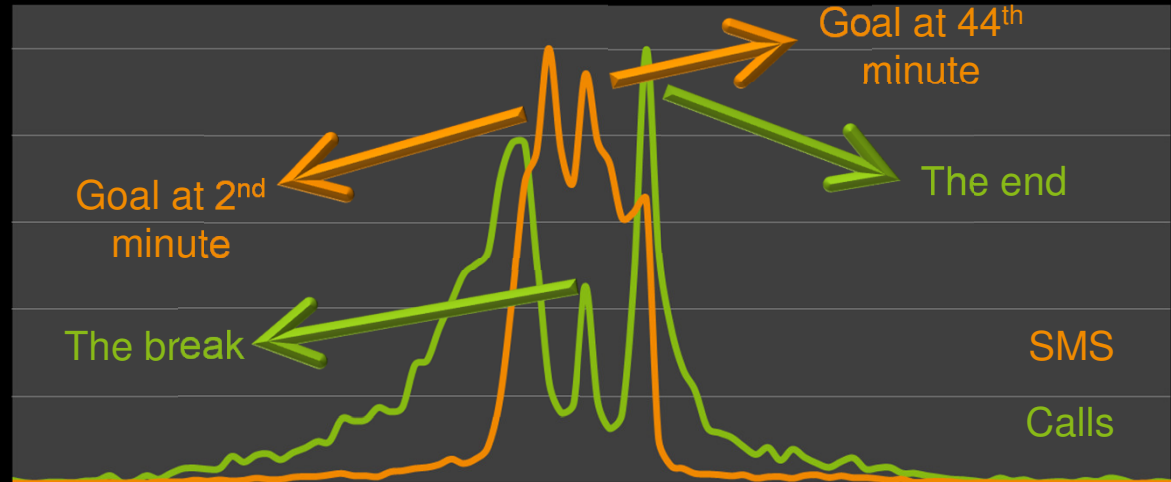
Source: <http://manycities.org/>

Illustration: <https://www.wikipedia.org/>

ENGLISH FOOTBALL MATCH



- › 2 hours of a soccer game is framed by call peaks
- › SMS activity only during the game and SMS storm at goals



Source: Ericsson

Illustration: <https://www.wikipedia.org/>

VÁROSI ÉLET EGYÉB ÉRDEKESSÉGEI

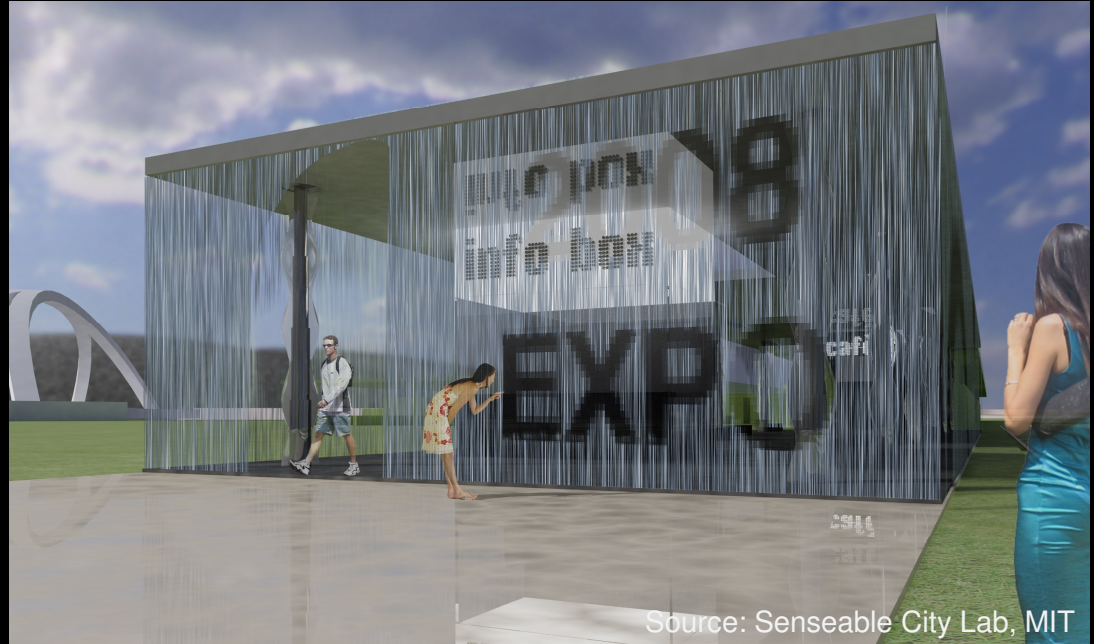
Kommunális hulladék, közvilágítás és úthálózat érdekességei
szenzor szemmel

Közlekedés: távolságok relativitása utazás közben; vonatozás,
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DIGITAL WATERFALL



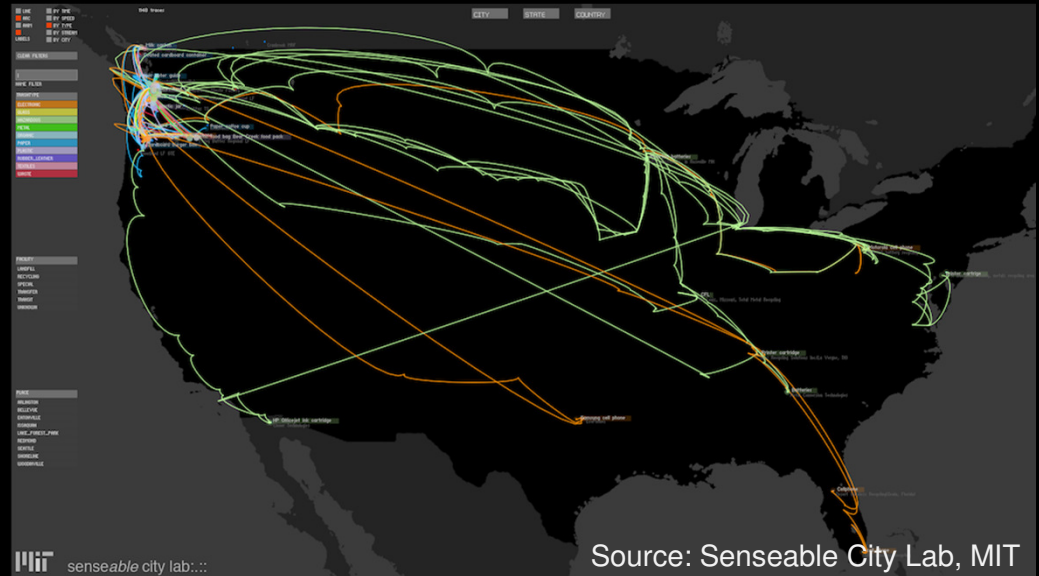
- › What more you can get out from a waterfall via sensors and some computation power



TRASH TRACK



- > Why do we know so much about the supply chain and so little about the 'removal-chain'



Source: Senseable City Lab, MIT



› Why “just” collecting the garbage?

› Garbage trucks go around the whole city

› Garbage trucks should check

- Street lights
- Potholes
- Status of environment

› Thinking further: if dust bins reported fill level, collection could be optimized

The operation of smart cities
requires strong cooperation
between partners of the cities

TRAINS OF DATA

EXAMPLE FROM FRANCE



Source: <http://senseable.mit.edu/trainsofdata/>

Isochronic France

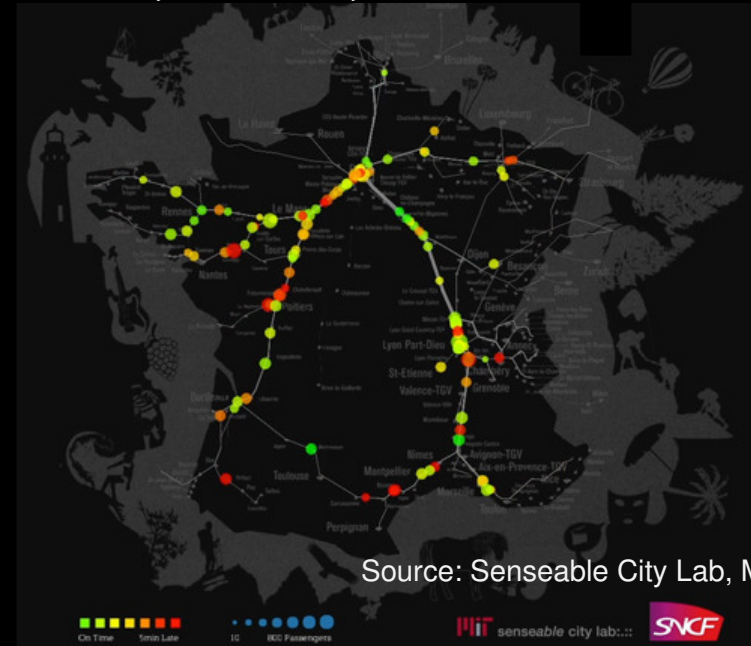
- Travel time between any location and the rest of the country changes constantly



Source: Senseable City Lab, MIT

Trains in time

- Trains, at times, do run late.



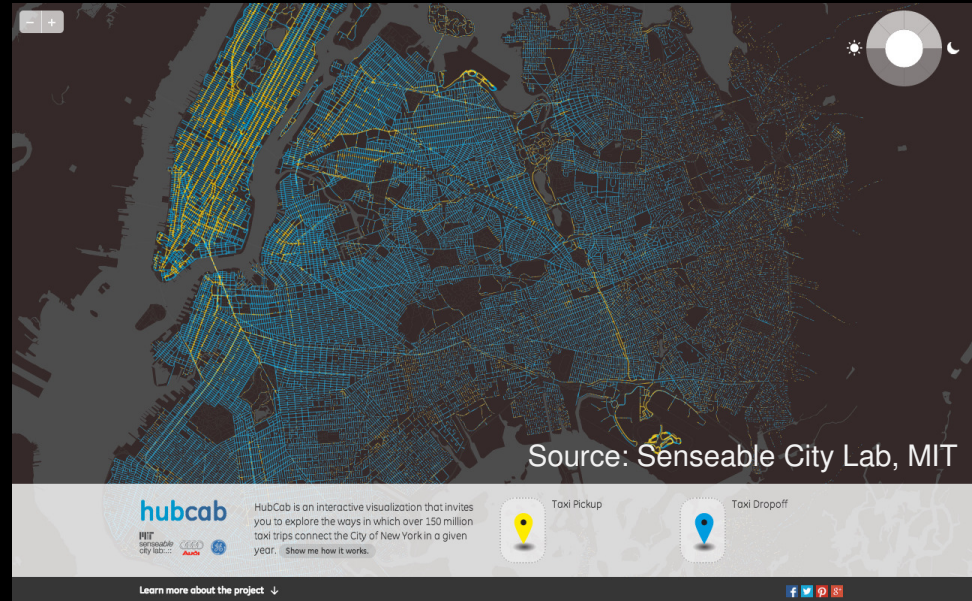
Source: Senseable City Lab, MIT

HUB CAB

EXAMPLE FROM NEW YORK



- Exploring New York City taxi trails and sharing our way to a more sustainable urban future
- HubCab is an interactive visualization that invites you to explore the ways in which over 170 million taxi trips connect the City of New York in a given year.



ROAD FRUSTRATION INDEX



- To investigate the emotive aspects of driving, Audi and the Senseable City Lab are working together to develop the Road Frustration Index, a project that combines realtime data on traffic, incidents, weather and driver sentiment across 30 metropolitan areas in the US to approximate the level of road-induced stress in each locale.

Source: <http://senseable.mit.edu/rfi/>



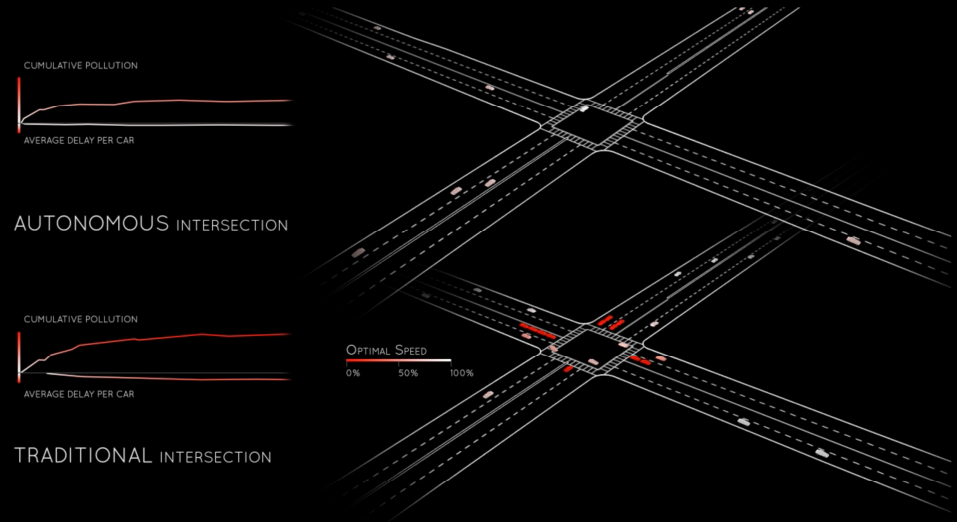
Source: Senseable City Lab, MIT

DRIVE WAVE

AUTONOMOUS INTERSECTION FOR AUTONOMOUS CARS



- › In the city of tomorrow traffic lights will be replaced by intelligent intersections for controlling urban traffic
- › Imagine a city without traffic lights, where lanes of cars merge harmoniously from one to the next, allowing traffic to flow smoothly across intersections



Source: Senseable City Lab, MIT

Source: <http://senseable.mit.edu/wave/>



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