The Value of Urban Data

Petr Suska, Fraunhofer IAO, 30th OCT, 2017
New Delhi

Profile of the Fraunhofer Society

- **Founded:** 1949
- about **24,000** staff
- **66** institutes and research units
- **Fraunhofer worldwide**

Europe: Brussels (Belgium), Budapest (Hungary), Porto (Portugal), Gothenburg (Sweden), Bolzano (Italy), et al.

USA: Boston, Brookline, Cambridge, East Lansing, Maryland, Newark, Plymouth, San José, Storrs

North/South America: London (Canada), Santiago (Chile), Salvador and Sao Paulo (Brazil)

Asia: Ampang (Malaysia), Beijing (China), Jakarta (Indonesia), Koramangala Bangalore (India), Seoul (South Korea), Singapore, Tokyo and Sendai (Japan)

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Profile of the Fraunhofer Society

- **Annual research budget:** more than 2 billion euros*
- Non profit organisation
- Over **70%** of this sum is **generated** through
  - projects commissioned by industry and
  - publicly funded research projects
- Roughly 30% is provided by the **German state and federal governments** for advanced research (looking at issues that will be of concern to the economy and society in five or ten years time).

  * Figures for 2016

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What is the <u>urban</u> Value that lies within data?

Who benefits from the Smart City?

How can we maximize the collective urban value?

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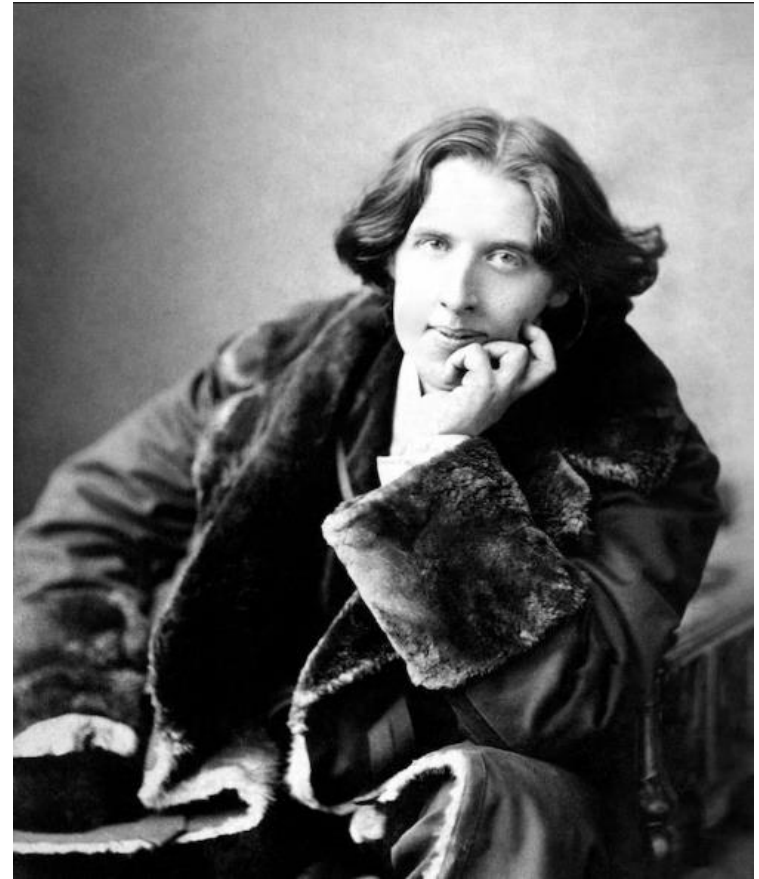
Morgenstadt Research Initiative
Value of Urban Data

"Data is the new oil"

- Everybody

"The Price of everything and the value of nothing…"

- Oscar Wilde

Fraunhofer
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NEW FORMS OF DATA AND WHERE THEY TAKE US

CITY DATA MARKETS… OR EXCHANGES

Defining the Value of Urban Data with leading Smart Cities & companies in Europe!

Copenhagen

Berlin

Fraunhofer FOKUS

Dublin

London

Fraunhofer IAO

Transport for London

MasterCard

Linked in

Allianz

WORLD BANK

intel
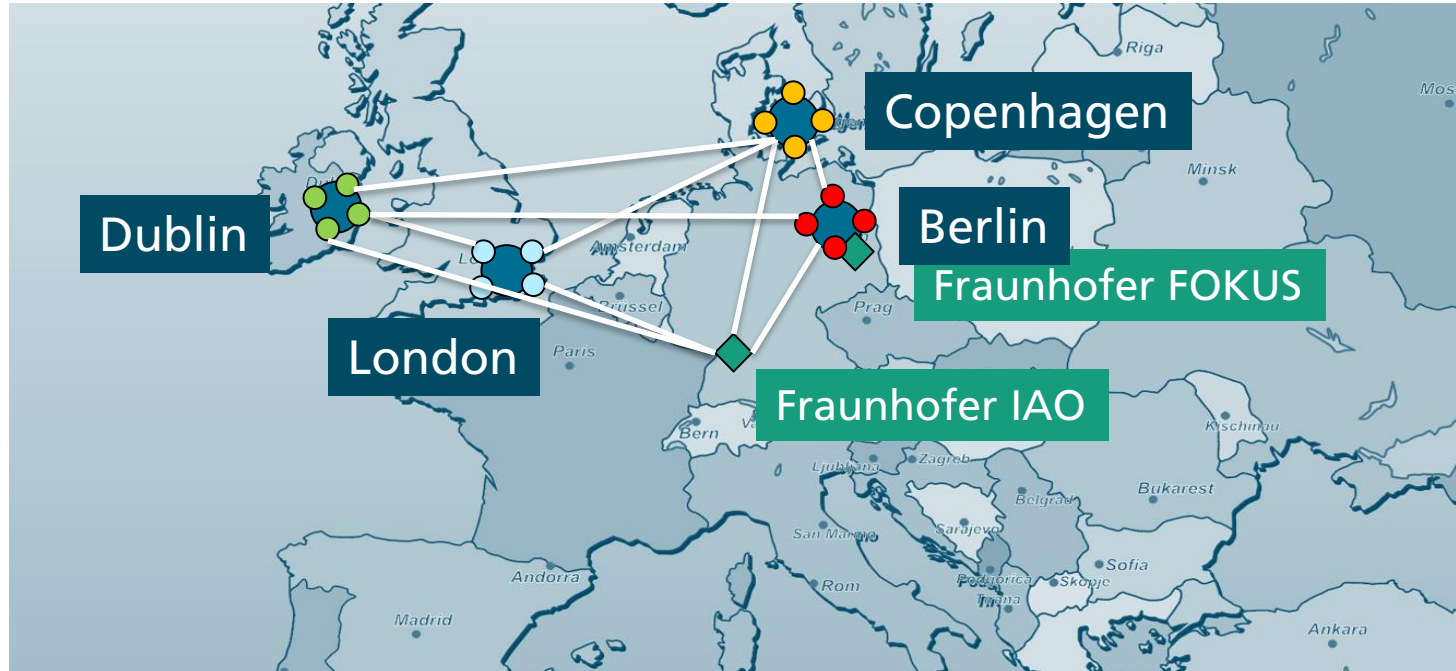
Envisaged partners

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Cumulative Data Value Framework

Benefits

More efficient city services

Better use of infrastructure and resources

Less pollution, better air, healthier people

Lower costs through risk prediction …

Jobs

New income opportunities
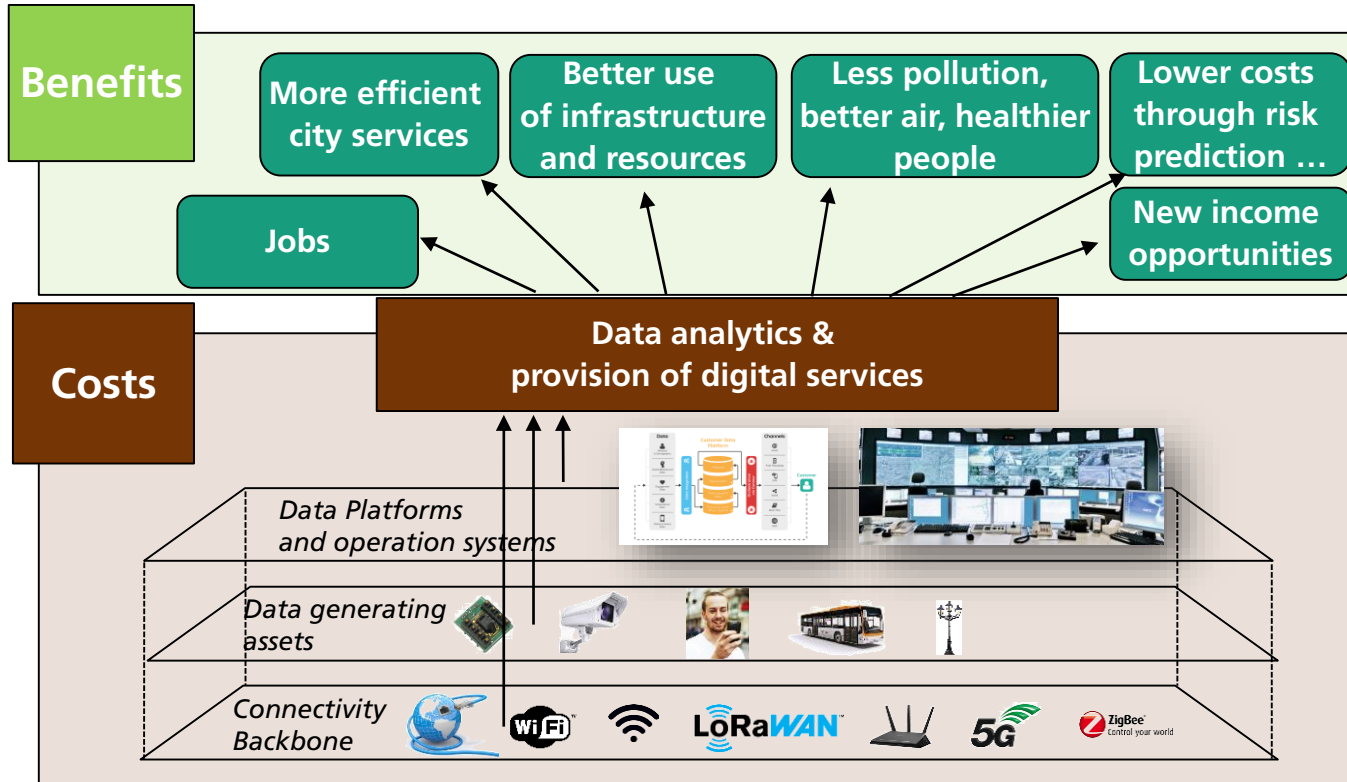
Social, environmental and economic returns on investment over time.

Costs

Data analytics & provision of digital services

Data Platforms and operation systems

Data generating assets

Connectivity Backbone

WiFi™   LoRaWAN™   5G   ZigBee Control your world

Costs for single data-sets

Recurring investments in data management, operation & maintenance

Recurring investments in digital infrastructure

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Basic data value model

Smart city infrastructure & governance

Data-sets

Smart City use case

Added value for city

Social impacts

Economic impacts

Environmental impacts

Primary Costs

Generation & provision of data (e.g. through sensors)

Hidden costs

Connectivity, broadband, data platforms, data policies, municipal data team, server parks, research & development.

Secondary Costs

Refinement, aggregation, protection, management & analysis of data

Benefits

Value expressed in monetary units derived through all types of impacts from a single use case. Impacts can be positive or negative.

Understanding the impact of use cases through systems modelling
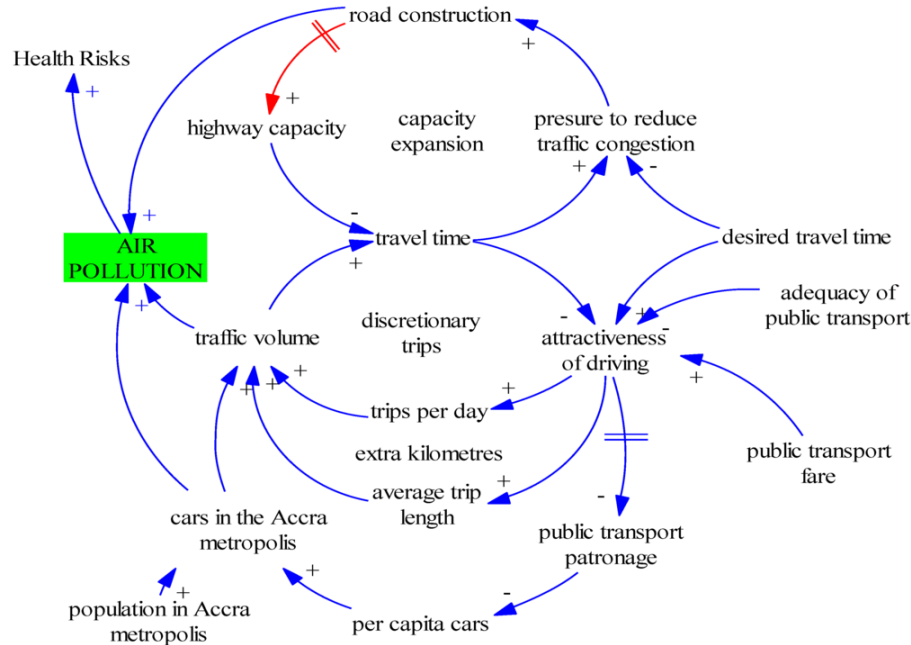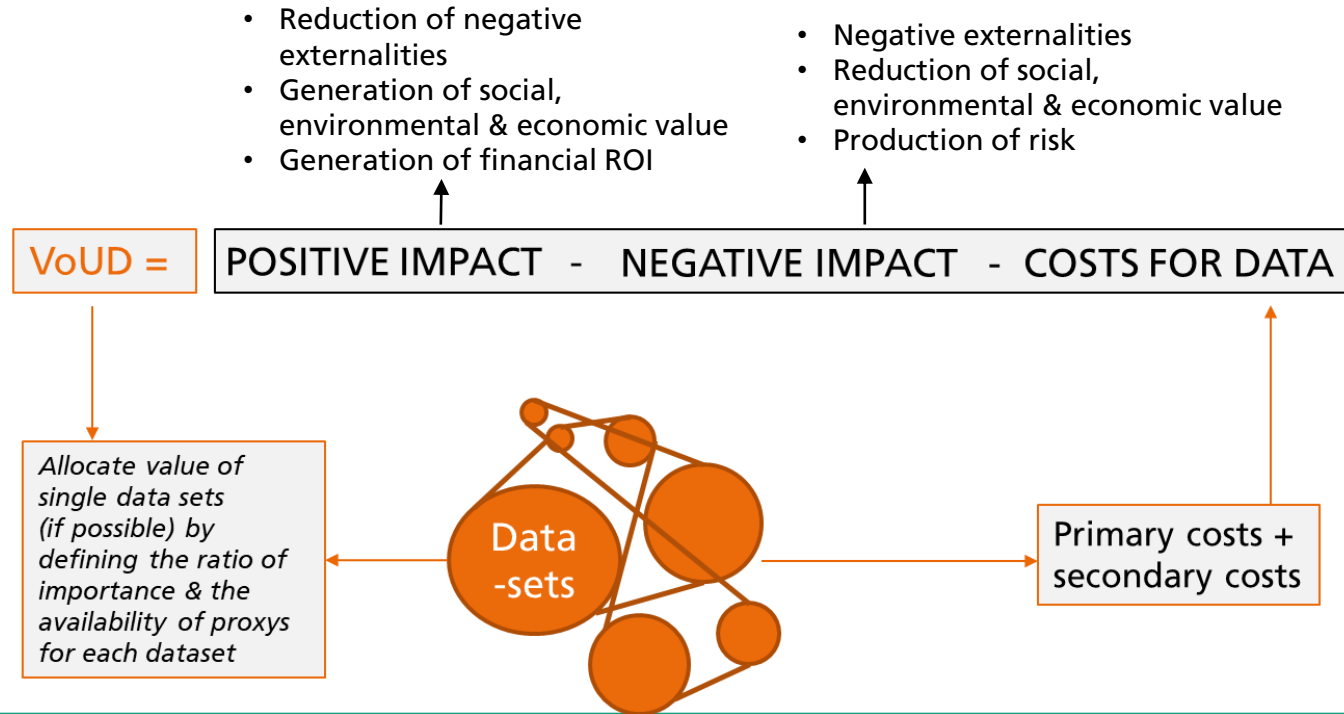

Behind each impact factor for each use case there will be a value tag and a defined or approximated monetary expression that is based on data from the particular city.

Understanding the value of data through calculating the net urban value of smart city use cases

- Reduction of negative externalities
- Generation of social, environmental & economic value
- Generation of financial ROI

- Negative externalities
- Reduction of social, environmental & economic value
- Production of risk

VoUD = | POSITIVE IMPACT - NEGATIVE IMPACT - COSTS FOR DATA

Allocate value of single data sets (if possible) by defining the ratio of importance & the availability of proxys for each dataset

Data-sets

Primary costs + secondary costs

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Thank you!

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