

# Välkomna!

## NORDISK KONFERENS OM ANALYS AV TURISM



# DIGITAL OPPORTUNITIES AND CHALLENGES FOR DATA, STATISTICS AND ANALYSIS IN TOURISM

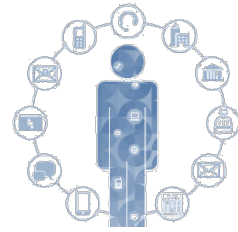
**Valeria Croce**

European Commission (external)

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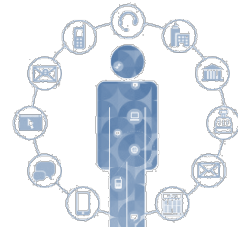
# A digital revolution



Digitalisation is the [pervasive, integrated, swift] adoption, or increase in use, of computer technology.

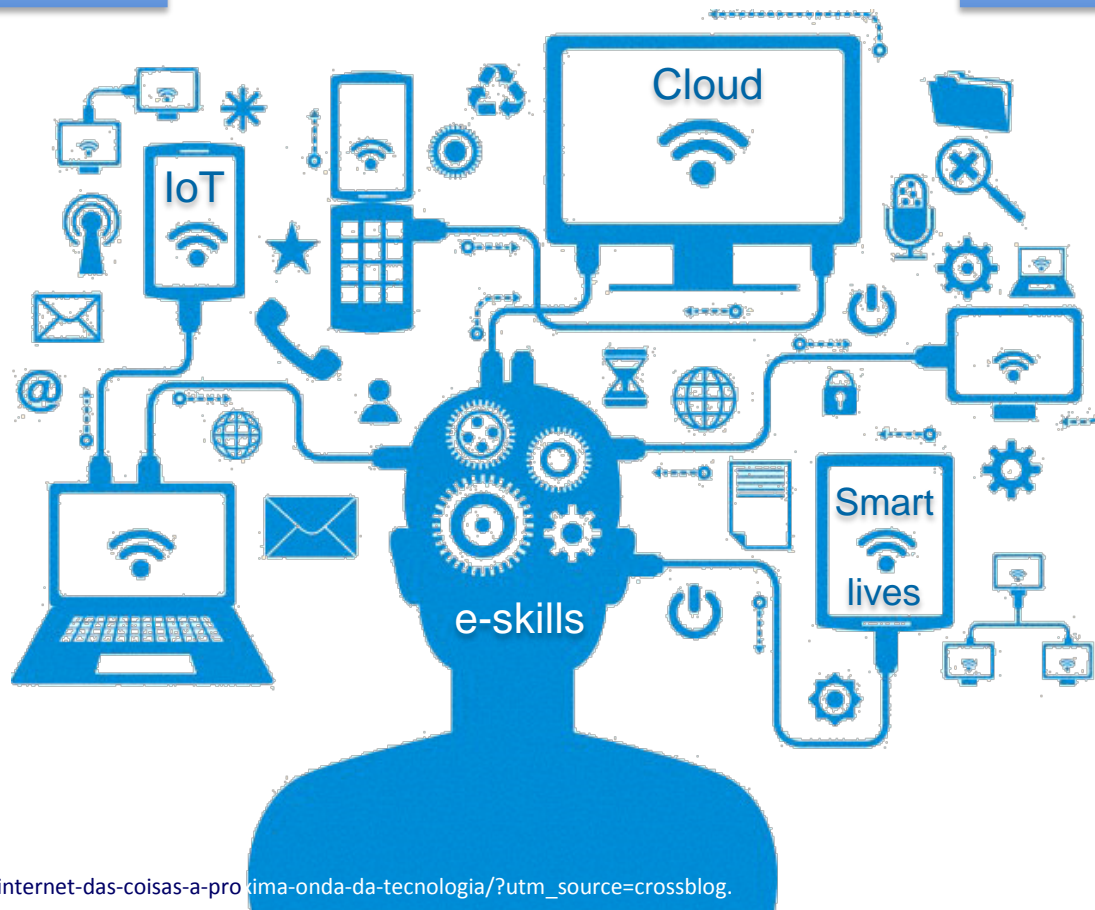


# Ubiquitous, deep, long-lasting impacts

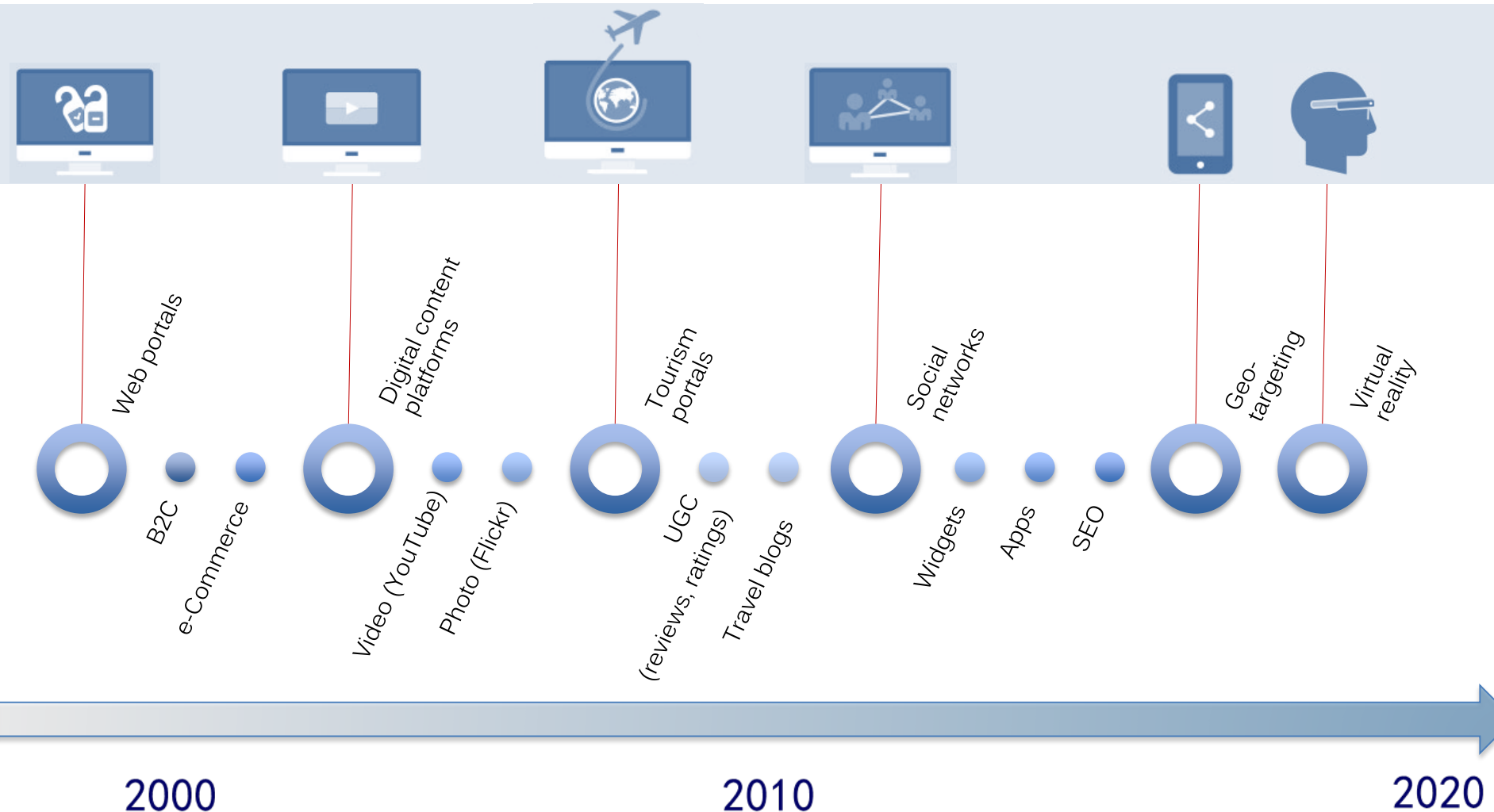


ON THE ECONOMY

ON SOCIETIES



# Tourism: an early adopter



2000

2010

2020

# Traditional products in a new guise



## Virtual Tour

### Mackinac Island Experience



Source: <http://www.michigan.org/georama-mackinac-island>

## Digital Resort



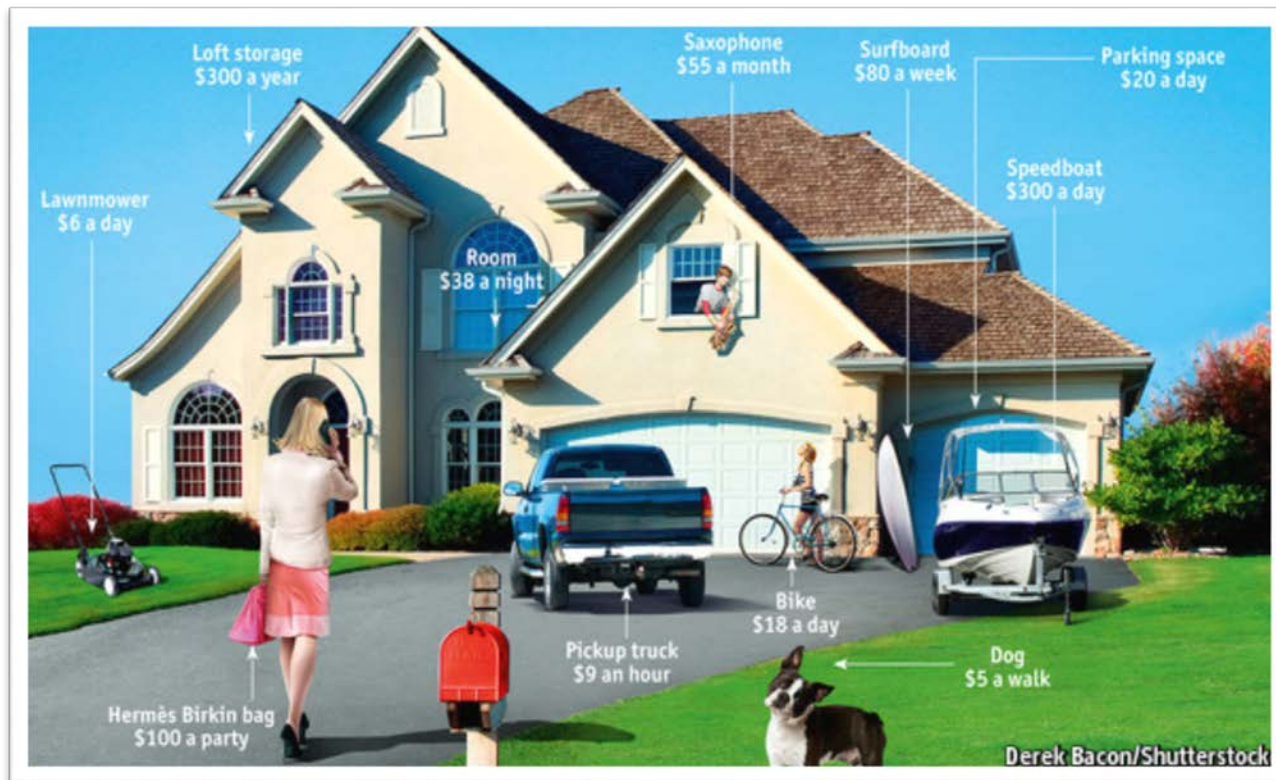
Source: <https://www.youtube.com/watch?v=tNZwZmBrBZQ&feature=youtu.b>



# New business models



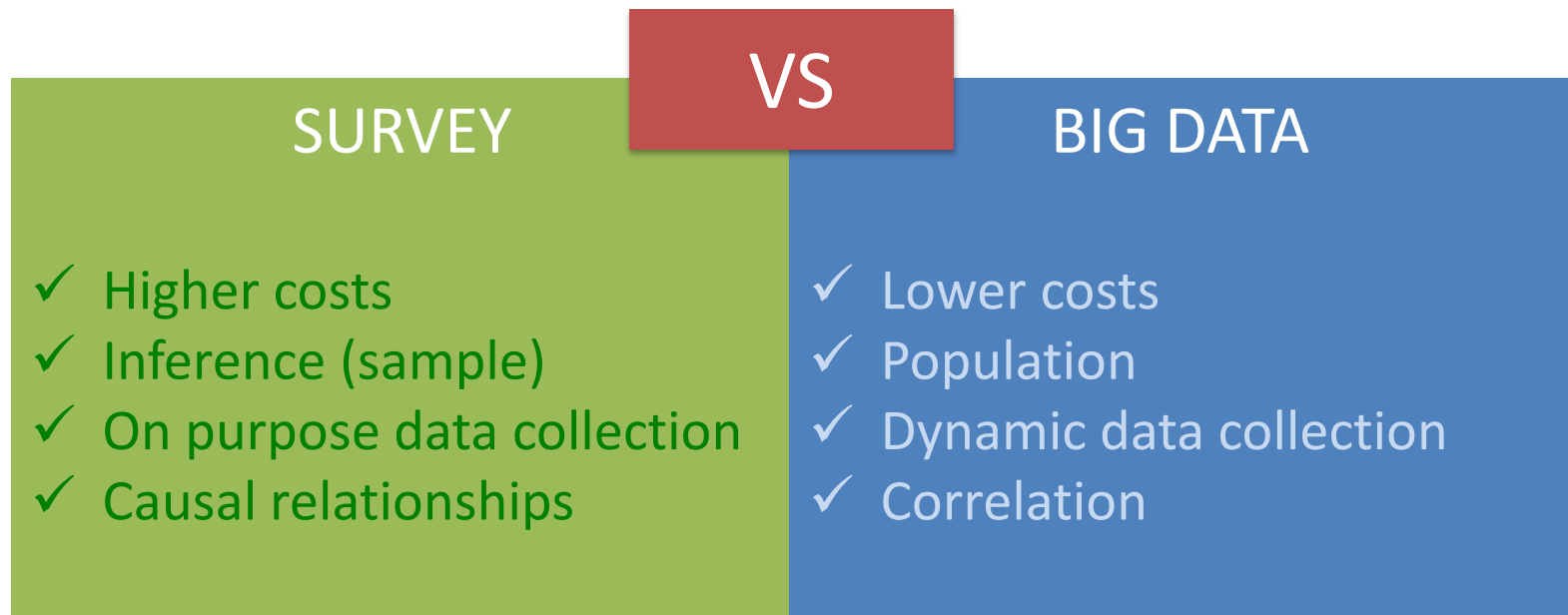
‘Share economy’ is a model, in which people use assets instead of owning them, and exchange services instead of selling them.



# Big data for tourism

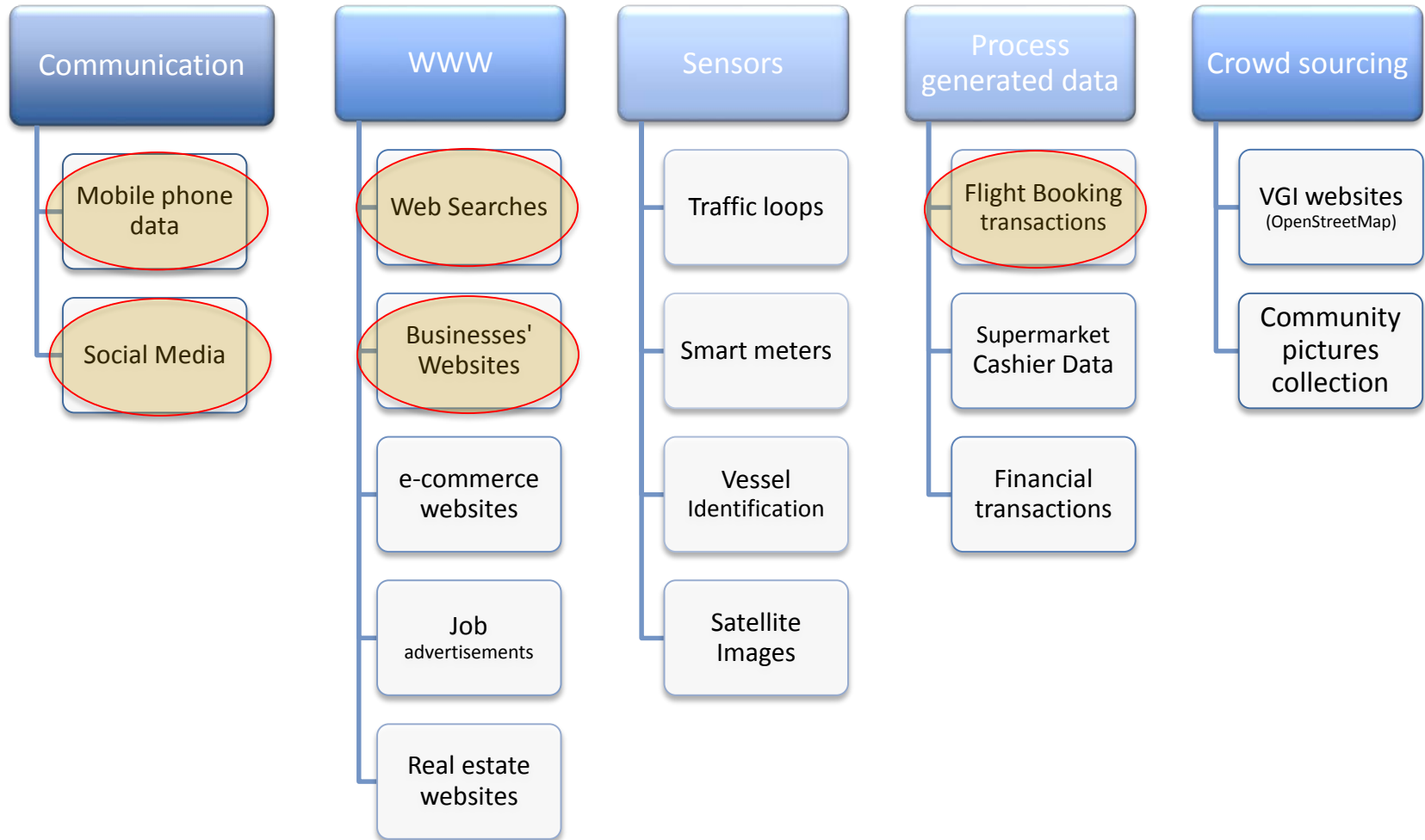


The ability to harness large amount of information to produce useful insights. So far, they supplement traditional data collection for the tourism sector.





# A host of 'Big Data' sources



# Mobile phone data



## Eurostat programme of work:

- Feasibility study (2012-2014)
- Forthcoming ESS Pilots on Big Data (2016-2019)

## Key findings (2012-2014):

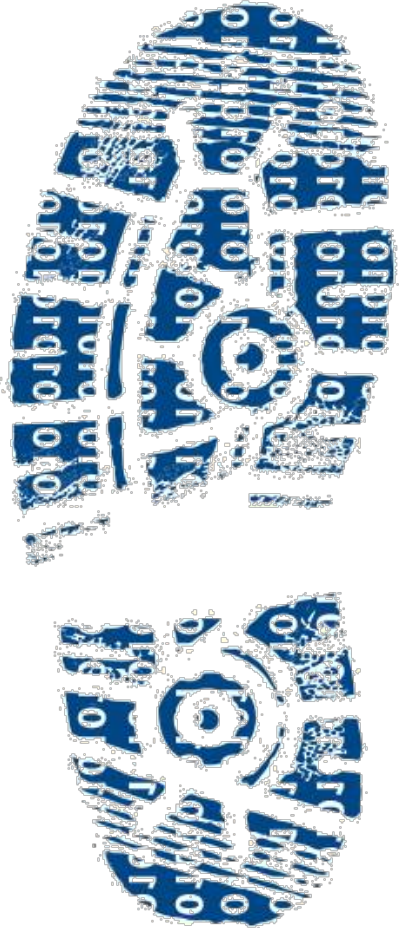
- ✦ Good consistency with trips and nights
- ✦ Better coverage
- ✦ Detailed background on origin
- ✦ New, near-real time indicators
- Regulatory limitations
- Over-coverage
- Lack of details (purpose of trip, quality of accommodation)



# Social media



- Digital footprint = Information Internet users leave when searching for product information, purchase products and express themselves via social media
- Pros: in-depth insights, non-intrusive observation, near real-time observation, automated data collection, etc.
- Cons: limited to existing conversations, social desirability, difficult to generalise, volatile, etc.
- Many social media analysis tools (sentiment analysis, netnography, etc.)



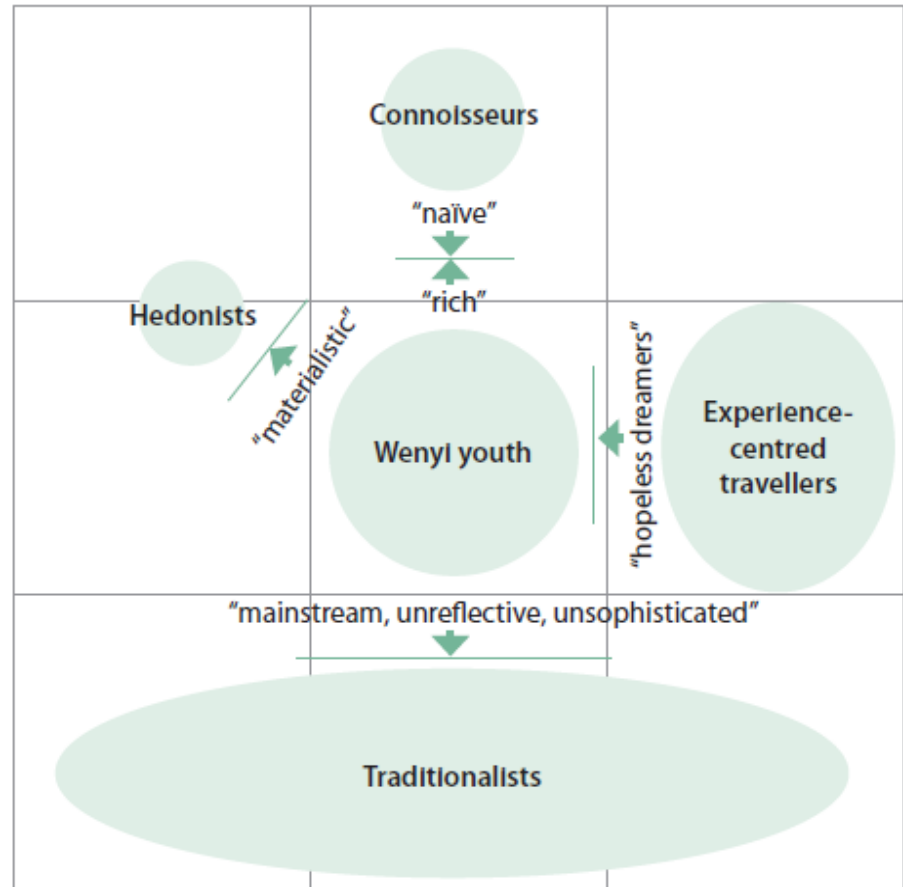
# Netnography - Travel tribes



Understanding Chinese  
Outbound Tourism:  
What the Chinese blogosphere is saying  
about Europe



Level of sophistication



Importance of status

# Netnography

## Brand positioning



### Sweden

<b>Mentioned in number of blog posts:</b>	55,538
<b>Cities showing highest interest:</b>	Moscow, St. Petersburg, Nizhny Novgorod, Yekaterinburg, Rostov-on-Don, Novosibirsk, Kazan, Krasnodar, Samara, Saratov
<b>Most discussed cities and regions:</b>	Stockholm, Malmö, Gothenburg, Uppsala
<b>Number of Instagram tags:</b>	35,934
<b>Top photo motives:</b>	Beer, Ikea, city

### Interest profile based on Russian Internet searches:

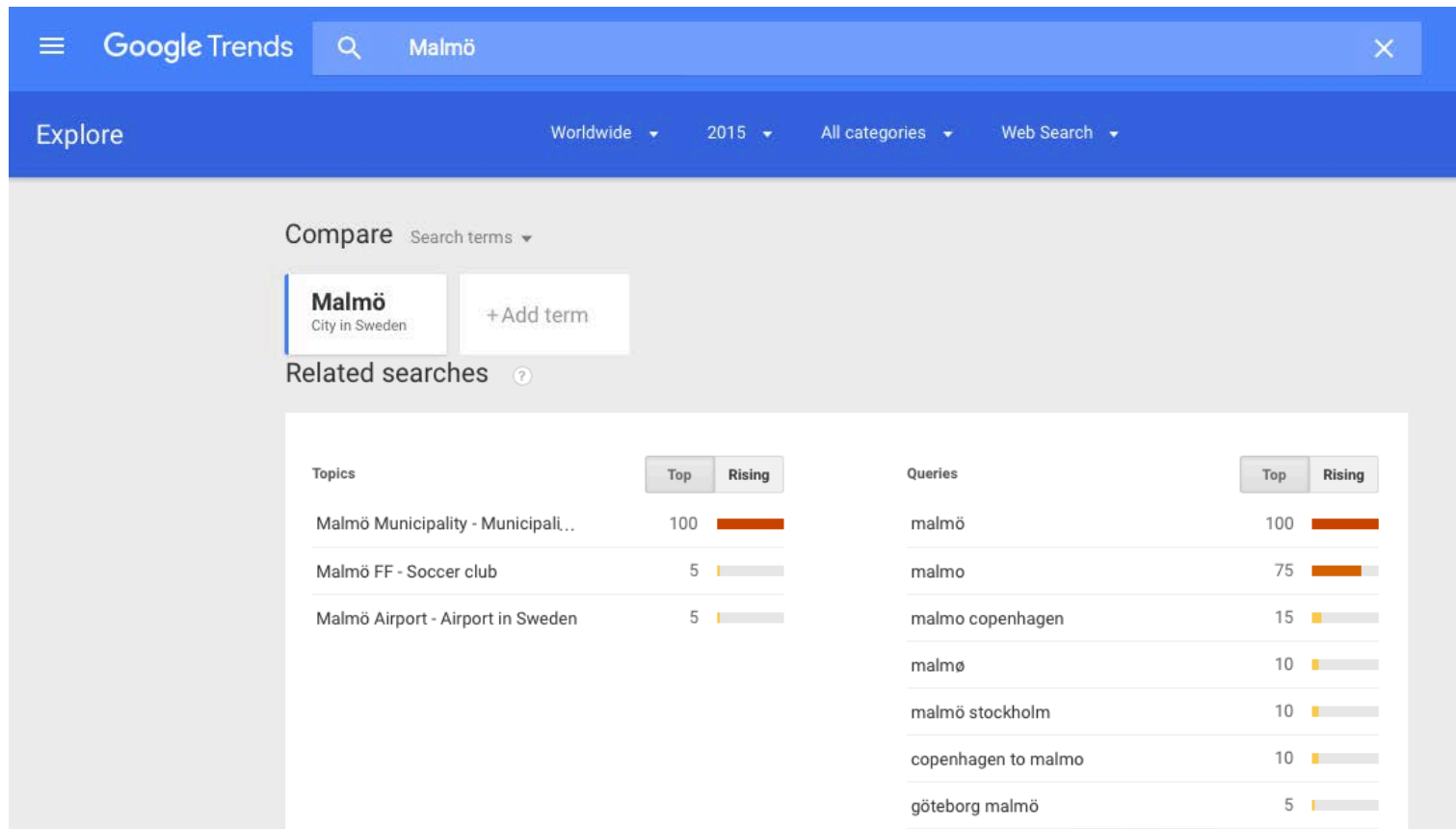


■ Accommodation	■ Nature
■ Food	■ Honeymoon
■ Transportation	■ Cruise
■ Attractions	■ Activities
■ Shopping	■ Clubbing
■ Camping	■ People
■ Culture	■ Unspecified travel
■ Recreation	■ Business and education
■ Winter holiday and skiing	■ Wellness
■ Prices and reviews	

# Web searches



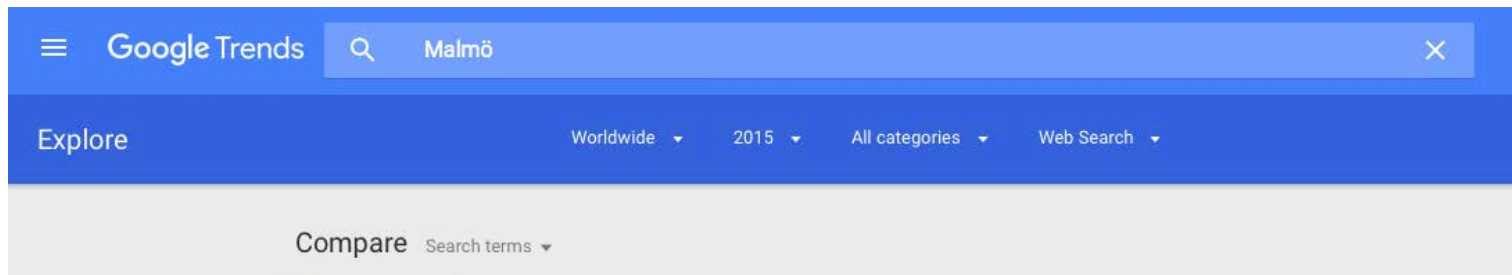
The use of search data to monitor traffic and analyse the behaviour of web sites' visitors.



# Web searches



The use of search data to monitor traffic and analyse the behaviour of web sites' visitors.



Search engines as a source of *topics of interest*

- interest  $\neq$  purchases (but correlated?)
- interest  $\neq$  tourism ("Bangkok" vs. "Bangkok train")
- Relevant for breakdowns ("accommodation", "bike tour")
- Eurostat project "[Internet as a data source](#)"
- Work done by NSIs (e.g. ONS UK using Google Trends)

Region | Town/City

Sweden 100

Denmark 35

Poland 10

Finland 5

Hungary 4

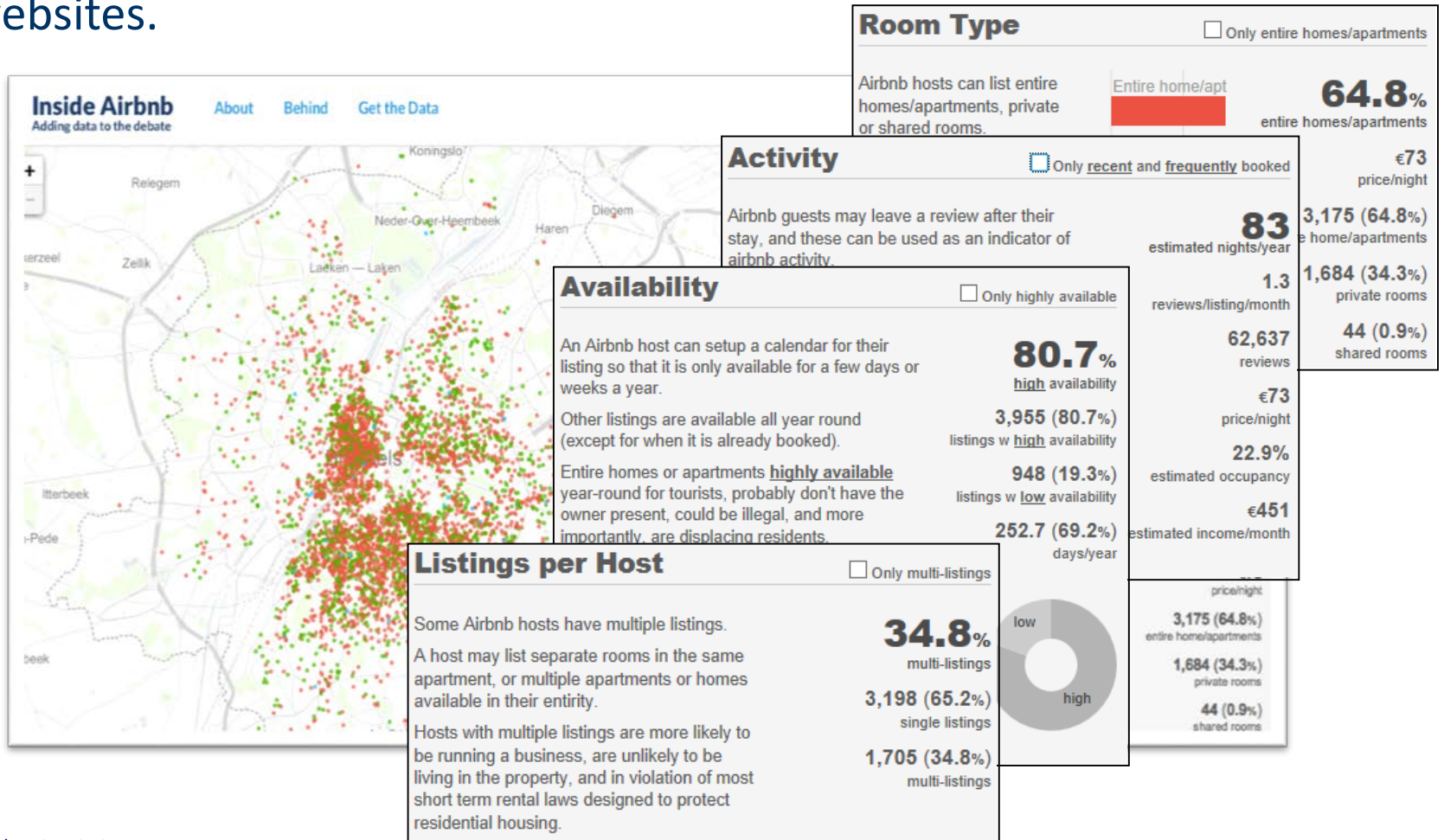
Germany 3





# Web scraping

A computer software technique of extracting information from websites.

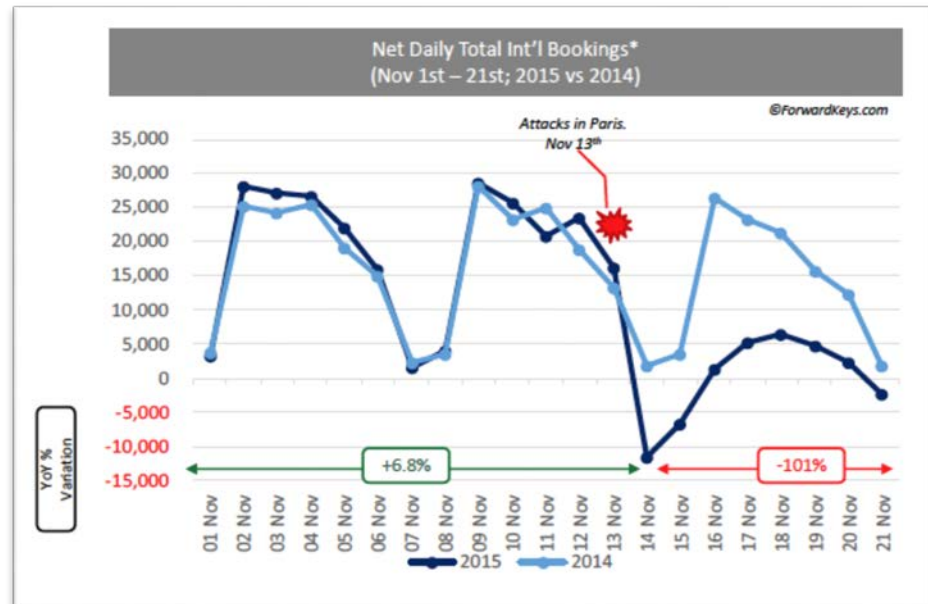


# Flight booking transactions



Air travel leaves a trace via the booking and reservation systems.

- ✦ Auxiliary information for poorly covered destinations (due to sample sizes) that are typically reached by plane
- ✦ More relevant for island countries or island regions
- Incomplete source of tourism statistics (concerns only trips by plane – 15% of all trips, 53% of outbound trips)



Source: <http://forwardkeys.com>.

# Possible use of Big Data in official statistics



- **Tourism accommodation - capacity and occupancy**
  - Booking websites (hotels, other accommodation), possibly monitoring a sample of smaller establishments and campsites
  - Smart meters for holiday dwellings (NACE 55.2)
- **Flows of tourists (overnight trips, same-day visits)**
  - Mobile phone data
  - Traffic loops (cars), reservation data (plane, long-distance train)
  - Social media, web searches
- **Expenditure**
  - Prices for tourism products (e.g. hotel prices, flight tickets)
  - Payment card data (also as data source for physical flows)

# Key takeaways



- Unprecedented **business opportunities**: new business models, product innovation, reach of new / global markets
- Big Data has a great potential for innovation and growth, but adoption **barriers** jeopardize Big Data benefits (for SMEs)
- Uncertainty: **complexity** is the new normal, detect signal from noise (all that glitter is not gold)
- Internet as a Data source requires a new **mindset**: focus on what is available (supply side driven indicators), look at correlations
- New **skills**: researcher => data scientist + business analysts
- Trust and **quality** are key: data sharing, data homologation, scientific standards, professional ethics
- Privacy and data ownership: the **game changers**

**THANK YOU FOR YOUR ATTENTION!**

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