

Master Big Data – 1° edition 2015

Master in Big Data Analytics & Social Mining

<http://www.sobigdata.eu/master/bigdata>



1 **NEW**
DEFINITION
IS ADDED ON
Urban
Dictionary

1,600+
READS ON
Scribd

13,000+ HOURS
MUSIC
STREAMING ON
PANDORA

12,000+
NEW ADS
POSTED ON
craigslist

370,000+ MINUTES
VOICE CALLS ON
skype

98,000+
TWEETS

320+
NEW
twitter
ACCOUNTS

100+
NEW
Linked in
ACCOUNTS

1 associated content
NEW
ARTICLE IS
PUBLISHED

6,600+
NEW
PICTURES ARE
UPLOADED ON
flickr

50+
WORDPRESS
DOWNLOADS

695,000+
facebook
STATUS
UPDATES

125+
PLUGIN
DOWNLOADS

79,364
WALL
POSTS

510,040
COMMENTS

IN
60
SECONDS...

168 MILLION
EMAILS
ARE SENT

694,445
SEARCH
QUERIES

60+
NEW
BLOGS

1,500+
BLOG
POSTS

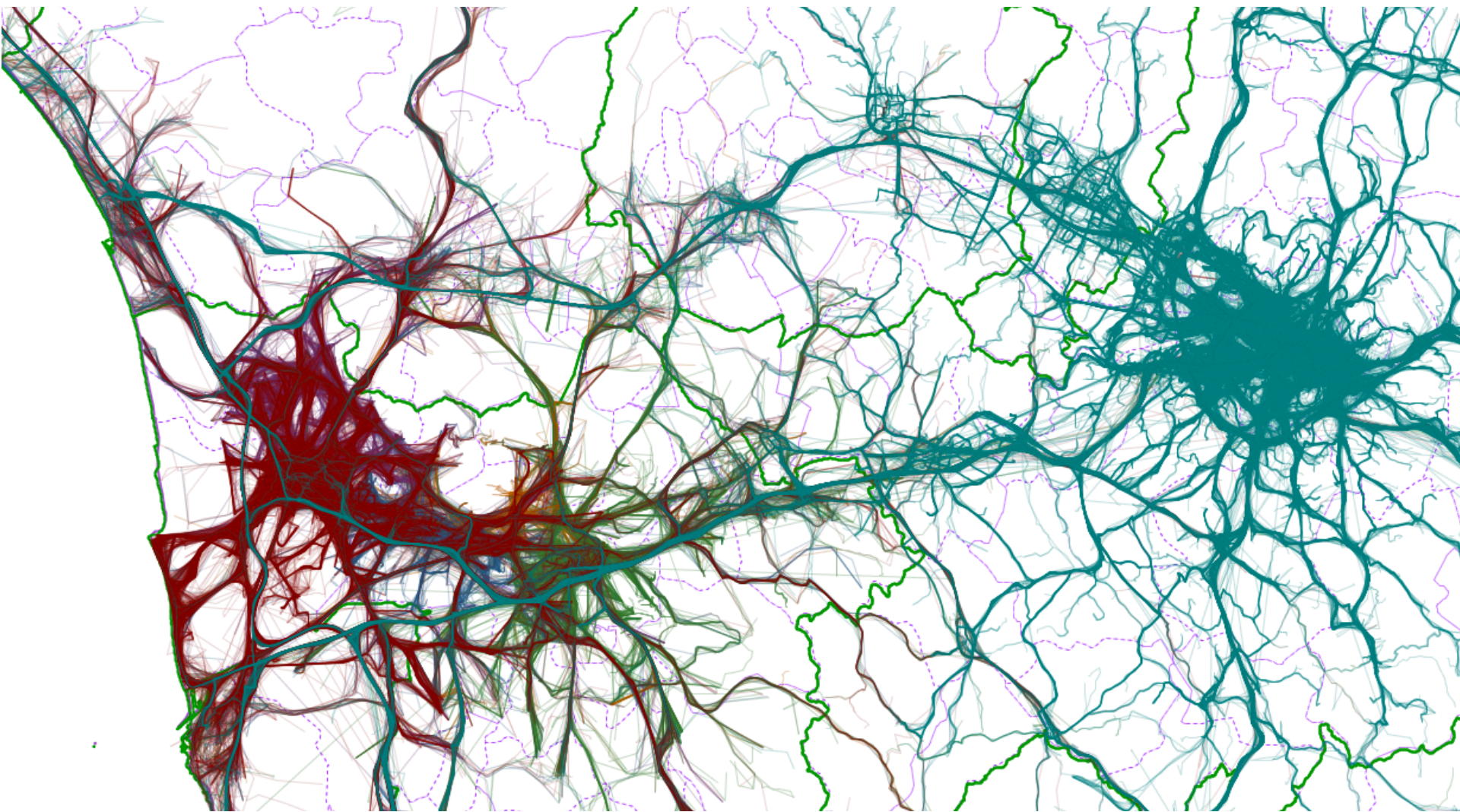
70+
DOMAINS
REGISTERED

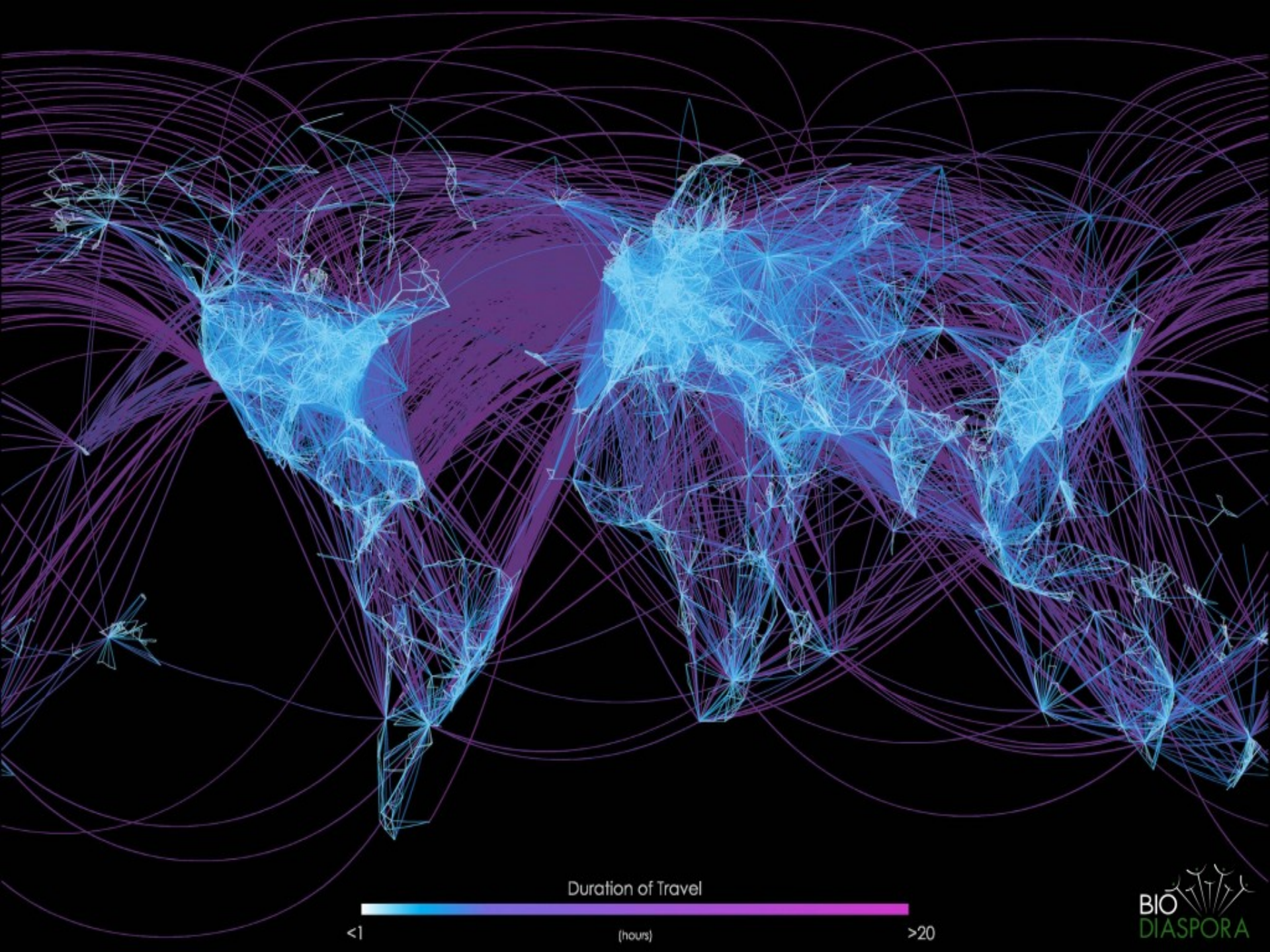
600+
NEW
VIDEOS

100+
Answers.com
40+
YAHOO! ANSWERS

QUESTIONS
ASKED ON THE
INTERNET...

25+ HOURS
TOTAL
DURATION





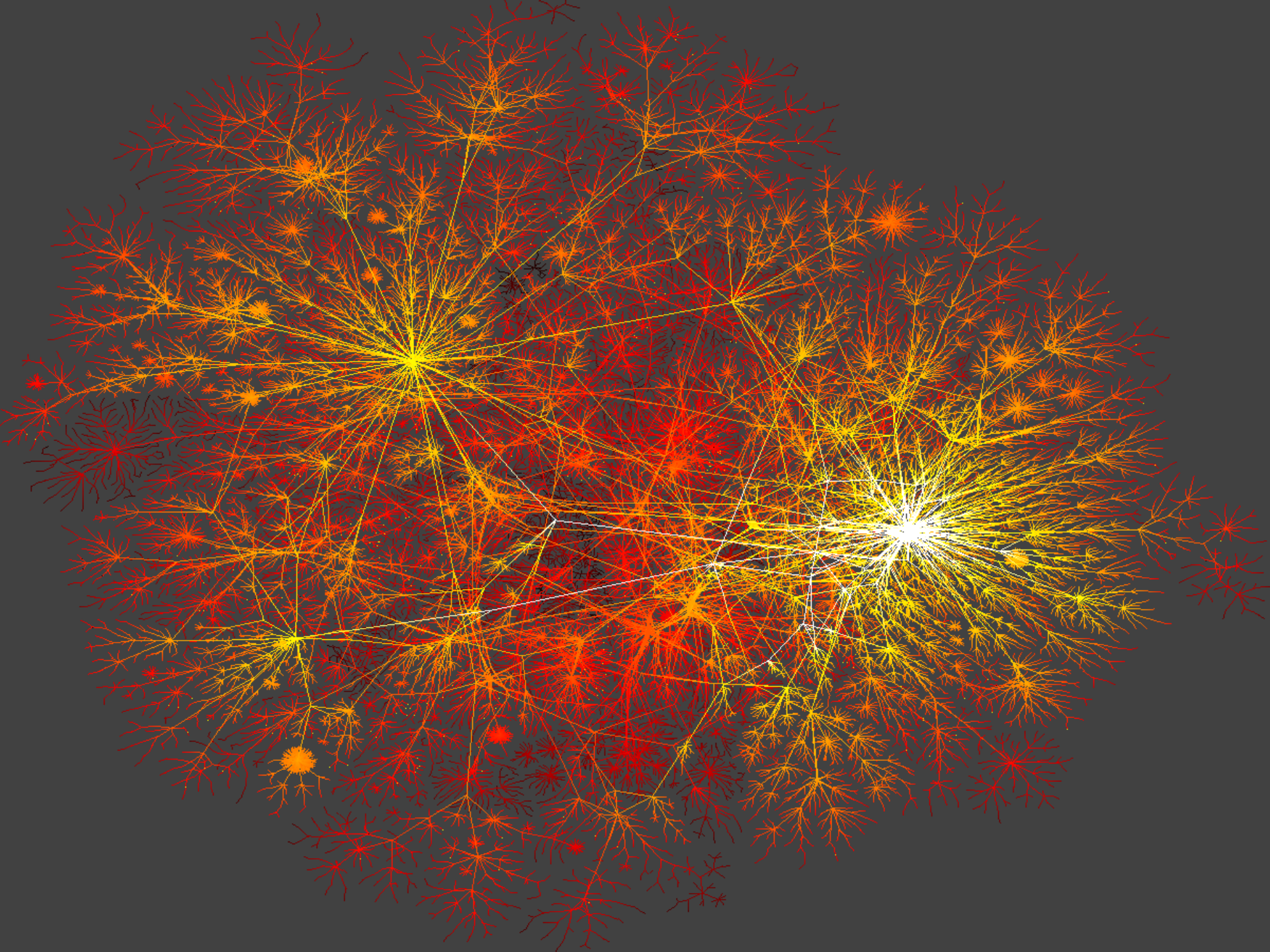
Duration of Travel

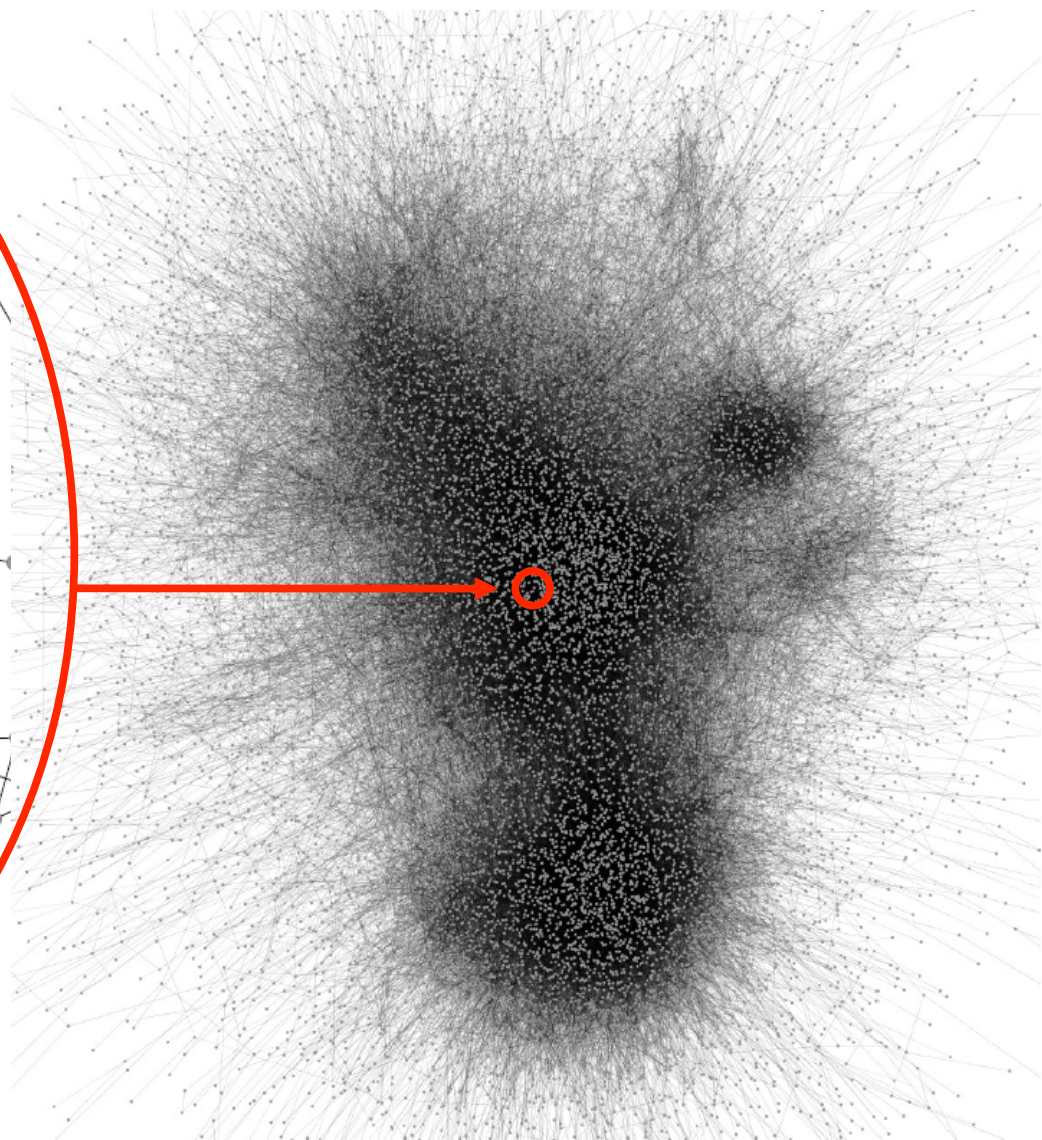
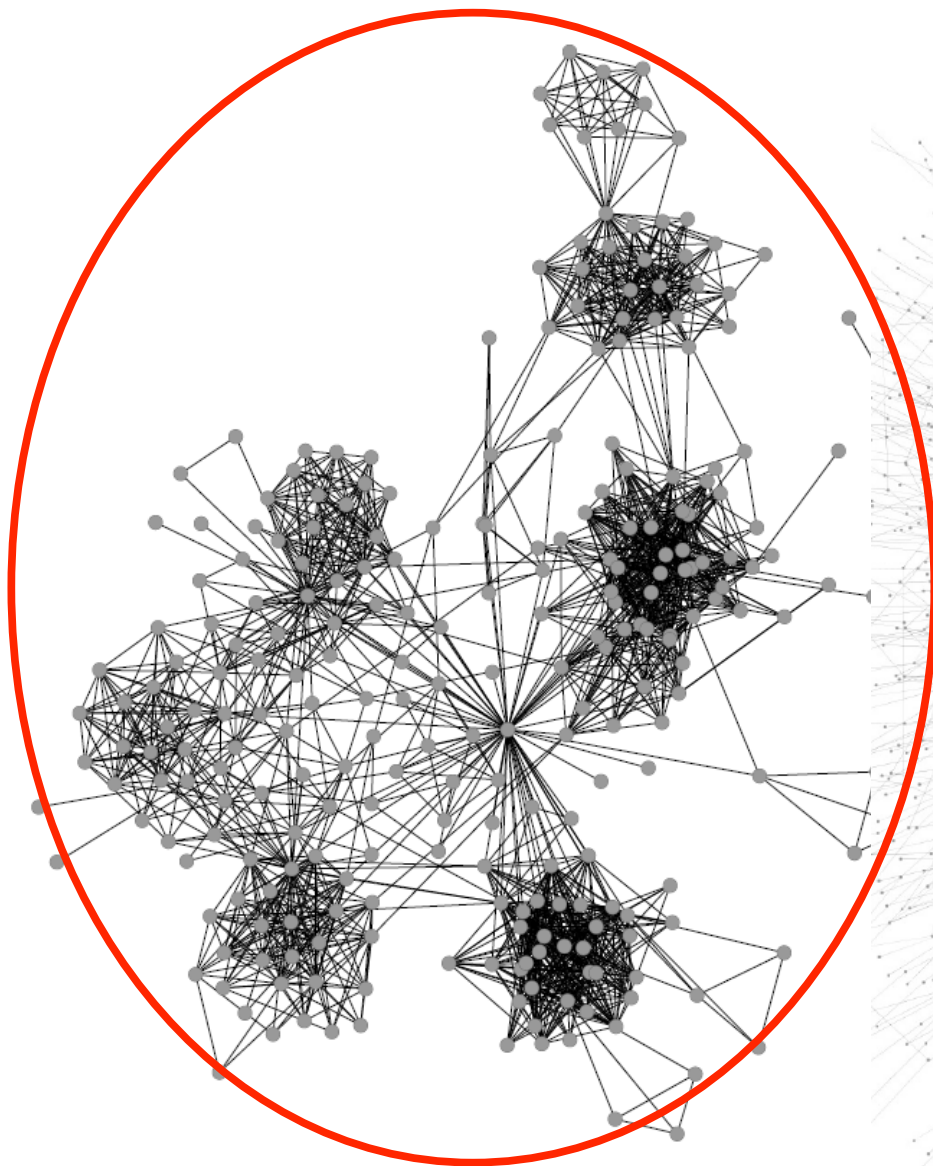
<1

(hours)

>20









\$300 billion

potential annual value to US health care—more than double the total annual health care spending in Spain

€250 billion

potential annual value to Europe's public sector administration—more than GDP of Greece

\$600 billion

potential annual consumer surplus from using personal location data globally

McKinsey Global Institute



60% potential increase in
retailers' operating margins
possible with big data

140,000–190,000

more deep analytical talent positions, and

1.5 million
more data-savvy managers
needed to take full advantage
of big data in the United States

McKinsey Global Institute



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Guest

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October 2012



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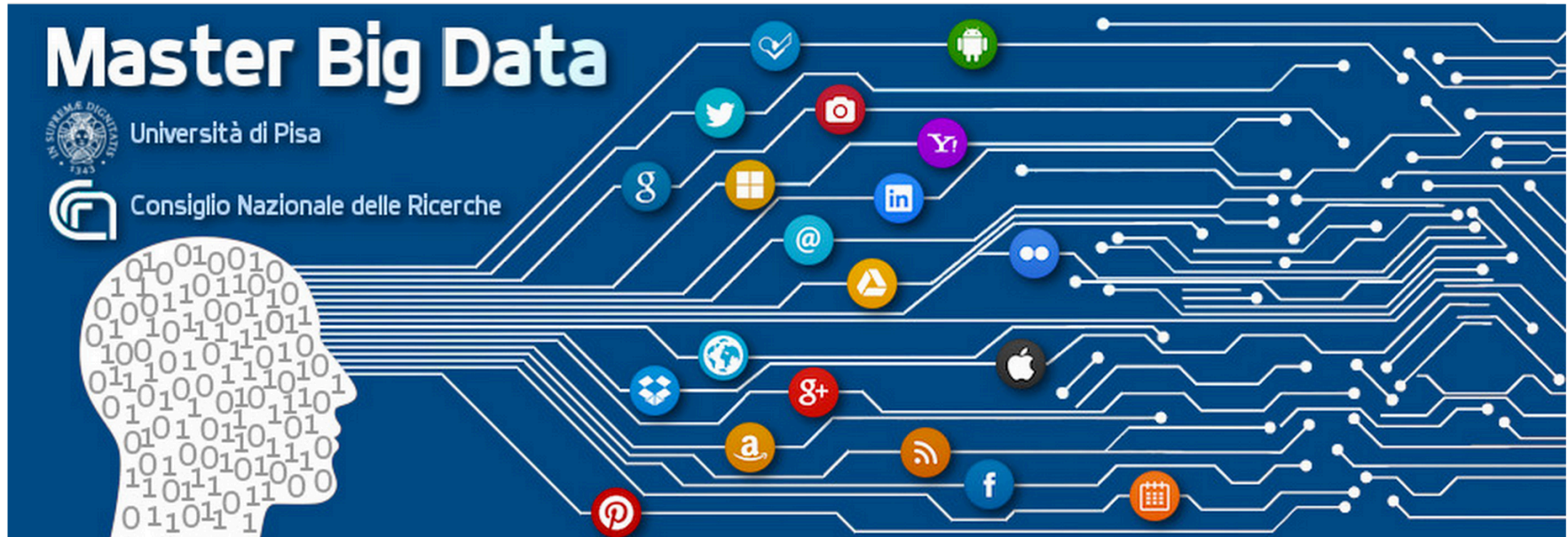
Data Scientist: The Sexiest Job of the 21st Century

by Thomas H. Davenport and D.J. Patil

Data scientist



- ... a new kind of professional has emerged, the **data scientist**, who combines the skills of **software programmer, statistician** and **storyteller/artist** to extract the nuggets of gold hidden under mountains of data.



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UNIVERSITÀ DI PISA



Business

Big Data Technologies

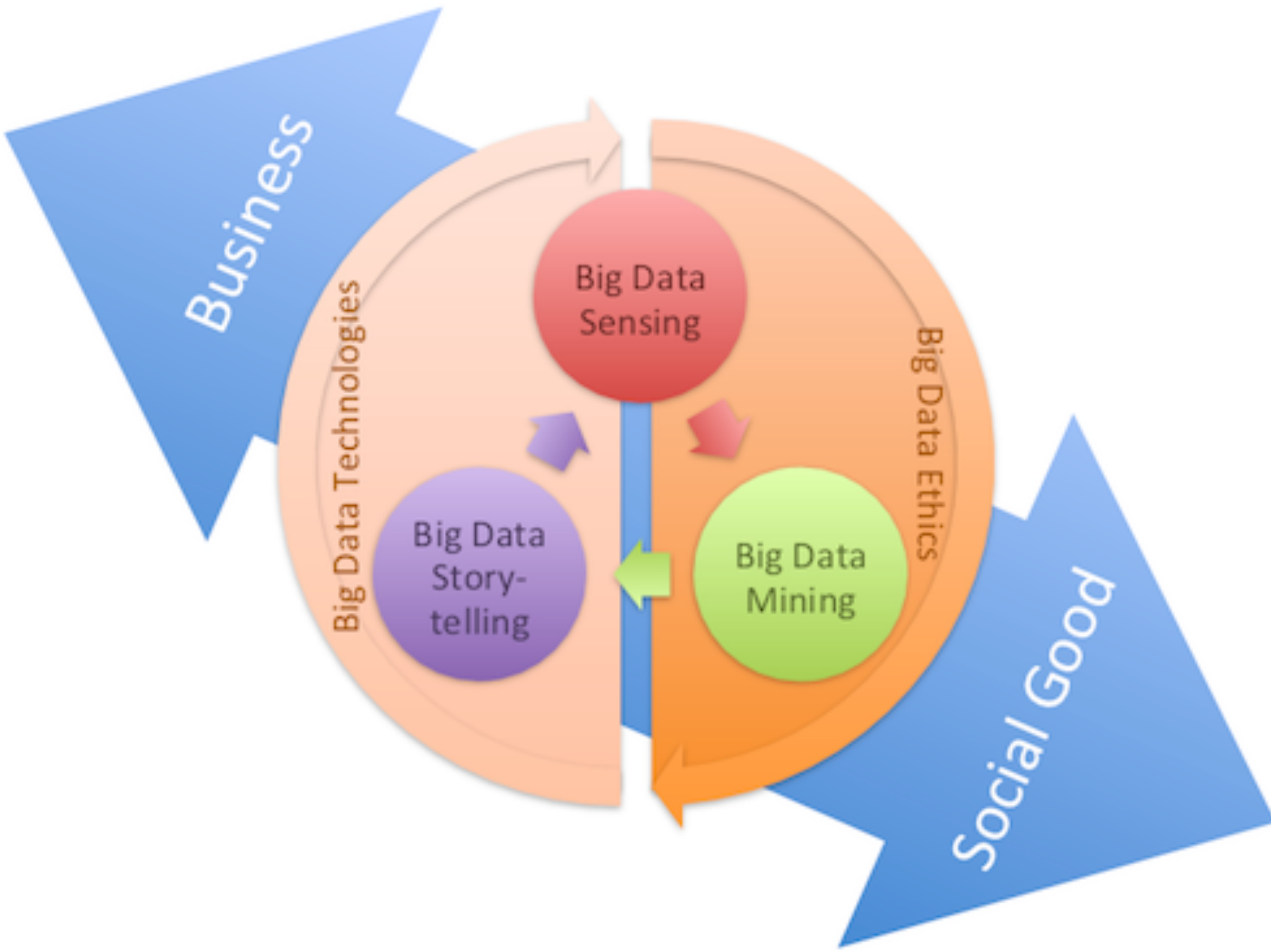
Big Data
Story-
telling

Big Data
Sensing

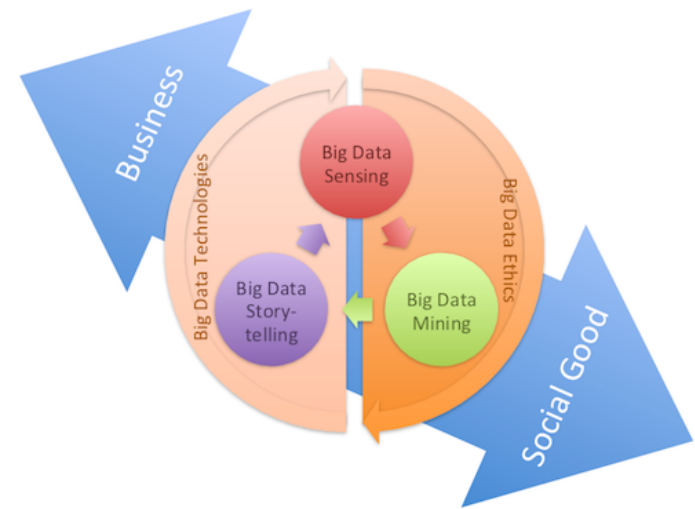
Big Data Ethics

Big Data
Mining

Social Good

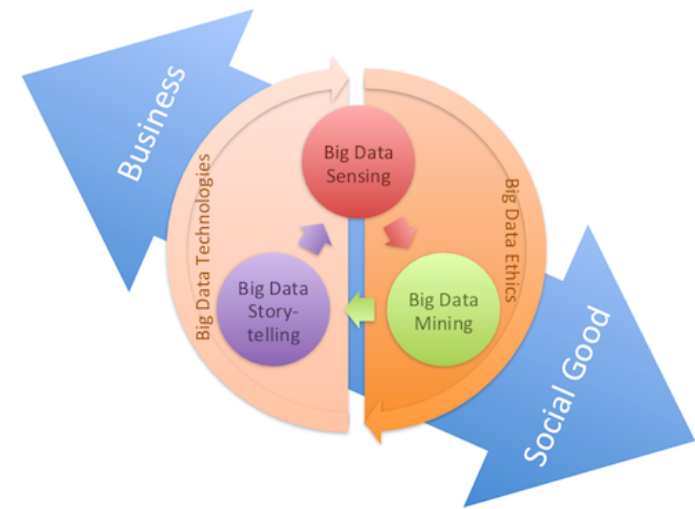


Big Data Sensing & Procurement



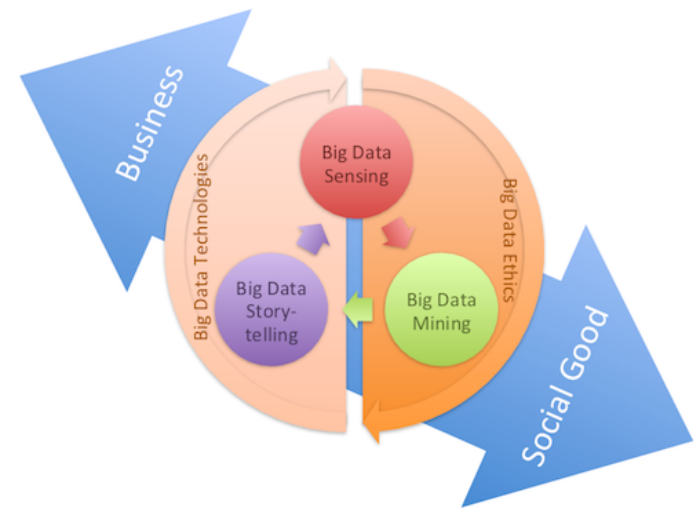
- **Big data sources, crowdsourcing, crowdsensing**
- **Web Search Engines and Information Retrieval**
- **Analytical Crawling, Text Annotation**

Big Data Mining



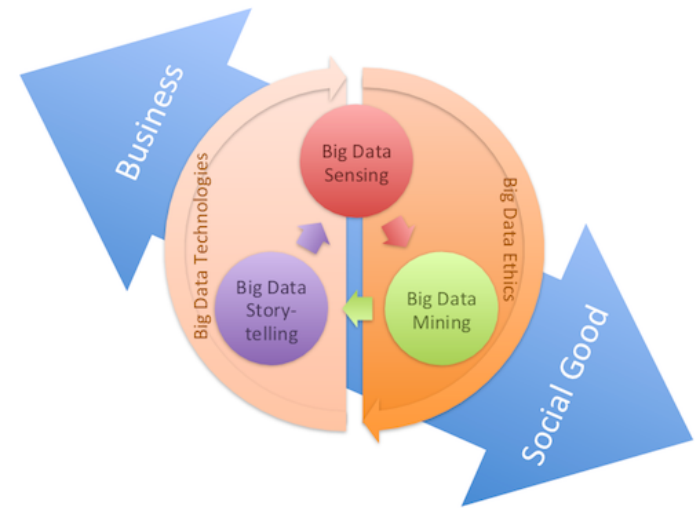
- **Data Mining & Machine Learning**
- **Mobility Data Analysis**
- **Social Network Analysis**
- **Web Mining & Nowcasting**
- **Sentiment Analysis & Opinion Mining**

Big Data Story Telling



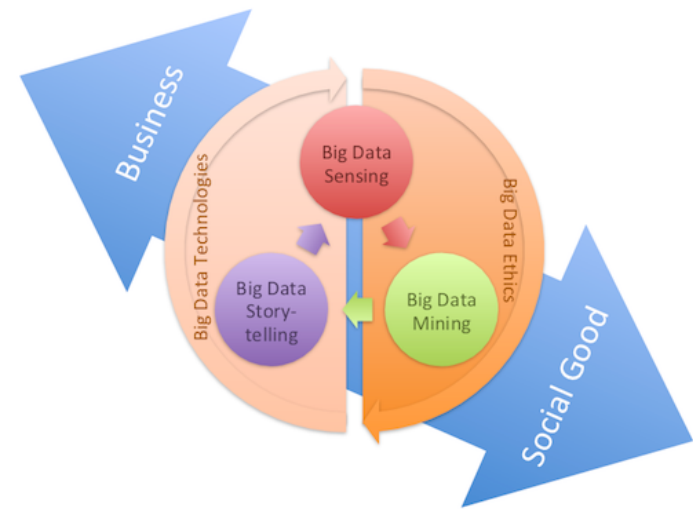
- Data Visualization & Visual analytics
- Data Journalism & Story Telling

Big Data Technology



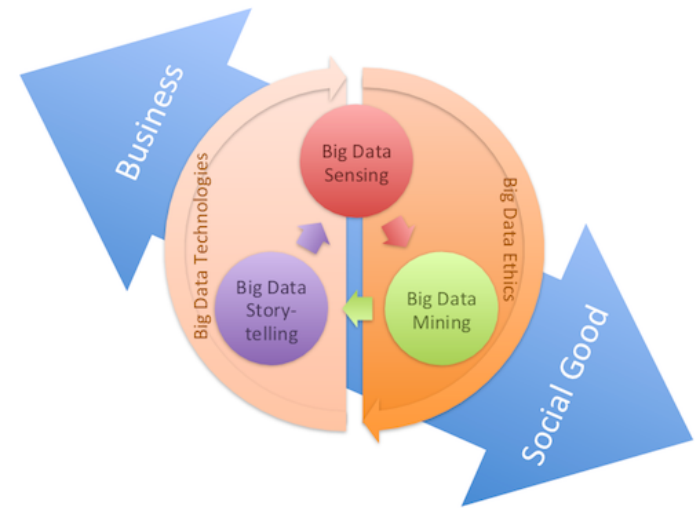
- **Data Management for Business Intelligence**
- **High Performance & Scalable Analytics, NO-SQL Big Data Platforms**

Big Data Ethics



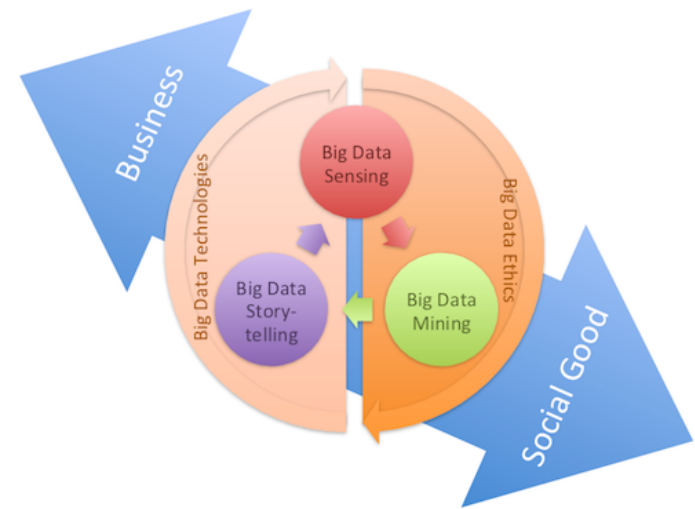
- **Privacy-by-Design**
- **Novel EU Regulations on Personal Data**
- **Data Scientist's Responsibility**

Big Data for Social Good



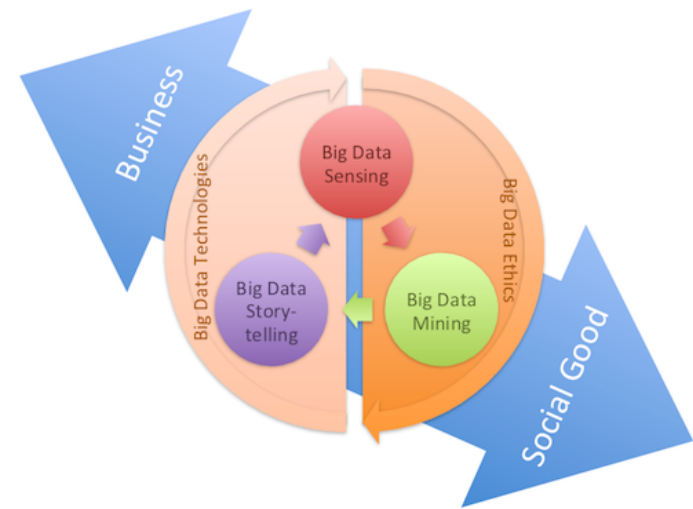
- **Big Data analytics for Smart Cities and Smart communities**
- **Big Data analytics for Official Statistics**
- **Big Data analytics for Policy Making**
- **Epidemics & Information Diffusion**

Big Data for Business



- **Big Data analytics in Finance and Economics**
- **Recommendation Systems**
- **Novel CRM applications**
- **Big Data analytics for Tourism**
- ...

Alignment



- Data Analysis – Statistics Basics
- SQL – Database Basics
- Python – Programming Basics



www.sobigdata.eu

Research Infrastructure

- 1 - CNR Consiglio Nazionale delle Ricerche Italy**
- 2 – USFD University of Sheffield UK**
- 3 - UNIPI Università di Pisa Italy**
- 4 - FRH Fraunhofer IAIS and IGD Germany**
- 5 - UT Tartu Ulikool Estonia**
- 6 - IMT Scuola IMT Lucca Italy**
- 7 – LUH Leibniz Universitaet Hannover Germany**
- 8 - KCL King's College London UK**
- 9 - SNS Scuola Normale Superiore di Pisa Italy**
- 10 - AALTO Aalto University Finland**
- 11 - ETHZ ETH Zurich Switzerland**
- 12 - TUDelft Technische Universiteit Delft Netherlands**

Starts: September 2015

Coordinator: Fosca Giannotti, ISTI-CNR, Pisa



Big Data Ecosystem

- Open Data
- Restricted Data
- Virtual Collections

Social Mining

- Text and Social Media Mining
- Social Network Analysis
- Human Mobility Analytics
- Web Analytics
- Visual Analytics
- Social Data

Ethical and Legal Framework

SoBigData Research Infrastructure



Virtual Access

E-infrastructure



Transnational Access

Open calls
Exploratory projects



Networking

Training
Dissemination
Innovation Accelerator



SoBigData.eu – a CERN for Big Data Analytics

Empower citizens, communities, business and institutions with a **Digital Time Machine to:**

- Explore the past and present to gain better understanding and self-knowledge
- Explore plausible futures to reason on the consequences of decision making

Our potential contribution ITN/EJD project

- **A summer school on Big Data Analytics & Social Mining** which provides a condensed experience of the full Master
- **A choice of learning modules and labs** together with a final **datathon**
- Thanks for the attention!
 - Dino Pedreschi and Fosca Giannotti