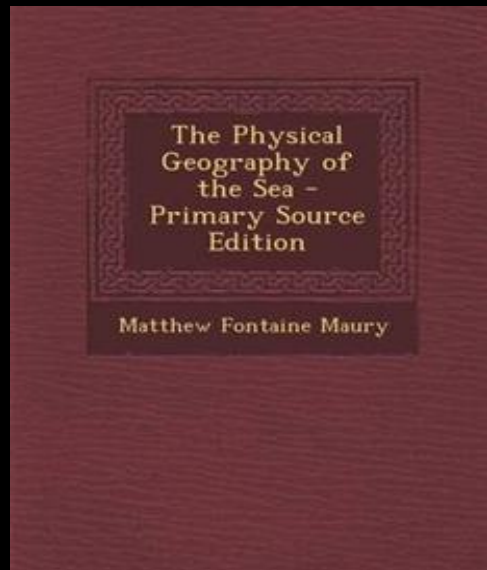
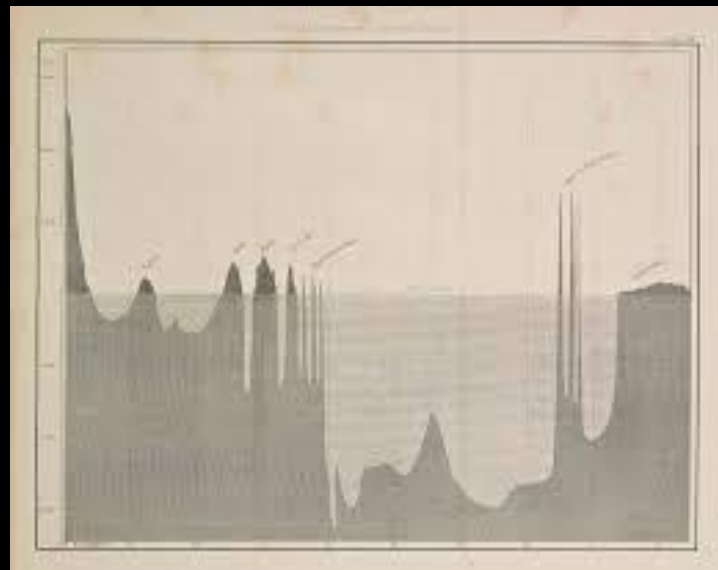
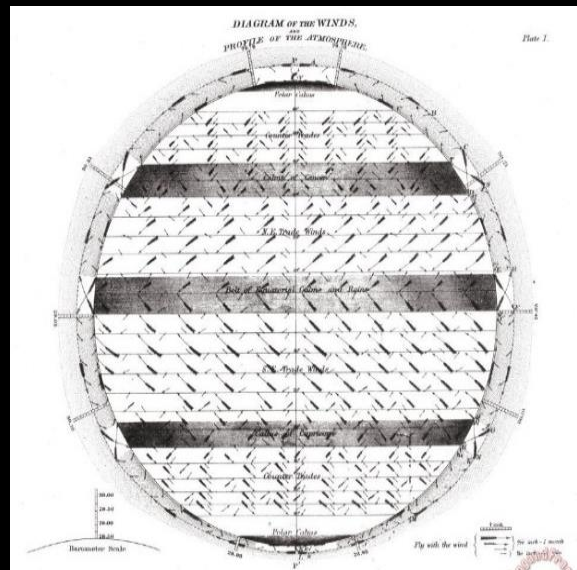
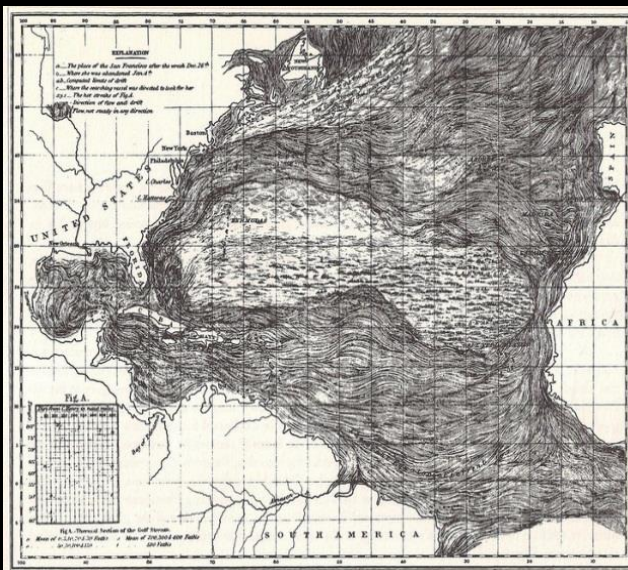
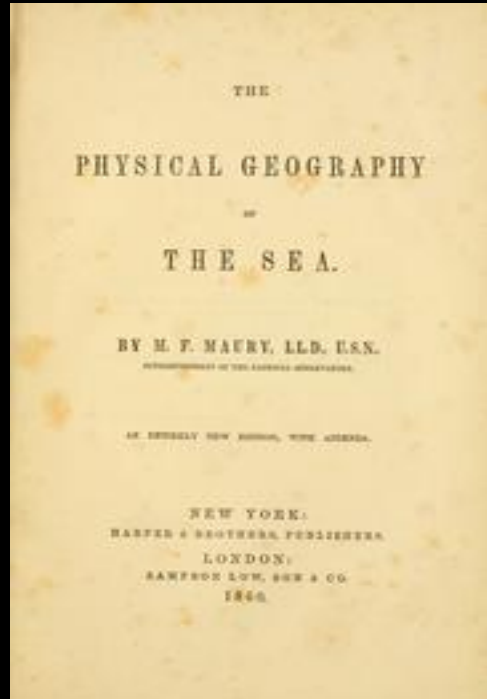
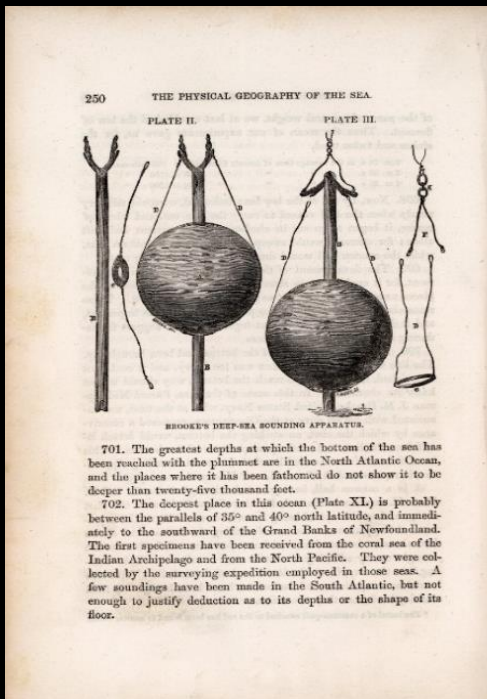
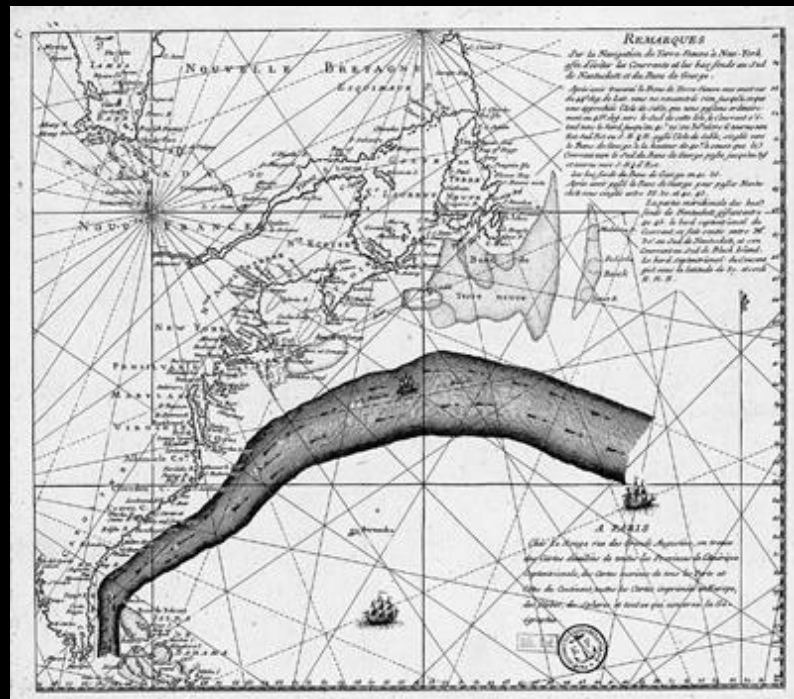
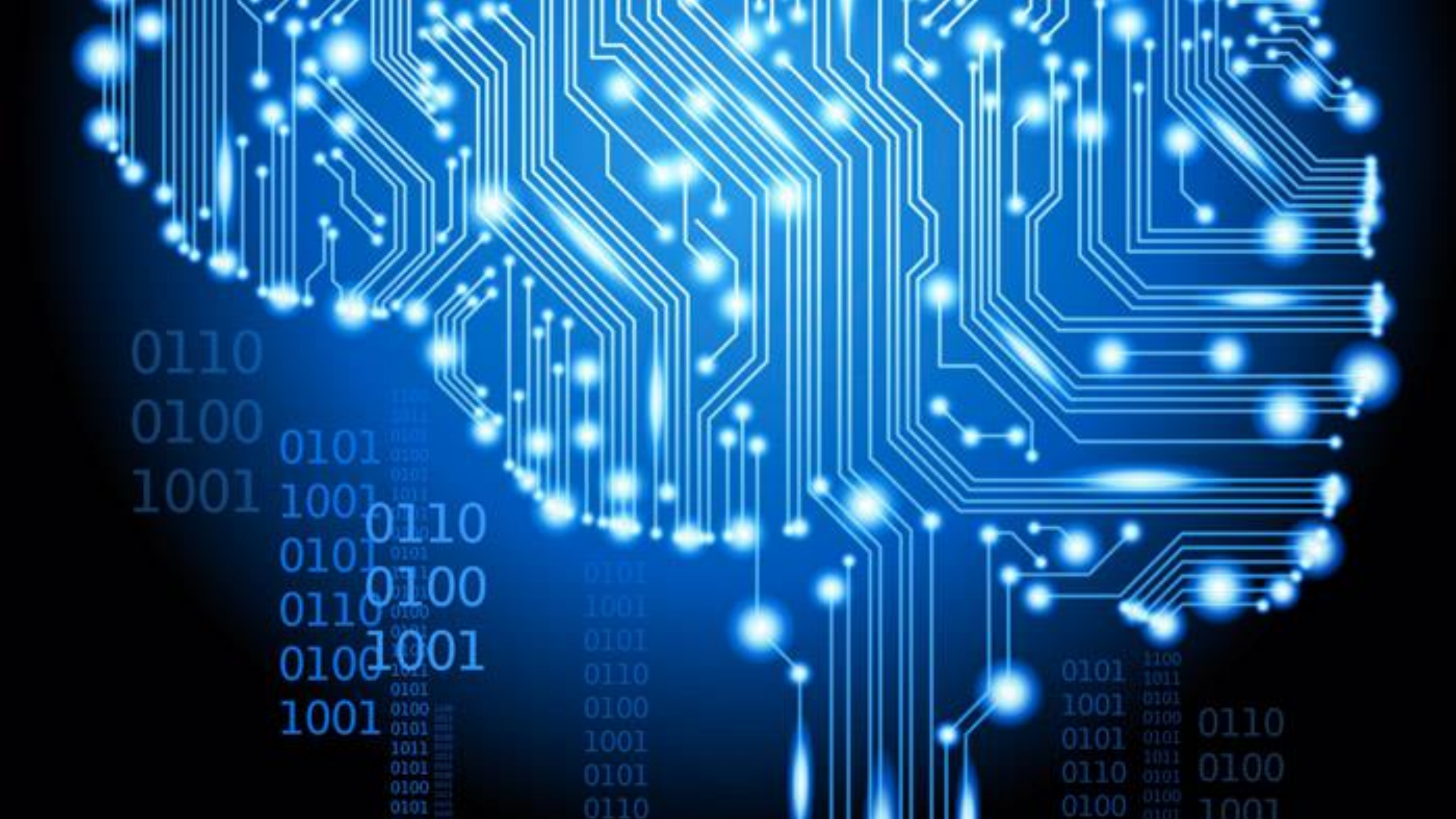


Matthew Fountain Maury, Virginia 1806-1873





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Vehicle, asset, person & pet monitoring & controlling



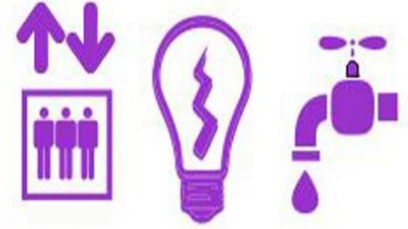
Agriculture automation



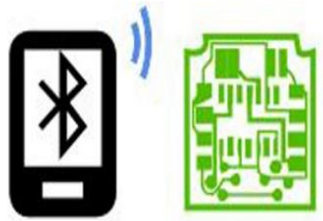
Energy consumption



Security & surveillance



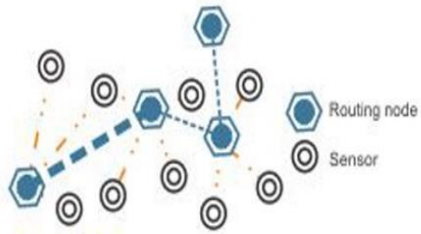
Building management



Embedded Mobile

Internet of things

Everyday things get connected  for smarter tomorrow



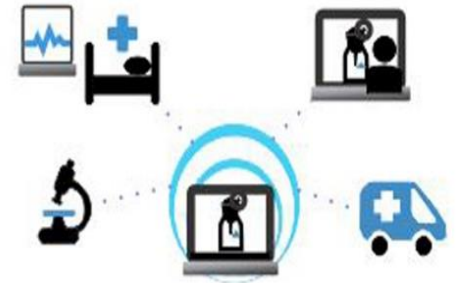
M2M & wireless sensor network



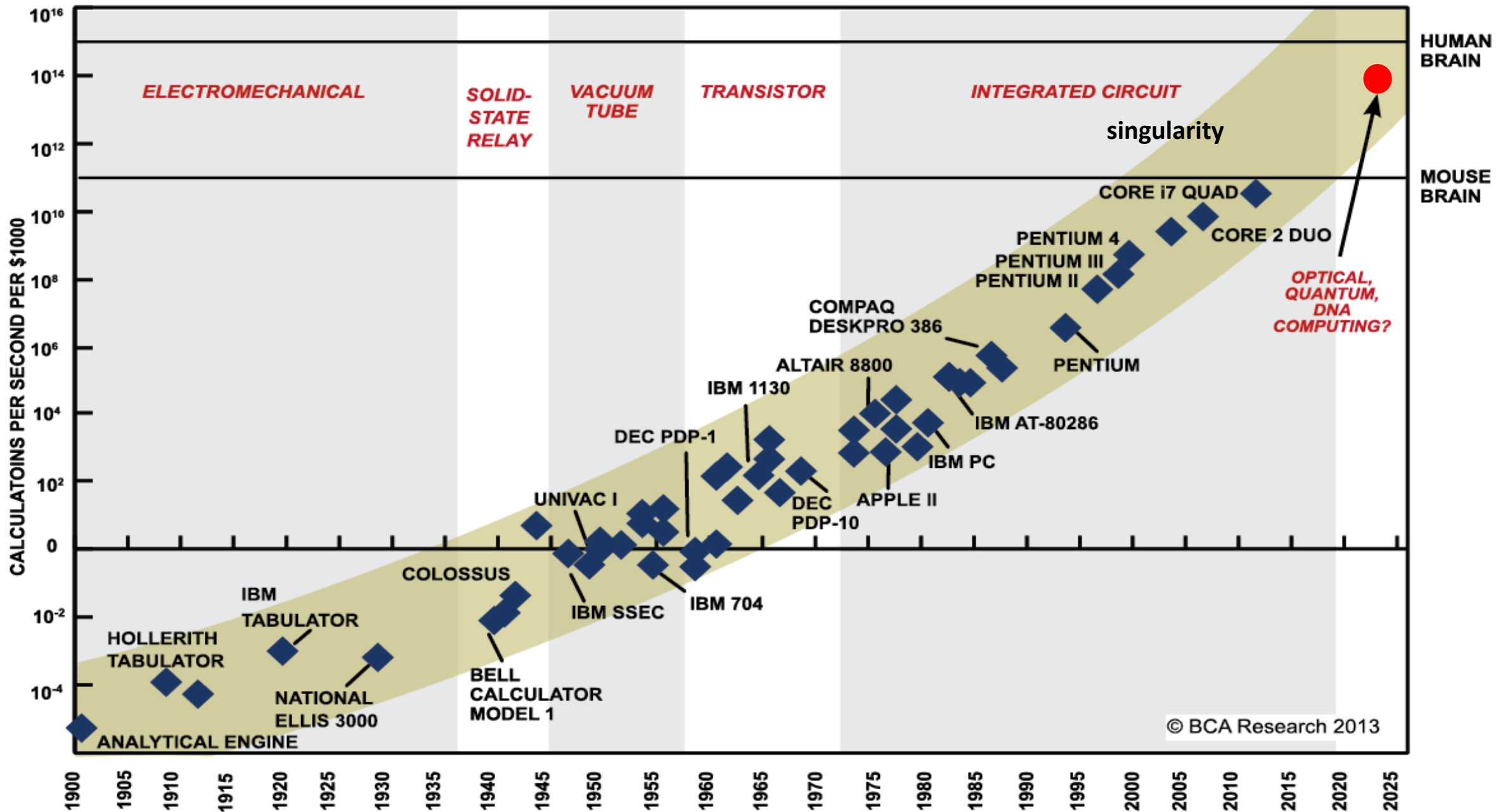
Everyday things



Smart homes & cities



Telemedicine & healthcare



SOURCE: RAY KURZWEIL, "THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY", P.67, THE VIKING PRESS, 2006. DATAPPOINTS BETWEEN 2000 AND 2012 REPRESENT BCA ESTIMATES.

THINK



\$24,000

Who is Stoker?

(FOR ONE WELCOME OUR
NEW COMPUTER OVERLORDS)

\$1,000

\$77,147

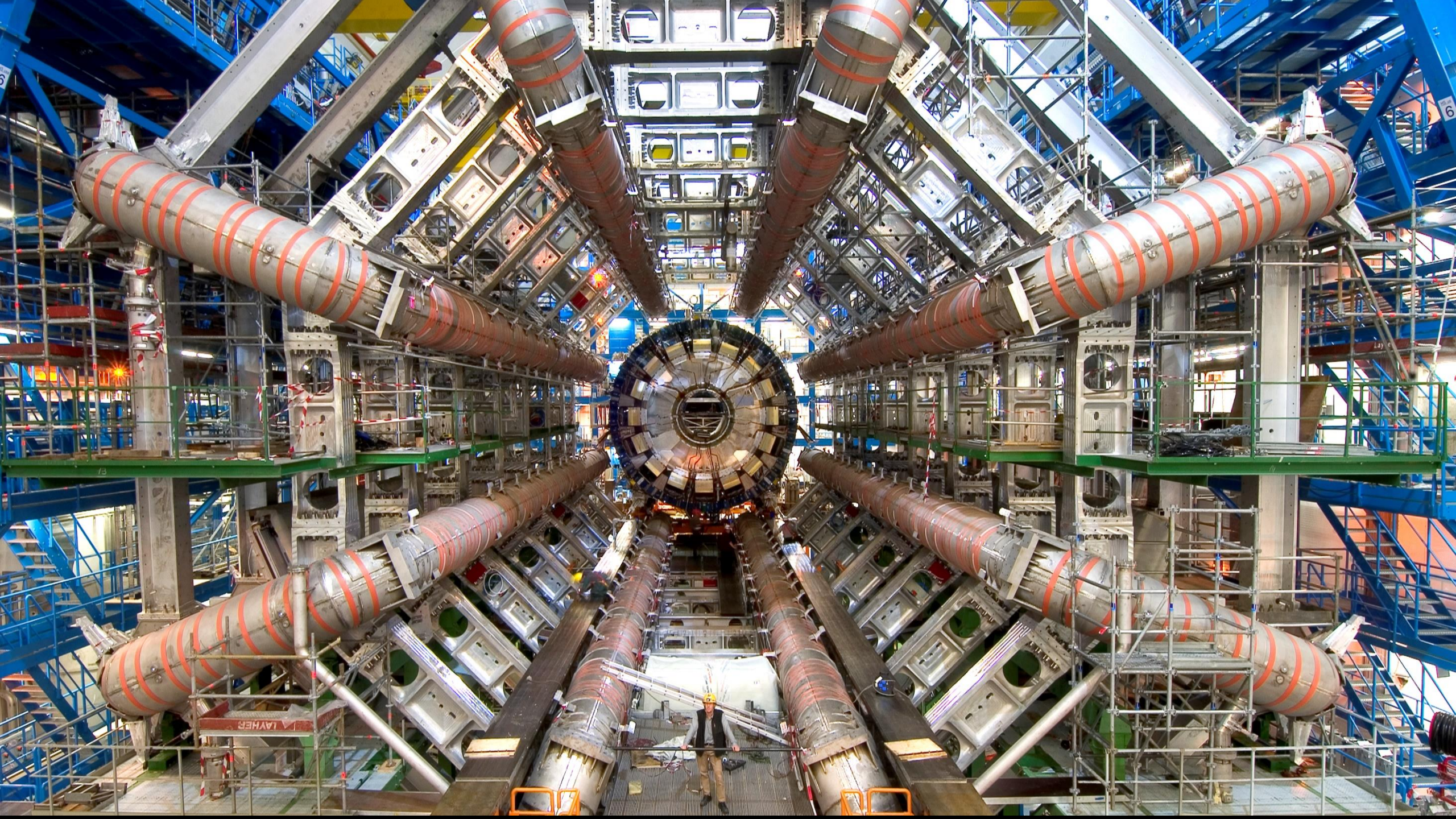
Who is Bram
Stoker?

\$ 17,973

\$21,600

WHO IS
BRAM STOKER?

\$5600



Google

Google Search

I'm Feeling Lucky

[Advertising Programs](#)

[Business Solutions](#)

[About Google](#)

[Go to Google UK](#)

Google Search Statistics



1,944,732,081

Google Searches [today](#)

[view how many in 1 second](#)

[Google Search Volume \(current and historical\)](#)

[Growth Rate](#)

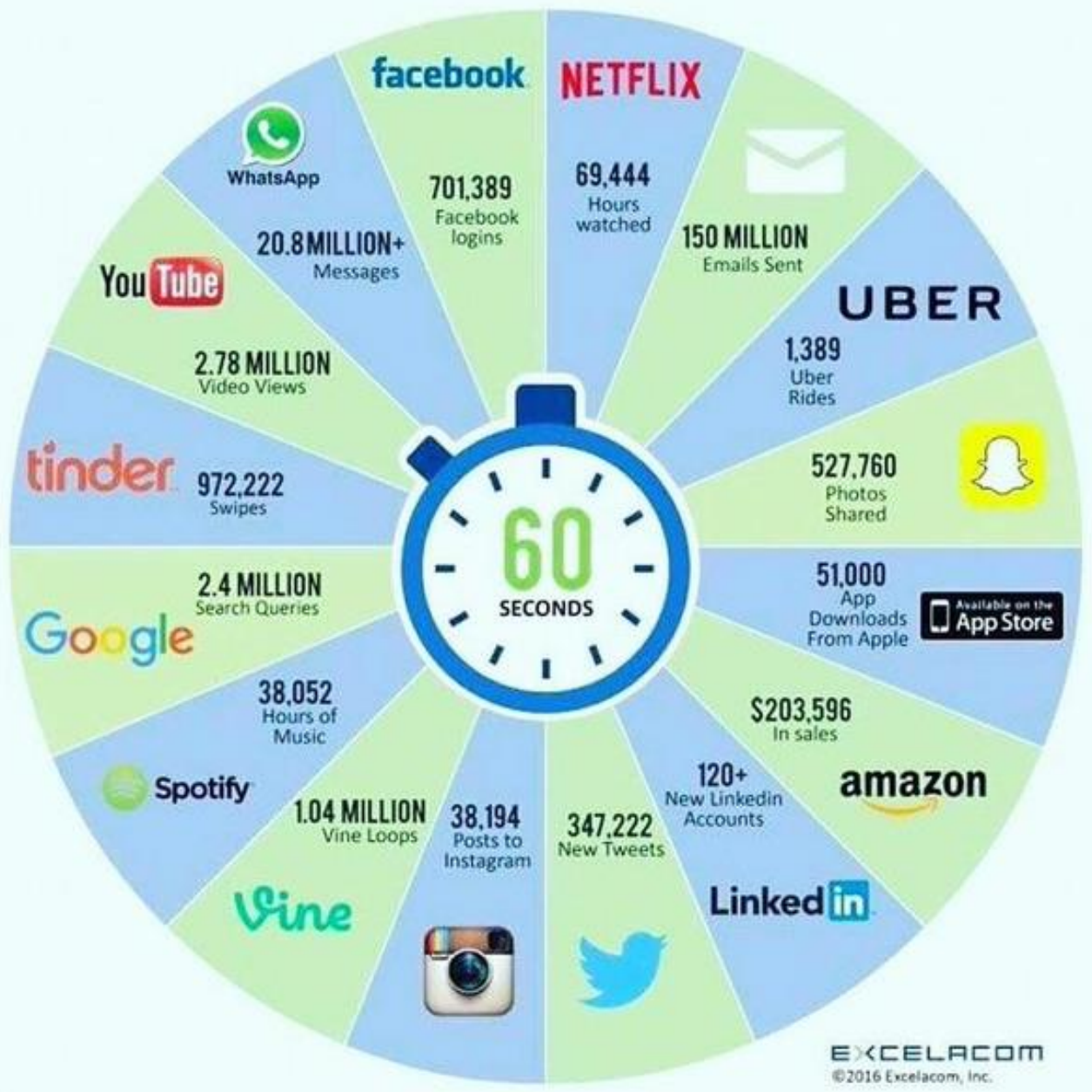
[Search Market Share](#)


[Sources and References](#)

Google now processes over 40,000 search queries every second on average ([visualize them here](#)), which translates to over **3.5 billion searches per day** and **1.2 trillion searches per year** worldwide. The chart below shows the number of searches per year throughout Google's history:

**Click here to see the
live amount of
Google searches per day.**



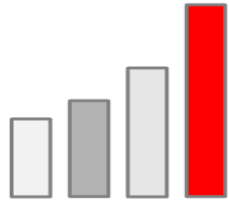


- People produce 400 million tweets and send 3.2 billion likes daily
- They also upload 300 million pictures daily
- There are 1 billion Websites online 
- Google Voice processes 10 years of spoken text daily
- The UK has 2 million surveillance cameras
- Facebook has 1 billion users
- 800 million users watch 4 billion movies daily
- Medical data doubles every five years



Source: NRC 08.02.2013; Gartner 2014

volume



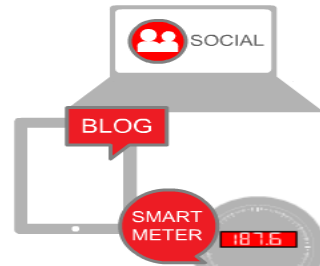
size, quantity

velocity



speed, timing

difference, (in)consistency



variability

quality, accuracy



veracity

BIG COMES IN FOUR 'V'LAVORS



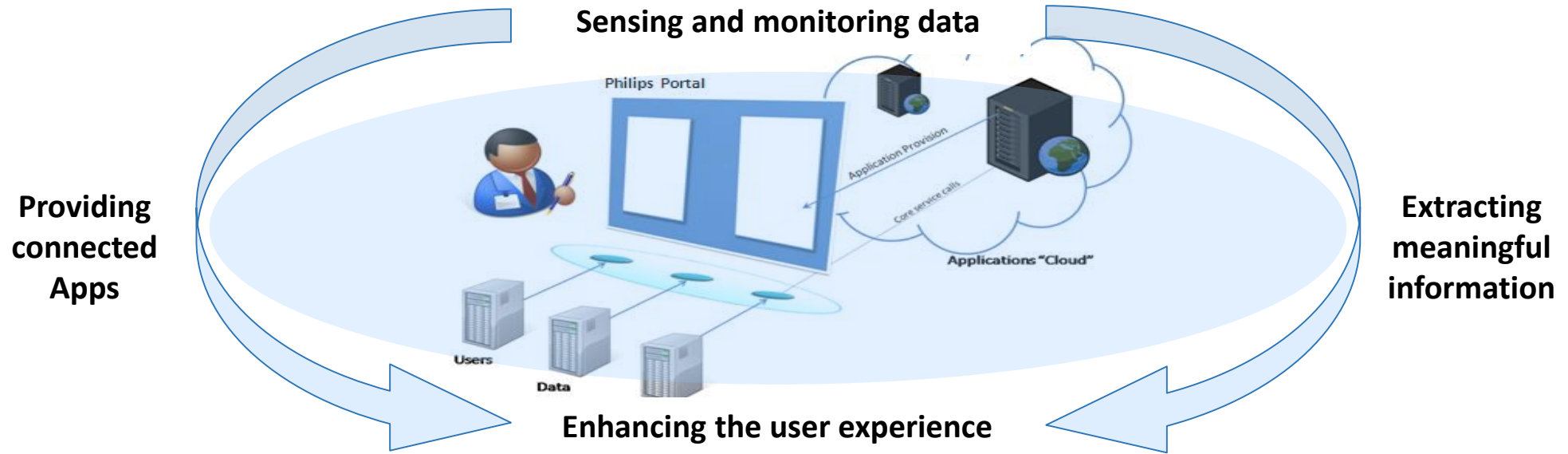
CUSTOMER RETENTION USING BEHAVIOR ANALYTICS



SMART MAINTENANCE USING PREDICTIVE ANALYTICS

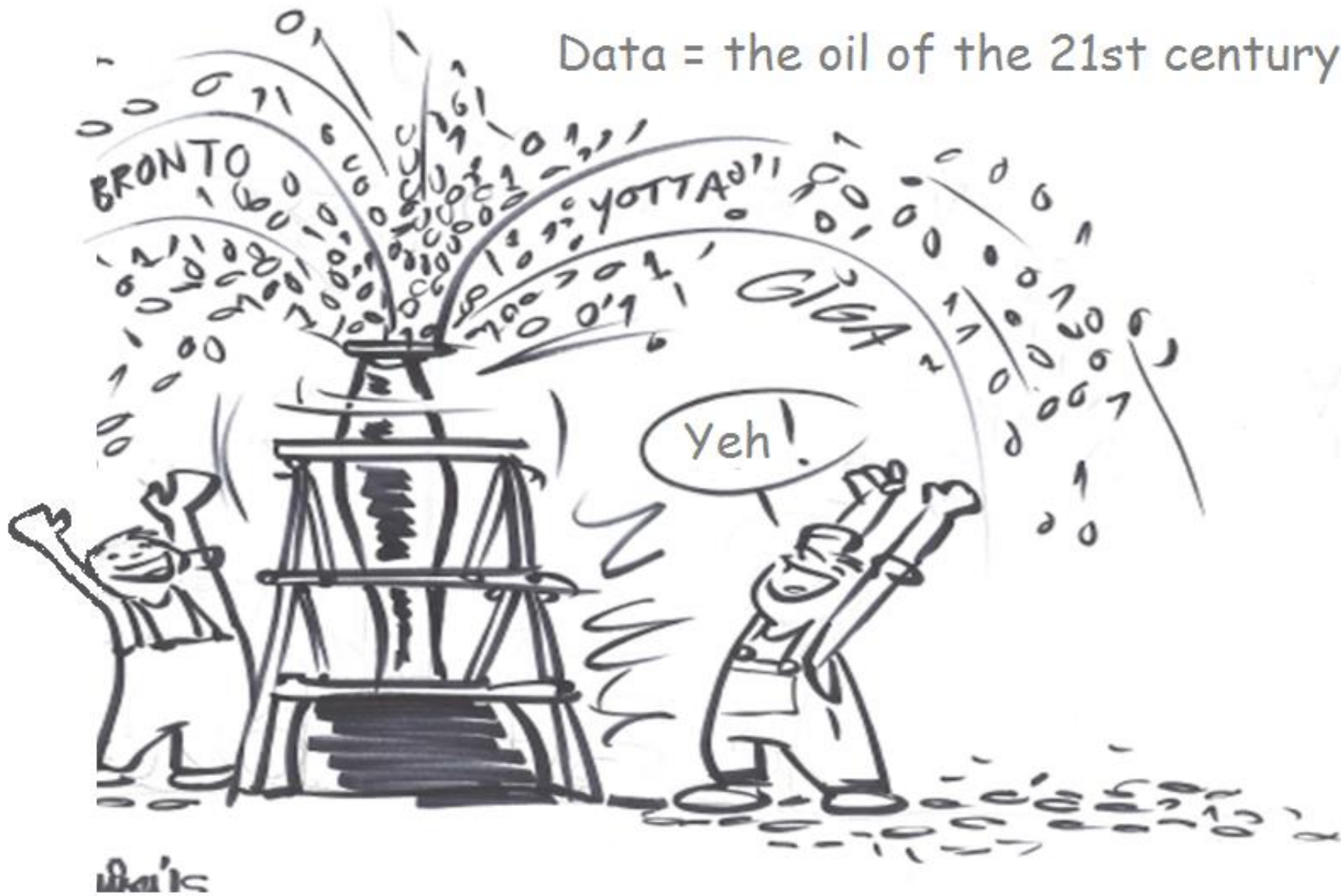


BUSINESS MODEL INNOVATION BY SERVICE DATA

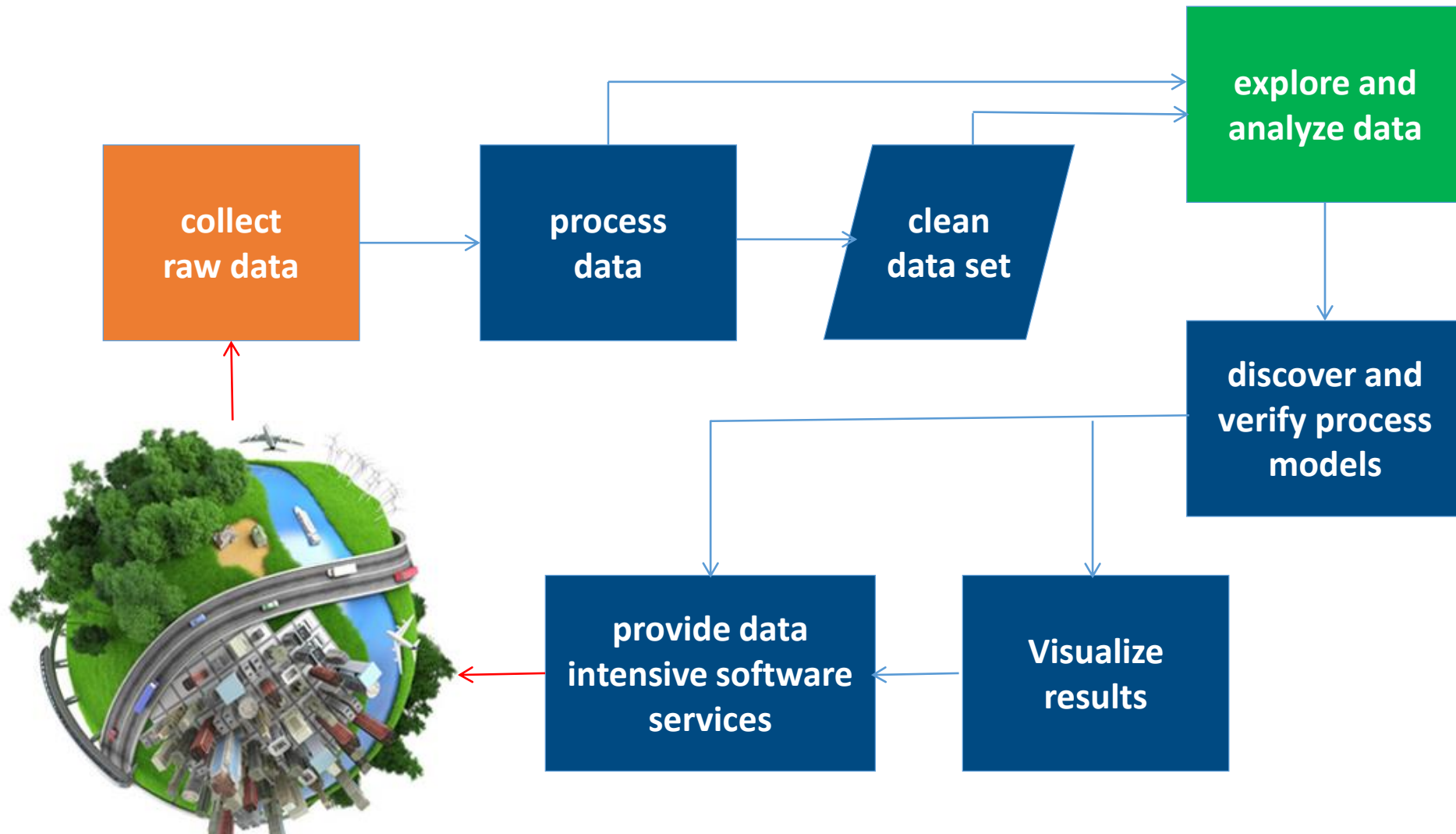


THE WORLD BECOMES CONNECTED

Data = the oil of the 21st century



DATA IS THE NEW FUEL



DATA SCIENCE IS THE NEW KNOWLEDGE

Entity matching: we can find hidden structures



Validation: we can deal with messiness



The PriceStats Blog
From data to insight

CHECK OUT THE
PRICESTATS BLOG

[LEARN MORE](#)



**STATE STREET
GLOBAL MARKETS.**

FINANCIAL SECTOR

Process mining: we can find unknown facts

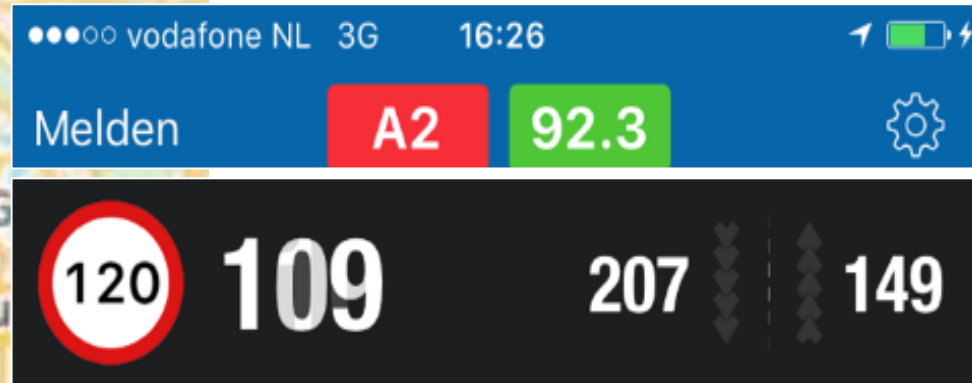


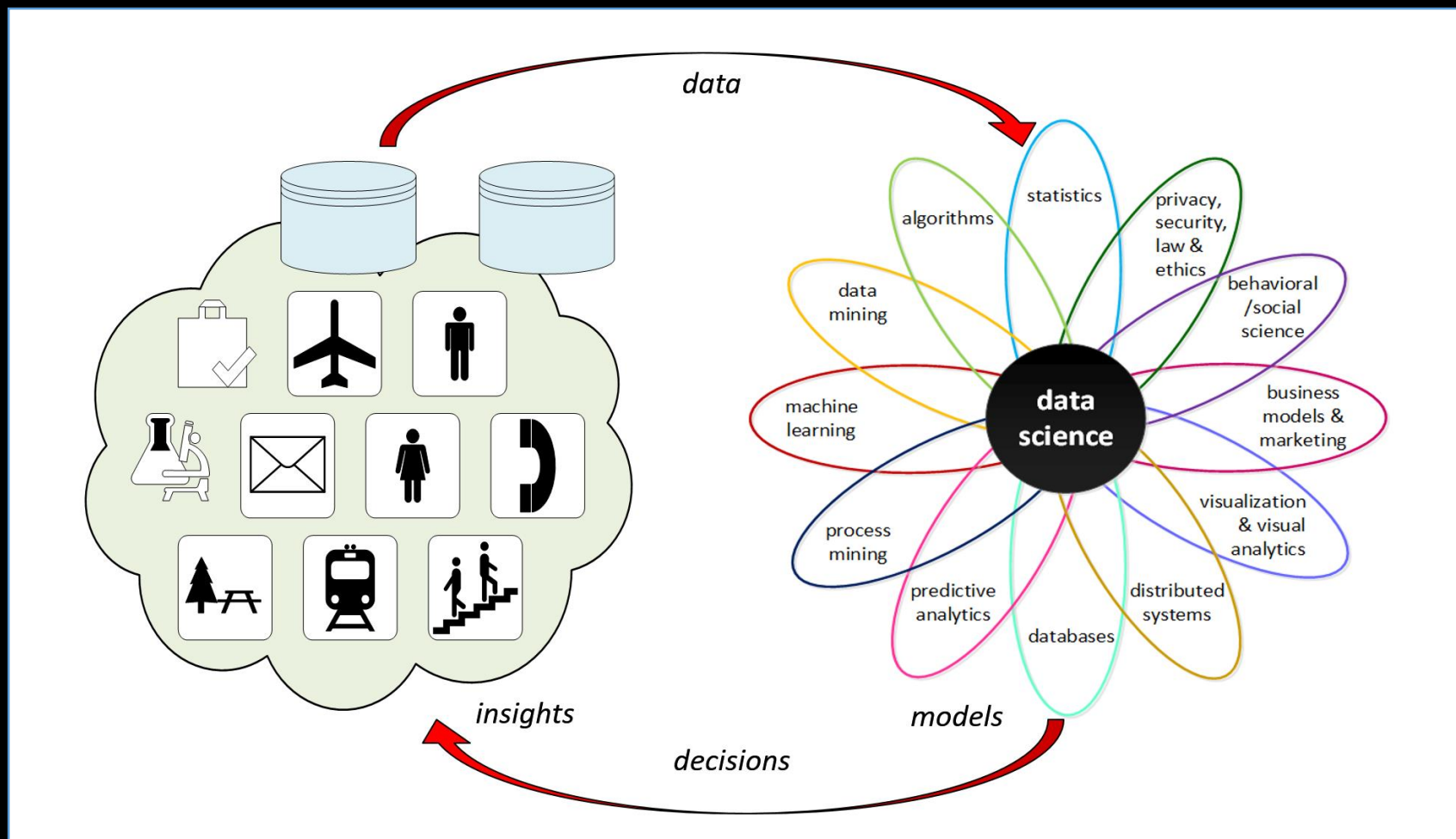
Visualization: we can show what it means



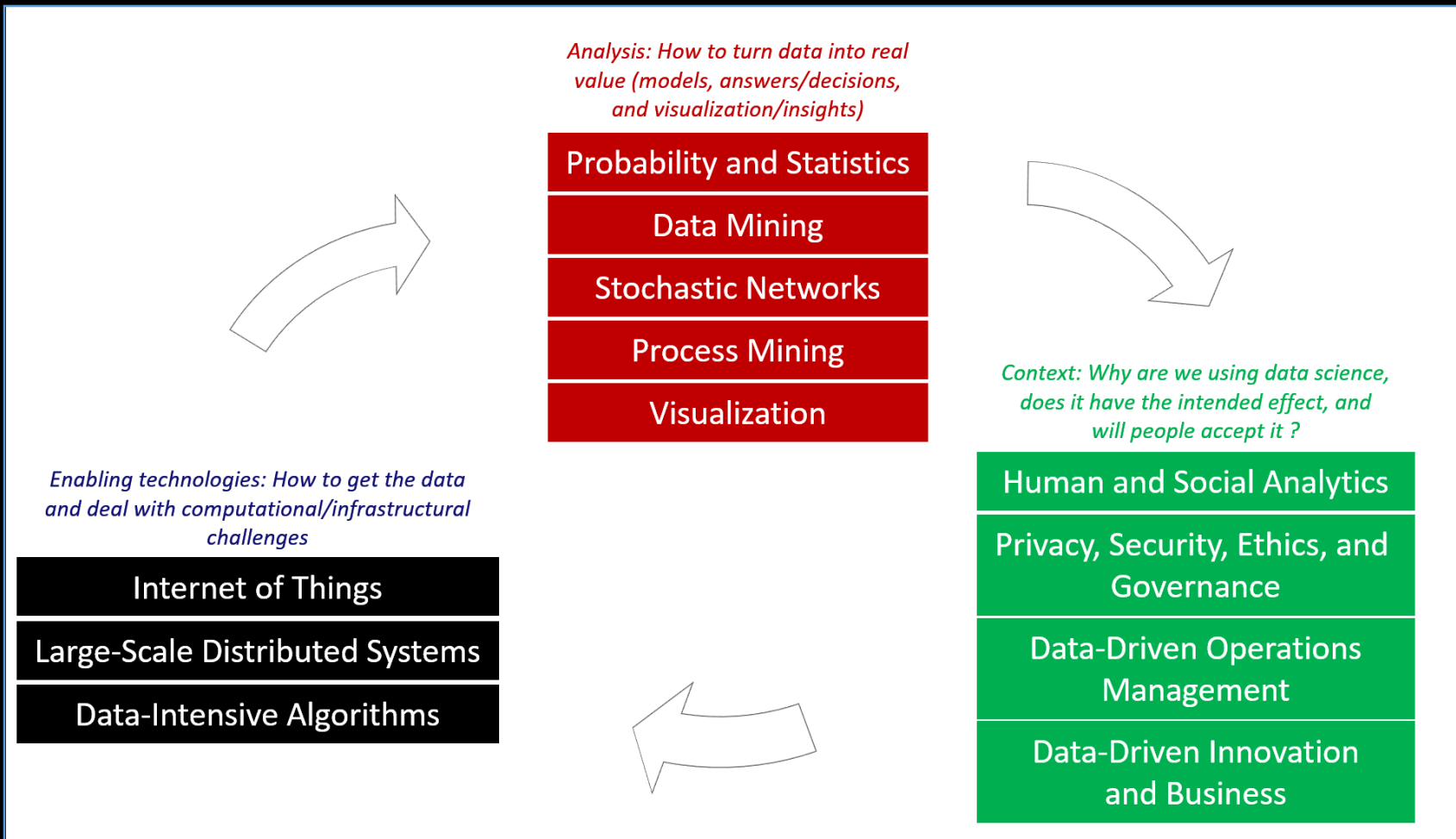
Flitsmeister

de app voor onderweg





DATA SCIENCE COMPETENCES ARE MULTIDISCIPLINARY



DATA SCIENCE COMPETENCES COME IN THREE GROUPS

	COLLECT	-	MOVE	-	ACCESS	
	ANALYZE	-	MINE	-	BROWSE	
	MODEL	-	SIMULATE	-	OPTIMIZE	
	DEDUCE	-	LEARN	-	REASON	
	UNDERSTAND	-	VISUALIZE	-	PERSONALIZE	
	INTERACT	-	PERSUADE	-	TRANSFORM	
	SECURE	-	TRUST	-	TRADE	

SCIENTIFIC CHALLENGES IN DATA SCIENCE ARE MANIFOLD

On November 10 1998, [C.F. Jeff Wu](#) coined the term in his lecture "Statistics = Data Science?" in honor of his appointment to the H. C. Carver Collegiate Professorship in Statistics at the University of Michigan.

In 2001, [William S. Cleveland](#) introduced the field of data science as an independent discipline, extending the field of statistics to incorporate "advances in computing with data" (*Statistical Review, Volume 69, No. 1*).

In April 2002, the Committee on Data for Science and Technology (CODATA) started the *Data Science Journal*, January 2003, Columbia University began publishing *The Journal of Data Science*.

The National Science Board defined in their publication "Long-lived Digital Data Collections" data scientists as "[the information and computer scientists, database and software and programmers, disciplinary experts, curators and expert annotators, librarians, archivists, and all mothers, who are crucial to the successful management of a digital data collection.](#)"

Data Science is a new multi-disciplinary field

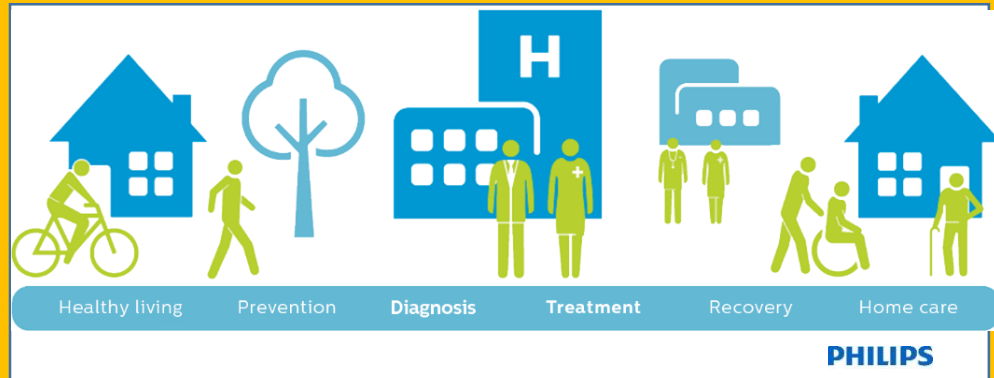
REAL TIME INTELLIGENCE IN MEMORY DATABASES
BIG DATA DATA DRIVEN?
PAAS WHAT ABOUT TRADITIONAL DW/BI?
RELATIONAL DATABASES GOOD ENOUGH?
HADOOP WHAT? MASSIVE PARALLEL PROCESSING
DATA LAKE
HDFS SCALE-OUT



BECOMING A
DATA DRIVEN
ORGANIZATION

EMC² Pivotal

Health Analytics



Marketing Analytics



HR Analytics



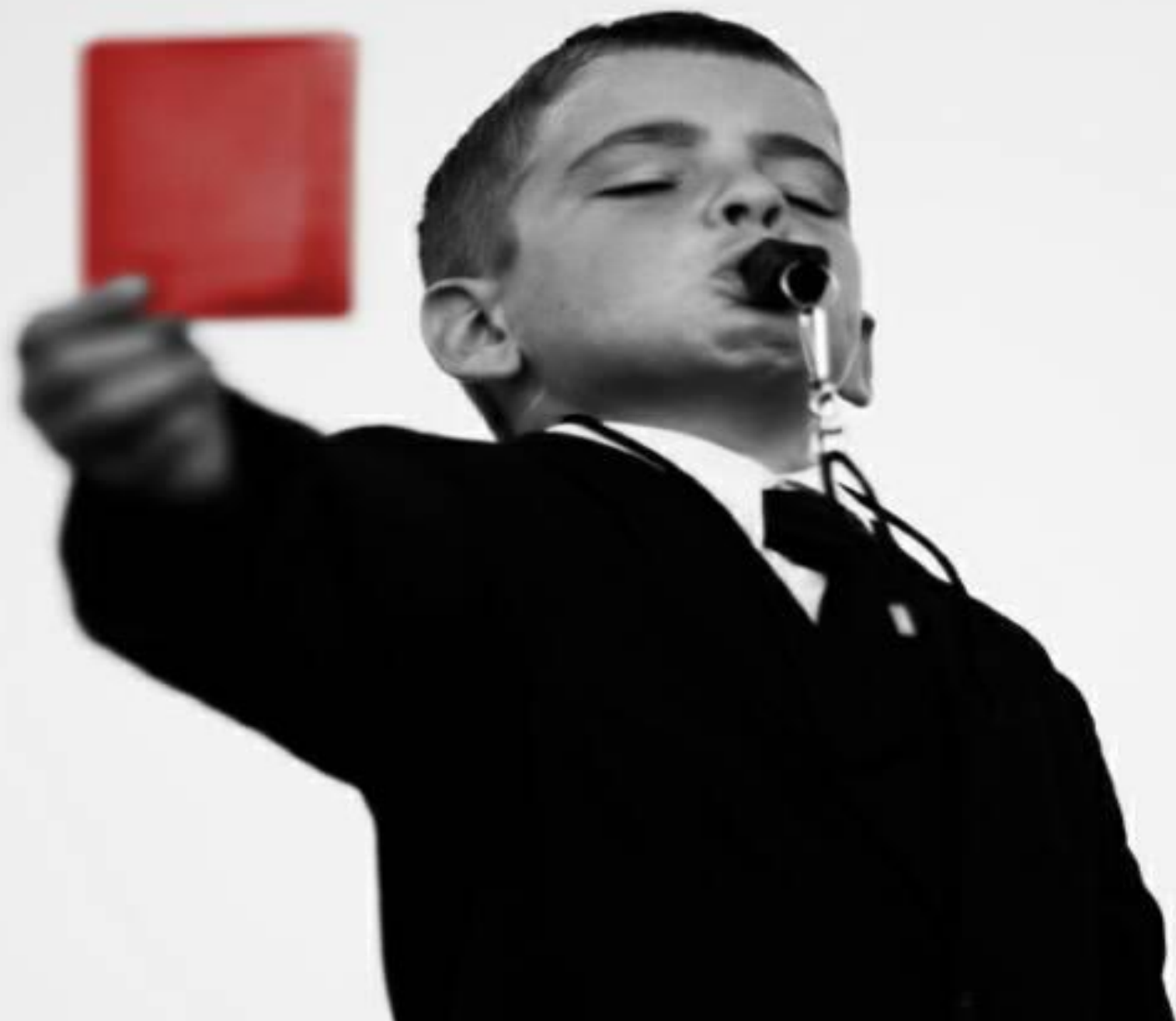
Accounting & Finance Analytics





DARK SIDE

OF DATA



Big data can and should bring greater safety, economic opportunity, and convenience to all people

There is discrimination in the delivery of these ads

Big Data allows for a new level of specificity in underwriting, changing how risk is allocated

Just because something can be measured doesn't mean that it should be measured

There are few laws governing the data brokerage industry

A lack of high-quality, individualized financial data can exclude a person from the mainstream financial system

Despite their importance, the algorithms used by E-Verify are not disclosed to the public

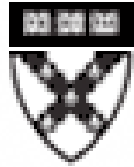
Body-worn cameras are poised to help boost accountability for law enforcement and citizens

Fairness: Data Science without prejudice: How to avoid unfair conclusions even if they are true?

Accuracy: Data Science without guesswork: How to answer questions with a guaranteed level of accuracy?

Confidentiality: Data Science that ensures confidentiality: How to answer questions without revealing secrets?

Transparency: Data Science that provides transparency: How to clarify answers such that they become indisputable?



**Harvard
Business
Review**

THE MAGAZINE

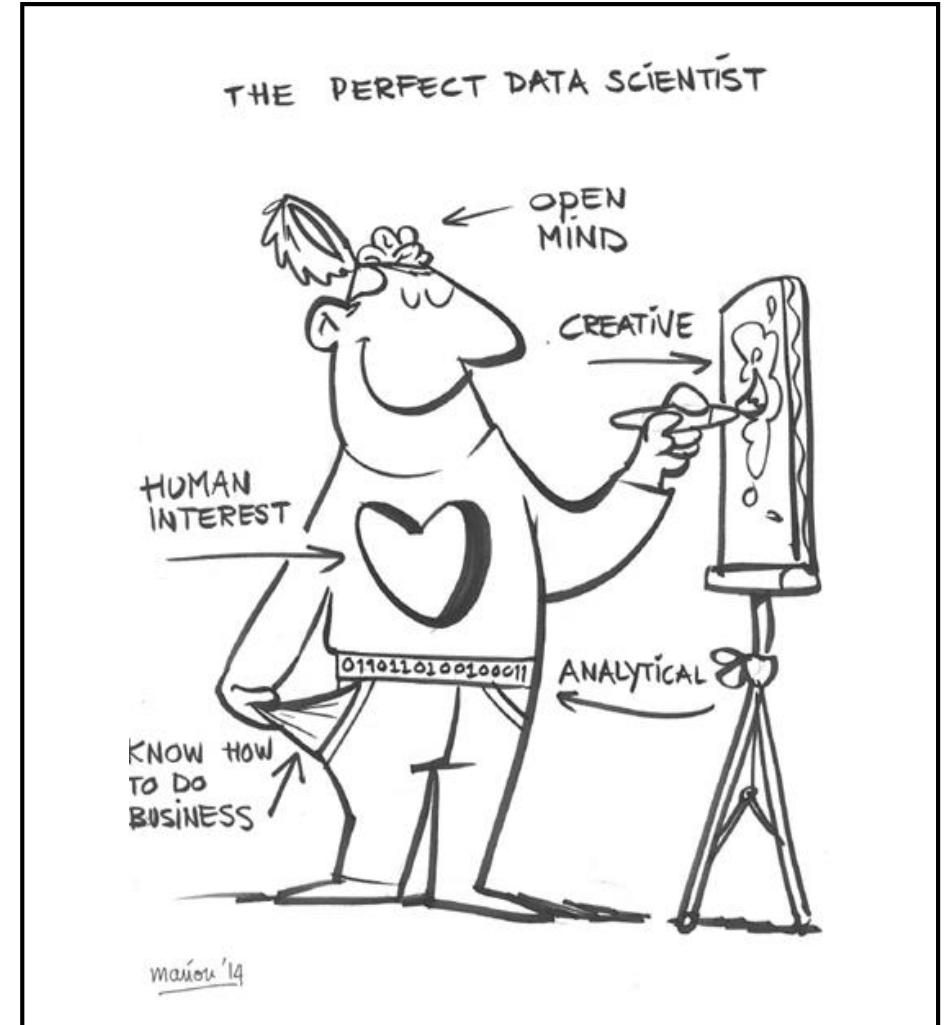
October 2012



ARTICLE PREVIEW To read the full article, [sign-in](#) or [register](#). HBR subscribers, click [here to register for FREE access](#) »

Data Scientist: The Sexiest Job of the 21st Century

We need T-shaped people



Large scale

Jeremy
Data Regulatory Officer



Melissa
On-line Data Business Strategist



Public

Private

Debora
Consultant Data Concessions



Ron
Web-data Entrepreneur



Small and medium scale

Master Your Future in Data Science

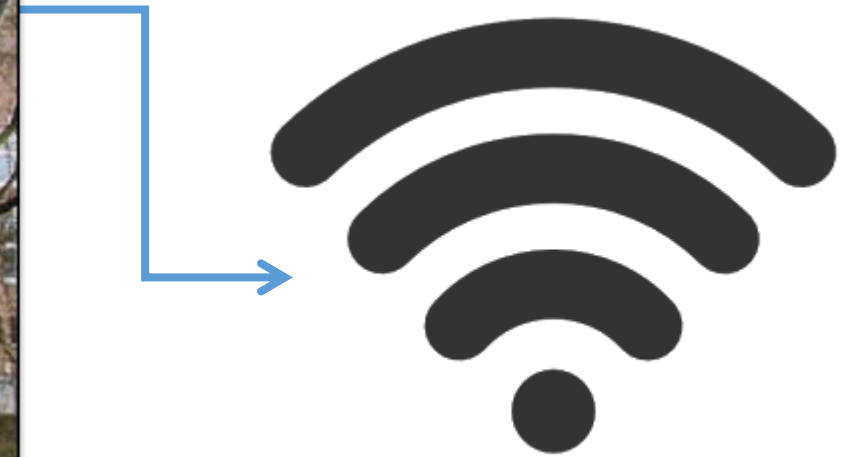


JADS

Jheronimus
Academy
of Data Science



Monastery Mariënborg



Data Science Hotspot

edu ca tion

JADS provides a number of data science programs at undergraduate, graduate and post-graduate level to educate the data scientist of the future

re se arch

Offering Data science research in three locations. Research programs that enhance the relevance of academic research to business and society.

bu. si ness

JADS offers great opportunities for organizations to become part of the data science ecosystem in 's-Hertogenbosch.

COMBINING DATA SCIENCE & ENTREPRENEURSHIP

----- *elective*

Data Mining	Business Analytics	Data Driven BPM	
IP & Privacy	Creative Thinking	Law, Ethics & Entrepreneurship	
Data Integration & Architecture	Innovation Sciences	Data Visualisation	
Strategy & Business Models	Entrepreneurial marketing	Data Entrepreneurship	
	Venture and the Law	Corporate Entrepreneurship	
	Signal Processing	Supercrunchers	
DEIA I - 1.1	DEIA II - 1.2	DEIA III - 2.1	Master Thesis – 2.2



CODERDOJO EDUCATES CHILDREN

Personal care and wellbeing



Monitoring non-intrusively biomarkers and body functions and feeding back information.

Productivity and maintenance



Monitoring performance remotely and enabling long-distance control and maintenance.

Branding and marketing



Analyzing customer behavior and mapping needs on business propositions.

Finance and insurance



Developing data driven options for innovative financial and insurance related business improvements.

City management and control



Enabling adaptive public space support by urban service management and commissioning.

Agro, food, and life science



Providing decision support by correlating information from different life-science related sources.

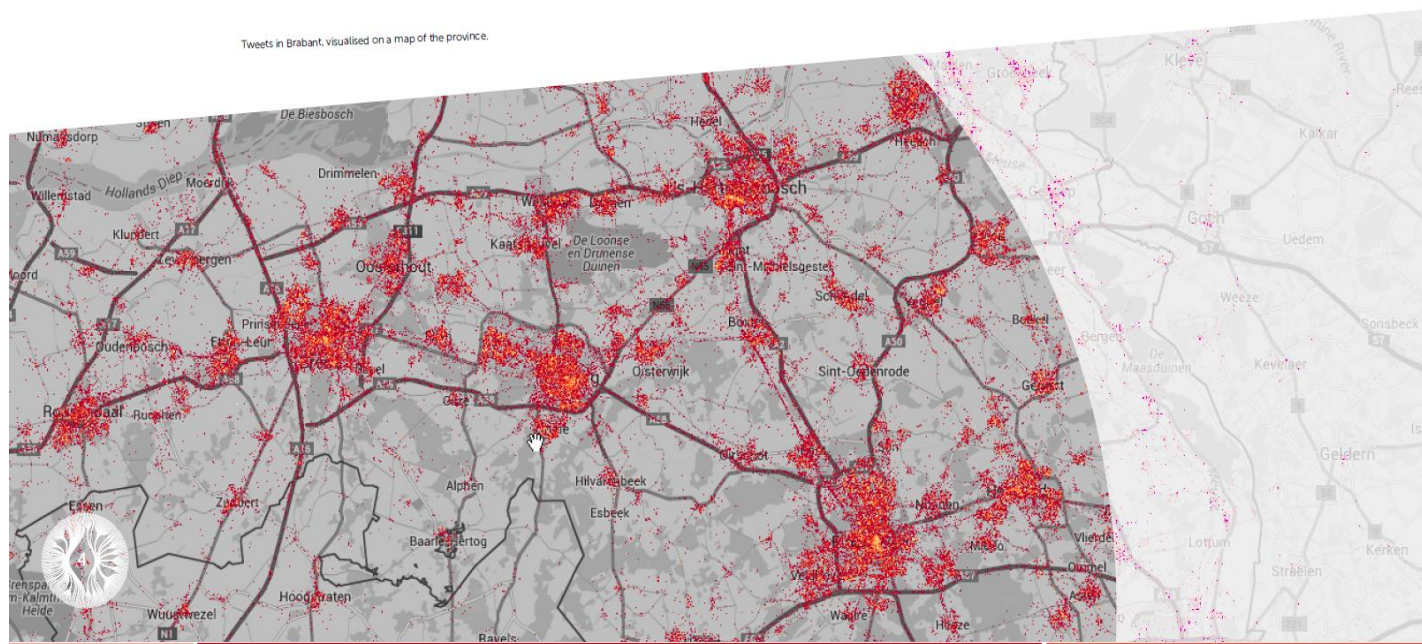
PROUD PARTNER OF
JHERONIMUS
ACADEMY OF
DATA SCIENCE

brandloyalty | JADS

BRABANT - DATA SCIENCE IN ACTION



Tweets in Brabant, visualised on a map of the province.



***FIRST CLASS
BREEDING GROUND
IN DATA SCIENCE***

*Brabant, where you find the brains to solve
the problems of today*



INTEREST IN COLLABORATION IS STRONG

64%

my organization is looking for data science talents

66%

my organization wants to experiment with new data-driven business models

43%

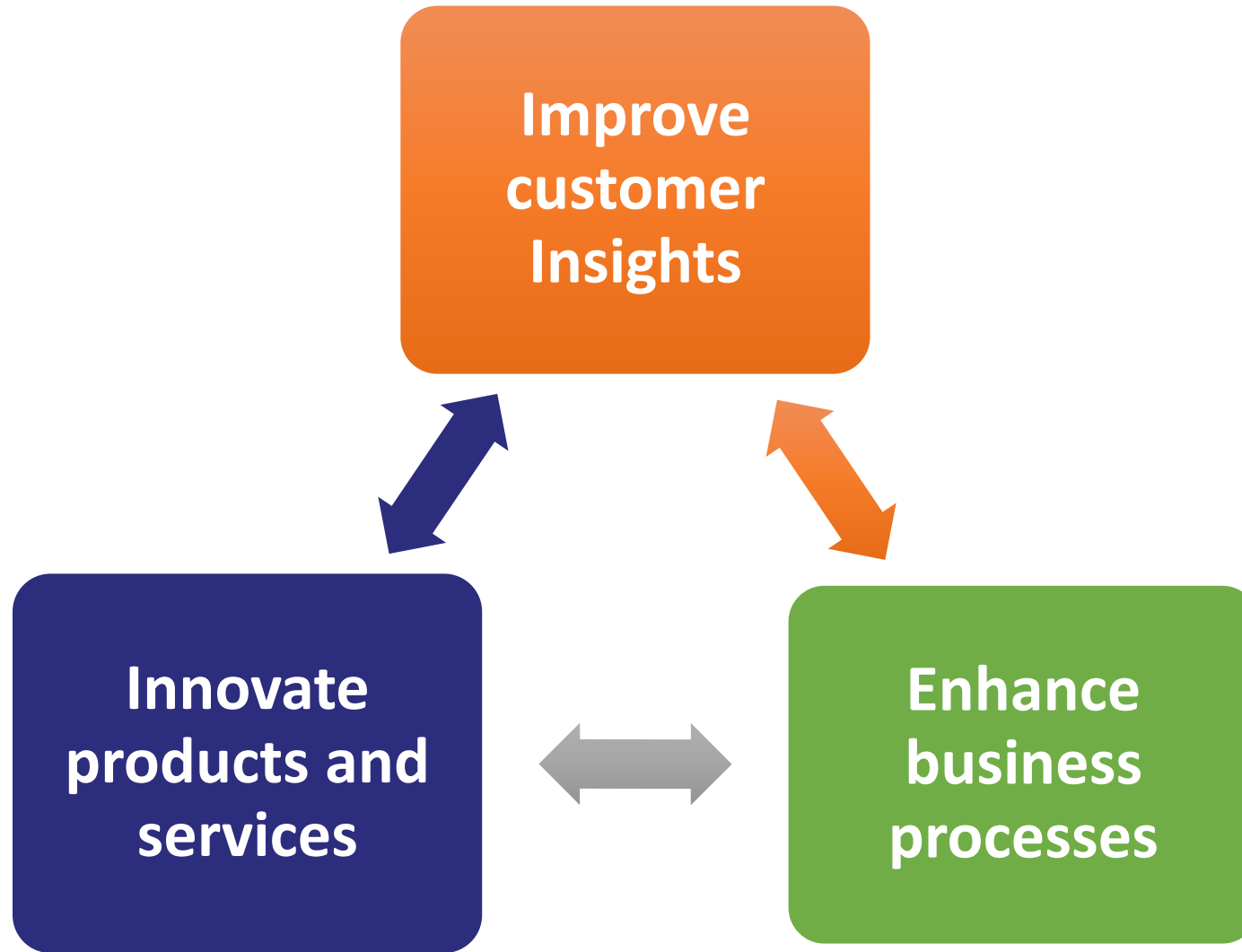
my organization wants to be a leading data intensive company

46%

my organization wants to wants to develop data science competences

THERE ARE MULTIPLE REASONS TO COLLABORATE

Survey (# = 120) amongst JADS business partners



THERE ARE THREE PATHWAYS TO DATA USE



MAKE BETTER DECISIONS



UNDERSTAND CUSTOMER PREFERENCES



CREATE CUSTOMER TRANSPARENCY



MEASURE PUBLIC OPINION



REDUCE RISKS



FIND ANOMALIES



CALCULATE RISKS



THERE IS NO ALTERNATIVE

Thank you



**FIRST CLASS
BREEDING GROUND
IN DATA SCIENCE**
Brabant, where you find the brains to solve
the problems of today

