Big Data

A Small Introduction

Dr. Philippe J.S. De Brouwer

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Honorary Consul of Belgium in Kraków
guest professor at the Jagiellonian University
guest professor at AGH University of Science and Technology
lecturer at eMBA UW
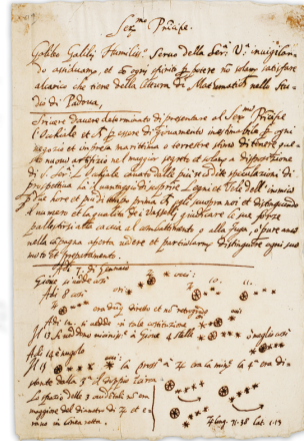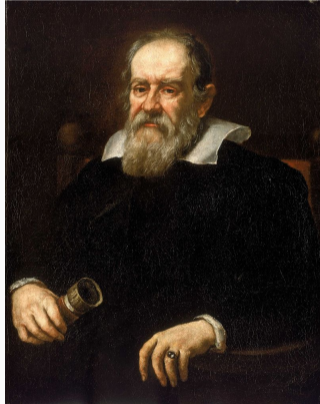SVP at HSBC in Kraków

Data is the new oil

Figure 1: Galileo Galilei used a telescope to observe the moons of Jupiter and angered the inquisition – fotos Wikimedia.
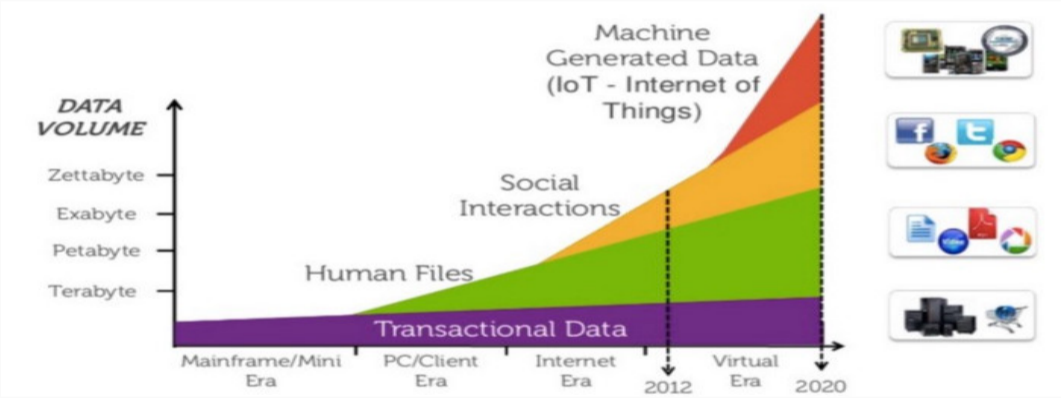
The New Paradigm

Figure 2: The gwroth of data

What is Big Data?

Figure 3: Big data is usually defined via 3 to 5 "Vs".

Benefits

The Benefits of Big Data

Deeper consumer insight, and hence . . .

1. smoother operations
2. more agile supply chain, less stock, etc.
3. data driven innovation (higher probability to succeed)
4. less customer churn
5. more turnover per customer

Also new products and services such as self-driving cars, care robots, etc.

How?

The Analitics Behind Big Data

- **Comparative analysis**: This examines customer behavior metrics and real-time customer engagement in order to compare a company's products, services and branding with those of its competitors.
- **Social media listening**: This analyzes what people are saying on social media about a business or product, which can help identify potential problems and target audiences for marketing campaigns.
- **Marketing analytics**: This provides information that can be used to improve marketing campaigns and promotional offers for products, services and business initiatives.
- **Sentiment analysis**: All of the data that's gathered on customers can be analyzed to reveal how they feel about a company or brand, customer satisfaction levels, potential issues and how customer service could be improved.

The Math Behind Big Data and Data Science

- **Data Gathering and Data Wrangling**
- Build a model:
    - **descriptive and predictive statistics**
    - **stochastic modelling**
    - **machine learning**
- use the results

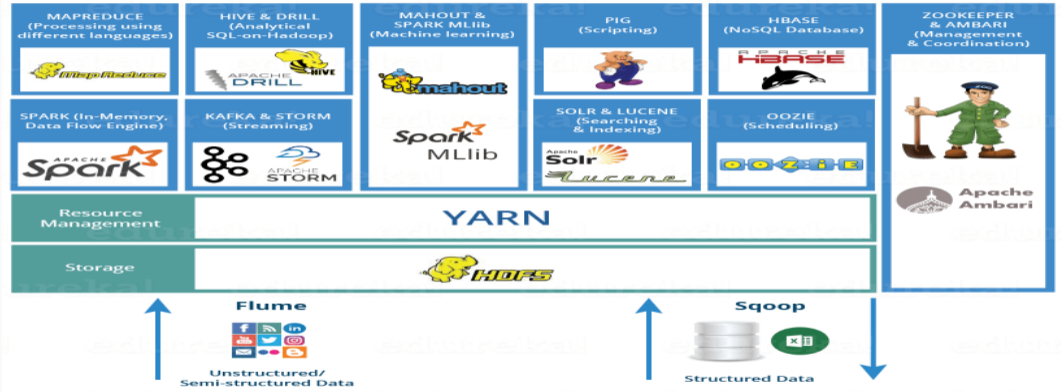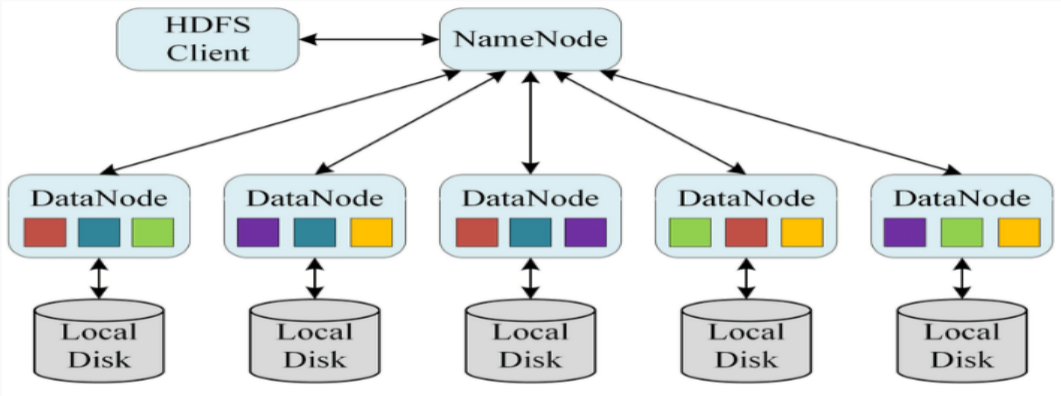**Figure 4:** The big data ecosystem.

Figure 5: The distributed resilient Hadoop Distributed File System.

Conclusions

Conclusions

- More data is better
- Big Data is here to stay
- We use "old" methods but on more data with spectacular and almost magical results
- The use of big data is everywhere
- Other developments such as Quantum computers will only enhance the use of big data
- The battle for privacy is lost ... we must strive to keep our agency