

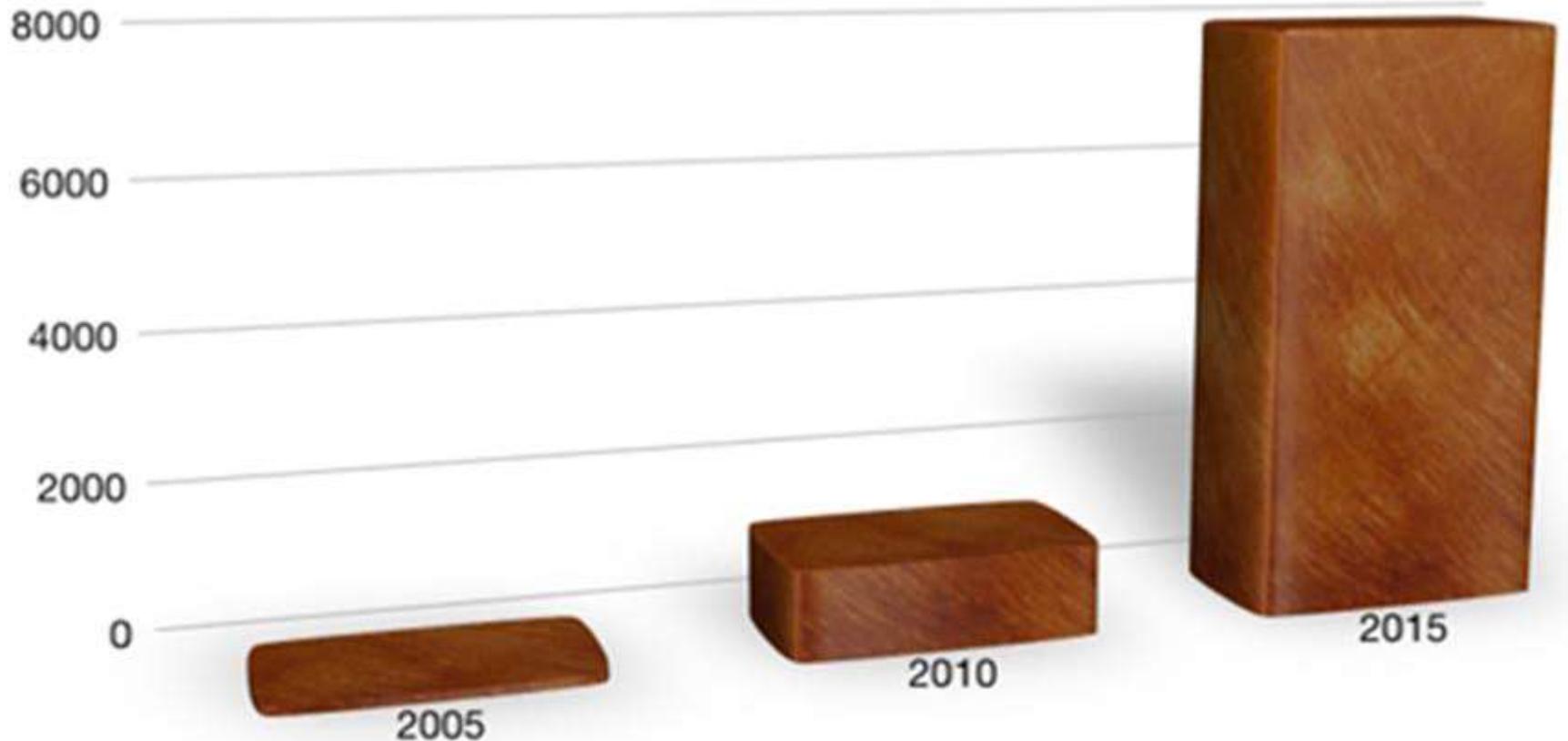
BUSINESS INTELLIGENCE

TRACK PRESENTATION

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WORLDWIDE DATA STORAGE IN EXABYTES (10^{18} BYTE):

- 10^9 - GB (gigabyte)
- 10^{12} - TB (terabyte)
- 10^{15} - PB (petabyte)
- 10^{18} - EB (exabyte)
- 10^{21} - ZB (zettabyte)
- 10^{24} - YB (yottabyte)



Source: IDC (2011) Extracting value from chaos

FACTS AND FIGURES



\$600

to buy a disk drive
that can store all
of the world's
music

30 Billion

pieces of content shared
on Facebook every month

5 Billion

mobile phones in use in 2010

Can “Big Data” play a useful economic role?



Source: McKinsey Global Institute (2011) Big data - The next frontier for innovation, competition, and productivity

BUSINESS INTELLIGENCE BUZZWORDS



Big data

ETL

Multidimensional
Modeling

Predictive Analytics

In-Memory

Data Warehousing

Hadoop

Enterprise
Reporting

Data Mining

Real-time

**Social Media
Analysis**

OLAP

COURSE ELEMENTS OF TRACK



MIS + Data Warehousing



Lecture:
Management Information Systems + Data Warehousing

Exercises:
MIS + DWH, Hadoop, IBM Cognos, ...

Presentation:
BI Research Topic

Data Analytics I



Lecture:
Data Mining and Statistics:
mainly **unsupervised** learning

Case study:
Applications of Statistical Learning and Multivariate Statistics

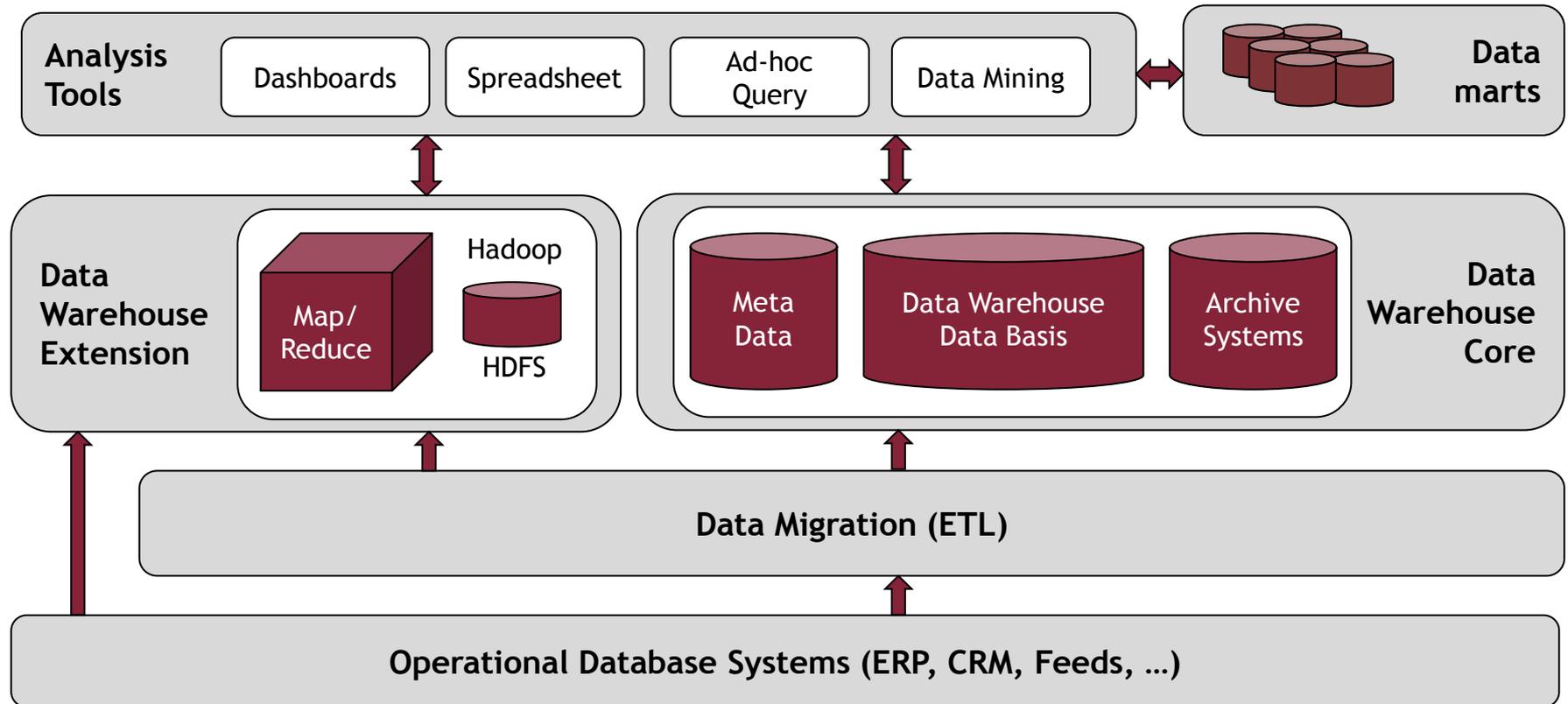
Data Analytics II



Lecture:
Data Mining and Statistics:
mainly **supervised** learning

Case study:
Applications of Statistical Learning and Multivariate Statistics

EXTENDED DATA WAREHOUSE ARCHITECTURE



COURSE GOALS: MIS + DATA WAREHOUSING



MIS + Data Warehousing

Lecture:
Management
Information Systems
+ Data Warehousing

Exercises:
MIS + DWH, Hadoop,
IBM Cognos, ...

Presentation:
BI Research Topic

- To understand the need for multidimensional reporting and data warehousing.
- Learn how to conceptually design data warehouse queries and table structures
- Get some hands-on experience with online analytical processing (OLAP) using IBM Cognos
- Learn and be informed about latest data warehousing trends (column stores and in-memory data management)

COURSE ELEMENTS OF TRACK



MIS + Data Warehousing



Lecture:
Management Information Systems + Data Warehousing

Exercises:
MIS + DWH, Hadoop, IBM Cognos, ...

Presentation:
BI Research Topic

Data Analytics I



Lecture:
Data Mining and Statistics:
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Data Analytics II



Lecture:
Data Mining and Statistics:
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Case study:
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DATA ANALYTICS: APPROACH



Data set

Think about:
purpose of the
analysis a-priori,
data quality

Techniques to
systematically analyze
multivariate data



Select and apply
appropriate
methods

COURSE GOALS: DATA ANALYTICS I



Data Analytics I

Lecture:
Data Mining and
Statistics:
mainly **unsupervised**
learning

Case study:
Applications of
Statistical Learning
and Multivariate
Statistics

- Understand methods for data preprocessing and data analytics.
- Understand the functioning of **unsupervised** learning techniques:
 - Principal component analysis
 - Cluster analysis
 - Multidimensional scaling
 - Multiple objective clustering
- Get some hands-on experience with statistical software (pool lectures)

COURSE GOALS: DATA ANALYTICS II



Data Analytics I

Lecture:
Data Mining and
Statistics:
mainly **supervised**
learning

Case study:
Applications of
Statistical Learning
and Multivariate
Statistics

- Understand methods for missing values treatment.
- Understand the functioning of **supervised** learning techniques:
 - Regression techniques
 - Classification techniques
- Get some hands-on experience with statistical software (pool lectures)

TRACK PRESENTATION: BUSINESS INTELLIGENCE

Big Data exceeds an organization's storage or compute capacity for accurate and timely decision-support data.

Information analysts design and implement Business Intelligence solutions to support meaningful planning decisions.

Life is about making choices... Start today with making good decisions and choose track Business Intelligence!

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THE IS RESEARCH NETWORK

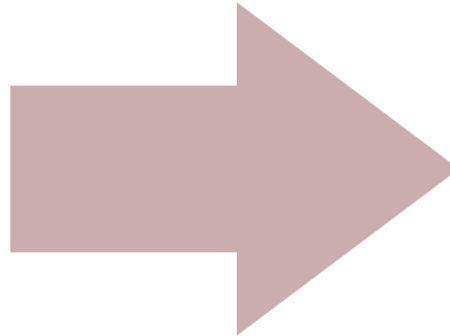
www.ercis.org

JOB PROFILE

~~DATA SCIENTIST~~ INFORMATION ANALYST



Data



Information

- Analyze corporate information demands
- Access appropriate data sources
- Design and implement MIS and BI solutions
- Apply sophisticated analytics

Gartner predicts that by 2015 „Big Data“ will create more than 4.4 million jobs