BUSINESS INTELLIGENCE

TRACK PRESENTATION
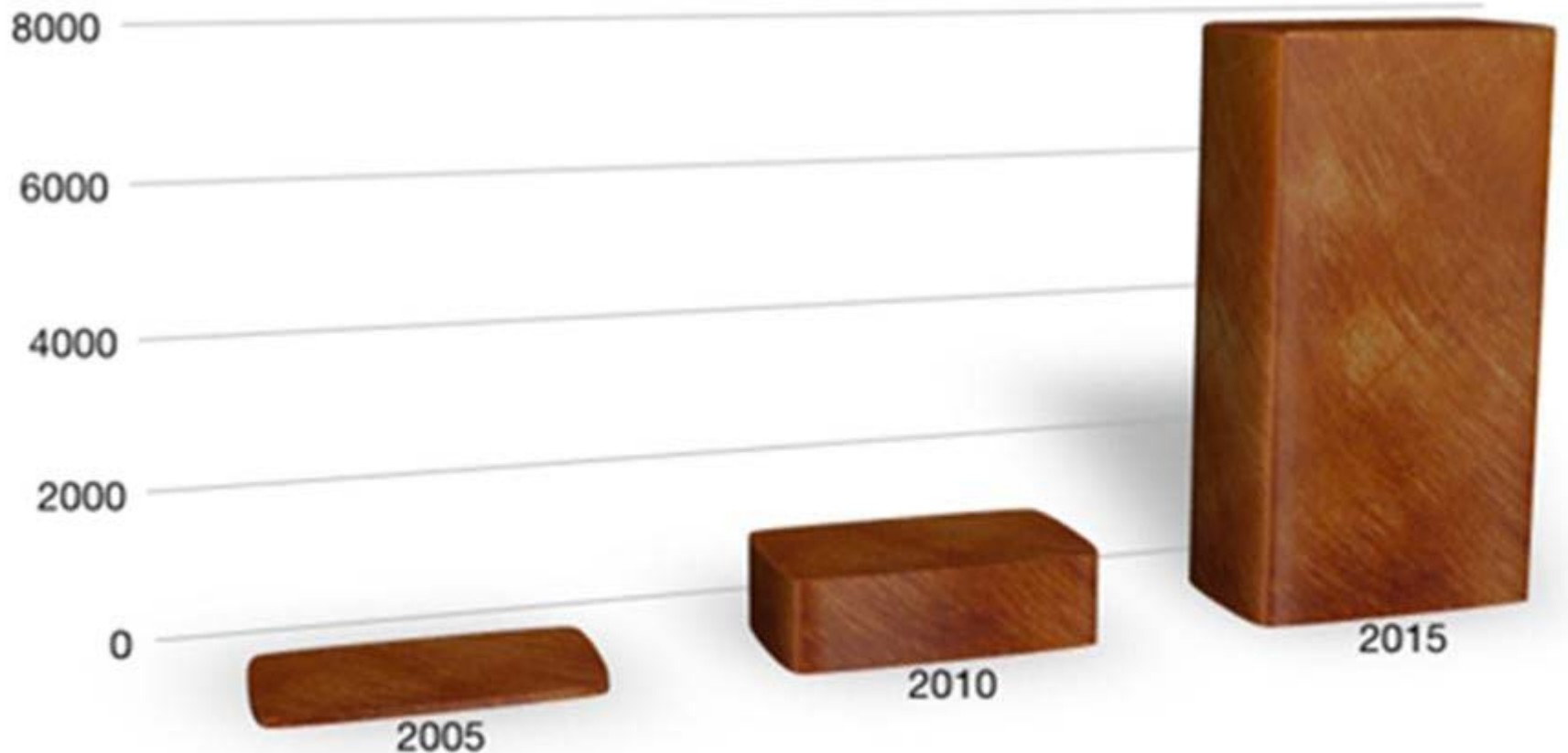
PROF. DR. JÖRG BECKER, DR. STEFAN FLEISCHER, SEBASTIAN KÖFFER
PROF. DR. GOTTFRIED VOSSEN, DR. JENS LECHTENBÖRGER, DAVID FEKETE
PROF. DR. HEIKE TRAUTMANN, <u>PASCAL KERSCHKE</u>

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)

ERCIS

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

Big data   ETL   Multidimensional Modeling

Predictive Analytics

Data Warehousing

In-Memory

Hadoop

Enterprise Reporting

Data Mining

Real-time

Social Media Analysis

OLAP

COURSE ELEMENTS OF TRACK

MIS + Data Warehousing	Data Analytics I	Data Analytics II
Lecture: Management Information Systems + Data Warehousing	Lecture: Data Mining and Statistics: mainly **unsupervised** learning	Lecture: Data Mining and Statistics: mainly **supervised** learning
Exercises: MIS + DWH, Hadoop, IBM Cognos, …	Case study: Applications of Statistical Learning and Multivariate Statistics	Case study: Applications of Statistical Learning and Multivariate Statistics
Presentation: BI Research Topic		

EXTENDED DATA WAREHOUSE ARCHITECTURE

Analysis Tools

| Dashboards | Spreadsheet | Ad-hoc Query | Data Mining |

Data marts

Data Warehouse Extension

Hadoop

Map/ Reduce

HDFS

Data Warehouse Core

Meta Data

Data Warehouse Data Basis

Archive Systems

Data Migration (ETL)

Operational Database Systems (ERP, CRM, Feeds, …)
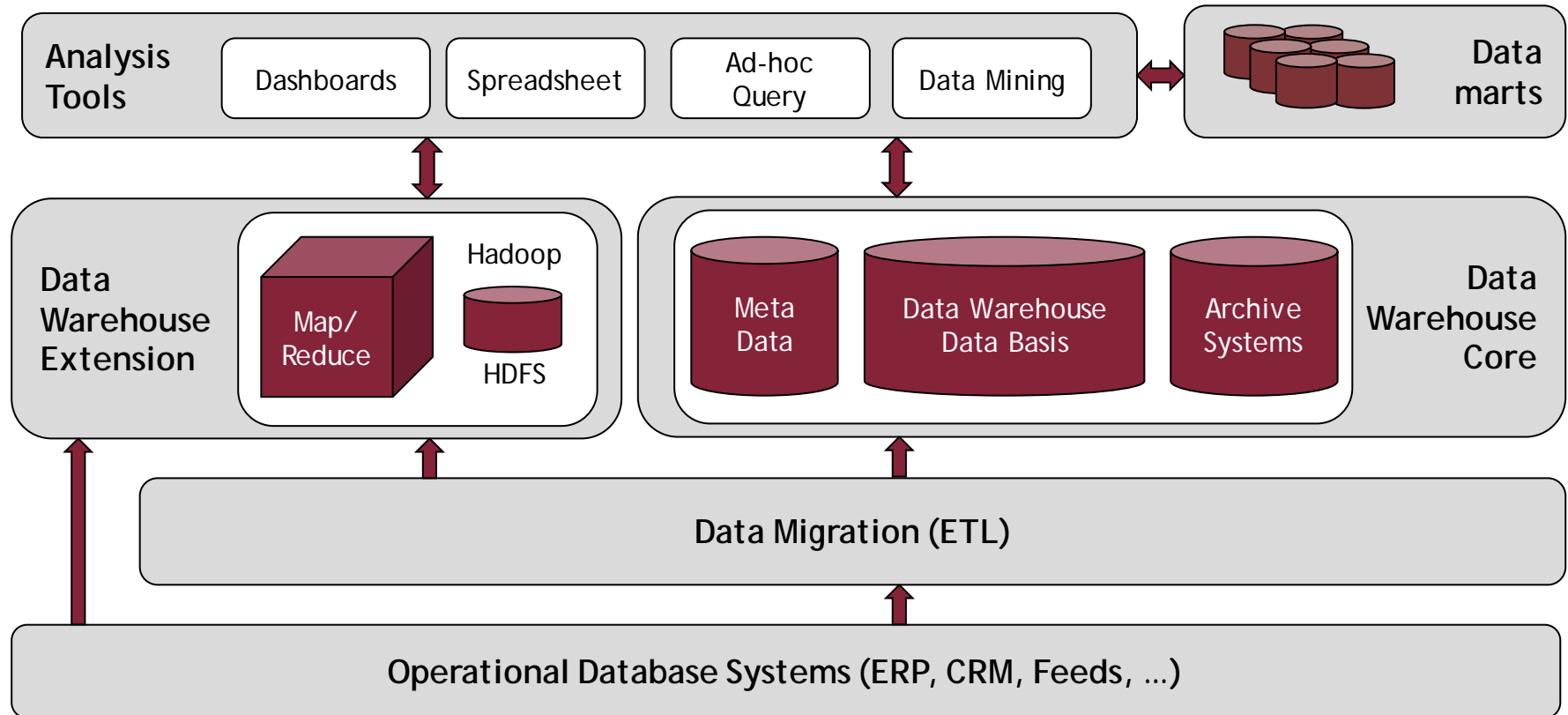
COURSE GOALS: MIS + DATA WAREHOUSING

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	Data Analytics I	Data Analytics II
Lecture: Management Information Systems + Data Warehousing	Lecture: Data Mining and Statistics: mainly **unsupervised** learning	Lecture: Data Mining and Statistics: mainly **supervised** learning
Exercises: MIS + DWH, Hadoop, IBM Cognos, …	Case study: Applications of Statistical Learning and Multivariate Statistics	Case study: Applications of Statistical Learning and Multivariate Statistics
Presentation: BI Research Topic		

DATA ANALYTICS: APPROACH

Data set

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

Techniques to systematically analyze multivariate data
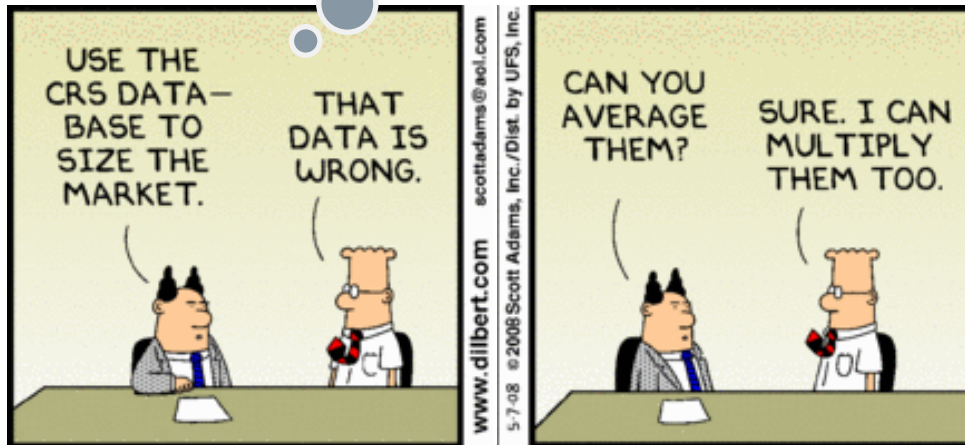
Select and apply appriopriate methods

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

ERCIS

European Research Center for Information Systems

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!

CONTACT
NAME   PASCAL KERSCHKE
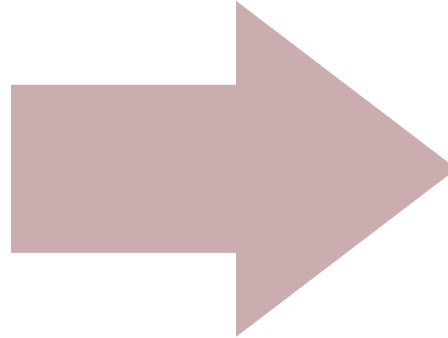E-MAIL   KERSCHKE@UNI-MUENSTER.DE

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