

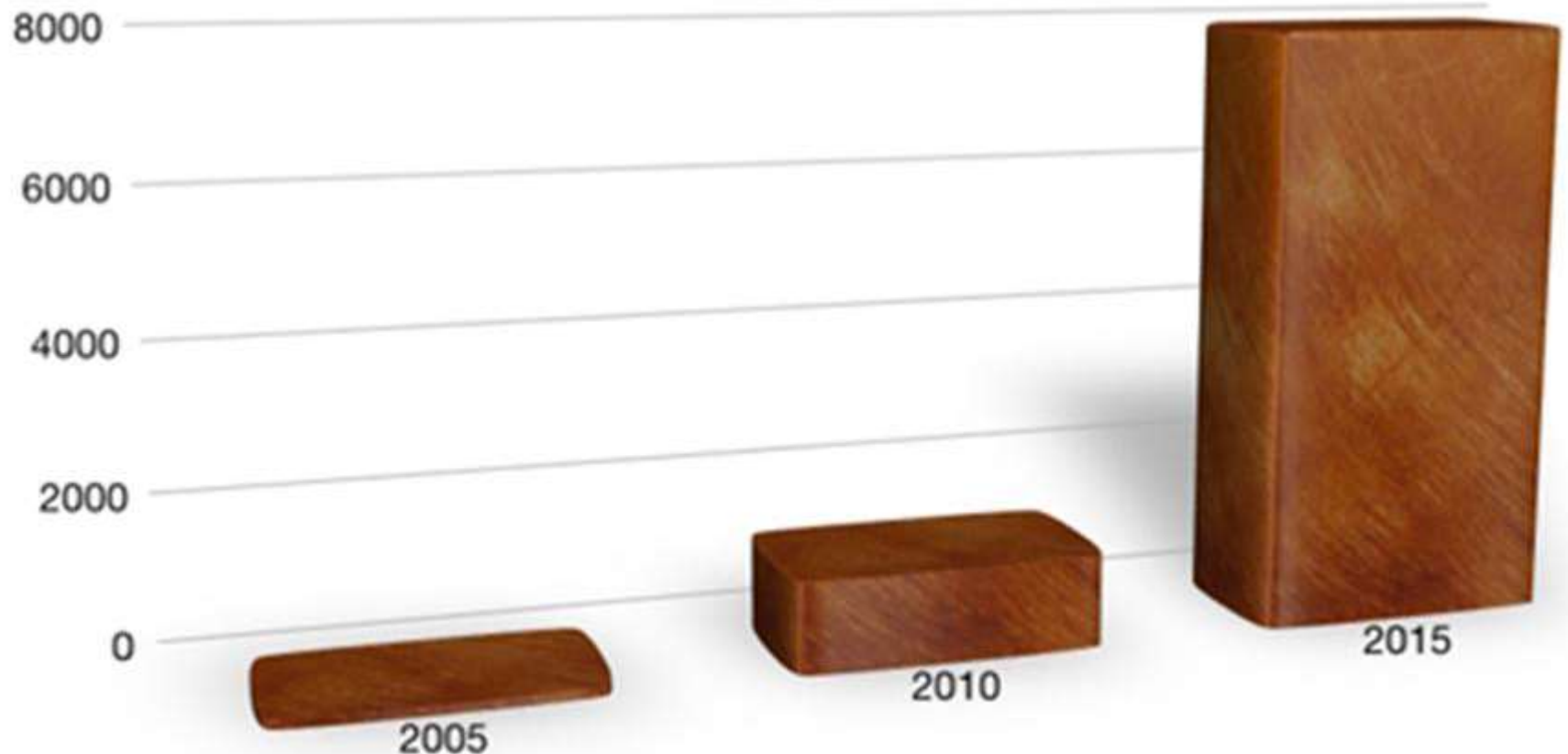
BUSINESS INTELLIGENCE

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



What is a data scientist?

50:50



A.

A mac user who calls himself a data scientist to get a job!

B.

A statistician who lives in San Francisco.

C.

Someone who is better at software engineering than any statistician.

D.

Someone who is better at statistics than any software engineer.

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

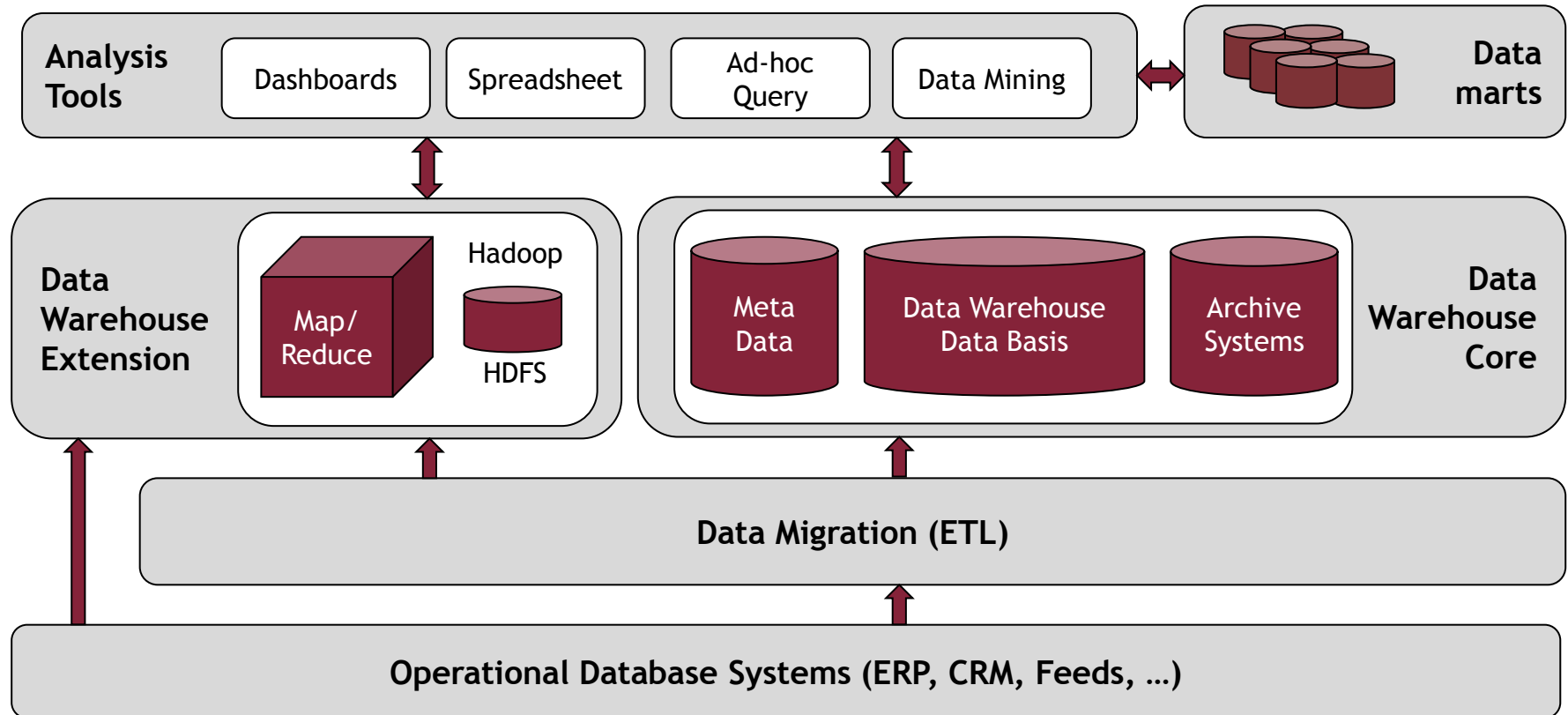
Data Analytics II



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

Case study:
Applications of
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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:
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Information Systems
+ Data Warehousing

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

Presentation:
BI Research Topic

Data Analytics I



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Data Analytics II



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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)

COURSE ELEMENTS OF TRACK



MIS + Data Warehousing



Lecture:
Management
Information Systems
+ Data Warehousing

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

Presentation:
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Data Analytics I



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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

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