

BA 464
Spring 2016-2017 - IEU

Business Analytics and Big Data
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Week 1A: Introduction to Analytics Organization
and Problems

What is management?

- Making decisions.
 - Choose a decision worth considering.
 - Decide on criteria for good solutions.
 - Find alternatives.
 - Evaluate alternatives.
 - Choose best alternative.
- Can data help? → Then be “data driven”

Your stormy career?

an example from a New York Times story from 2004:

Hurricane Frances was on its way, barreling across the Caribbean, threatening a direct hit on Florida's Atlantic coast. Residents made for higher ground, but far away, in Bentonville, Ark., executives at Wal-Mart Stores decided that the situation offered a great opportunity for one of their newest data-driven weapons ... predictive technology.

A week ahead of the storm's landfall, Linda M. Dillman, WalMart's chief information officer, pressed her staff to come up with forecasts based on what had happened when Hurricane Charley struck several weeks earlier. Backed by the trillions of bytes' worth of shopper history that is stored in Wal-Mart's data warehouse, she felt that the company could 'start predicting what's going to happen, instead of waiting for it to happen,' as she put it. (Hays, 2004)

The data driven manager

- The data driven manager can:
 - Develop a deeper understanding of their work
 - Deal better with uncertainty
 - Conduct good experiments and research
 - Learn from their mistakes

What is it?

- Business analytics (BA) is the practice of iterative, methodical exploration of an organization's data, with an emphasis on statistical analysis.
- Business analytics is used by companies committed to data-driven decision-making.

Why is it done?

The whole process of business analytics must be targeted to develop an insight into a strategically relevant question.

Who does it?

A chief data officer (CDO) is a corporate officer responsible for enterprise wide governance and utilization of information as an asset, via data processing, analysis, data mining, information (trading and other means. Formulates and executes the data strategy.

A more recent position)Chief analytics officer (CAO) is a job title for the senior manager responsible for the analysis of data within an organization, such as a listed company or an educational institution. The CAO often reports to the chief executive officer.

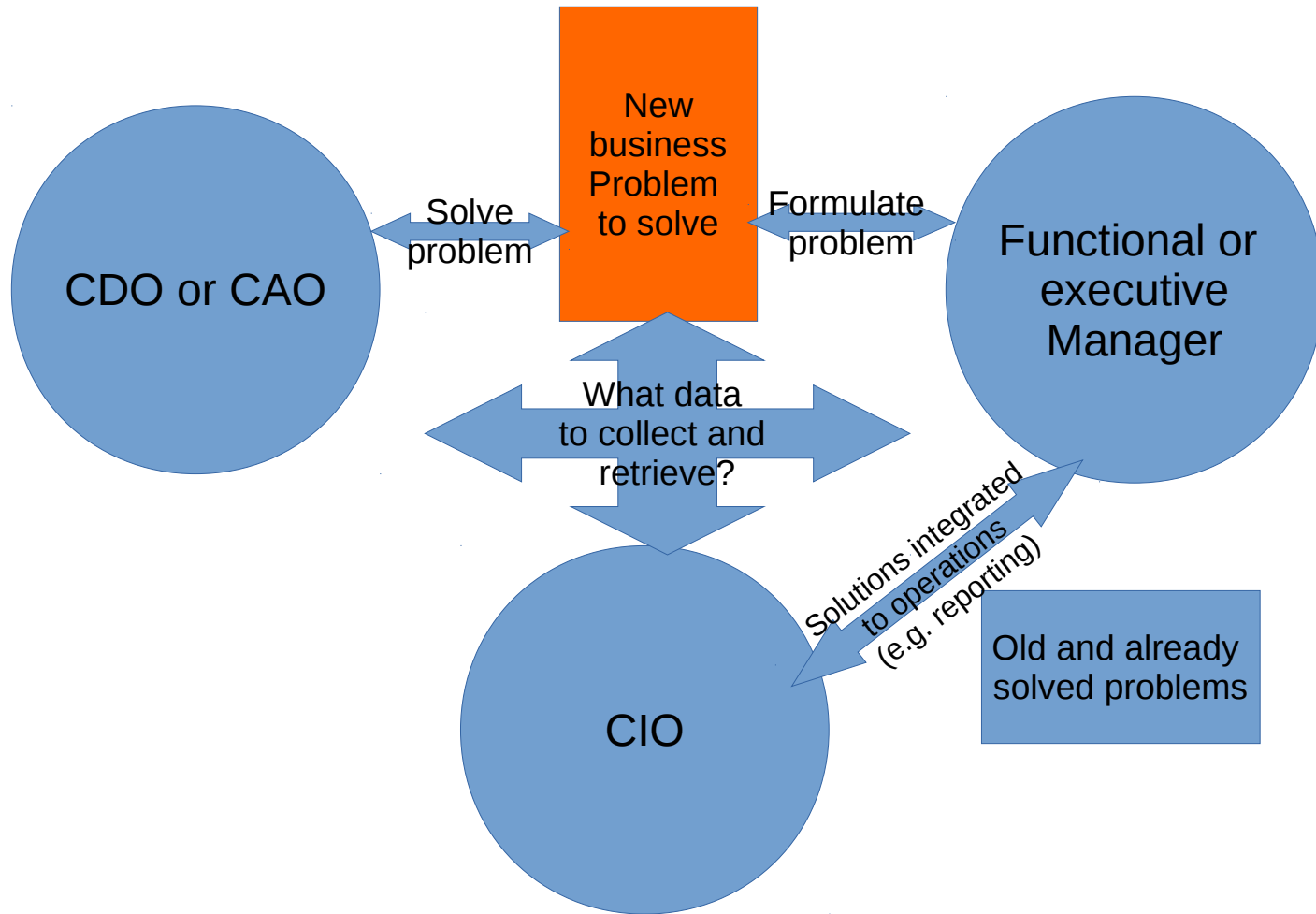
Chief information officer (CIO), chief digital information officer (CDIO) or information technology (IT) director, is a job title commonly given to the most senior executive in an enterprise responsible for the information technology and computer systems that support enterprise goals.

...

"My role is about how to leverage data to be better marketers as a group, how to use data to be better for our clients, and how to be better for the business."
Stephane Pere, **The Economist** Chief Data Officer

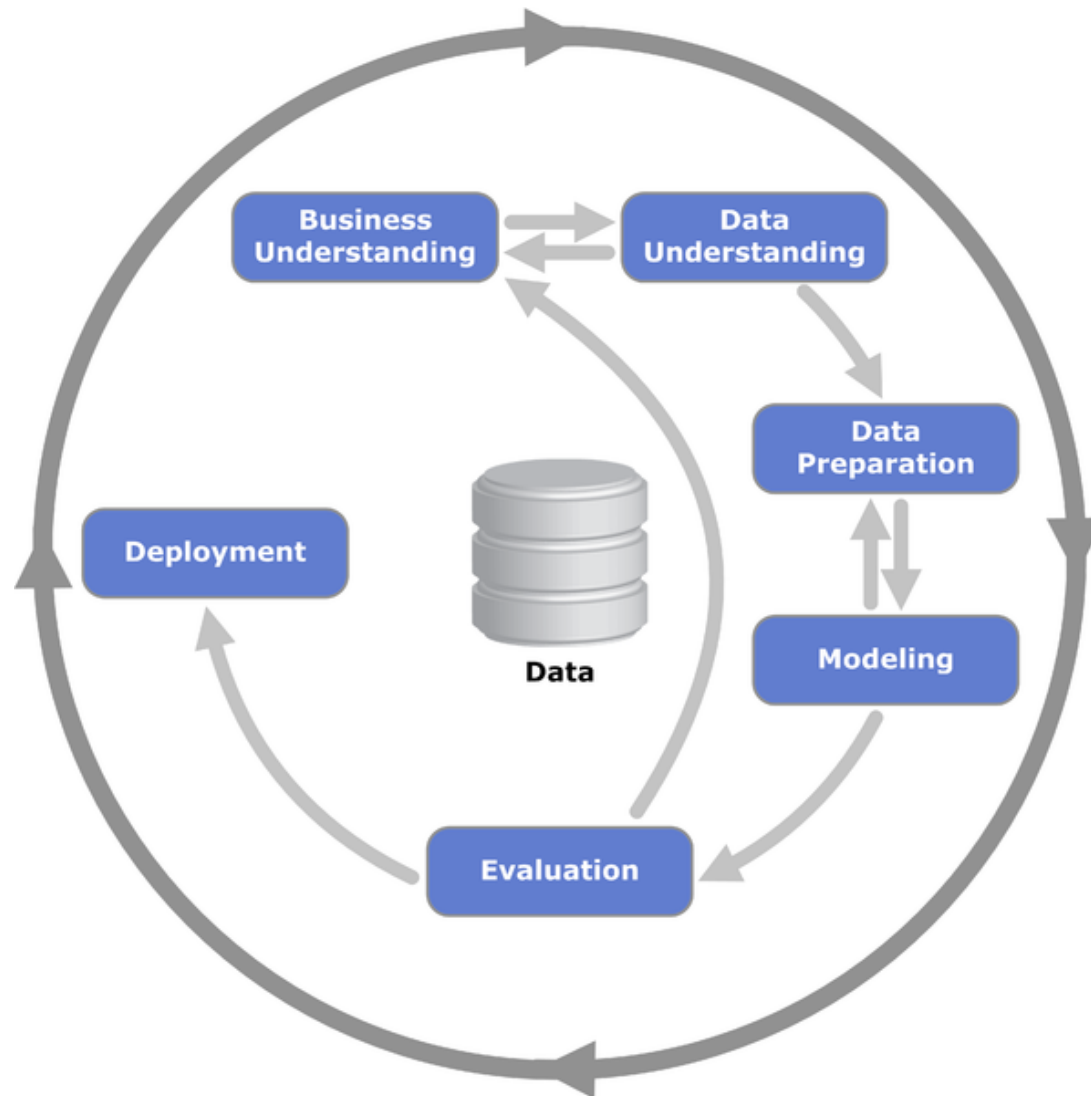
"The role of the CDO is to use data to drive value across the business, working transversally to embed this. It's how the CDO wires data into the business to create value - I think that's the key to unlocking data and making it work."
Steve Sacks, **Burberry** Chief Customer Officer

Organizing BA



Process of BA

Cross Industry Standard Process for Data Mining (CRISP-DM)



All starts with a problem

“If I were given one hour to save the planet, I would spend 59 minutes defining the problem and one minute resolving it,” Albert Einstein

BA activities must be anchored to a strategically relevant business question to be answered by using data analysis.

Hour break

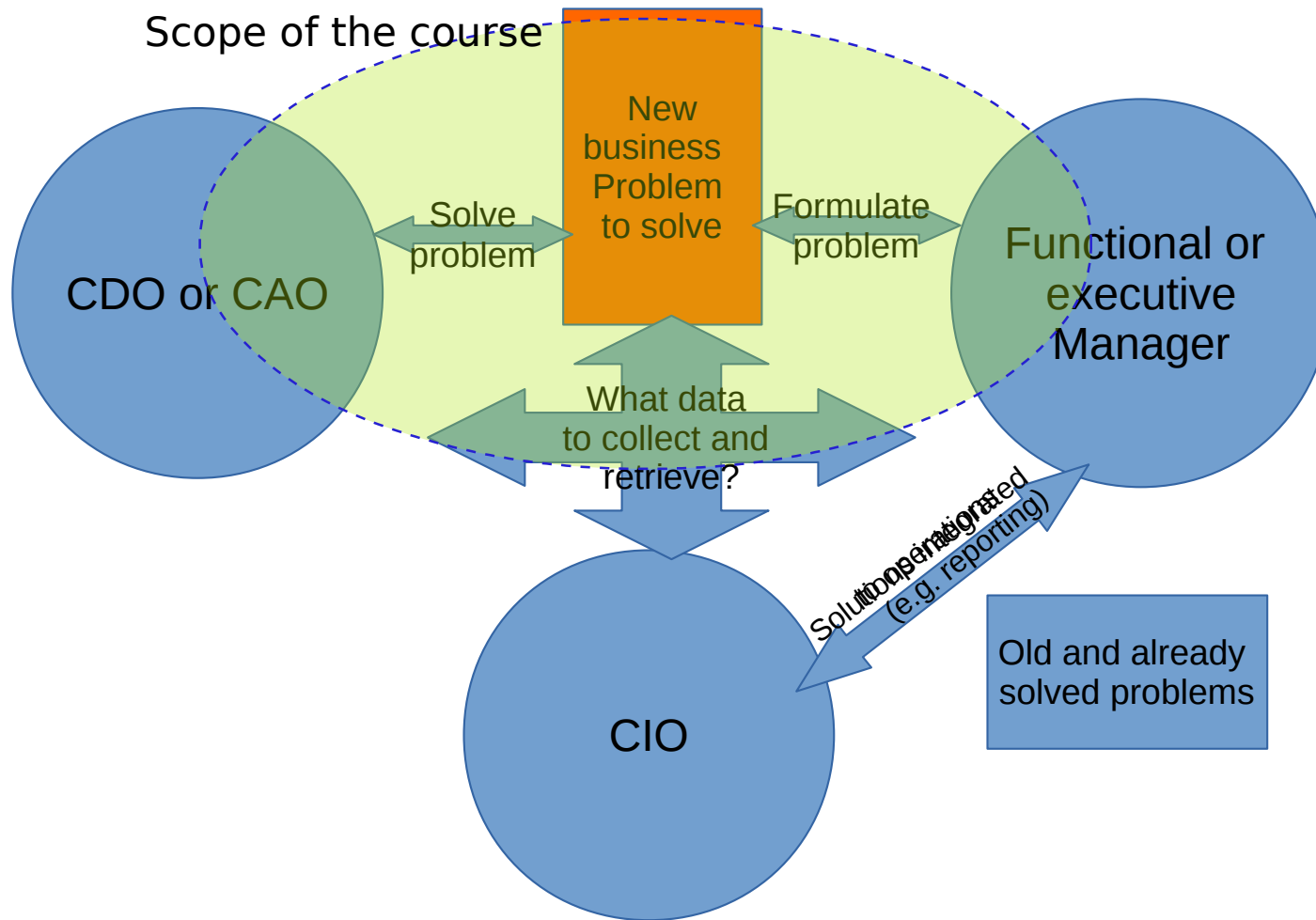
Talking about data?

- A review of data terminology and statistics
- Populations, samples
- Variables, statistics

The 'data'

- Pieces of data measures features of real world entities, may have different data types:
 - Amount of an item in a sales transaction.
 - The City where a customer lives
 - Diet type of a chicken in a poultry farm
- A measurement may correspond to different nature of data and data types in computer systems:
 - Logical (binary) → Boolean type
 - Count (natural) → Integer type
 - Whole number → Integer type
 - Numeric → Real type
 - Nominal → String type
 - Categorical → String or integer type
 - Ranking → String or integer type

Course coverage & Plan



- Review course syllabus

- Business analytics is about having a business perspective on data. This course aims to help you build theory and skills to find such perspectives in real problems.
- <https://www.youtube.com/watch?v=I-GR9IVjU54>

The data and the tools

- So this course is about using data, for business.
- We learn some theory, and apply the theory using R platform.
- To take a peek, visit <https://rdrr.io/> and play a little

What is R?

- A platform independent, open source software platform to conduct statistics,
- A language to command that platform,
- A community who uses that platform,
- A collection of libraries made available by the community.

Home study

- Go through the short course:
<https://campus.datacamp.com/courses/free-introduction-to-r>
- Read Ch1 from “Data Science for Business”