### Research Data Ownership

Personal perspectives from a (data-driven) researcher

Dennis Fok

Erasmus School of Economics

December 2, 2014



### **Outline**

1 Who am I?

2 What do I do?

3 My current data practice

4 Needs and wishes concerning RDM



### Who am I?

- Professor of Applied Econometrics at the Erasmus School of Economics
  - Teaching
  - Research
  - Management
    - ightarrow coordinator of Master in Business Analytics & Quantitative Marketing
- Associate Director of the Erasmus Research Institute of Management [ERIM] ERIM:
  - Joint venture between Erasmus School of Economics & Rotterdam School of Management
  - Doctoral programme (Research master + PhD programme)
  - Research institute
  - Also active on themes as scientific integrity and professionalism



# Research background

I create quantitative/econometric models to

- explain and predict behavior of customers and firms
- help companies optimize their (marketing) strategy
- understand decision-making in markets



# Research background

I create quantitative/econometric models to

- explain and predict behavior of customers and firms
- help companies optimize their (marketing) strategy
- understand decision-making in markets

#### Key features

- Data-analysis
- Modeling
- Non-standard techniques
  - ightarrow developing new techniques and software



### Three examples

- Online product recommendations
  - Use data on previous purchases by individuals
  - Predict the new products that they are likely to buy
  - Main challenge: size of assortment and number of customers



### Three examples

- Online product recommendations
  - Use data on previous purchases by individuals
  - Predict the new products that they are likely to buy
  - Main challenge: size of assortment and number of customers
- 2 Explain the launch decisions of new products
  - Use data on sales, advertising, quality, price of video games
  - Explain why some games get sequels and some don't
  - Main challenge: launch decision depends on many aspects



### Three examples

- Online product recommendations
  - Use data on previous purchases by individuals
  - Predict the new products that they are likely to buy
  - Main challenge: size of assortment and number of customers
- 2 Explain the launch decisions of new products
  - Use data on sales, advertising, quality, price of video games
  - Explain why some games get sequels and some don't
  - Main challenge: launch decision depends on many aspects
- 3 Using purchase histories to identify customer "projects"
  - Use data on customer purchases
  - Use the combination of bought products to predict what project consumers are working on (think about Do-It-Yourself stores)
  - Main challenge: projects are not pre-defined + one product can belong to multiple projects



My data comes from many different types of sources



My data comes from many different types of sources

Concerning the previous examples:

- 1 Online product recommendations
  - data made available by an online retailer
    - $\rightarrow \, \mathsf{Non\text{-}disclosure agreement [NDA]}$



My data comes from many different types of sources

Concerning the previous examples:

- Online product recommendations
  - data made available by an online retailer
    - $\rightarrow$  Non-disclosure agreement [NDA]
- 2 Explain the launch decisions of new products
  - Sales and price data: bought from company A
  - Advertising data: bought from company B
  - Quality data: manually obtained from websites
  - (Additional) launch data: manually obtained from websites



My data comes from many different types of sources

Concerning the previous examples:

- Online product recommendations
  - data made available by an online retailer
    - → Non-disclosure agreement [NDA]
- 2 Explain the launch decisions of new products
  - Sales and price data: bought from company A
  - Advertising data: bought from company B
  - Quality data: manually obtained from websites
  - (Additional) launch data: manually obtained from websites
- Using purchase histories to identify customer "projects"
  - Cooperation in the Wharton Customer Analytics Initiative
    - → Non-disclosure agreement



# Properties of the data

- Confidential data
- Non-disclosure applies
- Bought-in data
- Multiple sources
- Sometimes large datasets
- Need to apply complex modeling to the data



### **Current RDM strategies**

My current practice

- No formal RDM strategy
  - lack of tools and clarity on ownership/data protection →EUR is currently working on both



# **Current RDM strategies**

#### My current practice

- No formal RDM strategy
  - lack of tools and clarity on ownership/data protection →EUR is currently working on both
- During the research
  - One of the project members keeps the data (including backups)
  - If necessary data/code/paper is mailed back and forth
  - .. sometimes Dropbox is used
  - .. for some projects we use version-management software that allows for easy cooperation (git on the GitHub platform)



# **Current RDM strategies**

#### My current practice

- No formal RDM strategy
  - lack of tools and clarity on ownership/data protection →EUR is currently working on both
- During the research
  - One of the project members keeps the data (including backups)
  - If necessary data/code/paper is mailed back and forth
  - .. sometimes Dropbox is used
  - .. for some projects we use version-management software that allows for easy cooperation (git on the GitHub platform)
- After the research
  - Paper is shared through reprint series
  - Data/code is stored on own computer
    - Does not breach non-disclosure (NDA), but
    - sometimes difficult to retrieve data later
    - some NDAs require deletion of data after a certain period



# Goals of RDM (in my opinion)

#### RDM should:

- **1** simplify the research process
  - make cooperation between researchers easier
  - automatically/easily track important steps/decisions in the process
- 2 support a professional way of doing research
- 3 secure long-term storage (after the project)
  - as a service to the researchers
  - necessary in case of suspected misconduct
- 4 (make sharing data easier)



### Short-term needs and wishes

#### Researchers currently need:

- I IT support
  - make Dropbox obsolete
  - support version management
  - support backups of large data sets
- 2 support to develop a RDM strategy
  - grant suppliers demand a RDM strategy
- 3 insight and clarity concerning legal issues
  - who owns the data?
  - how to stay within Non-disclosure agreements?
  - privacy regulation?
  - how to keep data safe?
  - who is responsible for breaches of security?

