From Small to Big Data: A New Informational Paradigm

Prof. Michael Birnhack
Faculty of Law, Tel-Aviv University

Data Science
TAU, Dec. 24, 2014

אוניברסיטת תל-אביב

On the Internet,
Nobody Knows You're a Dog

"On the Internet, nobody knows you're a dog."

© Peter Steiner, The New Yorker (Vol.69, 1993)

Michael Birnhack, December 2014

"You have zero privacy anyway, get over it"

--- Scott McNealy,

CEO, Sun Microsystems

1999
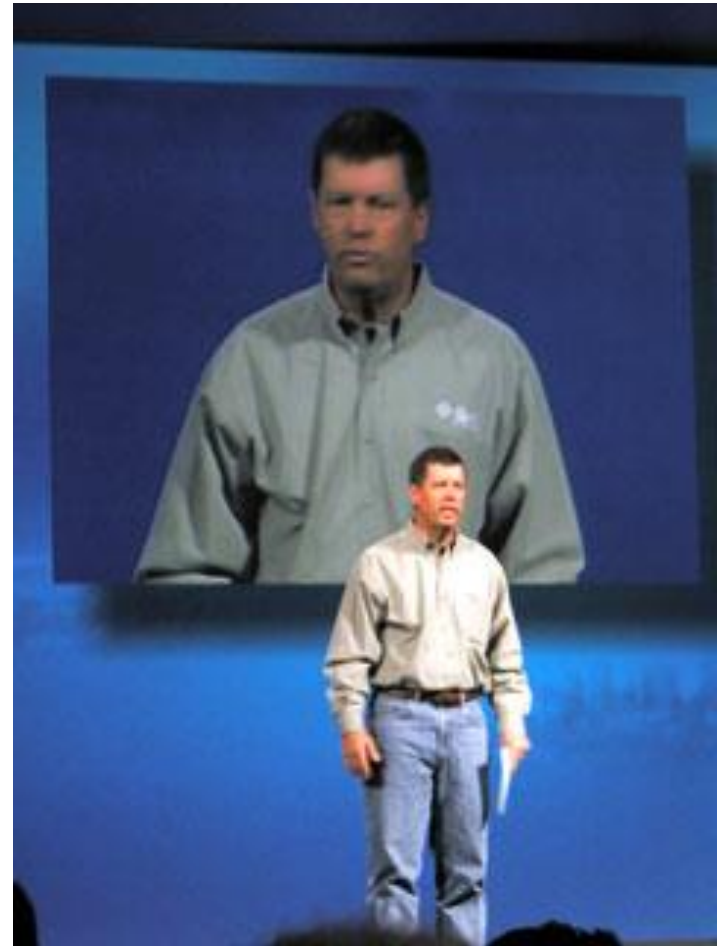
BIG Data

- 3 Vs: *Volume*, *Variety*, *Velocity*

- **Collect** as much data as you can

- **Integrate** in warehouse

- **Analyze**:
  - mining, meta-data, connections, identify patterns

- **Predict**:
  - general patterns (Google flu)
  - profile individuals, compare to general pattern; predict behavior (Amazon recommendations)

Michael Birnhack, December 2014
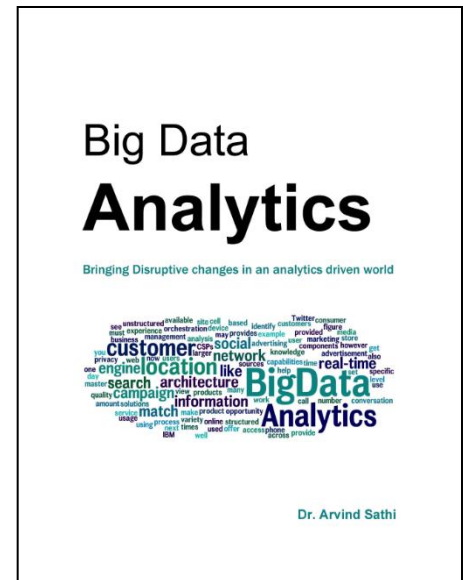
Data's Context

- Nissenbaum: Contextual Integrity

- What is the context of Big Data?

- Is it just "more of the same", and only a buzz?

→ continuum of data contexts

- Parameters:
  - Quantity; kinds of data collector(s), of data subject(s)
  - Scope of data
  - Kind of harm

אוניברסיטת תל-אביב

S

1 collector – 1 subject – 1 source – 1 bit

- prior, close relationship (social norms)
- *e.g.*, publicity to private facts
- concern: traditional privacy breach
- legal response: privacy torts (Prosser)
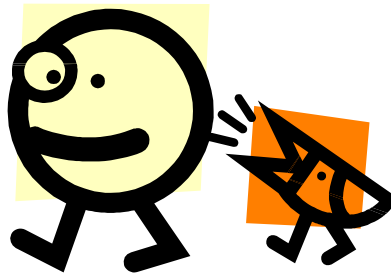
M

1 collector – 1 subject – many bits, over time

- unequal power
- *e.g.*, workplace, insurance co., school
- concern: abuse, discrimination
- legal response: specific laws / data protection

Michael Birnhack, December 2014

L

1 collector – many subjects – megabytes

- no close relationship or social norms
- Structured database, multiple purposes, data transferred to third parties
- *e.g.*, loyalty card
- concern: abuse, misuse, reuse
- legal response: data protection
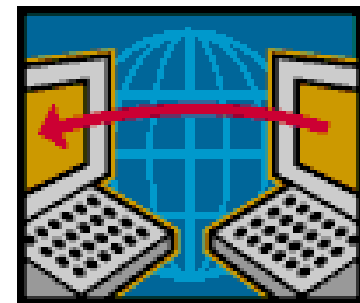
XL

many collectors – many subjects – terabytes – many sources

- no close relationship or social norms

- *e.g.,* Amazon, Walmart, Choice-point

- Data *de*contextualized and *re*contextualized

→ no data context

- "maximization principle"

Data Protection: the Law

- Various international, regional, local legal instruments

- Hard/soft law

- Based on different theories of privacy

- Attempts for a global law (OECD, CoE, UN), influential EU mechanism (law follows data)

Michael Birnhack, December 2014

Data Controllers' Duties

The Law

- Notice: purpose of collection
- Consent for processing
- No processing of special categories
- Specified, limited purpose
- Adequate, relevant accurate, up to date
- Confidentiality
- … and more

Big Data

- Purpose unknown
- Consent for …?
- Sensitive data can be inferred from data
- Data is unrelated to any particular purpose
- Prediction defies dignity
- De-anonymization possible

אוניברסיטת תל-אביב

The Challenge

If current law does not fit BD, how can we conceptualize it, so to find a solution?

- Property?

- Contract?

- Torts?

- Back to privacy …

Michael Birnhack, December 2014

Property?

- 1999: Lessig: propertize data so to protect it

→ more commodification, not protection

- 2013: "Data Subjects should share the wealth"
  - *e.g.*, Waze
  - Efficiency of data gathering?
  - Practicality?
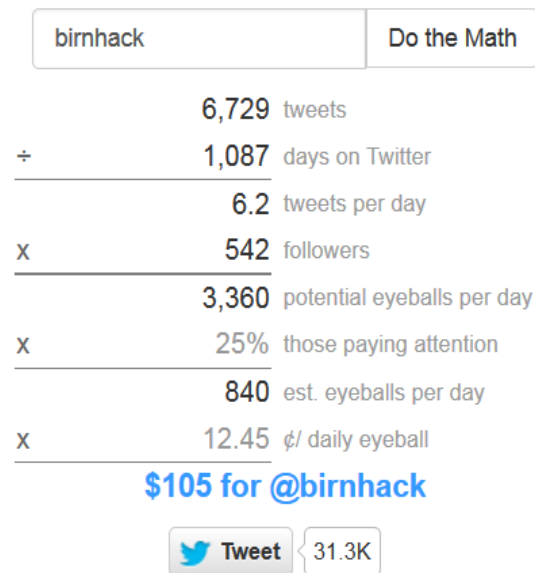 - Commodification?

- Technological solutions

Share the wealth

is.

NYT, Chris Wilson @chriswilsondc, Nov. 07, 2013

Michael Birnhack, December 2014

Property in data?

S Real property ≡ privacy ©: bit = fact, not protected	**M** Real property irrelevant ©: bit = fact, not protected
L ©: bit is not protected Database: original arrangement & selection are ©able EU: *sui generis* protection	**XL** ©: bit is not protected No Database: data is not selected and not arranged DRM/TPM; Trade Secret

Some Lessons

- S, M, L contexts are still here
- Property Law & IP - irrelevant to XL (BD)
- Contracts impossible (negotiation & enforcement costs exceed benefits)
- Negligence: who is the least cost avoider?
- Back to data protection:

   → **re-empower the data subject**

- Technological solutions?

Michael Birnhack, December 2014

Thanks!

birnhack@post.tau.ac.il

Privacy papers available at

www.ssrn.com

Twitter: @Birnhack

Michael Birnhack, December 2014