Personal Data Markets

Foundations of Web Science Lecture
WEBS6201
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Overview

1) The 'AdTech' industry
2) Controlling your own profile
3) Selling your own data
1. The AdTech Industry
or 'never play again'

opinion

“Facebook will beam the web to Africa - a vital first step in helping people connect”

Jeanne Bourgault

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Consumer Profiling

A way of matching buyers and providers

Digital Advertising: around 20% of ad industry ($137b)

90% of revenue for internet giants
Behavioural profiling: “The process of discovering patterns from the automatic extraction from an important amount of information, that will have some predictive capabilities … about an individual or group” - Hildebrandt 2008

makes inferences based on an individual's previous activity, usually collected and compiled surreptitiously

Hildebrandt & Gutwirth (2008) Profiling the European citizen
Digital advertising

H. Cox (2014) The online advertising and tracking industry: technology, business model, and market structure
Does it work for businesses?

44% are never 'in view'
Ad-blocking (software and wet-ware)
Click-fraud
Inaccurate profiles
Does it work for consumers?

Surveillance and civil liberties

Malvertising

Marketing profiles fall into the wrong hands

Personalisation, or discrimination?
Consumer response

When personalisation in advertising increases, consumers pay more attention, but find it less acceptable (Malheiros, Jennett, Patel, Brostoff, & Sasse, 2012)

When behaviourally targeted ads are perceived as creepy and threatening, they can lead to a 5% reduction in intention to purchase (Barnard, 2014)


The uncanny valley of personalisation


The Uncanny Valley of emotional response versus anthropomorphism. © 2004 Matthew Trump under CC-BY-SA 3.0
2. Controlling your own profile
Individual-centric model:

Individuals create their own profiles by supplying their own information, decide which marketers / brands / organisations are allowed to see what.
Self-authored interest profiles

Self-authored interest (SAI) profiling based on information explicitly volunteered and controlled by the individual.

Individual can create and edit profile as they wish
Study

Type of profiling → propensity to purchase

Beliefs about type of profiling → propensity to purchase

Online user study

Simulate behavioural profiling using Amazon product advertising API

Simulate SAI profiling using simple free-text keywords
## Findings (averages)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Source of targeting</th>
<th>Interface presented to user</th>
<th>Average rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>All conditions</td>
<td>N/a</td>
<td>N/a</td>
<td>2.68</td>
</tr>
<tr>
<td>Behavioural</td>
<td>Behavioural</td>
<td>Behavioural</td>
<td>2.14</td>
</tr>
<tr>
<td>SAI</td>
<td>SAI</td>
<td>SAI</td>
<td>2.78</td>
</tr>
<tr>
<td>SAI</td>
<td>SAI</td>
<td>Behavioural</td>
<td>2.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Behavioural</td>
<td>2.95</td>
</tr>
</tbody>
</table>
# Findings

<table>
<thead>
<tr>
<th>Test</th>
<th>Averages</th>
<th>Wilcoxon Rank Sum Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure behavioural vs. Pure SAI</td>
<td>2.14, 2.89</td>
<td>W = 1129, p-value = 0.003842</td>
</tr>
<tr>
<td>Pure behavioural vs. misrepresented behavioural</td>
<td>2.14, 2.78</td>
<td>W = 950.5, p-value = 0.003562</td>
</tr>
<tr>
<td>Pure SAI vs misrepresented SAI</td>
<td>2.89, 2.79</td>
<td>W = 1664.5, p-value = 0.6898</td>
</tr>
</tbody>
</table>
Implications for industry

Self-authored interest model a viable alternative to behavioural targeting.

Giving individual consumers transparency and control over their profiles and marketing channels can actually serve marketing objectives.

Can increase positive responses to marketing messages they receive, both due to the content of the recommendations as well as the positive attitudes users have towards the process.
3. Selling your own data
"Consumers, based on their attention, are creating more and more of the value on the Internet."

- Seth Goldstein
CEO of Root Markets, 2006
“Personal data is the new oil of the internet and the new currency of the digital world”

- Meglena Kuneva, European Consumer Commissioner, in March 2009.
Personal data

• Can we estimate the monetary value of personal data?
• Market cap per 'record' (Facebook: $40-300)
• Net income per user (Facebook: $4-7)
• Market price ($0.5/ address, $35/ military record)
• Cost of data breach (Sony (2011) leak = $1.7/account)
• Insurance, economic experiments

OECD (2013) Exploring the Economics of Personal Data
Data Proletariat: Unite?

Solidarity, June 30, 1917. The Hand That Will Rule the World—One Big Union.
• “Property rights in personal information: An economic defense of privacy” (Murphy 1995)
• “Privacy as property” (Lessig 2002).
I've data mined myself. I've violated my own privacy. Now I am selling it all. But how much am I worth?

Created by
Federico Zannier

213 backers pledged $2,733 to help bring this project to life.

https://www.kickstarter.com/projects/1461902402/a-bit-e-of-me
Première bonne Résolution

En 2013, devenez propriétaire de vos données personnelles avec Yes Profile.

Yes Profile

Créez et maîtrisez votre Profil.
Gagnez de l’argent en louant votre Profil à vos marques favorites.

Votre PROFIL...

Votre email: [ ] Go

Votre email ne sera pas attribué à votre profil.
Le service n’est pas en ligne lors des tests.
Qualitative study

• Discussion of traditional profiling vs. user-controlled profiling
• User study (n = 60)
• Qualitative survey, discourse analysis (274 responses)
• Raised questions about property, fairness, and ethics of trading personal data
“As owners of our profiles, we have the right to sell them or not”

“This is a fair value exchange”
“Ultimately, I don't want to be convinced by marketing companies to spend more on products I don't need. Receiving $8 for the privilege does not offset this cost.”
“It is interesting how being offered money for the information we are no doubt giving away for free, changes your perception of its worth, value or influence...

Suddenly, I do not want this information to be available”
Three challenges for 'personal data as property'

• Practical
• Economic
• Moral
The practical challenge

- You can't own data
- Non-excludable
- Non-rival
The economic challenge

• Market price for personal data \(\neq\) damage of privacy violation

• Personal compensation \(\neq\) societal compensation
The moral challenge
Moral market limit theories

- Corrupting the social meaning of a good (e.g. Walzer 1983)
- Undermining our equal social standing (Satz 2010)

“In the future advertising will be tasked with planting seeds of desire, expectations, aspirations that intrigue and pull the consumer along the path to thinking that it was his or her idea, giving a sense of ownership and full decision-making power.”

- “Advertising 2020” (2013)
http://wfoa.wharton.upenn.edu/perspective/lori-billey/
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