Smart, Useful, Scary, Creepy

Perceptions of Online Behavioral Advertising

Blase Ur, Pedro Giovanni Leon, Lorrie Faith Cranor, Richard Shay, Yang Wang
Introduction

• Online Behavioral Advertising (OBA):
  Ads tailored based on websites you have visited
How OBA works

Types

The bicycle has been around since the 1800s and is a popular form of recreation, and are the primary means of transportation in many places. Bicycles come in many different types, from children's toys to adult fitness vehicles, and appear in competitive sporting events.

The bicycle can be broken down into four distinct categories: mountain, road, and hybrid, and touring. Each type of bicycle has distinct characteristics that make each type of bicycle much different from the others. For example, a mountain bike is designed for off-road riding and has rugged tires and frame, while a road bike is designed for smooth, paved surfaces and has lightweight components.
How OBA works
How OBA works

I think you like bicycles!
How OBA works

• Later, on an unrelated site
How OBA works

• Later, on an unrelated site
How OBA works

• Hundreds of advertising networks perform OBA
  • From Google to Bluekai

• Cookies commonly used for tracking
Tension between utility and privacy

• Advertising networks like OBA
  • Target ads to interested users
  • Charge a higher price

• Users might have privacy concerns

• Advertising industry provides disclosures
Media and government attention

- U.S. FTC and White House
- U.S. Department of Commerce multistakeholder meeting
Related work

- Privacy surveys have found privacy concerns while marketing surveys have identified benefits.

- 87% of Americans definitely or probably would not allow advertisers to track them [Turow et al., 2009]

- 62% of respondents would allow advertisers to track them “under the right circumstances” [KPMG, 2011]
Research goals

• Gain insight into what users think about OBA
  • What factors influence these attitudes?

• Identify how participants’ mental models correspond with notice and choice mechanisms
  • How can we best support users?
Overview of methodology

• 48 participants for combination semi-structured interview and usability study
  • One-on-one, single moderator
  • Participants compensated $30
  • Usability study separate [Leon et al., 2012]

• Recruited from the Pittsburgh, PA, USA region
  • Non-technologists
  • Willing to test privacy tools
Interview structure

• Attitudes and knowledge about advertising

• Video from WSJ “What They Know” series
Interview structure

• Attitudes and knowledge about advertising
• Video from WSJ “What They Know” series
• Opinions and beliefs about OBA
Analysis

• Collaboratively developed codebook from researchers’ notes

• Coded interviews from audio recordings
  • Codes could be added
Overview of results

• Are people aware of OBA?
• What do privacy disclosures communicate?

• Opinion of OBA
• Beliefs about OBA that affect opinion

• Making choices about OBA
Are people already aware of OBA?
Participants were unaware of OBA

- Participants believed ads were tailored, but only based on context or on a single site
  - Amazon, Gmail, Facebook
Participants were unaware of OBA

• Participants believed ads were tailored, but only based on context or on a single site
  • Amazon, Gmail, Facebook

• Browsing could hypothetically be used
  • “I guess if they were monitoring what I did on the Internet...But I’d hope they weren’t...”
What did privacy disclosures communicate?
Misconceptions about disclosures

• Express interest in product

• Purchase your own ads
  “It looks like an icon advertising advertisements... a ‘place ad here’ kind of thing.”
Misconceptions about disclosures

• Express interest in product
• Purchase your own ads
• Go to product’s website
• See related ads
• Track user
Opinions of OBA
Participants mixed about OBA

• Recognized benefits for advertisers and users
  • Advertisers target the right person
  • Users find things they’re interested in

• Privacy was the primary concern
What factors may have influenced their opinions?
Beliefs about OBA

• Advertisers collect information including name, financial information, and address

• This information, along with browsing history, is stored in cookies
  • “I guess they can get into the cookies.”
Making choices about OBA
Existing methods for choice

• Deleting cookies
Existing methods for choice

- Deleting cookies
- Websites that set opt-out cookies
Existing methods for choice

• Deleting cookies

• Websites that set opt-out cookies

• Browsers’ Do Not Track feature
Existing methods for choice

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• Third-party browser plugins (Ghostery, DNT+)
Participants’ impressions of choice

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• Deleting cookies

• No options
Participants’ impressions of choice

• Deleting cookies
• No options
• Antivirus software suites
Participants’ impressions of choice

• Deleting cookies

• No options

• Antivirus software suites

• Web browser
Decisions based on advertising company and context
Choice based on companies
Companies: Familiarity and trust

- Asked about seven companies

![Graph showing participants' data collection preferences versus familiarity with a company.](image)
Opinions based on non-OBA activities

• Google is “not a company that I really associate with advertisements.”

• Microsoft “would collect information that would help them update your operating system.”
Preferences depended on context

• Asked about six scenarios
  • Planning a vacation, shopping for a car and car loan, researching STD treatments for a friend, job-hunting, ordering food, reading the news
  • 5 participants said ‘no’ to all six
  • 0 participants said ‘yes’ to all six
  • Preferences based on both privacy and utility
    • “I don’t want to be bombarded with car ads for the rest of my life.”
Conclusions

• Opinions about OBA mixed
  • OBA Smart, Useful, Scary, Creepy
  • Participants did not understand OBA technologies
  • Some of worst fears based on misconceptions

• Disconnect between mental models and existing notice and choice mechanisms
  • Privacy disclosures misunderstood
  • Meaningful choices?
  • Participants looked to familiar tools
Thank you!

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