



# 08 - Introduction to Privacy

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*Usable Privacy and Security*

# Privacy goals

How does each goal relate to privacy

- In general?
- On social networks?  
(e.g. concern or mechanism to achieve goal)

- Solitude, uninterrupted
- Unseen, unheard, unread
- Not talked about
- Not judged
- Not profiled, not targeted, not treated differently than others
- Not misjudged
- Free to try, practice, make mistakes, self-reflect
- Not surprised (contextual integrity)
- Not accountable
- Not required to reveal
- Unknown
- Forgotten
- Intimacy
- Control
- Boundaries
- Identity
- Security
- Safety
- Others?

# How privacy is protected

- Laws, self regulation, technology
  - Notice and access
  - Control over collection, use, deletion, sharing
  - Collection limitation
  - Use limitation
  - Security and accountability

# Privacy laws around the world

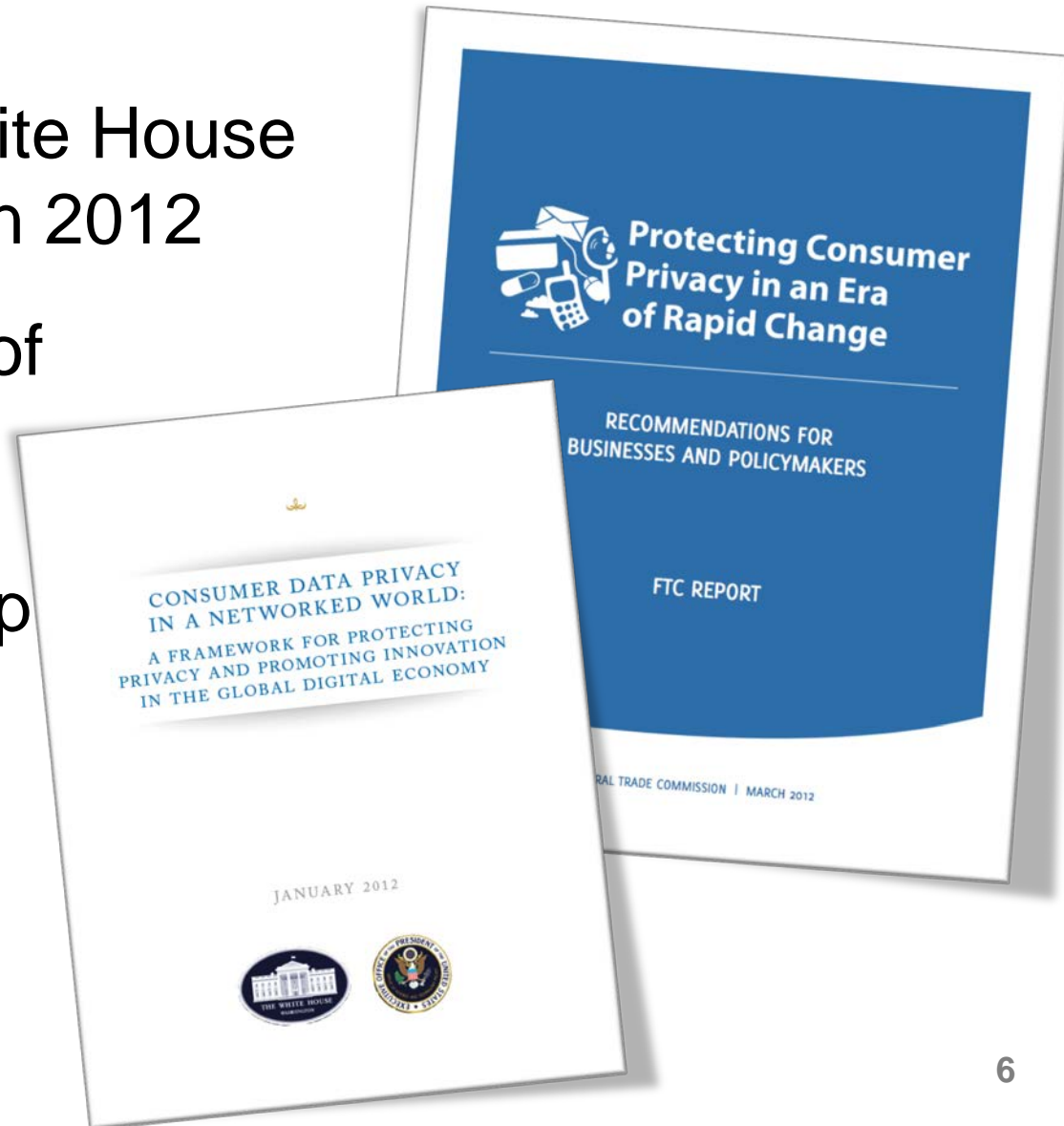
- Privacy laws and regulations vary widely
- US has mostly sector-specific laws, minimal protections, often referred to as “patchwork quilt”
  - No explicit constitutional right to privacy or general privacy law
  - But some privacy rights inferred from constitution
  - Narrow regulations for health, financial, education, videos, children, etc.
  - Federal Trade Commission jurisdiction over fraud and deceptive practices
  - Federal Communications Commission regulates telecommunications
  - Some state and local laws
- European Data Protection Directive - EU countries must adopt similar comprehensive laws, recognize privacy as fundamental human right
  - Privacy commissions in each country

# OECD fair information principles

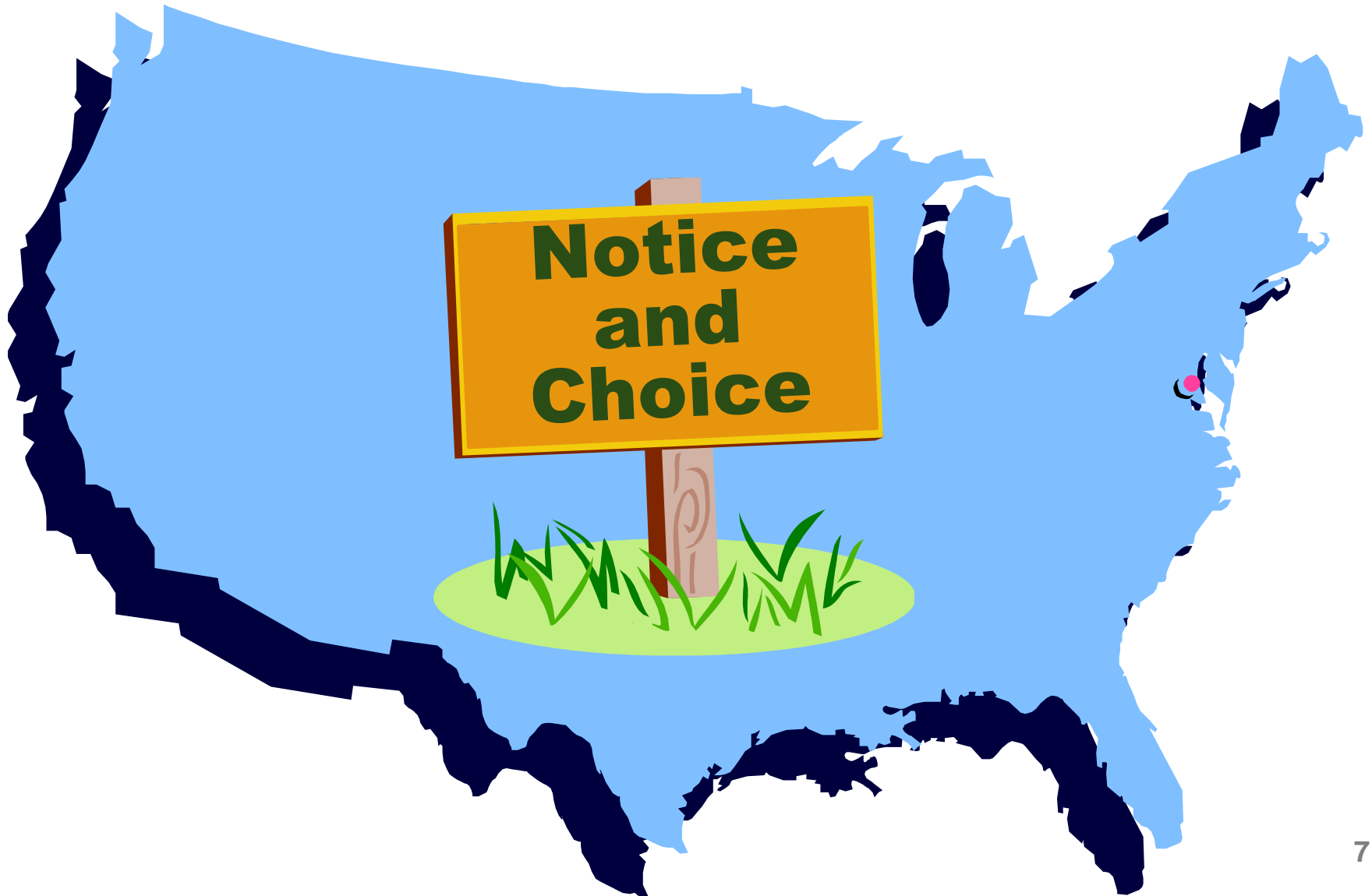
- Collection limitation
- Data quality
- Purpose specification
- Use limitation
- Security safeguards
- Openness
- Individual participation
- Accountability
- <http://www.privacyrights.org/ar/fairinfo.htm>

# US government privacy reports

- U.S. FTC and White House reports released in 2012
- U.S. Department of Commerce multi-stakeholder process to develop enforceable codes of conduct



# Privacy self regulation

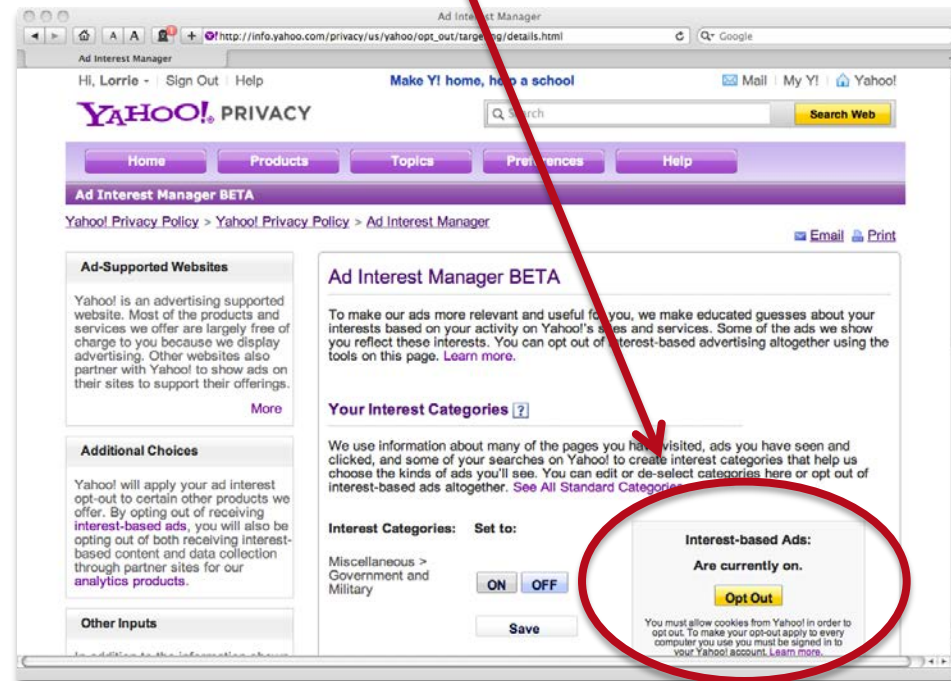
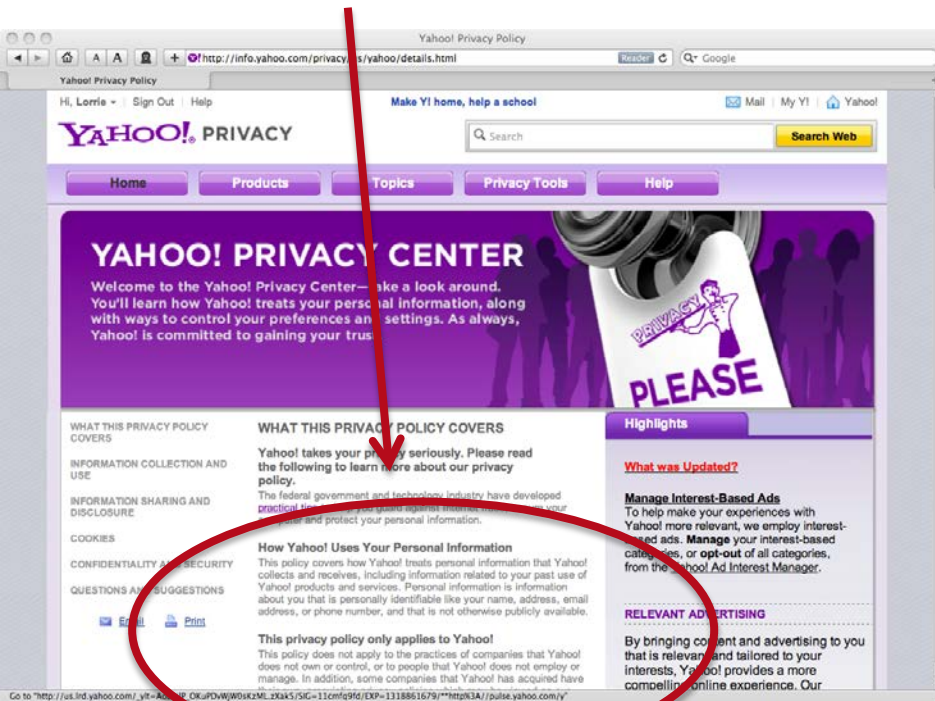


# Notice and choice

Protect privacy by giving people control over their information

**Notice** about data collection and use

**Choices** about allowing their data to be collected and used in that way








# Privacy Facts



A vertical list of 12 horizontal bars of varying lengths, alternating between black and light gray, representing a list of items.

[illegible][illegible]

# Privacy Facts



Category	Value (Relative)
1	High
2	Medium
3	High
4	Medium
5	Medium
6	High
7	Medium
8	Medium
9	Medium
10	Medium

Why don't we have a market for privacy?

# Privacy concerns seem inconsistent with behavior

- People say they want privacy, but don't always take steps to protect it
- Many possible explanations
  - They don't really care that much about privacy
  - They prefer immediate gratification to privacy protections that they won't benefit from until later
  - They don't understand the privacy implications of their behavior
  - The cost of privacy protection (including figuring out how to protect their privacy) is too high

# Nobody wants to read privacy policies

“the notice-and-choice model, as implemented, has led to long, incomprehensible privacy policies that consumers typically do not read, let alone understand”

- *Protecting Consumer Privacy in an Era of Rapid Change*. Preliminary FTC Staff Report. December 2010.





# Cost of reading privacy policies

- What would happen if everyone read the privacy policy for each site they visited once each month?
- Time = 244/hours year
- Cost = \$3,534/year
- National opportunity cost for time to read policies: \$781 billion





Your Data is Used Only for the Intended Use



Your Data May be Used for Purposes You Do Not Intend



Your data is never given to advertisers.



Site gives your data to advertisers.



Your data is never bartered or sold.



Your data may be bartered or sold.



Data is given to law enforcement only when legal process is followed.



Data may be given to law enforcement even when legal process is not followed.



Your data is kept for less than 1 month.



Your data may be kept indefinitely.

# Towards a privacy “nutrition label”

- Standardized format
  - People learn where to find answers
  - Facilitates policy comparisons
- Standardized language
  - People learn terminology
- Brief
  - People find info quickly
- Linked to extended view
  - Get more details if needed

**Shredded Oats**  
Original

## Nutrition Facts

Serving Size 1-1/4 Cup (2 oz/55g)  
Servings Per Container About 12

Amount Per Serving	Cereal	With 1/2 Cup V8, A & D Fortified Skim Milk
<b>Calories</b>	220	260
Calories from Fat	25	25

	% Daily Value**	
<b>Total Fat</b> 2.5g*	4%	4%
Saturated Fat 0.5g	2%	2%
Trans Fat 0g		
<b>Cholesterol</b> 0mg	0%	1%
<b>Sodium</b> 250mg	10%	12%
<b>Potassium</b> 180mg	5%	11%
<b>Total Carbohydrate</b> 42g	14%	16%
Dietary Fiber 5g	20%	20%
Soluble Fiber 2g		
Insoluble Fiber 3g		
Sugars 11g		

<b>Protein</b> 6g		
Vitamin A	0%	6%
Vitamin C	35%	35%
Calcium	2%	15%
Iron	10%	10%
Vitamin E	8%	8%
Thiamin	10%	15%
Riboflavin	4%	10%
Niacin	6%	6%
Phosphorus	15%	30%
Magnesium	15%	20%
Zinc	10%	15%
Copper	10%	10%

\* Amount in cereal. One half cup skim milk contributes an additional 40 calories, 65mg sodium, 200mg potassium, 6g carbohydrate (6g sugars), and 4g protein.

\*\* Percent daily values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories: 2,000	2,500
Total Fat	Less Than 65g	80g
Sat Fat	Less Than 20g	25g
Cholesterol	Less Than 300mg	300mg
Sodium	Less Than 2,400mg	2,400mg
Potassium	3,500mg	3,500mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4

**Ingredients:** Whole Oat Flour, Whole Wheat Flour, Unsulphured Molasses, Malted Barley Extract, Baking Soda, Salt, Natural Vitamin E (Mixed Tocopherols [Soy]), Vitamin C.

Contains wheat and soy. Made on equipment that also processes milk, almonds and hazelnuts.

Distributed by: **Barbara's Bakery, Inc.**®, a Weetabix North America Company  
20 Cameron Street, Clinton, MA 01510  
www.BarbarasBakery.com  
Product of Canada

**TRADER JOE'S®**  
**Organic HIGH FIBER O's**

## Nutrition Facts

Serving Size 1 1/4 cup (55g)  
Servings per Container 8

Amount per Serving	
<b>Calories</b> 190	Calories from Fat 10
	% Daily Value*

<b>Total Fat</b> 1g	2%
Saturated Fat 0g	0%
Trans Fat 0g	
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 115mg	5%
<b>Total Carbohydrate</b> 44g	15%
Dietary Fiber 9g	36%
Soluble Fiber less than 1g	
Insoluble Fiber 8g	
Sugars 9g	
<b>Protein</b> 6g	12%

Vitamin A 0%	• Vitamin C 130%
Calcium 4%	• Iron 30%
Thiamin 25%	• Riboflavin 25%
Niacin 25%	• Vitamin B6 25%
Folate 25%	• Vitamin B12 25%
Zinc 15%	

\* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g
Protein	50g	65g

**INGREDIENTS:** Organic Whole Grain Wheat Flour, Organic Wheat Bran, Organic Evaporated Cane Juice, Organic Oat Fiber, Sea Salt, Organic Caramel Color, Natural Vitamin E.  
**NUTRITION BLEND:** Nicotinamide, Vitamin C, Niacin, Iron, Zinc, Vitamin B6, Riboflavin, Thiamin, Folate, Vitamin B12.

Our vendors follow Good Manufacturing Practices to segregate ingredients to avoid cross contact with allergens. Made on shared equipment with milk, tree nuts & soy. Facility processes eggs & peanuts.

Dist. & Sold Exclusively By:  
Trader Joe's, Monrovia, CA 91016

Certified Organic by  
Quality Assurance International (QAI).





# Iterative design process

- Series of studies
  - Focus groups
  - Lab studies
  - Online studies
- Metrics
  - Reading-comprehension (accuracy)
  - Time to find information
  - Ease of policy comparison
  - Subjective opinions, ease, fun, trust

P.G. Kelley, J. Bresee, L.F. Cranor, and R.W. Reeder. A “Nutrition Label” for Privacy. SOUPS 2009.





P.G. Kelley, L.J. Cesca, J. Bresee, and L.F. Cranor. Standardizing Privacy Notices: An Online Study of the Nutrition Label Approach. CHI2010.

Acme						
information we collect	ways we use your information				information sharing	
	provide service and maintain site	marketing	telemarketing	profiling	other companies	public forums
contact information		opt out	opt out			
cookies						
demographic information		opt out	opt out			
financial information						
health information						
preferences		opt out	opt out			
purchasing information		opt out	opt out			
social security number & gov't ID						
your activity on this site		opt out	opt out			
your location						

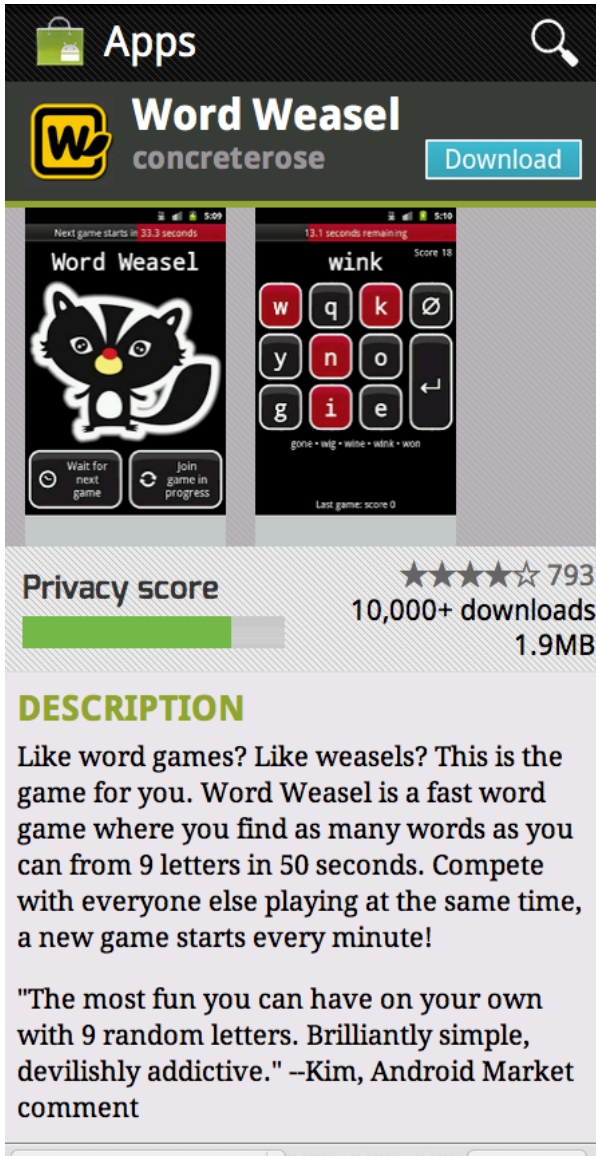
  

<p><b>Access to your information</b> This site gives you access to your contact data and some of its other data identified with you</p> <p><b>How to resolve privacy-related disputes with this site</b> Please email our customer service department</p>	<p>acme.com 5000 Forbes Avenue Pittsburgh, PA 15213 United States Phone: 800-555-5555 help@acme.com</p>
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<p> we will collect and use your information in this way</p> <p> by default, we will collect and use your information in this way unless you tell us not to by opting out</p>	<p> we will not collect and use your information in this way</p> <p> by default, we will not collect and use your information in this way unless you allow us to by opting in</p>
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# Privacy label for Android



**Word Weasel**  
concreterose [Download](#)

Next game starts in 33.3 seconds

Word Weasel

Wait for next game

Join game in progress

wink

Score 18

gone • wlg • wine • wrik • won

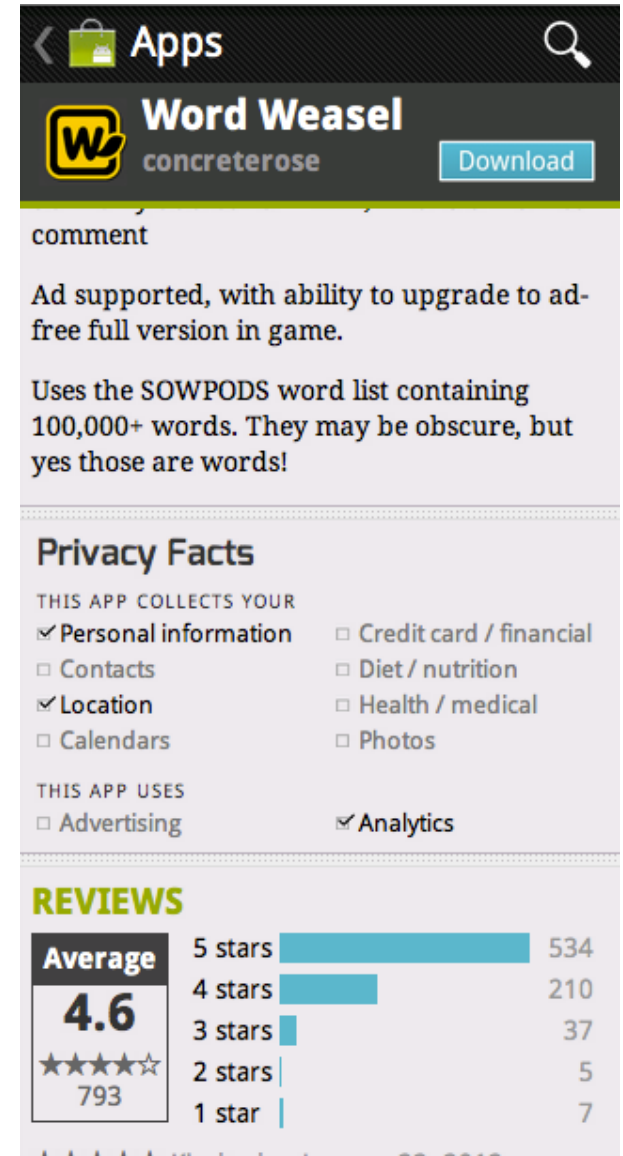
Last game: score 0

**Privacy score** ★★★★★ 793  
10,000+ downloads  
1.9MB

**DESCRIPTION**

Like word games? Like weasels? This is the game for you. Word Weasel is a fast word game where you find as many words as you can from 9 letters in 50 seconds. Compete with everyone else playing at the same time, a new game starts every minute!

"The most fun you can have on your own with 9 random letters. Brilliantly simple, devilishly addictive." --Kim, Android Market comment



**Word Weasel**  
concreterose [Download](#)

comment

Ad supported, with ability to upgrade to ad-free full version in game.

Uses the SOWPODS word list containing 100,000+ words. They may be obscure, but yes those are words!

**Privacy Facts**

THIS APP COLLECTS YOUR

- ☒ Personal information
- ☐ Contacts
- ☒ Location
- ☐ Calendars
- ☐ Credit card / financial
- ☐ Diet / nutrition
- ☐ Health / medical
- ☐ Photos

THIS APP USES

- ☐ Advertising
- ☒ Analytics

**REVIEWS**

**Average**  
**4.6**  
★★★★★  
793

5 stars	534
4 stars	210
3 stars	37
2 stars	5
1 star	7

# Role play studies

























- Task for participants in lab or online
  - Select apps for friend with new Android phone
  - Choose from 2 similar apps w/ different permission requests in each of 6 categories
  - Click on app name to visit download screens
- Post-task questionnaire
- Participants who saw Privacy Facts more likely to select apps that requested fewer permissions
  - Other factors such as brand and rating reduce effect

P.G. Kelley, L.F. Cranor, and N. Sadeh. Privacy as part of the app decision-making process. CHI 2013.

# Design icons and tag lines for smartphone app privacy

1. App only collects the information it needs to work and only uses and shares information as necessary to provide the service you requested
2. Same as 1 but app also collects information about your location and use of apps and provides it to advertising companies to target ads to you
3. App may collect any information and use or share it for any purpose

- Split into groups
- Design icons and taglines on a laptop
- Save as PDF or JPG and email it to Blase

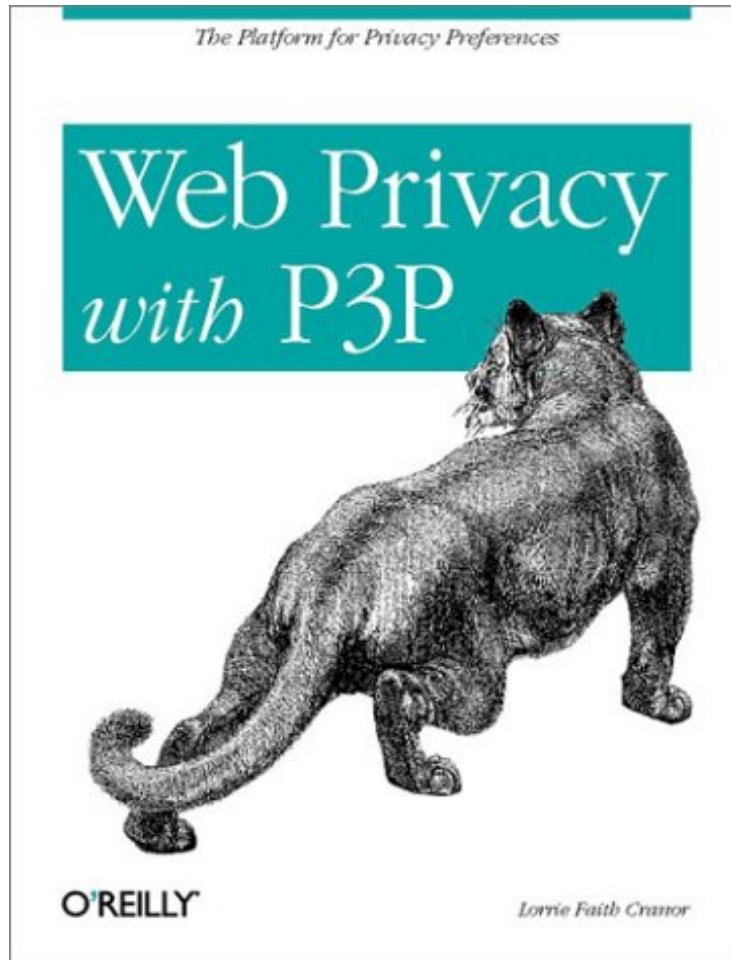
 <b>ONLY INTENDED USES OF YOUR DATA</b> <a href="#">More info &gt;</a>	 <b>SOME SHARING OF YOUR DATA</b> <a href="#">More info &gt;</a>	 <b>UNLIMITED SHARING OF YOUR DATA</b> <a href="#">More info &gt;</a>
 <b>ONLY INTENDED USES OF YOUR DATA</b> <a href="#">More info &gt;</a>	 <b>SOME SHARING OF YOUR DATA</b> <a href="#">More info &gt;</a>	 <b>UNLIMITED SHARING OF YOUR DATA</b> <a href="#">More info &gt;</a>
 <b>PERSONAL INFO ONLY COMPANY USE</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO SOME SHARING</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO UNLIMITED SHARING</b> <a href="#">More info &gt;</a>
 <b>ONLY INTENDED USES OF YOUR DATA</b> <a href="#">More info &gt;</a>	 <b>SOME SHARING OF YOUR DATA</b> <a href="#">More info &gt;</a>	 <b>UNLIMITED SHARING OF YOUR DATA</b> <a href="#">More info &gt;</a>
 <b>PERSONAL INFO ESSENTIAL SHARING</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO LIMITED SHARING</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO UNLIMITED SHARING</b> <a href="#">More info &gt;</a>
 <b>PERSONAL INFO SHARED FOR APP TO WORK</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO SHARED FOR ADVERTISING</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO SHARED FOR ANY PURPOSE</b> <a href="#">More info &gt;</a>
 <b>PERSONAL INFO ESSENTIAL SHARING</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO LIMITED SHARING</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO UNLIMITED SHARING</b> <a href="#">More info &gt;</a>
 <b>PERSONAL INFO SHARED FOR APP TO WORK</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO SHARED FOR ADVERTISING</b> <a href="#">More info &gt;</a>	 <b>PERSONAL INFO SHARED FOR ANY PURPOSE</b> <a href="#">More info &gt;</a>

# Requirements for meaningful control

- Individuals must understand what options they have
- Individuals must understand implications of their options
- Individuals must have the means to exercise options
- Costs must be reasonable
  - Money, time, convenience, benefits

More privacy background material

# Let your computer read for you



- Platform for Privacy Preferences (P3P)
- W3C specification for XML privacy policies
  - Proposed 1996
  - Adopted 2002
- Optional P3P compact policy HTTP headers to accompany cookies
- Lacks incentives for adoption



# Another approach to privacy communication


- Privacy Finder search engine
- Checks each search result for computer-readable P3P privacy policy, evaluates against user's preferences
- Composes search result page with privacy meter annotations and links to "Privacy Report"
- Allows people to comparison shop for privacy
- <http://privacyfinder.org/>



PrivacyFinder

http://www.privacyfinder.org/ nutrition label

[Win prizes and help our research](#)  
[Login here](#) if you already signed up



shoes Search

**Search Engine:**

- ☐ Google
- ☒ Yahoo!
- ☐ Shopping

**Preference Level:** Medium

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**Install the Privacy Finder [search bar](#)!**  
Compatible with Firefox 2 and Internet Explorer 7

[Frequently Asked Questions](#) | [Privacy Policy](#) | [Add A Site](#) | [Download Privacy Bird® Software](#) | [Privacy Finder 日本語版](#)


Privacy Finder is a public service provided by [CMU Usable Privacy and Security Laboratory](#)

Demo

PrivacyFinder Search for: shoes

http://www.privacyfinder.org/?q=shoes&Search=Search&a nutrition label

**Win prizes and help our research**  
[Login here](#) if you already signed up

 shoes

**Search Engine:** ☐ Google ☒ Yahoo! ☐ Shopping

**Preference Level:**

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■■■■ [Dress, Casual & Athletic Shoes | Zappos.com](#)  
[Privacy Report](#) Online shoe store selling a variety of brand name men's and women's footwear.  
<http://www.zappos.com/> - No Cache - [Privacy Policy](#) - [Similar Pages](#)

■■■■ [Nike.com - Shop the Official NikeStore](#)  
[Privacy Report](#) Designs, develops, and markets footwear, apparel, equipment, and accessory products. Explore Nike's site to shop online, customize products, and find a local store.  
<http://www.nike.com/> - No Cache - [Privacy Policy](#) - [Similar Pages](#)

■■■■ [Onlineshoes.com - official site](#)  
[Privacy Report](#) Shop online for name brand shoes at Onlineshoes.com. Choose from over 170 brands. Enjoy free shipping and exchanges, plus 110% price guarantee on all shoes.  
<http://www.onlineshoes.com/> - No Cache - [Privacy Policy](#) - [Similar Pages](#)

■■■■ [Shoes from Shoebuy.com - Free Shipping & Return Shipping](#)  
[Privacy Report](#) Sells mens' and womens' shoes, sandals, boots, and sneakers.  
<http://www.shoebuy.com/> - [Cached](#) - [Privacy Policy](#) - [Similar Pages](#)

□□□□ [Footwear Shopping in the Yahoo! Directory](#)  
[Privacy Report](#) Browse through footwear shops and official company sites in the Yahoo! Directory. Find retailers selling shoes, boots, and accessories from Nike, adidas, Puma, Timberland, Converse, Reebok, Skechers, and others.  
[http://dir.yahoo.com/Business\\_and\\_Economy/Shopping...](http://dir.yahoo.com/Business_and_Economy/Shopping...) - [Cached](#) - [Privacy Policy](#) - [Similar Pages](#)

[Shoes.com - Womens. Mens. and Childrens Shoes](#)

PrivacyFinder Search for: p3p:http://www.shoebuy.com/

http://www.privacyfinder.org/?appel=medium&q=p3p:http nutrition label

## Shoebuy.com, Inc. Privacy Practices

[Privacy Policy Summary](#) | [Full Privacy Policy](#) | [Opt-Out](#) | [Contact Site](#) | [P3P Policy](#)

### Privacy Policy Check

**Shoebuy.com, Inc.'s privacy policy *does not match your preferences*:**

- Site may contact you to interest you in other services or products and does not allow you to remove yourself from marketing/ mailing list

**Shoebuy.com, Inc. may share your information with:**

- Companies that help this site fulfill your requests (for example, shipping a product to you), but these companies must not use your information for any other purpose
- Delivery companies that help this site fulfill your requests and who may also use your information in other ways

### Privacy Policy Summary

#### Policy Statement 1 - Access log information

Our Web server collects access logs containing this information.

[Show data collection, use, and sharing details...](#)

#### Policy Statement 2 - Cookies

Cookies are used to track visitors to our site, so we can better understand what portions of our site best serve you. We also use cookies to allow our server to maintain information about the contents of your shopping cart.

[Show data collection, use, and sharing details...](#)

#### Policy Statement 3 - Transaction info (required)

Information we collect in order to process your purchase.

[Show data collection, use, and sharing details...](#)

#### Policy Statement 4 - Transaction info (optional)



PrivacyFinder Search for: merrell primo chill slide

http://www.privacyfinder.org/?q=merrell+primo+chill+slide nutrition label


merrell primo chill slide Search

Search Engine: ☐ Google ☐ Yahoo! ☒ Shopping Preference Level: Medium

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**Merrell Primo Chill Slide - Men's Tan: Merrell Shoes**


Buy Merrell Primo Chill Slide - Men's Tan and find Spring trends at Onlineshoes. Free Shipping and Exchanges on all Merrell!...  
<http://yhs.trafficdashboard.com/track.htm?pid=1031...> - [Privacy Policy](#) - [Similar Pages](#)

 \$89.95

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**merrell" Primo Chill Slide Shoes, Chocolate, Women's**


Italian styled winter slide for convenience and warmth. Easy-on and water resistant, the Primo Chill gives your feet after-sport comfort in casual style. Water-resistant pigskin leather upper with sheepskin lining. Removable wool fleece footbed. Injection-molded nylon shank for increased arch support. Air Cushion EVA midsole for softer flex and increased comfort. Merrell Pilot sole with sticky rubber sports a weight-saving design that is siped and barred for traction....  
<http://clickserve.cc-dt.com/link/ddiprod?lid=41000...> - [Privacy Policy](#) - [Similar Pages](#)

 \$90.00

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**Merrell Primo Chill Slide**


We heated up our stylish Italian standout slide with a sheepskin lining with removable footbed and a water resistant pigskin upper. Merrell Pilot Sole has a weight-saving cutaway configuration but is boldly siped and barred for wet and dry surface traction. Slip Lasted Construction. Water Resistant Pigskin Upper. Sheepskin Lining. Wool Fleece Footbed. Nylon 6. 6 Injection Molded Arch Shank. Compression Molded EVA Footframe. Air Cushion Midsole. Merrell Pilot Sole/Sticky Rubber....  
<http://shopping.yahoo.com/p:Merrell%20Primo%20Chil...> - [Privacy Policy](#) - [Similar Pages](#)

 \$89.95 - \$89.95

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**Merrell Primo Chill Slide (Men's)**

We heated up our stylish Italian standout slide with a sheepskin lining with removable footbed and water resistant pigskin upper. Merrell Pilot Sole has a weight--saving cutaway configuration but is boldly siped and barred for wet and dry surface traction. FEATURES: Slip Lasted Construction, Water Resistant Pigskin Upper, Sheepskin Lining, Wool Fleece Foot-Bed, Nylon 6.6 Injection Molded Arch Shank, Compression Molded EVA Foot-Frame, Air Cushion Mid-Sole, Merrell Pilot Sole/Sticky Rubber. Available Colors: Black, Chocolate, Natural, Tan. J63253....  
<http://www.shoebuy.com/cgi-bin/sbref.cgi?link=yps&...> - [Privacy Policy](#) - [Similar Pages](#)

 \$99.95

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**Merrell Shoes Primo Chill Slide - Men's**

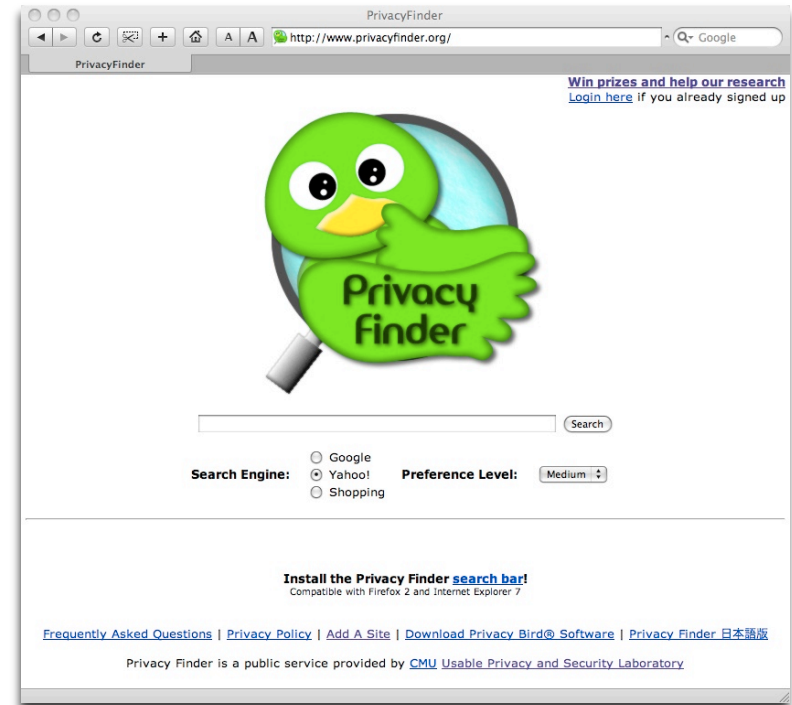
Why limit your casual winter footwear wardrobe to unimaginative, straight-laced shoes? Merrell's Primo Chill Slides offer the slip-in convenience of traditional post-sport footwear

# Impact of privacy information on decision making

- Online shopping study conducted at CMU lab
- Paid participants to make online purchases with their own credit cards, exposing their own personal information
- Participants paid fixed amount and told to keep the change – real tradeoff between money and privacy
- Studies demonstrate that when readily accessible and comparable privacy information is presented in search results, many people will pay more for better privacy

J. Tsai, S. Egelman, L. Cranor, and A. Acquisti. The Effect of Online Privacy Information on Purchasing Behavior: An Experimental Study. WEIS 2007.  
<http://weis2007.econinfosec.org/papers/57.pdf>

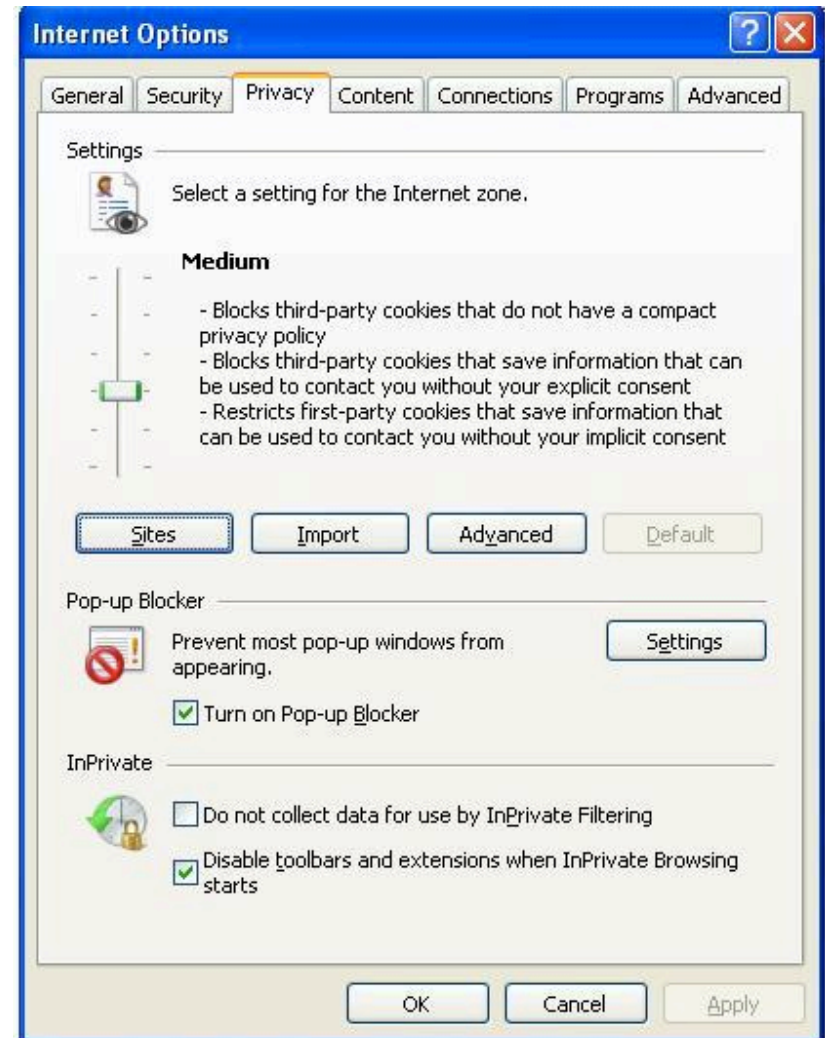
S. Egelman, J. Tsai, L. Cranor, and A. Acquisti. 2009. Timing is Everything? The Effects of Timing and Placement of Online Privacy Indicators. CHI2009.  
<http://www.guanotronic.com/~serge/papers/chi09a.pdf>



<http://privacyfinder.org/>

# P3P in Internet Explorer

- P3P implemented in IE 6, 7, 8, 9, 10 ...
- Default privacy setting
  - Rejects third-party cookies without a CP
  - Rejects unsatisfactory third-party cookies




# No P3P syntax checking in IE

- IE accepts P3P policies containing bogus tokens or missing required tokens
- Example of valid compact policy:

 **CAO DSP COR CURa ADMa DEVa OUR  
IND PHY ONL UNI COM NAV INT DEM PRE**

- Examples of invalid policies accepted by IE:

 **AMZN**

 **Facebook does not have a P3P policy.  
Learn why here: <http://fb.me/p3p>**

P. Leon, L. Cranor, A. McDonald, and R. McGuire. Token Attempt: The Misrepresentation of Website Privacy Policies through the Misuse of P3P Compact Policy Tokens. WPES 2010.



[MSDN Blogs](#) > [IEBlog](#) > [Google Bypassing User Privacy Settings](#)

## Google Bypassing User Privacy Settings

Published Monday, February 20, 2012 1:31 PM

 152 comments

When the IE team heard that Google had bypassed user privacy settings on Safari, we asked ourselves a simple question: is Google circumventing the privacy preferences of Internet Explorer users too? We've discovered the answer is yes: Google is employing similar methods to get around the default privacy

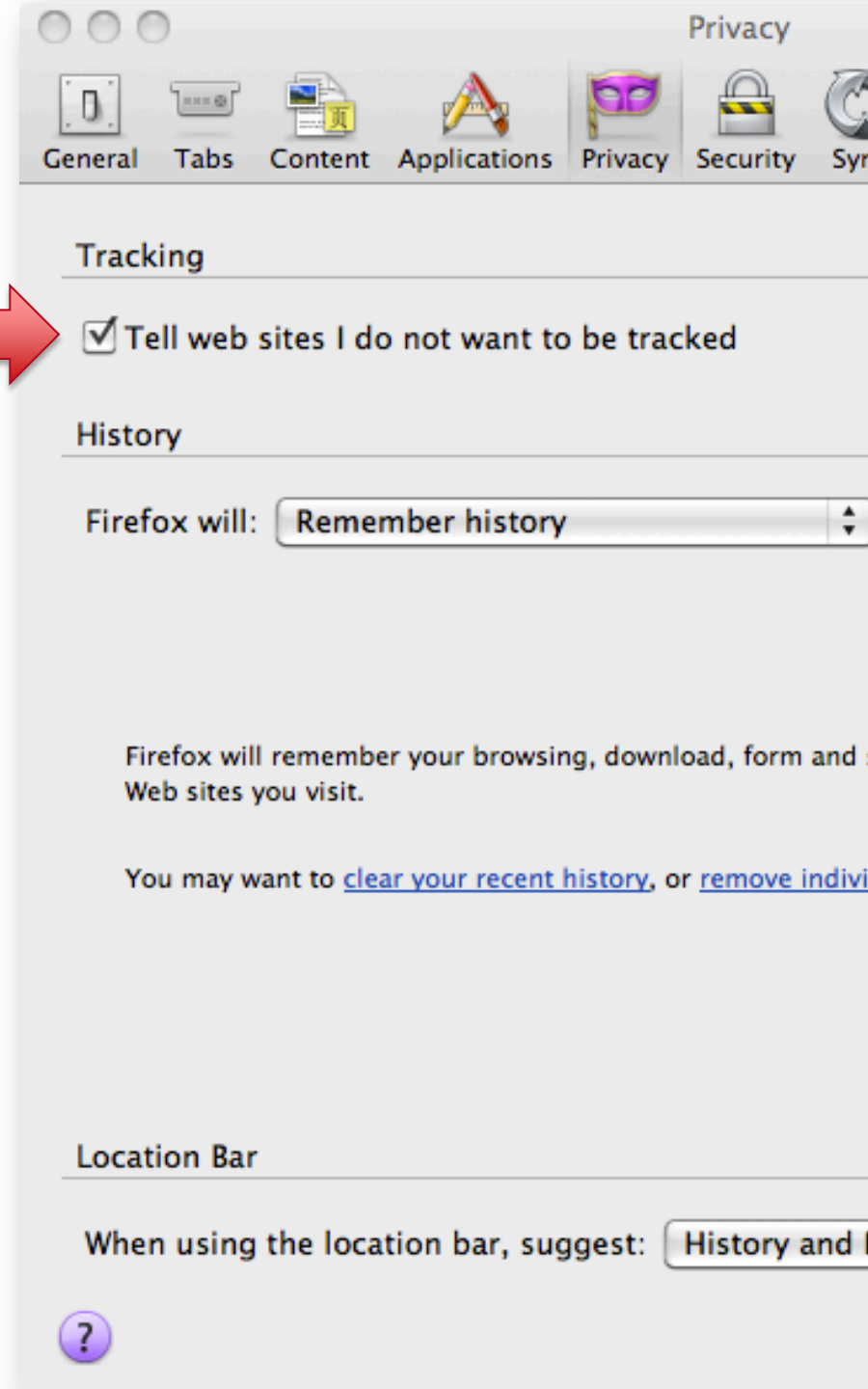
### Languages

[English](#)[Français](#)[Deutsch](#)[Português \(Brasil\)](#)[한국어](#)[日本語](#)[简体中文](#)[Русский](#)

Microsoft uses a “self-declaration” protocol (known as “P3P”) dating from 2002 .... It is well known – including by Microsoft – that it is impractical to comply with Microsoft’s request while providing modern web functionality.

# Do not track

- Proposed W3C standard
- User checks a box
- Browser sends “do not track” header to website
- Website stops “tracking”
- W3C working group trying to define what that means



# Tools to stop tracking, effective?

- Browser privacy settings
  - Cookie blocking
  - P3P
  - Tracking Protection Lists
  - Do Not Track
- Browser add-ons
- Opt-out cookies
- Digital Advertising Alliance (DAA) AdChoices icon and associated opt-out pages



DoNotTrackMe



TM

# User study results

- Problematic defaults
- Poorly designed interfaces and jargon
- Feedback
- Misconceptions about opt-out tools
- Users unable to make meaningful decisions on a per-company basis

Pedro G. Leon, Blase Ur, Rebecca Balebako, Lorrie Faith Cranor, Richard Shay, and Yang Wang. Why Johnny Can't Opt Out: A Usability Evaluation of Tools to Limit Online Behavioral Advertising. CHI2012.

# Do people understand OBA + tools?

- Opinions about OBA mixed – both useful and creepy
- Participants did not understand OBA technologies
- Some of the worst fears based on misconceptions
- Participants did not know how to effectively exercise choice

Blase Ur, Pedro G. Leon, Lorrie Faith Cranor, Richard Shay, and Yang Wang. Smart, Useful, Scary, Creepy: Perceptions of Behavioral Advertising. SOUPS 2012.

# What Do Online Behavioral Advertising Disclosures Communicate to Users?

Pedro Giovanni Leon, Justin Cranshaw, Lorrie Faith Cranor, Jim Graves, Manoj Hastak, Blase Ur, and Guzi Xu. WPES 2012



AdChoices



Pop in. Stand out.

Buy Now!

TARGET P&G eStore amazon.com

AT&T.

The nation's  
**largest**  
**4G**  
**network.**



LEARN MORE

Rethink Possible®

4G speeds not available everywhere.

It's 1702, a decade after  
The Crucible's infamous seductress  
danced with the devil in Salem.

MAY 4-26, 2013

*Abigail*  
1702

BY ROBERTO AGUIRRE-SACASA  
DIRECTED BY TRACY BRIDGEN

CITY THEATRE

BUY TICKETS >

YAHOO!  
--- ON THE ---  
ROAD

Don't miss a beat

Ad Feedback

AdChoices



# The industry claims total success

*“The DAA has revolutionized consumer education and choice by delivering a real-time, in-ad notice more than 10 billion times every day through the increasingly ubiquitous DAA Advertising Option Icon (also known as the ‘Ad Choices’ Icon)”*



Peter Kosmala, Former Managing Director of The Digital Advertising Alliance. *Yes, Johnny Can Benefit From Transparency and Control.* November 3, 2011.



# Objectives

- Evaluate the effectiveness of different OBA disclosures at communicating notice and choice about OBA
- Find ways to improve effectiveness of OBA disclosures

# Methodology

- Large scale between-subjects online study
  - 1,505 participants
  - Over 100 participants per treatment
- Participants recruited through Amazon Mechanical Turk
- Guided browsing scenario
- Online survey

# First exposure to OBA disclosures

HOME PAGE TODAY'S PAPER VIDEOS MOST POPULAR TIMES TOPICS

Subscribe: Home Delivery / Digital Log In Register Now

Why did I get this ad? 

# The New York Times

Tuesday, October 25, 2011 Last Update: 11:21 PM ET

Search  CLICK HERE

Follow Us    Subscribe to Home Delivery Personalize Your Weather

Switch to Global Edition ▶

**JOBS**  
REAL ESTATE  
AUTOS  
ALL CLASSIFIEDS

**WORLD**  
U.S.  
POLITICS  
NEW YORK  
BUSINESS  
DEALBOOK  
TECHNOLOGY  
SPORTS  
SCIENCE  
HEALTH  
OPINION  
ARTS  
Books  
Movies  
Music  
Television  
Theater  
STYLE  
Dining & Wine  
Fashion & Style  
Home & Garden  
Weddings/

## Europe Faces New Hurdles in Crisis Over Debt

By STEVEN ERLANGER and RACHEL DONADIO 20 minutes ago

On the eve of a European Union summit meeting, crucial financial measures were still unresolved.

- Tempers Flare as European Meeting Nears

## I.B.M. Names Virginia Rometty as New Chief Executive

By STEVE LOHR 22 minutes ago

The selection of Ms. Rometty, a senior vice president at I.B.M., will make her one of the highest-profile women executives in corporate America.



## Baseball's Game of Telephone

By PAT BORZI 3 minutes ago

Monday night's bullpen debacle by the Cardinals has put a new spotlight on baseball's reliance on landlines.

## New Poll Finds a Deep Distrust of Government

By JEFF ZELENY and MEGAN THEE-BRENAN 3 minutes ago

With Election Day just over a year away, a deep

## OPINION »

OP-ED | CLIFFORD WINSTON

### Are Law Schools and Bar Exams Necessary?

The barriers to entry for the legal industry exist to protect lawyers from competition with non-lawyers.

- Brooks: The Fighter Fallacy | Comments
- Nocera: Jobs's Biographer
- Cohen: Defending the E.U.
- Bruni: Have Glock
- Editorial: Refinancing
- Room for Debate: Will Amazon Kill Off Publishers?

THE WORLD SERIES 

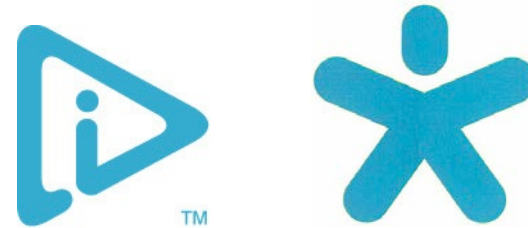
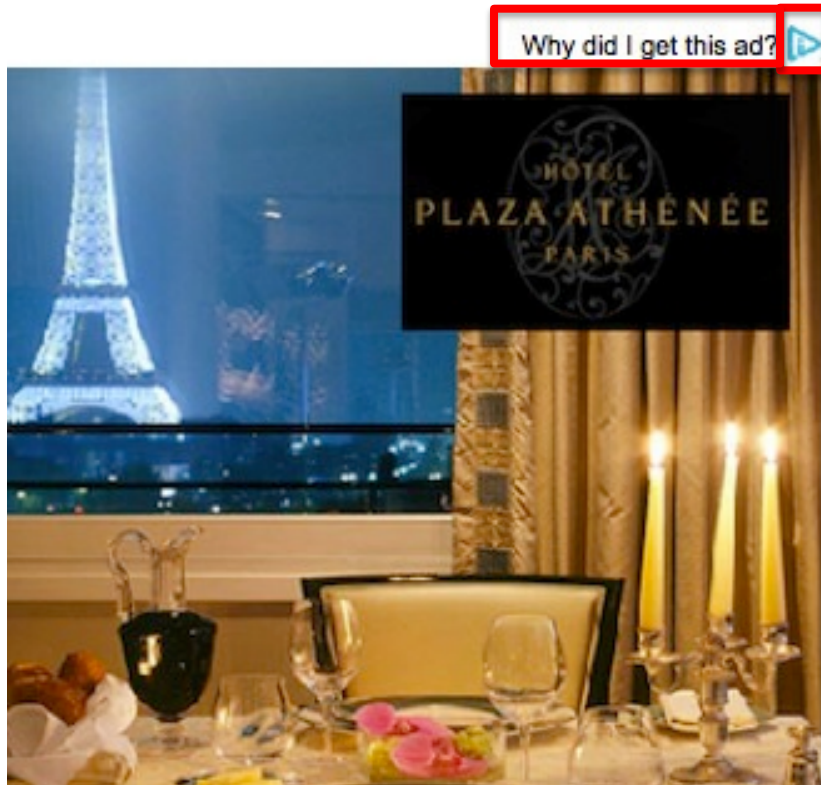


Dilip Vishwanat for The New York Times

Why did I get this ad? 



# Second exposure to OBA disclosures



- Why did I get this ad?
- Interest based ads
- AdChoices
- Sponsor ads
- Learn about your ad choices
- Configure ad preferences
- 'No tagline'

# Exposure to landing pages

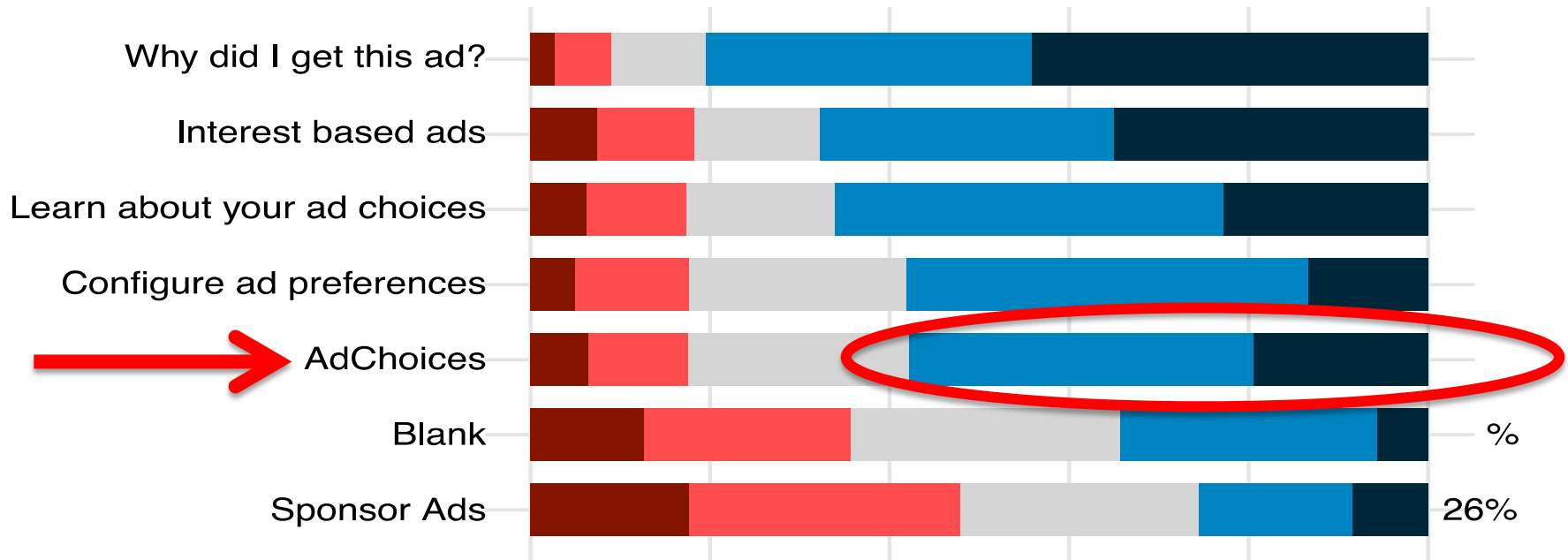


- AOL
- Yahoo!
- Microsoft
- Google
- Monster

# Do icons and taglines suggest tailored ads?

- To what extent, if any, does this combination of the symbol and phrase, placed on the top right corner of the above ad suggest the following?
  - This ad has been tailored based on websites you have visited in the past. [true]

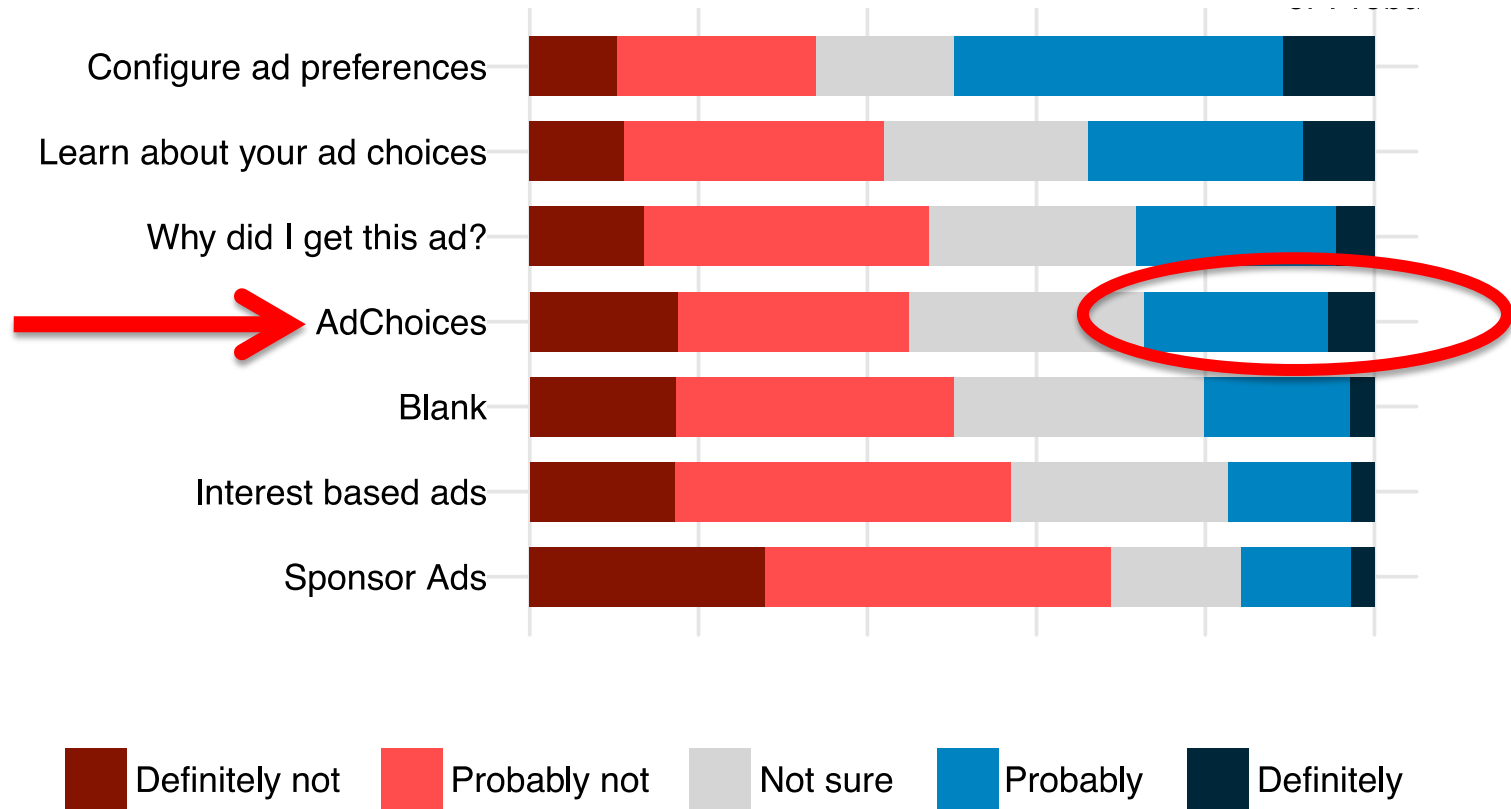




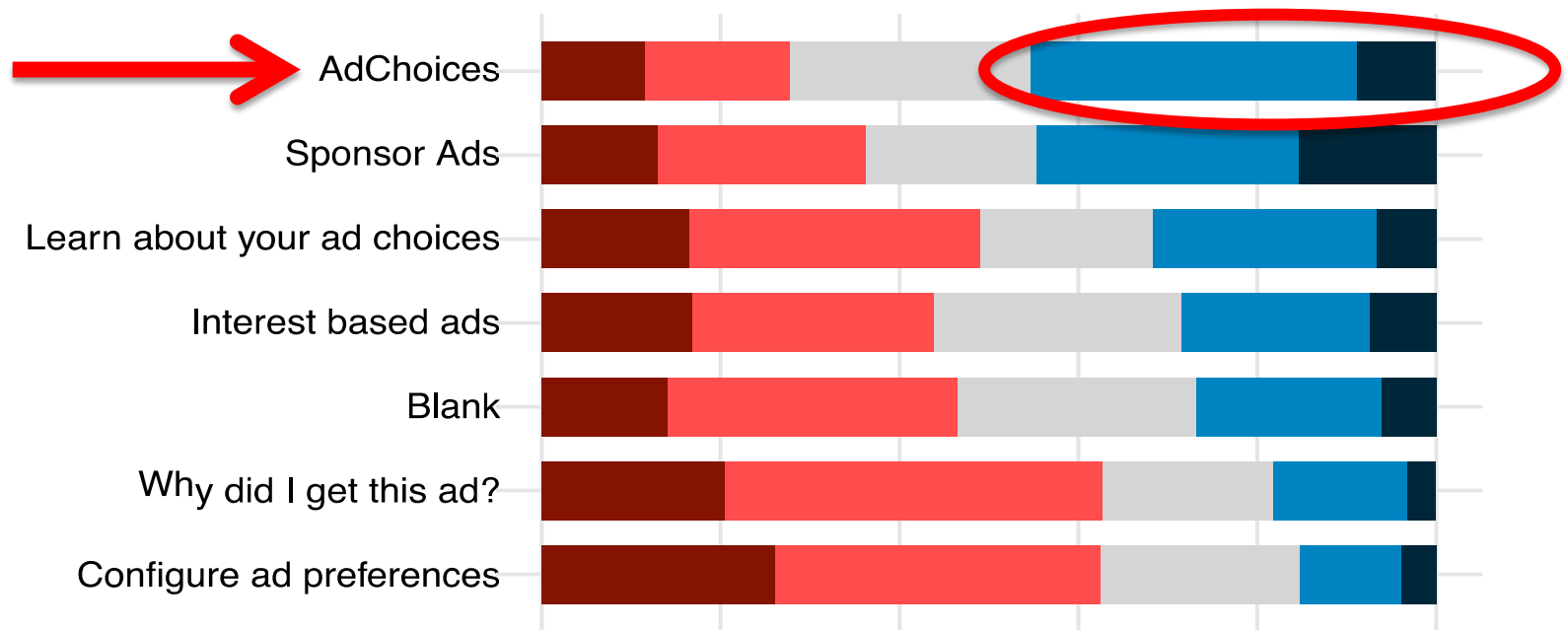
# Willingness to click

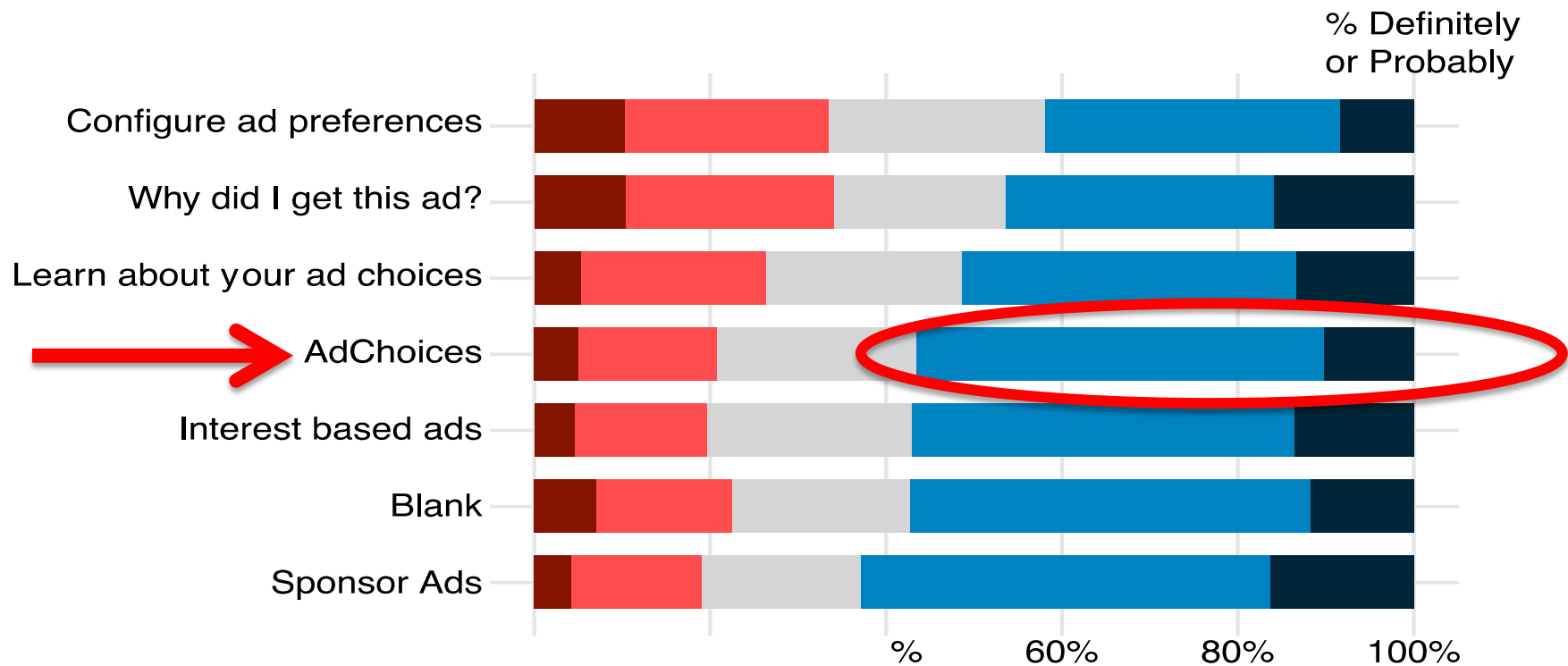
- What do you think would happen if you click on that symbol or that phrase?
  - It will take you to a page where you can tell the advertising company that you do not want to receive tailored ads. [true]
  - More ads will pop up. [false]
  - It will take you to a page where you can buy advertisements on this website. [false]

do not want to receive tailored ads



ge where you can  
buy advertisements on this website





# Takeaways

- OBA icons and taglines are not noticed
- “AdChoices” was outperformed by other tagline treatments at communicating notice and choice about OBA
- Users are afraid to click on icon



# Location-Based Services

- Surveyed 89 location-sharing services
  - 17% had easily-accessible privacy settings
  - 12% allowed users to specify rules to share location with groups of their friends
  - Only 1 had time- or location-based rules

J. Tsai, P. Kelley, L. Cranor, and N. Sadeh. Location-Sharing Technologies: Privacy Risks and Controls. TPRC 2009.

<http://cups.cs.cmu.edu/LBSprivacy/>

# Privacy in a location finding service

The screenshot displays the Locaccino web application. At the top, a red header contains the "LOCACCINO" logo and navigation links: HOME, PRIVACY SETTINGS, FRIENDS' VIEWS, LOCATOR, INVITE, and HELP. Below the header, a banner reads: "Join our study and earn \$30! Test out Locaccino for a month. Click for more details".

The main interface features a map of Pittsburgh. On the left, a sidebar shows the user's profile ("Your location" with a photo, "online" status, and "10:50 PM" time) and a list of friends with their photos and names: Chuck Cranor, Dena Tsamitis, Heng Xu, Kami Vanlea, Lorrie Cranor, Patrick Kelley, Christa Jones, and David Pierpont. A "Show friends" button is at the bottom of the list.

A pop-up window for "Lorrie Cranor" is displayed over the map, showing her profile picture and location details: "Near: 5344 Northumberland St, Pittsburgh, Pennsylvania 15217", "3 minutes ago", and a "Show in Google Maps" link. The map itself shows streets like Forbes Ave, Northumberland St, and Schenley Dr, with a green area representing Schenley Park Golf Course.

<http://locaccino.org/>

# Privacy rules

**LOCACCINO**

HOME **PRIVACY SETTINGS** FRIENDS' VIEWS LOCATOR INVITE **HELP!**

**My Rules**

Add New Rule

Family any time

Locaccino demo

Locaccino team

On campus

**People I work with**

SOUPS2009

Seattle

Washington, DC





**Rule Editing**





Cancel Save changes Delete





**Rule name** People I work with

**Who** Who can see my location?

New Locaccino Friend List Click for all lists and networks Show all

**Faculty**  
  
and 22 more... Remove | Edit

**Locaccino team**  
  
and 7 more... Remove | Edit

**PhD students**  
  
and 3 more... Remove | Edit

**When** When can they see my location?

☐ I can be seen all the time ☒ I can be seen part of the time...

☐ Sun ☒ Mon ☒ Tue ☒ Wed ☒ Thu ☒ Fri ☐ Sat

From: 8:00 am To: 6:00 pm ☐ All day

**Where** Where can they see my location?

e.g. my friends can see my location only when I'm in the Carnegie-Mellon University campus

☒ I can be seen in all locations ☐ I can be seen in these locations...

Cancel Save changes

# Feedback


## LOCACCINO

[HOME](#)
[PRIVACY SETTINGS](#)
[FRIENDS' VIEWS](#)
[LOCATOR](#)
[INVITE](#)


Who asked to view me
Who can view me right now

Unhappy? Go to Privacy Settings and fix your rules


Friends who can view your current location



Chuck Cranor




Judy Ackerman




Seth Carlson


Friends who cannot view your current location




Vassilis Kosta...




Heng Xu




Christa Jones




Marvin Sir




Jason Hong




Paul Driels




Steve Sheng




Joe Locac




Lujo Bauer




Jialiu Lin



Patrick Kelley



Heidi Brayer



Kursat Ozenc

## LOCACCINO












[HOME](#)
[PRIVACY SETTINGS](#)
[FRIENDS' VIEWS](#)
[LOCATOR](#)
[INVITE](#)
[HELP!](#)

Who asked to view me
Who can view me right now

Show records from:

All records

Please indicate how comfortable you are with each of the viewing records  
☒ Very uncomfortable | ☒ Uncomfortable | ☒ Comfortable | ☒ Very Comfortable  
Unhappy? Go to Privacy Settings and fix your rules

	Friend ↕	Time ↕	Location	Outcome	Feedback
	Paul Drielsma	11:35 AM, Thu, Jun 11	Cambridge, Massachusetts 02142 [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Steve Sheng	11:08 PM, Wed, Jun 10	[map]	Deny	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Eran Toch	4:58 PM, Wed, Jun 10	Carnegie Mellon University [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Steve Sheng	4:40 PM, Wed, Jun 10	Carnegie Mellon University [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Jay Springfield	4:11 PM, Wed, Jun 10	Carnegie Mellon University [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Kami Vaniea	12:51 PM-12:52 PM, Wed, Jun 10	Carnegie Mellon University [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Patrick Kelley	12:50 PM-12:51 PM, Wed, Jun 10	Carnegie Mellon University [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Kami Vaniea	11:21 AM, Wed, Jun 10	Carnegie Mellon University [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Eran Toch	4:52 PM, Tue, Jun 9	Carnegie Mellon University [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Paul Drielsma	4:34 PM, Tue, Jun 9	Carnegie Mellon University [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	Kami Vaniea	2:12 PM-2:13 PM, Tue, Jun 9	Carnegie Mellon University [map]	Allow	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

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# Requirements for meaningful control

- Individuals must understand what options they have
- Individuals must understand implications of their options
- Individuals must have the means to exercise options
- Costs must be reasonable
  - Money, time, convenience, benefits