Privacy Notice and Choice in Practice

Lorrie Faith Cranor July 2013

Carnegie Mellon University CyLab



Engineering & Public Policy



CyLab Usable Privacy and Security Laboratory



Carnegie Mellon University

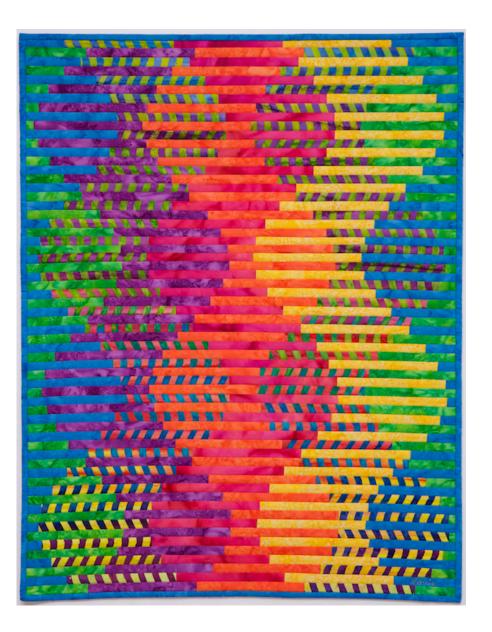
Master of Science in Information Technology

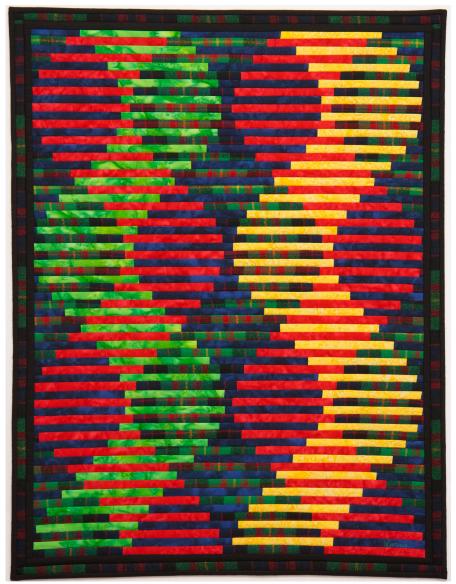


privacy.cs.cmu.edu

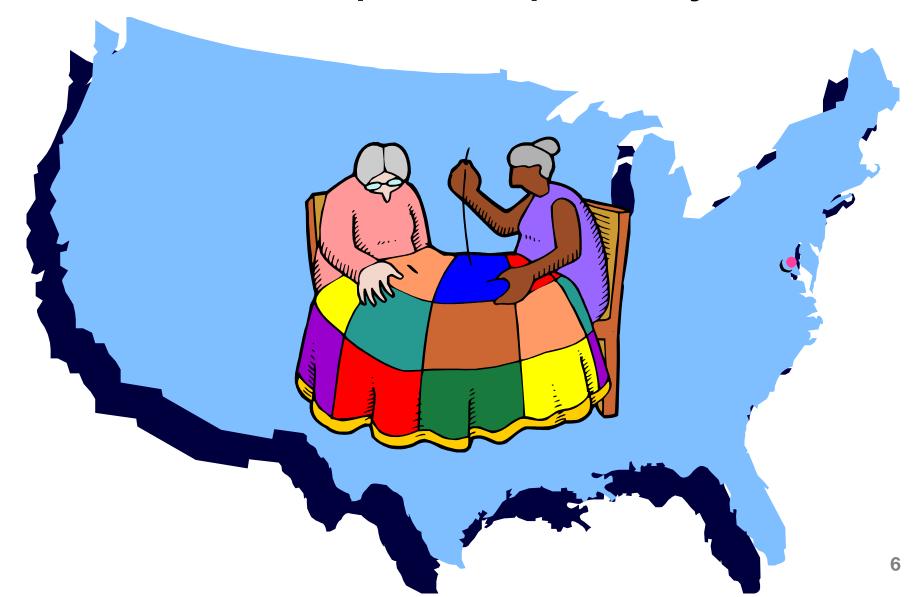








Patchwork quilt of privacy laws

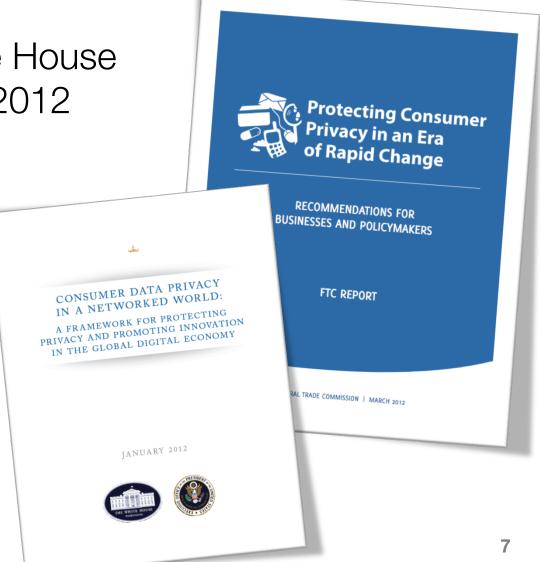


US government privacy reports

 U.S. FTC and White House reports released in 2012

 U.S. Department of Commerce multi-stakeholder process to develop enforceable

codes of conduct



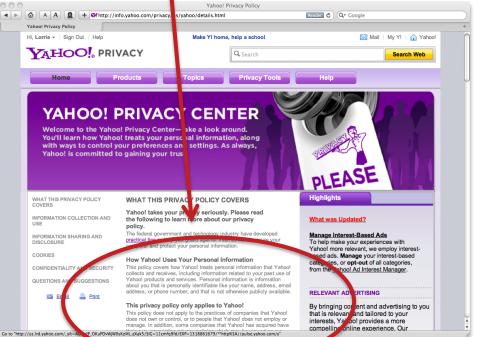
Privacy self regulation



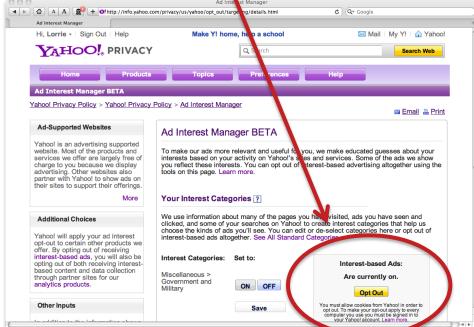
Notice and choice

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





ADER JOE'S®

utrition Facts

erving Size 1 cup (49 g) ervings Per Container about 10

mount Per Serving			
alories 180 Calories from	Fit 10		
% Daily Value*			
otal Fat 1g	2%		
Saturated Fat 0g	0%		
Trans Fat Og			
Cholesterol Omg	0%		
Sedium Omg	0%		
Potassium 180mg	5%		
Total Carbobudrate N	to 13%		

Dietary Fiber 5g Sugars 0g

alicium 0% • Iron 8% Namine 8% . Riboflavin 2%

Bacin 10% . Vitamin D 0%

of based depending on your carrier was a constraint of the Carrier and Carrier

INGREDIENTS: Whole Wheat, tamin E (to preserve freshness).

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



This product is sold by weight not volume. Some settling of contents may have occurred during handling and shipping.

Nutrition Facts

Amount For Serving Calories Total Fat 1.5g" Saturated Fat Og Trans Fat 0g Cholesterol Onc. Sodium 200mg 8% 11% Potassium 125mg 4%

Carbohydrate 24g 8% 10% Dietary Fiber 4g 15% 15% Soluble Fiber 1g Insoluble Fiber 3g

Sugars 5g. Protein 40

Vitamin C 15% Calcium 4% 4% Vitamin E

	Catories:	1.90	_1.50
Total Feet	Lass.Than	104	N/A
Set Fee	Less Than	200	274
Cholesteni	Less Trees	30014	300
Sodon	Less Than	1.400mg	1.41
Prosent		3,500mg	3.88
Total Carbonyshies		300	276
Delay Fits		24	- 7%

Ingredients: Whole Out Flour (With Added lat Bran), Yellow Corn Flour (With Added Corn Iron), Unsulphured Molassee, Whole Wheat Your, Salt, Baking Soda, Natural Vitamin Mixed Tocopherols (Soy)), Vitamin C Contains wheat and soy. Made in a peanut-free facility.

anchoted by Barbara's Bakery, Inc. 9, a Weetable North America Company 20 Cameron Street, Clinton, MA 01510 wone Barbaras Sukery com

CC008 Burbara's Bukery

TRADER JOE'S®

Nutrition Facts

Calories 230 Calories from Fat 5 % Daily Value

Total Fat 50 Saturated Fat 0.5g 3% Trans Fat 0g Cholesterol Ong Sodium 140mg 6% Total Carbohydrate 42g 14% Dietary Fiber 3g

Sugars 12g Protein 5g

Itamin A 0% . Vitamin C 2% Calcium 2% . Iron 6%

ORNSTRACH, HONEY, SALT, BARLEYMALT YRUP, FREEZE DRIED BLUEBERRIES COLORI, PURPLE CARROT JUICE (FOR COLORI, CARDAMOM SEED, FENNEL SEED, FENUGREEK SEED, NUTMIG.

OF TREE MUTS & SOY.

DIST. & SOLD EXCLUSIVELY BY: TRADER JOE'S, MONROVIA, CA 91816

This product is sold by weight not volume. Some settling of contents may have occurred during handling and shipping.

Nutrition Facts

Total Fut 0.5g* Saturated Fat 0g Trans Fat 0g Polyunsaturated Fat 0g Monoursaturated Fat 0g Cholesterol Ong Sodium 125mg 5% Potassium Itimo 8% Total Carbohydrate 25g 8% 10% 8%

Detary Fiber 2g Sugars 4g Other Carbohydrate 19g Protein 3g

Calcium 25% Thiamin 30% Macin 25% Vitamin B Folic Acid Phosphorus 8%

Magnesium EN 25%

INCREDIENTS: WHICKE GRAIN WHEAT", RICE, COWN MEA.", NATURALLY MILLED SUGAR-, SALT, MALT EXTRACT: VITAMIN & MORED TOCOPHEROLS ADDED TO PRESERVE VITAMINS AND MINERALS: FICE AND ZINC

CONTAINS WHEAT INGREDIENTS. MAT CONTAIN ALMOND, SOY AND MILK

DISTRIBUTED BY SMALL PLANET FOODS, INC. SEDRO-WOOLLEY, WA 96254 USA

PRODUCT OF CANADA 2008 Small Planet Foods, Inc.

CERTIFIED ORGANIC

Nutrition Facts

Calories Total Fat 2.5g" 4% 4% Saturated Fat 0.5g 2% 2% Trans Fat 0g Cholesterol (mg Sodium 250mg 10% 12% 5%

Carbohydrate 42g 14% 16% Dietary Fiber 5g Soluble Fiber 2g Insoluble Fiber 3g Sugars 11g Protein 6g 35% 35% Calcium 2% letter. Vitamin E 8% Thiamin

15%

8%

4%

Nacin 6% 6% Phosphorus 15% 30% 15% 20% 10% 15% Copper 10%

Riboflavin

Premark delly values are based on a 2,000 calone del. Your delly values may be higher or livear depending on your calone needs:

Ingredients: Whole Out Flour, Whole Wheat or, Unsulphured Molasses, Matted Barley Extract, Baking Soda, Salt, Natural Vitamin I (Moxed Tocopherois [Soy]), Vitamin C. Contains wheat and soy. Made on equipment that also processes milk.

Stributed by Barbara's Bakery, Inc. P. Weetable North America Company Cameron Street, Clinton, MA 01510 www.BarbarasBakery.com

Product of Canada 02008 Barbara's Bakery

TRADER JOE'S® Organic HIGH FIBER O'S

Nutrition Facts

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

mount per Servine Calories 190 Calories from Fat 10 Total Fat 1g 2% Saturated Fat 0g 0% Trans Fat 0g Cholesterol Omg 0% Sodium 115mg 5% Total Carbohydrate 44g 15% Dietary Fiber 9g Soluble Fiber less than 1g Insoluble Fiber 8g Sugars 9g

Protein 6g 12% Itamin A 0% . Vitamin C 1305 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.

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Penders follow Good Manufacturing Proc STREET PARTY & PRINCIPLE



TRADER JOE'S

Nutrition Facts

Calories 110 Calor Total Fat 0g Saturated Fat 0g Trans Fat 0g Cholesterol 0mg 01

Sodium 280mg **Total Carbohydrate 26g** 9% Dietary Fiber less than 1g 3%

Sugars 2g Protein 2g

Calcium 0% • Iron 45% Vitamin D 25% • Thiamin 25% Riboflavin 25% • Nacin 25%

Vitamin 86 25% . Folio Acid 50% Vitamin B12 25% • Zinc 25%

Catories 2,000

NGREDIENTS: ORGANIC MILLED CORN

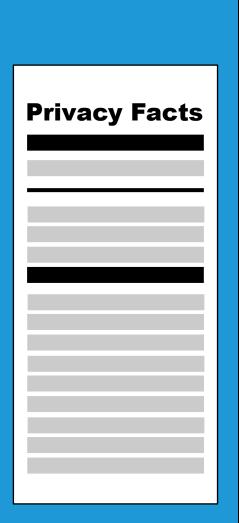
SALT, ORGANIC BARLEY MALT EXTRACT, BOY LECTHIN (AN EMULSIFIER) MORE FROM SOURCE), SODIUM ASCORBATE MTAMIN C, VITAMIN A ACETATE, MACINA. MDE (A B VITAMIN, ZINC DODE (ZINC) SOURCE, FOLIC ACID (A B VITAMIN, CKANOCOBALAMIN (MTAMIN B12) CHOLECAL CIFEROL (MICHANIN DI, PYRICO)

INE HYDROCHLORDE (VITAMIN BO).
RECELAVIN (VITAMIN BO). THAMIN'
MOMONITHATE (VITAMIN B1). OUR WINDORS FOLLOW GOOD MANUFACTURENS TO SECRECITE INDECEDENTS TO MODE CROSS COUNTED! WITH ALLERGENES MADE ON TOURNESS PROMISES PERMISS AND THE MESS.

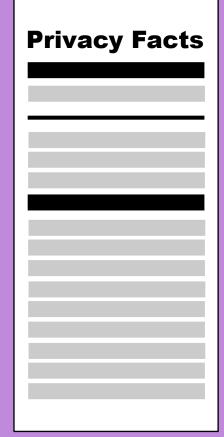
DIST, & SOLD EXCLUSIVELY BY: TRACER JOE'S, MONROWA, CA 91016

CERTIFIED ORGANIC BY QUALITY ASSERBANCE INTERNATIONAL (CAN).











"In theory there is no difference between theory and practice. In practice there is."

—Yogi Berra

How effective is privacy notice and choice in practice?



May 6, 2013

Commissioner's Findings

Parliamentary Activities

Resources **News Room**

Questions

A-Z Index

Transparency

HOW TO FILE

A privacy complaint

INFORMATION

Frequently Asked

Completed Access to

Proactive Disclosure

Information Requests

SECURING PERSONAL

What will happen during the Internet Privacy Sweep? What is the goal?

Privacy enforcement authorities participating in the Sweep will designate individuals within their organizations to search the Internet in a coordinated effort to assess privacy practices related to a predetermined theme – this year the theme is Privacy Practice Transparency.

The Sweep will provide flexibility for privacy enforcement authorities to tailor their search within this common theme to focus on issues that are relevant in the context of domestic legislation, market factors and strategic priorities.

The purpose of the Sweep is *not* to conduct an in-depth analysis of the privacy practice transparency of each website, but to replicate the consumer experience by spending a few minutes per site checking for performance against set common indicators.

The Sween is not an investigation, nor is it intended to conclusively identify

Contact:

Media Relations

Anne-Marie Havden

Non-journalists are invited to contact our Information Centre. Please call 1-800-282-1376 (toll free) or (613) 947-1698 and ask to speak with an Information Officer.

UPCOMING EVENTS

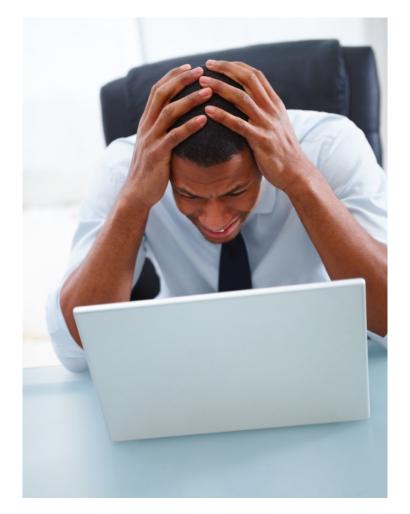
Address:

112 Kent Street Ottawa, ON K1A 1H3 Fax: (613) 995-1139

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



A. McDonald and L. Cranor. The Cost of Reading Privacy Policies. I/S:
A Journal of Law and Policy for the Information Society. 2008 Privacy Year in
Review Issue. http://lorrie.cranor.org/pubs/readingPolicyCost-authorDraft.pdf





Your Data is Used Only for the Intended Use



Your Data May be Used for Purposes You Do Not Intend



bartered or sold.



Your data is never given to advertisers.



Site gives your data to advertisers.



Your data is never bartered or sold.



Your data may be



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.

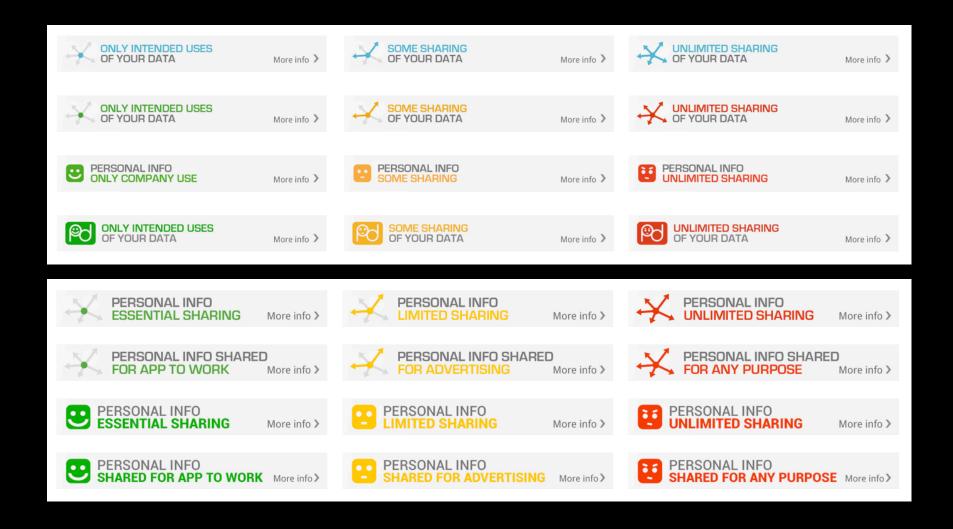








Your data may be kept indefinitely.



Smartphone App Privacy Icon Study Conducted for LifeLock, Inc. by Cranor et al., 2013

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



Nutritio Serving Size 1-1/ Servings Per Co	4 Cup (2 o	z/55g)
	,	Vit. A & D
Amount Per Serving		Skim Milk
Calories	220	260
Calories from Fa	t 25	25
	% Daily	Value**
Total Fat 2.5g*	4%	4%
Saturated Fat 0.	5g 2 %	2%
Trans Fat 0g		
Cholesterol 0m		1%
Sodium 250mg	10%	12%
Potassium 180r	ng 5 %	11%
Total Carbohydrate 4	12g 14%	16%
	2g 14% 20%	20%
Dietary Fiber 5g		20%
Soluble Fiber 2		
Insoluble Fiber	39	
Sugars 11g		
Protein 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%
	6%	6%
Niacin		
Phosphorus	15%	30%
Magnesium	15%	20%
Zinc	10%	15%
Copper	10%	10%
* Amount in cereal. O contributes an additi sodium, 200mg pota (6g sugars), and 4g	onal 40 calorie ssium, 6g cart protein.	es, 65mg oohydrate
** Percent daily values calorie diet. Your dai or lower depending	on your calorie	needs:
Calories: Total Fat Less Than	2,000 n 65g	2,500 80g
Sat Fat Loss Than	200	25g 300mg
Cholesterol Less Than Sodium Less Than	300mg 2,400mg	2,400mg
Potassium Total Carbohydrate	3,500mg 300a	3,500mg 375g
Dietary Fiber	25g	30g
Calories per gram: Fat 9 • Carbohyo		Protein 4
ngredients: Whole C Flour, Unsulphured M Extract, Baking Soda, Mixed Tocopherols [olasses, Mali Salt, Natural	ted Barle
	soy. Made	on
Contains wheat and equipment that also almonds and hazeln	processes	milk,

20 Cameron Street, Clinton, MA 01510 www.BarbarasBakerv.com

TRADER JOE'S ® Organic HIGH FIBER O'S

Serving Size 1 1/4 cup (55g) Servings per Container 8 Amount per Serving Calories 190 Calories from Fat 10 % Daily Value* Total Fat 1g Saturated Fat 0g Cholesterol 0mg Sodium 115mg 5% Total Carbohydrate 44g 15% Dietary Fiber 9g Soluble Fiber less than 1g Insoluble Fiber 8g Sugars 9g

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 dependence when the process

Vitamin A 0% • Vitamin C 130% Calcium 4% • Iron 30%

Protein 6a

or lower depending on your callerie need
Callories 2,000 2,500

Total Fat Less than 55g 80g 25g 25g
Sat Fat Less than 20g 25g 300mg
Sodium Less than 2,400mg 2,400m 2,100mg
Total Carbotyrate 30g 375g 375g
Dietary Fiber 25g 36g 65g

INGREDIENTS: Organic Whole Grain Whea Flour, Organic Wheat Bran, Organic Evaporates Cane Juice, Organic Oat Fiber, Sea Salt, Organic Caramel Color, Natural Vitamin E NUTRITION BLEND: Niacinamide, Vitamin C Niacina, Iron, Zinc, Vitamin B5, 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)

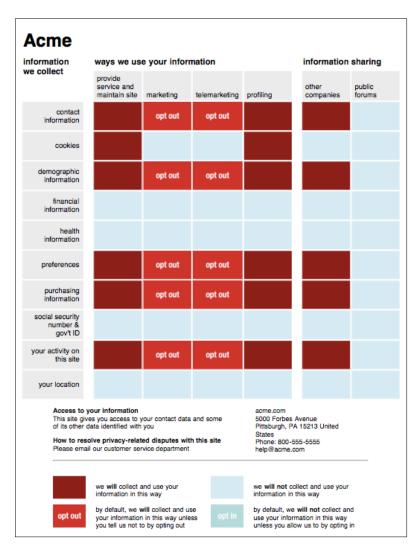


Iterative design process

- 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.



Privacy label for Android

1.9MB

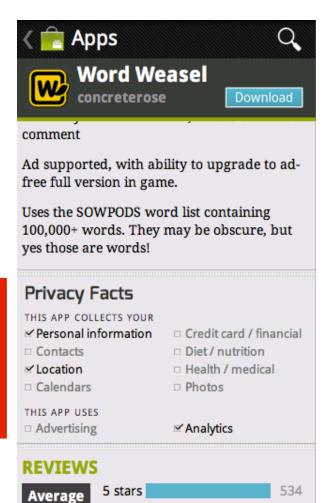




DESCRIPTION

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



4 stars

3 stars

2 stars

1 star

210

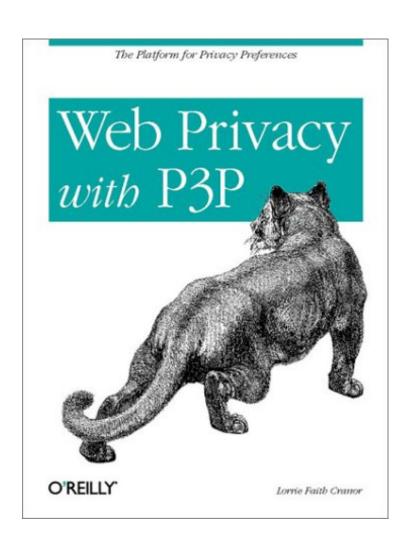
37

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.

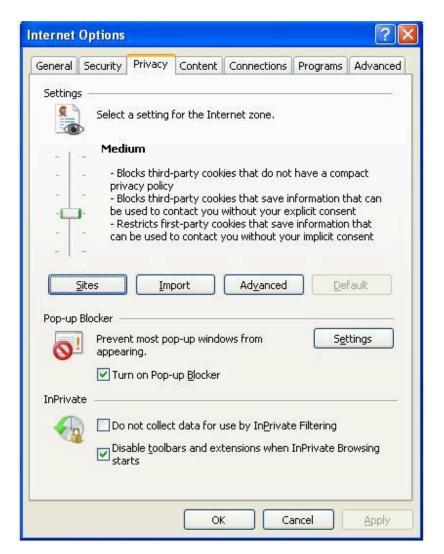
Let your computer read for you



- 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

P3P in Internet Explorer

- P3P implemented in IE6, 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:





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.

Windows Internet Explorer Engineering Team Blog 🔝

امما

IEBlog

MSDN Blogs > IEBlog > Google Bypassing User Privacy Settings

Google Bypassing User Privacy Settings

Published Monday, February 20, 2012 1:31 PM

P 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

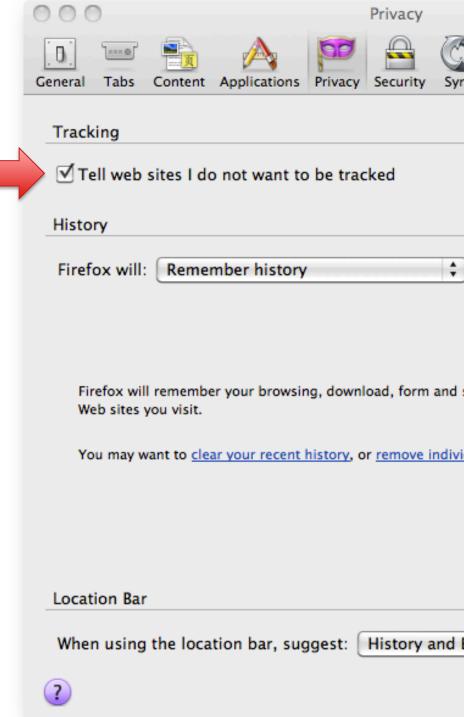
Dyccidia



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



Lots of tools to stop tracking

- 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



Are any of these tools effective?

- Do the tools work?
 - Does technology do what it is supposed to do?
 - Do companies respect user choices?
- Can consumers use them?
 - Do users understand tracking?
 - Do users understand what tools do?
 - Can users make tools do what they want?

Smart, Useful, Scary, Creepy: Perceptions of Behavioral Advertising

Blase Ur, Pedro G. Leon, Lorrie Faith Cranor, Richard Shay, and Yang Wang SOUPS 2012

Research goals

- Gain insight into what users think about online behavioral advertising (OBA)
- Identify how participants' mental models correspond with notice and choice mechanisms

Methodology

- 48 participants
- Recruited from the Pittsburgh, PA region
 - Non-technologists
 - Interested in testing privacy tools
- Combination semi-structured interview and usability study
- Part way through interview showed WSJ video to inform participants about OBA

Participants unaware of OBA

 Participants believed ads were tailored, but only based on context or on a single site



Your Amazon.com



New Release
Elixir Strings Acoust...
\$31.98 \$12.67
Why recommended?



New Release

Kyser 6 String Capo,...

\$24.95 \$15.16

Why recommended?



Planet Waves Pro Wind...

★★★★ (153)

\$13.99 \$6.99

Why recommended?



Elixir Strings Acoust...

(39)

\$30.00 \$12.12

Why recommended?



Elixir Strings Electr...

******* (34)

\$22.00 \$8.64

Why recommended?



Snark SN-2 All Instru... ★★★★★ (546) \$39.00 \$11.20 Why recommended?

Participants unaware of OBA

 Participants believed ads were tailored, but only based on context or on a single site

- Thought it was only hypothetical
 - "I guess if they were monitoring what I did on the Internet...But I'd hope they weren't..."

Didn't recognize OBA icon

- Not sure what would happen if they clicked on icon
 - Express interest in product
 - Purchase your own ads
 - Go to product's website
 - See related ads



Mixed opinion about OBA

- Recognized benefits
 - Advertisers can reach consumers interested in their products
 - Consumers find things they're interested in and don't get ads for things they're not interested in
- Concerned about privacy

Beliefs about OBA

- Advertisers collect information including name, financial information, and address
- This information, along with browsing history, is stored in cookies

Participants' impressions: available choice mechanisms

- Deleting cookies
- No options
- Antivirus software suites
- Web browser



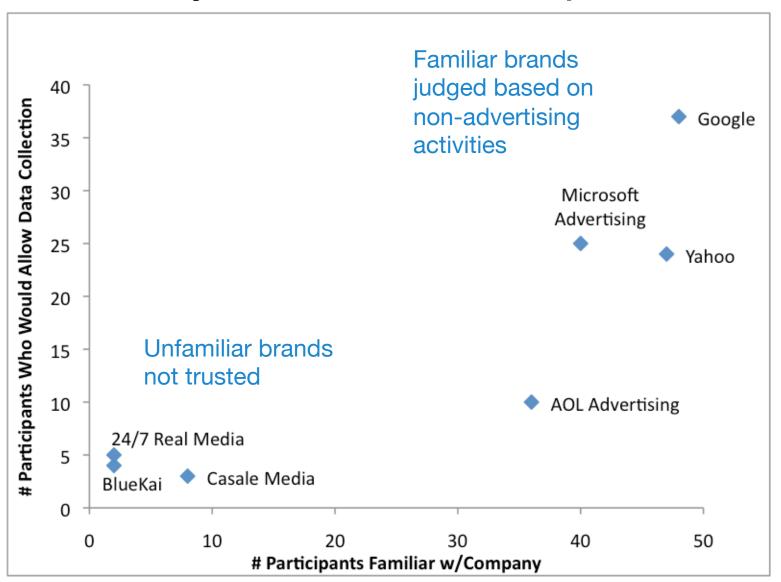








Familiarity and trust are important



Takeaways

- 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

Why Johnny Can't Opt Out: A Usability Evaluation of Tools to Limit Online Behavioral Advertising

Pedro G. Leon, Blase Ur, Rebecca Balebako, Lorrie Faith Cranor, Richard Shay, and Yang Wang CHI 2012

Three types of tools tested

Blocking Tools











Opt-out Tools





PrivacyMark

Privacy built in browser





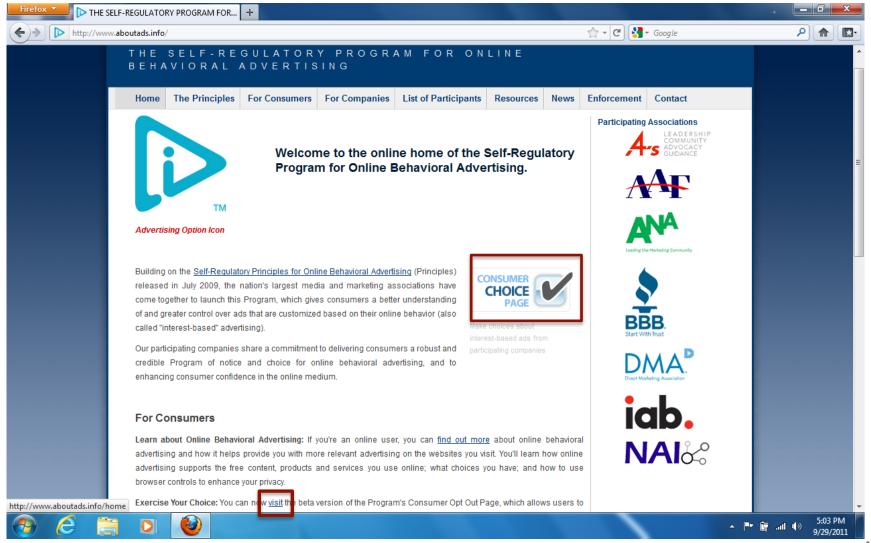
Methodology

- Part of previous interview study
- 45 participants evaluated 9 tools
 - Between subjects study
 - Random assignment, controlled for preferred web browser and operating system

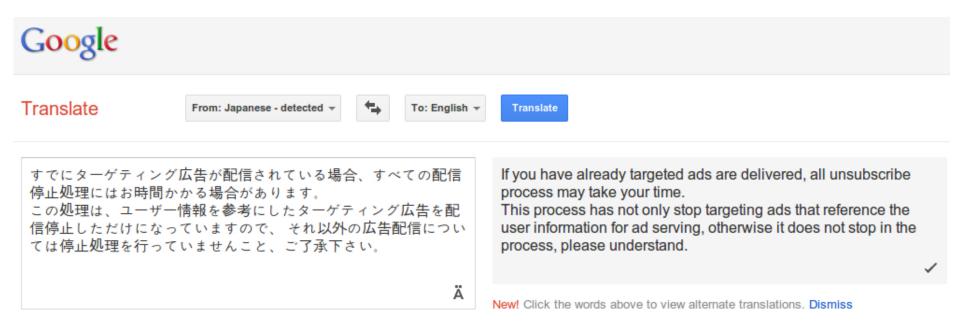
Testing protocol

- Semi-structured interview
- Usability testing
 - Task 1: Learn about and install the tool
 - Task 2: Change tool settings
 - Task 3: Browsing scenarios
- Exit questionnaire

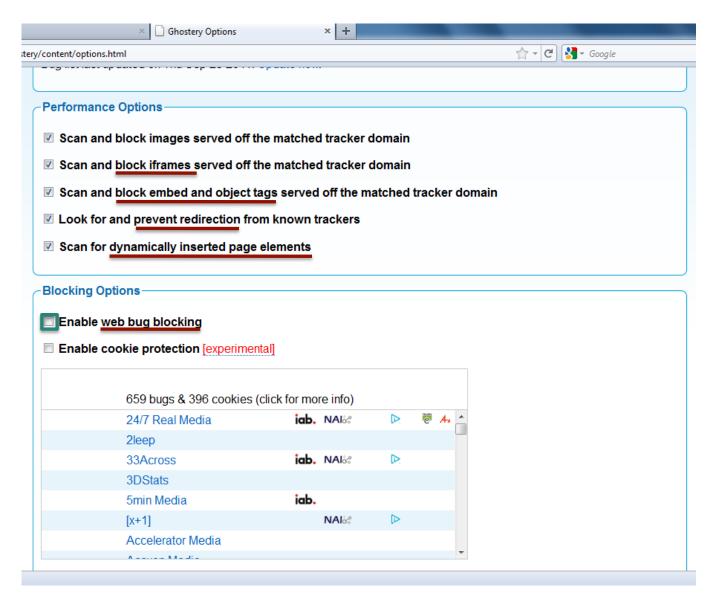
DAA website



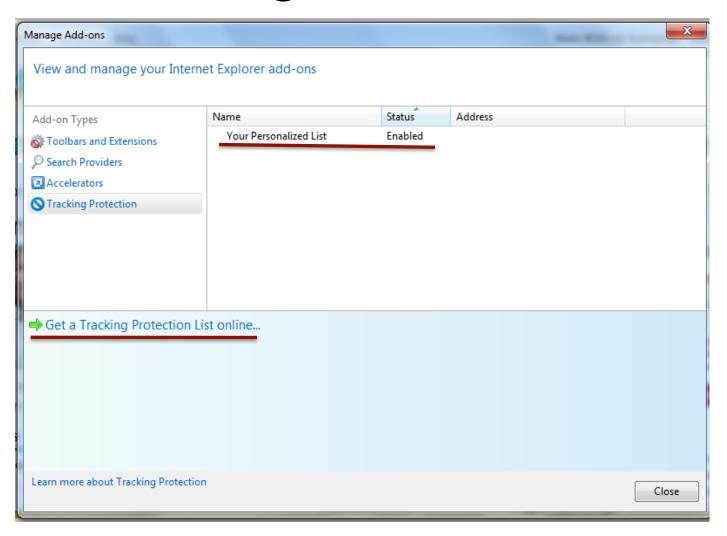
Opting out can be challenging



Ghostery configuration interface



IE-TPL configuration interface



Takeaways

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

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











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



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



Archive Offers

I.B.M., will make her one of

the highest-profile women

executives in corporate

senior vice

president at

America.

Music

Television

Theater

STYLE

Dining & Wine

Fashion & Style

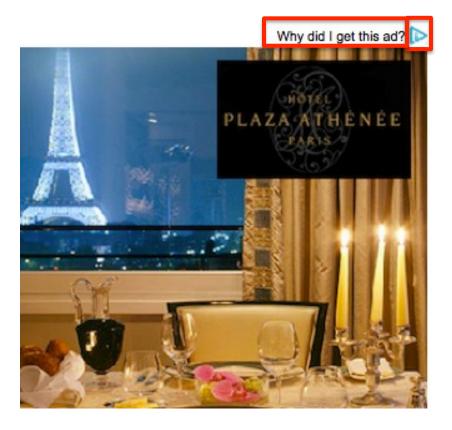
Home & Garden

Weddings/

Why did I get this ad?

Why did I get this ad?

Second exposure to OBA disclosures

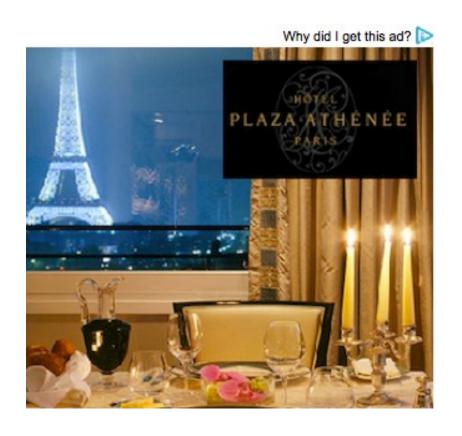






- Why did I get this ad?
- Interest based ads
- AdChoices
- Sponsor ads
- Learn about your ad choices
- Configure ad preferences
- 'No tagline'

Exposure to landing pages

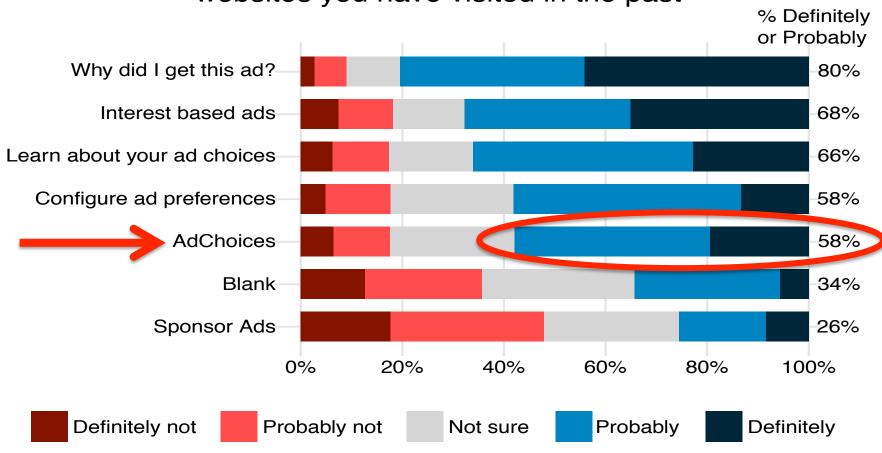


- AOL
- Yahoo!
- Microsoft
- Google
- Monster

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]

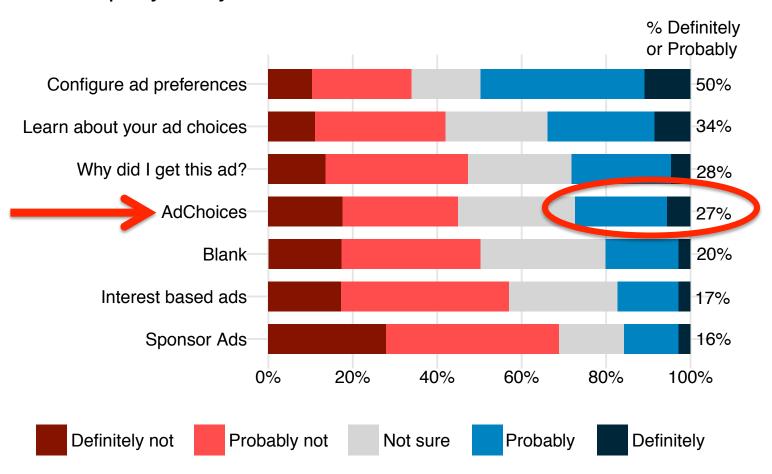
This ad has been tailored based on websites you have visited in the past



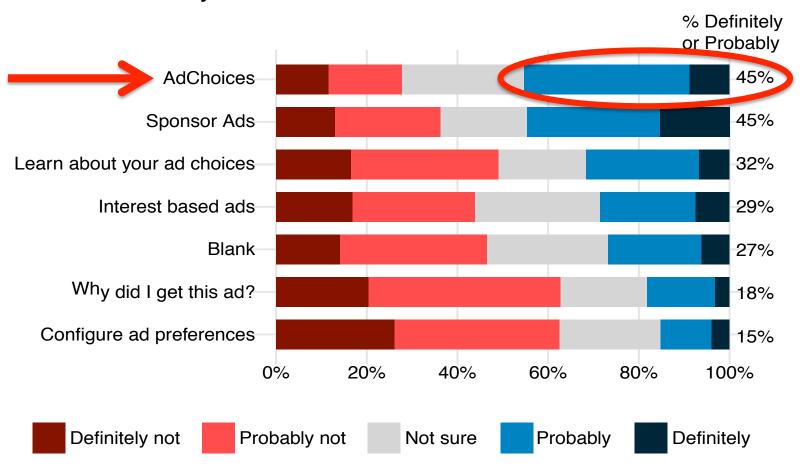
Willingness to click

- 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]

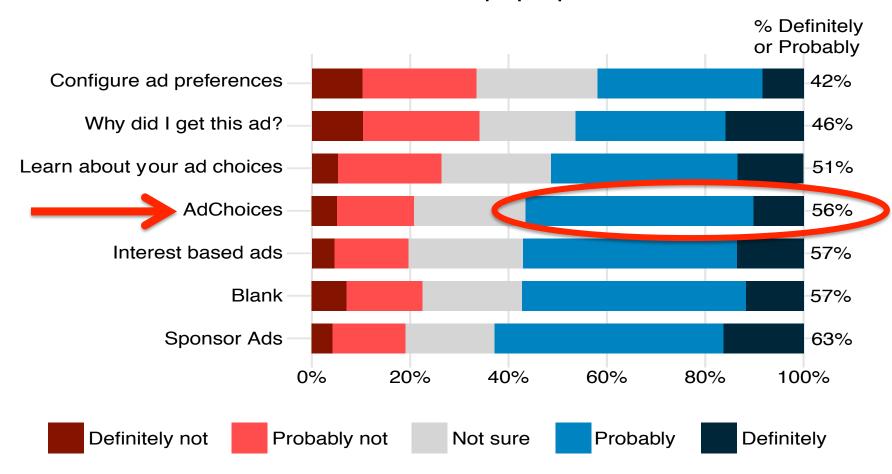
Will take you to a page where you can tell the advertising company that you do not want to receive tailored ads



Will take you to a page where you can buy advertisements on this website



More ads will pop up



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

How effective is privacy notice and choice in practice?

Notice and Choice Mechanism

Effectiveness in Practice

Notice and Choice Mechanism	Effectiveness in Practice
Privacy policies	Nobody reads
Privacy nutrition labels	Promising research, not used
Privacy Facts for Android	Promising research, not used
P3P	Used to circumvent browser privacy settings
Do Not Track	No agreement on what it means
Tools to opt-out of tracking	Difficult to use
AdChoices icon	Nobody knows what it means and people are afraid to click on it

Are They Actually Any Different? Comparing Thousands of Financial Institutions' Privacy Practices

Lorrie Faith Cranor, Kelly Idouchi, Pedro Giovanni Leon, Manya Sleeper, Blase Ur, WEIS 2013



FACTS	WHAT DOES PNC DO WITH YOUR PERSONAL INFORMATION?
Why?	Financial companies choose how they share your personal information. Federal law gives consumers the right to limit some but not all sharing. Federal law also requires us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand what we do.
What?	The types of personal information we collect and share depend on the product or service you have with us. This information can include: Social Security number and income Account balances and account transactions Credit scores and payment history
How?	All financial companies need to share customers' personal information to run their everyday business. In the section below, we list the reasons financial companies can share their customers' personal information, the reasons PNC chooses to share, and whether you can limit this sharing.

Reasons we can share your personal information	Does PNC share?	Can you limit this sharing?
For our everyday business purposes — such as to process your transactions, maintain your account(s), respond to court orders and legal investigations, or report to credit bureaus	Yes	No
For our marketing purposes — to offer our products and services to you	Yes	No
For joint marketing with other financial companies	Yes	Yes
For our affiliates' everyday business purposes — information about your transactions and experiences	Yes	No
For our affiliates' everyday business purposes — information about your creditworthiness	Yes	Yes
For our affiliates to market to you	Yes	Yes
For nonaffiliates to market to you	No	We don't share

To limit our sharing	 Call 1-800-762-2118 — our menu will prompt you through your choice(s) Visit us online: www.PNC.com/privacy (Online Banking customers only.) Please note: If you are a new customer, we can begin sharing your information 30 days from the date we sent this notice. When you are no longer our customer, we continue to share your information as described in this notice. However, you can contact us at any time to limit our sharing. 	
Questions?	Call 1-800-762-2118	
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Gramm-Leach Bliley Act (1999)

- Mandated annual privacy disclosures
- Disclosures were full of fine print, difficult to read and compare



Standardized notice

- Eight federal agencies jointly released a model privacy form (2009)
 - Two pages
 - Optional, but widely adopted
 - Safe harbor

Model Privacy Form

Pay (insert date)

FACTS	WHAT DOES [NAME OF FINA WITH YOUR PERSONAL INFO		O Hev. (insert date
Why?	Financial companies choose how they share your personal information. Federal law gives consumers the right to limit some but not all sharing. Federal law also requires us to tell you how we collect, share, and protect your personal information. Please read this notice carefully tunderstand what we do.		lso requires us to tell you
What?	The types of personal information we have with us. This information can in Social Security number and [inco [account balances] and [paymen [credit history] and [credit scores	clude: ome] t history]	the product or service you
How?	All financial companies need to share customers' personal information to run their everyday business. In the section below, we list the reasons financial companies can share their customers' personal information; the reasons [name of financial institution] chooses to share; as whether you can limit this sharing.		nies can share their
Reasons we can	share your personal information	Does [name of financial institution] share?	Can you limit this sharing?
such as to proces your account(s), r	/ business purposes— se your transactions, maintain espond to court orders and legal report to credit bureaus		
For our marketin to offer our produ	g purposes— cts and services to you		
For joint marketi	ing with other financial companies		
	everyday business purposes— your transactions and experiences		
	' everyday business purposes – your creditworthiness		
For our affiliates	to market to you		
For nonaffiliates	to market to you		
To limit our sharing	Call [phone number]—our ment Visit us online: [website] or Mail the form below Please note: If you are a new customer, we can be sent this notice. When you are no lot described in this notice. However, you can contact us at any	egin sharing your information [30] days from the date we
Questions?	Call [phone number] or go to [websit	e]	
_			

Leave Blank ☐ Do not share information about my creditworthiness with your affiliates for their everyday [If you have a joint account, your choice(s) Do not allow your affiliates to use my personal information to market to me. will apply to Do not share my personal information with nonaffiliates to market their products and everyone on your services to me. account unless Mail to: you mark below. □ Apply my [Name of Financial Institution] choices only [Address1] to me] [Address2] [Account #] [City], [ST] [ZIP]

Page 2

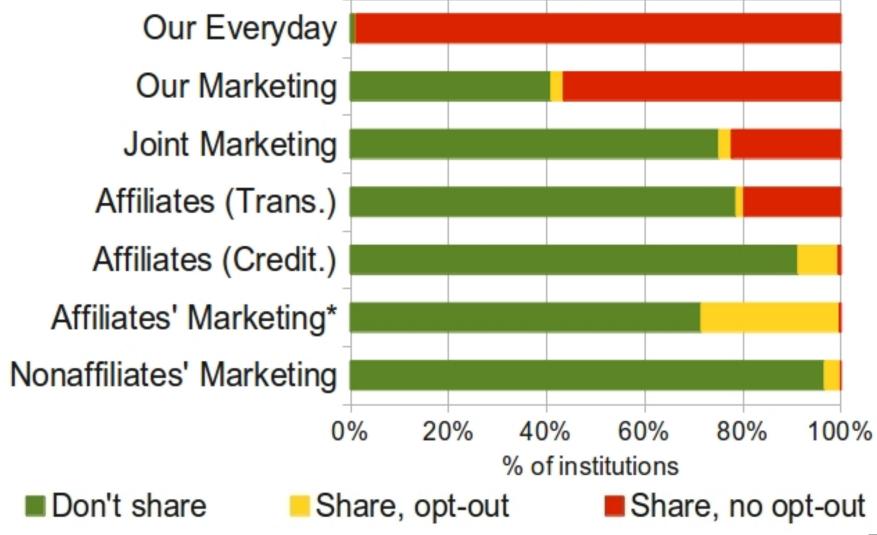
Who we are

11110 110 1110	
Who is providing this notice?	[insert]
What we do	
How does [name of financial institution] protect my personal information?	To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer safeguards and secured files and buildings. [insert]
How does [name of financial institution] collect my personal information?	We collect your personal information, for example, when you [open an account] or [deposit money] [pay your bills] or [apply for a loan] [use your credit or debit card] [We also collect your personal information from other companies.] OR [We also collect your personal information from others, such as credit bureaus, affiliates, or other companies.]
Why can't I limit all sharing?	Federal law gives you the right to limit only sharing for affiliates' everyday business purposes—information about your creditworthiness affiliates from using your information to market to you sharing for nonaffiliates to market to you State laws and individual companies may give you additional rights to limit sharing. [See below for more on your rights under state law.]
What happens when I limit sharing for an account I hold jointly with someone else?	[Your choices will apply to everyone on your account.] OR [Your choices will apply to everyone on your account—unless you tell us otherwise.]
Definitions	
Affiliates	Companies related by common ownership or control. They can be financial and nonfinancial companies. • [affiliate information]
Nonaffiliates	Companies not related by common ownership or control. They can be financial and nonfinancial companies. • [nonaffiliate information]
Joint marketing	A formal agreement between nonaffiliated financial companies that together market financial products or services to you. • [joint marketing information]
Other important information	
[insert other important information]	
[moore outer important imormation]	

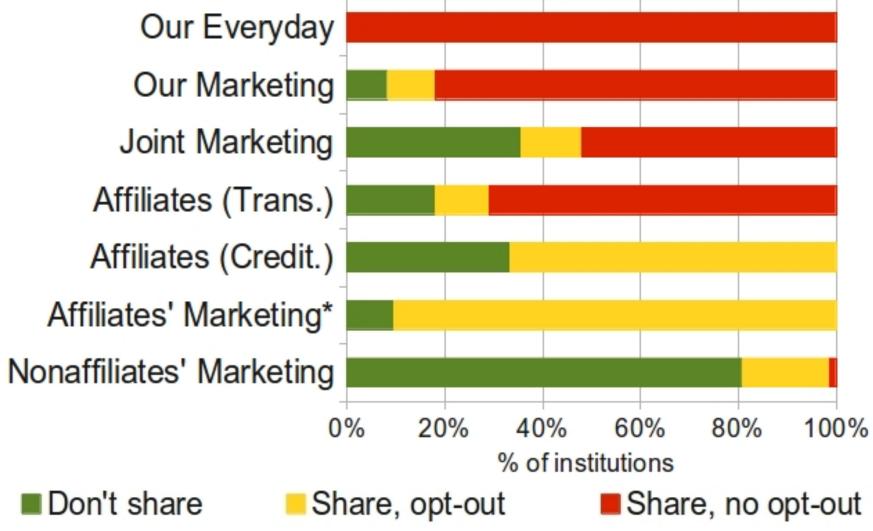
Data collection and extraction

- FDIC directory of 7,072 institutions
- Download top 10 results for Google query:
 - FACTS WHAT DOES [NAME OF FINANCIAL INSTITUTION] DO WITH YOUR PERSONAL INFORMATION?
- Restrict to institution's web domain
- Convert HTML or PDF to text
- Regular expressions (pattern matching)
 - Structure of document
- Manual verification: 90%+ accurate per section on a random sample of 50 policies

Reasons for sharing



100 largest banks



Comparing Credit Cards

Institution	Our everyday	Our marketing	Joint marketing	Affiliates- Trans.	Affiliates- Credit.	Affiliates' Marketing	Non- affiliates' marketing
Capital One, Chase, Discover, HSBC							
Bank of America, Citi							
Am. Ex.							
Barclays							
GE Capital							
U.S. Bank							
Wells Fargo							



Share, opt-out

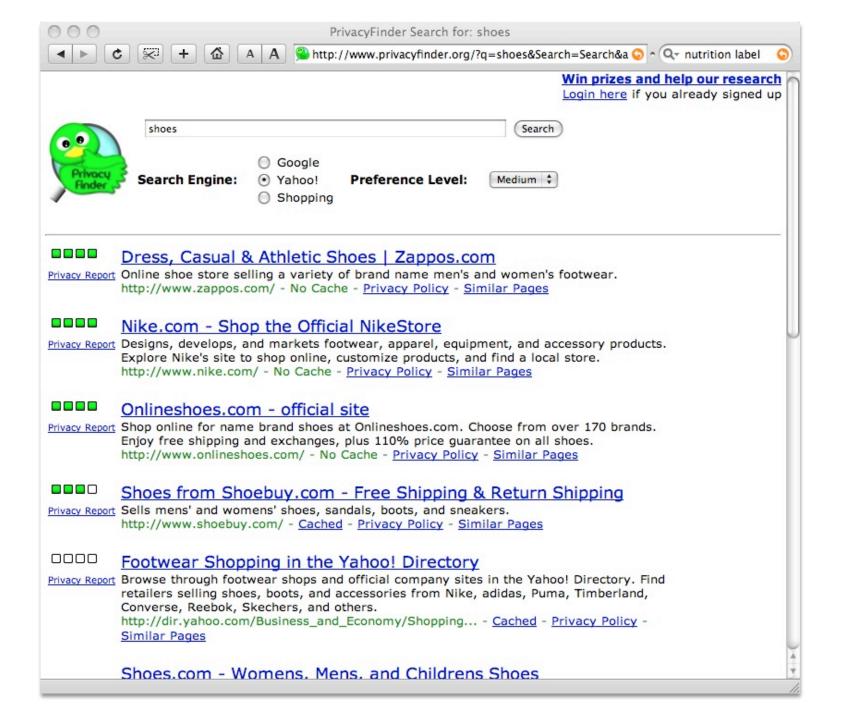
[■] Share, no opt-out

Logistic Regressions

- Dependent variable: {Share, Do not share}
- Independent variables: assets, state, specialization, regulator, etc.
- Significant factors included:
 - OCC district (geographic location)
 - Number of offices
 - Member or not of a bank holding company

Banks are not all the same

- Banks have different privacy policies
- Many banks do little sharing of customer data
- No easy way for consumers to find banks with good privacy policies



What Info is Collected, and How

What: 24 options, SSN + choose exactly 5

What?

The types of personal information we collect and share depend on the product or service you have with us. This information can include:

- Social Security number and [income]
- [account balances] and [payment history]
- [credit history] and [credit scores]
- How: 34 options, choose exactly 5

How does [name of financial institution] collect my personal information?

We collect your personal information, for example, when you

- [open an account] or [deposit money]
- [pay your bills] or [apply for a loan]
- [use your credit or debit card]

 The most commonly used terms were the examples listed in the model

Curiosities Encountered

Self-contradictory statements (15)



Curiosities Encountered

Self-contradictory statements (15)

Does Geneva State Bank share?	Can you limit this sharing?
Yes	We don't share
Yes	We don't share
Yes	We don't share

Curiosities Encountered

Self-contradictory statements (15)

Does Geneva State Bank share?	Can you limit this sharing?
Yes	We don't share
Yes	We don't share
Yes	We don't share

- 24 institutions appear to be violating the Fair Credit Reporting Act (FCRA)
 - Not providing required opt-outs

Takeaways

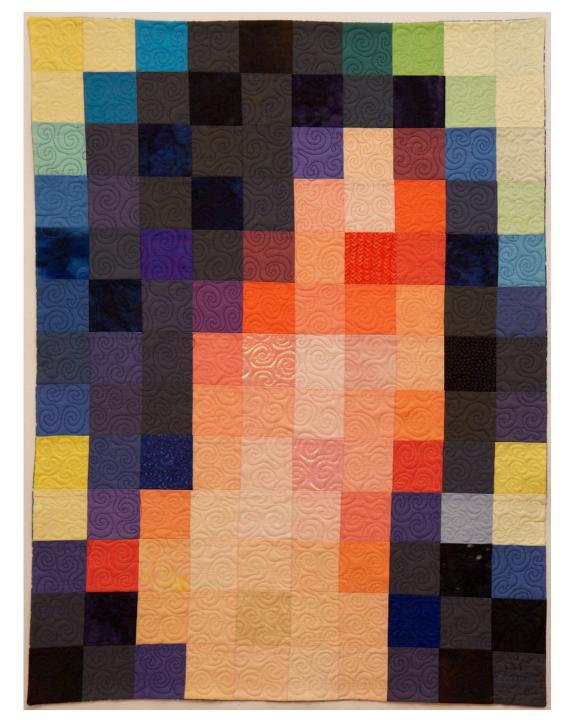
- Adoption happens when there are incentives
- Institutions are actually different!
 - Largest institutions have the worst practices
 - Opportunity for consumer privacy choice
- But we need to help consumers find the banks with good privacy
- Model form needs some improvement

How effective is privacy notice and choice in practice?

How to make notice and choice more effective

- Incentives for adoption
- Enforcement (legal and technical)
- Baseline requirements
- Standardized notice formats

- Machine-readable notice formats
- Reduce ambiguity
- Link to full disclosure
- Comparison tools
- More research



Carnegie Mellon University CyLab



Engineering & Public Policy

