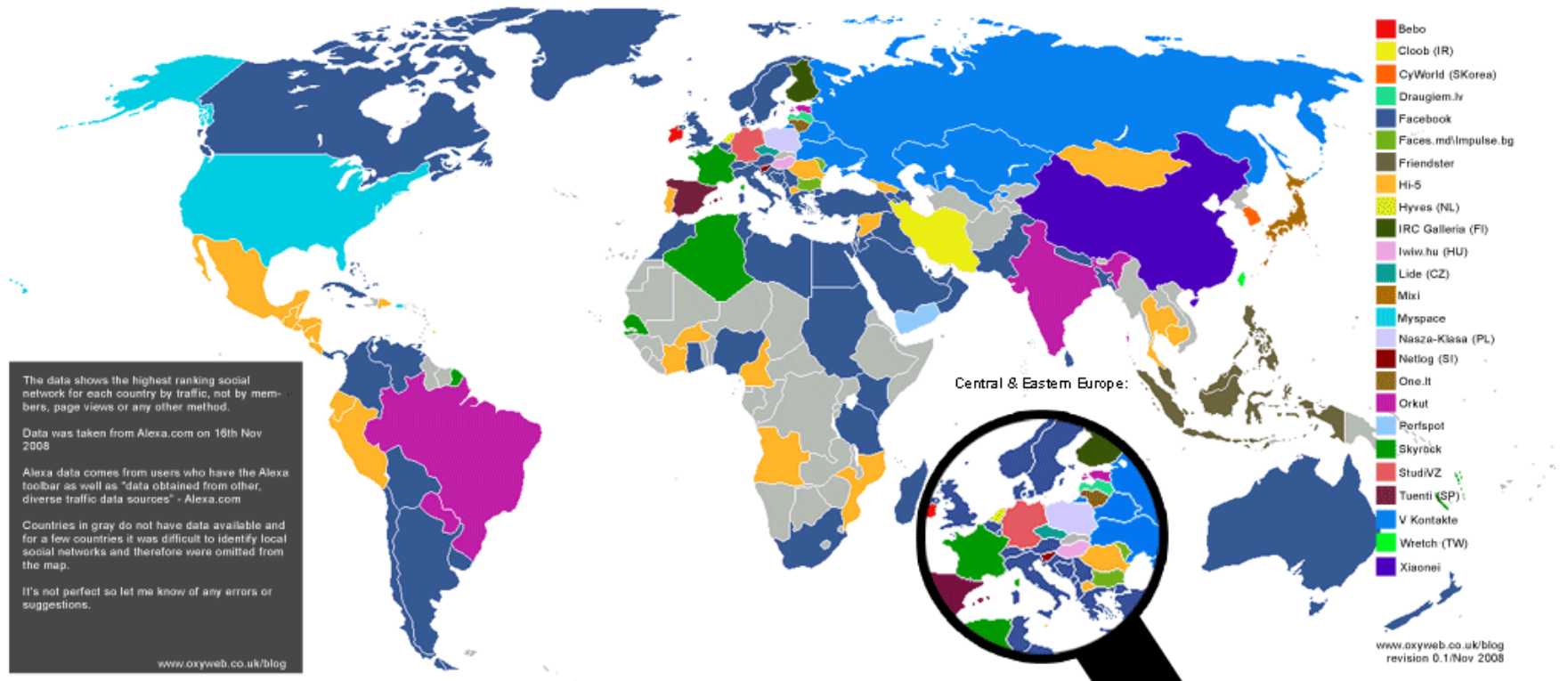


# The Privacy Jungle

## On The Market for Data Protection in Social Networks

Joseph Bonneau, Sören Preibusch

# Motivation



[www.oxyweb.co.uk/blog](http://www.oxyweb.co.uk/blog)

# Research Questions

- What does the **global SN market** look like?
- How do market conditions **impact privacy**?
- Do SN operators **compete on privacy**?

# Methodology and Scope

- Survey of  **$N=45$**  popular social networking sites
- **250+ criteria** evaluated for each site
  - ▬ General Site Characteristics
  - ▬ Privacy Claims
  - ▬ Privacy Controls
  - ▬ Privacy Policies
- Synthetic scores for privacy, functionality

# Sample Coverage: Sites Included

## General Purpose

Facebook  
hi5  
Orkut  
LiveJournal  
NetLog  
PerfSpot  
meinVZ  
Badoo  
CyWorld  
Xanga  
BlackPlanet  
MocoSpace  
Impulse  
Bahu  
Eons

MySpace  
Bebo  
Friendster  
SkyRock  
Tagged  
Live Spaces  
Multiply  
Sonico  
Ning  
MyYearbook  
Plaxo  
Hyves  
Yonja  
Nexopia

Last.fm  
Flixster  
Imeem  
BuzzNet

LinkedIn  
XING  
Viadeo

Twitter

## Niches

Classmates.com  
myLife

ExperienceProject  
Kaioo  
Imbee

Habbo  
Gaia Online  
CouchSurfing

# An Evolving Market

- Most sites very **young**: median age **5.1 years**
- No established **business model**: **17 / 45** sites offer subscription
- Wide **diversity** of features, privacy controls
- Many sites evolved from **other initial purposes**

*All websites expand until users can add each other as friends.*

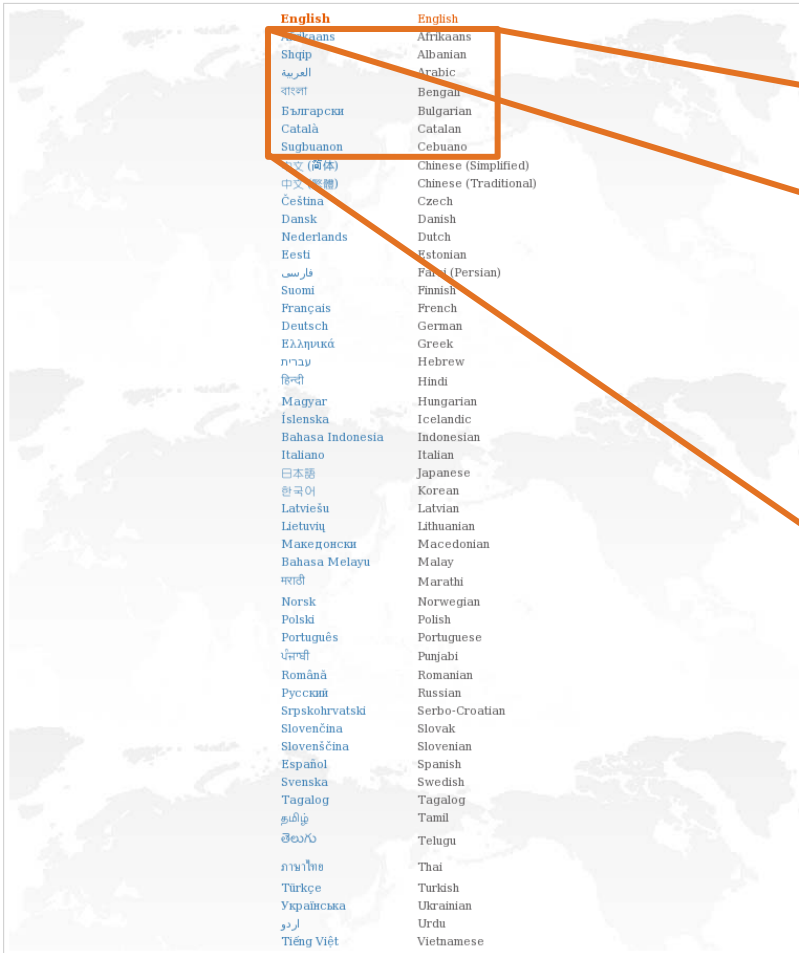
# Competition

1. Google UK
2. Facebook
3. Google
4. YouTube
5. Yahoo!
6. Windows Live
7. BBC
8. eBay UK
9. MSN
10. Wikipedia
11. Blogger
12. Amazon UK
13. Bebo
14. MySpace
15. Twitter
16. Flickr

Alexa Traffic Rankings, UK

# Globalisation

Please select your Language:



Afrikaans  
Shqip  
العربية  
বাংলা  
Български  
Català  
Sugbuanon

Afrikaans  
Albanian  
Arabic  
Bengali  
Bulgarian  
Catalan  
Cebuano

PerfSpot (46 Languages)





# Rapidly Changing Market...

## bahu

*Dear Friends,*

*As some have noticed, Bahu is not accessible. A rumor has been circulating a few times already according to which the site doors were going to be closed. In times of the crisis, we had many problems to maintain the activity of the site. Without preventing us, our hosting company cut the access to our servers not leaving us time to warn you in order to save your messages, photos... certainly we should have reacted earlier.*

*At all events, I unite with the team to thank you for having taken part in this so great adventure which have started nearly two years and attracted more than 2 million members.*

*I made a point of saying a large thank you to Manu, my parents, Sihame, Saïd, Albin, Marc and my uncle who supported me at all of my beginnings. Thanks so much to all the Bahu team: Fabien, Jean-François, Oleg, Patrick, Benoit, Amélie, Ludo, Harold, Michal, Lina, Christiane, Monica, Fabio, Angeje, Aurere, Thomas, Aurélie, Tony, Alexis, Clement, Mateusz, Holly, Krystian and all those whom I forget...*

*Thank you so much!! For those who are interested, I want you to know, that I am launching a new project named [www.sofamous.com](http://www.sofamous.com) in a few days. I hope to find you there very soon.*

*Stephane Soler (Ramses)  
Founder of Bahu*

# Data

- Consistent snapshot as of February 2009
- Available Online:  
[http://preibusch.de/publ/privacy\\_jungle/](http://preibusch.de/publ/privacy_jungle/)

# Lacking standards

- Varying policy length (**32 .. 8455 words**)
- Low and erroneous P3P adoption:
  - ▬ **7 / 45** full P3P
  - ▬ **10 / 45** compact P3P

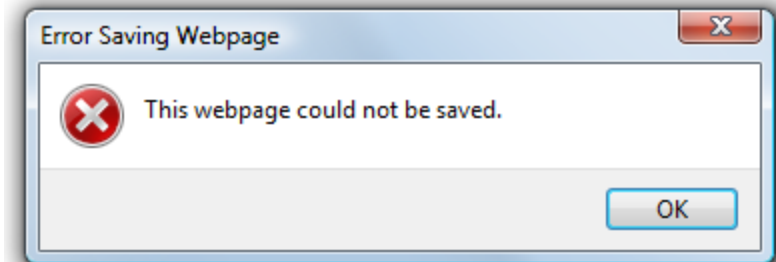
## Step 2-1: Compact Policy Validation

Compact Policy has **syntax errors or warnings**.

**Error:** HONK is not valid compact policy element.

# Poor usability

- Content problems
  - ▬ undated (**13 / 45**)
  - ▬ no postal address (**15 / 45**)
- Technically inaccessible
  - ▬ new window (**15 / 45**)
  - ▬ requires JavaScript (**4 / 45**)
  - ▬ unprintable, unsavable



# Underdesigned privacy settings UI

## **enable photo tagging:**

yes

- People can tag my photos with their friends
- My friends can tag me in photos
- People can see a list of photos I am tagged in

Orkut

# Excess diffuseness

## Account

User since February 23, 2009

You have a **Personal** account. [View purchase history](#) | [Compare account types](#)

**Get more when you upgrade**

✔ More Communication Features and Access    ✔ More Powerful Search    [Upgrade](#)

**Introductions: 5 of 5 available**  
Tip: If your Introductions run out, either wait for a recipient to take action or [upgrade your account](#).

**InMails: 0 available** [\[Purchase\]](#)  
InMails let you send business and career opportunities directly to any LinkedIn user. [Learn more.](#)

## Settings

### Profile Settings

#### My Profile

Update career and education, add associations and awards, and list specialties and interests.

#### My Profile Photo

Your profile photo is visible to **your network**.

#### Public Profile

Your public profile displays **full** profile information. <http://www.linkedin.com/pub/upton-simclair/11/93b/29>

#### Manage Recommendations

You haven't received any recommendations.

#### Status Visibility

Your current status is visible to **your connections**.

#### Member Feed Visibility

Your member feed is visible to **your connections**.

### Email Notifications

#### Contact Settings

You are receiving **Introductions and InMails**.

#### Receiving Messages

Control how you receive emails and notifications.

#### Invitation Filtering

You are receiving **all invitations**.

### Home Page Settings

#### Network Updates

Settings for the display of Network Updates on your home page.

#### News

News is currently **shown** on your home page.

### RSS Settings

#### Your Private RSS Feeds

Enable or disable your private RSS feeds.

### Groups

#### Group Invitation Filtering

You are **receiving** Groups Invitations.

### Personal Information

#### Name & Location

Control your name, location, and display name settings.

#### Email Addresses

Your primary email address is currently: [simclairupton@gmail.com](mailto:simclairupton@gmail.com)

#### Change Password

Change your LinkedIn account password.

#### Close Your Account

Disable your account and remove your profile.

### Privacy Settings

#### Research Surveys

Settings for receiving requests to participate in market research surveys related to your professional expertise.

#### Connections Browse

Your connections are **allowed** to view your connections list.

#### Profile Views

Control what (if anything) is shown to LinkedIn users whose profile you have viewed.

#### Viewing Profile Photos

You can view **everyone's** profile photos.

#### Profile and Status Updates

Control whether your connections are notified when you update your status or make significant changes to your profile and whether those changes appear on your company's profile.

#### Service Provider Directory

If you are recommended as a service provider, you **will** be listed.

#### Partner Advertising

Settings for LinkedIn partner websites.

#### Authorized Applications

See a list of websites or applications you have granted access to your account and control that access.

### My Network

#### Using Your Network

Tell us how you want to use your LinkedIn network.

LinkedIn

# Unexpected defaults

## Partner Sites

---

LinkedIn is working with NYTimes.com to use non-personally identifiable information from your LinkedIn profile in order to display a short, customized list of NYTimes.com headlines when you read Business or Technology articles on NYTimes.com. By way of example, a LinkedIn user might see headlines about agriculture if the industry selected in his or her LinkedIn profile is "Farming."

This anonymous profile data will also be used to help users see advertising that is most likely to interest them on NYTimes.com and other sites.

LinkedIn will not share personally identifiable information to bring you these services.

**Allow customization and enhanced advertising on NYTimes.com and other partner sites?**

- Yes
- No

[Save Changes](#) or [Cancel](#)

LinkedIn



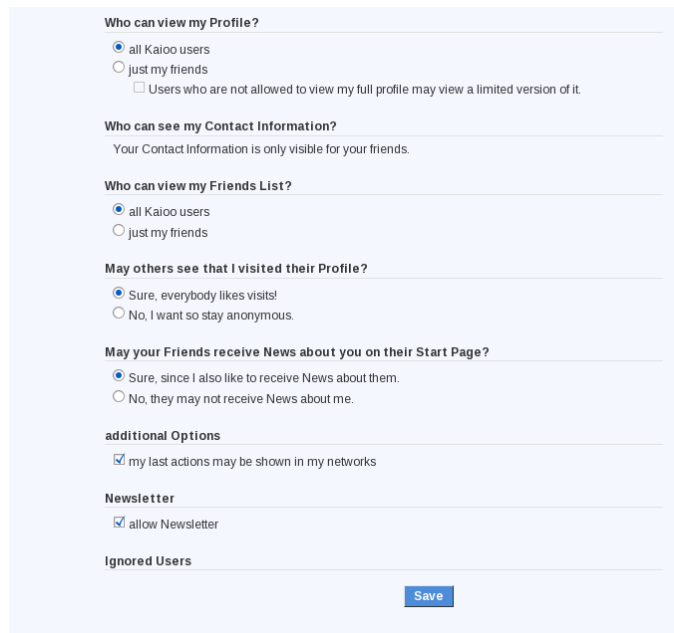
# The bigger, the better

- **Privacy score** increases with
  - ▬ Alexa rank ( $p = 0.02$ )
  - ▬ user count ( $p = 0.04$ )
  - ▬ age of site ( $p = 0.07$ )
- **P3P deployment** more often on large sites ( $p = 0.08$ )



# Privacy is Functionality, too

- More functionality: better privacy controls ( $p < 0.01$ )
- Niche sites: worse privacy controls ( $p = 0.03$ )



Who can view my Profile?

all Kaioo users  
 just my friends  
 Users who are not allowed to view my full profile may view a limited version of it.

Who can see my Contact Information?

Your Contact Information is only visible for your friends.

Who can view my Friends List?

all Kaioo users  
 just my friends

May others see that I visited their Profile?

Sure, everybody likes visits!  
 No, I want so stay anonymous.

May your Friends receive News about you on their Start Page?

Sure, since I also like to receive News about them.  
 No, they may not receive News about me.

additional Options

my last actions may be shown in my networks

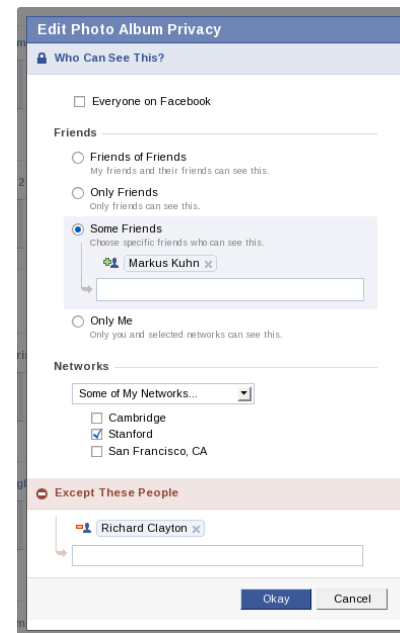
Newsletter

allow Newsletter

Ignored Users

Save

Kaioo



Edit Photo Album Privacy

Who Can See This?

Everyone on Facebook

Friends

Friends of Friends  
My friends and their friends can see this.

Only Friends  
Only friends can see this.

Some Friends  
Choose specific friends who can see this.  
Markus Kuhn x

Only Me  
Only you and selected networks can see this.

Networks

Some of My Networks...

Cambridge  
 Stanford  
 San Francisco, CA

Except These People

Richard Clayton x

Okay Cancel

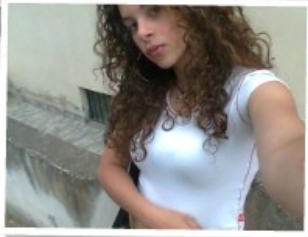
Facebook

# Growth is Primary

It's **the greatest place to meet**

... because it has more cool people than my local phonebook!

What else is it? >>



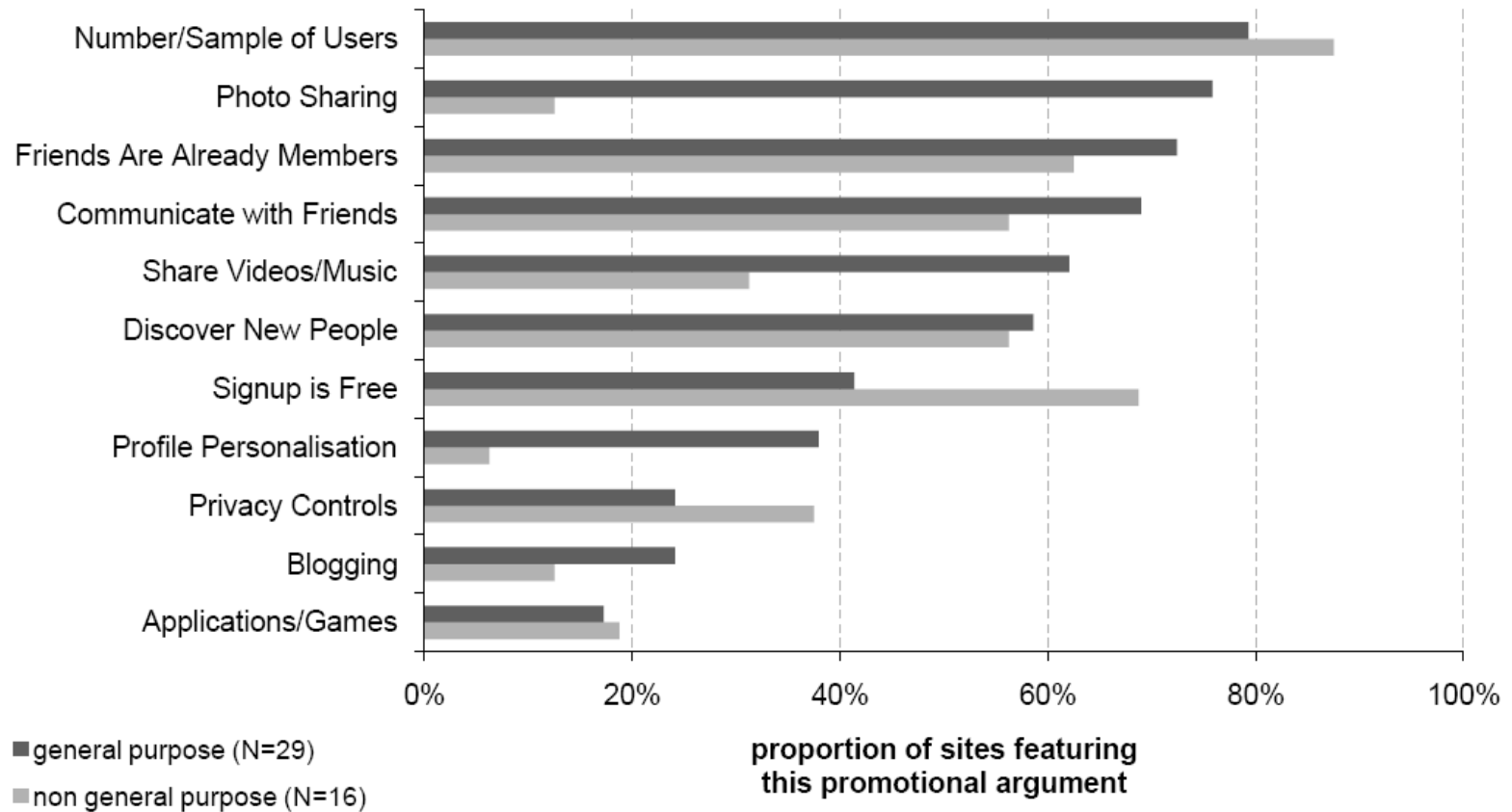
 **Find people you know here**

Already 33,082,535 people on Badoo!

33,082,535 people are on Badoo, 148,411 online now!

Badoo

# Promotional Technique Prevalence



# Privacy as a Tertiary Argument



**Eons is the online community for BOOMers and beyond.**

On Eons, you can...

- Stay in touch with friends and family online
- Share photos and videos
- Discuss your passions and interests
- Control your privacy
- Find friends you haven't seen in *eons*
- Challenge yourself and others to brain games
- And, most of all, have fun!

**Get ready to BOOM Your Life!**

Eons

# Self-Promotion in Privacy Policies

At Badoo your **privacy is of paramount importance**. As the custodians of your personal information, we have developed this policy to ensure that your privacy is always protected while you are using the Badoo network.



- Badoo's privacy score: **0.23** (lowest in sample)
- Sites promoting privacy have less favourable practices ( $p = 0.11$ ).

# Act good and don't make it known!

- The **Privacy Communication Game**:
  - ▬ avoid privacy awareness
  - ▬ address existing privacy concerns
  
- The **Strategy**:
  - ▬ hide any privacy notices from mainstream users
  - ▬ convince users who bother looking it up
  - ▬ dissimulate concerns, avoid criticism, discourage critics

# Decreasing Privacy Salience

[About Us](#) | [Contact Us](#) | [Developers](#) | [Share Your Profile](#) | [Help](#) | [Advertise](#) **New** | [Terms of Service](#) | [Privacy Policy](#)

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# Playing the Privacy Communication Game

- Privacy seals:

- ▬ on main pages: **0 / 45**

- ▬ on privacy policy: **7 / 45**

- Promoting privacy :

- ▬ on main page: **4 + 3 / 45**

- ▬ on privacy policy: **34 / 45**

# Thank you very much.

**Questions and comments**

are welcome and highly appreciated.