No Such Thing as a Free Lunch

Google Analytics and User Privacy

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Montana State University
DLF Forum 2016

Research Team Support



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University of New Mexico

- Karl Benedict @kbene

Google Analytics

Google Analytics

Easy to install

Google Analytics

Easy to install
Free to use

Google Analytics

Easy to install
Free to use



Research Motivation

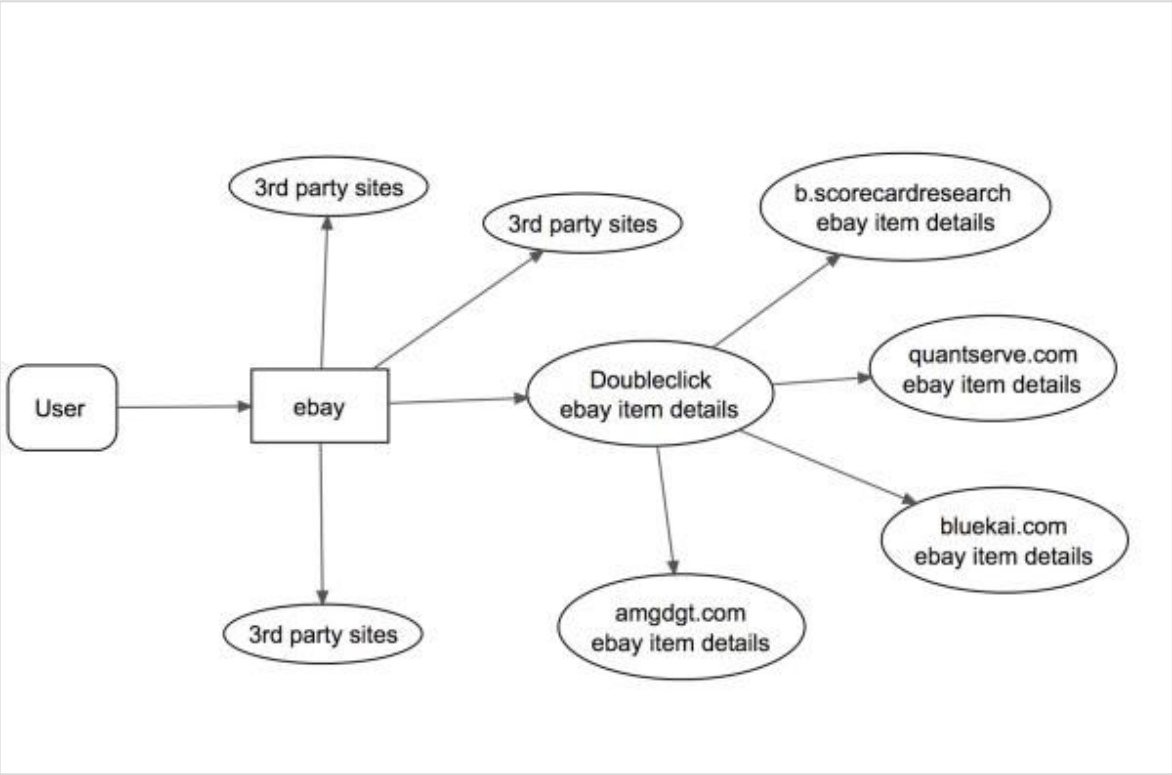
Web Tracking

Web Privacy

Web Tracking

Research Motivation - Web Tracking

Propagation of unintentionally shared information and online tracking
by Rath Kanha Sar and Yeslam Al-Saggaf



Research Motivation - Web Tracking

Internet Jones and the Raiders of the Lost Trackers:
An Archaeological Study of Web Tracking from 1996 to 2016

Adam Lerner*, Anna Kornfeld Simpson*, Tadayoshi Kohno, Franziska Roesner
University of Washington
{lerner,aksimpso,yoshi,franzi}@cs.washington.edu

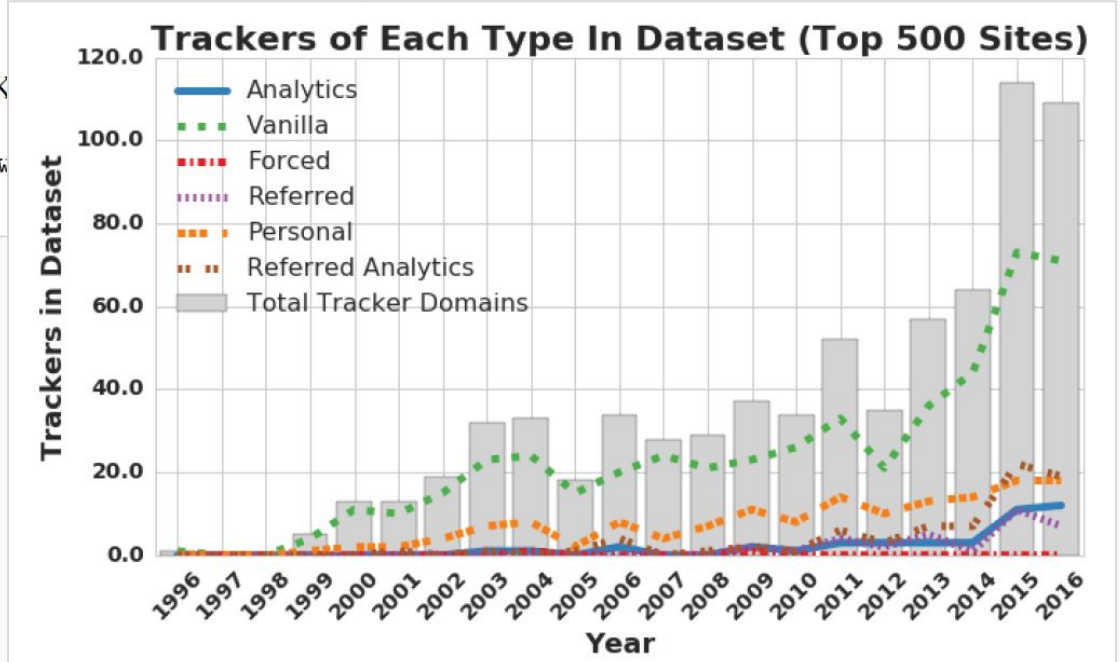
25th USENIX Security Symposium

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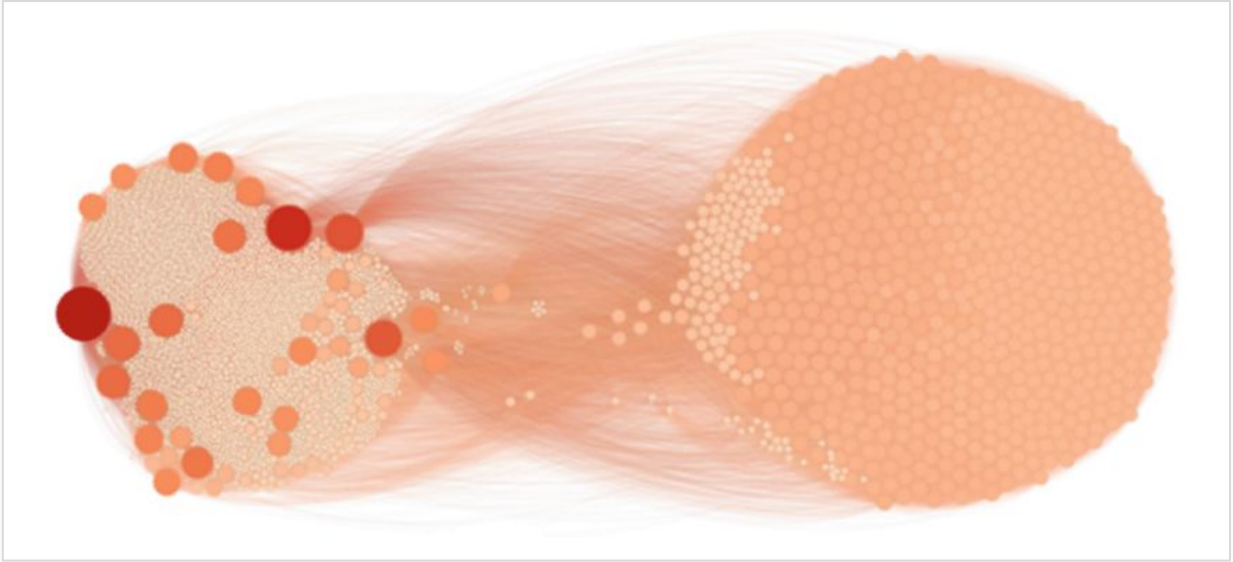
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Research Motivation - Web Tracking

Like a Pack of Wolves: Community Structure of Web Trackers

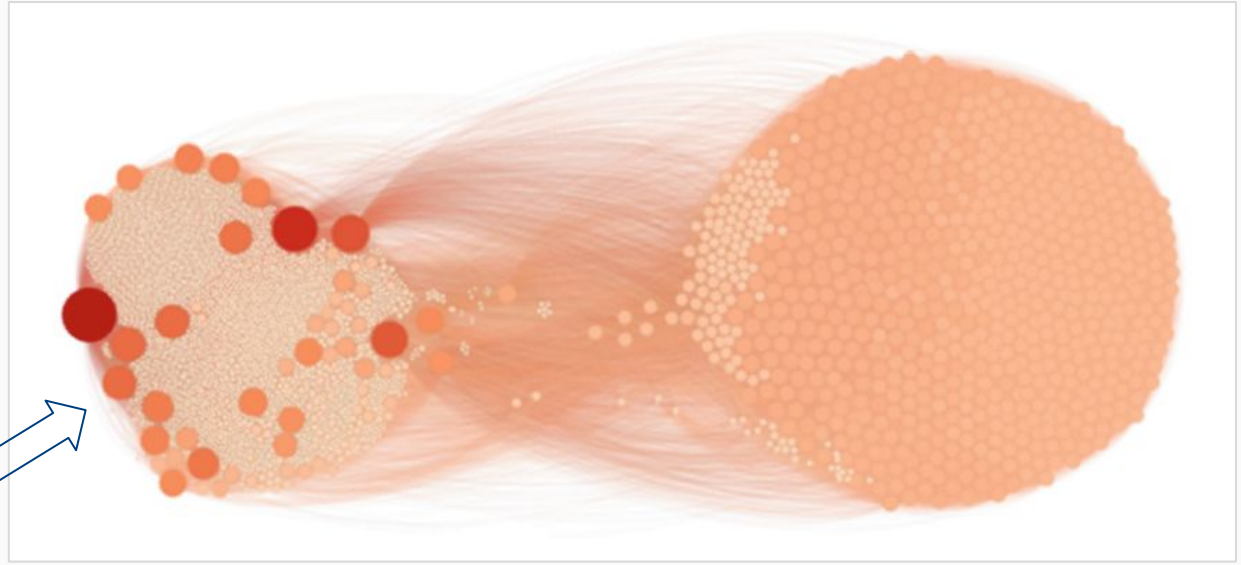
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Research Motivation - Web Tracking

Like a Pack of Wolves: Community Structure of Web Trackers

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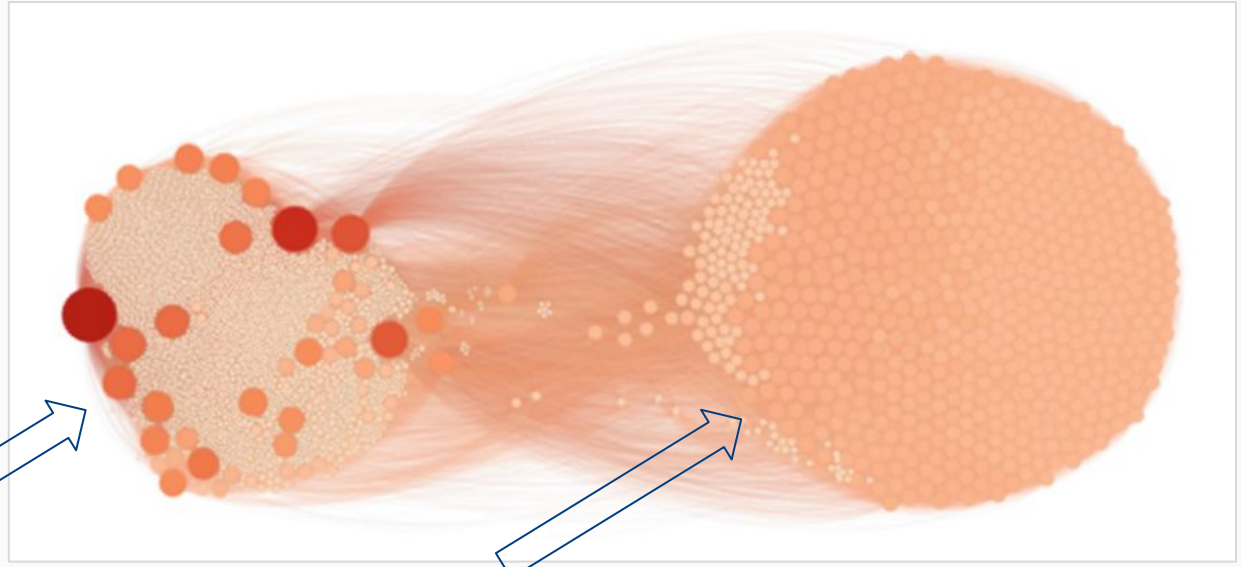


Web Pages

Research Motivation - Web Tracking

Like a Pack of Wolves: Community Structure of Web Trackers

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Web Pages

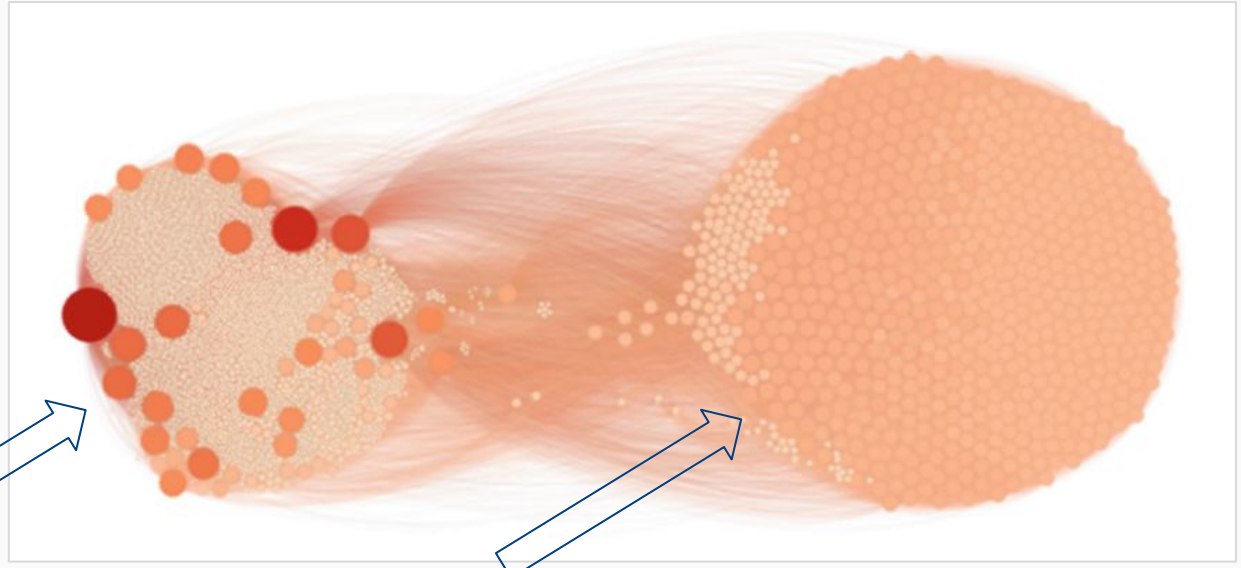
Web Trackers

Research Motivation - Web Tracking

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"From a privacy standpoint, this result is worrying as it highlights the pervasiveness of passive "surveillance" on the web."



Web Pages

Web Trackers

Research Motivation - Web Tracking

Online Tracking:
A 1-million-site Measurement and Analysis

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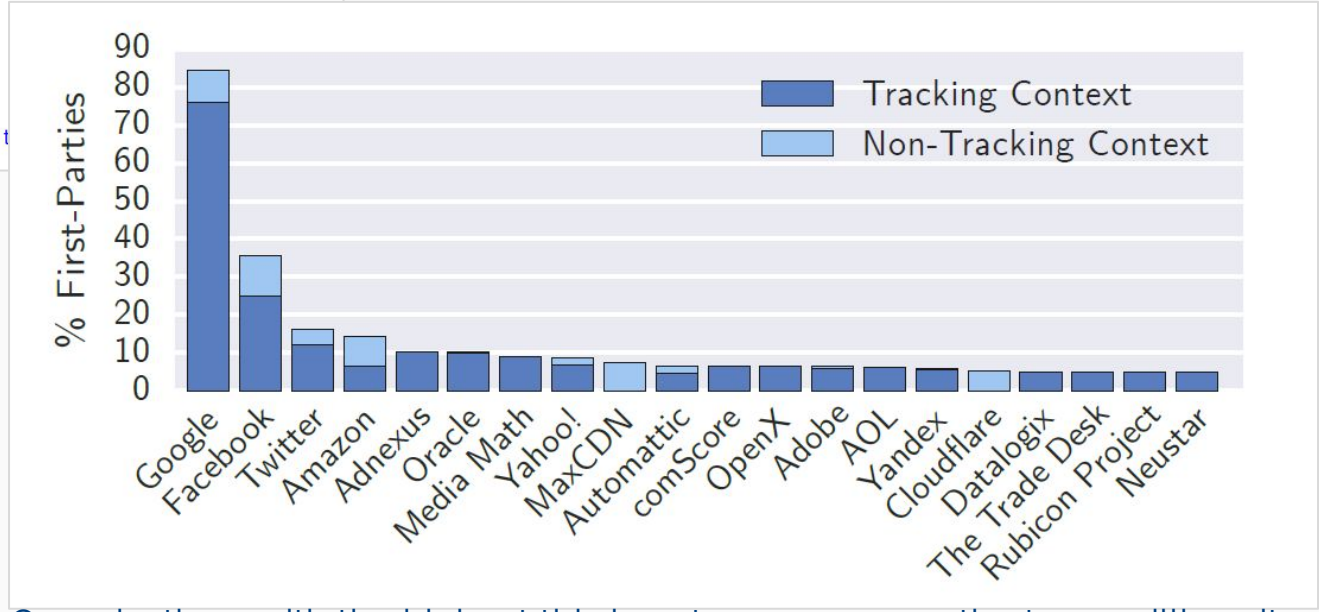
This is an extended version of our paper that appeared at ACM CCS 2016.

Research Motivation - Web Tracking

Online Tracking:
A 1-million-site Measurement and Analysis

Steven Englehardt
Princeton University
ste@cs.princeton.edu

This is an extended version of our paper t



Organizations with the highest third-party presence on the top 1 million sites.

Research Motivation - Web Tracking

Google Has Quietly Dropped Ban on Personally Identifiable Web Tracking

Google is the latest tech company to drop the longstanding wall between anonymous online ad tracking and user's names.

by Julia Angwin
ProPublica, Oct. 21, 2016, 8 a.m.

Research Motivation - Web Tracking

MENU the ONION Woman Stalked Across 8 Websites By Obsessed Shoe Advertisement SEARCH TOP HEADLINES

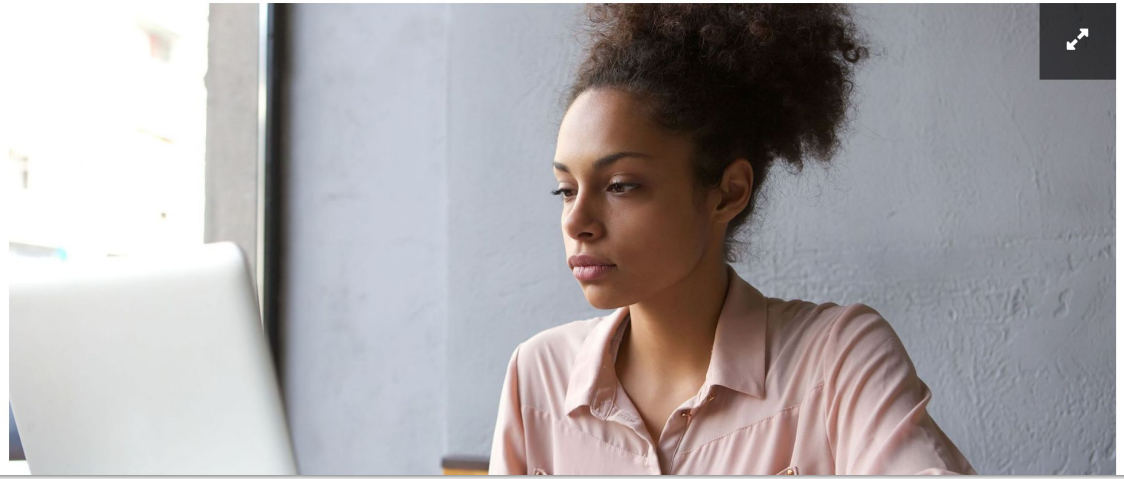
Woman Stalked Across 8 Websites By Obsessed Shoe Advertisement

NEWS IN BRIEF

October 12, 2015

VOL 51 ISSUE 41

News · Technology · Advertising · Fashion



Web Privacy

Research Motivation - Web Privacy

ALA
Library Bill of Rights

"In a library (physical or virtual), the **right to privacy** is the right to open inquiry without having the subject of one's interest **examined or scrutinized by others**."

Research Motivation - Web Privacy

CNI
Privacy in the Age of Analytics

"Libraries collecting data using Google Analytics are realizing they **may be violating the ALA *Library Bill of Rights***...this is but one example of how easily convenient web-based service offerings can come with **unexpected consequences**."

Library Freedom Project
Digital Privacy Pledge

"Library services and resources should be delivered, whenever practical, over **channels that are immune to eavesdropping**."

Research Design

Research Questions

How prevalent is Google Analytics tracking on library websites?

How secure is the connection between the user's device and the library's server?

How secure is the connection between the library's server and Google's server?

Research Design - Questions & Study Population

- How many libraries
  - Use Google Analytics?
  - Have activated intrusive Advertising features?
  - Make an effort protecting patron communications?
- All members to one or more
  - ARL
  - OCLC Research Libraries Partnership
  - DLF

Research Design - Questions & Study Population

- Identified and classified libraries
  - 16 - Canada
  - 22 - United Kingdom (UK)
  - 30 - International OCLC Research Libraries Partnership
  - **211 - United State (US)**
  - 279 - Total
- Requested and analyzed every web page
  - Secure (https) and insecure (http)
  - 9 tests for Google Code configurations

Research Design - Two primary types of web analytics

Sensitive Patron Information

- Search Terms
- Pages Viewed
- Physical Location
- Time of day





HTML

Page Tagging
{JavaScript}

A **Analytics Service** (SaaS)

Adobe

Google Analytics

webtrends

B **Log Files**



WebLog Expert

DSpace

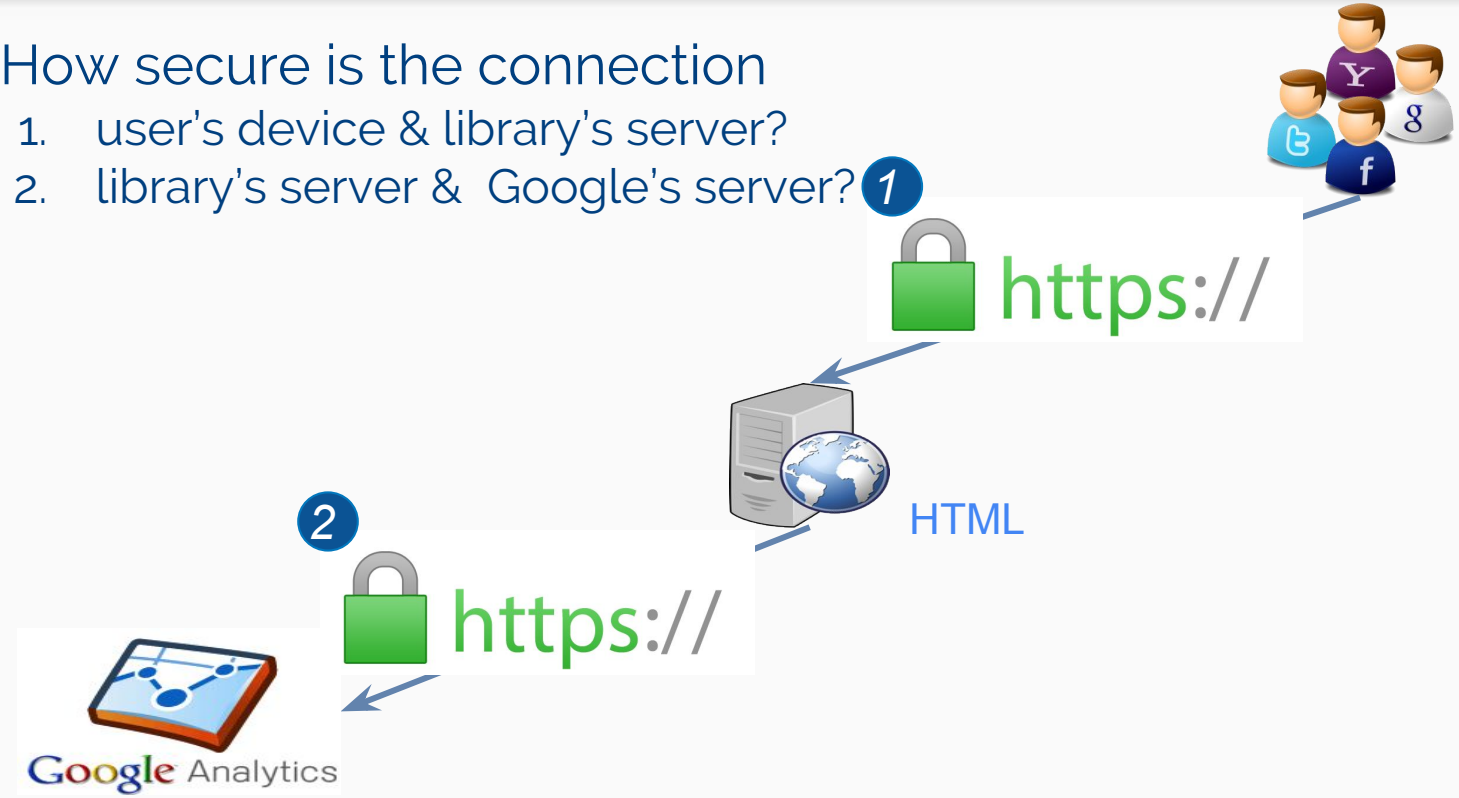
eprints repository software

PIWIK

Have libraries secured point to point communication with patrons?

How secure is the connection

1. user's device & library's server?
2. library's server & Google's server?



Research Results

Have libraries secured point to point communication with patrons?

How secure is the connection

1. user's device & library's server?
2. library's server & Google's server?



1

https:/

63.5% Available



HTML

Page Tagging {JavaScript}



Have libraries secured point to point communication with patrons?

How secure is the connection

1. user's device & library's server?
2. library's server & Google's server?



1

https:/

21.8% Enforced



HTML



Have libraries secured point to point communication with patrons?

How secure is the connection

1. user's device & library's server?
2. library's server & Google's server?





HTML

2



https://

1.4% Used



Google Analytics

Research Results

Country	*Google Analytics*	*Tag Manager*	*Tracking Code*	*Ad Network*	*Google SSL*	*Anonymize IP*
United States	79.6%	19.4%	90.0%	23.7%	1.4%	13.3%

Recommendations for Practice

Recommendations for Practice

1. HTTPS
2. User Education
3. Informed Consent
4. Privacy Policies
5. Risk/Benefit Analysis



PosIT

Heeding the Signals: Applying Web best Practices when Google recommends

Dale Askey & **Kenning Arlitsch**

Pages 49-59 | Published online: 20 Nov 2014

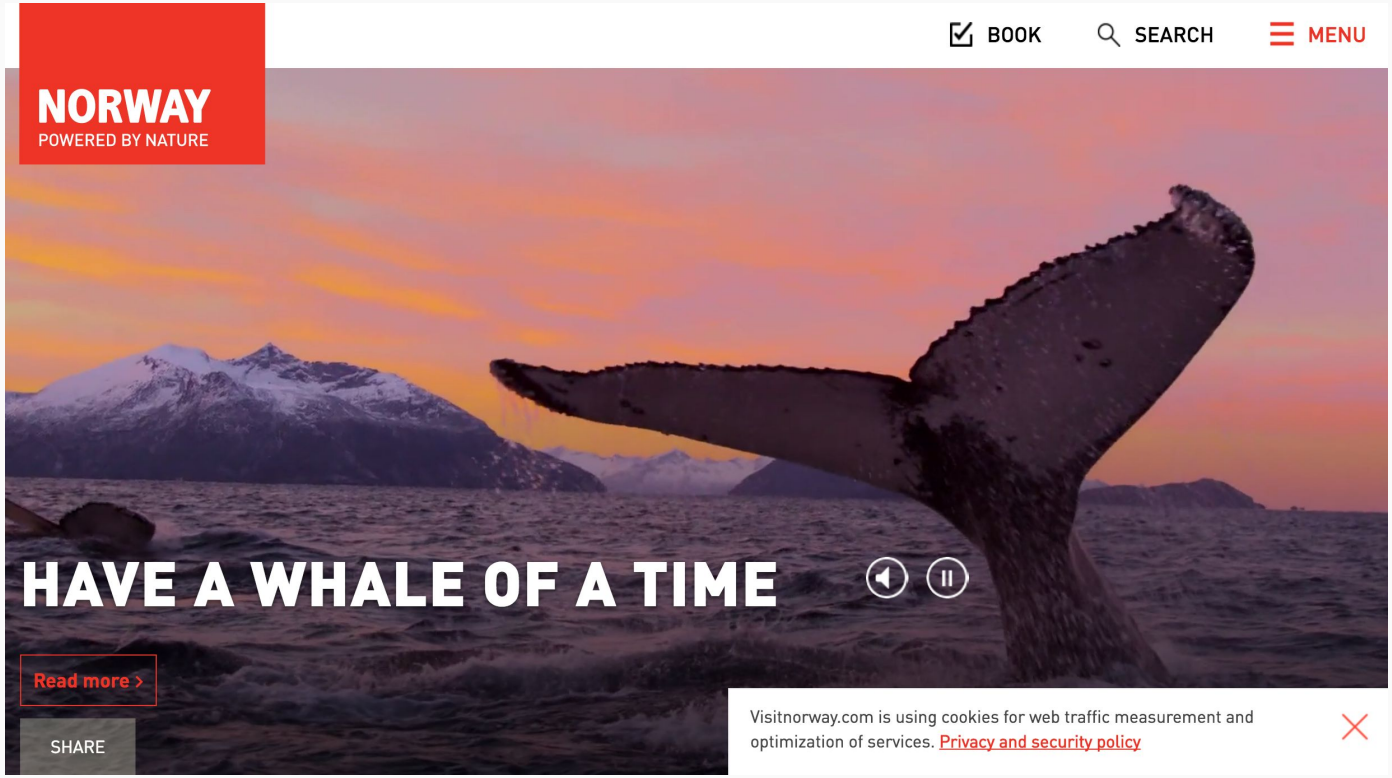
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Recommendations for Practice - User Education

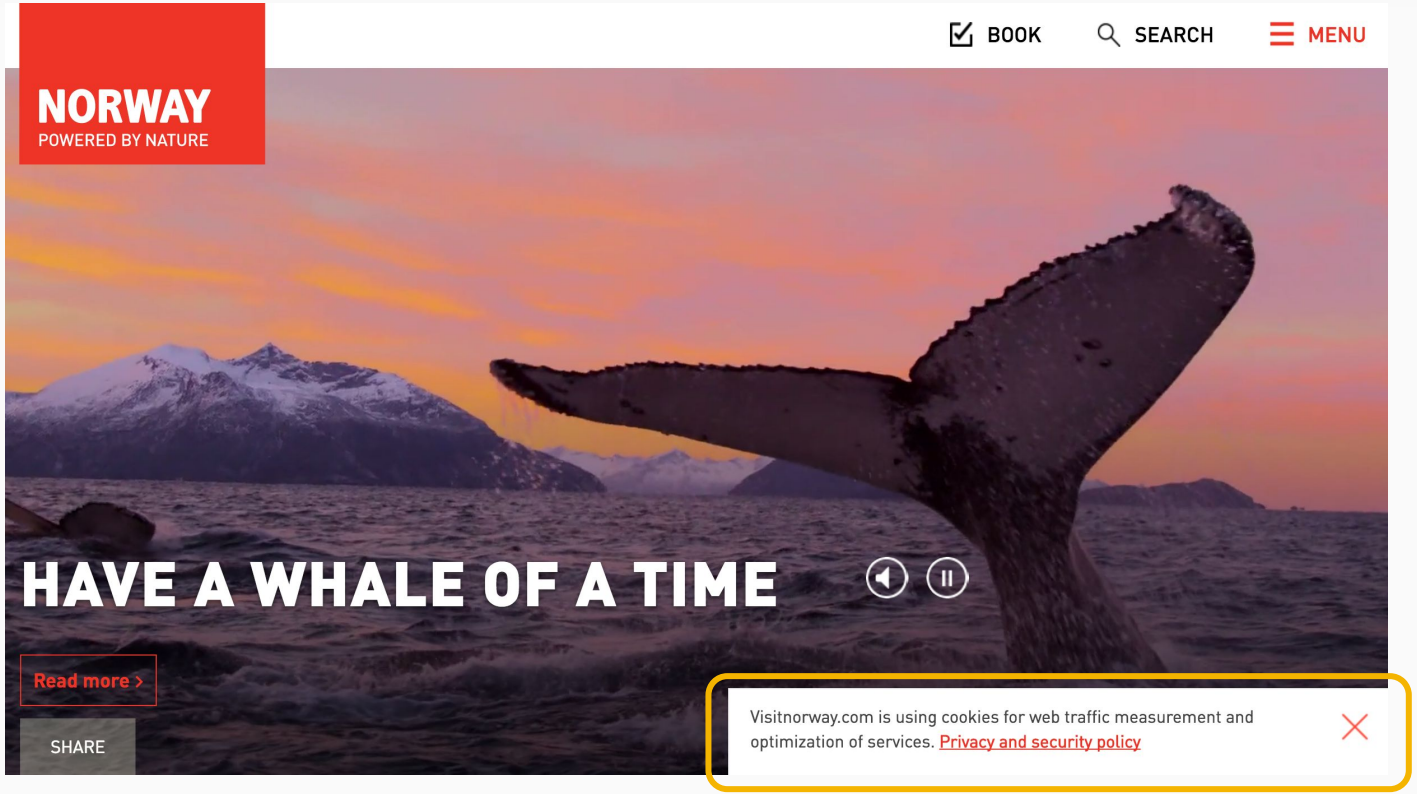
Workshops and other outreach that help your staff and users understand the privacy landscape and tools for mitigating tracking.

Offer cookie notices that communicate your third-party tracking practices to users.

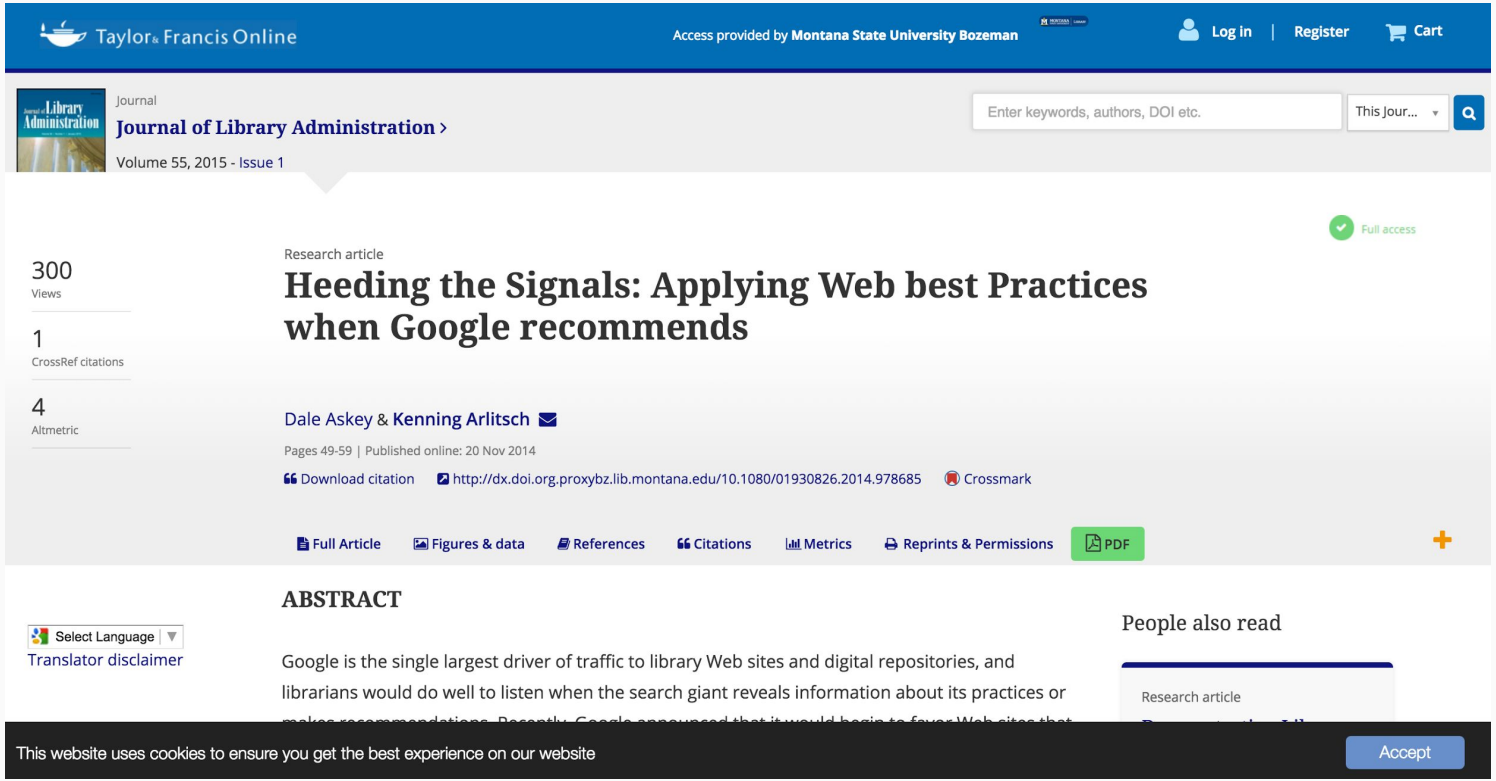
Recommendations for Practice - Informed Consent



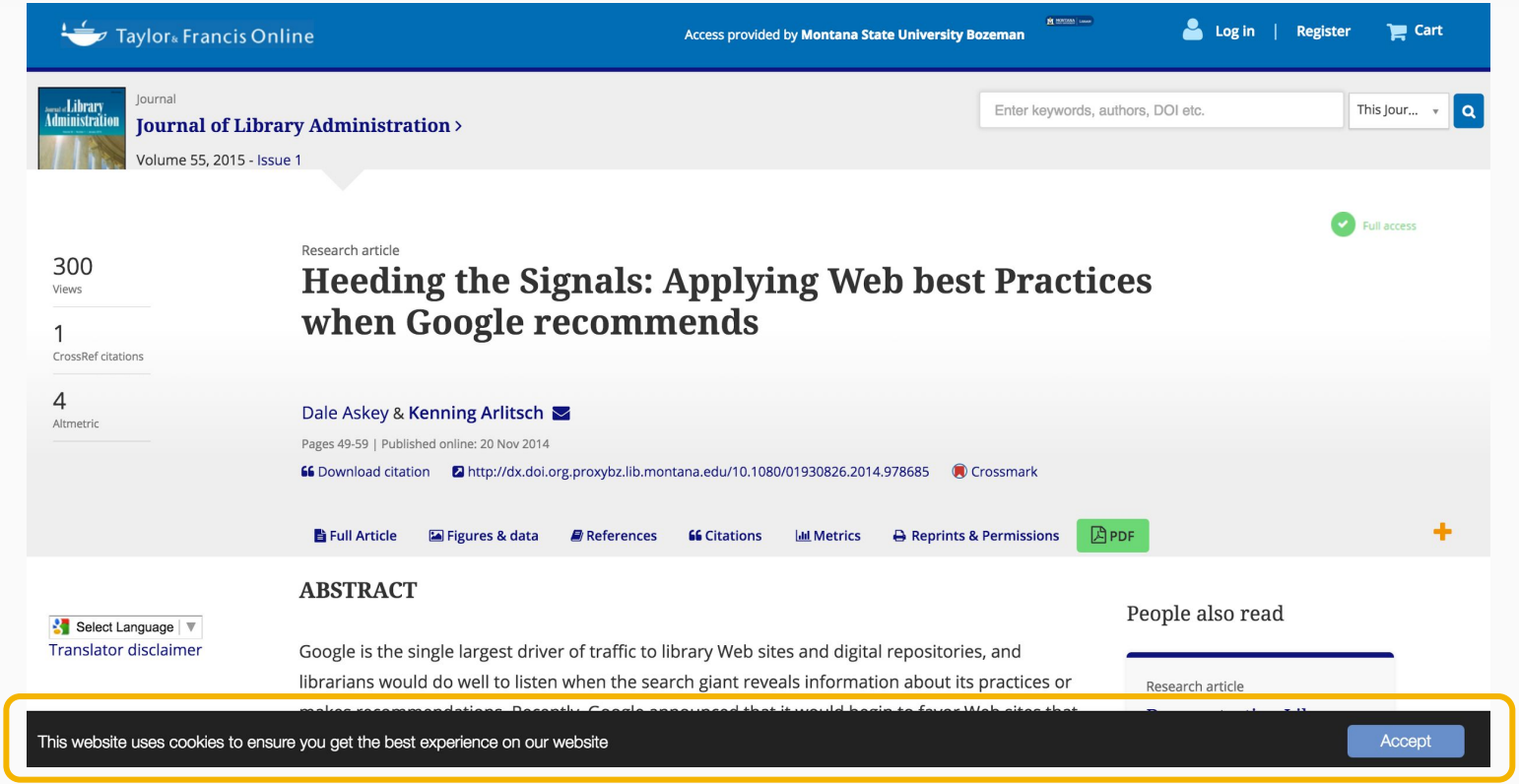
Recommendations for Practice - Informed Consent



Recommendations for Practice - Informed Consent



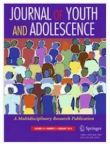
Recommendations for Practice - Informed Consent



Recommendations for Practice - Informed Consent

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Journal of Youth and Adolescence
February 2016, Volume 45, Issue 2, pp 402–416

Online Self-Presentation on Facebook and Self Development During the College Transition

Authors Authors and affiliations

Chia-chen Yang, B. Bradford Brown

Empirical Research
First Online: 03 November 2015
DOI: 10.1007/s10964-015-0385-y

Cite this article as:
Yang, C. & Bradford Brown, B. J Youth Adolescence (2016) 45: 402. doi:10.1007/s10964-015-0385-y

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Abstract

Self-presentation, a central element of young people's identity development, now extends from face-to-face contexts to social networking sites. Online self-presentation may change when youth transition to college, faced with the need to reclaim or redefine themselves in the new environment. Drawing on theories of self-presentation and self development, this study explores changes in youth's online self-presentation during their transition to a residential college. It

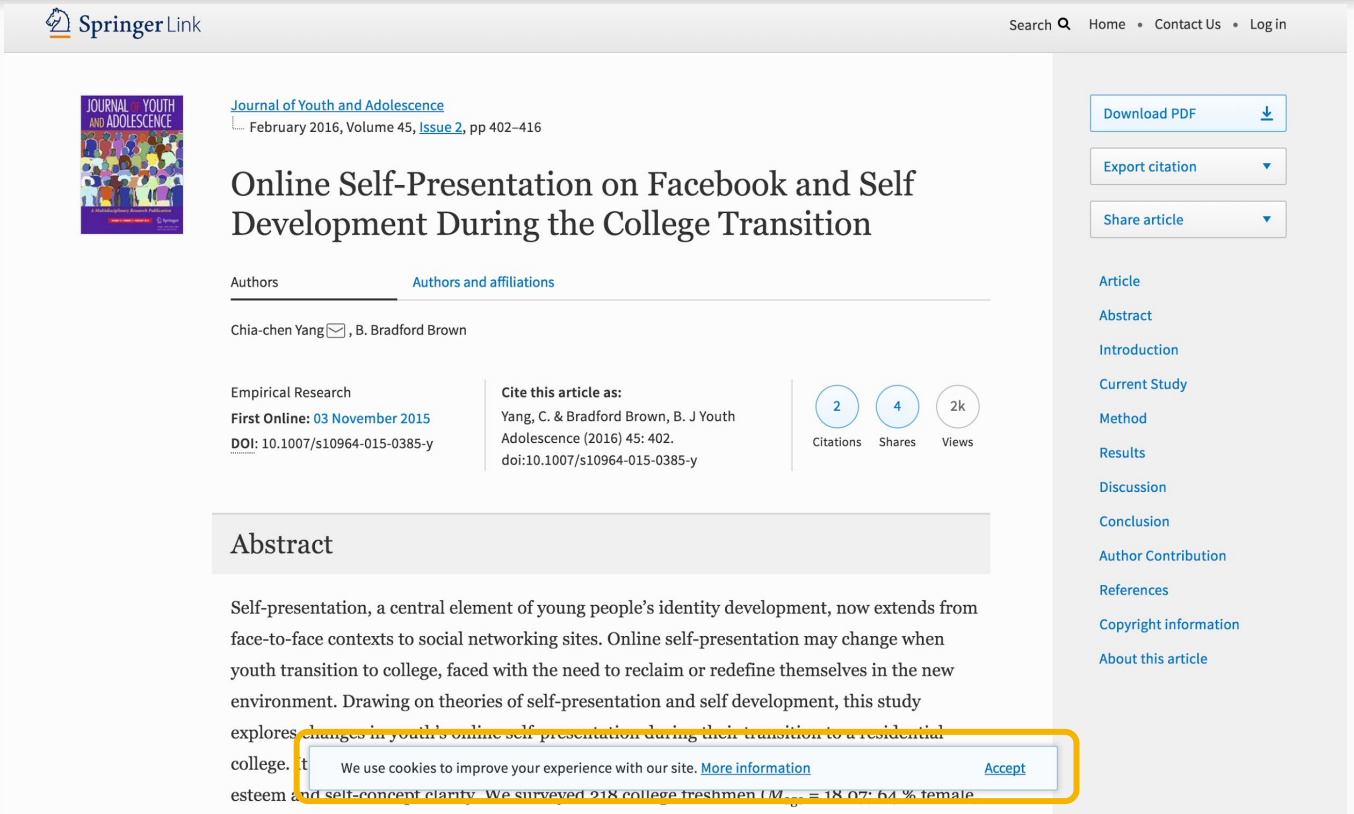
esteem and self-concept clarity. We surveyed 218 college freshmen (M_{age} = 18.07; 64 % female,

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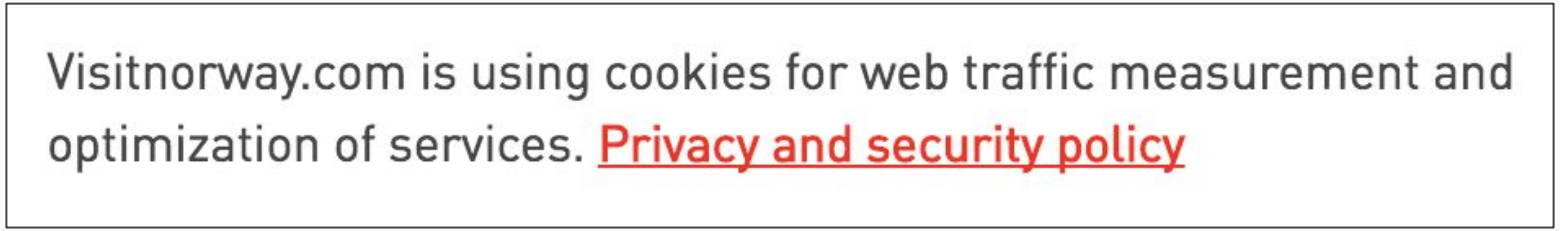
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Introduction
Current Study
Method
Results
Discussion
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Recommendations for Practice - Privacy Policies

Create a friendly version of your privacy policy.

Make is usable and readable for real people.

Discuss and document the benefits of third-party tracking and the risks to users.

Weigh the benefits and the risks against each other.

Recommendations for Practice

1. HTTPS
2. User Education
3. Informed Consent
4. Privacy Policies
5. Risk/Benefit Analysis

Recommendations for Practice

1. HTTPS
2. User Education
3. Informed Consent
4. Privacy Policies
5. Risk/Benefit Analysis
6. Continue the Conversation

Google Analytics

Google Analytics

Easy to install

Google Analytics

Easy to install

~~Free to use~~

Google Analytics

Easy to install

~~Free to use~~



Thank you

Patrick OBrien

Scott Young
@hei_scott

References and Follow-up Resources

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