

We Value Your Privacy ... Now Take Some Cookies: Measuring the GDPR's Impact on Web Privacy

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GDPR: From confusion to chaos

News

GDPR chaos as churches stop prayer requests and charities prepare to halt meals on wheels

Unfortunately, our website is currently unavailable in most European countries. We are looking at options to offering to the EU market compliance solutions that

Major websites offline and Facebook and Google accused of breaching new GDPR rules as digital chaos strikes

GDPR causes chaos on the Internet

Category: [Privacy News](#) | Last Updated: May 25, 2018 | Comments: [0](#)

The General Data Protection Regulation (GDPR)

- New privacy rules including:
 - **transparency** obligations ⇒ **privacy policy** required
 - **consent** as one of six legal bases for data collection
⇒ inform about **cookies** / web tracking
- Rules apply to everyone collecting personal data from people in the EU; substantial fines

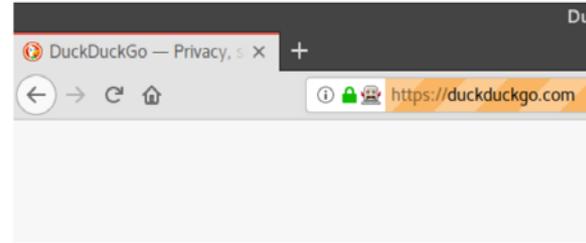
Research Questions

- How did websites **react** to GDPR?
- Is there increased **privacy protection** or **transparency**?
- How is **consent to tracking** implemented?

Method

Data Collection

- 500 most popular websites for each EU member state (6,750+ websites)
- Monthly scans from January to October 2018, more frequently in May 2018



↑
@Alexa Top 500 Ranking
for 28 EU member states



retrieved monthly, visited with automated browser

Policy Extraction

- Collected 112,041 privacy policies in 23 languages
- Older versions (2016-2018) retrieved from Internet Archive

Look for "Privacy Policy" in 24 different languages

Xpath search

```
//a[text()contains($WORD)]
```



download policy



make screenshot



manual inspection



detect cookies and trackers

\$WORD = Terms identifying privacy policies in different languages.

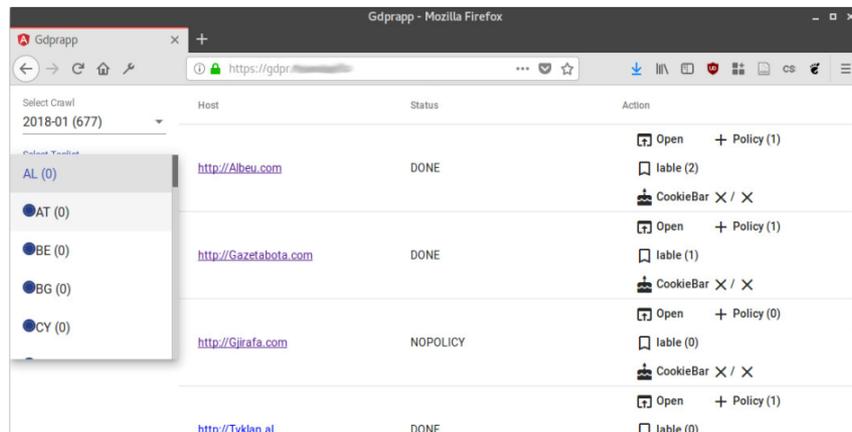
WayBackMachine

Downloaded previous versions for 2016 and 2017 from archive.org

Icons by Noto Emojil

Manual Annotation

- 49 % of sites manually annotated 3 times for privacy policies
- All sites annotated 3 times for consent notices



Manual website annotation



NOPOLICY: website does not have a privacy policy

OFFLINE: website is offline

DOWNLOAD: specify one or more privacy policy links



Identify Cookie Consent Notices & Types

Results

Privacy Policies

- **Prevalence:** from 79.6 % (January 2018) to 84.5 % (post-GDPR) overall, varies by country*
- Average **text length:** from 2,145 words (March 2016) to 3,044 words (May 2018)
- **Rate of change:** 50 % of sites made changes to their policy between April and May 2018 (75 % in all of 2018, ~37 % in 2016, ~40 % in 2017)

Privacy Policies: Content

- **Contact details:** names of data protection officers (+9%), email addresses (+9%)
- Keyword analysis for **GDPR-related terminology:** “erasure” +8%, “complaint” +11%, “rectification” +6%, “data portability” +7%

Other Analyses

- Use of **cookies**: no significant change
- Use of **tracking services**: no significant change (though 146 sites stopped tracking)
- **HTTPS adoption**: increasing trend continues

Consent Notices

- **Prevalence:** from 46.1 % (January 2018) to 62.1 % (post-GDPR)*
- 31 (cookie) consent **libraries**
- 7 distinct interaction models



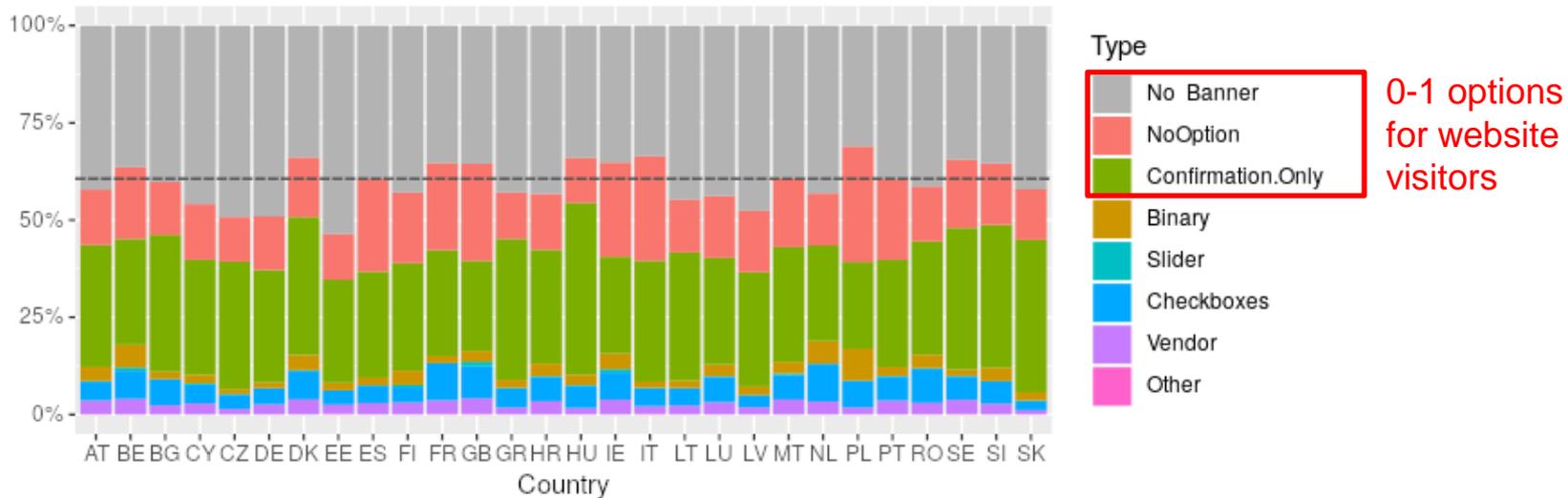
Consent Requirements

- EU DPAs: *“a clear affirmative act”, a “freely given, [purpose-]specific, informed and unambiguous indication of [...] agreement to the processing of personal data”*

This site uses first and third party cookies to provide you with a great user experience, measure audiences and show you personalised ads. By using Airbnb you accept our use of cookies. For more details about cookies and how to manage them, see our [Cookie Policy](#).



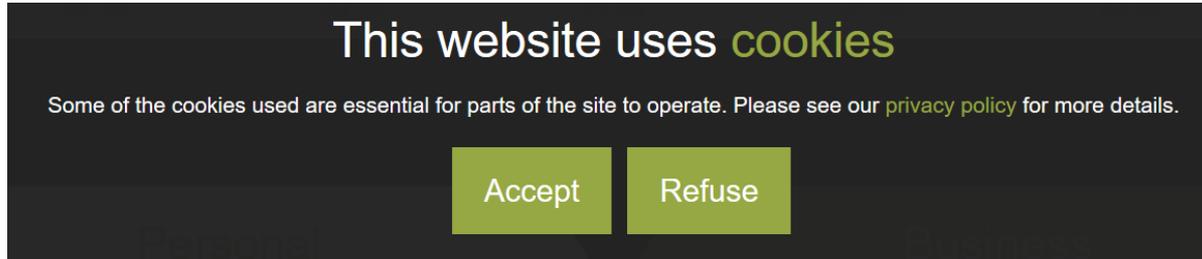
Distribution by Type



~80 % of websites have no consent notices or notices that do not offer a meaningful choice.

“Freely given”?

- Implied consent & forced opt-in
- Tracking often starts before “Accept” is clicked



“Purpose-specific”?

- Categories of cookies **predefined** by website owner / library provider
- Privacy-unfriendly **defaults**

This website uses cookies

We use cookies to help improve this website. We also share information about your use of our site with our social media, advertising and analytics partners. You consent to our cookies if you continue to use our website, in accordance with [our cookie policy](#).

Necessary Preferences Statistics Marketing

OK

The Industry Solution

- IAB Europe Transparency & Consent Framework
- Up to 400 (unknown) vendors
- Website may use non-participating third parties

Depending on the type of data they collect, use, and process and other factors including privacy by design, certain partners rely on your consent while others require you to opt-out. For information on each vendor and to exercise your choices, see below. Or to opt-out, visit the NAI, DAA, or EDAA sites.

Allow All

1000mercis [↗](#)

Allow

1020, Inc. dba Placecast and Ericsson Emodo [↗](#)

Allow

1plusX AG [↗](#)

requires opt-out

2KDirect, Inc. (dba iPromote) [↗](#)

requires opt-out

33Across [↗](#)

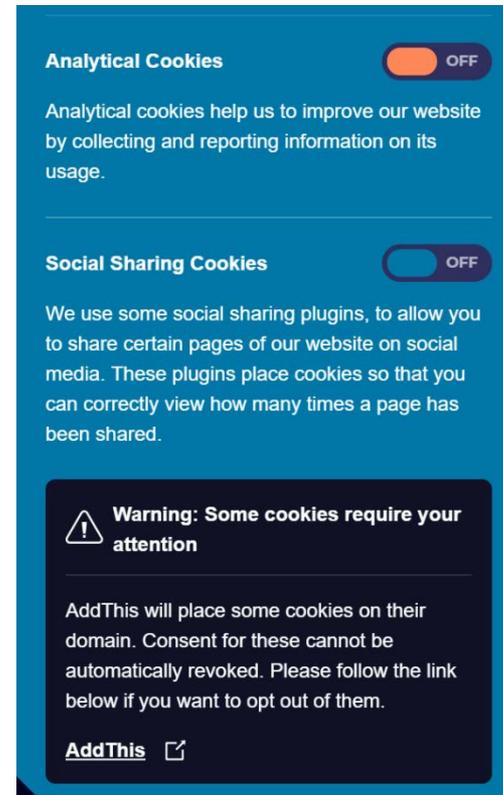
Allow

7Hops.com Inc. (ZergNet) [↗](#)

requires opt-out

More Challenges

- Sheer **amount** of consent notices
- Consent withdrawal vs. **Web security principles**



Analytical Cookies OFF

Analytical cookies help us to improve our website by collecting and reporting information on its usage.

Social Sharing Cookies OFF

We use some social sharing plugins, to allow you to share certain pages of our website on social media. These plugins place cookies so that you can correctly view how many times a page has been shared.

 **Warning: Some cookies require your attention**

AddThis will place some cookies on their domain. Consent for these cannot be automatically revoked. Please follow the link below if you want to opt out of them.

[AddThis](#) 

Conclusion

- Changes on the majority of websites around GDPR enforcement date, mainly **transparency**-related
- Few changes in actual **data processing**
- Results varied by country
- Transparency requirements vs. GDPR's goal to make privacy policies easier to understand
- Consent notices: lack of guidelines

Contact & More Information

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- Full paper with appendices: <http://arxiv.org/abs/1808.05096>
- Conference version: published at NDSS 2019
- Raw data, annotations, keyword lists, and more:
<https://github.com/RUB-SysSec/we-value-your-privacy>