

Internalization of Privacy Externalities through Negotiation

Social costs of third-party web-analytic tools and the limits of the legal
data protection framework

Who is

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- Research interests:
 - Systematization of IT-Security Law
 - Protection of Critical Infrastructure
 - Data Protection

Research Question

Is the current legal framework within the European Union sufficient to internalize externalities within the use (consumption) of third-party web-analytic tools through negotiation?

Background

Historical quarterly trends in the usage statistics of traffic analysis tools for websites

This report shows the historical trends in the usage of traffic analysis tools since April 2019.

| | 2019 1 Apr | 2019 1 Jul | 2019 1 Oct | 2020 1 Jan | 2020 1 Apr | 2020 1 Jul | 2020 1 Oct | 2021 1 Jan | 2021 1 Apr | 2021 1 Jul | 2021 1 Oct | 2022 1 Jan | 2022 1 Apr | 2022 25 Apr |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| None | 33.6% | 33.8% | 34.5% | 34.9% | 36.1% | 34.7% | 34.6% | 34.9% | 34.8% | 34.5% | 34.1% | 34.3% | 35.2% | 35.5% |
| Google Analytics | 56.8% | 56.7% | 55.9% | 55.4% | 53.8% | 55.0% | 55.0% | 54.7% | 54.9% | 55.9% | 56.8% | 56.8% | 55.7% | 55.3% |
| Facebook Pixel | 8.1% | 8.4% | 8.5% | 8.9% | 9.0% | 9.4% | 9.7% | 10.1% | 10.7% | 10.9% | 11.2% | 11.4% | 10.9% | 10.8% |
| Yandex.Metrica | 5.1% | 5.0% | 5.8% | 6.5% | 7.0% | 7.4% | 7.4% | 7.5% | 7.3% | 7.0% | 6.7% | 6.5% | 5.7% | 5.5% |
| WordPress Jetpack | 4.9% | 4.9% | 4.7% | 4.6% | 4.6% | 4.8% | 4.8% | 4.9% | 4.9% | 5.0% | 5.1% | 5.1% | 5.2% | 5.2% |

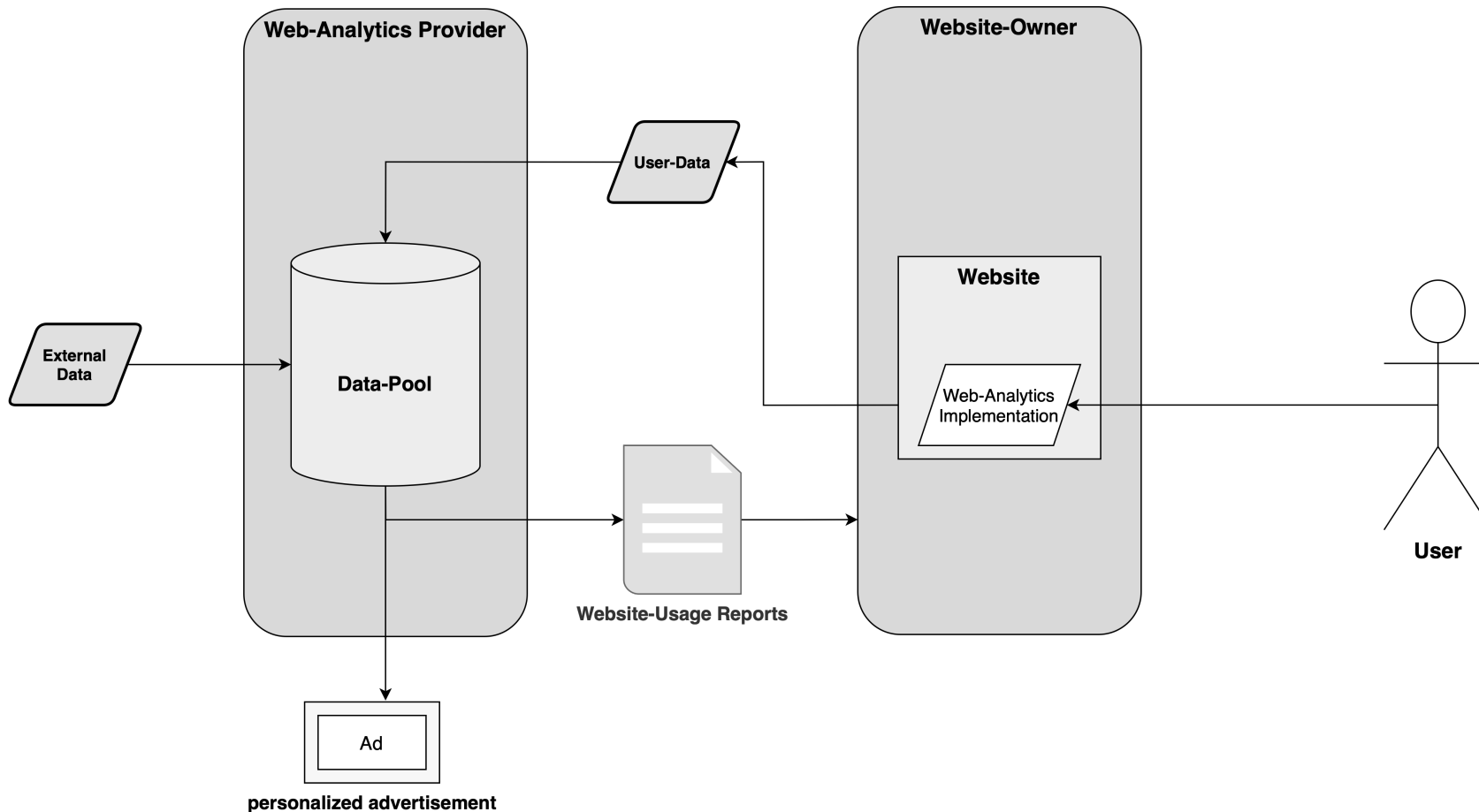
Web Technology Surveys. Usage statistics and market share of Google Analytics for websites Retrieved February 3,2022 from https://w3techs.com/technologies/history_overview/traffic_analysis/all/q

Most third-party web-analytics tools are free of charge to a certain extent

2. Fees and Service.

Subject to Section 15, the Service is provided without charge to You for up to 10 million Hits per month per Account. Google may change its fees and payment policies for the Service from time to time including the addition of costs for geographic data, the importing of cost data from search engines, or other fees charged to Google or its wholly-owned subsidiaries by third party vendors for the inclusion of data in the Service reports. The changes to the fees or payment policies are effective upon Your acceptance of those changes which will be posted at www.google.com/analytics/. Unless otherwise stated, all fees are quoted in U.S. Dollars. Any outstanding balance becomes immediately due and payable upon termination of this Agreement and any collection expenses (including attorneys' fees) incurred by Google will be included in the amount owed, and may be charged to the credit card or other billing mechanism associated with Your AdWords account.

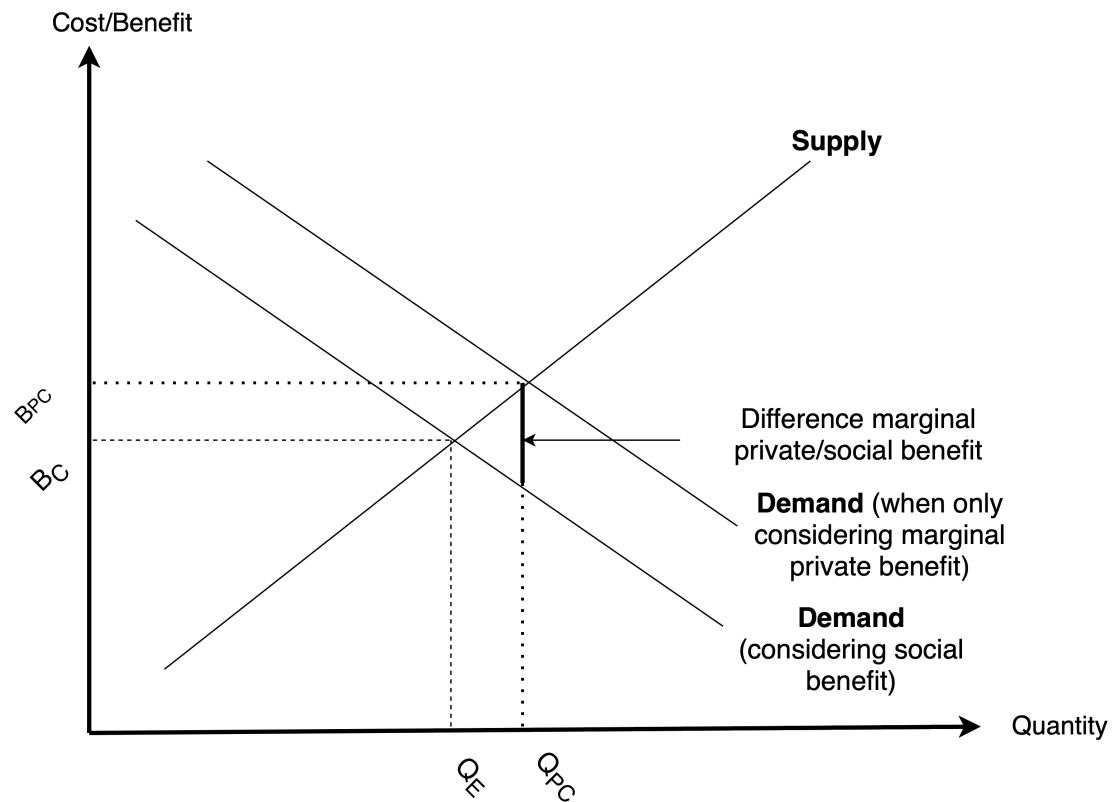
Flow and use of personal data with third-party web-analytic tools



- The contribution to the data pool of the provider is often encouraged by the provision of more elaborate reports for the website owner
- The provider monetizes the service by using the collected data for purposes of advertisement

Background: externalities in consumption

Externalities in consumption

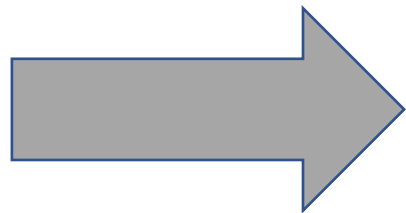


- Externalities in consumption mean, that the consumer of a good does not consider the overall cost of the consumption, but only his private cost.
- Externalities result in an inefficient market outcome

Externality caused by using third-party web-analytic tools

The website owner uses the third-party analytics tool, while the website user is negatively affected in his privacy by the data collection.

Therefore, the use of third-party web-analytics tools constitutes a negative externality within the consumption (use) of third-party web analytics tools.



The existence of this externality (if not adequately dealt with) results in higher use of web analytic-tools than in the efficient market equilibrium

Internalization of externalities through negotiation: the *coase-theorem*

- General assumption of the *Coase-theorem*:

Market-actors are able create an efficient market outcome through negotiation without state interference. Requirement (among others) is the ability to assign rights of disposal.

Coase-theorem requirements adapted by Noam [1996] for online-information markets:

- *Sufficiently low transaction cost*
- *A legal environment that permits transactions to be carried out*
- *The ability to create property rights, or to exclude*
-
- *An industry structure which permits transactions to occur*
- *Symmetry of information among the transacting parties*

Research Question

Is the current legal framework within the European Union sufficient to internalize externalities within the use (consumption) of third-party web-analytic tools through negotiation?

Further steps:

Examine if the current legal framework can effectively:

1. *assign disposal-rights*
2. *prevent information asymmetries*
3. *ensures proficient low transactional cost*

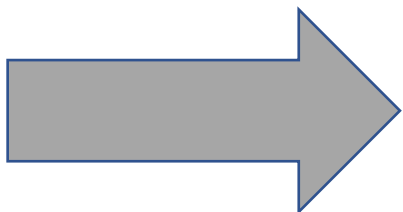
Assignment of disposal-rights

Means

- The user must give their consent for:
 - The access to his end device (e.g., for placing a cookie) – Art. 5 (3) ePrivacy-Directive
 - The use of the personal data for advertising purposes by a third party (the provider of the web-analytic tools) – Art. 6 (1) GDPR
- The controller (the website owner) must demonstrate the compliance of the processing and proof given consent - Art. 5 (2) GDPR.
- Further requirements for consent are stated in Art. 7 GDPR

Effectiveness?

- The design and implementation of the technical means to obtain consent (therefore the means of negotiation) is currently done mainly by the website-owner
- Different legal approaches of the GDPR (primarily regulates the end of processing) actively promote the use of complicated formulations for obtaining consent
- Methods that obtain the user consent unfairly might be unlawful. Because of the abstract formulation of the law and the slow enforcement speed through supervisory authorities and courts, misleading methods can be used for a long time.



The legal framework generally allows the assignment of disposal right. However the practical implementation lacks efficient enforcement

Use of unlawful methods of obtaining consent

Table 1: Variables of the graphical user interface of consent notices and their values across a sample of 1,000 drawn from 5,087 consent notices collected from the most popular websites in the European Union in August 2018

| Position | | Choices (visible) | | Choices (hidden) | | Blocking | | Nudging | |
|------------------------|--------|-------------------|--------|------------------|--------|----------------|--------|------------------|--------|
| top | 27.0 % | no option | 27.8 % | no option | 26.3 % | yes | 7.0 % | yes | 57.4 % |
| bottom | 57.9 % | confirmation | 68.0 % | confirmation | 59.9 % | no | 93.0 % | no | 14.8 % |
| top right | 0.2 % | binary | 3.2 % | binary | 4.0 % | | | n/a ^a | 27.8 % |
| bottom right | 3.0 % | categories | 1.0 % | slider | 0.2 % | | | | |
| top left | 0 % | vendors | 0 % | categories | 8.1 % | | | | |
| bottom left | 3.7 % | | | vendors | 1.1 % | | | | |
| center | 7.8 % | | | other | 0.4 % | | | | |
| other | 0.4 % | | | | | | | | |
| Link to privacy policy | | Text: Collection | | Text: Processor | | Text: Purposes | | | |
| yes | 92.3 % | “cookies” | 94.8 % | unspecified | 75.5 % | generic | 45.5 % | | |
| no | 6.6 % | “data” | 1.4 % | first party | 0.7 % | specific | 38.6 % | | |
| other | 1.1 % | both | 1.6 % | third party | 2.6 % | none | 16.9 % | | |
| | | none | 0.9 % | both | 21.1 % | | | | |
| | | other | 1.3 % | other | 0.1 % | | | | |

^a Nudging is not available for “no option” notices.

Christine Utz, Martin Degeling, Sascha Fahl, Florian Schaub, and Thorsten Holz. 2019. (Un)informed Consent: Studying GDPR Consent Notices in the Field. In 2019 ACM SIGSAC Conference on Computer and Communications Security (CCS '19), November 11–15, 2019, London, United Kingdom. ACM, New York, NY, USA, 18 pages. <https://doi.org/10.1145/3319535.3354212>

Information asymmetries

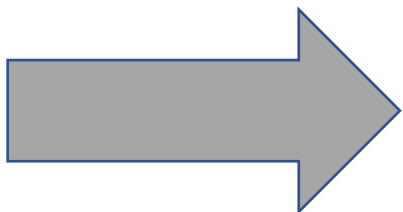
As the website owners decides about the actual implementation of web-analytic tools, there naturally exists an information asymmetry in favor of them

Means

- The website owner has to fulfill information duties:
 - indirectly by the requirement for consent to be given in an „informed way“ – Art. 5 (3) ePrivacy directive
 - directly through information about the processing of personal data – Art. 13 GDPR (Art. 14 GDPR)
- General principles about the declaration of intention apply, like the consideration of the „recipient horizon“

Effectiveness?

- The general complexity of the processes to be described, might be too high for the casual internet user to comprehend
- Website-owner has no incentives to provide the user with actual comprehensive information
- Legal requirements for the actual implementation are formulated in an abstract way, which leaves vast room for interpretation



The legal framework generally contains methods to diminish information asymmetries. Those only seem to be effective to an extent.

Transaction cost

- Generally technical means allow for a high automatization of the negotiation process, especially on side of the web-site owner
- The website-user must put in effort in actively engaging every single negotiation and in diminishing information-asymetries



In theory high transaction-cost should avert the initial owner of the disposal-rights to engage in the negotiation. This could explain the wide use of methods like „dark patterns“ to increase the transaction cost of not engaging.

Conclusion

The current regulatory framework does not seem to be fitted to internalize the costs of the website user through means of negotiation.

Reasons

- Vaguely and abstract formulated legal requirements (and a slow process of specifying those)
- Market actors addressed by the legal requirements have no incentive to implement those in a high-quality way.
- Information asymmetries and transaction cost to diminish those prevent a successful negotiation

Outlook: Potential of the upcoming E-Privacy regulation

- The current Draft for an ePrivacy Regulation contains regulations to promote the use of Personal Information Management Services (PIMS), which lower the transactions cost on side of the user
- Enforcement deficits could be improved by clearer and less abstract formulation
- Still the problem of information asymmetries remains
- The „original sin“ of the ePrivacy directive regarding the use of cookie technologies remains: the regulation of the technical mean instead of the end of data processing

Thank you for your attention

Questions?