

Implementation of GDPR Transparency Principle in Personal Data Processing by Croatian Online News Sites

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Summary - Nearly all of the online news media outlets are in whole or partially funded by revenue from advertising or other marketing activities. Online marketing activities involve gathering large amounts of personal data from their users. Furthermore, gathered data is shared with various third parties for ad personalization and targeted advertising, products and services development, tracking, audience measurement, content recommendation, and other purposes. To be competitive in the digital media market, Croatian online news sites operate their websites in the same way. The main goal of this paper is to analyze practices of most popular Croatian news sites in gathering personal data from their audience using cookies and their implementation of the principle of transparency about such practices prescribed by Article 13 and 14 of General Data Protection Regulation (EU) 2016/679. (GDPR)

Keywords – data protection; personal data; cookie; electronic publications; news sites; online newspaper; GDPR

I. INTRODUCTION

Targeted advertising and other forms of marketing based on the collection, analysis, and use of personal data of users has become constant practice and main source of revenue for almost all internet services, including online media outlets. At the forefront of implementing such practices are online news sites [1] that are providing their content (both free of charge and based on subscription) for the end-users, but at the same time collecting and using their personal data as a form of compensation for their services.

Online news sites argue that collecting personal data from users improves their services and content that they provide, enabling them to create a more tailored experience and help their future product development. Furthermore, personal data is often used to help with editorial decision-making process. At the same time, they are providing access to their platform and users personal data to third parties, for marketing and other purposes. That access is often realized through the use of cookies and other third-party elements that are included on news sites. Cookies and other forms of third-party elements on news sites can be used for different purposes, like marketing, audience measurement, content hosting, content recommendation, content optimization, and promotion of content using social media. All of that can be done while monitoring and analyzing habits of the users. Research shows that use of third-part content on news sites in seven countries in

Europe (Finland, France, Germany, Italy, Poland, Spain, and the UK) is especially prevalent on news sites compared to other 500 popular sites in the same country. News sites expose users to many third-party domains concurrently, ranging from an average of 24 third-party domains per news sites in Italy to an average of 50 on UK news sites [2].

Since news sites are also one of the prevalent source of news information for the vast majority of people (69% in 2018 and 88% in 2021) in Croatia [3], with lots of unique daily visits, main goal of this paper is to conduct research on the use of cookies and third-party content used by 10 of the most popular news sites in Croatia. Collected information about those practices is analyzed and considered within the context of the current regulatory framework, especially taking into account the General Data Protection Regulation (GDPR) [4] and its provisions that impose obligation to be transparent about processing of personal data of users.

II. RELEVANT REGULATORY FRAMEWORK

In Croatia, there are several legislative acts that are relevant for online news sites with regards to processing users personal data using cookies and other third-party content.

On the EU level, processing of personal data using cookies is regulated by Directive 2002/58/EC on privacy and electronic communications [5], Directive 2009/136/EC on universal services and users' rights relating to electronic communications networks and services [6] and the GDPR.

In Croatian legal framework the Directives 2002/58/EC and 2009/136/EC are transposed in the national legislation through Electronic Communications Act (ECA) [7]. Article 100 p. 4 of ECA stipulates that the use of electronic communications networks to store information or to gain access to information stored in the terminal equipment of a subscriber or user shall be allowed only on the condition that the subscriber or user concerned is provided with clear and comprehensive information in accordance with special regulations on personal data protection, especially about the purposes of the processing. This shall not prevent any technical storage or access to data for the sole purpose of carrying out or facilitating the transmission of a communication over an electronic communications network, or as strictly necessary in order to provide an information society service explicitly requested by the subscriber or user.

As in all member states, the specific regulation on personal data protection in Croatia is the General Data Protection Regulation (GDPR). In accordance with the above-mentioned Art 100 p. 4 of ECA, the legal basis for the processing of personal data via cookies that are stored in the terminal equipment of a user is consent, except for some specific cases [8]. For consent, with regards to cookies, relevant provisions of GDPR are Art 4 p.1 (11), Art 5, Art 6 p. 1(a) and Art 13 of GDPR. Consent has to be freely given, specific, informed, and unambiguous indication of the data subject's wishes. In the context of cookies, "freely given" consent implies a real and truthful choice of the user. In case the consent of the user is tied to other conditions and cannot be declined or retracted without consequences it will not be valid. Furthermore, consent must be "specific". When using cookies, given consent must be granular and provided specifically for each purpose of data processing. Also, for the consent to be valid it also has to be based on an informed decision. In accordance with Art 5 p.1(a) of the GDPR, transparency is one of the main principles, together with lawfulness and fairness. Provision of relevant information about the processing of personal data via cookies, prior to acquiring the consent, that also includes a clear understanding of what is consent for, and the rights for its withdrawal is a prerequisite for a valid decision to give consent. That is why each controller must comply with a set of minimum requirements with regards to the provision of information prescribed by Art. 13 of GDPR and the judgment of The Court of Justice of the European Union in the case C-673/17 [9]. Those minimum requirements are: the identity and the contact details of the controller; the purpose of each specific processing for which the consent is needed; the categories of personal data concerned; the existence of the right to withdraw consent at any time which must be as easy to withdraw as to give consent; the recipients or categories of recipients of the personal data; the period for which the personal data will be stored; the existence of automated decision-making; possible risks with regards to transfers of personal data on the basis of an adequacy decision.

With regards to exemptions for informed consent in the context of cookies and related technology, Opinion 04/2012 on Cookie Consent Exemption of Article 29 Data Protection Working Party and Guidelines 05/2020 on consent under Regulation 2016/679 of European Data Protection Board (EDPB) should also be taken into account. According to the first document, Opinion 04/2012, some types of cookies can be used without an informed consent from the users, because they are used either for the sole purpose of carrying out the transmission of a communication over an electronic communications network (Criterion A), or strictly necessary in order for the provider of an information society service explicitly requested by the subscriber or user to provide the service (Criterion B) [10]. Those types of cookies are: *user-input cookies* - they fall under the Criterion B because they are clearly needed to provide an information service explicitly requested by the user and tied to a user's action; *Authentication cookies* - they fall under the Criterion B and they are used to identify the user once he has logged in; *User centric security cookies* - they fall under the Criterion B and they have a task of increasing the security of the service that has been explicitly requested by the user;

Multimedia player session cookies - they fall under the Criterion B because they are used to store technical data needed to play back video or audio content; *Load balancing session cookies* - they fall under the Criterion A because they are used for load balancing and are necessary to carry out the communication over the network; *UI customization cookies* - they fall under the Criterion B because they are used to store a user's preference regarding a service across web pages and they are not linked to other persistent identifiers such as a username; and finally *Social plug-in content sharing cookies* - fall under Criterion B only if user is "logged in" the service and the cookie is strictly necessary for a functionality explicitly requested by the user [11]. The second document, Guidelines 05/2020 of EDPB is taking in to consideration freely given consent and use of so-called cookie walls [12]. Cookie walls are scripts that block visibility of web site content until the user accepts use of some types of cookies. As EDPB states those practices does not constitute a valid consent because users are not presented with a genuine choice, so it cannot be considered as freely given consent.

Beside above-mentioned relevant legislation for electronic communications and data protection when using cookies and processing users personal data, in Croatia, online news sites are also regulated by Electronic Media Act (EMA) [13]. Within EMA online news sites are defined as *electronic publications* that are edited media content which is produced or collected and distributed using internet by electronic publications providers for the purpose of informing the public, entertainment or education. Although there are no specific provisions with regards to cookies or protection of personal data in electronic publications, Article 2 p. 4 of the EMA clearly states that The European Convention for the Protection of Human Rights and Fundamental Freedoms shall apply to the relations governed by the EMA.

III. TYPES OF COOKIES AND THIRD-PARTY CONTENT

For a better understanding of conducted analysis, here we will make a short overview of technologies that are used for gathering users' personal data via cookies and other third-party content. When a user accesses an online news web page he is not accessing content from one source. Online news content consists of different types of content coming from different sources. Users are just accessing a set of instructions through their internet browser which reads those instructions and downloads and displays content according to those instructions. That content can be delivered to the users' device from a first-party - publisher/operator of online news themselves, or from some other third-party operators. It can be visible content, like text, images, or video content, but it can also include some other invisible content. In the process of accessing the content of online news site, the user's device sends data (like IP address, type of a device, information about accessed content, and so on) to all of the sources that he is trying to access the content from. Users can reasonably expect that a first-party provider is gathering those data, but very often they are not aware of the activities of third-party providers of the content. Since users did not directly initiate a transfer of the content from a third-party source, they are usually not aware that those third parties are also gathering

their data. This is done by using so-called identifiers like cookies - small files that are uploaded to a user's device that include a unique identifier and enable first and third-party content providers to track the users on the web.[14]

If we take into consideration the persistence, different origins, and functions of cookies and similar third-party content that are used to gather users' data, we can categorize them accordingly. Classified by persistence, cookies can be categorized into two groups. The first group comprises "session cookies" that are temporary and expire after the users' browser is closed. The second group of cookies are "persistent cookies" and encompasses all cookies that are downloaded to the users' device and remain on the device, depending on their expiration date [15] or automatic or manual deletion by the user. Classified by their origins, cookies and third-party content can be "first-party" cookies and "third party" cookies. First-party cookies are placed on users' devices by operators of the domain (website) that the user intended to visit, usually used in e-commerce applications, while "third-party" cookies and other content are used and placed on users' devices by operators of the domain other than the one that user visited (different than what is shown in the browser's address bar). Those third-party cookies are usually used by data brokers (e.g., Axiom, Datalogix and Epsilon), online advertisers and tracking applications [16]. Finally, cookies classified by their functions are necessary cookies, functionality cookies, performance cookies, marketing cookies and social media cookies. Necessary cookies are essential for the proper functioning of the website and its features. They are usually generated by the first-party provider and are usually also session cookies. There is no need for consent from the user to use these cookies but users should be informed about their functions. Functionality cookies are used to improve users' experience. These cookies are generally used for remembering users' preferences while visiting websites (like language, region, currency, username, and so on). Performance cookies collect information on how certain website is used and how it performs. Their main purpose is to improve the performance of the website. Generally, they can be categorized as design and content optimization cookies, analytics cookies, and content-hosting cookies. These cookies are used both by first and third-party operators. Marketing cookies are a category of cookies that prevails on the web. They are used to track users' interests, location, habits and anything else that can be of interest for better advertising and marketing. They are always persistent and generally used by third-party providers like AdSense, LiveRamp, AppNexus and others. Since online news sites' main source of income is an advertising and other marketing activities from third-party providers, they heavily rely on marketing cookies. Lastly, social media cookies are always third-party cookies. They enable website operators to embed social media functions into their content and to enable users to share, like and comment the content. Since web technology is in constant development, besides this general categorization of cookies and third-party content it is also worth noting that there are also some other types of technologies used to track users on the internet like web beacons, tracking pixels, supercookies, tracking tags, favicons, cross-device tracking cookies and so on [17].

As already mentioned in the introduction, online news sites are known for their practice of widespread use of cookies. Since their essential source of revenue, besides paywalls is advertising and marketing, it can be tolerated to a degree, but only if those practices are compatible with regulatory framework. In the next chapter we will analyze Croatian online news sites practices and their accordance with a law.

IV. ANALYSIS OF CROATIAN ONLINE NEWS SITES COOKIE PRACTICES

For the purpose of this paper, we selected 10 of the most popular online news sites in Croatia, according to Reuters Institute Digital News Report from 2021 [18], for analysis of their cookie practices. Selected online news sites are listed in Figure 1. that shows how many percentages of people uses certain online news site at least once a week.

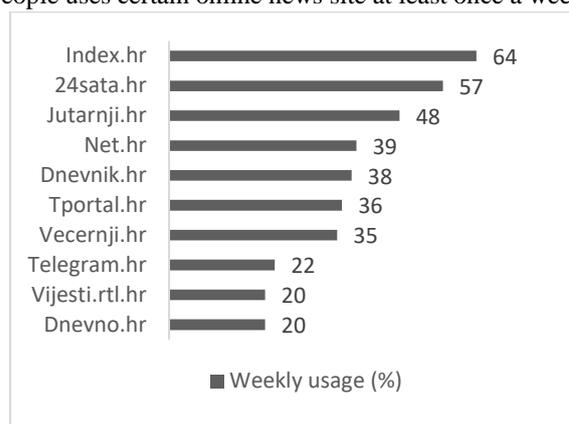


FIGURE 1. Weekly usage of 10 of the most popular online news sites in Croatia according to Reuters Institute Digital news Report 2021

It is worth noting that, according to the same report, online news sites are main source of news in Croatia for 88% of people, while TV is at 75% and print media is at 29%. Nevertheless, only 7% of the users in Croatia pay for online news [19].

All of the 10 analyzed Croatian news sites present the banner for the consent for use of cookies when accessing the site for the first time. All of them use the IAB Transparency and Consent Framework (TCF), a solution built for digital advertising. Its main purpose is to indicate to the users which data is collected, the lawfulness of processing according to GDPR, and how the website and its partners use them. About lawfulness and compliance of TCF solution with GDPR we are discussing later on in this paper. On the majority of sites (8), a user is not allowed to bypass the banner and access and view the content before going over the options for consent. On the other 2 sites (vecernji.hr and 24sata.hr) users can proceed to content by clicking on the content itself, without selecting any of the options in the consent banner, but then cookies are automatically placed on a users' device.

The number of cookies used on the above-listed online news sites in Croatia was analyzed in a two-month period with Website Cookie Scanner by OneTrust for 50 web pages of each site. Gathered results were then compared to the gathered results of other free online tools Cookiebot by Usercentrics and the open-source tool Website Evidence

Collector published by the European Data Protection Supervisor (EDPS) [20]. The results of the number of cookies used per website gathered by OneTrust as shown in Figure 2., were compared with the gathered average results of other tools, and analysis showed that there is a standard deviation of $\sigma = 3.76$ for first-party cookies and $\sigma = 7.23$ for third-party cookies.

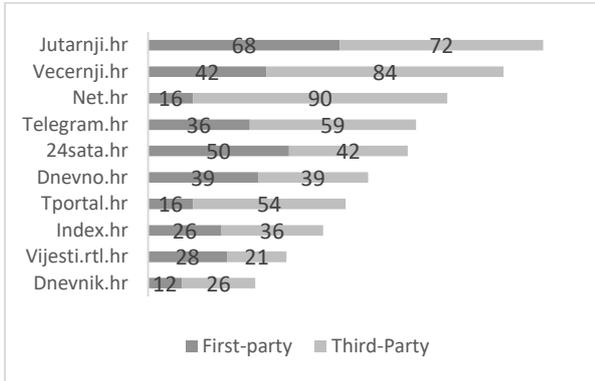


FIGURE 2. No. of cookies used per online news site by their origin

The first two online news sites with the largest number of cookies used are websites of the oldest print newspapers in Croatia and part of the two largest media groups in Croatia [21]. They both produce the largest amount of online news content in Croatia and have much more financial, technical and human resources than other online news sites in Croatia.

If we break down the number of cookies used by their origin, there is a strong positive correlation of $r = 0,86$ between an increased number of total used cookies and an increased number of third-party cookies used as shown in Figure 3.

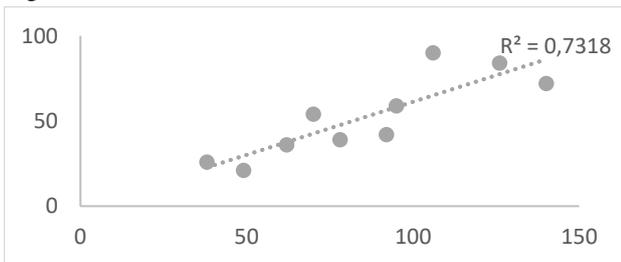


FIGURE 3. No. of cookies used per online news site

Analyzing used cookies by their persistence as shown in Table 1. shows us that an average of 30% of used cookies are session cookies and the rest of them are some types of persistent cookies.

TABLE I. PERSISTENCE OF COOKIES

	Session	Persistent	> 1 year	<= 1 year
Dnevnik.hr	15	9	1	13
Vijest.rtl.hr	12	8	7	22
Dnevno.hr	26	9	7	36
Index.hr	23	15	2	22
Tportal.hr	23	7	3	37
24sata.hr	22	30	7	33
Telegram.hr	19	14	18	44
Net.hr	40	25	3	38
Vecernji.hr	39	29	8	50
Jutarnji.hr	39	51	9	41

Those persistent cookies vary by the duration of their persistence on the user device. In order to simplify comparison we calculated averages of different types of permanent cookies on all sites. On average 32% of them are permanently stored on users' devices, 10% of them are stored for more than 1 year (ranging from 1 day to 10 years) and 58% of them are stored for a year or less.

In the Figure 4. we analyse cookies classified by their functions.



FIGURE 4. No. of cookies by their functions

Figure 4. shows that all of the sites have a similar number of necessary, functionality, performance, social media, and other cookies. The main difference is in marketing cookies. Sites that use a large number of cookies also use a larger number of marketing cookies. When calculated, marketing cookies comprise on average 46% of the total number of cookies on all online news sites in Croatia. The correlation between the total number of cookies and marketing cookies is positive and very strong with a value of $r = 0,91$.

With regards to the processing of personal data of their users carried out by online news sites and their partners, one of the most important metrics is the use of tracking technologies. Processing of personal data by third parties is usually done using cross-site tracking cookies and other tracking technologies like tracking pixels, browser fingerprinting, flash cookies and others [22]. Data about tracking content and cross-site cookies is shown in Table 2.

TABLE II. USE OF TRACKING TECHNOLOGIES

	Other tracking content	Cross-site tracking cookies
Dnevnik.hr	16	9
Vijesti.rtl.hr	39	31
Dnevno.hr	34	35
Index.hr	37	23
Tportal.hr	48	38
24sata.hr	27	30
Telegram.hr	23	17
Net.hr	19	21
Vecernji.hr	51	31
Jutarnji.hr	42	25

The first category in Table 2. - " other tracking content" includes technologies that first-party websites may load together with content like ad banners, videos, web beacons, and other tracking code that enables online news site to track the users' behavior and process their personal data. The second category in Table 2. - "cross-site tracking cookies" includes all cookies that follow the user from site to site gathering data about what the user does online. Usually, they are uploaded by third parties such as advertisers, social media companies and analytics companies. As is shown in Table 2. online news sites in Croatia extensively use tracking technologies to track users and their online behavior and enable third-party companies to do the same. The average number of cross-site cookies used is 26 per site. Analyzed cross-site cookies mainly include scripts from advertising companies like Double Click and Adservice from Google or companies that support advertisers like Adform, Criteo, Quantserve and Rubiconproject. For audience measurement all of the 10 sites use services from Gemius. For this analysis, five main categories of cross-site tracking cookies were examined and averages of all 10 sites were calculated. Figure 5. shows the average percentage of a certain category of cross-site tracking cookies used on all 10 online news sites in Croatia.

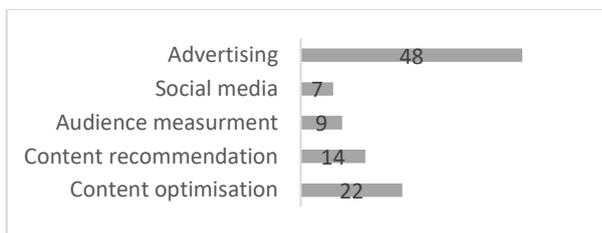


FIGURE 5. Cross-site tracking cookie used on online news sites

The most prominent categories are advertising and content optimization which clearly indicates that all of the sites are heavily dependent on third-party tracking of the users for advertising and marketing.

When using cookies all websites must be transparent about their practices because in most cases it implies the processing of personal data. Since it is clearly shown that Croatian online news sites are using cookies extensively, it is required to determine their level of transparency according to GDPR about their practice. For this paper, we have gathered data from the "privacy policies" of each online news site and categorized them according to the level of transparency and information provided to the users. For categorization, we compared published privacy policies (cookie policies) on each site with the requirements of Articles 5, 12,13 and 14 of GDPR. During the analysis, we considered: availability of information, ease of access, language used, provided information about controller and processor, information about the recipient of personal data, purposes of data processing, legal basis processing, information about legitimate interest, retention period, international transfers of data, information about the withdrawal of consent and information provided about automated-decision making. Each online news site was then classified into one of the 4 main groups. The first group encompasses sites that do not readily provide any information about the processing of personal data while

using cookies, the second group includes sites that provide only basic information about cookies used, the third group includes sites that provide a general set of information to the user but still lacking to be fully transparent, and finally, the fourth group encompasses sites that are transparent and include exhaustive information about the processing of personal data when using cookies.

TABLE III. EVALUATION OF TRANSPARENCY

	No information	Basic information	General information	Exhaustive information
Dnevnik.hr		✓		
Rtl.hr			✓	
Dnevno.hr		✓		
Index.hr				✓
Tportal.hr			✓	
24sata.hr				✓
Telegram.hr		✓		
Net.hr			✓	
Vecernji.hr				✓
Jutarnji.hr			✓	

Data in Table 3. shows that all online news sites in Croatia provide some form of information on their cookie practices. Three sites provide only basic information, lacking almost all of the main elements required by Article 13 of GDPR. Those three sites just provide basic information about cookies used, without going into details, where one of them (Telegram.hr) is even claiming that there is no processing of personal data or possibility to ID the users while using cookies, although at the same time they are using a large amount of tracking cookies. Four online news sites provide general information about their cookie practices. All of them provide information about the types of cookies used, recipients of information, and the purpose of collecting personal data through cookies, but usually, there is no explanation about the use of legitimate interest as a legal basis or automated processing of personal data. Furthermore, information about the possible withdrawal of consent is very vague and usually directed to some third parties. Also, there is no information about the retention period or international transfers. Lastly, three sites in total are providing exhaustive information about their cookie practices. They list all of the cookies used, and explain their function, retention period and possibilities for withdrawal of consent. Although there is lot of information provided with regards to their cookie practices, those sites are still lacking in transparency, they do not provide adequate information about recipients of personal data, international transfers or automated-decision making. Since all 10 online news sites rely on the Transparency and Consent management Framework (TCF) from the Interactive Advertising Bureau Europe's (IAB), their compliance with GDPR is questionable. Recently, Belgian Data Protection Authority (BDPA) fined IAB Europe for various infringements in relation to the IAB Transparency and Consent Framework [23]. BDPA has found that IAB was acting as a data controller in regards to registering user consent signals, choices and preferences via signal strings, as they could be linked to an identifiable user. Accordingly, it found that IAB is responsible for various infringements of GDPR, including lack of establishment of the legal basis for processing, the inadequacy of legal basis offered, too generic and vague language, lack of implementation of adequate organizational and technical measures, and failing to conduct data protection impact assessment. In response

to the said fine, IAB is rejecting the finding in their appeal before Brussels Court of Appeal that they are a data controller in the context of the TCF and at the same time directing the users of TCF to implement steps for compliance if they are using TCF. Those steps are to require consent for all vendors and purposes, limit the number of vendors that are collecting data, present the categories of data collected, include purposes of processing in with categories of data and make consent withdrawal easy and accessible. If their appeal is upheld, this would mean that with regards to personal data processed with TCF, publishers of online news sites would be data controllers for personal data collected using cookies, and most of the shortcomings of TCF, especially lack of establishment and inadequacy of legal basis would be their responsibility.

V. CONCLUDING REMARKS

When analyzing cookie practices of online news sites various factors have to be taken into account. Results gathered are dependent on the number and content of webpages reviewed, technology, methodology, time span, browser and devices used. Conducted analysis of the 10 most popular Croatian news sites tells us that all of the publishers heavily rely on cookies for marketing, audience measurement and content recommendation. Compared to other EU countries, Croatian news sites, with a total average of 85 cookies used per site, do not fall behind news sites in the other EU countries (Spain 103, France 95, Poland 81 [24]). This is not surprising, especially if we take into account that only 7% of the users pay for the online content. There is also a strong correlation between the total number of cookies used per site with the number of cookies used for tracking and cross-site tracking. This is a clear indicator that lots of personal data of users are shared with third parties. Although that has become a common practice among all online websites, and especially news sites, a regulatory framework for personal data protection imposes certain obligations for data controllers and processors. If we consider the role of Croatian news sites publishers in the context of data processing and usage of cookies, in most cases they have the role of the data controller. Accordingly, they have an obligation to be transparent about their practices. It is worth noting here that Croatian Law on Implementation of GDPR [25] does not provide for any exemptions for media or electronic publications (online news sites according to EML) when processing personal data. Analysis has also shown that current practices with regards to the provision of information and usage of transparency and consent framework of most of the assessed Croatian online news sites are largely not compliant with established data protection principles.

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