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Utilization of Personal Data Through Cookies Using Artificial Intelligence from Human Rights Perspective

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Abstract

The utilization of digital data is one of the business strategies used by Start-Up Companies in their business models. One of the methods used to perform data mining is through browser cookies. Cookies are data that are used for tracking or identifying the behavior of service users remotely through the browser. The act of harvesting service user data through cookies is one of the data sources that will be processed using artificial intelligence (AI) by Digital Companies to make decisions, solve problems, and determine predictions from user actions in a given service. Data acquisition through remote browser cookies (Remote Browser) is sufficient to contribute to providing effective and efficient digital services, such as online lending and borrowing activities (Peer-to-Peer Lending) in the context of Financial Technology. In this paper, the researcher tried to examine the utilization of data taken from Browser Cookies through Artificial Intelligence in terms of human rights perspective, especially concerning Article 28G paragraph 1 of the Indonesian Constitution. The research method used is normative juridical. The approach used is the statutory approach and conceptual approach. Given that personal data is included in the realm of privacy, therefore some browsers have started to leave the cookie method in data retrieval.

Keywords: *Cookie; Personal Data; Human Rights*

Introduction

The history of the industrial revolution starts from 1.0, 2.0, 3.0, to 4.0. The industrial phase is a real change. Klaus in his book argued:[1]

> "The world has experienced four stages of a revolution, namely: 1) Industrial Revolution 1.0 (18^{th} century) through the invention of the steam engine, 2) Industrial Revolution 2.0 (19^{th}-20^{th} century) through the use of electricity which makes production costs low, 3) Industrial Revolution 3.0 (in the 1970s) through computerization, and 4) The Industrial Revolution 4.0 that occurred around 2010 through intelligence engineering and *IoT* as the backbone of movement and connectivity."

[1] Klaus Schwab. (2018). *The Fourth Industrial Revolution*, New York: Crown Publishing Group, (2017). historical context page. dalam Banu Prasetyo dan Umi Trisyanti, *Revolusi Industri 4.0 dan Tantangan Perubahan Sosial*, *IPTEK Journal of Proceedings Series*, No.5, p.22-27.

Taking a deeper look at the stages of this revolution, we can see what was produced or what the forms of the revolution were.[2]Furthermore, the Industrial Revolution 1.0 was marked by the mechanization of production to support effectiveness and efficiency, with major changes that magnitude in various fields.[3]One of the most historic in the Industrial Revolution 1.0 was the emergence of the steam engine in the 18th century.[4]The Industrial Revolution 2.0 was characterized by mass production and standardization of quality, for example, the establishment of a slaughterhouse in Cincinnati, Ohio in 1870[5] and the invention of the electric power plant and combustion chamber.[6] This invention triggered the invention of telephones, cars, airplanes, and others.[7] Meanwhile, the Industrial Revolution 3.0 was marked by mass customization and flexibility of automation and robot-based manufacturing that made the production process more effective and efficient.[8]

Currently, the world is moving towards the Industrial Revolution 4.0 which is marked by cyber-physical and manufacturing collaboration. The term Industry 4.0 comes from a project initiated by the German government to promote the computerization of manufacturing.[9]The term Industry 4.0 was officially established in Germany, precisely when the Hannover Fair was held in 2011. After that, many countries launched the concept of Industry 4.0 with their respective terms. According to Lifter and Tschiener, the basic principle of Industry 4.0 is the integration of machines, workflows, and systems, by implementing intelligent networks along the production chain and processes to control each other independently.[10]

The Industrial Revolution is a self-upgrading of globalization. The Industrial Revolution 4.0 is marked by an increase of manufacturing digitization driven by four factors, namely: 1) An increase in data volume, computing power, and connectivity; 2) The emergence of analysis, ability, and intelligence in the business field; 3) The development of new forms of interaction between humans and machines; and 4) Improvement of digital transfer instructions to the physical world, such as robotics and 3D printing. In the Industrial Revolution 4.0, the size of the company is not a guarantee to be successful, but the agility of the company is the key to success in achieving achievements quickly. Like *Uber,* which is able to compete with big players in the transportation industry around the world, or *Airbnb,* which is able to compete with major players in the tourism services industry.[11]

Judit Nagy, Judit Oláh, Edina Erdei, Domián Máté, and József Popp explained that the main focus of industrial revolution 4.0 is:

> *"The fourth industrial revolution is* ***based on data****. The way it can be gathered and analyzed, and used to make the right decisions and develop, has become a competitive factor. The source of competitive advantage, therefore, will not only be produced on a coordinated or completely new*

[2] Venti Eka Satya. (2018). *Strategi Indonesia Menghadapi Industri 4.0*. Jakarta: Pusat Penelitian Badan Keahlian DPR RI. p.20.

[3] Hanifah Nd. *Ini Perkembangan Inovasi Teknologi Penanda 4 Periode Revolusi Industri.* availabe online from https://www.idntimes.com/science/discovery/hanifah-yoshioka/tanda-perkembangan-4-periode-revolusi-industri-c1c2, accessed on 9 April 2021, at 9.14 AM

[4]Alois Wisnuhardana, (2018). *Anak Muda dan Medsos*, Jakarta: Gramedia. p.60.

[5] Forkomsi FEB UGM. (2019). *Revolusi Industri 4.0*, Sukabumi: CV. Jejak. p.73.

[6]Donny Buddy P., *Sejarah Revolusi Industri 1.0 Hingga 4.0***,** availabe online from http://otomasi.sv.ugm.ac.id/2018/10/09/sejarah-revolusi-industri-1-0-hingga-4-0/, accessed on 9 April 2021, at 9.59 AM

[7] Badan Informasi Geospasial. *Memaknai Peranan Umat Islam dalam Era Digital Masa Kini*, acsessed from http://www.big.go.id/memaknai-peranan-umat-islam-dalam-era-digital-masa-kini/, on 9 April 2021, at 11.48 AM

[8] Anik Ghufron, dkk. (2019). *Modernisasi Bengkel Laboratorium Kejuruan Abad 21*. Jakarta: Kementerian Pendikikan dan Kebudayaan Republik Indonesia. p.156.

[9]Muhammad Yahya. (2018). *Era Industri 4.0: Tantangan dan Peluang Perkembangan Pendidikan Kejuruan Indonesia*. Makassar: Universitas Negeri Makassar. p.3.

[10] Hoedi Prasetyo dan Wahyudi Sutopo.(2018). *Industri 4.0: Telaah Klasifikasi Aspek dan Arah Perkembangan Riset*. Jurnal Teknik Industri.J@ti Undip:, Vol.13, No.1. p.17-26.

[11] Andreas Hassim, *Revolusi Industri 4.0*, available online from https://id.beritasatu.com/home/revolusi-industri-40/145390, pada 9 April 2021, at 12.38 PM

basis but also the embedding of products with digital services, i.e., how companies filter the relevant information from the generated data in order to support decision-making."[12]

The data is then processed by Artificial Intelligence (known as AI). According to Russell and Norvig, AI is a computing program that makes machines work like human intelligence. Several things can be done by AI in processing data such as making decisions, solving problems, and making predictions about things.[13]AI has been widely entered, utilized, and implemented into the niches of people's lives such as in the economic, industrial, social, educational, medical, and health fields. Even today, almost all aspects of human life will become an inseparable part of the AI development process.[14]

Utilization of data as part of the acceleration process of information and communication technology development can be said to direct the trend to a new era that changes traditional business models and stimulates the growth of new business models which are often called Start-Ups. Start-Ups tend to take advantage of technological opportunities, including data processing.[15] Examples of digital Start-Ups that use data processing are Start-Up companies engaged in Financial Technology, especially those that are emerging, namely online loan services or what is called Peer-to-Peer Lending.[16]

One of the ways used by digital companies to collect data is through Cookies. A cookie is a mechanism for placing data on a remote browser that facilitates browsing or identification of service users.[17]This paper intends to examine data collection from browser cookies that will be processed by digital companies using AI from a human rights perspective.

Research Methods

This research used a normative legal research method because the focus of the study departed from a normative vacuum or legal vacuum. Research focus was regarding the protection of personal data on artificial intelligence. In this paper, the approaches used were a legal approach and a conceptual approach. The technique of tracing legal materials used was document study techniques, and research analysis used was qualitative.

Results and Discussion

1.1 About Data

Grammatically, data comes from the Latin word *"datum"* which means facts, reality, and events. In other words, the data is a truth, so the main characteristic of the data is "true".[18] In the context of electronics, data is anything that is stored in memory according to a certain format. The data is then processed into information that can be accepted by the mind and can be used for various purposes, including decision making.[19]

[12] Judit Nagy, *et.al.*, *The Role and Impact of Industry 4.0 and the Internet of Things on the Business Strategy of the Value Chain-The Case of Hungary*, Jurnal Sustainability, Vol.10, No.10 (2018), P.2.

[13] Hakim Agung Ramadhan and Dinita Andriani Putri. (2018). *Big Data, Kecerdasan Buatan, Blockchain, dan Teknologi Finansial di Indonesia*, Jakarta: Centre for Innovation Policy and Governance (CIPG). p.19.

[14] Yudo Devianto and Saruni Dwiasnati. (2020) *Kerangka Kerja Sistem Kecerdasan Buatan dalam Meningkatkan Kompetensi Sumber Daya Manusia Indonesia*, IncomTech: Jurnal Telekomunikasi dan Komputer, Vol.10, No.1 (2020), p.20.

[15] Aryani Eka Prasatya Nugraha and Novika Wahyuhastuti, *Start Up Digital Business: Sebagai Solusi Penggerak Wirausaha Muda*, Jurnal NUSAMBA, Vol.2, No.1 (2017), P.3.

[16]Randi Eka, *Penerapan Teknologi Kecerdasan Buatan untuk Startup Fintech*, availabe online from https://dailysocial.id/post/penerapan-teknologi-kecerdasan-buatan-untuk-startup-fintech, accessed on 9 April 2021, at 9.00 PM

[17] Didik Dwi Prasetya. (2016) *Modul Ajar Praktikum Pemrograman Web*. Malang: Jurusan Teknik Elektro FT UM. p.17.

[18]Zulkifli Amsyah. (2005). *Manajemen Sistem Informasi*.Jakarta: Gramedia Pustaka Utama. p.83.

[19]Winardi Fertian, *Perbedaan Data dan Informasi*, available online from https://student-activity.binus.ac.id/himsisfo/2016/07/perbedaan-data-dan-informasi/, accessed on 9 April 2021, at 2.40 PM.

So that it can be said, information is data that has been processed, useful, and meaningful for the recipient. The forms of information are combined results, analysis results, inference results, and also the results of the computerized information system processing.[20] To mobilize data from one device to another, many components and methodologies are needed, or what is known as data communication. Data communication allows various hardware devices and various operating systems to communicate and understand each other. To achieve this goal, data communication or transmission requires certain criteria and standards both in terms of software and hardware.[21]

Modern digital-based companies such as Start-Ups, make data one of the necessities in the implementation of their services. Practically in a business model that relies on data sets, there are many types of data circulating in the circulation of the company. The data circulates through various means such as email, applications, and so on. However, in general, the types of data can be categorized into four groups, namely data that can be published, ordinary data, confidential data, and very confidential data.[22]

1.2 Data Mining through Cookie

One source of user data is through cookies which are facilities that can be found in the browser. Cookies are "flakes" of information that are stored on the user's computer. The information is constantly transmitted via the Hypertext Transfer Protocol (HTTP)[23] header between the browser and the website's server. The browser sends a cookie as part of its request to the server, and then the server updates the data on the user's device in response. The advantage of cookies for website owners or service providers is that they can retrieve data from the user's device related to their activities on the website that provides the service.[24]

Cookies are divided into two, namely First-party Cookie and Third-party Cookie. A first-party cookie is a cookie that originates or is sent by the website that is being visited at the time by the user, which is used together to store information such as preferences of the user when visiting a website. While Third-party Cookie is a cookie that originates or is sent to a different website from a website that is being accessed by the user at that time which is usually used for advertising purposes from that different website.[25] In addition, to the two most commonly used cookies, there are several other cookies. Such as Session Cookies, Secure Cookies, HTTP- Only Cookies, Flash Cookies, and Zombie Cookies.[26] In general, the website informs the users that the website uses a cookie system so that the website runs properly, makes the website more secure, gives a better service experience, and analyzes the performance of the website and how the website can be developed.[27]

1.3 Utilization of Personal Data in terms of Human Rights Perspective

The management of personal data by Start-Up companies is a polemic that is still being discussed and debated today, especially the adequate legal protection for users as consumers. Data is closely related to online trust, which is the main milestone in determining consumer comfort and safety, which if misused can potentially cause financial losses that even threaten the security and safety of

[20] Rini Asmara. (2016). *Sistem Informasi Pengolahan Data Penanggulangan Bencana pada Kantor Badan Penanggulangan Bencana Daerah (BPBD) Kabupaten Padang Pariaman*, Jurnal J-Click, Vol.3, No.2 .p.82.

[21] Irzam Hardiansyah (translator). (2004). *Schaum's Outline: Computer Networking (Jaringan Komputer)*. Jakarta: Erlangga. p.1.

[22] Bambang Pratama, *Menjaga Kerahasiaan Data Bagi Perusahaan*, available online from https://business-law.binus.ac.id/2018/10/11/menjaga-kerahasiaan-data-bagi-perusahaan/, accessed on 9 April 2021, at 10.49 PM.

[23] *Hypertext Transfer Protocol* atau HTTP adalah sebuah protokol komunikasi antara klien (*Client*) dan peladen (*Server*) yang umum digunakan dalam sistem world wide web (WWW). Adzan Abdul Zabar and Fahmi Novianto. (2015). *Keamanan HTTP dan HTTPS Berbasis Web Menggunakan Sistem Operasi Kali Linux*, Jurnal Ilmiah Komputer dan Informatika (KOMPUTA), Vol.4, No.2, p.70.

[24] Vivian Siahaan and R.H. Sianipar. (2018). *PHP/MYSQL untuk Mahasiswa*. Yogyakarta: Sparta Publisher. p.165.

[25] Wahana Komputer. *Menguak Rahasia Keamanan dan Kinerja Windows 7*, CV Andi Offset, Yogyakarta, 2010, p.190.

[26] Muchammad Yani. *Mengenal 7 Jenis Cookie pada Browser*, avai;able online https://merahputih.com/post/read/mengenal-7-jenis-cookie-pada-browser, accessed on 10 April 2021, at 3.41 PM.

[27] AI Technology and The Law. *Cookie Policy*, available online https://aitechnologylaw.com/cookie-policy/, accessed on 10 April 2021, at 3.49 PM.

users.[28]According to the Financial Services Authority, there are several real risks related to data (Cyber Security Risk) in the management of Start-Ups, especially those based on Financial Technology, for example, the risk of data theft, data misuse which is generally carried out by online shops and data privacy in a database that could potentially be abused by someone not responsible (data loss).[29]

Data utilization is a common thing done by online services that are free of charge. The service is not completely free, but as a counter-performance, it is paid (exchanged) by the user with the personal data, which data is generally in the form of activity preferences that are referred to in online advertising so that the advertisements can be targeted and effective.[30] However, this consequence violates the protection of data privacy as one of the human rights protected by the state precisely in Article 28F and 28G of the Constitution of the Republic of Indonesia of 1945 which philosophically also emphasizes that the constitution provides data protection as a form of respect, recognition, protection, and fulfillment of Human Rights in the form of privacy protection.[31]Another problem is the potential for "Spam" that can interfere with the convenience of service users, where "Spam" is a cheap advertising method by utilizing data.[32]

The case of data misuse by Facebook is a reflection that personal data is a valuable asset that is very vulnerable to being misused, especially by companies that manage personal data from users. In the case of Facebook, the main issue is the misuse of personal data of Facebook users without permission, where the number of users whose data has been misused has reached 87 million users. The misuse of the data was carried out by Cambridge Analytica, whose personal data was improperly used by the political consulting firm. Most of the users whose data was misused came from Facebook users in the United States, as well as Indonesia, including the top three countries whose users were victims.[33]

Moreover, reports of Facebook data leaks also occur many times. By the end of 2019, it was estimated that as many as 267 million user data leaked with indications of spam and fraudulent messages.[34]Data are suspected to be the result of misuse of the Application Programming Interface (API). Data leaks occurred again in early 2021 not only from Facebook but also Instagram and LinkedIn which reached 214 million accounts, according to a report by security researchers of Safety Detective.[35] Furthermore, recently it was also reported that 533 million Facebook user data had been leaked.[36] The government through the Ministry of Communications and Information only gave a warning

[28] Sinta Dewi Rosadi and Garry Gumelar Pratama. (2018). *Perlindungan Privasi dan Data Pribadi dalam Era Ekonomi Digital di Indonesia*. Jurnal Veritas et Justitia, Vol.4, No.1. p.89.

[29] Sarwin Kiko Napitupulu, *et.al.*, (2017). *Perlindungan Konsumen pada Fintech – Kajian Perlindungan Konsumen Sektor Jasa Keuangan*, Jakarta: Otoritas Jasa Keuangan, p.24-33.

[30] Budi Raharjo. (2016). *Starting Up*. Bandung: PT Insan Indonesia. p. 29.

[31] Ana Sofa Yuking. (2018). *Urgensi Pengaturan Perlindungan Data Pribadi dalam Era Bisnis Fintech*, Jurnal Hukum dan Pasar Modal, Vol.VIII, Ed.16. p.5.

[32] Brahma Astagiri. (2010). *Spamming dalam Perspektif Hukum Pidana*. Jurnal Yuridika. Vol.25, No.1 p.89.

[33] Andina Librianty. *Indonesia Juga Jadi Korban Skandal Penyalahgunaan Data Facebook*. Availabe online from https://www.liputan6.com/tekno/read/3427933/indonesia-juga-jadi-korban-skandal-penyalahgunaan-data-facebook, accessed on 10 April 2021, at 00.59 AM.

[34] Virdita Rizki Ratriani. *Bocor Lagi, 267 Juta Data Pengguna Facebook Diduga untuk SMS Spam dan Penipuan.* Availabe online from https://www.kompas.com/tren/read/2019/12/20/163000765/bocor-lagi-267-juta-data-pengguna-facebook-diduga-untuk-sms-spam-dan?page=all, accessed on 10 April 2021, at 8.02 PM

[35] Rachmatunnisa. *Data Pribadi 200 Juta Pengguna Facebook dan Instagram Bocor*. availabe online from https://inet.detik.com/security/d-5334125/data-pribadi-200-juta-pengguna-facebook-dan-instagram-bocor, accessed on 10 April 2021, at 8.08 PM

[36] Aaron Holmes. *533 Milion Facebook Users' Phone Numbers and Personal Data Have Been Leaked Online*, availabe online from https://www.businessinsider.com/stolen-data-of-533-million-facebook-users-leaked-online-2021-4?r=US&IR=T, accessed on 10 April 2021, at 8.10 PM.

to Facebook and did not go to court.[37] This misuse of data is the cause behind the urgency of protecting the personal data of service users.

With regards to the collection of user data through the cookie, there is an encouraging development that some browsers are starting to abandon the cookie system to collect user data. Starting from one of the browsers, namely Mozilla Firefox, which since the end of February 2021 has released version 86 which is oriented towards user security and privacy.[38] There is a feature called Total Cookie Protection, which is a feature that limits the range of cookies embedded on a website that is opened. Although it does not remove the cookie feature, at least this feature makes a website unable to share user data obtained from cookies to third-party websites or advertising websites.[39]

A month later, Mozilla Firefox announced that it will release version 87 based on "Privacy-Focused" which is able to sort sensitive user data so that it is not easily leaked, especially through referring links (Referrer URL[40]) as a new policy implemented by Mozilla Firefox.[41] This policy that minimizes data retrieval especially from third parties by default has also been implemented by the Safari browser. The next browser that is also starting to be concerned with the problem of protecting personal data is Google Chrome, which plans to take it a step further by stopping the tracking feature of its users' websites and removing the cookies feature in its browser service.[42]This breakthrough can certainly provide more protection for personal data which has been a concern for the past two decades.[43]

This has a direct or indirect impact on the practice of organizing online advertising. It has been known to be effective and efficient because it utilizes user data, one of which is taken from Remote Browser Cookies.[44] As a consequence, companies began to look for other alternatives to Data Mining from Cookies such as surveys.[45] The decision of browser developers to disable the cookie feature certainly has a positive effect that supports the protection of personal data as a human right.[46] This is because the protection of personal data is one part of the protection of human rights. In addition, to being based on the Constitution of the Republic of Indonesia of 1945 which implicitly regulates the protection of the privacy of Indonesian citizens, in particular, there are also international regulations regarding the protection of personal data contained in the Universal Declaration of Human Rights (UDHR). Article 12 of the UDHR states that "No one shall be subjected to arbitrary interference with his privacy, family,

[37] Helmi Shemi. *Kasus Penyalahgunaan Data Pribadi. Kominfo SP 2 Facebook*. availabe online from https://www.idntimes.com/news/indonesia/helmi/kominfo-sp-2-facebook-penyalahgunaan-data-pribadi-1, accessed on 10 April 2021, at 8.08 PM.

[38] Martinus Aditama. *Firefox 86 Resmi Dirilis, Punya Fitur Baru untuk Lindungi Pengguna!*. Availabe online from https://nextren.grid.id/read/012572777/firefox-86-resmi-dirilis-punya-fitur-baru-untuk-lindungi-pengguna?page=all, accessed on 10 April 2021, at 10.14 PM.

[39] Michael Kan. *Firefox "Total Cookie Protection" Tries to Block More Online Tracking*, availabe online from https://sea.pcmag.com/browsers/42219/firefox-total-cookie-protection-tries-to-block-even-more-online-tracking, accessed on 10 April 2021, at 10.13 PM.

[40]*Referrer* URL adalah tautan yang berisi pengarahan kepada pihak ketiga sebagai target yang mengumpulkan data pengguna, yang terdapat dalam HTTP Header. dalam Beliz Kaleli, Manuel Egele, and Gianluca Stringhini, *On the Perils of Leaking Referrers in Online Collaboration Services*, Proceedings of the International Conference on Detection of Intrusions and Malware, and Vulnerability Assessment (DIMVA), Gothenburg Swedia, Juni 2019, P.10.

[41] Sergiu Gatlan. *Mozilla Firefox Adopts New Privacy-Enhancing Referrer Policy*, availabe online from https://www.bleepingcomputer.com/news/software/mozilla-firefox-adopts-new-privacy-enhancing-referrer-policy/, accessed on 10 April 2021, at 10.26 PM.

[42] CNN Indonesia. *Mengenal Cookies, si Penguntit Kegiatan di Browser Internet*, availabe online from https://www.cnnindonesia.com/teknologi/20210312200545-185-616900/mengenal-cookies-si-penguntit-kegiatan-di-browser-internet, accessed on 10 April 2021, at 22.31 WIB.

[43] PC Mag. (2000). *Web Site Analysis – WebTrends Log Analyzer 5.0*, PC Magazine, p.182.

[44] Nur Fitriatus Shalihah. *Google Berencana Hapus Web Cookie, Apa Dampaknya?*, availabe online from https://www.kompas.com/tren/read/2020/01/16/202900365/google-berencana-hapus-web-cookie-apa-dampaknya-?page=all, accessed on 11 April 2021, at 10.22 WIB.

[45] Tim Glomb. *Say Goodbye to Cookies*. availabe online from https://hbr.org/2021/04/say-goodbye-to-cookies, accessed on 11 April 2021, at 10.23 WIB.

[46] Hanifan Niffari. (2020). *Perlindungan Data Pribadi sebagai Bagian dari Hak Asasi Manusia atas Perlindungan Diri Pribadi (Suatu Tinjauan Komparatif dengan Peraturan Perundang-Undangan di Negara Lain)*, Jurnal Yuridis, Vol.7, No.1. p.107.

home or correspondence, nor to attacks upon his honor and reputation. Everyone has the right to the protection of the law against such interference or attacks."[47], which means that we must understand that the underlying personal data is data and information related to an individual's life and is also closely related to the concept of confidentiality or a personal right to privacy which must be guarded and protected by laws and regulations to create certainty, justice, and benefit. In essence, privacy is a right that must be protected and the personal right not to be disturbed by their personal life.[48]

At that point, that the discourse on the urgency of personal data protection arrangements. For example, to maintain the confidentiality or privacy rights of personal data. The forming personal data protection law is increasingly having urgency from day to day when considering the dynamics. It occured including the use of personal data in the form of cookies using AI as well as policies issued by browser software developers. These policies becoming center of daily activities of the digital service user. Regulation of personal data protection is very necessary to be embodied in Indonesia as a tangible form of the state to guarantee the fulfillment of the rights of citizens as mandated by the constitution.[49]

One of these legal instruments can also be used to prevent all forms of human rights violations whose starting point comes from the use of personal data through user cookies using AI. So, it will create personal data processing governance with principles accompanied by legal requirements that must be met. If this has been adhered to, it will also indirectly stimulate the impact of growing legal awareness on the protection of the rights contained in personal data among the public as data subjects, as well as encouraging the public to further improve the security of Personal Data and build equality in the rules for protecting personal data which is not only harmonized internationally but also nationally.[50]

This can also be compared to regulation of personal data protection in other countries or regions. For example, what is applied in Europe which applies the European Union General Data Protection Regulation, where the emphasis is that there is a principle of equality in the Personal Data Protection law. Especially, if the data protection applies extra-territorially and there are forms of international data transfer such as, the cross-border use of cookies using Artificial Intelligence.[51]

Referring to Article 43 of the EU GDPR in determining the level of equality of a data protection law, the European Commission will assess several aspects. The following aspects are: the rule of law, respect for human rights and fundamental freedoms, relevant legislation, both general and sector including public, defense, national security, criminal law, the access of public authorities to personal data, and its application. In addition, European Commission will also assess legal data protection rules, professional rules, and security measures, including rules for forwarding personal data to third countries or other international organizations that are complied with in countries or international organizations. Moreover, case law, effective and enforceable data protection rights of the subject, as well as effective administrative and judicial redress for the transferred subject data are also assessed.[52]

[47] R. N. Rudi Natamiharja and M. Stefany. (2019). *Perlindungan Hukum Atas Data Pribadi di Indonesia (Studi Terhadap Pelaksanaan Pelayanan Jasa Telekomunikasi PT. Telekomunikasi Selular)*, Prodigy Jurnal Perundang-undangan, Vol.7, No.2.

[48] F. N. Khansa. (2021). *Penguatan Hukum dan Urgensi Otoritas Pengawas Independen dalam Perlindungan Data Pribadi di Indonesia*, Jurnal Hukum Lex Generalis, Vol.2, No.8. p.530.

[49] F. N. Khansa. (2021). *Penguatan Hukum dan Urgensi Otoritas Pengawas Independen dalam Perlindungan Data Pribadi di Indonesia*, Jurnal Hukum Lex Generalis, Vol.2, No.8. p.535.

[50] F. N. Khansa.*Ibid*.

[51] F. N. Khansa. *Ibid*.

[52] F. N. Khansa. (2021). *Penguatan Hukum dan Urgensi Otoritas Pengawas Independen dalam Perlindungan Data Pribadi di Indonesia*. Jurnal Hukum Lex Generalis, Vol.2, No.8. p.535.

Conclusion

Data is an essential thing needed by modern companies, both for data analysis purposes and for advertising. One of the ways used to harvest user data is through the Remote Browser. However, personal data is protected by the constitution in the corridor of Human Rights, especially in Article 28G paragraph 1 of the Constitution of the Republic of Indonesia of 1945. Given the negative impacts such as spam, fraud, and the potential for other criminal acts, the personal data of the user needs to get legal protection, especially sensitive data.

This is also reflected in the case of Facebook data leaks that have occurred repeatedly and reported by online security researchers, where users from Indonesia have also become victims and it is feared that it will trigger even greater losses. Based on this, the decision of browser developers such as Mozilla Firefox, Safari, and Google Chrome is the right one. The latest developments and future policies are planned to be oriented towards the security of service users, by limiting the use of data and even disabling the cookie feature as data required by modern companies with the help of Artificial Intelligence in processing, as a personal data protection measure, especially for sensitive data.

More specific rules are needed regarding the protection of personal data on artificial intelligence in information technology. Based on the function of law, the law should not only be a law as a tool of social control but also law as a tool of social engineering. Law as a tool for engineering and updating meets technological developments in society so that it can be reflected that law is dynamic.

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