COMMUNAL INTELLECTUAL PROPERTY IN THE DIGITAL AGE: EXPLORING THE RELEVANCE, REGULATION, AND IMPACT OF CREATIVE COMMONS LICENSES

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ABSTRACT

This paper explores communal intellectual property, focusing on shared ownership and collective control, contrasting it with traditional individual ownership in the digital era. It analyses existing literature and legal frameworks, focusing on characteristics that facilitate communal intellectual property and compliance with copyright laws, as well as protecting creators' and users' rights. It emphasizes the need to regulate technology to safeguard privacy and security. Specifically, it discusses Creative Commons licenses (which enable standardized sharing of creative works while retaining selective rights), open licensing models, and their relationship with each other and the copyright laws. The paper briefly examines the Indonesian laws in this context. It also examines the impact of AI and blockchain on copyright and open licensing, as well as the Indonesian stance on them. The paper concludes by acknowledging the need for an evolving legal framework required for accommodating these licensing models.

Keywords: Communal Intellectual Property, Open Licensing, Creative Commons, AI, Blockchain, Copyright Law

A. Introduction

As opposed to the traditional concept of intellectual property, communal intellectual property is the application and realization of a system where intellectual property is collectively owned and managed by a community or group of individuals.[1] Communal intellectual property and the traditional concept of intellectual property represent two different approaches, even though there may be significant overlap between the two – the primary difference between them lies in the emphasis on ownership.[2] While traditional intellectual property emphasizes individual ownership and control over creative works, communal intellectual property emphasizes shared ownership and collective control in an

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1   David W Opderbeck, 'The Penguin's Paradox: The Political Economy of International Intellectual Property and the Paradox of Open Intellectual Property Models' (2007) 18 Stan Law & Policy Review 101, 102.

2   Tiki Dare & Harvey Anderson, 'Passport Without A Visa: Open-Source Software Licensing and Trademarks' (2009) 1(2) JOLTS <https://www.jolts.world/index.php/jolts/article/view/11> accessed 14 June 2023.

attempt to encourage collaboration, open access, and the free flow of information, with an emphasis on the community or collective benefit rather than individual ownership.[3]

The need for communal intellectual property becomes highly relevant in the contemporary state of affairs, where the digital world has transcended geographical boundaries regarding information sharing.[4] In the borderless digital environment of today, technology such as online platforms, decentralized systems, and blockchain, can enable the creation, distribution, and management of communal intellectual property assets.[5]

Therefore, with the gradual realization and implementation of communal intellectual property, there arises a need to analyze the primary characteristics of what facilitates this form of intellectual property sharing. This ensures that the processes and systems used to further communal IP comply with existing copyright laws, intellectual property rights, and other relevant legal frameworks. It also helps in protecting the rights of creators, users, and other stakeholders who are a part of the communal intellectual property ecosystem.[6]

The role of communal intellectual property is also extremely relevant for protecting indigenous communal property rights. United Nations has defined indigenous knowledge as – "*a form of rational and reliable knowledge developed through generations of intimate contact by native people with their lands.*"[7] The need to protect these rights and this branch of knowledge comes from the understanding that cultural objects have a special protected status, owing to the intangible legacy value for people, as it symbolizes of their identity.[8]

Concerning Indonesia, a culturally megadiverse country, protecting communal intellectual property plays a significant role. The custodians of such communal intellectual property perceive it more as a deposit from the ancestors, as opposed to a benefit granted to them from an economic point of view.[9]

However, such Indonesian communal property has been vulnerable to acts of misappropriation and illegal commercialization.[10] There have been several claims of violation of the traditional cultural expression (which is a part of Indonesia's communal

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3   E.S. Nwauche, 'The Emerging Right to Communal Intellectual Property' (2015) 19 (2) Marquette Intellectual Property Law Review <http://scholarship.law.marquette.edu/iplr/vol19/iss2/4> accessed 14th June 2023.

4   Greg R Vetter, 'Open Source Licensing and Scattering Opportunism in Software Standards' (2007) 48 BC L Rev 225, 225.

5   Balazas Bodo and Daniel Gervais and Joao Pedro Quintais, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing' (2018) 26 Int'l JL & Info Tech 311.

6   Philips Sandner, Jonas Gross and Robert Richter, 'Convergence of Blockchain, IoT, and AI', (2020) 3 Frontiers in Blockchain <https://www.frontiersin.org/articles/10.3389/fbloc.2020.522600/full> accessed on 16th June, 2023.

7   UNEP, *Report of the Fourth Meeting of the Conference of the Parties to the Convention on Biological Diversity* (UNEP/CBD/COP/4/27).

8   E. Campfens, 'Whose Cultural Objects? Introducing Heritage Title for Cross-Border Cultural Property Claims' (2020) 67 Neth Int Law Rev LQR 257–295.

9   Antons C, *Intellectual Property Law in Indonesia* (Kluwer Law International 2000)

10 Y. M., Putri, R. W., & Tisnanta, H. S., 'Communal Rights as the Hegemony in Third World Regime: An Indonesian Perspective' (2020) 19(2) Indonesian Journal of International Law LQR289-315.

intellectual property) by foreign parties – in an advertisement on the Discovery Channel in Enigmatic Malaysia, the dance forms of Pendet, Wayang, and Reog Ponorogo have been wrongly shown in Malaysian tourism advertisements.[11]

As per the 1945 Constitution, the government of Indonesia is obligated to – "*promote Indonesia's national culture in the midst of world civilization by guaranteeing the freedom of the people to maintain and develop their cultural values, and the state respects and preserves local languages as national cultural treasures.*"[12] Thus, the ethnic and cultural diversity, which has given birth to the intangible cultural heritage as part of traditional cultural expression in Indonesia, must be protected, preserved, and developed by the state as a communal intellectual property right.[13]

Accordingly, there is a need to regulate the technology used in the communal intellectual property space, as it often involves the collection, storage, and sharing of sensitive data – which includes personal information, intellectual property assets, as well as the cultural, anthropological heritage and history of diverse cultures.[14] Hence, regulation helps establish guidelines and safeguards to protect the privacy, security of individuals, their creative works, as well as traditional cultural heritage. It ensures that data handling practices adhere to legal requirements and industry standards, reducing the risks of unauthorized access, data breaches, or misuse of personal and intellectual property-related information.[15]

One such framework to implement the same within community intellectual property is open licensing models.[16] Open licensing models are closely related to communal intellectual property, as they provide a legal mechanism to enable the sharing, reuse, and remixing of creative works within a community or collective context, thus allowing creators to grant permissions to others for the use, adaptation, and distribution of their creative works.[17]

These licenses are designed to facilitate the sharing and collaboration of intellectual property, promoting a more open and inclusive approach to creative expression.[18] By

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11 Yenny Eta Widyanti, 'Perlindungan Ekspresi Budaya Tradisional Indonesia Dalam Sistem Yang Sui Generis' (2020) 13(3) Arena Hukum LQR 388-415.

12 The 1945 Constitution of Indonesia, 1945, 32(1),(2); M. Citra Ramadhan, 'Protecting Communal Intellectual Property In Indonesia: Constraints Faced By The Directorate General For Intellectual Property,' (2022) 24,3 Kanun Jurnal Ilmu Hukum, 267, 268

13 Taufik H. Simatupang, 'Initiating The Concept Of Sui Generis Of The Legal Protection F Communal Intellectual Property In The Philosophy Of Science Perspective' (2022) 22(2) Jurnal Penelitian Hukum De Jure

14 Huang-Chih Sung, 'Prospects and Challenges Posed by Blockchain Technology on the Copyright Legal System' (2019) 9 Queen Mary J Intell Prop 430.

15 ibid.

16 Catharina Maracke, 'Copyright Management for Open Collaborative Projects - Inbound Licensing Models for Open Innovation' (2013) 10 SCRIPTed 140, 141.

17 Dennis K. Kennedy, 'A Primer on Open-Source Licensing Legal Issues: Copyright, Copyleft and Copyfuture' (2001) 20 (2) Saint Louis University Public Law Review. <https://scholarship.law.slu.edu/cgi/viewcontent.cgi?article=1393&context=plr> accessed 14 June, 2023.

18 David W Opderbeck, 'The Penguin's Paradox: The Political Economy of International Intellectual Property and the Paradox of Open Intellectual Property Models' (2007) 18 Stan L & Pol'y Rev 101, 102.

choosing open licenses, creators contribute to the communal intellectual property ecosystem by allowing others to use their works in ways that benefit the community or society as a whole, while also overcoming the limitations of traditional copyright, which often restricts access, stifles collaboration, and impedes imaginative creation.[19] Open licensing models promote a culture of sharing, openness, and collective participation in the creative process, aligning with the goals of communal intellectual property to foster collaboration, innovation, and access to knowledge and culture.[20]

One such open licensing model is Creative Commons, an organization that provides a framework of open licensing options for creators to share their works with the public while retaining selective rights.[21] These licenses enable creators to signal their intentions regarding the use, adaptation, and distribution of their works. They are designed in such a way as to support the principles of communal intellectual property by promoting collaboration, access to knowledge, and cultural cultural diversity.[22] These licenses are designed to have a consistent structure, which makes it easier for creators and users to understand and apply the licenses.[23]

The licenses combine four main elements – attribution, non-commercial use, share-alike, and no derivatives.[24] These elements can be combined to form six different licenses, each with a different set of permissions and restrictions, and can be customized as per each individual need.[25] This is further complimented by their compatibility with other open licensing frameworks and public domain dedications. This allows for the seamless integration and interoperability of works licensed under different open licenses, thus facilitating collaboration and remixing within the communal intellectual property ecosystem.[26]

In terms of accessibility, Creative Commons licenses are designed to be machine-readable, thus quickly processed by computers and search engines and enabling automatic identification, filtering, and attribution of licensed content.[27] In terms of application, these licenses are designed to be internationally applicable, considering the variations in copyright

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19 Zachary Katz, 'Pitfalls of Open Licensing: An Analysis of Creative Commons Licensing' (2006) 46 IDEA 391.
20 ibid.
21 Creative Commons, <https://creativecommons.org/licenses/#:~:text=This%20license%20lets%20 others%20distribute,and%20use%20of%20licensed%20materials.> accessed 14 June 2023 (hereinafter, "**Creative Commons**"); Lynn M. Forsythe & Deborah J. Kemp, 'Creative Commons: For the Common Good' (2009) 30 U La Verne L Rev 346.
22 Creative Commons; Michal Koscik & Jaromir Savelka, 'Dangers of over-Enthusiasm in Licensing under Creative Commons' (2013) 7 Masaryk U JL & Tech 201.
23 Creative Commons; Jessica Coates, 'Creative Commons - The Next Generation: Creative Commons Licence Use Five Years on' (2007) 4 SCRIPTed 72, 72.
24 Creative Commons; Mira T. Sundara Rajan, 'Creative Commons: America's Moral Rights' (2011) 21 Fordham Intell Prop Media & Ent LJ 905
25 Creative Commons.
26 Tony Simmonds, 'Common Knowledge? The Rise of Creative Commons Licensing' (2010) 10 LIM 162.
27 Creative Commons; Michael W Carroll, 'Creative Commons and the New Intermediaries' (2006) 2006 Mich St L Rev 45, 45.

laws across different jurisdictions and providing a globally recognized framework for sharing and using intellectual property.[28]

At the first glance, these characteristics may come across as establishing open licensing models as the better option in comparison to traditional licensing, as traditional individual intellectual property licenses often impose strict restrictions on access and sharing, limiting the dissemination of imaginative creation. Further, traditional individual intellectual property licenses can be complex and challenging to navigate, especially for individuals without legal expertise.[29]

However, when seen from a legal standpoint and from the perspective of regulation and implementation of intellectual property rights, especially in the context of the recent advent of the digitization of information sharing and access, certain aspects of discussion come to the forefront which, require analysis of open licensing and the challenges of a borderless digital environment. These include the impact and effectiveness of open licensing models and potential legal implications, as well as exploring emerging trends and future perspectives in the same field, such as the role of open licensing in emerging technologies, including AI and blockchain.

Accordingly, the purpose of this paper is to explore the concepts pertaining to communal intellectual property, as juxtaposed against traditional intellectual property. This paper will highlight the relevance of communal intellectual property in the digital age, particularly in safeguarding cultural heritage. It shall also examine open licensing models, specifically Creative Commons, and their legal implications. In this regard, it will also discuss emerging technologies and the need for their regulation.

B. Research Method

This research aims to examine the emergence and impact of open licensing models, specifically focusing on Creative Commons, as a response to the challenges and opportunities presented by the traditional intellectual property regime. The research methodology involves a comprehensive analysis of existing literature and legal frameworks to provide a thorough understanding of the subject matter.

The research will adopt a qualitative approach, utilizing a literature review as the primary method of data collection. A systematic review of scholarly articles, legal documents, and reports will be conducted to gather relevant information on the prominence of open licensing models and their relationship with copyright law. The literature review will help identify key themes, theoretical frameworks, and debates surrounding open licensing and its impact on knowledge sharing and creativity.

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28 Tony Simmonds, 'Common Knowledge? The Rise of Creative Commons Licensing' (2010) 10 LIM 162.
29 ibid.

In addition to the literature review, legal analysis will be employed to examine the legal frameworks governing open licensing, focusing on the Creative Commons licenses. This analysis will involve an in-depth study of copyright laws, licenses, and case law to understand the legal implications and enforceability of open licenses.

Furthermore, the research will utilize a case study approach, with a specific focus on the Creative Commons organization. This will involve analyzing the development, evolution, and impact of Creative Commons licenses in facilitating the sharing and accessibility of creative works. The case study will include an examination of the licenses' structure, permissions, and restrictions, as well as their compatibility with copyright law.

Multiple sources of data will be utilized to ensure the reliability and validity of the research findings. Findings will be integrated from the literature review, legal analysis, and case study to provide a comprehensive and well-rounded understanding of open licensing models. Proper citation and attribution will be ensured to respect intellectual property rights, and any limitations or restrictions on the use of data or sources will be acknowledged. The research findings will be analyzed thematically – key patterns, trends, and implications related to the prominence and impact of open licensing models shall be identified. The results will be presented in a clear and coherent manner, supported by evidence from the literature review, legal analysis, and case study.

C. Discussions

1. The Emergence of Open License Models, and the Evolution of Creative Commons

The prominence of open licensing models can be contributed to the emergence of the digital world and can be considered a response to the challenges and opportunities presented by the traditional intellectual property regime of the individual.[30] The rise of the internet and sophisticated application of technology has facilitated the easy sharing and distribution of exclusive creations, leading to a need for alternative approaches to traditional copyright frameworks.[31] This need has slowly been recognized with the difficulty in the application and implementation of the traditional copyright framework to content in a borderless digital environment, as well as knowledge-sharing to promote and further creativity and easy access to user content while also accessing some degree of ownership to the same.[32]

The advent of open-source software can be traced back to frameworks such as the GNU General Public License ("**GPL**"), which was released in 1989 by the Free Software

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30   ibid.

31   Open Source Licensing: Virus or Virtue?, 10 TEx. INTELL. PROP. L.J. 349, 352 (2002)

32   GNU General Public License, Preamble, < https://www.gnu.org/licenses/gpl-3.0.en.html>, accessed on 15th June, 2023.

Foundation to ensure that software remains free and open to use, modify, and distribute.[33] As it used copyright law to enforce the freedom of the use of software, it is often referred to as is often referred to as a 'copyleft license'.[34] It played an important role in promoting the principles of free software and furthering the principles of collaboration and innovation within the open-source software ecosystem, and many popular software projects, such as the Linux operating system, use the GPL as their license.[35]

The characteristics of this license can be compared to the Creative Commons licensing framework, as they differed majorly in terms of freedom, distribution, and compatibility.[36] The GPL allows anyone to use the software for any purpose, whether personal, commercial, or non-profit.[37] Further, it grants the users the right to study, modify, and adapt the software according to their needs, including the ability to access and modify the source code of the software.[38] Any such modification is required to be distributed under the same GPL terms, ensuring that the freedom of the software is preserved and the evolution of the software is shared without prejudice to further access to this knowledge.[39]

Moreover, the GPL includes a copyleft provision that ensures that any derivative works or modifications of the software are also licensed under the GPL, thus including its derivatives under the shelter of free access.[40] Further, much like Creative Commons, it is designed to be compatible with other open-source licenses, allowing developers to combine GPL-licensed software with software under different open-source licenses across jurisdictions.[41]

It can be evinced that the GPL furthers open licensing in the intellectual property regime.[42] Its copyleft had a profound impact on the growth of open-source licensing and thus sparked a ripple effect, where open-source values and licensing principles permeate various domains outside of software and into creative domains like art, literature, and music.[43] Through its licensing requirements and community-driven development process,

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33   Open Source, <https://opensource.org/licenses-old/gpl-license-html/> accessed 15 June, 2023.

34   GNU General Public License, Preamble, < https://www.gnu.org/licenses/gpl-3.0.en.html>, accessed on 15th June, 2023.

35   Linux Kernel Licensing Rules, <https://www.kernel.org/doc/html/v4.16/process/license-rules.html>, accessed 16 June, 2023.

36   GNU General Public License, Basic Permissions, <https://www.gnu.org/licenses/gpl-3.0.en.html>, accessed 16 June, 2023.

37   ibid.

38   ibid.

39   Dennis K. Kennedy, 'A Primer on Open-Source Licensing Legal Issues: Copyright, Copyleft and Copyfuture' (2001) 20 (2) Saint Louis University Public Law Review. <https://scholarship.law.slu.edu/cgi/viewcontent.cgi?article=1393&context=plr> accessed 14 June, 2023.

40   Open Source, <https://opensource.org/licenses-old/gpl-license-html/> accessed 15 June, 2023.

41   GPL-Compatible Free Software Licenses, < https://www.gnu.org/licenses/license-list.en.html#GPLCompatibleLicenses> accessed 16 June, 2023.

42   Sapna Kumar, 'Enforcing the GNU GPL' (2006) 2006 U Ill JL Tech & Pol'y 1, 1.

43   Robert W Gomulkiewicz, 'Open Source License Proliferation: Helpful Diversity or Hopeless Confusion' (2009) 30 Wash U J L & Pol'y 261, 261.

the GPL has cultivated an environment where individuals freely contribute, build upon, and improve upon existing software.[44]

Thus, Creative Commons licenses are a direct response to this need for open collaboration, offering a flexible and standardized framework that enables creators to share their works with specific permissions and restrictions.[45] However, one of the most important contributions of GPL to the emergence and realization of open licensing is the eventual advent of frameworks such as Creative Commons. It sets the precedent for a robust legal framework that can protect and promote open-source ideals, thus enabling developers to confidently contribute and share their work to a degree of their own comfort without having to conform to stringent requirements of regular copyright in case they want to license their work.[46]

Creative Commons, founded in 2001, played a crucial role in standardizing open licensing practices and raising awareness of the possibilities for sharing creative pursuits in art, music, and literature while also ensuring the legal protection of such work.[47] The organization sought to simplify the licensing process by providing a suite of standardized licenses that creators could easily apply to their works.[48] As opposed to a traditional copyright framework, Creative Commons licenses are designed to be user-friendly, enabling creators to communicate their intentions regarding the permissions and restrictions they wished to associate with their works.[49] The licenses offered a balanced approach, giving creators the ability to retain certain rights, while granting others the freedom to use and build upon their work.[50]

Creative Commons licenses have evolved over time to accommodate the diverse needs of creators and users in different creative domains. The license suite offers a range of options that allow creators to specify their desired permissions and restrictions.[51] These licenses are expressed through a combination of four core elements – Attribution (BY), ShareAlike (SA), NonCommercial (NC), and No Derivatives (ND). The elements cover the different degrees of sharing capacities which a creator may wish to pursue.[52]

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44 Michael A Einhorn, 'Open Source and Innovative Copyright' (2004) 22 IPL Newsl 30, 30.
45 Mark A Lemley and Ziv Shafir, 'Who Chooses Open-Source Software' (2011) 78 U Chi L Rev 139, 139.
46 GNU General Public License, Preamble, < https://www.gnu.org/licenses/gpl-3.0.en.html>, accessed on 15th June, 2023.
47 Chunyan Wang, 'Creative Commons Licence: An Alternative Solution to Copyright in the New Media Arena' in Brian Fitzgerald, Fuping Gao, Damien O'Brien Shi, Xiaoxiang Sampsung (eds), *Copyright Law, Digital Content and the Internet in the Asia-Pacific* (Sydney University Press 2008)
48 Creative Commons; Michael W Carroll, 'Creative Commons and the New Intermediaries' (2006) 2006 Mich St L Rev 45, 45.
49 Creative Commons; Frank Polcino, 'The Creative Commons: A Supplement to Copyright in Today's Technological Culture' (2012) 2 Pace Intell Prop Sports & Ent LF 210
50 ibid.
51 Creative Commons; Eli Greenbaum, 'The Non-Discrimination Principle in Open Source Licensing' (2016) 37 Cardozo L Rev 1297, 1297.
52 ibid.

The Attribution (BY) element requires that users of the licensed work give appropriate credit to the original creator.[53] When using a work under a Creative Commons license with the BY element, users must attribute the creator by acknowledging their name or the provided attribution information.[54]

The ShareAlike element requires any adaptations or modifications to the original work to be shared under the same license terms. This provision helps to foster a culture of collaboration by ensuring that derivative creations remain open and freely accessible to others.[55]

For creators who prefer that their work remains non-commercial in nature, the NonCommercial (NC) element restricts the use of the licensed work for commercial purposes. When a Creative Commons license includes the NC element, users are prohibited from using the work in a way that generates revenue, directly or indirectly.[56]

Finally, if the creators would prefer that their original content is not used for any derivative work, the No Derivatives (ND) element prohibits the creation of derivative works based on the original licensed work. Under a Creative Commons license with the ND element, users are not allowed to modify, adapt, or remix the creation.[57]

The growth of open licensing models, such as Creative Commons, has raised important legal and policy considerations due to its variance from traditional frameworks.[58] The application and enforceability of open licenses vary across jurisdictions, and legal frameworks continue to evolve to accommodate these new licensing models.[59] Questions regarding the relationship between open licenses and copyright law, the scope of license terms, and the legal implications of license violations have been subjects of legal debates and court cases.[60] This will be analyzed in detail in the next section.

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53   Creative Commons; H Ward Classen, 'Open Source Licensing and Its IP Considerations' (2005) 14 Bus L Today 9, 9.

54   Christian H Nadan, 'Open Source Licensing: Virus or Virtue' (2002) 10 Tex Intell Prop LJ 349, 349.

55   Heather N. Kjos, 'The Statutory Damages Regime of Copyright Law: The Non-Commercial User and Capitol Records, Inc. v. Thomas-Rasset' (2010) 1 Cybaris Intell Prop L Rev 174

56   ibid.

57   Creative Commons License Code, < https://creativecommons.org/licenses/by/3.0/legalcode> accessed 14 June 2023 (hereinafter, "**Creative Commons License Code**"); Joe Mutschelknaus, 'Spillover Effect: Investigating Patent Implications to Open-Source Software Copyright Licensing' (2010) 19 Fed Cir BJ 409, 409.

58   Ahrash N. Bissell, 'Permission granted: open licensing for educational resources, Open Learning: The Journal of Open, Distance and e-Learning', (2009) 24, 1.

59   Melanie Dulong de Rosnay, 'Creative Commons: Open Content Licenses to Govern Creative Works', European Journal for the Informatics Professional, (2006) 7,3.

60   O'Reilly, Legal Impacts of Open Source and Free Software Licensing, <https://www.oreilly.com/library/view/understanding-open-source/0596005814/ch06.html> accessed 16 June, 2023.

2. Relationship between Open Licenses and Copyright Law in the case of Creative Commons

Copyright law automatically grants creators exclusive rights over their original works. These rights include the right to reproduce, distribute, display, and create derivative works based on the original work.[61] By default, any use of a copyrighted work requires permission from the copyright holder. Thus, the concept of open licenses relies on using the protection granted by trademark law to ensure permission to others for use.

Creative Commons licenses function as legal instruments that allow creators to grant permissions to others in a standardized and easily understandable manner.[62] These licenses are based on copyright law, and are designed to work within its framework, following the 'copyleft' principle. They specify the permissions granted by the copyright holder, outlining the conditions under which others can use the work.[63]

Creative Commons licenses define the terms and conditions under which the licensed works can be used.[64] These licenses may include requirements for attribution, share-alike, non-commercial use, and restrictions on creating derivative works.[65] By specifying these terms, the licenses provide clarity to both creators and users regarding the permissions granted and the obligations that accompany the use of the work.[66] Therefore, as open licenses operate within the realm of copyright law, Creative Commons licenses are legally enforceable agreements that rely on copyright law for their enforcement. When users comply with the terms of a Creative Commons license, they are granted the permissions specified by the license. If someone violates the terms of the license, they can be held legally accountable for copyright infringement.[67]

An analysis of the Creative Commons Legal Code ("**the Code**") gives an interesting overview of the interface between copyright law and open licensing. The Code provides for fair dealing rights, which states that the Creative Commons license does not limit or restrict any uses that are already permitted under copyright law or other applicable laws.[68] Therefore, these licenses operate completely within the realm of copyright law and find their legal mandate through the same.

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61 Dennis K. Kennedy, 'A Primer on Open-Source Licensing Legal Issues: Copyright, Copyleft and Copyfuture' (2001) 20 (2) Saint Louis University Public Law Review.

62 ibid.

63 ibid.

64 Creative Commons; Stefano Leucci, 'Preliminary Notes on Open Data Licensing' (2014) 2 J Open Access L 1, 1.

65 ibid.

66 Creative Commons; Jason Schultz and Jennifer M Urban, 'Protecting Open Innovation: The Defensive Patent License as a New Approach to Patent Threats, Transaction Costs, and Tactical Disarmament' (2012) 26 Harv J L & Tech 1, 1.

67 Creative Commons License Code; Michael W Carroll, 'Creative Commons and the New Intermediaries' (2006) 2006 Mich St L Rev 45, 45.

68 Creative Commons License Code; Severine Dusollier, 'The Master's Tools v. the Master's House: Creative Commons v. Copyright' (2006) 29 Colum JL & Arts 271

Further, as per the Code, the licensor grants the licensee a worldwide, royalty-free, non-exclusive, perpetual license to exercise rights such as reproduction, incorporation, and distribution of the licensed work as well as adaptations.[69] Thus, when these two rules are read together, it can clearly be seen how copyright law is used to propagate the free access and sharing of creative product.

An important aspect of copyright law – royalties – is a requirement and a diversion from usual copyright contracts, as multiple people across jurisdictions use the creative product worldwide. Thus, the Code clarifies the status of royalties in three situations – (i) in jurisdictions where the right to collect royalties cannot be waived, the Licensor reserves the right to collect such royalties;[70] (ii) in jurisdictions where royalties can be waived, the licensor waives the right to collect them,[71] and (iii) in voluntary license schemes, the licensor waives the right to collect royalties.[72]

It is also relevant to note the effects of the restrictions which are mentioned in the Code. In furtherance of the copyleft principle, the Code prohibits the imposition of any additional restrictions on the work that contradicts the license[73] to preserve the spirit of open licensing and free access and sharing, and to ensure that individuals do not misuse the product of open licensing. In a similar vein, it is further mandated that such work is not sublicensed.[74] The Code also clarifies that this license does not create any additional rights under the applicable law.[75]

Thus, it can safely be concluded while open licenses operate within the boundaries of copyright law, they expand user rights by granting permissions beyond what copyright law typically allows. They provide a legal framework that allows creators to share their works while maintaining some control and specifying conditions for use. Open licenses are a valuable tool in a borderless digital environment for promoting openness and facilitating the sharing of creative works within the constraints of copyright law, as can be seen in the case study of Creative Commons.

It is interesting to note that Indonesia amended its copyright law in 2014, specifically

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69 Creative Commons License Code; Herkko A. Hietanen, 'A License or a Contract, Analysing the Nature of Creative Commons Licenses.' (2007) NIPLR 1, accessed 17th June 2023.
70 Creative Commons License Code; Brian L. Fyre, 'A License to Plagiarize' (2020) UALR L. Rev. 51, 43.
71 Creative Commons License Code; Timothy K. Armstrong, 'Shrinking the Commons: Termination of Copyright Licenses and Transfers for the Benefit of the Public' (2010) Harv. J. on Legis 47, 359.
72 Creative Commons License Code; Margoni, Thomas and Peters, Diane, Creative Commons Licenses: Empowering Open Access <http://dx.doi.org/10.2139/ssrn.274604> accessed 16 June, 2023.
73 Creative Commons License Code; Herkko Hietanen, 'Creative Commons Olympics: How Big Media is Learning to License from Amateur Authors', (2011) Intell. Prop. Info. Tech. & Elec. Com. L. 2, 50.
74 Creative Commons License Code; Lydia Pallas Loren, 'Building a Reliable Semicommons of Creative Works: Enforcement of Creative Commons Licenses and Limited Abandonment of Copyright', (2006) Geo. Mason L. Rev. 271 14, 271.
75 Creative Commons License Code; Axel Metzger, 'The Right of the Author to Grant Licenses for Non-Commercial Use', (2015) J. Intell. Prop. Info. Tech. & Elec. Com. L. 6, 11.

the provisions on license recordation. As per Article 83 of Law Number 28 of 2014, the term "*license recordation*" refers to the obligation for licensors, including those who publish works under Creative Commons, to inform the Indonesian Copyright Office about their licenses. Failure to comply with this requirement renders the applied license ineffective and unenforceable against third parties.[76] This requirement raised concerns for the operation of Creative Commons and other open licenses.

The Creative Commons Indonesia team (an affiliate in Indonesia as per Law No. 28 of 2014, which provides Indonesian translations of Creative Commons licenses in compliance with Indonesian copyright law)[77] engaged with the Indonesian Copyright Office to request an exception for open licenses. After discussions and providing written explanations, the Indonesian Copyright Office agreed to exclude Creative Commons licenses from the license recordation mandate.[78]

3. Impact of Technological Advancements on Copyright Law and Open Licensing

Another important aspect for consideration is the rapid development of artificial intelligence and blockchain technology, which presents both novel challenges and transformative opportunities for copyright frameworks and open licensing.

a. Artificial Intelligence

The advent of artificial intelligence technologies such as Open AI has created a paradigm shift in creativity, where such programs can generate original and creative content in fields of literature, music, art, etc. AI can assist in generating and curating content that is openly licensed.[79] Through natural language processing and machine learning algorithms, AI systems can analyze vast amounts of data, identify patterns, and generate new content, which expands the pool of openly licensed works available for use and adaptation by others.[80] AI can also prove to be an immaculate creative assistant, supporting artist, writer, and creator for creative processes and content creation, thus empowering the very rationale of open licensing. AI-powered tools can provide suggestions, generate ideas, and aid in developing creative works.[81] By augmenting human creativity, AI can enable more individuals to participate in open licensing by providing them with the tools and resources to produce high-quality and original content.[82]

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76 Law Number 28 of 2014, Indonesia
77 Creative Commons Indonesia, <https://creativecommons.or.id/tentang.html>, accessed 20 June, 2023
78 Creative Commons Indonesia, <https://creativecommons.org/2016/11/28/making-creative-commons-licensing-work-indonesia/>, accessed 20 June 2023
79 Victor M Palace, 'What If Artificial Intelligence Wrote This: Artificial Intelligence and Copyright Law' (2019) 71 Fla L Rev 217, 220.
80 ibid.
81 ibid, 221.
82 ibid, 222.

Tracking the usage of openly licensed works can be a complex task. Yet, AI systems can automate license verification, attribution, and tracking, ensuring compliance with open licensing requirements.[83] This simplifies the licensing process for creators and users, making sharing and collaborating on creative output easier.

Further, in terms of content marketing, AI algorithms can analyze user preferences, behavior, and content characteristics to provide personalized content recommendations.[84] By leveraging AI, open licensing platforms can offer users a tailored experience which can help them discover relevant, openly licensed works that align with their interests.[85] This promotes the dissemination and accessibility of openly licensed content to a broader audience.

AI can also provide for widening of opportunities for open licensing in the nascent stages of copyright as understanding copyright and open licensing can be challenging for individuals and organizations.[86] AI can assist in educating users about copyright laws, open licensing models, and proper attribution practices.[87] AI-powered chatbots or virtual assistants can provide guidance, answer questions, and raise awareness about the benefits and requirements of open licensing, fostering a culture of compliance and responsible use.[88] AI translation tools can break down language barriers and enhance the accessibility of openly licensed works.[89] By automatically translating content into different languages, AI expands the reach of open licensing initiatives, allowing individuals from diverse linguistic backgrounds to access and contribute to the open knowledge ecosystem.[90]

Finally, when it comes to addressing quality concerns, AI can assist in identifying and flagging potential instances of plagiarism, ensuring that works shared under open licenses are original and properly attributed.[91] AI-powered algorithms can compare content against vast databases, providing a valuable tool for quality control within the open licensing community.[92]

Therefore, it cannot be denied that AI offers numerous benefits to open licensing. However, it is important to address ethical considerations, as well as ensure that AI systems

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83   Michael Hatfield, 'Professionally Responsible Artificial Intelligence' (2019) 51 Ariz St LJ 1057, 1092.

84   Ananya Mohapatra, 'Artificial Intelligence and Privacy of Digital Consumers' (2021) 24 Supremo Amicus [344]

85   ibid.

86   Muñoz Ferrandis, Carlos and Duque Lizarralde, Marta, 'Open Sourcing AI: Intellectual Property at the Service of Platform Leadership' < SSRN: https://ssrn.com/abstract=4018413> accessed 17 June, 2023.

87   Hackernoon, Using Open Source Licensing to Resolve the AI Copyright Debate: AI as Derivative Works, https://hackernoon.com/using-open-source-licensing-to-resolve-the-ai-copyright-debate-ai-as-derivative-works, accessed 17 June, 2023.

88   ibid.

89   ibid.

90   ibid.

91   Michael Hatfield, 'Professionally Responsible Artificial Intelligence' (2019) 51 Ariz St LJ 1057, 1092.

92   ibid.

are designed and deployed in a manner that respects intellectual property rights, as well as promotes fairness and inclusivity. This is because while AI holds great potential to enhance the relevance of open licensing, it also presents challenges and potential problems that need to be carefully addressed.[93]

An important aspect that comes into play is the need for proper attribution of the original creators in open licensing.[94] AI-generated content may not always provide clear attribution or acknowledgment to the original sources. This raises concerns about transparency and fairness in giving credit to creators. As AI algorithms can analyze and process large amounts of data, this can lead to unintentional copyright infringement when AI systems generate or use content that is protected by copyright.[95] Without proper safeguards and human oversight, AI can inadvertently violate copyright laws, undermining the principles of open licensing.[96] Thus, AI systems need to be designed to ensure that attribution requirements are met when generating or using content under open licenses.[97]

The integration of AI into the open licensing framework can also raise complex legal questions on determining liability in cases of AI-generated copyright infringement or attribution, as existing copyright laws across the world may not adequately address the issue of AI-generated content.[98] This requires policymakers and legal experts to navigate this evolving landscape and adapt regulations accordingly.

Particularly, Indonesia has recognized the importance of AI and its potential societal impact. The Ministry of Communication and Informatics issued the National Strategy on Artificial Intelligence in 2020, outlining the country's vision and roadmap for AI development.[99] The Government Regulation No. 71 of 2019 on the Implementation of Electronic Systems and Transactions addresses certain aspects of AI, including data protection and privacy considerations.[100] Further, the Personal Data Protection Law 2022, aims to establish comprehensive data protection regulations, including provisions related to AI and automated decision-making processes.[101]

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93   The Federalist Society, The Problem with AI Licensing & an 'FDA for Algorithms', https://fedsoc.org/commentary/fedsoc-blog/the-problem-with-ai-licensing-an-fda-for-algorithms accessed 17 June, 2023.
94   ibid.
95   Yavar Bathaee, 'Artificial Intelligence Opinion Liability' (2020) 35 Berkeley Tech LJ 113
96   Victor M Palace, 'What If Artificial Intelligence Wrote This: Artificial Intelligence and Copyright Law' (2019) 71 Fla L Rev 217.
97   Special Committee on Artificial Intelligence in a Digital Age, 'Challenges and limits of an open source approach to Artificial Intelligence', <https://www.europarl.europa.eu/RegData/etudes/STUD/2021/662908/IPOL_STU(2021)662908_EN.pdf> accessed 17 June, 2023.
98   Daniel Seng & Stephen Mason, 'Artificial Intelligence and Evidence' (2021) 33 SAcLJ 241.
99   AISCI (2020) 'Artificial Intelligence Strategy for Indonesia: Building Trust in AI for Societal Progress', <https://s899a9742c3d83292.jimcontent.com/download/version/1610650061/module/8284006463/name/AISCI-2020-Indonesia.pdf>, accessed on 20 June 2023
100 Peraturan Menteri Perdagangan Nomor 1 Tahun 2020 tentang Ketentuan Ekspor dan Impor Teknologi Informasi dan Komunikasi, 2020, Peraturan Menteri Perdagangan Republik Indonesia, https://jdih.kemendag.go.id/peraturan/download/2453/3, accessed 20 June 2023
101 Personal Data Protection Law, Act No. 27 of 2022

To address the challenges posed by AI, it is crucial to develop robust frameworks and guidelines for AI use in the context of open licensing. This includes promoting transparency in AI-generated content, ensuring proper attribution mechanisms, implementing safeguards against copyright infringement, and actively addressing bias and discrimination in AI algorithms.[102]

Moreover, collaboration between AI developers, legal experts, and open licensing communities is essential to navigate these challenges, as well as preserve the integrity and relevance of open licensing in the era of artificial intelligence.[103]

b. Blockchain Technology

The emergence of blockchain technology presents new possibilities for open licensing models. Blockchain provides a decentralized and transparent ledger that records all transactions and activities related to open licensing.[104] By leveraging blockchain technology, open licensing platforms can ensure transparency in licensing agreements, content usage, and attribution. This enables creators and users to easily verify the authenticity and ownership of works, fostering trust and accountability within the open licensing ecosystem.

Blockchain's immutability ensures that copyright registrations and licenses cannot be tampered with or altered.[105] This feature can strengthen the protection of creators' rights and prevent unauthorized modifications to licensed works. By recording copyright information on the blockchain, creators can establish a secure and tamper-proof record of their ownership, enabling efficient enforcement of their rights.[106]

Blockchain-based smart contracts can automate licensing agreements and streamline the licensing process. By utilizing smart contracts, creators can establish licensing terms, automate royalty payments, and enforce licensing conditions in a transparent and efficient manner.[107] This reduces the need for intermediaries, lowers transaction costs, and facilitates the broader adoption of open licensing.

Blockchain enables the traceability of content usage and ensures proper attribution, and each transaction or use of a licensed work can be recorded on the blockchain, creating

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102 Xavier Ferrer, "Bias and Discrimination in AI: A Cross-Disciplinary Perspective" (2021) https://technologyandsociety.org/bias-and-discrimination-in-ai-a-cross-disciplinary-perspective/ accessed 17 June, 2023.

103 James Manyika, Jake Silberg,& Brittany Presten, Harvard Business Review Home, 'What Do We Do About the Biases in AI?' <https://hbr.org/2019/10/what-do-we-do-about-the-biases-in-ai> accessed 17 June, 2023.

104 Huang-Chih Sung, 'Prospects and Challenges Posed by Blockchain Technology on the Copyright Legal System' (2019) 9 Queen Mary J Intell Prop 432

105 ibid.

106 ibid.

107 Balazas Bodo, Daniel Gervais & Joao Pedro Quintais, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing' (2018) 26 Int'l JL & Info Tech 311

an auditable trail of its usage history.[108] This facilitates the tracking of content distribution, attribution of works to their original creators, and fair compensation for their contributions.

Blockchain's decentralized architecture ensures that open licensing platforms are not controlled by a single authority or entity.[109] This resilience to centralized control makes it difficult for governments or external parties to censor or restrict access to openly licensed content. By utilizing blockchain, open licensing can promote freedom of expression, access to knowledge, and protect against censorship attempts.[110]

Thus, by providing transparency, accountability, traceability, and automation, blockchain can revolutionize licensing processes, protect creators' rights, and foster collaboration within the open licensing community.[111] With continued advancements and thoughtful implementation, blockchain can contribute to the growth and sustainability of open licensing in the digital era.

However, this technology is still evolving, and scalability, energy consumption, and user experience are areas that require further development and thus, poses area of concern. Blockchain technology is complex and requires technical expertise to understand and implement.[112] The intricacies of blockchain protocols, smart contracts, and decentralized systems can be daunting for individuals without technical knowledge and thus may discourage creators and users from adopting blockchain-based open licensing platforms, limiting the reach and accessibility of open licensing initiatives.[113] Further, blockchain's immutability, which is one of its characteristic features, acts a double-edged sword in the context of open licensing.[114] While it furthers the goals of open licensing, once a licensing agreement or transaction is recorded on the blockchain, it becomes virtually irreversible.[115]

From a very holistic perspective, blockchain networks, particularly public blockchains like Bitcoin and Ethereum, face scalability challenges and consume significant amounts of energy.[116] As open licensing platforms grow and attract more users, the scalability limitations of blockchain technology may hinder the efficient processing of licensing transactions. Additionally, the energy consumption associated with blockchain networks has raised

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108 Samuel N. Weinstein, 'Blockchain Neutrality' (2021) 55 Ga L Rev 499

109 ibid.

110 Annabel Tresise, Jake Goldenfein & Dan Hunter, "What Blockchain Can and Can't Do for Copyright" (2018), 28 Australian Intellectual Property Journal 144.

111 Samuel N. Weinstein, 'Blockchain Neutrality' (2021) 55 Ga L Rev 499

112 Walid Al-Saqaf & Nicolas Seidler, 'Blockchain technology for social impact: opportunities and challenges ahead' (2017) Journal of Cyber Policy 2,3, 338-354.

113 ibid.

114 Clohessy, T., Acton, T., Rogers, N. (2019) 'Blockchain Adoption: Technological, Organisational and Environmental Considerations,' <https://doi.org/10.1007/978-3-319-98911-2_2> accessed 17 June, 2023.

115 ibid.

116 Europa Environment Agency, Blockchain and the environment, <https://www.eea.europa.eu/publications/blockchain-and-the-environment> accessed 16 June, 2023.

concerns about its environmental impact, which may affect the sustainability and viability of blockchain-based open licensing initiatives.[117]

Therefore, while blockchain technology offers potential benefits for open licensing, it also presents challenges that need to be carefully addressed. Overcoming technical barriers, clarifying legal frameworks, ensuring flexibility, addressing privacy concerns, improving scalability, enhancing user experience, establishing effective governance, and achieving interoperability are key areas that require attention.[118] By addressing these challenges, blockchain technology can contribute to the growth and relevance of open licensing in a sustainable and inclusive manner.

In Indonesia, the intersection of blockchain, open licensing, and copyright is an area of law that is still developing. However, there is a growing recognition of the potential of this technology to promote innovation and collaboration. As blockchain technology continues to evolve, it is likely that Indonesian copyright law will need to be adapted to ensure that the rights of copyright holders are protected while also promoting innovation.[119]

D. Closing

Basis the discussions in this paper, it can be concluded that open licensing models like Creative Commons have emerged as responses to the challenges posed by traditional intellectual property frameworks in the digital era. The GNU GPL has played a significant role in promoting collaboration and free software. Creative Commons has standardized open licensing practices, providing creators with a flexible framework to specify permissions and restrictions. These licenses operate within copyright law, granting permissions and defining usage terms. Open licenses, including Creative Commons, foster collaboration, innovation, and knowledge accessibility. However, their application and enforceability vary across jurisdictions, necessitating ongoing legal adaptation, including Indonesia.

The upcoming advancements in the global world, specifically the rise of artificial intelligence and blockchain technology, present both opportunities and challenges for traditional copyright frameworks and open licensing models. Adapting copyright frameworks to accommodate AI-generated works, addressing legal personhood concerns, and leveraging blockchain technology for transparent and efficient open licensing are essential steps for governments across the world, including Indonesia.

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117 ibid.
118 GNU General Public License, Preamble, < https://www.gnu.org/licenses/gpl-3.0.en.html>, accessed on 15th June, 2023.
119 Abeba N. Turi, *'Technologies for Modern Digital Entrepreneurship: Understanding Emerging Tech at the Cutting-Edge of the Web 3.0 Economy'* (Apress, 2020)

Policymakers, legal experts, and stakeholders must collaborate to navigate these evolving landscapes and strike a balance between protecting rights and fostering innovation in the borderless digital age. The proactive consideration and thoughtful adaptation of copyright and licensing frameworks will be vital to facilitate the responsible and effective use of AI and blockchain technologies while ensuring the preservation of creativity and intellectual property rights.

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