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A POTENTIAL APPROACH TO THE USE OF ARTIFICIAL INTELLIGENCE IN TRADEMARK VERIFICATION PROCESS

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ABSTRACT

Artificial Intelligence (AI) is undeniably impacting many aspects of life, including legal fields. Many countries are now focused on developing AI in many sectors, such as governmental services. In relation to the plan of the Government of Indonesia to provide faster public services, AI can be expected to be a catalyst and support in the field of the Intellectual Property Rights verification process, specifically trademark. By now, the process may take several times to arrive at the final decision before the certificate of IP Rights ownership is given to the applicant. This is due to the necessity of the details that need to be checked to guarantee the originality of the application of the IP rights. This paper will discuss the possibility of how AI can be a helpful breakthrough to innovate in assisting the intellectual property rights verification process under the supervision of the Ministry of Law and Human Rights in Indonesia.

Keywords: Artificial Intelligence; Trademark; Intellectual Property Rights.

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INTRODUCTION

Artificial Intelligence (AI) has been under the spotlight of many discussions and become a focus of interest of many researchers, institutions and industries.[1] The peak of AI emergence was marked by the launch of a generative AI platform deployed by Open AI as ChatGPT 4 inlate 2022.[2]

[1] European Commission. AI Watch: Defining Artificial Intelligence : Towards an Operational Definition and Taxonomy of Artificial Intelligence. (2020) *Joint Research Centre PublicationOffice* 4.

[2] Dan Milmo, 'ChatGPT Reaches 100 Million Users Two Months after Launch', *The Guardian*

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As the human mind is digitized, AI also has the ability to create works creativity such as literature, art, music as well which has been mentioned above. As an example, SONY CSL research laboratory created intelligent software capable of creating pop music.4 In fact, they launched project (funded by the European Research Council (ERC)) dedicated to music, namedFlowmachines. As a result, two new song styles were born 'The Beatles'.5 Not only that, in 2016, there is a group of museums and researchers in the Netherlands released a painting entitled "The Next Rembrandt," computer generated paintings with analyzing thousands of works by Dutch artists 17th century, Rembrandt Harmenszoon van Rijn.6 Based on that, it is only natural to use it AI system in the production of a work, good for personal and productionpurposes, has has become commonplace in this technological era completely automatic, autonomous and sophisticated.[3]

As with any other novel invention, this automated sci-fi-like technology has given rise to a wide debate about whether it can assist or replace humans, as it is programmed to be able to think like humans, or it is merely a trend that eventually will be swept away by time. Regardless, the impact of AI on humans' lives cannot be denied. Referring to the statement ofthe President of Russia, Vladimir Putin, that whoever becomes the leader of AI will dominatethe global power. This is signalling how crucial AI's role is in global settings. Although Indonesia may still need to go a long way to be leading in the AI industry, at least we can be optimistic that we can utilise AI in the field of Intellectual Property.

There are several forms of intellectual property rights, including patents, trademarks, copyrights, and trade secrets. In global settings, intellectual property is regulated by. The Protection of Intellectual Property Rights is marked with the Paris Convention for the protection of industrial property, and the Berne Convention protecting copyright. In the mid 1990s, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), became a compulsory part of the World Trade Organization (WTO). By now, intellectual property is protected globally under the World Intellectual Property Organization (WIPO), which administers IP treaties, including, agreements with IP chapters, such as bilateraltrade treaties.[4]

Indonesia is a member of the World Trade Organization since 1st January 1995. As a member of WTO, Indonesia adjusted the legislation related to

(online, 2 February 2023)<https://www.theguardian.com/technology/2023/feb/02/chatgpt- 100-million-users-open-ai-fastest-growing-app>.

[3] Maulana Reyza Alfaris Rahmadi Indra Tektona, Nuzulia Kumala Sari, "Quo Vadis Undang-Undang Hak Cipta Indonesia: Perbandingan Konsep Ciptaan Artificial Intelligence Di Beberapa Negara," *NEGARA HUKUM* 12, no.2 (2021).

[4] Tuomas Mylly et al (eds), 'The Transformation of Global Intellectual Property Protection: General Introduction' in *Global Intellectual Property Protection and New Constitutionalism: Hedging Exclusive Rights* (Oxford University Press, 2021)

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Intellectual Property Rights under the regulation for Copyright by Law No. 28 of 2014, Patent by Law No.13 of 2016, Trademarks and Geographical Indication by Law No.20 of 2016, Industrial Design by Law No.31 of 2000, Integrated Circuit Layout Design by Law No.32 of 2000, Trade Secrets by Law No.30 of 2000,and Plant Variety Protection by Law No.29 of 2000. The importance of intellectual property isnow can be assisted with the development of technologies that keep on advancing. This paper will discuss the possibility of how the intellectual property verification process can be combined with the help of Artificial Intelligence (AI) to ensure a faster, more reliable, and innovative approach to the protection of intellectual property.

METHOD

The method used in this research is based on normative juridical legal research. This method is carried out by examining various legal rules and statute approaches.[5]

DISCUSSION

Intellectual property rights refer to the legal protection granted to individuals or organisationsfor their creations, inventions, and original works[6]. Another way to define intellectual propertyis as creations of the mind – everything from works of art to inventions, computer programs totrademarks and other commercial signs.[7] Intellectual property rights are essential in today's business world, protecting innovative ideas and creations. In the constantly evolving digital era, it is crucial to have a firm understanding of these rights to safeguard original works from unauthorised use. Grasping the intricacies of intellectual property rights is important for individuals and businesses aiming to secure their competitive edge and retain ownership over their creative endeavours. This guide will explore various aspects of intellectual property rights and highlight their significance in today's dynamic and competitive environment.

There are several forms of intellectual property rights, including patents, trademarks, copyrights, and trade secrets. Each type of protection serves a specific purpose, whether it's safeguarding a novel invention, a unique business logo, a piece of creative work, or confidentialbusiness information. Article 15 of the Agreement on Trade-Related Aspects of Intellectual Property Rights outlines a definition for trademarks, stating that "*Any sign, or any combinationof signs, capable of distinguishing the goods or services of one undertaking from those of*

[5] Eka NAM Sihombing, Cynthia Hadita , Penelitian Hukum (Malang: Setara Press, 2022).

[6] Granit Curri,' Intellectual property law – age of internet, (2016) *Academic Journal ofInterdisciplinary Studies Vol. 5 No. 3 S1*.

[7] World Intellectual Property Organization, 'What is Intellectual Property?'(online,2020) <https://www.wipo.int/publications/en/details.jsp?id=4528>

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otherundertakings, shall be capable of constituting a trademark".[8]

There are multiple aspects to this definition.[9] First, a trademark is defined in substance as a sign. It can be denominations, letters, numerals, combinations of colours, or any combination of these elements. Second, a trademark is defined by its function, the sign must be distinctive.Originally the trademark law was designed to fulfil the public policy objective of consumer protection. It prevents the public from being misled as to the origin or quality of products. Third, a trademark is defined in legal terms: It is a type of industrial property. Trademark protection grants the owner the exclusive right to use the signs to identify the goods or servicesproduced or to authorise another party to use them in return for payment.

Practically, the owner can be any physical or legal person,(the majority of trademarks are owned by firms).Trademarks are defined as a combination of these different dimensions.The main purpose of trademarks is to prevent consumer confusion by ensuring that the source of aproduct or service is easily recognizable. When a trademark is registered, the owner gains exclusive rights to use the mark in association with specific goods or services, and can take legal action against unauthorised use by others. For example, the Nike 'swoosh' logo and the Coca-Cola name and script are both well-known trademarks that easily identify the source of the products.[10]

It is important for businesses to conduct thorough trademark searches before adopting a new mark to avoid infringing on existing trademarks. Additionally, registering a trademark with theappropriate government authority provides legal evidence of ownership and can serve as a valuable asset for the business. In addition to protecting the interests of the trademark owner, trademarks also benefit consumers by facilitating informed purchasing decisions and promoting fair competition among businesses.[11]

While trademarks are indeed important for protecting the interests of businesses and individuals, it is also important to consider the potential drawbacks and limitations of trademark rights. One opposing argument is that the exclusive rights granted to trademark owners can stifle competition and innovation in the marketplace. When one company owns exclusive rights to a certain mark, it may limit the ability of other businesses to use similar marks, even if they are not intentionally trying to pass off their products as those of the

[8] Valentine Millot, "Trademarks as an Indicator of Product and Marketing Innovations", OECD Science, Technology and Industry Working Papers, No. 2009/06, (Paris, OECD Publishing, 2009)

[9] ibid

[10] Maverick, J. B, 'Trade Name vs. Trademark: What's the Difference? ' *Investopedia (*online, 26 December 2022)

<https://www.investopedia.com/articles/personal-finance/120415/trade-name-vs-trademark-know- difference.asp>,

[11] ibid

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trademark owner. This can lead to a lack of diversity in the market and can hinder new entrantsfrom establishing themselves.

Furthermore, the process of conducting thorough trademark searches and registering a trademark with the appropriate government authority can be time-consuming and costly, especially for small businesses and individuals with limited resources. This may create barriersto entry for new entrepreneurs and innovators, ultimately hindering economic growth and creativity. For Example, in United States, the entire trademark registration process usually takes between 12-18 months from the initial filing date until the trademark is officially registered and you receive the registration certificate. The typical timeline is as follows[12]:

1. Filing the application - This is the start date that establishes the claim to the trademark.
2. USPTO Review (4-10 months) - It can take 4-10 months for a USPTO examining attorneyto be assigned and conduct the initial review of the application.
3. Office Action Response (6 months) - If issues are identified, there will be 6 months torespond to the USPTO office action letter explaining how to address them.
4. Publication in Official Gazette (3 months) - After approval, the mark is published for 30days to allow for opposition. This takes around 3 months.
5. Registration (2-3 months) - If no opposition, the registration certificate will be publishedtypically 2-3 months after publication.

Trademark registration typically takes 12-18 months from filing to final registration, assumingno significant delays from office actions or oppositions. Trademark registration timelines in Indonesia closely resemble those in the United States.

In some cases, trademarks may also be used to restrict freedom of expression. Individuals andorganisations may face legal challenges for using certain words, symbols, or designs that are deemed to be too similar to a registered trademark. The Indonesian Act Number 20 of 2016 on Trademarks and Geographical Indications specifies that a request for trademark registration will not be approved if it closely resembles another mark that has already been registered for similar goods/services. Evaluation of similarities includes analysing the overall elements comprising the brand, such as visual, phonetic (sound), and conceptual meanings. If there are significant resemblances in the primary elements, even if they are not exact matches, it is deemed to have essential similarities. This can result in limitations on their ability to express

[12] The United States Patent and Trademark Office.' *How long does it take to register?'* (n.d.), < https://www.uspto.gov/trademarks/basics/how-long-does-it-take-register>

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themselves freely.

Trademarks unquestionably serve an important function in safeguarding the interests of both businesses and consumers. However, it is vital to strike a balance between these protections and fostering competition, creativity, and freedom of speech within the market. One approachinvolves employing artificial intelligence in trademark management.

In relation to the potential of advancing the process of intellectual property registration and verification process, the new existing advanced technology known as Artificial Intelligence (AI) can be considered as a new approach. By now, artificial intelligence is still complicated to define since there is no universally agreed definition of it.[13] One of many ways it can be defined is as a machine that is capable of doing tasks that require intelligence like humans do.[14]A definition of AI is also made by the High-Level Expert Group on Artificial Intelligence (HLEG) of the European Commission, that AI is software designed to carry out complex tasks,act by perceiving the environment through collected data, information processing mechanismsand data interpretation to decide the best action in achieving the goal that has been given.

Following the definition provided by HLEG, AI can further be categorized related to its capabilities, which are (i) reasoning and decision-making and (ii) learning and perception.[15] The first category covers its ability to transform information into understandable data that further can be used in decision-making. The second category covers the capabilities of developing information based on symbolic rules, involving learning, and extracting information, and solving problems based on perceived data (written language, image, sound, etc). The sub-field of this category is related to Machine Learning, Natural Language Processing, and Computer Vision.[16] This paper and its recommendations are in the scope of the combinations of these categories in implementation, which are constructed in the form of generative AI.

The exponential growth of AI demonstrated not only extraordinary potential and capabilities but also profound risks. Due to this condition, it is seen as important to bring out ethical frameworks, regulations, and cooperative initiatives to ensure the beneficial outcomes of AI are maximized while still protecting public interests. Considering that AI is the most advanced system today that develops rapidly at an exponential rate, it is reasonable to expect that

[13] Karen Yeung, 'A Study of the Implications of Advanced Digital Technologies (Including AISystems) for the Concept of Responsibility Within a Human Rights Framework' (2018) *SSRN Scholarly Paper No. 328602.*

[14] James Vincent, 'Putin Says the Nation That Leads in AI "Will Be the Ruler of the World"', *The Verge* (online, 4 September 2017) <https://www.theverge.com/2017/9/4/16251226/russia-ai-putin-rule-the-world>.

[15] Ibid 4.

[16] Ibid.

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ethical framework and regulations as a mitigation step to avoid unmanageable risks. However, it also needs to be ensured thatthe law does not limit how AI can be developed and will restrict innovation.

The existence of AI of course should never be perceived from a black-and-white pointof view, in the sense that, it probably contains many risks that will impact the dynamicsin global societies, however, the advantages are potentially limitless either. For example, the data shows that almost 40% of the jobs that human employees do daily are affected by AI.[17] This can be seen as either potential or risk. Unlike humans, the advantageous sides of how computational technology gains experience are based on data storage and algorithms, and now artificial intelligence can do more by carrying outin-depth analysis by studying the data provided.[18] This is a big opportunity since AI does not require years of training or experience as humans to be able to meet certain standards and produce certain outputs within seconds.[19] On the other hand, it may causejob layoffs due to automation.

Legal sectors are not excluded from AI impacts as well.[20] Many developed countries have been trying to develop AI that is expected to assist in legal matters, such as assisting in court processes.[21] Some developers of AI itself are developing AI-based robot lawyers. In this way, it is expected that in the upcoming times, the law can be carried out at a lower cost for the plaintiffs than to hire highly skilled professionals like lawyers. labour and employment, and intellectual property.[22]

However, applying AI in legal practices certainly opens room for arguments, since this ideal situation may not be completely without flaws. Although AI will most likely help to assist in legal matters, it can be argued that it will never be capable of being a complete replacement forhuman lawyers, in terms of providing legal services, complex critical thinking, and analysis.

Therefore, technology is not a one-fits-all answer, but rather a tool that can

[17] Kristalina Georgieva, AI Will Transform the Global Economy. Let's Make Sure It Benefits Humanity. *IMF* (Online, 14 January 2024)<https://www.imf.org/en/Blogs/Articles/2024/01/14/ai-will-transform-the-global-economy-lets-make-sure-it-benefits-humanity>.

[18] Zichun Xu, 'Human Judges in the Era of Artificial Intelligence: Challenges and Opportunities' (2022) 36 (1)

Applied Artificial Intelligence 5.

[19] Ibid

[20] Benjamin Alarie, Anthony Niblett and Albert H Yoon, 'How Artificial Intelligence Will Affect the Practice ofLaw' (2018) 68 (Supplement 1) *University of Toronto Law Journal* 106.

[21] Ibid.

[22] Katherine Medianik, 'Artificially Intelligent Lawyers: Updating the Model Rules of Professional Conduct inAccordance with the New Technological Era Notes' (2017) 39(4) *Cardozo Law Review* 1497, 1498.

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be used as a tool toachieve the goals of legal professionals.[23] Human lawyers will never be completely replaced given their importance of expertise, experience, and intuition in handling a case to determine the best approach.[24] Therefore, AI should be perceived as the first step rather than the final stepof enhancing law enforcement and making it more accessible.

A country like Indonesia is also starting to recognize the benefits of AI. However, unlike the developed countries that seem to focus on providing AI as legal professional substitution, digital systems are focused on planning to assist in a more administrative approach, such as governmental services and public services.[25] In this context, the presence of AI in developed and developing countries is still beneficial to advance legal services with the support of advanced technological inventions.

Advantages and implications will go simultaneously as AI keeps on advancing. The advantagesand risks surely cannot be separated from the law. In the legal context, the implications of theuse of AI are complex, for example, data protection and privacy are the common concerns thatpeople have related to the use of technology especially AI.[26] These concerns are reasonable since AI can only function by learning data that it is trained to that later will be processed by the algorithm. To answer this challenge, many nations worldwide may adopt various degrees to protect personal data. European Union seems to have led one step ahead by having the General Data Protection Regulation (GDPR)[27] It is certainly essential indeed to give attentionto privacy in AI use,[28]and referring to the EU approach, it is one of the fundamental rights that must be protected.[29] For this situation, it is hoped that many countries will follow up in regulating data protection.

The scope of data protection and privacy itself is complex and sometimes challenging to definedue to the lack of precision,[30] but in this context, it will be limited to the information or data that are collected without the consent or

[23] Elliott Cook, 'Blue Skies Ahead: A Retrospective and Prospective Look at Technology in the Legal Professions'(2017) 25(2) *Journal of Law, Information and Science* 176, 200.

[24] Alarie, Niblett and Yoon (n 14).

[25] Eko Eddya Supriyanto, Hardi Warsono and Augusin Rina Herawati, 'Literature Study on the Use of Big Data and Artificial Intelligence in Policy Making in Indonesia' (2021) 12(2) *Administratio* 139, 140.

[26] Bernd Carsten Stahl and David Wright, 'Ethics and Privacy in AI and Big Data: Implementing ResponsibleResearch and Innovation' (2018) 16(3) *IEEE Security & Privacy* 26.

[27] Matthew Humerick, 'Taking AI Personally: How the E.U. Must Learn to Balance the Interests of Personal DataPrivacy & Artificial Intelligence Comments' (2017) 34(4) *Santa Clara High Technology Law Journal* 393.

[28] James Curzon et al, 'Privacy and Artificial Intelligence' (2021) 2(2) *IEEE Transactions on Artificial Intelligence* 96.

[29] Humerick (n 24).

[30] Des Butler, 'A Tort of Invasion of Privacy in Australia?' (2005) 29(2) *Melbourne University Law Review* 339.

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authorisation of the owner to be stored or used to trainAI algorithm to arrive at a conclusion, output, or decision-making process. Privacy becomes important since the data stored in the system will be used to make automated decision- making,[31] and sometimes there may be chances that the decisions can cause detriment to concerned parties. However, this risk surely can be overcome by drafting the right regulation to accommodate. This can be done by both the *hard-law* and *soft-law* approach. Hard law canbe done by updating the pre-existing statute or creating specific Minister of Law and Human Rights regulations known by the term *Permenkumham.* The soft-law approach can be done by deploying technical guidance for the use of AI in legal procedures specifically provided by theMinistry of Law and Human Rights of Indonesia.

In relation to Intellectual Property, Artificial Intelligence is increasingly playing a significant role in trademark protection. With the massive amount of data available on the internet and thegrowing complexity of trademarks in the digital age, AI technologies offer valuable tools for trademark monitoring, enforcement, and management. There are some key ways AI is being applied in the trademark domain, such as:

1. Trademark Search and Clearance

AI-powered search tools can help conduct comprehensive searches to determine the availability of new trademarks. These tools use machine learning algorithms to analyse vast databases of existing trademarks, considering factors like similarity in appearance, sound, and meaning. AI can quickly identify potential conflicts and assess the viability of proposed marks,saving time and improving accuracy.[32]

2. Trademark Monitoring and Watching

AI algorithms can monitor websites, e-commerce platforms, and social media to detect potential unauthorised use or infringement of registered trademarks. This enables trademark owners to proactively enforce their rights more efficiently.[33]

3. Image Recognition and Similarity Analysis

AI technologies like deep learning and neural networks are being used to

[31] Theo Araujo et al, 'In AI We Trust? Perceptions about Automated Decision-Making by Artificial Intelligence (2020) 35(3) *AI & Society* 611.

[32] 'How AI Will Revolutionise Trademark Searches - World Trademark Review' (online, 2 July 2019) <https://www.worldtrademarkreview.com/article/how-ai-will-revolutionise-trademark-searches>.

[33] 'How Trademark Lawyers Use AI, Paul Hunter' (online, 26 June 2023) <https://viewpoints.foley.com/post/102ihzl/how-trademark-lawyers-use-ai>.

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analyse and compare trademark images or logos. This helps identify visually similar marks that could lead to confusion, even if the text portions differ.[34]

4. Trademark Prosecution

Natural language processing AI can assist in drafting and optimizing trademark applications by analysing specifications, and descriptions, and ensuring compliance with legal requirements.[35]

5. Trademark Portfolio Management

AI tools can automate tracking registration status, renewal dates, and potential conflicts across large trademark portfolios, streamlining the management process.

However, to delve deeper into the risk of AI use as previously described, such as privacy concerns, another topic that needs to be considered further is:

a. Legal Personhood of AI

This is widely debated whether AI should be given legal personhood. Several practitioners emphasize that to consider a work original, there should be human intervention in creating the work. Considering AI is trained by the data that is inputtedby humans, it will only be able to work with human training. Without humans, AI cannot function. Therefore, the context of originality will never be fulfilled since AI cannot create a novel invention without humans.

b. Trademark Confusion and Infringement

There are concerns that AI-generated content could infringe on existing trademarks or lead to consumer confusion, raising issues around trademark dilution and infringement.[36]

c. Data Privacy and Ethical Concerns

AI models trained on internal data or personal information could potentially violate privacy policies or raise ethical issues around data usage.[37]

d. Lack of Human Intuition and Context

AI models may struggle to understand the nuances, context, and subjective factors that human experts consider when evaluating trademark similarity and potential conflicts. AI systems may miss important conceptual similarities or

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[34] 'WIPO Launches State-of-the-Art Artificial Intelligence-Based Image Search Tool for Brands' (online, 1 April 2019) <https://www.wipo.int/pressroom/en/articles/2019/article_0005.html>.

[35] Hunter (n.31)

[36] Reed Smith LLP-Katrina M Kershner et al, 'Entertainment and Media Guide to AI: Legal Issues of AI in the Entertainment and Media Sector Part 1 -IP: Trademarks, Patents and Trade Secrets', *Lexology* (5 February 2024)
<https://www.lexology.com/library/detail.aspx?g=c9d57fce-686c-4fa8-ba3e-2b04e3095381> ('*Entertainmentand Media Guide to to AI*').

[37] 'The Legal Issues Presented by Generative AI, MIT Sloan' (online, 28 August 2023)
<https://mitsloan.mit.edu/ideas-made-to-matter/legal-issues-presented-generative-ai>.

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overlook relevant factors that a human trademark professional would recognize.

e. Lack of Transparency and Explainability

AI is at risk of lacking transparency, which is called by the term Blackbox. Blackbox is a termused to define the process of decision-making based on the algorithm of AI that is too complexto be comprehended by humans[38] In other words, we may not know how AI comes up with certain conclusions. It could be caused by the entered data, or the AI itself is capable of extending the analysis automatically. Regardless of any possibility, the chance is this conditionwill be interrelated to the decision-making process of AI, and the risk of producing wrong or biased output exists since the process of creating the decision is lacking in transparency.

This risk can be mitigated as the artificial intelligence keeps on advancing. The next thing thatis as important is to ensure that the human resources that will be responsible for the use of the new instrument are capable of grasping the advanced technology correctly and effectively. Thiscan be done by seminar or technical training for the operators of the AI-based trademark verification.

CONCLUSION

Throughout its parts, this paper has already discussed AI, including its potential, risk, and impacts on legal matters and the regime of intellectual properties in Indonesia. It also provideda potential of how AI can be implemented to ensure the trademark verification process is carried out more effectively and efficiently and to answer the challenges that arise more rapidly today. As discussed, constraints are inevitable in implementing any changes, however, there will always be room for solutions that can be considered to overcome the challenges. The presence of technology is an opportunity to innovate the existing systems. Furthermore, the implementation of AI in Indonesia will transform the bureaucracy and deliver better services for citizens and global communities. In the near future, this innovation can also be supported by related regulations to ensure that the process is carried out properly and based on the legal norms that exist in Indonesia.

[38] Cynthia Rudin and Joanna Radin, 'Why Are We Using Black Box Models in AI When We Don't Need To? ALesson from an Explainable AI Competition' (2019) 1(2) *Harvard Data Science Review.*

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