INTELLECTUAL PROPERTY LAW AND ARTIFICIAL INTELLIGENCE IN UGANDA: TRENDING ISSUES AND FUTURE PROSPECTS

Hassan Ismaila Adebowale Ph.D. *
Dr. Ahmad Mohamed Ph.D. **
Chukwuemeka Odi Agwu Ph.D. ***
Habib Shehu Ph.D. ****
Chima Magnus Ph.D. *****
Damina Joshua John ******
Yasein Hassan N. Osman Ph.D. *******

ABSTRACT

At the initial stage, Al-generated works were categorized as computer-assisted or computer-propelled works, therefore, copyright/patent rights were conferred on the individuals or persons who utilized Al as a tool. In other words, authorship/inventorship under the copyright and patent law is viewed to be human-centric because authorship/inventorship is reserved for the natural human person. Artificial Intelligence's influence has permeated all sectors of human endeavors - science, technology, academia, politics, business, law, economics and other perspectives. Past experience has vividly illustrated that even a minimal alteration or amendment to intellectual property legislation will reflect significantly on the transformative and innovative network of interconnected systems. In many countries of the world, Al-generated inventions devoid of human impact are not eligible for patent law because they fail the test of the non-obvious requirement, even though Artificial Intelligence is viewed as a person with 'skills in the art'. This article focuses on the conceptual and legal issues that arise in the evolution and revolution of AI-generated works. The writers adopt a doctrinal approach, citing primary and secondary sources in the thematic study of AI and IP in Uganda, whilst drawing comparative analysis from other developed economies such as the US, UK and China. In conclusion, the authors advocate exploring the public domain option, trade secret and other contractual arrangements for inventors and IP owners, due to the fact that Uganda and other developing countries are primarily technology users. The article recommends policy changes to accommodate the incursion of AI and its resultant effects on IP laws in Uganda.

Keywords: Intellectual Property, Law, Artificial Intelligence, Uganda

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1.0 INTRODUCTION

Intellectual Property (IP) generally refers to the legal rights which culminate from cognitive or mental undertakings or exploits in the industrial, scientific, literary and artistic disciplines.[1] Intellectual Property is basically classified as an intangible form of asset in a specific product of intellectual pattern, with its worth expressed on concept or combination of concepts.[2] The legal regime of Intellectual Property oversees legitimate rights related to innovative activities or economic integrity and business reputation.[3] Section 2 of the Ugandan *Industrial Property Act*[4] states that industrial property rights 'mean rights under patents, certificates of utility models and technovation, and registration of industrial designs issued under the Act'. Copyrights and neighbouring rights in Uganda are regulated and protected by the Copyrights and Neighbouring Rights Act[5] and the Regulation thereto.[6] *The Copyrights and Neighbouring Rights Act 2006* makes provisions for the safeguard of poetic, research-based and creative or aesthetic cognitive tasks and their neighbouring rights.[7] *The Trade Secret Protection Act of 2009* protects secrets of commercial value from unapproved divulgence and motivates sincere merchandising exercise. The *Trade Secret Act* provides for the right to disallow exposure, obtaining or exploitation of classified trade secrets.[8] *The Trade Secrets Act* further provides for the right for cause of action for unapproved divulgence of

* Prof. of Law, School of Law, Kampala International University, Kampala Uganda
** School of Law, Kampala International University, Kampala Uganda
*** School of Computing and Mathematics, Kampala International University, Kampala Uganda
**** School of Computing and Mathematics, Kampala International University, Kampala Uganda
***** School of Law, Kampala International University, Kampala Uganda
****** School of Law, Kampala International University, Kampala Uganda
******* School of Law, Kampala International University, Kampala Uganda

[1] World Intellectual Property Organisation WIPO Property Handbook; policy, Law and Use' (2008) Chapter 2 Fields of Intellectual Property Protection WIPO Publication 489(E), 3

[2] Adam D. Moore,' Intellectual Property Innovation and social progress: A case against incentive Based Arguments' (2003)26 (3*) Hamline Law Review* 602

[3] D Bainbridge, 'Intellectual Property' (8th ed., 2010) 3

[4] Industrial Property Act 2014 s2

[5] Copyrights and Neighbouring Rights Act 2006

[6] Copyrights and Neighboring Rights Regulations, SI 2010 -1

[7] Copyrights and Neighbouring Rghts Acts 5 – it stipulates the works eligible for copyright. See *Moses Magala 7 Co. v. Attorney General* (2010)) HCCS 137, per Madrama J. See *also Classic Art works Ltd v Vincent Lukenge & Anor (2010)HCCS 206, per Madrama J*

[8] Trade Secrets Act Protection Act 2009 s3; See *Duchess* of *Argyil* (1967) 1 CH 302 at 333 and*; Coco v. A.N. Clark (Engineering) Ltd* (1969) RPC 41,48 per Megarry J

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trade information and available remedies.[9] *The Geographical Indication Act of 2013* was enacted to provide for the protection of identification of products manufactured and related to a particular place or position with distinctive or notable features.[10] Uganda declared its approval or support to the plan to stretch out protection of geographical indications to other goods or materials identifiable by geographical roots. The plan was submitted by Turkey earlier before the *Seattle Ministerial* proposal for the enlargement of the multilateral register to goods apart from wines and spirits.[11] In the same vein, the *Plant Variety Protection Act* was also enacted pursuant to Article 27(3)(b) of the *TRIPS Agreements*. This provision mandates member states to provide for the protection of plant varieties through patents license or by adoption of *sui generis*[12] method or mixture thereof. Under the *Act*, 20 years protection period is provided for varieties of annual crops and 25 years for perennial crop varieties.[13] The Agreement on Trade Related Aspects of intellectual Property Rights (TRIPS Agreement)[14] obligates state parties to grant intellectual protection under the *Agreement* to citizens of other state parties.[15] The *TRIPS Agreement* demands each state party to give citizens of other member states similar privilege it grants to its own citizen in relation to the protection of intellectual property[16]. *Ipso facto*, Uganda's *Industrial Property Act*[17] provides for the applications of international patents. Thus, the

[9] Ibid, s5 and s 12; *Byte Legion Technologies v. MTN Ltd* (2009) HCCS 395, per G. Kiryabwire J.

[10] ***The Geographical Indication Act 2013*** was enacted pursuant to Articles 23 and 24 of the ***WTO Agreement on Trade Related Aspects of Intellectual Property Rights***. The ***TRIPS*** provisions on geographical indications trace their history from the ***Madrid Agreement for Repression of False or Deceptive Indications of Source of Goods*** of April 14th 1891, as revised at Washington June 2nd 1911, at the Hague Nov. 6th 1925, at London June 2nd 1934 and at Lisbon Oct. 31 1958.

[11] ***World Trade Organisation (WTO***) Doc. No. WT/GC/W/249, 13th July 1999, cited by Micheal Blakeney 'Geographical Indications and Trips *University of Western Australia, Faculty of Law Research Paper* No. 2012-o9<http://www.abs-initiative.info/…/Gls and TRIPs –Micheal Blakeney.pdf>accessed September 2 2024

[12] Latin words literally meaning 'of its own kind'. In the legal context, it denotes an ' independent legal classification'

[13] ***Plant Variety Protection Act 2014 s19***

[14] The ***TRIPS Agreement*** is ***ANNEX 1c*** of the ***Marrakesh Agreement*** Establishing the ***WTO***, 1994

[15] ***TRIPS Agreement***, Art 1(3) provides that "Members shall accord the treatment provided for in this Agreement to the other nationals of other members"

[16] ***TRIPS Agreement***, ***Arts*** 3 and 4

[17] ***The Industrial Property Act*** 2014 makes provision for international patent applications.

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Patent Cooperation Treaty[18] is operational as it relates to the provisional protection of published international patent applications,[19] as well as the publication of international patent applications in Uganda[20]. Similarly, the *Industrial Property Act 2014(IPA 2014)*[21] also accords patents issued under the *Harare Protocol on Patents*[22] the same effect as patents granted under IPA 2014 in regard to enforcement and protection, in cases where Uganda is a designated state for the purposes of such patent enforcement[23]. Nevertheless, enforcement of intellectual property rights are territorial irrespective of international agreements and instruments[24]. The Ugandan government has control over IP protection.[25] In pursuance of this power, the Uganda government enacted the various intellectual property laws in the country.

2.0 Artificial Intelligence Evolution and Revolution

History has proved that the advent of novel machinery and equipment had radically and drastically changed the dynamics of relationships and institutions that promote technological innovations or processes/actions of innovating – thus activating chains of policies and activism of policymakers in the interest of the society and the ecosystem. Artificial Intelligence (AI) is identified as the source of the latest technology[26] were the first to third revolutions respectively. The new revolution comes in form of general purpose technologies (GPTs).[27] GPTs have had tremendous influence on manufacturing industry,

[18] ***Patent Cooperation Treaty*** (Washington) June 19th 1970 amended Sept, 28th 1979, modified Fed. 3rd 1984 and Oct.3rd 2001; See also the ***Paris Convention*** for the ***Protection*** of ***Industrial Property,*** March 20th 1883 as amended on Sept 28, 1979
[19] ***Industrial Property Act*** 2014 s36
[20] ***Ibid***, s 37
[21] ***IPA*** 2014 s45
[22] The ***Harare Protocol on Patents and Industrial Designs*** within the framework of ***African Regional Intellectual Property Organisation on (ARIPO)***
[23] Ibid
[24] ***Curtis Aeroplane & Motor Corporations v United Aircraft Engineering Corporation*** **(1920) 226 Fed 70 (Cir)**
[25] ***Constitution of the Republic of Uganda 1995, Art***. 189 (1) and the **Sixth Schedule of the Constitution**.
[26] Nicholas Craft 'Artificial Intelligence as a General Purpose Technology: an Historical Prospective' (2021) 37 (3) ***Oxford Review of Economic Policy*** 521-536
[27] Boyan Jovanovic and and Peter Rousseau, 'General Purpose Technologies' (2005) 1 (B) *Handbook of Economic Growth* 1181-1224 – this GPTs is different from "generative pre-trained transformers" (a prominent framework for generative Al)

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the employment scene and other medium and small scale variables.[28] Alfred was credited with the early coinage of the concept.[29] He referred to the notion /conception of IMI as the finest of the 19th century.[30]. A glaring example is hybrid maize, its processing generates both new outputs and new methods towards further new product.[31] In summary; Invention of the Methods of Inventions has diverse impacts in the creative industries.[32] Artificial Intelligence's influence has permeated all sectors of the human endeavours - science, technology, academics, politics, business, law, economics and other perspectives. Past experience has vividly illustrated that even a minimal alteration or amendment to intellectual property legislation will reflect significantly on the transformative and innovative network of interconnected system. A very good illustration is the enactment of the United State of America (US) *Patent Act* of 1952 which transformed the court's law from "flash of creative genius[33] to a "non-obviousness" requirement.[34] The latter requirement was discovered to be more suitable to patents acquisition from disciplined and comprehensive creative efforts. The crux of this is that similar standards were later adopted by several jurisdictions outside the US.[35] A unique copyright protection requirement is "creativity"- it applies to freshly generated art or work. The general aim is to give financial benefits to originate and share products of model mental activities in the innovative sectors.[36] In other words, Artificial Intelligence generated activities should enjoy due protection under copyright laws, otherwise originators of creative works and inventions

[28] Crafts (n26) ; Cockburn,I. M *et al* ' The Impact of Artificial Intelligence on Innovation: An Exploratory Analysis' In *The Economics of Artificial Intelligence : An Agenda* (University of Chicago Press 2019) 115-146; Mokyr Joel' The Past and Future of Innovation 'Some Lessons from Economic History' (2018) 69 *Exploration in Economic History 13 – 26*

[29] Alfred North Whitehead was an English Mathematician and Philosopher.

[30]Whitehesd Alfed North "Science and the Modern World.Lowell lectures (New York: The Macmillan Company,1925)

[31] Cockburn *et al* (n28)

[32] Crafts (n26) –Al , by interpretation is a GPT that falls under the category of IMI.

[33] A court-developed requirement for patentability.

[34] The "non-obviousness" requirement was adopted in accordance with the legislation.

[35]Bhaven N. Sampat, ' Intellectual Property Rights and Pharmaceuticals: the Case of Antibiotics' (2015) 26 *Economic Research Writing Working Paper*(Geneva, WIPO)

[36] Giorcelli M and Moser P, ' Copyrights and Creativity: Evidence from Italian Opera in the Napoleonic Age' (2020) 128 (11) '*Journal of Political Economy 4163-4210*

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with large investment portfolio would tend to avoid the use of Artificial Intelligence technology - this will invariably have negative impact on the creative industries. Fundamentally, the essence of copyright principles is to habour and seek a balance between stale and fresh creative generations by providing motivations for creating model work and incentivizing generative reuses.[37]

Without doubt the advent of accessible and friendly generative Artificial Intelligence tools, for example Chat GPT, Midjourney and DALL-E, has extended the scope of the creative labour force, blowing the market open to newcomers. Generally, mathematical patterns are not protected under intellectual property laws, however, the embedded software in Artificial Intelligence prototype can be copyrighted and may also be patentable, thus Artificial Intelligence modeled inventions may qualify for protection under patents law. The courts, therefore have a major role to play in distinguishing mathematical methods, pieces of software and inventions – this distinction may be riddled with ambiguity.[38] It is therefore imperative to clarify and define copyright infringement liability in Artificial Intelligence development works and reuse to avoid legal ambiguity and minimize litigation risk. In the corollary, private contracts, bargaining and negotiation mechanisms could be adopted to cope with the technological revolution in the creative industries. These private contracts and negotiations could protect the individual rights of the AI operators and intellectual property right owners.[39]

3.0 The Appropriability Dilemma

For data protection, intellectual property rights under the mechanism of trade secrets or *sui generis* rights are more appropriate to resolve the '***appropriability dilemma*** of inventive

[37] Cuntz A, 'Grand Rights and Opera Reuse 'Today' (2023) 75 (1) *Oxford Economic Papers* 206 – 232
[38]Khan F.A, Intellectual Property Rights for Software, Artificial Intelligence and Computer Related Inventions : A Comparative Analysis' (2024) 29 (1) *Journal of Intellectual Property Rights*
[39] Schwemer S F, 'The Licensing of Online Music Streaming Services in Europe'. In *Handbook on the Economics of Copyright* (Edward Edgar Publishing, Chapter 9,2014) 141-164

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activity'.[40] It was contrary argument on the success of methods of creation and its marketability,[41]the dilemma simply arises where many people have access to a technology with the inventor being absolutely powerless to prevent this. [42]

By virtue of its component, the patent system addresses this dilemma. Innovators reap the benefits of their undertakings and corporate and natural bodies in the technology industry embrace the patent system as a market-driven panacea to the dilemma.[43] Overtime, other IP mechanisms were discovered to yield more benefits than patents.[44]

In many countries of the world, Al-generated inventions devoid of human impact are not eligible for patent law because they fail the test of the non-obvious requirement, notwithstanding the fact that Artificial Intelligence is viewed as a person with 'skills in the art'.[45] Related IP tools may also be adopted by corporate bodies for their use and investment interests,[46] this include trade secrecy which is an IP-based appropriability mechanism that Artificial Intelligence may benefit from. In law, one of the conditions for acquisition of patent is the exhaustive description of the inventions to enable their implementation . The question then is whether an Artificial Intelligence based and Artificial Intelligence-generated inventions can satisfy this disclosure requirement?[47] The ineligibility of Artificial Intelligence-generated inventions under the patent system may make trade secrecy an intellectual property preference for investors. An illustration of the dynamics of

[40]Arrow K J' Economic Welfare and the Allocation of Resources for Invention. In R R Nelson (Ed.) The Rate and Direction of Inventive Activity: Economic and Social factors' (Princeton NJ Princeton University Press, 1962) 609-626

[41] Ibid

[42] Cuntz A, Carsten F and Hansueli S, 'Artificial Intelligence and Intellectual Property: Economic Perspective' (2024) 77 *Economic Research Working Paper* (WIPO) 8

[43] WIPO 'World Intellectual Property Report: The Changing face of Innovation' (WIPO; Geneva 2011)

[44]Ibid –patent protection is limited to technological inventions(science industry) while lead-time is most important in the electronic industry see Duffy J F 'Why Business Method Patents" (2010) 63 (6) *Stanford Law Review* 1247-1288

[45] n43, 10

[46] For example, test data protection which incentivize investments in trials of compound may be ineligible for patent protection - n43,11

[47] Al-based Al- generated inventions may rely on black-box algorithms and large-scale training data that are extremely beyond the contemplation of the usual patent disclosure – Ebrahim T Y 'Artificial Intelligence Inventions & Patent Disclosure (2020) 125 *Pena St. L. Rev*. 147

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new technology is the contemporary negotiation of Hollywood studios, corporate producers, performers and script writer – it emphasizes the need to review fresh creative industry uses and financial dealings in view of new technology.[48] Again, in law mathematical methods, in all ramifications, are not eligible for all categories of intellectual property protection. However, software embedded in Artificial Intelligence prototype enjoys copyright protection;[49] also, patent protection may be available to Artificial Intelligence-based innovations. By and large, distinguishing mathematical methods, pieces of software and innovations could be problematic and may eventually require court's interpretations.[50] Thus, culpability in Artificial Intelligence usage and activities must be unambiguously clear and well-defined to mitigate legal vagueness and the risk of lawsuits for developers, operators and users.[51] Clearly stated, unambiguous liability rules on enforcement and safety will promote and assist investment in 'precautionary' measures and 'complementary' technology.[52]

4.0 Challenges and Prospects

The issue of time in drawing up mutual contracts and coordinating bargains should be well considered to forestall past pitfalls.[53] A very pertinent hurdle for intellectual property laws, going forward, is maintaining the fair balance of motivations in the light of the wide scope of Artificial Intelligence applications.[54] On the flip side, intellectual property rights provides good tool for data providers to recover the costs of data generation.

[48] Anon, ' Studios Reveal New Proposal to Striking Writers on Data Transparency, AI and Residuals' The Hollywood Reporters (US, 22 August, 2023)
[49] It sometimes also benefits from patent protection
[50] Khan F A 'Intellectual Property Rights for Software, Artificial Intelligence and Computer Related Inventions: A Comparative Analysis' (2024) 29(1) *Journal of Intellectual Property Rights.*
[51]Cuntz *et al* (n42), 20
[52] Ibid- to this end, new automated licensing and filtering technology on Artificial Intelligence use might be required for the enforcement of rights around existing content as input to Artificial Intelligence
[53] Duch-Brown N *et al,* 'The Economics of Ownership, Access and Trade in Digital Data' (2017) (1) *J R I Digital Economy Working Paper;* Spulber D F, 'Complementary Monopolies and Bargaining'(2017) 60 (1) *Journal of Law and Economics* 29-74
[54] The digitization of day to day activities has significantly expanded the spectrum of data for Researchers

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However, data licensing arrangements may be undermined by the niggly issues of hold-up, transaction costs and royalty pile up.[55]

Under the IP laws, could the use of IP- protected data for learning constitute an exception to the grant of exclusive rights availed by IP rights? In law, there usage as learning tools may fall under the scope of the fair use rules or express exemptions . Copyright litigation for infringements between holders and Artificial Intelligence tools providers have revolved around the aforementioned.[56] There are two sides of tenable arguments: while Intellectual property exclusivity on learning data could delay valuable Artificial Intelligence research, on the other hand, it would generate new innovations and assist in Artificial Intelligence research that benefits the society. Intellectual property laws, therefore, going forward, needs to navigate and uncover the right balance for these incentives – the challenges here is how incentives could be shared in multistage innovation processes.[57] Copyright rules are destined to attain higher prominence in shaping innovation outcomes as training data evolves in its use for technological innovation.[58] Apart from Intellectual property laws, other legal restrictions may also regulate the access to data.[59] In future, Artificial Intelligence developers may tilt towards self-generated 'synthetic' learning data with no liability risk, and generated at very low cost.[60]

Artificial Intelligence based works invoke multifaceted legal, political, social and economic concerns, such as disseminating false information, teaching data, algorithmic biases, role of Intellectual property, future applications and adoptions of Artificial Intelligence technology,and creative labour. All these concerns and issues mirroring how Artificial Intelligence technology is re-branding the innovative and creative industry

[55] These problems could be aggravated as contemporary Al tools use a network of data sources. Farrel J *et al.,* 'Do Patent Holdup and Royalty Stacking lead to Systematically Excessive Royalties' (2007) 74 (47) *American Economic Journal: Economic Policy* 603
[56] *Getty Images v Al Art Generator Stable Diffusion* (*US*). *The Verge,* February 6, 2023; and *Sarah Silverman v Open Al and Meta* (*US*), *The Verge*, July 9, 2023
[57] n42, 22
[58] Ibid
[59] Ibid – Secrecy rules contain approved regulatory objectives and raise difficult trade-offs with innovation policy.
[60] Anon, 'Why Computer-made data is being used to train Al models' *Financial Times,* July 19, 2023

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should be closely monitored by policymakers.[61] Thus, Artificial Intelligence is presently transforming the 'balance of incentive' as provided by the Intellectual property system.[62] The ripple effect of Artificial Intelligence, as in past revolutions will require stakeholders' adaptation, the emergence of new business models, consolidation by industry practitioners and interpretation of laws by the courts, in order to maintain stable and standard self-regulatory markets.[63] Researchers should also endeavour to identify the specific effects of Artificial Intelligence on labour market, whilst considering the customary methods ingrained in intellectual property statutes.[64]

The question now is whether Uganda's IP regime is ready to protect Al while maintaining one of the justifications upon which intellectual law is based, that is to motivate ingenuity. The answer is that Uganda's intellectual property legal regime is not ready, and any amendments to it should take into account the country's local reality such as technological development and balance that with the need to incentivize innovation. The adoption of the public domain approach as a way to inspire local innovation. acts as a counterweight for Al's over expansion into the realm of human ingenuity. Take note, that intellectual property protects creations of the mind.[65]

5.0 Intellectual Property Law and Artificial Intelligence

The ripples caused by AI now has a spiral effect on IP rights and enforceability. The process and methods of acquiring IP licence now has to accommodate this new technological development. The status of a machine to acquire and enforce these rights is the current legal conundrum that is facing the IP and social world. In some developed countries, for the advancement of science and technology, the inventive works of AI have being duly protected under

[61] n42, 23 – Al-generated comedy is already at the centre of contemporary IP disputes.
[62] Ibid
[63] Ibid
[64] Ibid.
[65] David I.Bainbridge,' Intellectual Property' (Prentice Hall 2010)

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the IP laws and the courts have upheld the enforcement of this protection.[66] Most recently, a court in Asia upheld the enforcement of such protection. [67]

The advent of Al has completely changed the landscape of IP laws and many issues relating to ownership, rights, creator, commercialization, legal status, incentivization, public domain etc are now begging for urgent attention and must be duly addressed.

Abbott[68] states that Al's discovery was never anticipated by policy makers and legislators. Provisions of IP laws did not factor in the recent developments in the technology industry and therefore fall short of identifying and defining key nomenclatures of AI extraction, such as inventorship, ownnership, holder etc. He further suggests that AI should be jointly or severally made a party when obtaining IP licence.

It has been suggested that AI-generated work may be made freely accessible to members of the public, for research and learning, without being subjected to the formal requirements of IP laws - this approach will place its use under public domain and within the exclusion from IP rights.[69] This particular approach will aid developing countries who are majorly technology users, and boost the activities of scholars and researchers in these developing countries, especially Uganda. [70]

It is trite that the central point of IP rights is the motivation for economic benefits. People with new ideas and deep thoughts are entitled to IP protection and should be duly protected. On the evidence of its operations, AI does not seem to fall under the categories of worthy beneficiary of incentives, as it is configured to function and create independent of motivation.[71]

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[66] World Economic Forum Artificial intelligence, " Committed to Improving the State of the World: Artificial intelligence Collides with Patent Law (White paper REF 160418- case 00048540, 2018) 8

[67] Anon, 'Court rules Al-written article has copyright' ***ECNS*** 9 January 2020 <http://www.ecns.cn/news/2020-01-09 detail-ifzsqcrm6562963.shtml > accessed 10 October 2024.

[68] Ryan Abbott, 'Hall the inventor: Big Data and its Use by Artificial intelligence (SSRN MIT Press, 19 February, 2015) 1

[69] Petar Hristov, 'Works generated by Al – How Artificial Intelligence Challenges our Perception of Authorship', (Master Thesis, Tilburg University Law School 2017) 41

[70] United Nations Conference on Trade and Development, "Development Dimensions of Intellectual Property in Uganda: Transfer of Technology, Access to Medicines and Textbooks, UNCTAD /PCB/2009/13.12

[71] Pamela Samuelson ' Allocating Onwership Rights in Computer Generated Works' (1985) 47 ***University of Pittsburgh Law Review*** 1185-1228

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6.0 Conceptual Issues and framework

The following issues are germane at this juncture:

Issue No.1: whether Al generated creations are copyrightable ?

Expression rather than the idea is protected under the copyright law. The overbearing reason is that a writer is entitled to the fruit of his labour, in line with the Lockean economic theory of possessive individualism .[72] However the two elements of tangibleness and originality must be satisfied. The court had previously rejected a verbal interaction as literary efforts based on its intangibility.[73] In the same vein, the court also declined to uphold an unscripted kaleidoscopic display as eligible for copyright protection.[74] The test for a work being original is the level of physical and neural efforts in common law countries, whilst others adopt innovativeness.[75] In recent decisions, the court have been quick to adopt the principle of the"sweat of the brow".[76] It opined that being original as to do with outward action and the work must not be a manifestly lifted from an existing book or manuscript.

There have been new developments on the test of originality - the applicant now only needs to establish a modicum of creativity.[77]Thus, the threshold for originality has been lowered to mere minimal creativity. The latest test dwells more on satisfactory creative efforts and self-centred neural activities.The threshold has been reduced to minimal creativity for the enjoyment of protection under the copyright law. The court have earlier declined to grant protection to solely mechanical toil, i.e photograph, as it lacks creativity .[78] Uganda, however, still apply the earlier standard of "sweat of the brow" which is devoid of any shade of creative gift.

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[72] Swapnil T. and Chadni Ghatak,' Artificial Intelligence and Intellectual Property' (2018) ***Christ University Law Journal*** 86
[73] ***Gould Estate v. Stoddart Publishing Company*** (1996) 39 QR 555
[74]***Tate v Fulbrook*** (1908) 1 KB 821
[75] Rosa Maria, kan He & Teemu, ' Al generated Content: Authorship and inventorship in the Age of Artificial Intelligence (Helsinki Institute for Information Technology , 2019) <http://www.cs.helsinki: fi/u/Honteri/pub/ai content2018 > accessed 10 October, 2024
[76] ***Ladbroke football Ltd v William Hill Football Ltd*** (1964) 1 All ER 465
[77] See ***Feist Publication Inc. v Rural Telephone Service*** 499 U.S. 340
[78] ***Burrow Gilles Lithographic Co. v. Sarony*** lll U.S. 53

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The IP law in Uganda [79] acknowledges the eligibility of a novel work derived from another source. Al, by its nature, draws on available techniques and ideas and, therefore, captured under this statutory provision. In a case involving the protection of written work by AI in China, it was decided that copyright protection could be extended to a piece of writing by AI. The case was decided in favour of the claimant, and against the defendant for electronically disseminating an article generated by an AI.[80]

Issue No 2: Whether Al generated creations are patentable?

A patent must offer something new in form of product or process.[81] The test is that it must be novel and entail new procedure, i.e - inventive step. This goes beyond ordinary or known technological device. Patent licence gives exclusive rights for a specified duration in exchange for detailed information on the invention. The disclosed information must be clear to avail the members of the public with useful tools, especially a specialist that is skilled in the particular art.[82] Al is a reference point here, as it could be categorized as a specialist who could generate and process on its own.[83]

Algorithms are non-patentable, therefore AI activities *per se* fall under this category. Accordingly, scientific theories and mathematical methods are excluded from patent protection. [84] This has been expounded upon by the Supreme Court of the United States (SCOTUS) which states that " they are basic tools of scientific and technological work", and that granting monopolies on these tools through patent rights impede innovation.[85]

[79] Copyright and Neighbouring Rights Act,s.5 Laws of the Republic of Uganda Cap. 222
[80] Shenzhen Nanshan District People's Court: ***Shenzhen Tencent Computer Systems Co. Ltd v. Shanghai Yingmou Technology Co. Ltd*** cited in 'Shenzhen Court Rules Al-Generated Articles are Entitled to Copyright Protection' National Law Review 3 January 2020 http://www.natlaw review.com/article/shenzhen- court-rules-ai-generated-articles-are-entitled-to-copyright-protection> accessed 10/10/2024.
[81] World Intellectual Property Organization (WIPO) , ' What is a Patent?< https://www.wipo,int> web>patents > accessed 11 October 2024.
[82] David 1 Bainbridge' IntellectuaL Property' (8th Edition Prentice hall 2010) 377
[83] Swapnil T and Chadni Ghatak (n13) 90: See ***Re: Stephen Thaler*** (1994)
[84] Industrial Property Act, Laws of the Republic of Uganda cap. 224, s.8
[85] See ***Alice Corporation Pty Ltd v. CLS Bank international*** 573 US 208 (2014) and ***Blue Spike , LLC v Google Inc.*** No. 16-1054(Fed. Cir. 2016)

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7.0 LEGAL FRAME ON AI-GENERATED WORKS AND INTELLECTUAL PROPERTY IN UGANDA

All matters relating to IP in Uganda is exclusively the preserves of the government (art.189(1)).[86] Uganda is a signatory to the World Trade Organization (WTO),[87] and by extension affiliated to the TRIPS Agreement.[88] The Agreement entrenched compliance with the IP protections under WIPO, the Paris Convention and the Berne Convention .[89] The TRIPS Agreement is however silent on the nature or personality of potential applicants. It, nevertheless, adopted the requirements in the Berne Convention(art.3), therefore identifying only human beings as objects of applications.[90]

Uganda is also a signatory to the Paris Convention and the Patent Co-operation Treaty (PCT).[91] The PCT provides for the filing of an international patent. The application may be filed by the national or resident of a PCT contracting state in the country's national patent office or with the international Bureau of WIPO in Geneva.[92] The TRIP (art. 1.3) also recognises only human beings as the subjects of IP rights.

At the regional level, Uganda is a member of the Lusaka Agreement on the creation of African Regional Intellectual Property Organization (ARIPO), the East African Community and Patent Cooperation Treaty (PCT). PCT only recognise human beings as applicant for for patents. The implication of this to Uganda is that only human beings can register as inventors.

In ***DABUS case***[93] the UK Patent Office declined the application filed on behalf of a machine because it is a non- human entity.

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[86] Sixth Schedule (Functions and services for which government is responsible) under para 8
[87] WTO Agreement: Marrakesh Agreement Establishing the WTO, 15 April 1994, 1867 UNTS 154, 33 ILM 1144
[88] Agreement on Trade-Related Aspects of Intellectual Property Rights, 15 April 1994, Marrakesh Agreement Establishing the WTO, Annex 1C (1994) 1869 UNTS 299, 33 ILM 1197
[89] WTO,' Overview: The TRIPS Agreement'< http://www.wto.org/english/tratop_e/trips_e/intel_-e.htm> accessed 11 October 2024.Uganda is not a party to the International Instrument Regulating Copyright Law (Berne Convention) for the Protection of Literary and Artistic works – Although its criteria for eligibility of protection of copyright was incorporated in TRIPS and thus relevant to non-parties like Uganda
[90] WIPO, 'Impact of Artificial Intelligence on IP Policy'< http://www.wipo.int/about_ip/en/artificial intelligence/call_for_comments> accessed it October 2024.
[91] *Ibid*
[92] WIPO, Patent Cooperation Treaty (PCT) <http:// www.wipo.int/treaties/en/registration /pct/> accessed 11 October 2024
[93] ***Re Stephen Thaler*** BL 0/741/19

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Section 2 of the ***Copyright and Neighbour Rights Act*** [94] defines an " author" to be a human being protected under section 5, including a third party under a contract of employment. Section 11 provides for joint authors who shall have equal rights. Thus, autonomously generated Al works would fall into public domain. Section 2 of the ***Industrial Property Act***[95] describes an inventor reflecting the provision in section 8, including his lawful attorney. Section 17 provides that the right to a patent belong to the inventor. Section 17(2) provides for joint right to a patent by two or more joint inventors. Section 20 prescribess the format of the application which shall include the natural name of the applicant.

8.0 CONCLUSION AND RECOMMENDATIONS

For developing countries like Uganda there is a strong need to support the public domain approach of regulating IP rights in Al-generated works because it would serve as a valuable pool for inspiration and technological learning hence increasing innovation.Policymakers should, without being emotive, take considerable time to gather sufficient facts and figures on the impact of Artificial Intelligence in the society. Policy makers must guarantee policy certainty to assure Artificial Intelligence innovators of secured future intellectual property rights because they will tend to avoid creative works that attract high risks of copyright infringement liability. *In Futuro,* researchers are tasked with better understanding of the changes introduced by Artificial Intelligence into the innovation and creativity markets not only for research and development but also for creative processes. As an alternative, for reforms and further research, collective bargaining between corporations and Artificial Intelligence service providers, for example, self- regulation and mutual contracts between inventive Artificial Intelligence operators and Intellectual property owners, could be explored as a mechanism in view of the technological revolution in the industry.

[94] Laws of the Republic of Uganda, Cap.222
[95] Laws of the Republic of Uganda, Cap. 224

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