

EMERGING ISSUES INTROSPECTION: INTELLECTUAL PROPERTY, DIGITAL TRADE AND ARTIFICIAL INTELLIGENCE

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ABSTRACT: Do we really have future with intellectual property over the advancements made in AI technology and digital trade? If we do, Nigeria must rejig her legal framework and enact more solid and global friendly policies to harness such full potentials. We must adopt a mechanism to fight and manage the growing concerns that comes with the use of artificial intelligence and digital technology. Yes, digital technology has its own benefits especially as it has brought about greater opportunities for intellectual property owners, like licensing and monetization of IP assets etc., even companies of late pledges their IP as collateral to generate funds, thereby making the opportunities brought by digital technology obviously outweighs the expected challenges. This article therefore seeks to explore intellectual property as an emerging area of law, highlighting the emerging issues bordering on digital trade and the use of artificial intelligence. The work proffers solutions on how better to apply AI to be more efficient to our daily activities, limiting our scope to Nigeria as a territory.

Keywords: *Emerging issues, Intellectual property, Digital trade, Artificial intelligence*

1.0 Introduction

The World Intellectual Property Organization (WIPO) defines Intellectual property (IP) as ‘creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.’ They are intangible works of one’s ingenuity; the fruits of one creative labour. These works are classified under different heads: Patent, Copyright, Industrial designs, and Trademarks. Although there are separate laws for these categorized works, they are generally called Intellectual Property laws.

Artificial intelligence on the other hand is a growing global concern, which has brought ease and flexibility to our daily lives, as well as multiples of problems alongside it. Digital trade on its own end involves digitally ordered but physically delivered trade in goods and services. It refers to commerce enabled by electronic means.

While these three areas of study are different in their ways, they can be somehow intertwined. In this article, we would be exploring the basic understanding of the subject matter- Intellectual Property as well as emerging issues on this area of law. We would also highlight the emerging issues relating to Artificial intelligence and its use while also offering suggestions for its better utilization. While we do not intend to jurisdictionally limit our study due to what the topic brings to the table lately, these issues would however be centered on the ‘giant of Africa’- Nigeria.

2.0 The Novel Area of Law: Intellectual Property

Intellectual Property has existed from time immemorial. Patents, for example began with royal grants by Queen Elizabeth I (1558–1603) for monopoly privileges. However, the first known use of the term "Intellectual Property" dated back to the 1970s when a piece in the Monthly review, an English periodical used the phrase. So it is evident that intellectual creativity has been around for a while. So why then refer to it as novel?

Intellectual Property though aged in existence is only novel in the Nigerian legal system. In fact, there are very few legal scholars in this interesting but unpopular area of law possibly because of the seemingly intractable intellectual Property theft across the country.

As already mentioned, intellectual property covers 4 major areas: Patent, Copyright, Industrial design and Trademarks. These would now be discussed briefly.

2.1 Patent

Patent is an exclusive right granted to the creator of an invention, giving him the full right of exploitation and control over the use of such invention. Thus, the subject matter for protection is inventions, which could be a product or a process. This invention is required to be new or not obvious if it is to be registered under the Patents and Designs Act. It must also be capable of industrial application. However, not all inventions are patentable. Laws of nature, ideas, scientific theories, methods, schemes, rules and formulas are not patentable. They are simply principles and discoveries already existing in nature. TRIPS agreement also lists certain matters that are excluded from patent protection: diagnostic, therapeutic and surgical methods for the treatment of animals, biological processes for the production of plants and animals and inventions which are contrary to public order and morality.

The owner of a patent is the person registered as the proprietor in the Patent register, whether or not he is the true creator. This person called the 'statutory creator' is accorded the right where the patent is granted for a product, to make, import, sell, or use the product. On the other hand, where the patent is granted for a process, the proprietor has the right to apply the process or carry out any of the above-mentioned acts in relation to the process. The act also confers on the proprietor the right to exclude any person who seeks to carry out any of the above acts, for such would amount to an infringement.

At this point it is important to note that patents must be registered to be accorded with protection as there can be no case of infringement where such invention has never been registered. Upon registration they are valid for a period of 20 years (from the date the application was filed). However, annual fees must be paid during the 20-

year validity period otherwise the patent will lapse. Patented work can also be assigned and licensed.

The patent law acts as a double-edged sword, i.e. it provides the owner with legal protection for his invention and at the same time benefits society by providing public access to technical information about these inventions and thus accelerating innovation.

2.2 Industrial Designs

In a legal sense, an industrial design constitutes the ornamental aspect of an article. They are simply designs but this time not the kind made with hand such as works of art or paintings. Industrial designs are multiplied by industrial processes. A statutory definition of this type of intellectual property was captured in section 12 of Patents and Designs Act. This is the extant law governing industrial designs in Nigeria, it refers industrial designs as "any combination of lines or colors or both and any three-dimensional form, whether or not associated with colours".

Like Patents, industrial designs must be registered, and they are only registrable when they are new and not against public order or morality. Upon registration, the registered owner of the design has a monopoly over its use for a certain period. Industrial designs can also be assigned and licensed.

2.3 Copyright

Copyright is 'originality' and 'fixation' simpliciter. In all eligible works whether it is an artistic, literary, musical or audio-visual work or it is a sound record or broadcast, there two elements must exist. A work is original where it is proven that the author devoted sufficient skill and labour to its creation i.e., they must not have been copied. On the other hand, work is fixed where it has been captured in a sufficiently permanent medium such that it can be reproduced, perceived or communicated.

Though it covers a wide range of creative works, copyright does not protect all kinds of works. An author who proves the eligibility of his work can sue claiming certain rights ascribed to him under copyright law, so long as it does not fall within the available exceptions. Copyright differs from patent and industrial designs in that

while these other forms of intellectual property require registration for protection of their works, copyrighted works does not, registration is mere formality. Copyright protection over a work is automatic upon creation and is not contingent upon any form of registration. Copyright can also be assigned and licensed.

2.4 Trademarks

The last type of intellectual property to be discussed is trademarks. Trademarks are marks used or proposed to be used in relation to goods and services for the purpose of indicating a course of trade between the goods/services and some other person having right either as a proprietor or as a registered user to use them. A trademark can be registered or left unregistered. However, a registered owner has greater protection than that of an unregistered user.

3.0 Artificial Intelligence and Intellectual Property

Technological advances, especially artificial intelligence, appear to be the most significant factor affecting the future of IP in our world today. Artificial intelligence encompasses the creation of intelligent machines (no doubt, works of intellectual property) capable of accomplishing tasks that typically require human intelligence.

AI began with the "abstract computing machine" described by a British Logician, Alan Mathison Turing. This was a specialized compartment of infinite memory and a combination of symbols stored in that memory which allows it to operate and improve its own programming '. Turing later called it the "intelligent machinery" and by 1956, during the Dartmouth Conference, the term "Artificial intelligence" was officially coined making it a distinct field of study.

The idea behind the development of AI is to have machines that can actually mimic human intelligence and indeed every improvement on the AI software over the years seems to get closer to achieving this. Today AI has been infused into almost all facets of human life. For example, in the health sector an AI program called CORTI has been created to analyze emergency calls and to learn words and characteristics associated with cardiac arrests and so through voices, this program is able to predict when a person's heart has stopped. To aid in transportation services also, digital

personal assistants as well as AI- safety functions have been installed in cars. So it is no news that AI is slowly becoming a good "help-meet" for man.

However, as AI continues to grow, it brings with it ethical issues that must be addressed to ensure that its benefits are fair and its risks are managed responsibly. Some of these ethical issues will be briefly discussed below.

3.1 Bias

A good example where this can be found is in foundation models. AI was previously trained on task-specific data to perform a narrow range of functions, however with foundation models, AI can now be trained to adapt and be fine-tuned to a wide range of applications and tasks. The data used in AI models are only sourced from a few core sources. These sources have their social and moral norms which may not be applicable or acceptable to several other sources. So the challenge of bias is not far-fetched. For example, in a country with over 250 ethnic groups like Nigeria, AI models may not fully represent the complexity of Nigeria's population, leading to biased outcomes that may favor certain groups over others.

To curb this, AI should also be 'fed' with data used by the minority groups such that members from local communities can also benefit from the rich opportunities the AI technology brings.

3.2 Transparency

It is impossible to track the reasoning of some AI models and where AI providers refuse to provide information about their models on the grounds of business confidentiality, it would also be impossible to ascertain the effectiveness and safety of these AI models.

Therefore, a uniform regulation from an international body like WIPO, for example, should be made to mandate the submission of certain relevant information that would help track some of these AI models. As a means to assuage the fears of AI providers, this information must be kept private and confidential.

3.3 Data Privacy and Security

Safeguarding an organization's data is not just a matter of compliance but strategic imperative for maintaining trust, sustaining business operations, and safeguarding the overall well-being and reputation of the organization. AI is a technology with easy access to data and very unfortunately many countries lack the requisite technology and strong legislation to curtail its access to their data. For example, the enforcement of the Nigeria Data Protection Regulation in Nigeria has been rather slow since its issuance in 2019, such that many citizens remain unaware of their rights concerning data collection and usage. For a technology that lives and feeds on data like AI, this could spell doom, especially considering the grave importance of data privacy.

Nigeria has made strategic efforts to better curb this. One of such efforts is the enactment of the Nigeria Data Protection Act in 2023. A major innovation brought by this law is the extension of the definition of "sensitive personal data". The NDPA extends this definition to provide for extensive and specific grounds for when such sensitive data can be processed. This would enable data controllers and processors to note the categories of data deemed "sensitive" and have a reliable ground of processing when handling such data. This is a good attempt in ensuring data privacy and security.

3.4 Accountability in AI Decision Making

Generally speaking, accountability in AI relates to the expectation that designers, developers and deployers will comply with standards and legislation to ensure the proper functioning of AIs. The issue with the use of AI models is that decisions taken by these models cannot be explained or understood. Where this is the case, assigning responsibility and holding parties accountable for harmful outputs becomes very difficult. For example, if an AI system used by a bank incorrectly denies a loan to a qualified individual, or if an AI-driven diagnosis tool in a hospital fails to detect a critical health issue, who should be held accountable? Will it be the developer, the organization, or the AI itself?

Well, this can only be ascertained by the existing laws of a jurisdiction. It is the law that determines the liability of any person. There is therefore need for the establishment of strong legal and regulatory frameworks that will foster

accountability by providing individuals with the right to challenge automated decisions and seek redress for violations of their data protection rights.

4.0 Digital Trade and Intellectual Property

Trade is basically the exchange of goods and services. Where it is done at an international level, it is the transfer of goods, from one person, or group of people across borders. Traditionally, trade is done via local commute where physical presence is prioritized. However, that has changed. Today, trading processes have been improved by leveraging on the advancement in technology. Therefore, the use of technology in the sale and delivery of goods and services is what is called digital trade, and this can exist in various forms. So where is the place of intellectual property in digital trade?

Intellectual property is objects of trade. They can be licensed or assigned. Today, with the rise in the use of digital trade, innovators can access new trading platforms in order to distribute their works. Users can as well access these works from any location at little or no stress. Governments in turn get to benefit from the increase in production and sale of works of intellectual property. However, while the recent diffusion of broadband internet access has significantly improved productivity, it has also made it hard to enforce intellectual property for digital goods like movies and music.

4.1 Challenges of Intellectual Property Protection under Digital Trade

Difficulty in enforcement of these intellectual property rights is a major challenge, and this is due to differing laws and jurisdictions. Different legal systems and cultural backgrounds influence the understanding and enforcement of intellectual property rights therefore creating a segmented global system where actions deemed infringement in one country may not be illegal in another. A typical illustration is where pirates and counterfeiters use more than one website in different countries. There will definitely be a conflict of laws applicable to try such matters.

Speaking of piracy, there is no doubt that digital content is more vulnerable to piracy and illegal downloading. An example is the \$539M infringement lawsuit made

against Samsung electronics in 2011. This can take different forms. From the unauthorized production and sale of counterfeit products to the malicious use of well-known trademarks and brand names. Not to mention the unauthorized redistribution of digital content and the theft of product designs and trade secrets. With the identity of the counterfeiter often unknown to the brand or content owner due to the advancement in technology, it becomes difficult to track down such 'bad Actors'.

Digital technology, however, has its own benefits, especially as it has brought about greater opportunities for intellectual property owners. This includes better prospects for licensing and monetization of IP assets, as well as increase in job opportunities. Even more, companies have realized that they can tap into their intellectual property when there is an urgent need to generate funds, by pledging them as collateral. So perhaps the opportunities brought by digital trade far outweigh the challenges faced.

5.0 Conclusion

The future of intellectual property is indeed bright with the recent advancements in AI technology and digital trade. However, for Nigeria to harness her full potential, there must be enactments of more solid and global friendly policies. She must also work alongside the International Intellectual Property community to fight and manage the growing concerns that come with the use of Artificial intelligence and digital technology.

REFERENCES

1. < <https://www.wipo.int/en/web/about-ip>>accessed 25th August 2025.
2. Copyrighter works are protected in Nigeria by the Copyright Act, 2022; Patentable works and Industrial designs by the Patent and Designs Act CAP P2 LFN, 2004 and Trademarks by the Trademark Act, CAP T13 LFN, 2004.
3. Prakash, A., Chen, L., & Shrestha, R. (2025). Digital Transformation and Indo-Pacific's Participation into GVCs. *The Journal of World Investment & Trade*, 1(aop), 621-647.

4. Park, K., & Kim, H. (2024). The Norms Alignment of Digital Trade: Handbook and Rulebook. *Journal of Korea Trade (JKT)*, 28(7), 175-199.
5. <https://en.m.wikipedia.org/wiki/Intellectual_property> accessed 25th August 2025
6. Mulraine, L. E. (2020). From Adidas To Zenga: A Historical and Comparative Analysis of International Intellectual Property Law in Fashion. *AIPLA QJ*, 48, 281.
7. Amavo Ltd v B.T.M Ltd (1991) 7 NWLR (Pt. 206)37 CA
8. OKORO, P. A., OTOR, E., & OMLIGBE, J. APPRENTICESHIP AND THE RIGHT TO PATENTABLE INVENTIONS IN NIGERIA.
9. Olubiyi, I. A., & Irumekhai, O. S. (2024). AI AUTHORSHIP/INVENTORSHIP THROUGH THE LENS OF THEORETICAL JUSTIFICATIONS OF INTELLECTUAL PROPERTY RIGHTS. *ABUAD Law Journal*, 12(1), 119-134.
10. Cottier, T. (2005). The agreement on trade-related aspects of intellectual property rights. In *The World Trade Organization: legal, economic and political analysis* (pp. 1041-1120). Boston, MA: Springer US.
11. Bainbridge, D. I. (2007). *Intellectual property*. Pearson Education.
12. Sankar, M. N., Bhombal, S., & Benitz, W. E. (2019). PDA: to treat or not to treat. *Congenital heart disease*, 14(1), 46-51.
13. S. Timi- Koleolu & O. Atanda, ' Registering of Patents in Nigeria', Pavestones Newsletters(March 19, 2024) <<https://pavestoneslegal.com/registering-patents-in-nigeria>> accessed 26th August 2025
14. Ramos, Y., & Santos, F. D. (2025). Are Climate Geoengineering Technologies Being Patented? An Overview. *Climate*, 13(4), 77.
15. <<https://www.wipo.int/en/web/designs>> accessed 30th August 2025
16. These designs fall more appropriately as artistic works under the copyright law. See the definition of artistic works under section 108, Copyright Act 2022.

However S. 2(6) of that same Act provides that if at the time these 'handicrafts' are made they are intended by the author to be used as models or patterns to be multiplied by Industrial process, then such works are industrial designs and they would be protected accordingly.

17. Opadere, O. S. (2018). The Complexities of Nigeria's Copyright (Collective Management Organizations) Regulations, 2007. In *Contemporary Issues in International Law: Environment, International Trade, Information Technology and Legal Education* (pp. 273-285). Singapore: Springer Singapore.
18. Backes, C. H., Rivera, B. K., Bridge, J. A., Armstrong, A. K., Boe, B. A., Berman, D. P., ... & Kirpalani, H. (2017). Percutaneous patent ductus arteriosus (PDA) closure during infancy: a meta-analysis. *Pediatrics*, 139(2).
19. Clyman, R. I., Liebowitz, M., Kaempf, J., Erdeve, O., Bulbul, A., Håkansson, S., ... & Center, K. P. S. C. M. (2019). PDA-TOLERATE trial: an exploratory randomized controlled trial of treatment of moderate-to-large patent ductus arteriosus at 1 week of age. *The Journal of pediatrics*, 205, 41-48.
20. Nwosu, E. (2015). Nigeria. *Millennium Goals and NEEDS: the*.
21. Jetton, B. (2025). The Art That Makes the AI Artist: AI's Potential as a Copyright Infringer and Its Future under a Licensing Requirement. *J. Intell. Prop. L.*, 32, 173.
22. Stylianou, N., Buchan, I., & Dunn, K. W. (2015). A review of the international Burn Injury Database (iBID) for England and Wales: descriptive analysis of burn injuries 2003–2011. *BMJ open*, 5(2), e006184.
23. Rosen, Z. S. (2022). Examining Copyright. *J. Copyright Soc'y USA*, 69, 481.
24. Sunmoni, F. (2023). FAIR USE AND FAIR DEALING; AN OVERVIEW OF COPYRIGHT LAW IN NIGERIA. *Available at SSRN 4888743*.
25. Denicola, R. C. (1982). Trademarks as speech: constitutional implications of the emerging rationales for the protection of trade symbols. *Wis. L. Rev.*, 158.

26. Nasirian, A., & Qassemi, V. (2025). The impact of artificial intelligence on intellectual property rights in digital higher education environments: A meta-analytic review. *Knowledge and Research in New Higher Education*, 3(4), 1-14.
27. Singh, V., & Sethi, M. R. (2021). Digital Trade And Artificial Intelligence: Role Of Intellectual Property. *NTUT Journal of Intellectual Property Law and Management*, 10(1), 45-66.
28. Adam Jezard, " This AI detects cardiac arrests during emergency calls", World Economic Forum, August 6, 2018 <<https://www.weforum.org/stories>>accessed 25th August 2025
29. Terhile Ikyo, ' Emerging Issues for Nigerians in the age of artificial intelligence' (Oct.7,2024)<<https://www.vanguardngr.com>> accessed 27th August 2025
30. Bauer, M., Dugo, A., Pandya, D., Sharma, V., & Sisto, E. (2025). *Boosting efficiency and quality in EU public services: The need for a European multi-cloud-first strategy* (No. 04/2025). ECIPE Occasional Paper.
31. Holgate, N. (1984). IMA (1978) Ibid. 42, 533-63 (compiled by BE Leake). MacPherson, HG (1983) Ibid. 47, 247-57. Rock, NMS, and Leake, BE (1983) A FORTRAN program for the classification of amphiboles according to. *Mineral. Mag*, 48, 211-27.
32. Terhile Ikyo 'Emerging Issues for Nigerians in the age of Artificial intelligence' (Oct. 7, 2024) <<https://www.vanguardngr.com/2024/10/emerging-issues-for-nigerians-in-the-age-of-artificial-intelligence/amp/>> accessed 29th August, 2025
33. Broyde, M. J., & Mei, Y. (2024). Don't Kill the Baby! The Case for AI in Arbitration. *NYUJL & Bus.*, 21, 119.
34. Alikhan, S., & Mashelkar, R. (2009). Intellectual property and competitive strategies in 21st century.
35. <<https://eclipses.com/news/safeguarding-your-organizations-data-why-data-protection-matters/>> 29/06/25

36. Babalola, O. (2024). The GDPR-Styled Nigeria Data Protection Act 2023 and the Reverberations of a Legal Transplant. *Available at SSRN 4786872*.
37. Terhile Ikyo 'Emerging Issues for Nigerians in the age of Artificial intelligence' (Oct. 7, 2024) <<https://www.vanguardngr.com/2024/10/emerging-issues-for-nigerians-in-the-age-of-artificial-intelligence/amp/>> accessed 29th August, 2025
38. Ijeoma Uju & Okabonye Chukwuani, Navigating the New data protection Regime: Key Takeaway from the Nigerian Data Protection Act, [2023] Templars Law.
39. Fjeld, J., Achten, N., Hilligoss, H., Nagy, A., & Srikumar, M. (2020). Principled artificial intelligence: Mapping consensus in ethical and rights-based approaches to principles for AI. *Berkman Klein Center Research Publication*, (2020-1).
40. <<https://carnegiecouncil.org/explore-engage/key-terms/ai-accountability>> accessed 29th August 2025.
41. Terhile Ikyo' Emerging Issues for Nigerians in the age of Artificial intelligence' (Oct. 7, 2024) <<https://www.vanguardngr.com/2024/10/emerging-issues-for-nigerians-in-the-age-of-artificial-intelligence/amp/>> accessed 29th August, 2025
42. Selbst, A., & Powles, J. (2018, January). "Meaningful information" and the right to explanation. In *conference on fairness, accountability and transparency* (pp. 48-48). PMLR.
43. For example to access streaming services like Netflix or DSTV, a user has to subscribe. A trade has occurred. Or is it the rise in the use of technology to run transportation systems. examples include UBER and BOLT technology transport companies. Not to mention the purchase of items via platforms like Jumia, Amazon, etc. The list is endless.
44. <https://www.cambridge.org/core/books/abs/trade-in-knowledge/enforcement-of-intellectual-property-rights-in-a-digital-era> accessed August 11th, 2025
45. EL Steenwyk, 'Patent infringement in Focus: Apple's \$539M infringement lawsuit against Samsung Electronics ' [2025] Forensis group<

<https://www.forensisgroup.com/resources/expert-legal-witness-blog/patent-infringement-in-focus-apple-s-539-m-infringement-lawsuit-against-samsung-electronics>> accessed 12th August 2025

46. Xin, M., & Mendonça, A. (2025). Does Cross-border E-commerce Promote the Internationalization of SMEs in BRICS Countries?—Evidence From China and Brazil.
47. Mostert, F. (2018). The global digital enforcement of intellectual property. *WIPO Magazine, Special Issue 10/2018*.