



IMPACT OF AI-DRIVEN ANALYTICS IN ADJUDICATION OF INTELLECTUAL PROPERTY RIGHTS IN NIGERIAN COURTS

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Abstract

Artificial intelligence (AI) is exerting influence on legal system by affecting various aspects of lawyers' work such as predicting court outcomes. With the complex nature of legal proceedings, the integration of AI-driven analytics has become imperative to streamline judicial processes, improve transparency and seamless access to justice. This study therefore assessed the impact and challenges associated with the deployment of AI-driven analytics in the jurisdiction of intellectual property rights in Nigerian courts. The study revealed the challenges facing the jurisdiction of intellectual property rights in Nigerian courts as lack of ethical and regulatory concern, data privacy and security risk, technical expertise, high implementation cost, algorithm bias and inadequate government policies. From the findings of the study, the researchers recommended that government, stakeholders, and law enforcement agencies should establish comprehensive ethical standards, data privacy regulations, and transparency protocols to mitigate potential biases, ensure data integrity, and guarantee adherence to ethical and legal norms in AI technologies. Also, the Nigerian court system should foster interdisciplinary collaboration and information sharing among legal experts and technology providers to facilitate the development of technological advancements in AI-driven analytics. Government at all levels should establish Technology Monitoring and Evaluation Unit (TMEU) in the Ministries of Justice across the Country to organize capacity building and training programs for legal professionals, judicial personnel, and administrators as well as monitoring and evaluating its effectiveness in addressing the specific needs and challenges of intellectual property rights in Nigerian courts.

Keywords: Artificial intelligence (AI), Predictive Analytics, Intellectual Property, Rights, Nigeria

Introduction

Over the years, the world has witnessed a transformative journey that has permeated every facet of existence, spanning culture, economy, legal system, social norms, and, notably, technology. Presently, technology has enhanced human endeavors, from the era of the wheel

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and the steam engine to the era of the computer.¹ The fundamental purpose of technology is to offer resolutions to life's challenges by upgrading societal living standards, predominantly through the implementation of robotics, nuclear capabilities, social media advancements, drones, power generation innovations, diagnostic tools, autonomous vehicles, smart watches, 5G networks, and the development of Artificial Intelligence (AI).² Since the time when the abacus was invented, humanity has been captivated by the pursuit of creating intelligent machines capable of emulating or surpassing human intelligence.³ The global adoption and utilization of Artificial Intelligence (AI) are swiftly on the rise.⁴ Recent advancements in artificial intelligence, especially in natural language processing and machine learning, have questioned conventional notions of human proficiency.⁵ Machines are currently executing progressively intricate tasks more proficiently than humans. In recent times, Countries such as Australia, China, France, and the United States have extensively harnessed the potential of artificial intelligence analytics, resulting in substantial impacts and commendable outcomes.⁶

The term "artificial intelligence" was first used in August 1955 in a proposal for a research project by John McCarthy, Marvin L. Minsky, Nathaniel Rochester, and Claude Shannon.⁷ AI, as a field of study, delves into the creation and advancement of intelligent machines.⁸ Artificial intelligence, sometimes referred to as machine intelligence (M.I.), involves the study of the cognitive processes of the human brain on how it reasons, learns, decides, and operates while solving problems, while the outcomes serves as a foundation for developing intelligent software and systems that imitate and emulate human behaviors.⁹ Furthermore, leveraging advancements in AI and Machine Learning, these systems are progressively

¹ Ionescu, I.G. (2018). The first industrial revolution and general features of the world economy between the 16th century and 1780. *SEA Practical Application of Science*, 17 (2):183-186.

² Duarte, A.Y.S, Sanches, R.A & Dedini F.G. (2018). Assessment and technological forecasting in the textile industry: From first industrial revolution to the industry 4.0. *Strategic Design Research Journal*. 11(3):193-202.

³ Agunbiade A.I. Artificial intelligence (AI) and law: A Nigerian perspective.

⁴ Borenstein, J., and Howard, A., 2021. Emerging challenges in AI and the need for AI ethics education. *AI and Ethics* 1, 61–65.

⁵ Bhavani, R., J., & S. Thuraisingam, A. (2022). Artificial intelligence and its impact on the legal fraternity. *UUM Journal of Legal Studies*, 13(2), 129-161. <https://doi.org/10.32890/uumljs2022.13.2.6>

⁶ Pedro, F., Subosa, M., Rivas, A., and Valverde, P., 2019. Artificial intelligence in education: challenges and opportunities for sustainable development.

⁷ J. McCarthy, M. L. Minsky, N. Rochester, C. E. Simon. (2006). "A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence, August 31, 1955." *AI magazine*. [On-line]. 27(4), pp. 12-14. Available: <https://ocs.aaai.org/ojs/index.php/aimagazine/article/viewFile/1904/1802> [15th May, 2023].

⁸ Luxton, D.D., 2016. An introduction to artificial intelligence in behavioural and mental health care, in: *Artificial intelligence in behavioural and mental health care*. Elsevier, pp. 1–26.

⁹ Adamopoulou, E., and Moussiades, L., 2020. An overview of chatbot technology, in: *IFIP International Conference on Artificial Intelligence Applications and Innovations*, Springer. pp. 373–383.



proficient at processing vast amounts of data in remarkably brief periods.¹⁰ In addition, these systems continuously enhance their capabilities, yielding predictions with heightened precision.¹¹

AI- driven analytics denotes the utilization of sophisticated algorithms and machine learning models to process extensive datasets, detect patterns, and generate actionable insights or predictions.¹² The fundamental concept behind AI-driven analytics is to empower systems to learn from data, recognize intricate patterns, and adapt to new information without explicit programming. Leveraging machine learning, deep learning, and natural language processing, AI-driven analytics can unveil concealed correlations, identify anomalies, and offer real-time, data-driven suggestions that significantly enhance decision-making procedures. AI is classified into two primary types: weak and strong AI, also known as narrow and general AI.¹³ Weak AI describe AI as a problem-solving instrument, while strong AI involves the creation of a "real" intellect.¹⁴ Research in Artificial Intelligence (AI) has enriched human existence and has brought positive transformations across various domains.¹⁵ The legal practice is evidently not exempt from these technological advancements.¹⁶ The surge of data-driven technologies, thrust by automation and AI progress, promises to disrupt the conventional methodologies of the legal system significantly.¹⁷ The magnitude of data requiring thorough and intensive analysis to facilitate fair and impartial decision-making in the judicial system continues to occupy a significant part of the judiciary and detrimentally affect the case management system.

The delivery of legal services has transformed significantly, owing to shifts in access to legal information. Internationally, the legal sector confronts the impetus to innovate and

¹⁰ Simon, M., Lindsay, A. F., Sosa, L., & Comparato, P. (2018). *Lola v Skadden and the automation of the legal profession*. Yale Journal of Law & Technology, 20, 234.

¹¹ Kelly, J. E. (2015). *Computing, cognition and the future of knowing; How humans and machines are forging a new age of understanding*. Whitepaper, IBM Research, 2.

¹² Rouse, M. (2018). *Definition: Data analytics*. Retrieved October 24, 2023, from TechTarget: <https://searchdatamanagement.techtarget.com/definition/data-analytics>

¹³ Chang, A.C., 2020. *Intelligence-based medicine: Artificial intelligence and human cognition in clinical medicine and healthcare*. Academic Press.

¹⁴ Flowers, J.C., 2019. Strong and weak AI: Deweyan considerations, in: AAAI spring symposium: Towards conscious AI systems.

¹⁵ Zhang, C., & Lu, Y. (2021). Study on artificial intelligence: The state of the art and future prospects. *Journal of Industrial Information Integration*, 23(100224).

¹⁶ Richard Susskind, *Tomorrow's Lawyers: An Introduction to Your Future* (2014) and Richard Susskind and Daniel Susskind, *The Future of The Professions: How Technology Will Transform the Work of Human Experts* (2016); and Raymond H. Brescia, et al., *Embracing Disruption: How Technological Change in the Delivery of Legal Services Can Improve Access to Justice*, 78 ALBANY L. REV. 553 (2015)

¹⁷ Alarie, B., Niblett, A., & Yoon, A. H. (2018). How artificial intelligence will affect the practice of law. *University of Toronto Law Journal*, 68 (supplement 1), 106–124. <https://doi.org/10.3138/utlj.2017-0052>



revolutionize the approach to legal operations.¹⁸ In 1976, Westlaw and Lexis initiated computer-assisted legal research, altering the reliance on physical law books.¹⁹ Lawyers could now access these materials through computers, as the texts were available in electronic formats, enabling keyword searches to locate pertinent sources.²⁰ Today, the demand for justice has escalated as society becomes increasingly intricate, leading to heightened involvement in commercial and legal disputes by citizens.²¹ Legal professionals undertake a multitude of legal responsibilities, including advising clients, drafting contractual documents, and safeguarding Intellectual Property Rights (IPRs). Undoubtedly, the protection of Intellectual Property Rights (IPRs) holds mounting significance across many nations globally, influencing the social and economic landscapes of these countries. In numerous developed nations, laws duly safeguard the intellectual property rights of creators and inventors. The protection of intellectual properties aids governments in curbing the actions of violators, counterfeiters, and imitators of intellectual works. Consequently, the protection of IPRs fosters economic growth for nations and contributes to the valuation of intellectual creations.²² Governments in various countries have instituted the protection of intellectual properties through the enactment of dynamic and robust laws. These laws undergo periodic reviews to effectively address emerging innovations and challenges in the operating environment.²³

Intellectual property (IP) encompasses a wide spectrum, encompassing literary, artistic, and scientific works; performances of performing artists, as well as phonograms and broadcasts; inventions across all domains of human pursuit; scientific breakthroughs; industrial designs; trademarks, service marks, commercial names, and designations; protection against unfair competition, and other rights derived from intellectual endeavors in industrial, scientific, and technological sectors.²⁴ According to World Intellectual Property Organization (WIPO),

¹⁸ Bhavani n5

¹⁹ James A. Sprowl, Computer-Assisted Legal Research: Westlaw and Lexis, 62. AMER. BAR ASSOC. J. 320 (1976).

²⁰ Alarie, Benjamin and Niblett, Anthony and Yoon, Albert, How Artificial Intelligence Will Affect the Practice of Law (November 7, 2017). <http://dx.doi.org/10.2139/ssrn.3066816>

²¹ N.W. Founder, J. Herik, A.B. Salem, Digitally produced judgements in modern court proceedings, *International Journal of Digital Society (IJDS)* 6 (2015) 1101–1112.

²² Holland, J. (2017). Intellectual property rights in China: Patents and economic development. *Nnamdi Azikiwe University Journal of International Law and Jurisprudence*, 8(1), 40-45.

²³ Afolayan, O.T, (2022) Intellectual Property Rights Protection in Nigeria: Issues and Perspectives. *Information Impact: Journal of Information and Knowledge Management*, 13:1, 1-9, DOI <https://dx.doi.org/10.4314/ijikm.v13i1.1>

²⁴ Cap P2, Laws of the Federation of Nigeria 2004 (hereinafter “PDA”).



Intellectual property pertains to the legal rights resulting from creative undertakings in industry, research, literature, and the arts. The fundamental objective of intellectual property law is to safeguard artists and creators of intellectual goods and services by granting them time-bound rights to control the usage of their work. These rights pertain to the intellectual work itself, rather than the physical entities in which it might be incorporated.²⁵

These creations have been given legal protection, granting their creators proprietary and transferrable rights. This right empowers the creator to control the use and misuse of their creation by others. Legal statutes establish the foundation for the moral and economic rights of creators, along with fostering encouragement and incentives for the advancement of creativity and innovation. Novel creative forms arising from the digital and online sphere²⁶, including databases and multimedia, often exist in Intellectual property (IP) without precise delineation.²⁷

By harnessing AI-powered analytics, the judicial system can acquire a more profound comprehension of intricate datasets, evaluate legal cases, anticipate case outcomes, recognize pertinent precedents, and offer invaluable insights aiding legal professionals and judges in making well-informed and unbiased judgments.²⁸ AI applications can support legal reasoning by searching through databases of legal texts and pinpointing relevant cases pertaining to ongoing judicial proceedings, and can also make suggestions on judgement or guidance based on accessible information.²⁹ This tool significantly streamlines case management by sifting through irrelevant data.³⁰ The Nigerian judiciary system, akin to numerous others worldwide, faces the challenges posed by mounting caseloads and the necessity for prompt and accurate case resolutions. In response to these challenges, the integration of AI-driven predictive analytics has emerged as a promising resolution to streamline case management processes

²⁵ World Intellectual Property Organization (WIPO), Introduction to Intellectual Property, Theory and Practice, (Geneva, Switzerland: Kluwer Law International, 1997), p. 3.

²⁶ A. Adewopo, "Role of the Court in the Interpretation and Development of Intellectual Property Law: The Nigerian Experience", (2015), Vol. 6 No. 1, *The Gravitas Review of Business & Property Law*, pp. 1 – 2.

²⁷ Cecil Nwachukwu Okubor & Kesiena Urhibo. Judicial role in the development of intellectual property law in Nigeria. *Commonwealth Law Review Journal*. The Law Brigade Publishers Annual Volume 8 (2022).

²⁸ R. Yulia, R. Sergiy, Justice in the digital age: Technological solutions, hidden threats and enticing opportunities, *Access to Justice in Eastern Europe* 4 (2021) 104–117. URL: <https://doi.org/10.33327/AJEE-18-4.2-A000061>. doi:10.33327/AJEE-18-4.2-A000061.

²⁹ Reiling, A.D. (2020). Courts and Artificial Intelligence. In *IJCA* (Vol. 11, p. 1). Last accessed from <https://www.iacajournal.org/articles/10.36745/ijca.343/print/> on April 13, 2023

³⁰ C.R. Sunstein. (2001). "Of Artificial Intelligence and Legal Reasoning." *University of Chicago Law School Roundtable*. [On-line]. 8(1), pp. 29-35



and advance Intellectual Property (IP) interests. Hence, this paper aims to explore the multifaceted potentials linked to the deployment of AI-driven predictive analytics in the advancement and enforcement of intellectual property rights.

Overview of AI-Driven Analytics in Legal System

The inaugural "Artificial Intelligence + Law Science" conference held at Boston University in the United States in 1987 led to the establishment of the International Association of Artificial Intelligence and Law (IAAIL),³¹ aimed at promoting the research and application of AI in the field of law. The conference outlined ten key areas of AI's potential in legal applications.³² Today's AI applications now offer a plethora of legal solutions, including contract drafting and review, digital signatures, contract document management, litigation budgeting, evaluation of scientific expert testimony, bankruptcy, immigration, estate planning, taxes, securities, food and drug cases, contract due diligence, expertise automation, legal analytics, task management, title review, and lease abstracts.³³ The American Bar Association has opined that AI represents the next big leap that will revolutionize the legal profession.³⁴ In 2014, the London-based legal consulting firm Jomati published a report titled "Civilization 2030: The Law Firm in the Near Future," predicting that, following a period of incubation and experimentation, technology would rapidly advance. The report boldly suggested that within 15 years, robots and artificial intelligence would dominate legal practice, potentially leading to a 'structural collapse' in law firms and a substantial transformation in the market for legal services.³⁵

Artificial intelligence is increasingly being utilized in judicial and agency actions, employing computer software such as COMPAS and the Public Safety Assessment (PSA) to analyze extensive data sets. These systems are applied in various contexts, including predictive

³¹ Jiang Ke, Law Education Mode of Science and Technology Institutions in the Context of "Artificial Intelligence +", Think Tank Era, 2018139 (23): Page 74. (In Chinese)

³² Cao Jianfeng, "Ten Trends of Artificial Intelligence + Law", Robot Industry, The 5th issue in 2017, Page 86. (In Chinese)

³³ Connell, W. J. (2018). Artificial Intelligence in the legal profession— What you might want to know. Rhode Island Bar Journal, 66(6), 5–43.

³⁴ Chamberlain & Poteet, *supra* nota 9, at 2 (quoting Bob Ambrogi, How Artificial Intelligence is Transforming the Legal Profession, ABA Journal (May 3, 2016), <http://www.abajournal.com/legaltalknetwork.com/podcasts/law-technology-now/2016/05/artificial-intelligence-will-influence-future-legal>).

³⁵ Teng Hu and Huafeng Lu. Study on the Influence of Artificial Intelligence on Legal Profession. 5th International Conference on Economics, Management, Law and Education (EMLE 2019), p965



policing, bail setting, and other public safety matters.³⁶ Major online platforms such as eBay and PayPal, faced with an influx of disputes concerning erroneous charges and misrepresented items, have implemented resolution tools capable of automatically handling over sixty million cases annually.³⁷ These software systems assess the arguments presented by each party, weigh them using specific algorithms, and independently generate solutions. While these disputes may seem trivial, their resolution can consume valuable time and resources, potentially leaving consumers dissatisfied if not handled carefully.³⁸ However, through the use of AI agents, these cases are adjudicated within minutes, ensuring a level of fairness that has significantly enhanced customer satisfaction.³⁹ Similarly, software solutions like Legal Robot have been developed to aid individuals in comprehending intricate legal language and identifying potential issues before signing, eliminating the need to engage costly legal services.⁴⁰ Leveraging legal algorithms, these technologies offer fairness and risk analysis, catering specifically to non-legal professionals.⁴¹

According to a study conducted by researchers at the Massachusetts Institute of Technology and the University of North Carolina School of Law, it was revealed that large law firms dedicate only four percent of lawyers' time to document review, outsourcing the majority of this task or assigning it to artificial intelligence.⁴² Their analysis indicated that the immediate implementation of all new legal technologies could potentially lead to a thirteen percent decrease in lawyers' billable hours.⁴³ Likewise, a study focused on contract review unveiled that the Contract Intelligence (COIN) software efficiently completed the review process in just 26 seconds, while participating lawyers spent 92 minutes on the same task.⁴⁴ Notably, Catalyst, an AI program, was capable of reviewing an impressive 723,537 documents within five days.⁴⁵ This software enables users to convert documents into digital formats and execute various responses on individual documents by searching for specific words or phrases. A

³⁶ Mariano-Florentino Cuéllar, A Simpler World: On Pruning Risks and Harvesting Fruits in an Orchard of Whispering Algorithms, 51 U.C. DAVIS L. REV. 27, 35 (2017).

³⁷ Larry N. Zimmerman, Artificial Intelligence in the Judiciary, 85 J. Kan. B.A. 20 (2016).

³⁸ See Larry n37

³⁹ See Larry n37

⁴⁰ Connell n34

⁴¹ Connell. n34

⁴² Steve Lohr, A.I. Is Doing Legal Work. But It Won't Replace Lawyers, Yet, N. Y. Times (March 19, 2017), <https://www.nytimes.com/2017/03/19/technology/lawyers-artificial-intelligence.html>.

⁴³ Steve n43

⁴⁴ Davis, A. E. (2020). The future of law firms (and lawyers) in the age of Artificial Intelligence. *Revista Direito GV*, 16(1). <https://doi.org/10.1590/2317-6172201945>

⁴⁵ Nelson, S. D., & Simek, J. W. (2017). Running with the machines: AI in the practice of law. *Law Prac.*, 43, 24.



prominent example is the JP Morgan Chase COIN (Contract Intelligence) software, which annually saves 360,000 hours of contract review work for lawyers and swiftly examines voluminous documents, significantly reducing legal costs and mitigating errors attributed to human fallibility. This technology greatly enhances the document review process by extracting pertinent information.⁴⁶ Despite the welcoming speed and efficiency of AI in conducting due diligence, it is imperative to recognize the need to avoid over-reliance, as these systems are not completely infallible.⁴⁷

The advent of AI has the potential to revolutionize the legal profession, especially in tasks like contract review, which many lawyers often find mundane. AI can significantly expedite and enhance this process, enabling legal practitioners to allocate their time more judiciously to legal work where AI's capabilities are less suited, such as litigation strategy.⁴⁸ For example, in a United Kingdom case study, AI software known as "Case Cruncher Alpha" outperformed human lawyers, accurately predicting case outcomes with an 86.6 percent success rate, compared to the lawyers' 66.3 percent.⁴⁹ This prompts the question of whether lawyers can keep pace with AI as it continues to advance and approach 100 percent accuracy?⁵⁰ Notably, in June 2016, Ross, the world's first AI lawyer, supported by IBM's cognitive computer, Watson, was "hired" by an American law firm. Ross can engage in human-like conversations with lawyers, offer insights into prospective cases, and address specific bankruptcy consulting issues.⁵¹ This AI lawyer excels in legal research, drafting research memos, analyzing briefs, and suggesting missing cases from a list of authorities in an existing brief.⁵² Similarly, programs like CARA provide legal summaries and research memos.⁵³ In February 2018, an AI system developed by Lawgeex, an Israeli legal technology company, triumphed over 20 experienced lawyers in a standard business contract review

⁴⁶ Nelson n46

⁴⁷ Manap, N. A., & Abdullah, A. (2020). Regulating Artificial Intelligence in Malaysia: The two-tier approach. *UUM Journal of Legal Studies*, 11(2), 183–201. <https://doi.org/10.32890/uujls.11.2.2020.8779>

⁴⁸ Umali, T. (2018, September 24). *Implications of AI in the legal profession*. Open Gov Asia. <https://opengovasia.com/implications-of-ai-in-the-legal-profession/>

⁴⁹ Bhavani n5

⁵⁰ Ting, K. S. (2017, November 25). Legal Profession in the age of Disruption: 5 Key Discussions in LexTech Conference 2017. *University of Malaya Law Review*. <https://www.umlareview.com/lex-in-breve/legal-profession-in-the-age-o>

⁵¹ Liberatore S. "Your AI Lawyer will See You Now: IBM's ROSS Becomes World's First "Artificially Intelligent Attorney [EB/OL].(2016-05-16)[2018-04-07].

⁵² Ross Intelligence (Aug. 8, 2018), Artificial Intelligence (AI) for the Practice of Law: An Introduction, <https://rossintelligence.com/ai-introduction-law/>; see also Susan Beck, Inside ROSS: What Artificial Intelligence Means for Your Firm, *LAW.COM* (Sept. 28, 2016), <http://www.law.com/sites/almstaff/2016/09/28/inside-ross-what-artificialintelligence-means-for-your-firm/>.

⁵³ Allison Arden Besunder, Not Your Parents' Robot, *N.Y. ST. B.J.*, Mar./Apr. 2018, at 20, 90-APR NYSTBJ 20 (Westlaw).



competition, showcasing the potential of AI in the legal field.⁵⁴ AI's primary impact has been on legal processes such as analytics and discovery,⁵⁵ attributed to algorithms' precision and accuracy in executing rule-based tasks.

AI-driven predictive analytics empowers legal professionals to evaluate potential case outcomes based on historical precedents, court decisions, and pertinent case law,⁵⁶ known as predictive justice in English terminology.⁵⁷ Lexis Advance, a legal research service that integrated Lex Machina litigation analytics following its acquisition by Lexis Nexis in 2015, transforms court case data into dynamic charts.⁵⁸ It provides concise judge biographies, categorizes ongoing cases by area of practice, assesses cases by year, and offers case schedules.⁵⁹ AI-driven tools streamline automated legal research, granting legal experts access to extensive databases, repositories of case law, and legal documents for pertinent precedents and references.⁶⁰ Notably, the ROSS platform employs cognitive computation that utilizes natural language processing for analyzing legal documents.⁶¹ Furthermore, effective risk assessment stands as a crucial responsibility for lawyers. Inadequate risk assessment often leads to costly lawsuits, resulting in negative impacts on clients⁶². Fortunately, AI innovations, such as Technology Assisted Review (TAR) tools with predictive coding capabilities, can address this inefficiency.⁶³ Enhanced risk assessment practices will enable law firms and legal professionals to accurately evaluate potential risks, thereby minimizing costs and safeguarding their reputation and clients' interests.⁶⁴ In 2018, Grace InfoTech Limited in Nigeria introduced a new AI-driven product called 'Timi,' integrated into the Law

⁵⁴ Teng n36

⁵⁵ McGinnis, J. O., & Pearce, R. G. (2019). The great disruption: How machine intelligence will transform the role of lawyers in the delivery of legal services. *Actual Probs. Econ. & L.*, 13, 1230.

⁵⁶ Harry Surden, Machine Learning and Law, 89 UNIV. OF WASH. L. REV. 87, 102-110 (2014); Daniel Martin Katz, Michael Bommarito, and Josh Blackman, A General Approach for Predicting the Behavior of the Supreme Court of the United States, *PLoS ONE* 12(4): e0174698 (2017)

⁵⁷ Reiling n30

⁵⁸ Nelson n46

⁵⁹ Remus, D., & Levy, S. F. (2017). Can robots be lawyers: Computers, lawyers, and the practice of law. *Geo. J. Legal Ethics*, 30, 501.

⁶⁰ Lin, T. C. W. (2019). Artificial intelligence, finance, and the law. *Fordham Law Review*, 88(2), 531–552.

⁶¹ F. Schaefer, Taylor B. "The Ethical Implications of Artificial Intelligence in the Law." *Gonz. L. Rev.* 55 (2019): 221.

⁶² McCarthy Kieran, Why Most Lawyers Are Terrible at Assessing Risk, *Mccarty Garber Law*, Sep 2018, <https://mccartygarberlaw.com/why-most-lawyers-are-terrible-at-assessing-risk/>

⁶³ Prelaw What Do Lawyers Do?, NALP, https://www.nalp.org/what_do_lawyers_do [https://perma.cc/982D-APDZ] (last visited Mar. 26, 2023).

⁶⁴ Avaneesh Marwaha, Seven Benefits of Artificial Intelligence for Law Firms, *Law Technology Today*, July 2017, <https://www.lawtechnologytoday.org/2017/07/seven-benefits-artificial-intelligence-law-firms/>



Pavilion suite software and electronic law reports.⁶⁵ Timi functions as a chatbot equipped with an understanding of the Lagos State Civil Procedure Rules⁶⁶. According to the developers, the product aims to address the fact that 48% of cases in Nigerian courts are lost due to procedural errors rather than substantive legal issues.⁶⁷ Considering the rapid growth of technology, coupled with advancements in Machine Learning, it is anticipated that AI will eventually replace many manual tasks currently exclusive to the legal profession.⁶⁸ This is feasible due to the significant improvement and advancement of machine intelligence with continued use.⁶⁹

Intellectual Property Rights (IPRs) in Nigeria

As defined by WIPO, intellectual property encompasses products of the mind, including inventions, literary and artistic works, symbols, names, images, and designs utilized in commercial settings.⁷⁰ Intellectual property rights serve as a comprehensive term that covers patents, trademarks, plant breeds, copyrights, trade secrets, and other forms of rights granted to safeguard creative endeavors and knowledge generation. These rights are instituted to protect the interests of creators and inventors and regulate the utilization of their creations.⁷¹ Section 251(1) of the Constitution of the Federal Republic of Nigeria 1999 (as amended in 2011) (CFRN) establishes that "Notwithstanding anything to the contrary contained in this Constitution... the Federal High Court shall have and exercise exclusive jurisdiction to the exclusion of any other court in civil causes and matters." This clause signifies that any civil matter related to intellectual property must be initiated exclusively in the Federal High Court, with no other court authorized by law to adjudicate on such matters. This provision closely aligns with the provisions outlined in section 7 of the Federal High Court Act.⁷²

In Nigeria, Intellectual property rights are categorized into four main groups, namely Copyright, Patents, Trademarks, and industrial designs.⁷³ Copyright refers to the legal

⁶⁵ 'LawPavilion set to release Nigeria's first Artificial Intelligence Legal Assistant' (Vanguard News, October 24th

2023) <https://www.vanguardngr.com/2018/08/lawpavilion-set-to-release-nigerias-first-artificial-intelligencelegal-assistant/> accessed 12th February 2019

⁶⁶ ibid

⁶⁷ ibid

⁶⁸ Susskind, R. E. (2017). *Tomorrow's lawyers: An introduction to your future*. (2nd ed.). Oxford University Press.

⁶⁹ Prelaw n65

⁷⁰ WIPO n26

⁷¹ Afolayan n24

⁷² Cap F12 *Laws of the Federation of Nigeria (LFN)*, 2004.

⁷³ Afolayan n24



protection that creators hold over their literary and artistic works. Works falling under the umbrella of copyright include books, music, paintings, sculptures, computer programs, databases, maps, and technical drawings.⁷⁴ Under the Copyright Amended Acts of 1999, copyright holders possess the rights to publish and reproduce the work in any tangible form, perform the work in public, create cinematograph films or recordings of the work, distribute copies of the work to the public for commercial purposes through renting, leasing, hiring, loaning, or similar arrangements, broadcast or communicate the work to the public via loudspeakers or any analogous device, and create adaptations of the work.⁷⁵ These copyright provisions dictate how creators' works can be utilized or disseminated for public consumption. Failure to adhere to these rights can result in appropriate sanctions, as outlined in the Copyright Amended Act of 1999.⁷⁶

A patent represents an exclusive right granted for an invention for a maximum duration of 20 years starting from the date of the patent application's filing. This right prevents others from utilizing the invention during the designated period.⁷⁷ In exchange of this right, the patent holder makes information about the patent publicly accessible through the published patent document. The regulations governing patent and design matters in Nigeria are established under the Patent and Designs Act of 1990, which devotes Sections 1-11 to patents and Sections 12-22 exclusively to design. Likewise, a trademark constitutes a symbol, sign, or logo distinguishing an organization's goods and services from others.⁷⁸ The Nigerian Trademark Act Cap T13 LFN 2004 governs the registration and management of trademarks in Nigeria. Hence, individuals seeking trademark protection must register with the Registrar of Trademarks. Trademarks safeguard names, logos, shapes, and slogans for a duration of 7 years, renewable for an additional 14 years. Similarly, industrial designs encompass the ornamental or aesthetic aspects of an article. These designs may incorporate three-dimensional features such as the shape or surface of an article, or two-dimensional elements like patterns, lines, or colors.⁷⁹ State authorities grant rights to industrial designs upon meeting specific criteria set by the governing body. Registering an industrial design grants the applicant the right to prohibit others from copying or replicating the design,

⁷⁴ Cecil n28

⁷⁵ Afolayan n24

⁷⁶ Afolayan n24

⁷⁷ Kujembola, D. (2014). Doing business in Nigeria: The intellectual property angle. Retrieved from www.bellanaija.com/2014/07/08damilarekujembola.

⁷⁸ WIPO n26

⁷⁹ WIPO n26



manufacturing the product, or selling it for commercial purposes.⁸⁰ The right to an industrial design is granted for a maximum duration of 15 years, starting from the date of the registration application.

A thorough examination of the existing state of intellectual property (IP) law in Nigeria reveals a concerning lack of sufficient balance, efficacy, and utility in the current legal system's protection of intellectual property rights.⁸¹ In this context, the protection of creators' and investors' intellectual property rights remains inadequate, primarily due to the persistent rise in illicit activities such as piracy, counterfeiting, and imitation.⁸² Nigeria notably contends with the highest rates of software piracy, intellectual property theft, and related malpractices within the IT industry across the African continent.⁸³ It has become apparent that the current IP law in Nigeria lacks a well-thought-out policy framework that adequately addresses the contemporary economic and technological environment.⁸⁴ The foundation of Nigerian IP law originates from English Imperial law, and despite frequent revisions, it has failed to effectively adapt to modern circumstances. One aspect of this deficiency relates to the framework for digital rights management (DRM) and the legal prohibition of circumventing technological protection measures (TPM). Furthermore, the powers of the Nigerian Copyright Commission (NCC) and the Trademark and Patent Registry, along with the issue of fragmented IP institutions, require significant reforms to reflect contemporary needs.⁸⁵

Challenges of AI-Driven Analytics in Adjudication of IPRs in Nigerian Courts

The Nigerian courts encounter several jurisdictional hurdles in effectively enforcing intellectual property rights, significantly impeding the overall efficiency and efficacy of legal proceedings. Some of the prevailing challenges include:

- 1. Ethical and Regulatory Concerns:** Currently, the ethical implications of AI application in legal practice constitute a primary focal point. Lawyers are tasked with an ethical

⁸⁰ Afolayan n24

⁸¹ Cecil n28

⁸² Nwokocha, U. (2012). Nigerian intellectual property: Overview of development and practice. *Journal of Intellectual Property (NJIP)*, 100-16.

⁸³ Andembubto, D. R, Apuru, I. A., & Ezra, S. D. (2020). Software piracy in Nigeria. *Asian Journal of Research in Computer Science*, 6(1), 1-13.

⁸⁴ Cecil n28

⁸⁵ Cecil n28

responsibility to ensure competence and diligence.⁸⁶ Consequently, this places an additional responsibility on legal practitioners to comprehend the reasoning employed by AI systems, as well as their capabilities and limitations.⁸⁷ Yet, comprehending the intricacies of specific AI technologies poses a significant challenge for lawyers, who are not traditionally synonymous with legal technology.⁸⁸ Moreover, the inherent complexity of AI systems, often referred to as the 'black box' of AI, further complicates matters for legal professionals.⁸⁹

2. **Data Privacy and Security Risks:** The integration of AI technologies in Nigerian courts demands the implementation of robust measures to preserve data privacy and security, ensuring the protection of sensitive client information and legal data.⁹⁰ Safeguarding confidential client data, enforcing data encryption, and adhering to data protection protocols play a pivotal role in averting data breaches and upholding client trust and confidentiality. Smart devices may be tampered with,⁹¹ and the challenges stemming from inadequate data security underscore the complexity of these systems⁹². Mitigating the risk of cyber-attacks is crucial, considering the substantial costs involved; for instance, the annual expense of installing digital infrastructure stands at approximately \$30 billion.⁹³ The prevalence of cyber-attacks targeting law firms is a growing and acknowledged threat.⁹⁴
3. **Skill Gaps and Training Requirements:** A successful integration of AI within the Nigerian courts hinges on fostering a workforce equipped with the requisite technological

⁸⁶ Nunez, C. (2017). Artificial intelligence and legal ethics: Whether AI lawyers can make ethical decisions. *Tulane Journal of Technology & Intellectual Property*, 20, 189.

⁸⁷ Rogers, J., & Bell, F. (2019). The Ethical AI Lawyer: What is Required of Lawyers When They Use Automated Systems?. *Law, Technology and Humans*, 1, 80-99. <https://doi.org/10.5204/lthj.v1i0.1324>

⁸⁸ Susskind n70

⁸⁹ Yu, R., & Ali, G. S. (2019). What's inside the Black Box? AI challenges for lawyers and researchers. *Legal Information Management*, 19(1), 2–13.

⁹⁰ D. Ardia, Privacy and court records: Online access and the loss of practical obscurity, *University of Illinois Law Review* 2017 (2017) 1385–1454.

⁹¹ Haseeb, K., Ud Din, I., Almogren, A. & Islam, N. (2020). An energy efficient and secure IoT-based WSN framework: An application to smart agriculture. *Sensors*, 20(7): 2081.

⁹² Zhao, Y., Li, T., Zhang, X., & Zhang, C. (2019). Artificial intelligence-based fault detection and diagnosis methods for building energy systems: Advantages, challenges and the future. *Renewable and Sustainable Energy Reviews*, 109: 85-101.

⁹³ Fickling, B.D., 2019. Cyberattacks Make Smart Grids Look Pretty Dumb. Bloomberg Bloomberg. Retrieved on 12th January, 2022 from: <https://www.bloomberg.com/opinion/articles/2019-06-17/argentina-blaming-hackers-for-outage-makes-smart-grids-look-dumb>,

⁹⁴ Calo, R. (2015). Robotics and the lessons of cyberlaw. *California Law Review*, 103(3), 513. <https://doi.org/10.2139/ssrn.2402972>

skills and expertise to effectively utilize AI tools.⁹⁵ Closing the skill gaps and implementing comprehensive training programs for legal and paralegal professionals on AI-related technologies and applications is indispensable in unlocking the full potential of AI and ensuring its responsible and adept assimilation within the Nigerian legal framework.

4. **Cost of Implementation:** Implementing AI systems in the legal System incurs substantial costs, potentially becoming a barrier for small or mid-tier firms with limited financial resources for investments.⁹⁶ Resolving issues related to legal responsibility, attributing liability, and establishing decision-making accountability is crucial in ensuring the responsible usage of AI technologies and maintaining the oversight and control of critical legal processes and outcomes within the Nigerian courts.
5. **Algorithm Bias:** AI systems developed on datasets associating specific nationalities or races with particular crimes pose a primary concern in the application of AI within the legal systems.⁹⁷ These systems tend to perpetuate historical racial and gender biases predominantly accrue to individuals already positioned in power, who are predominantly white, educated, and male.⁹⁸
6. **Lack of Relevant Government Policies:** As AI-driven technologies continue to permeate business, governance, and educational domains, the absence of comprehensive policies for AI implementation remains a significant concern in African countries, similar to the initiatives seen in developed nations like Australia, China, France, and the United States.⁹⁹ Although some African countries, including Mauritius, Egypt, Zambia, Tunisia, and Botswana, have acknowledged the potential of AI in augmenting GDP and have devised national AI strategies, and countries like South Africa, Nigeria, and Kenya have enacted data protection laws, these efforts are still in their nascent stages.¹⁰⁰

However, there appears to be a shifting trend as technology is increasingly gaining acceptance in recent times. Proactively addressing these challenges and implementing resilient governance structures, ethical guidelines, and comprehensive training initiatives can

⁹⁵ P. Rubim, B. Fortes, Paths to digital justice: Judicial robots, algorithmic decision-making, and due process, *Asian Journal of Law and Society* 7 (2021) 453–469. URL: <https://doi.org/10.1017/als.2020.12>.

⁹⁶ Remus, n61

⁹⁷ Prelaw n65

⁹⁸ Lauterbach, A. (2019). Artificial intelligence and policy: Quo vadis? *Digital Policy, Regulation and Governance*. 21(3), 238- 263. <https://doi.org/10.1108/dprg-09-2018-0054>

⁹⁹ Pedro n7

¹⁰⁰ Effoduh, J.O., 2020. 7 ways that African states are legitimizing artificial intelligence. *Openair.Africa*. <https://openair.africa/7waysthataficanstatesarelegitimizingartificialintelligence/> [Accessed 19 June 2023].



enable the legal profession to adeptly navigate the intricacies of AI integration. This approach facilitates the maximization of the benefits associated with AI technologies and ensures the responsible and effective utilization of AI in legal operations and decision-making procedures.

Conclusion

Assessing the deployment of AI-driven analytics in the jurisdiction of intellectual property rights emphasizes the transformative potential of AI technologies in streamlining legal operations. It highlights their role in optimizing decision-making processes, with demonstrated benefits such as improved case prioritization, data-informed decision-making, and streamlined legal research. The integration of AI technologies in the Nigerian legal system encounters various challenges, including the lack of ethical and regulatory concern, data privacy and security risk, technical expertise, high implementation cost, algorithm bias and inadequate government policies. By harnessing AI-driven predictive analytics, the Nigerian legal system can enhance case management, expedite legal proceedings, and allocate resources more efficiently, fostering a responsive and impartial legal environment that prioritizes efficiency, transparency, and equity. Moving forward, sustained investment in AI-driven technologies, along with capacity-building programs and regulatory frameworks that emphasize ethical AI integration, is essential to maintain the momentum of technological progress within the Nigerian legal.

Recommendations

Based on the assessment of AI-driven predictive analytics in jurisdiction of Nigerian court to enforce intellectual property rights, several key recommendations are proposed to maximize the benefits of AI technologies as follows:

1. The government, stakeholders, and law enforcement agencies should establish comprehensive ethical standards, data privacy regulations, and transparency protocols to mitigate potential biases, ensure data integrity, and guarantee adherence to ethical and legal norms in AI technologies.
2. Government, stakeholders and relevant law agencies should foster interdisciplinary collaboration with technology providers for capacity-building and training programs for legal professionals, judicial personnel, and administrators on the application of AI-driven predictive analytics to enable the effective adoption and utilization of AI within the Nigerian legal system.



3. The government should establish Technology Monitoring and Evaluation Units (TMEUs) in all Ministry of Justice branches nationwide to continuously monitor and evaluate the effectiveness, impact, implications, and potential challenges of AI-driven predictive analytics in the Nigerian legal system.
4. Government, stakeholders and relevant law agencies should promote public awareness and engagement initiatives to foster understanding, transparency, and trust in AI-driven predictive analytics in the Nigerian legal system. This will encourage public participation, and foster a more inclusive and informed legal environment that prioritizes transparency and accountability.
5. Government, stakeholders and relevant law agencies should provide consistent and reliable electricity to facilitate the effective utilization of AI-driven facilities.
6. Compulsory registration of intellectual properties should be taken seriously by government. The use and application of information and communication technologies in registering applicant will facilitate the registration process.

The users of AI-driven facilities must publicly disclose the choices made, along with the data and assumptions utilized, in a comprehensive, timely, and accessible manner. This approach would render it less challenging to assess the decisions made, the evidence, reasoning, and assumptions employed, thereby ensuring adequate legal assurance against decisions based on these choices, data, reasoning, and assumptions.