## ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY RIGHTS PROTECTION: AN APPRAISAL*

**Abstract**

*Artificial Intelligence (AI) system is a product of technological innovation that is developed and built in the form of a machine or other electronic device that is designed or programmed with inbuilt capacity to exhibit certain traits or characteristics of a natural person such as the ability to think, create, design, invent or make discoveries including problem solving, etc. Intellectual Property (IP) refers to a design, discovery or invention that is a product of the activities of the human intellect. Intelligence is a natural attribute of human beings. This is a fact that is recognized by law. This has led to the provision of legal protection for invented works that are novel, which the law recognizes as constituting the basis of Intellectual Property rights. Since AI has been orchestrated to create inventions and innovations in addition to solving problems and executing operations and activities that were carried out by natural humans before now, the relevant question now is that for the purpose of legal rights and liabilities, who bears responsibility for the inventions, innovations, discoveries or designs etc from an AI? Is it the developer, programmer, operator or the AI itself? This question is necessitated by the fact that unlike natural humans, the law does not recognize AI as entities that are entitled to Intellectual Property rights protection. This article among other things, attempts an appraisal of the mode of operations, characteristics, deployment, uses, impacts and challenges of AI. More importantly the work examines the current legal status of AI, its impact on copyrightable or patentable inventions by AI and also makes recommendations to address the problems posed by the current legal status of AI. In conducting the research for this work, relevant materials from various primary sources more especially from internet publications were consulted and referred to. This article will be useful to all and sundry across the globe particularly to those involved in developing and operating AI technologies. It is hereby recommended that AI should be entitled to acquire a legal status just like incorporated companies which are recognized as artificial persons in the eyes of the law, while the developers, programmers and operators of AI should assume the position and play the role of directors and other principal officers of incorporated companies.*

## 1. Introduction: Clarification of Key Terms

The word Property is derived from the Latin word '*proprius*' which means 'one's own'.[1] Intellectual Property can be appreciated from two perspectives with respect to its meaning, which are, its literal or colloquial meaning and its legal connotation. From the literal perspective, Intellectual Property may be defined as things, inventions or creations that are the product of the human mind or brain. They include creative ideas, designs, inventions, innovations and discoveries etc, some of which may be scientific or technological or artistic in nature whether visual or dramatic performance which covers music, dance, poems, drama, movies and structural designs, etc. From its legal perspective, Intellectual Property may be described as the product of the activities of the human mind that constitutes the subject of legal rights (i.e, rights that are recognized, protected and enforceable by law). Thus, an inventor or designer of a unique product has the legal right to prevent any unauthorized production, reproduction or use of the product.

Intellectual Property law is that aspect of the law that recognizes and protects the legal rights associated with creative efforts and goodwill.[2] It is that field of law that recognizes and protects the rights of inventors over their creative works and innovations. IP laws regulate the rights of invention by recognizing and protecting the inventor's rights of claim, ownership and entitlement over the invented innovations. It also restricts or prohibits the production or reproduction of such inventions by unauthorized persons. IP law makes provision for the legal consequences of infringement of the rights of inventors which takes the form of the remedies in favour of the inventor such as damages, compensations, fines etc and criminal liabilities for infringement or violations of these rights such as imprisonment, fines, injunctions, etc. An inventor of an original work or product becomes entitled to an Intellectual Property right called copyright or patent right as the case may be.

The word 'Artificial' describes a man-made product or something that is the creation of man as against something that is natural. The word 'Intelligence' refers to mental capacity that is demonstrated in various ways such as the ability to learn and acquire knowledge, solve difficult tasks, address or prefer solutions to problems through reasoning, innovation, personal initiative and creativity, etc. The phrase 'Artificial Intelligence' was first coined by Professor John McCarthy, an American computer scientist in 1956. He defined AI as the science and engineering of making intelligent.[3] Artificial Intelligence (AI) is a technical configuration of an electronic device, machine or other system that is designed to simulate human intelligence and carry out intelligence-based tasks. AI refers to computer systems capable of performing complex tasks that historically only humans can handle such as reasoning, decision making or problem solving etc. Today AI describes a broad spectrum of technologies that power many of the goods and services that are consumed and utilized

***By Agbor Itu BASSEY, PhD, LLM, LLB, BL,** Lecturer, Faculty of Law, University of Calabar, Calabar, Email: megalife82@gmail.com Tel: 08035819883*

[1] Jeremy Phillips, *Introduction to Intellectual Property Law.* London: Butterworths. 1986 pp. 3-4
[2] David I. Bainbridge (9th ed). *Intellectual Property.* England: Pearson Education Limited. 2012. p.3
[3] Freeman, *Impact of Artificial Intelligence on Intellectual Property Practice – Legal Articles.* 3/1/2024. *www.freemanlaw.in*

daily.[4] AI is the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings such as ability to think, make discoveries, perceive, rationalize or learn from previous experiences, etc. Since its development, AI in the form of digital computers has been programmed to discharge very complex tasks.[5] The ideal characteristic of AI is its ability to rationalize and to take actions to achieve specific goals and results. AI was used in the 1960s by the United States Department of Defense when it trained computers to mimic human reasoning. A subset of AI is Machine Learning (ML) a concept that computer programs can automatically learn from and adapt to new data without human assistance.[6] AI uses multiple technologies that equips or enables machines to sense, comprehend, plan, act and learn with human-like levels of intelligence. AI systems perceive environments, recognize objects, contribute to decision making, solve complex problems, learn from past experiences and imitate patterns.[7] AI is a technology that enables computers and machines to simulate human learning, comprehend, analyze and solve problems, creatively make decisions, etc.[8] As a friend of science, AI is concerned with building and developing computers and machines that can reason, learn and act just like human intelligence. It analyzes data with scales that exceeds human analytical capacity.[9]

## 2. Discussions on Artificial Intelligence (AI)

### How AI Works

Generally, AI systems work by ingesting large amount of data for correlations and patterns and use these patterns to make predictions about future states or events. For example, an AI Chatbot that is fed with examples of texts can learn to generate life-like exchanges with people. Also, an image recognition device can learn to identify and describe objects in images by reviewing millions of examples. Programming AI systems focuses on cognitive skills such as (1) Learning which involves acquiring data and creative rules known as algorithms to transform it into actionable information. These algorithms provide computing devices with step-by-step instructions for completing specific tasks. (2) Reasoning which involves choosing the right algorithm to reach a desired outcome. (3) Self-correction, which involves algorithms continuously learning and tuning themselves to provide the most accurate results possible. (4) Creativity, which involves using neural networks, rule-based systems, statistical methods and other AI techniques to generate new images, text, music, ideas, etc.[10]

### Some AI Technologies and How they Operate

*Automation:* - AI enhances automaton technologies by expanding the range, complexity and number of tasks that can be automated. An example is Robots Process Automation (RPA) which automates repetitive rules-based data processing tasks traditionally performed by humans.

*Machine Learning:* - This is the science of teaching computers to learn from data and make decisions without being explicitly programmed to do so.

*Computer Visions:* - This is a field of AI that focuses on teaching machines how to interpret the visual world. By analyzing visual information such as camera images and videos using deep learning models, computer vision systems can learn to identify and classify objects and make decisions based on these analyses. Its primary aim is to replicate or improve on the human visual systems using AI algorithm.

*Natural Language Processing (NLP):* - This refers to the processing of human language by computer programs. NLP algorithms can interpret and interact with human language, perform tasks such as transaction, speech recognition and sentiment analysis.[11]

*Robotics:* - This is s field of engineering that focuses on design manufacturing and the operation of robots automated machines that replicate and replace human actions particularly those that are difficult, dangerous or tedious for human to perform. Example of robotic applications include manufacturing where robots perform repetitive or hazardous assembly-line tasks and exploratory missions in distant arrears that are hard to access such as outer space and the deep sea.

*Autonomous Vehicles:* - Which are more colloquially known as self-driving cars, can sense and navigate their surrounding environment with minimal or no human input. These vehicles rely on a combination of technologies including radar, GPS and a range of AI machine learning algorithms such as image recognition.

*Generative AI:* - These are machine learning systems that can generate new data from text and images, audio, video, software code and even genetic sequences and protein structures.[12] They can create texts, images, music and other media output.[13]

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[4] Coursera Staff, *What is AI? Definition, Uses and Types.* 3/4/2024. *https://www.coursera.org*

[5] B. J. Copeland, *Artificial Intelligence.* Updated 2/9/2024. *https://www.britannica.ca*

[6] *Investopedia Team,* Reviewed by Gordon Scott, *What is AI?* Updated 9/4/2024. *https//:www.investopedia.com*

[7] Vijay Kanade, *What is AI? Definition, Types, Goals, Challenges and Trends in 2022.* 14/3/2022. *www.spiceworks.com*

[8] IBM, *What is Artificial Intelligence (AI)?* 2/9/2024. *https//:cloud.google.com*

[9] *What is Artificial Intelligence (AI)?* 2/9/2024. *https//:www.techtarget.com*

[10] Lev Craig, Nicole Laskowski, Linda, *What is Artificial Intelligence (AI)?* 2/9/2024. *https//:www.techtarget.com*

[11] *Ibid*

[12] *Ibid*

[13] Coursera Staff, *Op. cit*

**Examples of AI Systems**
*ChatGPT:* - Uses large language models (LLMs) to generate text in response to questions or comments posted to it.
*Google Translate:* - uses deep learning algorithms to translate text from one language to another.
*Netflix:* - Uses machine language algorithms to create personalized recommendation engine for users based on their previous viewing history.
*Tesla:* - Uses computer vision to power self-driving features on their cars.
*Dabus:* - Acronym for 'Device for the Autonomous Bootstrapping of Unified Sentience', is a type of connectionist AI which uses multiple neutral networks to generate new ideas, the novelty of which is then assessed by a second system of neutral networks. By this process, DABUS has autonomously generated two inventions in respect of which an application for patent right was made by Dr. Thaler. The inventions are the Fractal Container (a good container) and the neural flame (a search and rescue beacon).[14] However the application was refused on grounds that AI powered inventions are not entitled to legal protection.

**Categories (Types) of AI Technologies**
TYPE 1: Reactive Machines: - This AI system have no memory and are task specific. An example is Deep Blue, the IBM Chess program that beat Russian Chess grandmaster Garry Kasparov in the 1990s. Deep Blue was able to identify pieces on a class board and make predictions but because it had no memory, it could not use past experience to inform future ones.
TYPE 2: Limited Memory: - This AI systems have memory, so that they can use past experiences to inform future decisions. Some of the decision-making functions in self-driven cars are designed this way.
TYPE 3: Theory of Mind: - This is a psychological term – 'Theory of the Mind'. When applied to AI it refers to a system that is capable of understanding emotions. This type of AI can infer human intentions and predict behavior which is a necessary skill for AI systems to become integral members of human history.
TYPE 4: Self-Awareness: - This category of AI has a sense of self, which gives them consciousness. Machines with self-awareness understand their own current state. This type of AI does not yet exist.[15]

**Where are AI Systems Deployed or Used?**
*Healthcare Services*: - AI is used to promote efficiency and speed in diagnoses. For instance, AI prompted software can analyze CT Scan and alert neurologists to suspected cases of strokes.

*Businesses:* - AI has been deployed to boost business efficiency, strategic planning and decision making. For example, machine learning models facilitate data analysis and Customer Relationship Management (CRM) platforms and help companies understand how to serve their customers better. AI can perform tasks more efficiently and accurately than humans. It is especially used for repetitive detail-oriented tasks such as analyzing large number of documents to ensure relevant information are correctly filled in. AI's ability to process massive data sets gives enterprises and businesses insight into their operations that they might not otherwise have noticed.[16]

*Education*: - AI can facilitate better learning experience for students and enable them work at their own pace. It can also enable an automated grading system and reduce the work pressure on educationists. Generative AI has introduced transformative changes with text generation like ChatGPT capable of producing essays, poems and even passing complex medical and legal exams faster than humans. These systems can equally create tremendous artworks within few seconds imitating prominent artists and their styles with astonishing precision and accuracy beyond the speed of humans.[17]

*Banking and Finance:* - Financial institutions such as banks use AI to enhance their decision making for relevant tasks such as setting credit limits, interest rates, loan advancement and identification of investment opportunities. Banks also use AI Chatbots to inform customers about service rendition, transactions and to address questions that requires no human intervention.[18]

*Law:* - The emergence of AI has dramatically impacted on the legal profession's intellectual property practice in various aspects such as automated intellectual searches, prior apt analysis, automated patent drafting, copyright infringement detection, trademark creation and monitoring, contract analysis and intellectual property litigation support, etc.[19] AI is deployed in law establishments such as law firms for documents review and discovery response which is characteristically tedious and time consuming for attorneys and paralegals. Law firms now deploy AI for data and case law analysis. They equally deploy computer vision to classify and extract information from documents and natural language processing

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[14]Aaron Hayward *et.al., The IP in AI: Can Patents Protect AI-Generated Inventions?* 3/10/2023. *www.herbertsmithfreehills.com*
[15] Lev Craig, *et.al. op. cit*
[16] Lev Craig, *et.al. op. cit*
[17] Portulans Institute, *The Future of IP in the Era of AI.* 26/4/2023. *www.networkreadinessindex.org*
[18] *Ibid*
[19] Maurice Bretzfield, *The Impact of AI on IP Practice: Revolutionizing the Legal Profession.* 3/10/2023. *www.linkedin.com*

(NLP) to interpret and respond to discovery requests. With the rise of generative AI in law, firms are also exploring the use of Large Language Models (LLMs) to draft documents such as boilerplate contracts.

*Entertainment and Media:* - Entertainment and media businesses deploy AI techniques for advertisement, content recommendations, distribution and fraud detection. It is also seriously considered by content creation. Advertisement professionals use AI to create marketing collateral and to edit advertisement images. Generative AI which uses data lakes and questions snippets to recover patterns and relationships is becoming more prevalent in creative industries.[20]

*Journalism:-* Here AI can be utilized to streamline workflow by automating routine tasks such as data entry and proofreading. Investigative journalists also use AI to find and research stories by sifting through large data sets using machine learning models, thereby uncovering trends and hidden connections that will be time consuming if manually done. For instance, 5 finalists for the 2024 pulitzer prizes for journalism admitted using AI in their reporting to perform tasks such as analyzing massive volumes of police records.[21]

*Software Development and Information Technology (IT):-* Artificial Intelligence for Information Technology Operations (AIOPs) tools for instance, enable predictive maintenance of IT environments by analyzing system data to forecast potential issues before they occur. Many of today's largest and most successful companies including Alphabet, Apple, Microsoft and Meta, etc use AI to improve their operations and outpace competition. Waymo company for instance, which is a subsidiary of Alphabet, AI is central to its search engine and self-driving cars. Also, with regards to Google, which is equally a subsidiary of Alphabet, its brain searching lab supports recent Natural Language Procession (NLP) breakthrough such as open AI's ChatGPT.[22]

*Security:* - AI has for instance, been deployed to combat cyber security including anomaly detection, reduction of false positives and conducting of behavioral threat analytics. Also, by analyzing vast amounts of data and recognizing patterns that resemble known malicious code, AI tools can alert security operatives about new and emerging attacks much sooner than humans and previous technologies could.

*Manufacturing:* - Robots can discharge multitasks simultaneously in an industries, warehouses, factories and other workplaces such as assembly, packaging, quality control, etc. Furthermore, using robots to perform or assist with repetitive and physically demanding tasks can improve safety and efficiency for human workers.

*Transportation Services:* - AI technologies are used in automative transportation systems to manage traffic, reduce congestion and enhance road safety. In air travel, AI can predict flight delays by analyzing data points such as weather and air traffic conditions. In overseas shipping AI can enhance safety and efficiency by optimizing routes and automatically monitoring vessel conditions.[23]

## Certain Human Features of AI

The AI technology system has certain features and potentialities that gives it a lot of similarities with man, although it seems to exhibit more efficiency than man when exhibiting these human potentials. They include: creativity, innovativeness and productivity. This enables the AI system for instance, to draw, create designs and invent devices whether scientific or technological, etc. AI is also unpredictable in its output and by this the AI system can generate, derive or achieve results different from what was foreseen or anticipated. For instance, AI technology that is designed to develop new antibacterial drugs can process data from a large volume of micro-organism (i.e. bacteria), breakdown the data and identify similarities and patterns different from what humans have identified or expected the AI to identify. AI has inherent capacity to operate independently and autonomously. For instance, unlike industrial robots that assemble and replicate circuits designed by humans, the AI system in Koza's patent actually designs new circuits. By so doing, the AI replaces the engineers by autonomously choosing, directing and assigning strengths to various circuit components to achieve predetermined performance parameters.[24] AI has inbuilt rational intelligence. It is a rational device that can perceive and analyze data from the external environment and decide what activity to engage in or to avoid in order to maximize its probability of success in achieving certain goals. AI has the capacity to learn, access and collect data as well as communicate information to the external world. AI can repeat this process and receive feedback and also improve on its results. For example, Siri of Apple and Google Translate of Google serve as examples of these features. Also, a new generation of autonomous network-centric applications can collect data incessantly from different sources. Also, driverless cars collect and process data from the external environment such as other cars, obstacles, traffic signs and autonomous weapons and process these data for target identification. AI machines can process data accurately, efficiently

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[20] Gil Appel, Juliana Neelbauer & David A. Schweider, *Generative AI Has an IP Problem.* April 2023. *www.hbr.org*

[21] Lev Craig, *et.al. Op. cit*

[22] *Ibid*

[23] *Ibid*

[24] Dr. Shlomit Yanisky Ravid and Xiao giong (Jackie) Liu, *When Article Intelligence Systems Produce Inventions: An Alternative Model for Patent Law at the 3A Era.* 6/9/2024. *www.cardozolawreviw.com*

and rapidly beyond human capacity. In addition to being goal oriented, AI systems equally make decisions by choice. For instance, AI systems in driverless cars can process data in order to choose from alternatives and decide on speed limits, routes to take and measures for accident avoidance.[25]

**Some Benefits and Challenges of AI System**
AI system has numerous beneficial effects some of which have been earlier highlighted. AI system has enhanced speed in large data processing. It has made accurate predictions than man. AI has also achieved excellence in details-oriented tasks. AI is known to be consistent in results achievement. It has improved customer satisfaction in service delivery. AI has proven to be useful in accelerating research and development. It has also promoted the conservation of environmental and natural resources and sustainable development. AI has enhanced production process optimization, etc.[26]

However, the AI machine is not without obvious challenges. AI technology system is very expensive to develop, operate and maintain. It requires huge investment in infrastructure, computation of resources and software to train the model and store its training data, etc. Developing, operating and maintaining AI system is very technical and complex. The shortage of man-power who possess the requisite skill and technical know-how to run and operate AI system further complicates its problems. Sometimes AI systems find it difficult to exhibit the flexibility associated with man. For instance, an NLP model trained on English language text might perform poorly on texts in other language without extensive additional training. Development and deployment of AI technology system in companies, offices and industries, etc, has the natural consequence of displacing human workers thereby significantly compounding the incidents of job loss. AI systems are highly susceptible to cyber security threats including data poisoning and adversarial machine learning. Hackers can extract or retrieve sensitive training data from an AI model or trick AI systems into producing wrong or harmful or dangerous results. Data centers and network infrastructures that support operations of AI models consume large amount of energy and water. Also, AI's carbon effect is a serious source of environmental concern. The use of AI systems create privacy issues and the invasion of privacy and personal data can easily be perpetrated by AI and it will be difficult to address the issue of liability legally due to the current status of AI which is not recognized as a legal entity.[27] One of the major challenges associated with the deployment and operation of AI technology is the high disposition towards intellectual property rights infringement as AI normally uses data from the web including potentially copyrighted contents. Recently, Getty images and a group of artists instituted a lawsuit against AI art generators after highlighting the intellectual property issues associated with AI. Getty image accused stability AI of copying over 12 million images from its database without permission or compensation including distorted versions of Getty Watermark, potentially leading to trademark infringement claims.[28] On March 2, 2022, the European Union Intellectual Property Office (EUIPO) released a study on the impact of AI on the infringement and enforcement of copyright and designs. The authors of the study believed that AI represents a double-edge sword that can be used effectively to enforce as well as to infringe on intellectual property rights. For example, learning tools can be deployed to remove the digital dots and watermarks used to track the distribution of unauthorized copies of copyrighted works online and also generate 'deep-fakes' developed through a 'generative adversarial networks'. Using the technology on the positive side, once the deep-fakes have been identified, the authors can use AI bots to identify infringement of copyright and designs on social media. Also, computer vision application can determine if videos are original or artificially generated.[29]

**3. Artificial Intelligence (AI) and Intellectual Property (IP) Rights Protection**
As noted earlier, IP right is a legally protected right that is recognized as a product of the activities of the human intellect that is protected by law in the form of patent right, copyright or trademark. For instance, under the Copyrights Act[30] for a work to be entitled to a copyright, the author of the work must be a Nigerian citizen or a person who resides in Nigeria or a company duly incorporated in Nigeria. This presupposes that only natural or artificial persons in law are entitled to copyrights for their works or inventions. Although AI possesses and exhibits the attributes and features of a natural person, however, they are not natural persons and quite unfortunately, they are not recognized by law as artificial persons. Consequently, they have no rights and liabilities that can be protected or enforced by law. AI is presently not entitled to copyright or patent rights for their inventions and also cannot be held liable for the infringement of any protected right by law such as where they violate a person's right to privacy. Furthermore, the courts in many countries have pronounced that only inventions created by humans can enjoy copyright protection. For instance, in India, in the M/S Kibow case, the Delhi High Court ruled that AI systems cannot be officially registered as the proprietor of a trademark. The court in that case also highlighted that only a human being can apply for and be officially registered as a proprietor of a trademark.[31] The United States Patent and Trademark Office (EPO) and the UK Intellectual Property Office (IPO) have all recently rejected applications for the protection of inventions created by an AI system called 'DABUS' by maintaining that the extant laws and conventions necessarily require that only human beings can have such protection. The debate

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[25] *Ibid*
[26] Lev Craig, *Op. cit*
[27] *Ibid*
[28] Portulans Institute, *Op. cit*
[29] *Ibid*
[30] Section 5 of the Copy Rights Act 2022
[31] Freelaw, *Op. cit*

has however been on going as to whether AI should enjoy legal protection for their inventions. Recently, in *Thaler v Comm. of Patents in Australia* the Federal Court of Australia recognized DABUS as an inventor, thereby signaling a significant departure and variation from previous courts decisions and promoting the possibility of AI systems becoming entitled to legal protection for their inventions.[32] This decision was however reversed by the Full Federal Court of Australia. In rejecting the argument by Dr. Thaler that DABUS should be regarded as an inventor, the Full Federal Court suggested some options as to who should have the right to protection as an inventor for inventions by a DABUS. They are: (a) The owner of the machine upon which the AI software runs, (b) the developer of the AI software, (c) the owner of the copyright in its source code and (d) the person who inputs the data used by the AI to develop its output.[33]

There is no reference to IP effect on the European Commission's Artificial Intelligence Act, thereby creating uncertainty as to the rights of stakeholders. Also, the UK law regulating computer-generated works does not seem to cover AI generated inventions.[34] According to Owen H. Dean, an author is a person responsible for the creation of a material embodiment of a work through the application of intellectual effort and skill. He holds the view that only natural persons can qualify as authors of creative copyright works like literary, musical and artistic works.[35] Ginsburg has the view that an author is a human creator who succeeds in exercising personal autonomy in molding the work to their vision and is therefore entitled to recognition, payment and exercise of artistic control over it. According to him, an author is a natural person and not a juristic person and allowing a juristic person to be author is to equate authorship with ownership.[36] Asein on the other hand holds a contrary opinion to the effect that an author of a work is the person who created the work or made the production of the work possible and this need not be human.[37]

AI is transforming the world of IP by increasing the speed and efficiency of the creation, protection and enforcement of IP rights. AI is equally being used in various fields of specialization including, music, literature, art and science to generate new works, assist in legal analysis and identify infringing contents.[38] While on the positive, AI has, among other things enhanced increase in efficiency, speed, accuracy and cost reduction in the creation, protection and enhancement of IP rights, on the negative, AI poses serious ownership and liability issues. The ownership of AI generated copyrightable work is uncertain and the risk of infringement of IP copyrighted work by AI is very high.[39] This is because AI not being a human or natural person will not be able to distinguish between works that have already been copyrighted, patented or that has a trademark and the ones that are not, in the course of creating an invention.

Some legal questions have been raised in attempt to address the question of the impact of AI on IP, such as: Can AI perpetrate infringement of patent, copyright or trademarks? If yes, can AI be found liable or guilty of such infringement? Who can be criminalized for infringement of protected rights by AI? Should AI inventions be entitled to IP rights protection by law? Who should be entitled to copyright for an AI created invention? Is it the manufacturer/developer, programmer or operator of the AI system? How can AI be prevented from perpetrating copyright infringement? Are there laws regulating AI infringement of protected IP rights?[40] If yes, what are the adequacies or otherwise of such laws? Can AI detect patent, copyright or trademark infringement? If yes, how does it do it? These questions and more are necessitated by the fact that AI generated inventions are currently not recognized as IP that are entitled to legal protection. Consequently, the rights and liabilities of an IP owner like the right to sue for infringement cannot be enjoyed by AI machine currently. An artificial person in law, for instance, an incorporated company has certain powers, rights and obligations under the law just like a natural person of full legal capacity.[41] since AI has the capacity to exhibit the characteristics of a natural person such as the ability to create an invention that can constitute the subject of legal rights, and at the same time it can perpetrate an act that should amount to infringement of a right for which it should be held liable, such as the violation of the right to privacy or the unauthorized use of a copyrighted work, the necessary question then is why should AI not become entitled to acquire the status of a legal person and its inventions capable of enjoying legal protection?

## 4. Conclusion and Recommendations

Inventions that are legally entitled to patent, copyright and trademark require originality which is normally attributed to human authors. Although it produces works of originality, AI presently is not entitled to acquire the status of a legal person and is legally unable to acquire IP rights. Consequently, if no human inventor or creator can be identified, an AI

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[32] Arlen Olsen, *AI and Invention: A Legal Perspective.* January 9 2024. *www.iplawusa.com*

[33] Aaron Hayward, *et.al. Op.cit*

[34] James Godefroy, *How Does Artificial Intelligence Affect Intellectual Property Protection.* 7/3/2024. *https//:rouse.com*

[35] Eloghene E. Adaka, Ifeoluwa Olubiyi. *Lessons for Nigeria: Determining Authorship and Inventorship of Artificial Intelligence Generated Works.* September 2022. *www.researchgate.net*

[36] *Ibid*

[37] *Ibid*

[38] WIIPA, (Middle East Regional Office), *The Challenge of Artificial intelligence and Intellectual Property.* 5/9/24. *www.wiipo.org*

[39] *Ibid*

[40] Vijay Kanade, *Op. cit*

[41] Companies and Allied Matters Act 2020, Section 43

generated work may in principle fall into public domain[42] and be categorized as a work or invention that apparently has no owner, and this is not a very healthy development for AI generated inventions. This has a direct and an indirect adverse effect on the developer, programmer, operator and the AI itself. This is because they cannot claim ownership of the work. They are equally not entitled to acquire IP rights over such inventions, neither can they enjoy economic benefits therefrom such as through the marketing of the invention or by claiming monetary damages or compensation for infringement of IP rights over such inventions.

It is hereby recommended that the AI system, through its programmers and operators should be entitled to apply for and acquire the status of a legal personality through incorporation or registration that is similar to, or the same as that of an incorporated company with legal rights and duties, while the programmers and operators of the AI system should assume the role of directors and other principal officers of the AI system (corporate body) just as in the case of an incorporated company. Through incorporation, the AI system should both be conferred with the rights to have legal protection for its works and inventions, while at the same time be held liable for the infringement of any protected IP rights. Thus, the AI system, under the management of its programmers and operators, should be entitled to become a body corporate in respect of which interested members of the public can acquire shares just like in a limited liability company. The AI system and its operations and programmers should be run like an incorporated company and in the event of infringement of a protected IP rights by AI systems, the AI system's liabilities should include winding up, fines, compensations or damages as the case may be. The status of incorporation and its accompanying legal rights should also confer on the incorporated AI system the legal capacity not only to have its works and inventions copyrighted or patented as a protected IP right, but should also confer on the AI system the capacity to legally enforce its rights against the infringement of the protected IP rights.

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[42] *Portulans Institute, Op. cit*