

# **ARTIFICIAL INTELLIGENCE: THE LEGAL IMPLICATIONS OF INTELLECTUAL PROPERTY RIGHTS FOR AI-GENERATED INVENTIONS.**

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## **Abstract**

*The advancement of science and technology, which led to the birth of Artificial Intelligence, has evolved to the point of advanced autonomy, which has recently triggered the quest to make Artificial intelligence “subjects of intellectual property rights”. Intellectual property law has been faced with the challenges of ascribing ownership/authorship rights to Artificial Intelligence, which proves to be an inventor due to the emphasis on the creativity of the human mind in intellectual property law. This article, therefore, addressed the ongoing legal debate as to whether inventions made by machines can enjoy intellectual property rights and aimed at addressing the implications of ascribing intellectual property rights to Artificial Intelligence. The article concluded by stating that intellectual property law would face reoccurring threats and difficulties upon recognizing Artificial Intelligence as subject of intellectual property rights. It was recommended, among other things, that inventors of AI, rather than AI, should be ascribed with intellectual property rights over inventions generated by Artificial Intelligence.*

**KEY WORDS: Artificial Intelligence, Intellectual Property Right, Ownership, Patent Law, Copyright Law.**

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## 1. INTRODUCTION

Since the 20<sup>th</sup> century, there has been increased evolution in artificial intelligence in processes and output, enabling machines to think and act like humans. Sequel to the evolution of artificial intelligence, the advancement in science and technology has birthed an era of autonomous invention by machines.

The field of science and technology, particularly in AI inventiveness and creativity, had earlier been subjected to human intervention. However, with the recent development in artificial intelligence and the era of “big data”, machines can now invent devices and processes autonomously.

Intellectual property law protects the results of a creative human mind/intellect exclusively, thereby providing a means of enforcing the creator's/inventor's right against infringement and exploitation. Intellectual property law recognizes and emphasizes creativity and inventions from the human mind. However, the paradigm shift in technology witnessing AI-generated inventions has triggered the debate as to whether artificial intelligence would be compatible as an inventor and a subject of right by justifying its non-human ingenuity.

This article analyzes the legal issues *whether Artificial Intelligence can enjoy intellectual property rights over AI-generated inventions and the implications of Artificial intelligence as subject of intellectual property rights*. It highlights the evolution and attainment of Artificial Intelligence, the intersection and challenges of Artificial Intelligence and Intellectual property law, and the legal implications of intellectual property rights for AI-generated inventions. This paper is divided into five (5) unequal sections. The first section is the

Introduction, while the second section describes the Evolution and Attainment of Artificial Intelligence. The third section elaborates on artificial intelligence and intellectual property rights, thereby advancing explanation over copyright and patent on artificial intelligent machines. The fourth section reflects on the legal Implications of ascribing intellectual property rights for AI-generated inventions, and the paper concludes in the fifth section with some concluding remarks and recommendations.

## **2. EVOLUTION & ATTAINMENT OF ARTIFICIAL INTELLIGENCE**

The advancement and expansion of artificial intelligence over the years have been fostered by a continuous search in algorithms, machine learning algorithms, and integrating statistical analysis into understanding the world at large.<sup>1</sup> This has led to an endless application of artificial intelligence in several sectors and industries such as healthcare, real estate, entertainment, logistics and transport, banking and financial services, travel, retail and e-commerce, manufacturing and food technology. Artificial intelligence refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions.<sup>2</sup> Artificial intelligence, also known as “machine intelligence”, had earlier been a figment of imagination of the early science fiction writers, which grew over the years to reality. In 1950, a British polymath, Alan Turing, proposed that a computer could possess artificial intelligence if it mimics human responses under specific conditions,<sup>3</sup> though his ideas were ridiculed at the time. In 1956, John McCarthy, a computer scientist,

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<sup>1</sup> Chris Smith, Ting Wuang and Gary Yang, History of Artificial Intelligence, available at <https://courses.cs.washington.edu/courses/csep590/06au/projects/history-ai.pdf> accessed 16<sup>th</sup> August, 2022.

<sup>2</sup> Investopedia – What is Artificial Intelligence (AI)? Available at <https://www.investopedia.com/terms/a/artificial-intelligence-ai.asp> , accessed 15<sup>th</sup> August, 2022.

<sup>3</sup> TechTarget – What is the Turing Test? available at <https://www.techtarget.com/searchenterpriseai/definition/Turing-test/> accessed on 15<sup>th</sup> August, 2022.

formally coined the term “artificial intelligence” when he held a conference on the subject. Since then, artificial intelligence has evolved into what it is today. Artificial intelligence has poised promising tendencies as innovations from the field of AI are never-ending, but rather a quick and continuous advancement which has introduced the Age of Automation to the world. Artificial Intelligence (AI) is at the intersection of machine learning, language processing, and systems management.<sup>4</sup> Before now, the implementation of Artificial Intelligence was streamlined to robotics. Today, machines are designed and programmed to work autonomously without human intervention to provide inputs and instructions for each operation. When artificial intelligence is applied to the copyright fields of music, art and literary works, for instance, the machine learning algorithms learn from input/data made available by the computer programmers, and learning from these data sets, the AI system makes independent decisions to generate new piece(s) of work, and in the process of creating the work, they independently determine how the work will look like.<sup>5</sup> The continuous application of AI to these fields and the increase in ability of AI to invent autonomously sparked attention to the area of intellectual property that needs urgent attention and consideration.

### **3. ARTIFICIAL INTELLIGENCE & INTELLECTUAL PROPERTY RIGHTS**

Intellectual property refers to the creation that emanates from the human mind, which is intangible. According to the World Intellectual Property Organization (WIPO), intellectual property is defined as “*the creation of the*

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<sup>4</sup> Rapacke Law Group, Artificial Intelligence and Intellectual Property: Everything You Need To Know, available at <https://arapackelaw.com/patents/ai/artificial-intelligence-and-intellectual-property/> accessed on 20<sup>th</sup> September 2022.

<sup>5</sup> Lawrence Oguama, Intellectual Property And Artificial Intelligence: Emerging Prospects And Challenges, available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4046151](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4046151) accessed 20<sup>th</sup> August, 2022.

*mind, such as inventions, literary works, designs and symbols, names and images used in commerce.”*<sup>6</sup> Man’s creativity and inventions are protected by intellectual property law which ascribes exclusive rights to the inventor or creator for a certain period of time. The law of intellectual property is commonly understood as providing an incentive to authors and inventors to produce works for the benefit of the public by regulating the public's use of such works in order to ensure that authors and inventors are compensated for their efforts.<sup>7</sup>

The World Intellectual Property Organization and other national laws around the globe provide for the following as intellectual property rights –copyright, patent, industrial design, trademark, related rights, geographical indications, unfair competition, trade secrets, new plant variety, traditional knowledge, traditional cultural expressions and genetic resources.<sup>8</sup>

However, the exclusive rights granted to creators or inventors by intellectual property law are copyright, patent, trademark and industrial design. In application to artificial intelligence, intellectual property law rights are well established in Copyright and Patent.

### **i. Copyright & Artificial Intelligence**

Copyright is the exclusive right vested over an author’s artistic or literary works, including writings, music, paintings, sculptures, computer programs and electronic databases. An author under the copyright law enjoys the sole

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<sup>6</sup> World Intellectual Property Organization (WIPO), What is Intellectual Property? available at <https://www.wipo.int/about-ip/en/>, accessed 28<sup>th</sup> August, 2022.

<sup>7</sup> Cornell Law School Legal Information Institute, Modern Intellectual Property Rights [https://www.law.cornell.edu/wex/intellectual\\_property](https://www.law.cornell.edu/wex/intellectual_property), accessed 28<sup>th</sup> August, 2022.

<sup>8</sup> World Intellectual Property Organization (WIPO), General Course on Intellectual Property, available at <https://welc.wipo.int/aip/coursesDetail/50914> accessed on 28<sup>th</sup> August, 2022.

right of exploitation over his works for a limited period subject to the copyright laws in their country. The author must be an originator of the creative work emanating from the human mind.

AI has invented machines with the ability to create and generate creative works autonomously. An example of such a machine worthy of note is the “eDavid robot”. eDavid is a painting robot developed at the University of Konstanz in Germany that calculates brushstrokes from an input image and paints the image on a canvas.<sup>9</sup> It does not copy other works but instead takes pictures with its camera and makes autonomous and unpredictable decisions, and draws original paintings from these pictures.<sup>10</sup> From the foregoing, the obvious question becomes *“whether the generated works of eDavid and other AI-generated works can be subject to the Copyright law?”*

In the United States case of *Naruto v. Slater*<sup>11</sup>, the United States Court of Appeals for the Ninth Circuit dismissed the appeal of a claim of copyright infringement brought by a monkey over selfies he took on a camera of the Appellant, David Slater, and further claimed authorship and ownership of the photographs while alleging that it suffered a concrete and particularized economic harms. It was held in the court’s wisdom that non-humans, and as in the instant case, animals lack statutory standing to sue under the Copyright Act. In line with the decisions of the US Court, the United States Copyright Office has previously taken and

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<sup>9</sup> Wikipedia, eDavid Robot, available at [https://en.wikipedia.org/wiki/EDavid\\_\(robot\)](https://en.wikipedia.org/wiki/EDavid_(robot)) accessed on 13<sup>th</sup> October, 2022.

<sup>10</sup> Shlomit Yanisky-Ravid, Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era-The Human-like Authors are Already Here – A New Model, 2017, available at [https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1955&context=faculty\\_scholarship](https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1955&context=faculty_scholarship) accessed on 12<sup>th</sup> October, 2022.

<sup>11</sup> *Naruto v. Slater*, (9th Cir. 2018) No. 16-15\$69 (Cir. 2018).

maintains the bold step to protect only original works of authorship that a human being must have created.

In *Stephen Thaler v. Shira Perlmuter & The United States Copyright Office*<sup>12</sup>, the Applicant sought to register “A Recent Entrance to Paradise”, a work that was, by the Applicant’s admission, “autonomously created by a computer”. In the copyright application, the Applicant listed the AI program as the author of the work. The United States Copyright Office denied the application on the grounds that the application lacked “human authorship”. The Copyrights Act 1976 affords protection only to original works of authorship and the court explained such to imply works that were independently created by an author, which must be human.

Also, in *Urantia Foundation v. Maaherra*<sup>13</sup>, the United States Districts Court held that a book partially created by spiritual beings is void at first instance and cannot claim copyright protections under the Copyright Act.

The United Kingdom jurisdiction, the United Kingdom Copyright, Designs and Patents Act accommodates and acknowledges the autonomous nature of the creativity of machines under copyright in its expanded scope of copyright-protected work, including computer-generated work. The Act defines a computer-generated work as one that was “*generated by a computer in circumstances such that there is no human author of the work.*”<sup>14</sup> The UK Copyright, Designs and Patents Act goes further to clarify that the author of such computer-generated works is deemed to be the person “by whom the

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<sup>12</sup> No 1:22-cv-01564

<sup>13</sup> 895 F. Supp. 1347 (D. Ariz. 1995) available at <https://law.justia.com/cases/federal/district-courts/FSupp/895/1347/1570651/> accessed on 13<sup>th</sup> October, 2022.

<sup>14</sup> Section 178 of the UK Copyright, Designs and Patents Act, 1988.

arrangements necessary for the creation of the work are undertaken”.<sup>15</sup> This was made with the intent to incentivize the increased use of Artificial Intelligence in the United Kingdom by protecting the creative output and granting exclusive rights to exploit the work and an opportunity to recoup their investment costs.<sup>16</sup> Creative works in the UK, generated solely by AI are given a unique form of copyright protection if the work is an original literary, dramatic, musical, or artistic work and the copyright will exist in it as a ‘computer-generated work’ for 50 years from the date on which it was made. This is distinct from the copyright protection for 70 years ascribed to works solely generated by a human author. Furthermore, some jurisdictions, such as South Africa, Hong Kong, India, Ireland, and New Zealand, grant copyright ownership to AI-generated works through protection for computer-generated works.

In Nigeria, the Nigerian Copyright Act grants copyright protection to literary and artistic works, which include writings, music, paintings, sculptures, computer programs and electronic databases. The Act provides thus:

Copyright shall be conferred by this section on every work eligible for copyright of which the author or, in the case of a work of joint authorship, any of the authors is at the time when the work is made, a qualified person, that is to say-

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<sup>15</sup> Jackson, Etti & Edu, The Future-Artificial Intelligence and Intellectual Property, available at <https://jee.africa/the-future-artificial-intelligence-and-intellectual-property> accessed on 13<sup>th</sup> October, 2022.

<sup>16</sup> Pineset Massons, UK Sets to Decide on Copyright Protection of Creative Works Generated by AI, available at <https://www.pinsentmasons.com/out-law/analysis/uk-to-decide-copyright-protection-creative-works-generated-ai#:~:text=Currently%2C%20creative%20works%20generated%20solely,on%20which%20it%20was%20made.> accessed on 13<sup>th</sup> October, 2022.

- (i) an individual who is a citizen of, or is domiciled in Nigeria;  
or
- (ii) a body corporate incorporated by or under the laws of Nigeria.<sup>17</sup>

Although the Act did not expressly make provisions for Artificial Intelligence or computer-generated works, it can be implied on the face of it that AI-generated works cannot enjoy the benefits of copyright as Nigerian law and jurisprudence only recognize natural persons (human beings and artificial persons) as subjects of rights.

Another question that arises from this argument is, who takes the benefit of this copyright protection? The possibility of an AI system taking benefit of copyright protection under the law is improbable, if not impossible. Under the Copyright Act and Nigeria's jurisprudence in general, only two types of persons are recognized as capable of having legal rights: natural persons, in other words, human beings, and artificial or juristic persons. If AI systems were recognized as having copyrights, they would have done so as "artificial persons." However, the problem is that artificial persons must be created and acknowledged as such by the law. The Nigerian jurisprudence has yet to catch up with AI and recognize it as a legal person capable of enforcing and taking advantage of copyright protection.

Given the inability of Artificial Intelligence systems to claim copyright protection under the law, the obvious but pertinent question then becomes who claims copyright ownership for works generated by Artificial Intelligence systems. It is a growing belief that where works are created by AI systems in

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<sup>17</sup> Section 2(1) Copyright Act 1988.

Nigeria, the copyright in such work should be vested in the human inventor of the AI system. This argument is premised on the idea that only humans and entities recognized by the law can own copyright under the law. In other words, even in recognizing the abilities of AI systems to create original works with little or no human supervision, the artificial intelligence system itself is a product of human intellect and ingenuity. Therefore, by extension, the copyright in the product or outcome of the AI system should be vested in the human creator or programmer.

## **ii. Patent & Artificial Intelligence**

A patent is an exclusive right over an invention. The holder of such a right is entitled by law to exclude others from making, selling, or even using the patented invention for a limited term.<sup>18</sup> It is a legal document that grants an exclusive right to the patented invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem.<sup>19</sup> For an inventor to enjoy patent over his invention, he must give a full disclosure of the invention to the public to enable further access and research by others upon the expiration of the patent. Specifically, the inventor must certify that his invention is novel, has an excellent advanced approach, is industrially helpful or applicable and must improve an existing patented invention. The concept of 'invention' entails the 'act of intellectual

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<sup>18</sup> Anmol Maheshwari, Dawn of Artificial Intelligence Changing the Face of Patent Regime, available at [https://www.researchgate.net/publication/347449810\\_Dawn\\_of\\_Artificial\\_Intelligence\\_Changing\\_the\\_Face\\_of\\_Patent\\_Regime](https://www.researchgate.net/publication/347449810_Dawn_of_Artificial_Intelligence_Changing_the_Face_of_Patent_Regime) accessed on 13<sup>th</sup> October, 2022.

<sup>19</sup> World Intellectual Property Organization (WIPO), General Course on Intellectual Property, available at <https://welc.wipo.int/aip/coursesDetail/50914> accessed on 10th September, 2022.

creation original to the inventor'<sup>20</sup>, that is, the mental act occurring in the mind of the inventor.

Artificial Intelligence has evolved to the point of advanced autonomy where AI invents machines autonomously, and most machines operate without human intervention. The bone of contention remains whether these inventions of Artificial Intelligence should be protected by ascribing intellectual property rights to AI as an Inventor/Owner of its invention.

Under the United States Patents Act, an 'inventor' is defined as an individual or a set of individuals who invented or discovered the subject matter of the invention.<sup>21</sup> In the case of *Townsend v. Smith*<sup>22</sup>, the court held that, in order to ascribe validity to the outcome of an invention, it must survive the test of 'conception', which implies that the idea must have been conceived in the mind of the inventor before the same be put into practice. This eliminates any inference which supports the premise that legislative intention in the United States sought to include inventions or rather the possibility of inventions being made by anyone besides humans.<sup>23</sup> According to the United States Patent and Trademark Organization (USPTO)<sup>24</sup>, one of the eligibility criteria to be fulfilled for the registration of a patent is that the inventor must be a natural person,

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<sup>20</sup> Robert L Harmon, Harmon on Patents. Black-Letter Law and Commentary (BNA Books, 2007) 32, available at <https://library.law.yale.edu/harmon-patents-black-letter-law-commentary> accessed on 11<sup>th</sup> October 2022.

<sup>21</sup> Consolidated Patent Laws, § 100 U.S. 35 available at [https://www.uspto.gov/web/offices/pac/mpep/consolidated\\_laws.pdf](https://www.uspto.gov/web/offices/pac/mpep/consolidated_laws.pdf) accessed on 14<sup>th</sup> October, 2022.

<sup>22</sup> 36 F.2d 292,293 (1929).

<sup>23</sup> Jason Lohr, Artificial Intelligence drives New Thinking on Patent Rights, available at <https://www.limegreenipnews.com/2016/07/artificial-intelligence-drives-new-thinking-on-patentrights/> accessed on 14<sup>th</sup> October, 2022.

<sup>24</sup> United States Patent and Trademark Office, Decision on Petition in Re Application of Application No: 16/524,350 available at [https://www.uspto.gov/sites/default/files/documents/16524350\\_22apr2020.pdf?m](https://www.uspto.gov/sites/default/files/documents/16524350_22apr2020.pdf?m) accessed on 14<sup>th</sup> October, 2022.

thereby making Artificial Intelligence ineligible to register solely as a patent inventor.

In the case of *Stephen Thaler v. Vidal*<sup>25</sup>, Ryan Abbott of the University of Surrey, United Kingdom, filed two applications on behalf of Stephen Thaler (CEO of Imagination Engines) for a patent under the United States Patent and Trademark Office (USPTO), naming Thaler's AI system, DABUS (Device for Autonomous Bootstrapping of Unified Sentience) as the sole inventor of a fractal container and a neural flame considering that DABUS had created the devices in questions without any human contribution. The patents were refused on the grounds that DABUS lacked legal personality as the court focused on the statutory interpretation of the term "inventor" under the Act. According to the United States of America Patent Act, an inventor is "*the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention.*" While the Patent Act does not define an "individual", the Federal Circuit cited the decision of the Supreme Court in *Asid Mohamad v. Palestinian Authority et al*<sup>26</sup> that an "individual" is ordinarily understood to be a human being. The court, however, held that only a natural person can be an inventor, so AI cannot be an inventor.

In the United Kingdom, the United Kingdom Patent Act<sup>27</sup> provides that a patent for an invention may be granted primarily to the inventor or joint inventors. Interpreting this provision, the UK courts explained that the inventor is 'the

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<sup>25</sup> United States Patent and Trademark Office, Decision on Petition in Re Application of Application No: 16/524,350 available at [https://www.uspto.gov/sites/default/files/documents/16524350\\_22apr2020.pdf?m](https://www.uspto.gov/sites/default/files/documents/16524350_22apr2020.pdf?m) accessed on 14<sup>th</sup> October, 2022.

<sup>26</sup> 132 S.Ct. 1702 (2012) 566 U.S. 449

<sup>27</sup> Patents Act 1977

natural person who “came up with the inventive concept.”<sup>28</sup> The patent applications in respect of DABUS (above discussed) were brought before the patent offices of seventeen (17) jurisdictions, amongst which included the United Kingdom and the European Patent Organization (EPO). The United Kingdom and the European Patent Organization rejected the application of DABUS on the ground that only humans and legal entities may be granted/named as inventors under the current frameworks.

In Nigeria, the Nigerian Patent and Designs Act did not make provisions for Artificial Intelligence as an inventor. Nigerian law confers patent rights over an invention on a person who first files the patent application to the Registrar of Patents and Designs. The law, however, provides thus:

Subject to this section, the right to a patent in respect of an invention is vested in the statutory inventor, that is to say, the **person** who, whether or not **he** is the true inventor, is the first to file or validly to claim a foreign priority for, a patent application in respect of the invention.<sup>29</sup>

Although the Act did not expressly define who a “statutory inventor” or a “qualified inventor” is, it can be implied that a statutory/qualified inventor is a natural person or an artificial person under Nigerian law as from a bare reading of the provisions of section 2 of the Act, the provision referred a statutory inventor to be “a person” while it used the pronoun “he”. To this effect, since

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<sup>28</sup> University of Southampton’s Applications [2005] RPC 220, at 234, available at <https://academic.oup.com/rpc/article-abstract/122/7/220/1583020?redirectedFrom=PDF> accessed on 14<sup>th</sup> October, 2022.

<sup>29</sup> Section 2(1), Patent and Designs Act, 1971.

Artificial Intelligence is not a natural or artificial person, it is automatically stripped of any entitlement to intellectual property rights or to be conferred with authorship/ownership rights over an invention.

On the other hand, applications for patent registration with AI as inventors, brought before the Australian and South African offices, were allowed. In *Thaler v. Australian Commissioner of Patents*<sup>30</sup>, the Justice Beach of the Federal Court of Australia whilst observing that, indeed, Thaler is the owner of the copyright in DABUS' source code as well as the owner of the computer on which DABUS operates, noted however that Thaler was not the inventor of the inventions over which the patents would be granted.<sup>31</sup> Further, the Court also observed that DABUS was not a natural or legal person, but an AI system which incorporates artificial neural networks. However, in reaching its decision to grant the application, the court examined the Australian Patent Act to find the meaning of the word "Inventor", which it could not find – only that the Act recognized the word "Inventor". Thus, the court resorted to other sources for a definition. And in doing so, it came to the following conclusion/decision:

1. The word "Inventor" is an agent noun; 'an agent can be a person or thing that invents'.
2. This "...reflects the reality in terms of many patentable inventions where it cannot sensibly be said that a human is the inventor";
3. The APA did not contain anything that required a contrary conclusion.

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<sup>30</sup> (2021) FCA 879

<sup>31</sup> HWL Ebsworth Lawyers, Federal Court of Australia Approves Artificial Intelligence to be Inventor for Patents Act Purposes (September, 2021), available at <https://hwlebsworth.com.au/federal-court-of-australia-approves-artificial-intelligence-to-be-inventor-for-patents-act-purposes/> accessed 11<sup>th</sup> October, 2022.

In the final analysis, the Federal Court of Australia accorded ownership status to DABUS. It held thus: “an inventor as recognized under the Australian Patent Act can be an artificial intelligence system or device. But such a non-human inventor can neither be an applicant for a patent nor a grantee of a patent.”<sup>32</sup> In the same vein, the South African patent office, the Companies and Intellectual Property Commission, granted patent to DABUS recognizing it as an inventor without giving reasons for such decision.

#### **4. LEGAL IMPLICATIONS OF INTELLECTUAL PROPERTY RIGHTS FOR AI-GENERATED INVENTIONS.**

Although it may appear easy to grant Intellectual property rights to AI, the law fails to address the possible situations of AI liability. It is difficult to agree to the nature of AI as it lacks legal personality and cannot be legally responsible for its actions. Can AI sue or be sued? If AI is granted Intellectual Property rights over its inventions, who would bear the liability upon fault or breach caused by the machines if they were not adequately formulated, constructed or manufactured? Who bears the liability when a person suffers loss or injury from an AI-generated machine?

One of the core building blocks of our legal system is the concept of legal personality. Only legal persons have the ability to own assets, enter into contracts, or to sue and be sued. Historically, and subject to few exceptions, only human beings and registered companies and corporations registered with CAC

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<sup>32</sup> Utkarsh Patil, South Africa Grants a Patent with an Artificial Intelligence (AI) System as the Inventor – Word’s first!! (19th October, 2021) available at <https://www.mondaq.com/india/patent/1122790/south-africa-grants-a-patent-with-an-artificial-intelligence-ai-system-as-the-inventor-world39s-first> accessed on 11<sup>th</sup> October, 2022

in accordance with section 42 of the Companies and Allied Matters Act (CAMA) 2020, have been granted the status of legal personality.

It has been argued that AI should be ascribed intellectual property rights following the ratio of the court in *Thaler v. Australian Commissioner of Patents*<sup>33</sup> and the grant by the South African patent office. Then, in light of the fears associated with AI damages and the challenge of affixing responsibility in respect of same, it is suggested that where an application is filed by the owner of an AI system to confer patent ownership of an invention on the AI (especially in cases of not very advanced AIs), the Patent Office (PO) while recognizing the AI inventorship should require the AI owner to be named as a joint inventor or at the minimum, an assignee of the AI or as the Applicant (as did Australia). In particular, while doing this, the Patent Office should consider the inventor of the AI for the purpose of affixing liability where same occurs.

This argument is consequential as they cannot approbate and reprobate their argument. If humans are to be brought into the light to bear the liabilities of AI-generated inventions, humans should be granted authorship/ownership over the said invention.

To understand these legal implications, there is need to take a cursory look at the concepts of Product liability and Vicarious liability.

### Product liability

Generally, suits on product liability can be instituted under the law of contracts or torts or under extant consumer protection statutes. The common law

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<sup>33</sup> (supra)

principle established in *Donoghue v Stevenson*<sup>34</sup>, which was subsequently applied by the Supreme Court in *Nigerian Bottling Company Limited v. Ngonadi*<sup>35</sup> provides that where a party has severe injury as a result of a breach of duty of care by a producer, the producer may be held liable to compensate the injured party if the injury is a consequential act of the producer. In giving its decision, the court only ascribes compensation in damages against the producer but does not attach liability to the owner, keeper, user, network provider, software provider, etc. of the AI machine. The issue for determination remains whether the chain of causation and liability for a breach caused by an AI system can be traceable to the producer or owner of the machine and who is to be held liable upon breach. A product liability regime may be relied on by a claimant seeking damages for loss or injury caused by AI, which would only be ascertainable where human beings are recognized as inventors/owners of AI-generated inventions. It would be easy to trace who would bear the product liability upon breach.

### Vicarious Liability

Although vicarious liability typically arises in employment, partnership and limited liability partnership scenarios, vicarious liability may also be implied by law in the current discourse.

It is challenging to ascertain vicarious liability in Artificial intelligence due to the numerous parties involved in the invention of AI. For instance, when a food delivery application provides a customer with wrong food preferences and information, the customer suffers financial loss. As a result, the pertinent

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<sup>34</sup> (1932) AC 562

<sup>35</sup> [1985] 1 NWLR (Pt 4) 739

question is, “which of the food delivery application owners, data providers or application designers should be liable?” However, the answer will be dependent on the circumstances of each case. The court may need to consider certain factors, such as the person with the most significant level of involvement, monitoring and supervision of the AI, or the person with the highest capacity and capability to control or influence the actions of the AI system. Where there are multiple principals, it may be possible to hold them jointly and severally liable for the damage. Also, it would be possible to hold the last user of the artificial intelligent machine liable on the grounds that the purchaser/user is seen to have purchased the benefits and liabilities of the AI system.

It has also been argued that AI machines are agents of their owners or manufacturers and, as such, should not be held vicariously liable for damage caused by them. This is because humans design artificial intelligent machines, and these machines only receive instructions from their manufacturers. Thus, it has been proposed that the principles of vicarious liability may be applied to hold the manufacturer of the artificially intelligent machine vicariously liable for the damage suffered by the customer or user. For instance, where a robot designed to serve meals in a restaurant causes damage to a customer in the cause of carrying out its role, it has been proposed that the restaurant, being the “employer” of the robot, should be held vicariously liable as the damage caused by the robot was done in the cause of it being employed for services in the restaurant.

From the concept of inventions autonomously created by AI, this approach will be unfruitful before attempting. As the manufacturer or sole inventor, Artificial Intelligence cannot be held liable for any damage caused by it or its inventions.

However, this has made the argument of ascribing intellectual property rights to AI difficult, as artificial intelligent machines do not currently enjoy ownership rights over inventions created by them. It would be difficult to hold AI vicariously liable as it is not recognized by any law.

## 5. CONCLUSION

Proponents in support of the traditional position have argued that Intellectual Property rights can and should only be accorded to natural and artificial persons, given that “even the most sophisticated machines remain a machine and not a living being: a tool in the hands of inventors.”<sup>36</sup>

On the basis that only legal persons can own assets such as IP rights, an artificially intelligent machine cannot own the rights in any artistic work or invention it is said to have created. Under this logic, the AI program is merely a tool for creation, and the intellectual property rights in the resulting creation will be owned by the person using the tool, or the company to which the rights are contractually assigned. In this context, the answer to the question “can an AI own IP rights” is straightforward – it cannot, as it lacks the legal personality to do so.

Nevertheless, recent leaps in AI capabilities have meant that the creative or inventive steps usually carried out by humans are being increasingly attributed to the AI, with minimal input from a natural person. There is a sense that, in

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<sup>36</sup> Kathleen Walch, “Artificial Intelligence Is Not a Technology”, (2018) available at <https://www.forbes.com/sites/cognitiveworld/2018/11/01/artificial-intelligence-is-not-a-technology/#7b4dc6645dcb> accessed on 14<sup>th</sup> October, 2022

these cases, it may no longer be satisfactory to attribute ownership of the IP rights to a person whose involvement is arguably incidental.

Artificial Intelligence, in the long run, can be an asset in the field of Intellectual Property Rights, but there are so many lacunas and ambiguities regarding using Artificial Intelligence in Intellectual Property Rights. AI has proven to be a threat as there are issues in determining its liability in cases of infringement. There is a need for policies and rules pertaining to Artificial Intelligence and how the liability will be determined. Also, clarity is needed on who will hold the copyright, patent or any other intellectual property right over the work or invention of AI. Hence, Artificial Intelligence is still at a very initial stage, and a lot of growth is happening. There will be no end to the debate on the impact of Artificial Intelligence, be it on any sector or specifically on Intellectual Property Rights, till the time there are laid out rules on the use of AI, its liability and to what extent AI can be allowed to interfere. In a nutshell, Artificial Intelligence is very beneficial if it is within the control of the programmer, but the moment it starts functioning on its own without any external control, it might pose a threat to not only the field of Intellectual Property Rights but to everyone in general.

It is therefore recommended that inventors of artificial intelligent machines, rather than AI, should be ascribed with intellectual property rights over inventions generated by Artificial intelligence. While filing for an intellectual property right, same should be made in the name of the inventor and not the invention.