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Legal Implications of Artificial Intelligence Relating to Content Creation and Content Ownership

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ABSTRACT

AI has emerged to have a multitude of solutions, be it in automobile industry, healthcare, businesses etc; and potentially a second generation of technological advancements are bound to happen. Intellectual property issues are likely to arise at a greater scale and these issues need to be addressed to avoid infringement that may be unjust to the AI content creator. Since AI machines these days are capable of creating their own content, intellectual property can be assigned to these AI but with much speculation. This means that AI could possibly bring infringement proceedings and vice versa. It is, however, a confusing position when it actually comes to interpreting AI as a separate legal entity. If it is not for the machine that should be held responsible, can the owner of a specific AI technology be held responsible? As of today, AI has not reached a 'superintelligence' level to have acquired human skills, at least the sentient and more moral aspects of human intelligence, and therefore, it is challenging to understand what skills the AI has that can be attributed to a human in order to sue the former, to say the least, attach a legal personality to such AI. The definitions of skilled person, art, authorship, inventorship etc may take up other legal definitions in the near future with the surge of AI. It is foreseeable that the concept of ownership and creation has already diverted from its conventional meaning. There is also a need for a broader application of intellectual property laws to AI as it is important to protect an individual's data considering rapid data transfer, sharing and mining techniques used today.

Keywords: *Artificial intelligence, intellectual property laws, data, content creation, content ownership, technological advancements*

I. UNDERSTANDING ARTIFICIAL INTELLIGENCE

The dawn of technology has witnessed an increasing number of computer algorithms that have helped create machines to aid and possibly take over human activities in the foreseeable future. This means that automation is rapidly developing in several industries and it is only fair to say that innovation is happening at some level. The World Intellectual Property Organization (WIPO) has established and acknowledged the existence of AI and categorised

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AI into a *tria* of systems namely, expert systems, perception systems, and natural-language systems.[2] For practical purposes, the aforesaid mental machines[3] build computer programs to perform tasks that require human intelligence. Such human training induced artificial intelligence can be applied to reap benefits in the field of medicine, automobile, government etc. For instance, "the machine" from a popular web series *Person of Interest* is created for the Federal Government to assimilate a lot of information, mainly through advanced surveillance to identify and predict threats to the country. Interestingly, "the machine" can only identify threats that involve the aspect of "premeditation". This certainly is an advanced technology that exceeds human intelligence. Further, today's AI has gone to the extent of providing us with digital assistants like Siri and Alexa which have access to much of our data and possibly know what we want even before we want it. LexisNexis, a frontrunner in the legal research field can also be attributed to an AI that helps people retrieve documents for academic purposes. Self-driving cars on the roads and automated services offered in the restaurants are first-hand experiences that really are beginning to feel like a second wave of technological advancements.

In order to promote research and development of AI, countries globally are actively engaging through investments to boost the growth of AI applications. For instance, the Malaysian government's strategic investment fund recently invested in an augmented reality/visual recognition start-up founded by an Indian-origin entrepreneur with offices in Silicon Valley.[4] Private funding in India is relatively new; Infosys, for example, recently announced its decision to support AI research efforts at the Indraprastha Institute of Information Technology, Delhi, apart from its commitment to open-source AI research efforts led by SpaceX founder and Tesla Motors CEO Elon Musk under the OpenAI Project.[5] The United States, the European Union, Canada, China and many other countries are continuously developing, national AI strategies that imply significant government investment in AI. Global investment in AI start-ups has increased steadily, from $1.3B in 2010 to over $40.4B in 2018, at an average annual growth rate exceeding 48%.[6] This is evidence that AI's intervention in

[2] A. Johnson-Laird, 'Neural Networks: The Next Intellectual Property Nightmare?' 7 The Computer Lawyer 14 (1990)

[3] Alan Bundy, 'Artificial Intelligence, Art or Science?' RSA Journal Vol. 136, No. 5384 (1988)

[4] Arjun Kharpal, 'App That Recognizes Objects With AI Raises $54M' (*CNBC*, 2 March 2016) http://www.cnbc.com/2016/03/02/blippar-app-that-recognizesobjects-with-artificial-intelligence-raises-54-million.html. accessed 1 April 2021

[5] Shashi Shekhar Vempati, 'India and The Artificial Intelligence Revolution' Carnegie Endowment for International Peace (2016)

[6] Convington and Burling LLP, '10 Best Practices for Artificial Intelligence Related Intellectual Property' (Lexology, 4 June 2020) https://www.lexology.com/library/detail.aspx?g=7eb7e695-4712-4b46-b876-4a48b55d53ad accessed 5 April 2021

technological and economic growth is inevitable and has sufficient government backing since AI applications are the new age alternative to conventional human innovation.

II. THE ANALOGY OF INTELLECTUAL PROPERTY LAWS AND ARTIFICIAL INTELLIGENCE

(A) Curious Case of Copyrights in AI

In the realm of intellectual property laws, creativity and innovation have been continuously changing with the emergence of AI. Attributing copyrights to AI creators and owners is viewed with scepticism due to the caveat of a certain degree of human essence and originality that are required to attract these copyrights. In any case, for the recognition of a copyright, there must be a human author or creator in addition to the aspect of originality. Evidently, this is what is laid down in the laws and a norm that is standardised.

Accrediting a legal personality to AI generated works to protect copyrights that may arise from such works, which are indeed possible using machine learning can be an arduous task. This is because the general interpretation surrounding copyrights require a human creator. Furthermore, it is difficult to ascertain the originality and the actual developer of such content created using the AI system because there may be more than one human creator involved in the process of making the AI system. The motive of creating any AI system is to encourage its public use so that the users can benefit from such technology. For instance, the use of data subsisting in copyright works without authorization for machine learning cannot be considered to constitute an infringement of copyright as this would seriously defeat the purpose of development of AI for the greater good and possibly hinder free flow of data. Commercializing AI content and their respective developers may have a polar effect and the benefits may not reflect entirely. However, it is justified to offer protection to a certain extent so that the uniqueness or competition is not hampered in the absence of adequate protection. Therefore, it is pertinent to have a system in place that can identify a part of the process of such AI creation, or a number of processes within the creation that may potentially lead to a copyright or any intellectual property protection. The application of the same set of intellectual property law policies governing humans and corporations on AI and a technology driven world is not workable and completely preposterous. AI systems are complex and are deprived of any morality. This could mean that an AI system, considering its motive as opposed to a human creator or a corporate entity may have reduced protection and more limitations while ascertaining the intellectual property rights.

Most jurisdictions do not acquiesce with the idea that intellectual property rights can be

extended to AI systems. For instance, in the infamous case of *Feist Publications* v *Rural Telephone Service Company, Inc.*[7], the US court of law established that copyright laws only protect works that involve creative and intellectual powers of the human mind. A similar stance has been reiterated under the European jurisdiction as well. In another decision, *Authors Guild* v. *Google*[8], the Association of American Publishers contended that Google was in copyright breach by scanning book collections for its Google Books Library Project, which aimed to make searchable the content of millions of books. This meant that free content, either partially or fully, was available to a large audience and the authors were not happy about such access to copyrighted works. In this long-drawn battle, the Court of Law established that such an act undertaken by Google falls under the ambit of "fair use". The Court further went on to state that Google transformed the original content's utility and enhanced public knowledge, which is an important canon of the copyright law. In another noteworthy US Supreme Court decision, namely, *Google* v. *Oracle*[9], the Court observed that "applying copyright law to computer programs is like assembling a jigsaw puzzle whose pieces do not quite fit". The Court further relied on *Harper* v. *Row*[10] and stated that even a small amount of copying may fall outside the scope of fair use where the excerpt consists of the "heart" of the creative work. However, the Court recognized possible infringement in cases of knock-off products and established that the statutory purpose was to encourage creative expression as opposed to monopolizing the market.

The definition and scope of "author" and "authorship" must be broadened to merit the field of AI. This has been reflected under section 9(3) of the U.K Copyright, Designs and Patents Act which states that the author for any computer-generated work shall be construed to be a person who makes all the necessary arrangements for the creation of such works. Notably, in this regard, some level of recognition is given to the AI creators and the absolute involvement of a human is condoned. Critically speaking, these developments are not implemented in its effect as seen in the precedents. However, in the Chinese jurisdiction, considerable developments have taken place through several judicial decisions. In the case law of *Shenzhen Tencent Computer System Co., Ltd.* v. *Shanghai Yingxun Technology Co.*[11], Ltd., the Court held that an article created by an artificial intelligence program benefitted from

[7] *Feist Publications, Inc., v Rural Telephone Service Co.*, 499 U.S. 340 (1991)
[8] *Authors Guild v Google, Inc.*, No. 13-4829, 2d Circuit (2015)
[9] *Google v Oracle*, No. 18-956, The United States Court of Appeals for Federal Circuit (2021)
[10] *Harper v Row*, 471 U.S. 539 (1985)
[11] *Shenzhen Tencent Computer System Co., Ltd. v Shanghai Yingxun Technology Co., Ltd.*, Yue 0305 Min Chu 14010, (2019)

copyright protection. In another decision by the Beijing Intellectual Property Court[12], the Court while considering issues regarding copyrights in video recordings by a sports camera attached to a balloon, stated that since there was human intervention for selecting video recording parameters, screenshots taken from such video recordings would be deduced as photographic works and unauthorized use of such works constitutes an infringement to the copyrights of the Plaintiff's photographic works.

The laws relating to data ownership are generalized in most jurisdictions and they are not fit to adapt to a technology driven world. For instance, in the United States, data may be subject to intellectual property rights, including copyright and trade secret laws, depending on the definition of "data." The question of ownership of AI data still remains unanswered. This poses a challenge to AI creators as behind the stage of creation of advanced AI systems, there is a great deal of innovation, creativity, intellect, time, money, and other intangible efforts that are put in.

The common conundrum when it comes to intellectual property laws and the AI is whether the AI content rights are with the owner of a particular AI system or the person who creates content using such AI systems. This leads to the general notion regarding AI content that it belongs in the public domain.[13]

(B) The Tale of Trademarks in AI

Trademark laws have a huge impact on consumer behaviour.[14] Trademarks are what connotes a company's ownership or identification with its unique brand. For instance, Nike's new business model incorporates coach-behaviour strategies. By making its customers part of virtual running clubs and tracking their runs, the company knows when it is time for their next workout, and through its app it can offer them audio training guides and plans.[15] Automatic execution strategy is yet another example which allows companies to perform certain tasks for its consumers based on their past activities and preferences. Zomato, a popular Indian food delivery application gives suggestions based on the consumer's previous orders and interestingly, this consumer may even get notifications based on their cravings. The AI technology that is used in such food applications must have a commendable tracking system. Practically, this consumer may not even be aware of a particular restaurant or menu to begin with sans the interposition of the AI system. On the contrary, such increased

[12] Beijing Intellectual Property Court (2017) Jing 73 Min Zhong No. 797 Civil Judgment (2020)
[13] *Urantia Foundation v Maaherra*, 114 F.3d 955, (1997)
[14] Lee Curtis, 'AI and Trademarks' (*WIPO*, June 2020) <https://www.wipo.int/wipo_magazine_digital/en/2020/article_0001.html> accessed 25 February 2021
[15] Nicolaj Siggelkow, 'The Age of Continuous Connection' Harvard Business Review (2019)

protection may create a black box problem that could come in the way of data sharing which is already seen in the European jurisdiction.[16]

Trade secrets protect information that are confidential and have commercial significance. One of the objectives of having trade secrets is to encourage fair competition and to prevent unauthorized use of business information that could be vital for the functioning of the business. Trade secrets can be used in the AI field to provide for AI innovation and also gives a legal backing for data sharing between authorized parties.[17]

There are a few case laws that may be important in this symposium. In the decision of *Lush* v. *Amazon*[18], the High Court of England and Wales ruled against Amazon for the infringement of Lush trademarks wherein, Amazon bought the keyword "Lush" through a bidding process. The issue was raised when the Google search engine redirected to the Amazon website based on the keyword and AI of the Amazon website displayed similar products to Lush but not the actual Lush products. In another pertinent case of *Louis Vuitton* v. *Google France*, which dealt with the issue of keyword advertising in Google's AdWords system, it was held that Google would not be liable for trademark infringement unless it had an active role to play in such keyword advertising. The ascertainment of degree of infringement and the party to be held responsible when an AI system is involved are unsettled and continues to be a moot point.

(C) The Path of Patents in AI

As per the World Intellectual Property Organization's (WIPO) findings, about 40% of AI related patents predominantly comprise machine learning, which is an important feature of the AI among other functional applications. Most AI patent related findings are found in the offices of the United States of America and China. This could mean that the aforesaid countries may potentially pioneer AI related inventions.[19] An important example of an AI invention is Microsoft's FarmBeats project which combines low-cost soil sensors, aerial imaging, and vision and machine learning algorithms to complement a farmer's intuition, helping increase productivity and reduce costs. This is definitely a game-changer in the field of inventions and as discussed earlier in the paper, it implies a certain level of

[16] WIPO Revised Issues Paper on Intellectual Property Policy and Artificial Intelligence, WIPO/IP/AI/2/GE/20 /1 Rev. (2020)
[17] id
[18] *Cosmetic Warriors and Lush v Amazon.co.uk and Amazon* EU, EWHC 181 (Ch) (3014)
[19] Steven Kelly, 'The Story of AI in Patents', (*WIPO*) <https://www.wipo.int/tech_trends/en/artificial_intelligence/story.html> accessed 10 April 2021

superintelligence that may acquire a superior status and improve the lives of humans.[20]

Speaking of how patent applications are treated worldwide, in two decisions under the European Union[21], European patent applications EP 18 275 163 and EP 18 275 174 in which an AI system called "DABUS" was designated as the inventor was refused under the provisions of the European Patent Convention ("EPC") and the term "inventor". The European Patent Office (EPO) held that the term refers to a "natural person" and stated that this is the internationally accepted standard. In another decision, the European Patent Office refused a patent on determining cardiac output by the aid of an artificial neural network due to a lack of descriptive sufficiency. The aforesaid decisions have also been relied on in several other jurisdictions. For instance, the United States Patent and Trademark Office ruled that AI systems cannot be credited as an inventor and that the current law stipulates an inventor only as a natural person.[22] Such decisions invoke a state of quandary especially considering how much technology has advanced and to narrowly construe an inventor to be a natural person is almost archaic. The scope of "inventor" must be emphasized to include AI inventors and specific grounds of such patent applications must be laid down in laws as it is most definitely a legislative requirement of this era brimming with technology. Devoid of specific AI related laws and undervaluing AI's advancements, viewing it as an aberration or an anomaly can only lead to further delay in the laws catching up with the AI trends.

A condition precedent for patentability is the element of "inventive step or non-obviousness". While assessing the grounds to attract patentability for AI systems, the application of conventional requirements does not seem just. For instance, while weighing the matter of non-obviousness, a particular AI driven documentation management system may be obvious to a person who is skilled in coding, thereby rendering such a system obvious but the intricacies such as identification of important clauses using clause handling techniques within such documentation management system is clearly an inventive step and due recognition must be given to such an AI machine. The next precarious question in line is whether such an AI system is solely owned by the human inventor or the AI system or should there be legal requirements to be satisfied in order to form a joint ownership between the former and the latter. There is a need for specific laws to be introduced to govern the ownership of AI-generated inventions. Private arrangements, such as corporate policy relating to attribution of inventorship and ownership may not necessarily offer a promising protection to the inventors,

[20] (n 18)
[21] European Patent Office decision of 27 January (2020) on EP 18 275 163 and European Patent Office decision of 27 January (2020) on EP 18 275 174
[22] United States Patent and Trademark Office Decision of April 27 (2020) on Application No. 16/524,350

be it human or a computer application.[23]

AI inventions form an important part of technological development, the aspect of fair use applied in the conventional human context would not be effective in the field of intellectual property laws in AI. In the traditional sense, while one may not be allowed to engage in unauthorized use of a recent Indian pharmaceutical combination, the extent of usage of an AI application may vary given the fact that such an AI application may accelerate technological advancement. As per Article 27 of the TRIPS, unless excluded from patentability, all inventions in the field of technology may be patentable. The problem is most intricacies relating to patentability concerns the national legislation and interpretations differ depending on the jurisdiction. For example, Article 52 of the European Patent Convention (EPC) states that computer programs per se shall not be considered patentable inventions. In India, as per Section 3(k) Patent Act, computer programmes per se or algorithms are categorized as non-patentable subject matter. In the United States of America, software is not expressly barred from obtaining a patent.

As discussed previously in this paper, Microsoft's Farmbeats is an innovation that can greatly take human advancement to a different level and stringent measures to reduce the usage in order to protect trade secrets may not necessarily achieve the end goals of such innovations. It is understood that the relationship between AI and inventorship and ownership are inextricable. Therefore, it is incumbent to have an international model of laws to address the scope and extent of various terms that are used commonly in the field of AI so that intellectual property rights can be attributed to AI systems. This will enable national legislations to formulate laws that include specific subject matter that may be patentable when it comes to AI generated inventions and content. Furthermore, this will also address the matter of indefinite usage of AI applications without the actual inventors or owners receiving credit or benefits.

The issue of data is complex, and data has a far-reaching role to play when it comes to AI inventions. For instance, AI employs machine learning techniques which uses a vast amount of data for training and validation. Hence, such data has considerable commercial value. Since data and its application comprises a diverse range of activities, it is challenging to contrive a single policy framework for data governance.[24] In this light, it is pertinent that the present intellectual property policy framework must be revised in order to include various components of data usage including different kinds of data pertaining to AI, including the

[23] (n 15)
[24] (n 15)

groups that may use and create such data so that there is a fair market competition, and to further ensure that the outcome is not a power imbalance and obstruction of fair practices.

III. LEGISLATIVE STEPS ADOPTED BY DIFFERENT JURISDICTIONS TO INCLUDE AI IN INTELLECTUAL PROPERTY

Certain jurisdictions have initiated legislative steps to make the intellectual property law more inclusive of AI. In China, for instance, as per Section 3(5) of the Hong Kong Registered Designs Ordinance (Cap. 522) 1997 expressly states that if a design is computer generated in circumstances such that there is no human designer, the person who makes all the arrangements necessary to make the design shall be deemed as the designer. This is a similar legislative stance taken by the U.K government as established previously in this paper.

The European Union, besides its active participation in reforming intellectual property laws has passed an ordinance in 2019 to make a copyright exception in the case of text and data mining for the purposes of scientific research.[25] Similarly, in Japan, the Copyright Act was amended in 2018 to include certain limitations provisions. The purpose of the amendment was to allow usage of copyrighted works for innovation through technology. For instance, data collection used to train AI systems can make use of such an exception to avoid infringement claims. Japan is also making attempts to examine the patent system for AI and its enforcement through discussions by the Japanese Patent System Committee and Industrial Structure Council 2020.

Singapore, much like Japan, proposed to be add limitation provisions for copyrighted works in the Copyright Act which may come into effect in 2021 with safeguards for rights holders' interests, such as requirements of the user to have lawful access to the works as well as options for right holders to implement security measures to maintain security and stability of the network or system.

The aforementioned legislative steps taken by countries are positive affirmations that developments in the field of intellectual property for AI is bound to happen. Such legislative and policy reforms can help evade challenges faced by entities in the commercial space that use AI as an essential part of their functioning.

[25] Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC

IV. Ways to go off on a tangent with intellectual property rights strategy and policy making in AI

(A) Ownership, Authorship, and Inventorship of AI generated content/AI system

From the above discussion, it is clear that research, skills, and innovation are in abundance when it comes to an AI invention. The general contention is that due to the large quantities of data used in the creation of AI systems, assigning intellectual property rights, and thereby rewarding an individual or a machine is difficult to implement. In order to facilitate research and to promote recognition of AI in the Intellectual Property field, it is important to have an international model for policy making that encourages the formulation of inclusive national level policies that can accommodate a technology steering world, and which may also include the scope and extent of interpretation of terms that are indispensable in the Intellectual Property field. AI inventions and works that are invaluable must be protected with the help of legal and policy reforms at a national level while using the international model for reference. With a sufficient legislative backing, companies can implement strategies that assess, identify, and ascertain such AI related inventions that are important for the companies. This helps in intellectual property management at a micro level to ward off any future infringement claims against such AI works that warrant protection. The EU has made crucial efforts in addressing the issues of policy making in the field of Intellectual Property and AI. For example, in October 2020 the European Parliament issued three Resolutions concerning an ethical framework for artificial intelligence, civil liability for damage caused by AI technology, as well as intellectual property rights to works created by, or with the assistance of, AI.[26] Moreover, the European Commission is expected to publish a draft legislative proposal on AI in early 2021 to shape the field of AI in Intellectual Property Laws and to make it comprehensive. This is a sure-fire effort by the EU in terms of increased technological growth and better investments.

(B) AI Content Creation and Data Rights

It is important and a modern-day requirement for policies to be in place to ensure that establishments using data mining to train the AI machine do not violate third-party rights. The EU can be taken as a reference for other jurisdictions to better implement AI and Intellectual Property related strategies. The EU 2019 Digital Single Market[27] requires EU

[26] Intellectual Property Rights to AI Works: the EP Proposal, (*CMS Law-Now*, 3 December 2020) https://www.cms-lawnow.com/ealerts/2020/12/intellectual-property-rights-to-ai-works-the-ep-proposal?cc_lang=en accessed 10 April 2021

[27] Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and

Member States to implement certain exceptions to copyright infringement and companies can use these exceptions subject to the limitations put forth by the actual owners of such intellectual property. Assessment techniques employed in the general legal policy framework at a national and international level can also ease data processing, sharing, and setting interoperability standards that can help protect AI related content. In this regard, it is also important to have more standards in place since it is of a cross-border transactional nature, hence, there must be more agreements such as creative common licenses, open-source license agreements[28] etc to solidify data use mechanisms. This will allow the companies to best leverage these agreements to protect such AI related content.

V. A CLOSING NOTE

In light of the comprehensive analysis made in this paper relating to AI generated content and its ownership, relying on case laws and legislative reforms, the understanding is that there is a prodigious amount of development yet to be seen in the field of intellectual property and AI. It is without doubt that there is a surge of incorporation of AI systems in today's business and individual activities, thereby, calling for at the very least, a certain groundwork from which further laws can be formulated.

The conundrum surrounds the idea that, for example, patent disclosure in technology is quintessential for further advancements in the field and on the other hand, such patents may be the heart and soul of a business activity which mandates protection. Another point to be in this regard is the ownership of AI generated content which continues to be an unresolved question. The primary concern is that laws that are applicable to humans may not be effective for a machine. Further, on many occasions, it is possible to raise moral questions regarding this issue. Speaking of data and content in general, policies need to be implemented to enable creation of new rights when it comes to AI generated content, especially when it is of commercial value.

There is also a need for lawmakers to look into the social policies that concern protection of human creation and the promotion of innovation in the field of AI. It would be rather beneficial for the AI content creators if the AI content has sui generis right as opposed to a copyright. This would also mean that the AI content would not fall under public domain, ensuring protection and recognition of such AI content.

Given the myriad of legal and commercial implications in the field of intellectual property

related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC

[28] (n 25)

and AI, it is important to address the challenges by encouraging an international level policy framework which can be relied on by countries to implement policies at a national level that are inclusive of the present-day technological advancements. It is merited that such a single policy framework is an ambitious approach considering the complexities of data, nevertheless, there can be an increased clarity of the traditional interpretations of intellectual property terms such as legal personality, authorship, inventorship etc. If not for policy making, there must be strategies in place that can be devised in order to strike a balance between incentivizing human creation and boosting technological advancement.

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