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Intellectual Property Rights in the Age of Artificial Intelligence

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ABSTRACT

Artificial intelligence and laws are coming to appoint where revision of laws is required to keep up with the technological advancements. Artificial intelligence is developing rapidly and there are possibilities that it may take over a lot of human endeavors one of which may also be a large part of law profession. Lawyers with their teams spend a lot of time in understanding and placing Patent claims. Hours are spent in investigating and analyzing the novelty, utility and non-obvious nature of products and processes for which a claim is to be presented. A substantial expenditure goes into the process of patenting something. Facilitating laws by including AI in the whole process may substantially save us time and money involved in the process. This paper has addressed how the old concepts of Intellectual Property are being stretched to the maximum to accommodate the disruptive consequences of the advent of Artificial Intelligence. In other words, granting Intellectual Property protection to Artificial Intelligence results, paradoxically, into challenging the very foundations of Intellectual Property law.

Keywords: Artificial intelligence, Patent, Intellectual Property law.

I. INTRODUCTION

Sometime early in this century the intelligence of machines will exceed that of humans. Within a quarter of a century, machines will exhibit the full range of human intellect, emotions and skills, ranging from musical and other creative aptitudes to physical movement. They will claim to have feelings and, unlike today's virtual personalities, will be very convincing when they tell us so. – Ray Kurzweil (2008)[2]

Many of us might have watched Arnold Schwarzenegger's Terminator or heard about Benedict Cumberbatch starrer, 'The Imitation Game'. These movies revolve around extremely intelligent human-like machines and the Imitation Game, in particular, portrays the life of a profoundly unusual English mathematician, Alan Turing, who might have been the first person

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[2] Ray Kurzweil, "The Coming Merging of Mind and Machine", Scientific American (23 March 2009), https://www.scientificamerican.com/article/ merging-of-mind-and-machine; accessed on 17th march,2021.

to work on intelligent machines. Artificial Intelligence (AI) is one of the most important technologies of this era.[3]

Once considered a remote possibility reserved for science fiction, AI has advanced enough to approach a technological tipping point of generating ground breaking effects on humanity and is "likely to leave no stratum of society untouched"[4]

In recent times however, it is becoming more science and less fiction. The world of technology is changing rapidly, and Artificial Intelligence systems have been gaining widespread momentum. With sophisticated technologies being incorporated in the same, it is only a matter of time these systems start to produce marvellous inventions without human intervention of any kind. AI is the capability of a machine to imitate intelligent behaviour.

II. WHAT IS ARTIFICIAL INTELLIGENCE?

Computers, coupled with human intelligence, have advanced to even make decisions on their own. This ability of a computer system to take decisions by itself came to be known as artificial intelligence, in common parlance.[5] AI is not a new phenomenon, with much of its theoretical and technological underpinning developed over the past 70 years by computer scientists such as Alan Turing, Marvin Minsky and John McCarthy. AI has already existed to some degree in many industries and governments.[6] The term 'artificial intelligence' was formally coined by Mr. John McCarthy, a computer scientist at a conference in 1956. According to him, it was the notion of a program, processing and acting on information, such that the result is parallel to how an intelligent person would respond in response to similar input.[7]No single definition of AI is accepted by all practitioners. Some define it broadly as a computerized system exhibiting behavior commonly thought of as requiring intelligence, whereas others define AI as a system capable of rationally solving complex problems or taking appropriate action to achieve its goals in real-world circumstances.[8] AI is often described based on its problem space, such as logical reasoning, knowledge representation, planning and navigation, natural language processing

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[3] Artificial Intelligence & Intellectual Property Rights, available at https://clairvolex.com/PDFs/October-2016-Mailer-1.pdf, accessed on 18th March,2021.
[4] Lauren Goode, "Google CEO Sundar Pichai compares impact of AI to electricity and fire",The Verge (19 January 2018), available at https://www.theverge.com/2018/1/19/16911354/google-ceo-sundar-pichai-ai-artificial-intelligence-fire-electricityjobs-cancer accessed on,17th March,2021.
[5] Swapnil Tripathi, Artificial Intelligence and Intellectual Property Law, 7 Christ University Law Journal, 83-97 (2017), ISSN 2278-4332⎪https://doi.org/10.12728/culj.12.5.
[6] Niti Ayog, Task Force Discussion Paper, available at http://niti.gov.in/content/nationalstrategy-ai-discussion-paper, accessed on 17th March,2021.
[7] Raquel Acosta, Artificial Intelligence and Authorship Rights (17/2/2012), available at https://jolt.law.harvard.edu/digest/artificial-intelligence-and-authorship-rights, accessed on 17th March,2021.
[8] Frank Chen, "AI, Deep Learning, and Machine Learning: A Primer", Andreesen Horowitz (10 June 2016), https://a16z.com/2016/06/10/ai-deep-learning-machines), accessed on 17th March,2021.

(NLP) and perception,[9]or based on its often-overlapping subfields, including machine learning (ML), deep learning, artificial neural networks, expert systems and robotics.[10]

III. IMPACT OF ARTIFICIAL INTELLIGENCE ON THE IPR'S

As the artificial intelligence and the new technologies evolve, the IPR's protection became a necessity. The digital revolution of the late twentieth century and the emergence of internet as a worldwide communication means, is creating a continuous pressure on IPR's adaptation.[11] The World Intellectual Property Organization WIPO has adopted many treaties which could be one response to the emergence of revolutionary new technologies and IPR's protection. Artificial Intelligence (AI) and robots has been the subject of science fiction for some time, however they have become a reality that we have to work with. The AI market is predicted to grow from $ 8 billion in 2016 to more than $ 47 Billion in 2020 according to market intelligence firm (IDC).[12] AI is set to increase rapidly, being enabled by the convergence of big data, ready availability of processing power, alongside the cost-effective infrastructure being available. If each AI is different in its specific implementation, we also admit that many modern AI relate to intellectual property [13] issues may also arise out of this development. In fact, AIs have the potential to engage in acts of content creation by replicating aspects of human cognition. In addition, many AI systems undergo a training process, where they develop their own decision making algorithms and rules by practicing decision making and using feedback to improve future decisions.[14] In addition, AI systems are frequently used to examine huge volumes of input data to detect statistical features. However, AI may experience limitations in some IP issues, especially due to one major reason and that is because most of the IPs is a human creation.

AI AND PATENT

There are challenges with patenting AI systems and platforms. In fact, an AI system is usually

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[9] 3 Michael Mills, Thomson Reuters, "Artificial Intelligence in Law: The State of Play" (2016), https://www.neotalogic.com/wp-content/uploads/2016/04/Artificial-Intelligence-in-Law-The-State-of-Play-2016.pd, accessed on 17th March,2021.

[10] Future of AI, available at https://www.congress.gov/bill/115th-congress/house-bill/4625/text, accessed on 18th March,2021.

[11] Abbott, F.M., Cottier, T., & Gurry, F. (1999). The international intellectual property system: Commentary and materials, available at https://scholar.google.com/citations?user=OXk1rN4AAAAJ&hl=en, accessed on 18th March,2021.

[12] Soni, N., Sharma, E.K., Singh, N., & Kapoor, A. (2019). Impact of artificial intelligence on businesses: From research, innovation, market deployment to future shifts in business Models, available at https://arxiv.org/ftp/arxiv/papers/1905/1905.02092.pdf, accessed on 18th March,2021.

[13] Hacker, P. (2018). Teaching fairness to artificial intelligence: Existing and novel strategies against algorithmic discrimination under EU law. Common Market Law Review, 55(4), 1143-1185.

[14] Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. International Journal of Artificial Intelligence in Education, 26(2), 582-599.

mimicking a human task. The example of Microsoft's Inner Eye project is an AI system helping oncologists target cancer treatment in a shorter time. It manages to accomplish this task by using machine-learning techniques in the analysis of magnetic resonance imaging scans of patients and delineate tumors from surrounding healthy tissue and bone. The oncologist himself previously accomplished this task by drawing by hands contours on 3D images. In case a patent application is submitted for this task done by the machine, it would be rejected because one of the fundamental requirements of patentability, which describes how the invention works, is not met in this case. Inventions and new ideas are at the center of societal transformation. Inventions have been historically protected by a system of intellectual property law of which patents are at the heart. Whilst patent law is still deeply moored in its roots in the industrial revolution, to a greater extend it has been able to adapt to the successive revolutions like the computing albeit with some challenges. The world is now at an unprecedented threshold of the most far reaching revolution whose consequences to patent law in particular are so far reaching that its impact is still unknown. This is the AI revolution.[15]

AI AND COPYRIGHT

Traditional Copyright law does not recognize AI generated works. It only protects the original creations of a human being. In a famous Monkey-Selfie copyright dispute, U.S. Copyright Office clarified that to fall within the protective shield of copyright law a work must be created by a human being.[16]This decision gave rise to challenges for the copyrightability of AI-generated works.

However, in United Kingdom the law is rather different. In UK Copyright Act, there is a provision which stipulates that if a work is computer-generated then the author is taken to be the person who facilitated the work to be created. [17] On similar terms we can assume that the author of AI generated work would be one who made the arrangement necessary for the creation of work.

With regard to Indian legal standards, Section 2 (d) of the Copyright Act, 1957, defines "author" "in relation to any literary, dramatic, musical or artistic work which is computer-generated, the person who causes the work to be created;" [18] The complexity arises where AI

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[15] Garikai Chimuka,Impact of artificial intelligence on patent law. Towards a new analytical framework – [the Multi-Level Model],World Patent Information,Volume 59,2019, available at https://doi.org/10.1016/j.wpi.2019 .101926.(https://www.sciencedirect.com/science/article/pii/S0172219018300814), accessed on 17th March,2021.
[16] Sana Singh and Sonil Singhania, India: Redefine Intellectual Property With Artificial Intelligence, available at https://www.mondaq.com/india/patent/1036180/redefine-intellectual-property-with-artificial-intelligence, accessed on 18th March,2021.
[17] Supra Note 12.
[18] Ibid

becomes more advanced and fully autonomous and when it has the liberty to make its own decisions, it may become even more complicated to say with certainty by whom the arrangement necessary for the creation of work undertaken. As per current scenario only the human-authors of creative works may enjoy copyright protection. However, some scholars have advocated the idea of granting copyright to non-human authors. They argue that the realm of word "authorship" should be widened to incorporate both human and non-human authors.[19] The authorship of a work created by AI is still contentious.

IV. CONCLUSION

Now humankind stands on the threshold of an era when ever more sophisticated robots, bots, androids and other manifestations of artificial intelligence ("AI") seem to be poised to unleash a new industrial revolution, which is likely to leave no stratum of society untouched, it is vitally important for the legislature to consider its legal and ethical implications and effects, without stifling innovation.[20]

The cited recital of the European Parliament Report with recommendations on Civil Law Rules on Robotics ("Recommendations on Civil Law Rules on Robotics") is a brief summary of two issues: 1) How artificial intelligence ("AI") changes and challenges society, and 2) How regulators try to respond to these challenges. While policymakers are still attempting to foresee the coming challenges for many areas of AI's application and assess the potential consequences, intellectual property is one area where the impact is self-evident.

The current IP laws need severe upgrading to come up to par with the artificial intelligence that is continuously growing. If they are not upgraded the artificial intelligence would keep on becoming smarter to such a point where the current laws would not be able to serve human needs. Using smart mixed AI and human models like the one mentioned above, could solve the fear problem that human being has and could also serve in making the process of achieving intellectual property rights more smooth, transparent and affective. Most of the laws are not designed substantially to work algorithmic.[21] This is the main reason behind the discretions are provided to most of the judges when they are deciding the cases. The approach to completely convert the IP process to algorithmic decision-making lacks for the time being legal infrastructure and human experiences.

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[19] Ibid

[20] European Parliament Report with Recommendations on Civil Law Rules on Robotics as of 27 January 2017 < http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+REPORT+A8-2017-0005+0+DOC+XML+V0//EN > accessed on 17th March,2021.

[21] Supra Note 9.

The Artificial Intelligence (AI) coupled with IP can empower IP creation processes. In fact, AI is now delivering real value to companies that need to solve difficult and complex issues. The IP daily tasks can be time consuming for human beings as the magnitude of the data increases. Thus, AI technology enables professionals the time to focus on more strategic decisions. It will also drive improved accuracy by reducing reliance on human investigation procedures. For IP professionals, the real opportunity brought by AI, is the access to the impenetrable and inaccessible volumes of data. AI will help IP professionals generate business insight that can open up new markets and deliver a better understanding of what and where the next generation of IP investment should come from.

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