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ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY: AN INEVITABLE INTERFACE

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Artificial intelligence (AI) is a branch of Science. It makes systems having human like intelligence and machine like efficiency. Artificial Intelligence has taken technological advancement to the next level which has added an ease and comfort to human life. Starting from auto correcting our text to auto driving our cars we are enjoying fruits of AI in almost all of our daily courses. As AI enabled technology is nothing but fruits of human creativity and innovation, it has an inevitable interface with Intellectual Property (IP) which will certainly have enduring impact on the traditional concepts of IP. Eligibility conditions for protection, ownership and infringement liabilities are the main areas in the field of IP that are facing challenges when it comes to AI. The paper begins by exploring the impact of Artificial Intelligence on human life which is the root cause for the requirement of analyzing the interface it has with Intellectual Property. The second part makes an endeavor to address the challenges posed and opportunities available in the field of AI with particular reference to Intellectual Property. Traditional forms of Intellectual Property consisting of patents, copyright, trademarks and industrial designs were developed when AI was not known to human life. Thus, the numerous challenges being faced by traditional forms of IP in this world of Artificial Intelligence enabled technology are the subject matter of the third part of this paper. As the fruits of AI are being enjoyed globally, the challenges that it is posing for IP are also being faced by most of the countries. Comparative aspects on the same shall be considered in the fourth part of the paper. Finally the paper concludes with an observation that one size fits all approach will not work in case of AI and IP interface. One has to develop IP strategies locally to meet with the AI challenges globally.

Keywords: Artificial Intelligence, Copyright, Infringement, Intellectual Property, Ownership, Patent.

Introduction:[1]

Artificial intelligence (AI) is a branch of Science. It makes systems having human like intelligence and machine like efficiency. Artificial Intelligence has taken technological advancement to the next level which has added an ease and comfort to human life. Starting from auto correcting our text to auto driving our cars we are enjoying fruits of AI in almost all of our daily courses. It is nothing but the basis of the theory that intelligence in principle can be classified so precisely that a machine can be made to assimilate it. In 1955 the term Artificial Intelligence was coined by John McCarthy, an American computer scientist and cognitive scientist.During the Dartmouth Conference of 1956[2]the field of AI, a science hardly 60 years old having significant impact on our lives evolved formally. The link between human intelligence and machines was identified and formally established with the evolution of AI.

Impact on Human Life:

The journey of AI from infancy to adulthood has been very interesting. The impact and influence that it generated on humanity is undeniable. It is considered to be the forth industrial revolution. The era of forth industrial revolution is defined by technology and internet. The advent of internet has converted the world into global village where with the help of AI human life is governed by extreme automation and ubiquitous connectivity. AI is contributing a great deal of revenue to national economy. In fact in the age of smart phones, one encounters AI each moment every day. Suggestions in form of 'you may like, from Amazon,Gaana and Netflix have become part and parcel of our routine life. These recommendations are made using algorithms that examines human preferences and choices. It is believed that Artificial Intelligence can generate a market value upto $15.7 trillion to the global economy by 2030.[3]

True to its title, Artificial Intelligence ranges from simple intelligent procedures like filtering incoming emails and diverting spams from inbox to complex activities like showing advertisements according to preferences of a user. Here, AI works better than software through "deep learning algorithms", as it learns what could be spam from the content of the

[1]I thank Ms. Hetvi Trivedi, RA-GUJCOST for her fruitful discussions on the topic as well as student members of GCIPR, GNLU for their help in conducting preliminary research for this paper.

[2]Shaan Ray, *History of AI*, Medium, TOWARDS DATA SCIENCE(Feb. 25, 2019, 10:30 A.M.),https://towardsdatascience.com/.

[3]Terence Mills, *The Impact of Artificial Intelligence in the Everyday Lives of Consumers*, FORBES TECHNOLOGY COUNCIL(Feb. 21, 2019, 10:30 A.M.), https://www.forbes.com/sites/forbestechcouncil/2018/03/07/the-impact-of-artificial-intelligence-in-the-everyday-lives-of-consumers/#694d87ab6f31.

email, keeping in mind the preferences of the particular user as what could be spam for one may not be spam for another. These deep learning algorithms are particularly strong in pattern recognition tasks such as reading, listening, watching and classifying contents.[4]

AI is gradually becoming an integral part of human life. Each time a question is asked to Siri or Cortana, or assistance is sought from Alexa, it is an interaction with artificial intelligence. The voice assistants find the relevant information and return the answers to the device from where the query is generated. These voice assistants go as far as anticipating what the user might ask for, based on past preferences or queries.

A fascinating example of AI is self-driving cars! Yes, these cars use machine learning to understand how to behave on a road. Tesla's Elon Musk has recently suggested that the company will roll out a 'feature-complete' car, meaning it will be a fully self-driving car, smart enough to find its owner in a parking lot and take the owner to the destination without any intervention.[5]So far, driverless cars have not been a successful experiment and several incidents have been reported, where drivers have collided with these smart cars because the autonomous cars stuck rigidly to the rules of the road.[6]Besides AI enabled planes and cars, the world is being rapidly introduced to homes that are positively impacted by the technology. With an AI enabled home, you will be able to connect yourself to all appliances and gadgets. More so, these gadgets and appliances will be connected with each other as well.

Authors Ravid and Liu, claim there are eight important features of Artificial Intelligence, which are inter-related and occasionally overlap. These are *Creativity*; *Unpredictable Results*; *Independent*, *AutonomousOperation*; *RationalIntelligence*; *Evolving*; *Capability of Learning*, *Collecting*, *AccessingandCommunicating with Outside Data*; *Efficiency and Accuracy*; and "*Free Choice*" *Goal oriented*.[7] These features create AI systems to generate independent outcomes and as the technology advances, AI embedded systems become increasingly capable of mimicking the functions that we consider to symbolize the human mind, creating new products and processes.[8]AI systems have become valuable for solving

[4]DIRK HELBING, THINKING AHEAD - ESSAYS ON BIG DATA, DIGITAL REVOLUTION, AND PARTICIPATORY MARKET SOCIETY77-78 (Springer 2015).
[5]Aarian Marshall, *Elon Musk promises a Really Truly Self-Driving Tesla in 2020*, WIRED(Feb. 21, 2019, 11:00 A.M.), https://www.wired.com/story/elon-musk-tesla-full-self-driving-2019-2020-promise/.
[6]Mills, *supra* note 3.
[7]Dr. ShlomitYaniskyRavid&Xiaoqiong (Jackie) Liu, *When Artificial Intelligence Systems Produce Inventions: An Alternative Model for Patent Law at the 3a Era*, 39 CARDOZO L. REV. 2215, 2224-2227 (2018).
[8]*Id.* at 2228.

specific problems and now promise to improve specific human skills—not only accuracy, velocity and capacity to process vast amounts of data but also creativity, autonomy, novelty.[9]

AI and Intellectual Property (IP) - an Inevitable Interface:

AI is all about technology based creations. The act of creation is traditionally associated with a human being. However, this understanding may not hold true in today's age of AI. AI is not merely a tool or aid to human world. It has created a world of non-human creations that has human like intelligence and efficiency. Thus, developments in the field of AI are challenging the notion of only human to be the creator. We currently have machines that can create books, music, paintings, and other subject-matter that could eventually come under copyright protection.

R. Kurzweil's defines AI as "the science of making computers do things that require intelligence when done by humans." Such things could be, for example, creating copyright-protected works. Examples of non-human creations abound, such as Google's Deep-mind AI piano prowess or the Next Rembrandt project.[10] The question that arises here is: where is the author's 'own intellectual creation' in works produced by computers or robots? What is the best regime for protection? Should we recognize a non-human copyright or patent? Or perhaps a new neighboring right for producers? In case of AI, law not being able to keep pace with the technology is not the case. The challenge is how to recognize non-human inventions and creations within the conventional eligibility criteria that recognizes only human inventions and creations.

Challenges to Copyright and Patent Law

AI based inventions have transformed every segment from entertainment to medicine. Along with the fruits of AI that the human race is enjoying there are unique challenges being posed especially in the field of intellectual property. Most difficult question in case of AI based innovations is to decide on the ownership. Most of the IP systems in the world associate human innovations with ownership of IP. Deciding on the ownership of AI based innovation requires revisiting conventional criteria for grant of IPRs like copyright and patents. As known, Intellectual property rights are granted for creative and original inventions of human

[9] *Id.* at 2228.

[10] Dr.Begona Otero & Pedro Quintais, *Before the Singularity:Copyright and the Challenges of Artificial Intelligence*, KLUWER COPYRIGHT BLOG(Jan. 26, 2019, 9:47 AM), http://copyrightblog.kluweriplaw.com/2018/09/25/singularity-copyright-challenges-artificial-intelligence/,http://copyrightblog.kluweriplaw.com/2018/09/25/singularity-copyright-challenges-artificial-intelligence/.

intelligence. In the age of AI the world has reached to a stage where such inventions can be created without human intervention. In this situation, how current IP regime will recognize such creative and inventive invention is the biggest challenge before the IP experts.

Challenges to Copyright protection

Copyright is one of the most important forms of IP protecting original literary, artistic, musical and dramatic expressions. Such original expressions are human creations. Exclusive economic and moral rights are grated on such expressions through law of copyright. Creating works using artificial intelligence could have serious implications for copyright law. Traditionally, the ownership of copyright in computer-generated works was not in question because the program was merely a tool that supported the creative process, very much like a pen and paper. Creative works qualify for copyright protection if they are original, with the definition of originality requiring a human author. Globally the system of copyright protection is founded on the proposition that only works created by a human can be protected by copyright. But with the latest types of artificial intelligence, the computer program isnot just a tool but a non-human creation. It actually makes many of the decisions involved in the creative process without human intervention.[11]Copyright protection in software extends to all of the original expression embodied in the software, but not to its functional aspects, such as algorithms, formatting, logic, or system design. Issues that arise with respect to copyright law and artificial intelligence are listed below-[12] Issues like determining authorship, registration of copyright in case of AI based tools, commercial implications in case no protection is granted to AI based creations are the major issues to be addressed. Issues like The Next Rembrandt[13]proposed two situations for the world. Firstly the law of copyright can be made adaptable to include AI based creations and secondly not to recognise such creations at all. Considering huge commercial implication that misuse of AI based creations can lead to, the second option may not serve the purpose. In case of going with the first option, one can

[11] Andres Guadmuz,*Artificial Intelligence and Copyright*, WORLD INTELLECTUAL PROPERTY ORGANIZATION MAGAZINE, (Jan. 26, 2019, 09:07 AM), https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html.

[12] Jones Day, *Protecting Artificial Intelligence IP: Patents, Trade Secrets or Copyrights?*,JONES DAY(Jan. 26, 2019, 11:31 AM), https://www.jonesday.com/protecting-artificial-intelligence-ip-patents-trade-secrets-or-copyrights-01-09-2018/.

[13] The Next Rembrandt is a computer-generated 3-D–printed painting developed by a facial-recognition algorithm that scanned data from 346 known paintings by the Dutch painter in a process lasting 18 months. The portrait consists of 148 million pixels and is based on 168,263 fragments from Rembrandt's works stored in a purpose-built database. The project was sponsored by the Dutch banking group ING, in collaboration with Microsoft, J.Walter Thompson marketing consultancy, and advisors from TU Delft, The Mauritshuis and the Rembrandt House Museum. See https://www.jwt.com/en/work/thenextrembrandt for more details.

safely state that the statutory language of copyright law in most of the jurisdiction does not prohibit conferring copyright in works generated by AI.The question of determining ownership seems to have resolved prima facie when it is accepted that the author of the work for grant of copyright can be considered to be a person who is responsible for arranging the work. However, the question still remains unanswered as to how to decide when there are more than one or two persons such as programmers and user of such programs involved in arranging such work.

Patents: Can technology be inventor?

Patent is one of the most important forms of intellectual property rights which protects an invention exclusively for a duration of twenty years. Indian patent law recognizes new, non-obvious and industrially applicable inventions as patentable. In India for patenting an AI backed technology one needs to follow the Computer-related Inventions (CRIs) guidelines which excludes a computer programme or algorithms from being patented. At present these guidelines are focused on computers/algorithm/software based inventions and also are used to examine AI based inventions.[14]According to technology lawyer and patent expert Rahul Dev, software and computer-related innovations can be patented under Indian patent laws. However, according to section 3(k) of the Indian Patents Act, computer programs, mathematical formulae and even business methods are regarded as non-patentable inventions.[15] Issues on subject matter eligibility, ownership and financial implications in case of infringement are required to be addressed on urgent basis. Ac per the basic understanding provided under the Indian Patent Act, it protects inventions by human only. Apart from the major issue of non-human being the inventor, abundance of prior art in the area of Ai is another challenge for its patenting. Till the development of sufficiently powerful technology, research in the field of AI had its origin in the academic endeavors. Thus, many of the fundamental techniques are published and are considered to be prior art. Further in case of AI based litigation hasn't yet reached to a stage where its enforceability can be judged adequately in India.

[14]*Can Artificial Intelligence Software be patented in India?* PATENT BLOG and PATENT NEWS for LEGAL SERVICES by TT CONSULTANTS, (Jan. 26, 2019, 09:07 AM)http://ttconsultants.com/blog/can-artificial-intelligence-software-be-patented-in-india/.

[15] Richa Bhatia, *Should AI be allowed to get Patents? How can Indian Companies Protect their Inventions?*ANALYTICS INDIA MAGAZINE, (Jan. 26, 2019, 11:27 A.M.)https://www.analyticsindiamag.com/should-ai-be-allowed-to-get-patents-how-can-indian-companies-protect-their-inventions/.

Artificial Intelligence and Indian Policy Scenario:

AI technology has emerged on the global platform, bigger and smarter than other technologies, so much so that governments arerequired to oblige to this boom and create policies surrounding it. Significant role being played by AI based technology has made human life much more comfortable than ever before. The pace at which AI aided by Big Data is growing is set to change age-old policies, law and especially the manner in which intellectual property is created for which protection is granted. Machines have been autonomously generating works traditionally eligible for copyright and patent protection, so the scenario isn't new. However, AI has developed to become moresophisticated and coupled with the existence of big data, it is wise to appreciate that computer-generated works are being transformed to major contributors to the creative and inventive economies. While its benefits cannot be ignored, its massive growth and rapid usage calls for checks and balances so that AI does not disrupt law and order.

In the year 2016, the Obama Government of the United States of America, released a report developed by a sub-committee on Machine Learning and Artificial Intelligence, of National Science and Technology Council (NSTC). The report titled "Preparing for the future of Artificial Intelligence" spoke of the scope and impact of AI which is to deeply influence the future of human life.While talking of the opportunities and challenges posed by AI, the report concentrated on the need to adjust regulatory procedures for AI, coordination and funding of government led research on AI, economic impact of AI vis-à-vis its effect on job security as well as ethical issues regarding employment and creation of policies on such matter of importance concerning AI.[16]Further, the sub-committee directed the Sub-committee on Networking and Information Technology Research and Development (NITRD) to create a National Artificial Intelligence Research and Development Strategic Plan.[17]The United Kingdom announced its 2020 national development strategy and issued a government report to accelerate the application of AI by government agencies while in 2018 the Department for Business, Energy, and Industrial Strategy released the Policy Paper - AI Sector Deal.[18]Thus,

[16]National Science and Technology Council Committee on Technology, *Preparing for the Future of Artificial Intelligence* (2016).

[17] National Science and Technology Council, Networking and Information Technology Research and Development Subcommittee, *The National Artificial Intelligence Research and Development Strategic Plan* (2016).

[18]Government of the United Kingdom*, Industrial Strategy Artificial Intelligence Sector Deal*(2018).

it is clear that national strategies are being influenced by the growth of AI and no sooner global policies will also be affected by this technology.

NITI Aayog's National Strategy for AI

Looking at global trends, India took a decisive action on its approach for recognizing and regulating Artificial Intelligence and other emerging technologies at the highest level. During his budget speech for 2018-19, Hon'ble Finance Minister Shri Arun Jaitley, mandated NITI Aayog to establish the National Program on AI, in order to guidethe research and development in this area.In pursuance of the above, NITI Aayog has adopted a three-pronged approach – undertaking exploratory proof-of-concept AI projects in various areas, crafting a national strategy for building a vibrant AI ecosystem in India and collaborating with various experts and stakeholders.[19]

With an aim of crafting a National Strategy for AI, since the beginning of the year 2018, NITI Aayog partnered with several leading AI technology players to implement AI projects in critical areas such as agriculture and health. Learnings from these projects coupled with the Aayog's engagement with leading domestic experts and institutions gave an enhanced understanding of India's take on the proposed national strategy. The strategy document prepared and published by the NITI Aayog rightly premises its proposition considering the strengths and characteristics of India which can make it a global leader on the AI platform. Recognizing India's potentialthe NITI Aayog created a unique brand #AIforAll. While evolving the national strategy for AI, the underlying thrust was to identify applications with maximum social impact, a willingness to learn from the best of the world when it comes to the recent technology advancements in AI, and leveraging approaches that democratize access to and further development of AI.[20]

The strategy document identifies barriers that India must overcome in order to benefit from what Artificial Intelligence has to offer. These barriers are characterized under the following broad heads[21]:

1. Lack of broad based expertise in research and application of AI;
2. Absence of enabling data ecosystems – access to intelligent data;
3. High resource cost and low awareness for adoption of AI;

[19]NITI Aayog, *National Strategy for Artificial Intelligence #AIFORALL* (2018).
[20]*Id.*, at 5.
[21]*Id.*

4. Privacy and security, including a lack of formal regulations around anonymity of data;
5. Absence of collaborative approach to adoption and application of AI.

Based on the a study of the barriers as noted above, the strategy document further outlines five focus areas for policy intervention:

1. Healthcare[22];
2. Agriculture[23];
3. Education[24];
4. Smart cities and Infrastructure[25];
5. Smart Mobility and Transportation[26].

The Aayog proposed setting up a Centre of Research Excellence (CORE), to focus on developing better understanding of core research, adopting the research in order to create commercial value and make India a successful nation with regards to AI. Apart from CORE, NITI Aayog also proposed setting up International Centres of Transformational AI (ICTAI) with a mandate to develop and deploy application-based research in collaboration with private players.

India has many challenges to overcome with regards to research in Artificial Intelligence and implementation strategies. Due to its unique challenges, it cannot readily adopt the policies implemented in other developing or developed nations. However, the growing population of a generation functioning largely on the *online* way of life also means that the nation has strength enough to initiate policies and plans targeting the growth of AI research. However, it is also to be understood that AI is not just a beneficial technology, it is also characterized to be disruptive in the sense that it is potentially strong to negatively impact of jobs in the future which means the growing numbers of the domestic population can in not time turn from assets to liabilities. Thus, in order to control the disruptive nature of AI, it is hugely important that stakeholders come together and regulate AI so that India climbs ranks on the global strategic platform.

[22] *Id.*, at 24.
[23] *Id.*,at 30.
[24] *Id.*, at35.
[25] *Id.*, at 39.
[26] *Id.*, at 41.

Comparative AI Strategies:

USA:

The US government does not have a coordinated national strategy to increase AI investment or respond to the societal challenges of AI. The Obama Administration first released an AI Strategic Plan along with a companion report entitled, "Preparing for the Future of Artificial Intelligence" in October 2016. The plan articulated seven strategic aims[27]:

1. Make long-term investments in AI research;
2. Develop effective methods for human-AI collaboration;
3. Understand and address the ethical, legal, and societal implications of AI;
4. Ensure the safety and security of AI systems;
5. Develop shared public datasets and environments for AI training and testing;
6. Measure and evaluate AI technologies through standards and benchmarks; and
7. Better understand the national AI R&D workforce needs.

President Trump's White House has taken a markedly different, free market-oriented approach to AI. In May 2018, the White House invited industry, academia, and government representatives to a summit on AI[28]. The government has four goals:

1. Maintain American leadership in AI;
2. Support the American worker;
3. Promote public R&D; and
4. Remove barriers to innovation.

To achieve these objectives, a new Select Committee on Artificial Intelligence is appointed to advise the White House on AI research &development priorities and to consider the creation of Federal partnerships with industry and academia.[29]The advisory committee is composed of scientists, engineers, ethicists, and civil liberties experts, as well as representatives from labour groups, technology companies, and federal officials. The committee will have 18 months to issue recommendations on how to ensure that artificial intelligence is a positive for

[27] National Science and Technology Council, Networking and Information Technology Research and Development Subcommittee, *The National Artificial Intelligence Research and Development Strategic Plan*, 3, (2016).

[28]Larry Medsker, *White House AI Summit*, AI MATTERS,(Feb. 24, 2019, 10:34 A.M.), https://sigai.acm.org/aimatters/blog/2018/05/15/white-house-ai-summit/.

[29]The White House Office of Science and Technology Policy, *Summary of the 2018 White House Summit on Artificial Intelligence for American Industry*, 7, (2018).

the country. But without a national strategy and increased public investment, the country will risk having a few companies control the most elemental science of the future.

United Kingdom:

United Kingdom has become one of the leading countries in the field of Artificial Intelligence and the government released the AI Sector deal in 2018[30] which is comprehensive to position UK as a global leader in AI.Further, the Select committee on AI published a lengthy report titled, *AI in the UK: ready, willing, and able?*,[31] came up with a report on implications of AI on the economy, which outlines a number of recommendations for the government to consider, including calls to review the potential monopolization of data by technology companies, incentivize the development of new approaches to the auditing of datasets, and create a growth fund for UK SMEs working with AI. Businesses have committed to supporting AI-related research and development to help boost productivity across the economy.

The Select Committee report is of the opinion that the major challenge for anyone working in AI is finding ways to share data – needed to train algorithms – in a safe and secure way. It further makes a statement that the UK government is committed to investments in innovation *to make the country the world's most innovative nation* by 2030. The report opines that the nation has an opportunity to lead global governance of AI and recommends hosting a global summit in 2019 to establish international norms for the use and development of AI.[32]However, for the UK government*Brexit* remains a bigger challenge for necessary actions in order to boost research and implement policies for AI.While the field of AI is recognized as one of the rare industries which continues to perform remarkable despite the turbulent political climate, disembarking on a journey of detachment from EU will certainly pose difficult questions for investment and development of AI in the nation. This goes true for policy initiatives in the field of AI. It was stressed that there is still a lack of co-ordination at the national level and that there is a need for "multi-stakeholder" dialogue to take place in the UK, which must be initiated by the Government as working in silos alone will not help further the intentions of policy making on AI.[33]

[30]Government of the United Kingdom*, supra* note 14.
[31]House of Lords, Select Committee on Artificial Intelligence, *AI in the UK: ready, willing and able?*(2018).
[32]*Id.*, at 120.
[33]*Id.*, at 122.

India:

NITI Aayog in 2018 endeavored to understand the Artificial Intelligence scenario of India and strategize a futuristic domestic policy. The strategy documentopines that despite indications of positive effects in AI, the research & development in this area is still in its infancy and requires expertise for core and applied research. The report suggests that it is important to understand the dynamics of AI, as the technology increasingly threatens employment opportunities and can make many sectors redundant due to automation. Thus, the challenge at present is not only to consider the positive impact that AI is creating on human life but also to addressed the negative influence that it will generated in all possibilities. With policies like 'Make in India' and 'Digital India' or the 'Smart Cities' project, India must make sure that it develops as a major manufacturing hub with AI- assisted technology, thus making the best use of AI.

India has taken a unique approach to its national AI strategy by focusing on how India can leverage AI not only for economic growth, but also for social inclusion.[34] The strategy, as a result, aims to[35]:

(1) enhance and empower Indians with the skills to find quality jobs;

(2) invest in research and sectors that can maximize economic growth and social impact; and

(3) scale Indian-made AI solutions to the rest of the developing world.

The strategy document provides for over 30 policy recommendations to invest in scientific research, encourage reskilling and training, accelerate the adoption of AI across the value chain, and promote ethics, privacy, and security in AI. Further, an important strategic move was its flagship initiative is development of a two-tiered integrated strategy to boost research in AI- Centres of Research Excellence in AI (COREs) with a focus on fundamental research; the COREs will act as technology feeders for the International Centres for Transformational AI (ICTAIs), which will focus on creating AI-based applications in domains of societal importance. As described in the previous chapter, NITI Aayog identified five priority sectors- healthcare, agriculture, education, smart cities and infrastructure, and smart mobility and transportation, as the priority sectors that will benefit the most socially from application of AI.

[34]NITI Aayog, *supra* note 15.

[35]Tim Dutton, *An Overview of National AI Strategies*, MEDIUM, (Feb. 24, 2019, 02:30 P.M.),https://medium.com/politics-ai/an-overview-of-national-ai-strategies-2a70ec6edfd.

The document also recommends setting up a consortium of Ethics Councils at each CORE and ICTAI, developing sector specific guidelines on privacy, security, and ethics, creating a National AI Marketplace to increase market discovery and reduce time and cost of collecting data, and a number of initiatives to help the overall workforce acquire skills. Strategically, the government wants to establish India as an "AI Garage," meaning that if a company can deploy an AI in India, it will then be applicable to the rest of the developing world.[36]

Concluding Remarks:

As has been observed, law has always legged behind in keeping pace with technology. In case of protecting AI based creations, the issue is not only limited to the pace, but also about the nature of such creations. Further, AI and IP issues are complex because till now the concept of human made inventions have been recognized by IP laws. Globally the need of creating an adequate framework of IP laws for providing protection to non-human creations is being felt. It's only the time and the growing use of AI will help the world understand how to address this inevitable overlap. It's not possible to come out with a concept of one strategy fits all. Hence the countries will have to address the issues at their level within the frame work of their domestic IP law.

The discussions in the third and the forth part of this paper lead to conclude that the policies of the major players in the field of IP like USA, UK and India are mostly focusing on creating a system of adequate AI governance ranging from creation, research and use. The policies have not addressed the issues of protection of AI through IP regime. The issue of their inevitable interface have been felt and hence recognized. However, in the technology driven economy where human intelligence is being replaced by machines and computers, one size fits all approach will not work in case of AI and IP interface. One has to develop IP strategies locally to meet with the AI challenges globally.

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[36] *Id.*