PROTECTING TRADE SECRETS: A CASE FOR AIRTIFICIAL INTELLIGENCE

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ABSTRACT

Artificial Intelligence or AI can be understood as a set of technology that enables machine intelligence to simulate or augment elements of human thinking. This technology includes modern advances such as machine learning, neural networks, probability based reasoning, and other "intelligent" technologies – a number of which learn from experience, just as humans. These technologies have over time enabled computers to replicate human cognitive capabilities, including vision, speech, knowledge, problem-solving skills, and more.

The technology of AI isn't a niche research area in the tech field any more, today artificial intelligence has impacted almost every industry and its usage has pervaded our everyday lives largely. It has become the pot of gold in the modern tech businesses - almost all major tech-based corporations are, as it seems, in a rat-race to grab a slice. Thus, it goes without saying that the corporate world and industries have found significant value, and use for this technology. This includes usage at the ground level along with additional opportunities of cost-cutting and increasing efficiency by a number of times considering the proven "intelligence" of AI over human capabilities. Corporations have reportedly succeeded in extracting enormous profits tapping into the value of AI in the Intellectual Property domain. Concern arises when the profit maximization goals of corporations stand against the wider aspect of technological advancement or access.

Protection of such futuristic and fruitful technologies under a patent is one thing, considering the time limits to patent operation. On the other hand, protection of such technologies as trade-secrets raises a number of contentions – ethical as well as legal.

Although trade-secrets are not in themselves accepted as IPs, they operate in close nexus with the domain of IP and are of significant concern under IP laws. From a legal perspective, no matter the implications, focus rests on the mechanisms

protecting trade-secrets but rationalization of the same taking these implications into consideration is an approach less explored. Thus, it becomes important to understand and examine the existing mechanisms in terms of their vigour in the effort towards the abovementioned rationalization.

Although Artificial Intelligence has other debatable negative complexities, the premise of this research is, in exclusion of controversial debates regarding AI, limited to the domain of Intellectual Property Law, particularly Trade-secrets. On the critical side of the perspectives opted by the authors, questions such as whether protection of trade-secrets can be said to hinder possibility of new innovations; whether there exists a requirement of a focused set of legal strategies with regard to trade-secrets and AI will be looked into.

Keywords: Intellectual property, Trade secret, Artificial Intelligence,

INTRODUCTION

Trade Secrets till date are not identified as a potential Intellectual Property. It has been given quietly under represented IP grant and legitimate protection. Though not an IP, companies have chosen to use Trade Secrets to protect their utmost confidential documents, which if lands into the hands of the competitor the said company can lose its share in the market. The protection of Trade secrets has been identified by the State Governments, while the Central focuses on other IP protection. Many definitions exist to define what a Trade Secret is. The definition under U.T.S.A also known as Uniform Trade Secrets Act was enlightening and widely accepted.

It defines Trade Secret as information including pattern, formula, compilation, program, device, method, technique or process that derives an independent economic value from being not generally known and also not being ascertained by proper means by any other party who may benefit from disclosure of such trade secret. Also,

reasonable measures should be taken to maintain its secrecy.[1] As the case was, many States had not accepted the definition given under the U.T.S.A., a meaning of Trade Secrets was set forth in Restatement (First) of Torts. The definition focussed mainly on business process and devices that are continuously used for operation of business. It gives a smaller meaning because the main centre while considering the definition were just business operations and industry.[2]

Another meaning of Trade Secrets was given under the Economic Espionage Act of 1996. It defined Trade Secret as all forms and types of financial, business, scientific, technical, economic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques, processes, procedures, or codes, whether tangible or intangible, and whether or how stored, compiled or memorialized physically, electronically, graphically, or in writing. It also strongly condemned those involved in Trade Secret piracy by mechanical cooperatives or remote governments.[3]

A trade secret contains information that can be potential threat to its own business if it lands in the competitor's hands. Therefore, reasonable measures are essential for protection of such valuable information. The reasonable measures can be classified into two categories:

(i)   **PRIMARY CLASSIFICATION** incorporates physical strategies, for example, restricted access, self-shutting and self-locking entryways, zapped fences, and watchman hounds, and furthermore incorporates virtual techniques, for example, PC passwords, encryption, and hibernation defaults, and staff procedures, for example, record verifications and work seminars.

(ii)   **SECONDARY CLASSIFICATION**: This classification includes insurances where mystery is upgraded by data control. Such techniques remember the

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[1] Mark A Lemley, November 2008, "The Surprising Virtues of Treating Trade Secrets as IP Rights" Stanford Law Review.

[2] Mark A Lemley, November 2008, "The Surprising Virtues of Treating Trade Secrets as IP Rights" Stanford Law Review.

[3] Mark A Lemley, November 2008, "The Surprising Virtues of Treating Trade Secrets as IP Rights" Stanford Law Review.

dispersal of data for a "have-to-know" premise, decides that limit duplicating of delicate archives, and decides that exclusive data ought to be put away in a divided manner.

Reasonable efforts are a part of finding out the accessibility of competitive innovation for the following reasons:

a. The measure of exertion leads to estimation of the secret;

b. The protection is just concurred to things that would not be deliberately or coincidentally revealed;

c. Defensive exertion offers evidentiary help to demonstrate that the data was in certainty kept as a mystery, and henceforth, that the respondent made sure about the secret through ill-advised means.[4]

Now a Trade Secret retains its independent economic value because it's a mystery. It may provide a potential business incentive and also companies my profit from its use. Therefore, companies and various organizations that have such kind of data, protect it with all sorts of physical restraints from intrusion by any other party who may benefit by its use.

There have been cases of Trade Secret leakage, theft and piracy. The very well-known case is the Coca- Cola case where two ex-employees of Coca-Cola Ltd., leaked the secret ingredient of the beverage to their competitor/rival company Pepsi Co. Ltd. Normally, when rival companies are provided with some valuable information, they use it for their own benefit, but here, Pepsi Co. Ltd., tipped off Coca-Cola that someone from their company was providing inside information to Pepsi Co. Ltd. On this information, Coca-Cola launched an investigation and the wrongdoers were sentenced for imprisonment.

This may not happen with every company or organization; therefore, companies and organizations are always advised to keep this valuable information under maximum level of security.

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[4] Patrick P Philips, August 1987, "The Concept of Reasonableness in the Protection of Trade Secret." American Bar Association.

Generally, devices, programs, software are given protection under Patent or Copyright. Even if companies try protecting their algorithms through Trade Secrets, they won't be able to avail the protection that other IP grants. But, in today's reality Trade Secrets are the most effective way to protect such algorithms, processes, devices etc. For instance, Robots! They have become a major part in our lives now. We see them each day, everywhere like hospitals, multi-national companies, devices etc. The program that is used to build such devices or system is Artificial Intelligence. AI programs can be protected under Copyrights, Patents and Trade Secrets. But, the most effective IP protection can be Trade Secrets as compared to other IP protection.

Artificial Intelligence or AI can be understood as a set of technology that enables machine intelligence to simulate or augment elements of human thinking. This technology includes modern advances such as machine learning, neural networks, probability based reasoning, and other "intelligent" technologies – a number of which learn from experience, just as humans. These technologies have over time enabled computers to replicate human cognitive capabilities, including vision, speech, knowledge, problem-solving skills, and more. While AI's acknowledgment in standard society is another marvel, it is anything but another idea. The cutting-edge field of man-made consciousness appeared in 1956; however it took many years of work to gain huge ground toward building up a computerized reasoning framework and making it an innovative reality.

There are two elements essential for Artificial Intelligence, and these are:

a. **MACHINE LEARNING**: AI's are principally used to process a lot of information rapidly. Feed and AI more and more information and its demonstrating ought to improve with each information. These AI's can break complex information into simple form for better understanding of humans. For instance, while in an assembling industry, one of the apparatus is snared near to the machine. For humans, all the important information and also the non-relevant information may take a toll on remembering everything what was wrong. On the other hand, an AI could easily identify and report to its chief about the certain problem and the chief could dispatch the preventive upkeep group.

Yet, AI is additionally a moderately general classification. The advancement of counterfeit neural systems, an interconnected trap of computerized reasoning "hubs," has offered ascend to what is known as "profound learning."

b. **DEEP LEARNING**: Profound learning is an explicit variant of AI that depends on neural systems to take part in non-linear thinking. It's mainly seen in self-driving cars, where few components have to be recognized, broke down and then acted upon immediately. Profound learning calculations are utilized to help self-driving autos contextualize data got by their sensors, similar to the separation of different items, the speed at which they are moving and an expectation of where they will be in 5-10 seconds. This data is determined next to each other to help a self-driving vehicle settle on choices like when to move to another lane. More seasoned AI calculations keep an eye on level in their ability once a specific measure of information has been caught, yet profound learning models keep on improving their presentation as more information is gotten. This makes profound learning models unquestionably progressively versatile and itemized; you could even say profound learning models are undeniably increasingly free.[5]

IMPORTANCE OF ARTIFICIAL INTELLIGENCE

In the words of the originator and President of AI organization SPARK COGNITION, Mr. Amir Husain, "Artificial Intelligence is kind of the second coming of software. It's a form of software that makes decision on its own, also able to act even in situations not foreseen by the programmers. It has wider latitude of decision making as opposed to traditional software."

These exceptional qualities make AI important through numerous ventures, regardless what kind of job it can be, for instance, helping guests and staff advance around a corporate ground or observing a breeze turbine to foresee when it will require fixes. AI's are also utilized regularly in frameworks that catch immense measures of information. For example, the board frameworks gather information from sensors attached to different resources. The information collected are then contextualized by AI calculations and communicated to human leaders who would upkeep the requests.

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[5] https://builtin.com/artificial-intelligence - What is Artificial Intelligence?

Now Mr. Husain also said that man-made consciousness is a vital partner with regards to searching gaps in PC organized barriers. He also added that as a result of expanding multi-faceted natured jobs, man-made reasoning is assuming an expanding job in this field too. Certain issues cannot be handled by AI, and that is when human beings come into play. Therefore, Artificial Intelligence and Human Beings should go hand-in-hand.

For example: Programming like Sales-Force requires substantial human interaction to stay exceptional and accurate. So, in any case, if man-made reasoning is applied, an ordinary CRM framework changes into an auto-updating structure that keeps in check the relationship with the executives.

Artificial Intelligence has also been useful in the field of finance. The President of man-made consciousness attendant organization Flybits, Dr. Hossein Rahman worked with TD Bank to coordinate man-made reasoning into normal financial activities.

"Utilizing this innovation in the event that you have a home loan with the bank and it's up for restoration in 90 days or less… in case you're strolling by a branch, you get a customized message welcoming you to go to the branch and re-establish the buy.", he said.[6]

ETHICAL ISSUES RELATING TO ARTIFICIAL INTELLIGENCE TECHNOLOGY

From 1927 to 2019 there have been in excess of 100 movies created worldwide about computerized reasoning. In motion pictures, for example, The Terminator, The Matrix, Avengers: Age of Ultron and numerous others, the film business set into our mutual creative mind scenes showing how progressively clever machines will assume control over the world and subjugate or absolutely wipe mankind from presence. This is one part of the problem. There are few certain issues that concern the Artificial Intelligence Technology, which are as follows:

   i.   **JOB LOSS AND WEATH INEQUALITY**: Completely incorporating man-made intelligence into various jobs, there is a possibility that people would

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[6] https://medium.com/@vg4gupta/artificial-intelligence-the-trade-secret-of-new-era-companies-1edfaa5bf1f5

start losing their positions, and maybe their jobs. In a report it was published that by 2030 about 80 million people would lose their jobs to stimulated intelligence driven robots. These robots maybe entrusted with easy to most complex jobs that a human being cannot carry out. But this may also cause new opportunities to rise for the people, because human experience is needed to make and fix such AI technology in the first place.[7]

ii. **INACCURACY OF AI**: No one could possibly say that an AI is perfect. It can make mistakes, not that anyone has heard off. They are not safe from committing errors but they also set aside the effort to get helpful. If they prepared well, then the AI's function to their full ability. But if any mistakes is made in internal programming, then the AI would not function properly and would make mistakes, and it can be harmful. For instance, Teka Microsoft's computer-based intelligence Chabot, Taya, which was discharged on Twitter in 2016. In less than one day, because of the data it was accepting and gaining from other Twitter clients, the robot figured out how to regurgitate bigot slurs and Nazi promulgation. Microsoft shut the Chabot down quickly since permitting it to live would have clearly harmed the organization's reputation.

iii. **ROGUE AI**: It's true that AI's can commit errors. But, also with committing errors there is a possibility that they could denounce any kind of authority or make unintended results from its activities. The present-day scientists say that recent AI innovations are not fit for such kind of behaviour, but in the future the supercomputers may show signs of such behaviour.

iv. **AI BIAS**: Artificial Intelligence has gotten logically inherent in facial and voice affirmation systems, some of which have real business proposals and directly influence people. These systems are helpless against inclinations and blunders presented by their own creators. However, the information used to prepare these AI's can have inclinations. For instance, Microsoft, IBM had inclinations when distinguishing individuals' gender. The system had been identifying whiter skin males than darker skin men. Even in Amazon's Artificial Intelligence carrying out the contracting and enrolment

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[7] https://kambria.io/blog/the-7-most-pressing-ethical-issues-in-artificial-intelligence/

end preferred male candidates over female candidates. The ground for such preference came from a 10-year span of information mainly from male competitors. AIs build up a specific predisposition towards or against race, sex, religion or ethnicity; at that point the deficiency will lie for the most part on how it was educated and prepared. In this way, individuals who works in man-made intelligence investigate need to remember predisposition while figuring out what information to utilize.[8]

Therefore, the question that arises in this field is that how and what mechanism will be best suited for legal protection of such diversified technology which has an immense importance in safeguarding the business ideologies and enhancing the performance too. As it is already discussed above about the Trade secret protection that AI can achieve, however being technology it also clashes with the Patent system and as we know it has diversified area and elements it also at some point clashes with Copyright being a software creation.[9]
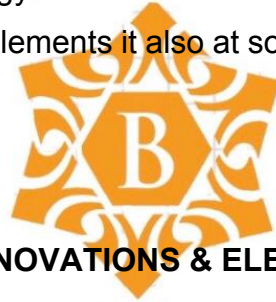
ARTIFICIAL INTELLIGENCE INNOVATIONS & ELEMENTS WELL SUITED FOR TRADE SECRET PROTECTION.

Artificial Intelligence often consists of elements that would be best ensured by trade secret protection. A trade secret is any business data that gives an economic benefit and provides a competitive advantage because of the data not being commonly known by the public. However, keeping such information and elements of the technology secret will disqualify such technology from getting other intellectual property protection. Therefore, the company must choose between one form of intellectual property and another.

In case of patent protection and copyright protection, the applicant seeking protection is required to publicly disclose information related to the innovation. As such securing

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[8] Artificial Intelligence: What kind of IP Protection: https://www.mondaq.com/italy/Intellectual-Property/767332/Artificial-Intelligence-What-Kind-Of-IP-Protection
[9] https://medium.com/@vg4gupta/artificial-intelligence-the-trade-secret-of-new-era-companies-1edfaa5bf1f5

patent protection and maintaining trade secret are mutually exclusive intellectual property strategies. On the other hand, copyright protection can be secured in such a way that any trade secret information contained in copyright can be rendered to maintain the secret status of the information. Artificial Intelligence related inventions generally use techniques like machine learning, deep learning and neural networks. According to the 'WIPO publication 1055 – Technology Trends 2019', the most predominant Artificial Intelligence functional applications have been filed in the fields of telecommunications, transportation and life and medical sciences with activity mainly in computer vision, natural language processing and speech processing.

Now, the important factor is to recognise that an Artificial Intelligence related invention is not a single invention but a combination of several. The identification of these various inventions facilitates the possibility of securing trade secret protection of Artificial Intelligence related innovation and elements. Generally, these inventions could be a computational or a mathematical method or an algorithm or a combination of both. However, the issue that comes up is whether these combinations can be captured in a claim or will that reduce the scope of protection. If we take a look in the foundation of any Artificial Intelligence based technology it can be derived that the technology is totally based on its algorithms or mathematical models which are not eligible for patent protection or any other intellectual property protection. In India and many other countries, have an absolute ban on the patentability of algorithms and computer programs unless it produces a technical effect or technical contribution which will be difficult to establish in an Artificial Intelligence related invention[10]. These algorithms will be constantly revised and updated, and with these new inventions being created would require exclusive protection.

There are several types of information related to Artificial Intelligence innovations that are well suited for trade secret protection. Some aspects of Artificial Intelligence are protectable with Trade Secret include:

- **Technological Know-How:** This aspect determines the value of the business information generated by the Artificial Intelligence innovation works. A company can achieve a competitive advantage if the way of getting Artificial

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[10] Section 3(k) of Indian Patents Act, 1970 states that a mathematical or business method or a computer programme per se or algorithms are not considered as inventions which qualify for securing patent protection.

Intelligence to work or to implement machine learning is better than their competitors. This know-how behind the Artificial Intelligence innovation can be protected under trade secret which will prevent others from taking advantage.

- **Algorithms:** This is the most significant aspect of Artificial Intelligence innovation. Algorithms form the foundation of Artificial Intelligence innovations. However, algorithms are generally not eligible for other types of intellectual property protection, such as patents and copyrights. Trade secret protection is the only viable alternative to protect AI Algorithms. When the algorithms are kept secret, others will have no chance of using the algorithms unless they derive it through independent discovery or reverse engineering.

Some other important elements include neural network which further include modular network structure and individual modules, training sets, data output, and other data. Also includes software of AI code; Learning, backpropagation, and other algorithms.

- **Neural Network:** Artificial neural networks are popular Artificial Intelligence implementations which have two categories where patents can be used to protect node architectures, network topologies, feature extraction and related signal processing in networks, while trade secret protection can be used to protect many themes with patent protection qualifications. However, related technologies must be kept confidential. Trade secret protection may be an ideal choice for rules, training methods, databases, and business methods for artificial intelligence system development.[11]

DEVELOPING STRATEGY:

Maintain "Reasonable Measures" of secrecy may vary depending on a company's size and resources. However, written policies should control the trade secret management, and employees should have contractual obligations to protect the trade secret of the company. From the initial stage, the companies should consider a trade secret protection program which goes beyond "reasonable measures." In such scenario a robust "belt-and-suspenders" is the key to manage the trade secrets and

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[11] Juha Vesala & Rosa Maria Ballardini, 2019, "AI and IPR Infringement: A Case Study on Training and Using Neural Networks" Helsinki University

these robust measures at the outset will diminish the likelihood of misappropriation and enable rapid detection of misappropriation when it occurs.[12]

TRADE SECRET PROTECTION V. PATENT PROTECTION:

- **Patentability:** Whether the information under consideration is patentable or not becomes the initial stage of determination. When the information is not patentable, it is better for the company to invest resources on trade secret protection.

- **Term of Protection:** Patent protection provides a protection for twenty years from filing the application or from the earliest priority dates. However, patents are not granted the day they are filed, the period of time a granted patent may be less than 20 years or in some cases substantially less. On the other hand, trade secret protection is flexible regarding the period of information protection as there is fixed limitation of period. Therefore, a trade secret is more effective at protecting the subsequent improvements and evolution of an invention without incurring significant additional costs or efforts.

- **Injunctions:** If either company A or company B generally considers money damages as Inadequate, trade secret protection may be the better option. In 2006, the Supreme Court raised the threshold for obtaining injunction for patent infringement. What was once an automatic injunction upon a finding of patent infringement became instead discretionary relief that is granted only upon the showing of four factors:

  i.   Whether the plaintiff suffered an irreparable injury;

  ii.   Whether remedies available at law are inadequate to compensate for that injury;

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[12] Dominika Galajdova, Vol 10, No 1, 2019, "Artificial Intelligence as a new challenge for software law." European Journal of Law & Technology.

iii.   Whether considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and

iv.   Whether the public interest would not be disserved by a permanent injunction.

The results were almost immediate, with substantially fewer injunctions. By reducing the threat of an injunction, the Court in the eyes of some decreased the potential reward for asserting patent infringement and the risk in defending against patent infringement charges.[13]

- **Disclosure:** The foundation of trade secret protection is based on the non-disclosure of economically valuable information. For example, companies A and B may prefer to protect their patentable inventions as trade secrets to prevent the flow of information to their competitors. While comparing to trade secrets, the criteria of disclosure for patent application, once published, may give competitors an important strategic insight into what a company is doing or is planning to do and achieve. Such competitive intelligence might give bigger and better financed rivals a competitive head start in developing a competing product. Moreover, rivals may use this information to design around or even make patentable improvements to the company's inventions.[14]

- **Cost:** A company will have many effective ways for protection of valuable information, i.e., innovations and inventions, but it will likely choose what it can afford. It is generally true that procuring patents is, far more expensive than creating a trade secret.

  Whilst the list is not exhaustive, these five factors are likely to be the most relevant and should always be considered in a trade secret versus patent analysis.

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[13] eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388 (2006).
[14] Ignatius Horstmann, et al., Patents as Information Transfer Mechanisms: To Patent or (Maybe) Not to Patent, 93(5) J. OF POL. ECON. 837 (1985).

INDIAN POSITION:

In India there is no proper and specific legislation to protect trade secrets and confidential information. Based upon the principle of equity and common law action of breach of confidence, i.e., breach of contractual obligation the whole system of trade secret is upheld by the Indian Courts. The remedies which are available to the owner of the trade secrets is to obtain an injunction restraining the licensee from disclosing the trade secret, return of all confidential and proprietary information and the compensation for any losses suffered due to disclosure of trade secrets.

The Delhi High Court in the case of *John Richard Brady and Ors v. Chemical Process equipment's P. Ltd. and Anr*[15] invoked a wider equitable jurisdiction and awarded injunction even in the absence of a contract. Therefore the intersection of patents and trade secrets can be described as a delicate balance of disclosure and secrecy. The USPTO views that trade secret protection is "an alternative to patent protection." But the position of trade secret protection is better than the patent protection on the basis of the points we have discussed earlier. The position of India in relation with the trade secret is not clear as no proper law has been implemented so the law regarding the trade secret should be made for greater understanding in the Indian jurisdiction.

CONCLUSION

There are many creating Patent, Trade Secrets, and Copyright law aspects explicit to Artificial Intelligence innovation, an extremely new frontier. While these legitimate issues are perplexing and will persistently advance, it is significant for organizations that are building and selling simulated intelligence-based items to set up a proactive and complete procedure for IP assurance and danger assessment. Such a methodology ought to incorporate and not just measures to make sure about Patent, Trade Secrets, Copyright and Design assurance where accessible yet additionally measures to screen outsider IP rights and survey related dangers. The crossing point of licenses and proprietary advantages can be portrayed as a sensitive parity of revelation and secrecy. The USPTO sees that proprietary advantage security is "a

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[15] AIR 1987 Delhi 372.

choice to patent protection." However, the situation of Trade Secret protection is better than Patent protection based on the focuses examined before. The situation of India in connection with the proprietary advantage isn't clear as no legitimate law has been executed so the law with respect to the proprietary advantage ought to be made for more noteworthy comprehension in the Indian jurisdiction. What to pick between the Patent and Trade Secret exclusively relies upon the organization or innovator or rely upon what kind of creation is being to be secured.