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Bengaluru



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Bengaluru



Bangalore Institute
of Legal studies
Bengaluru

Proceedings of **ONE DAY NATIONAL CONFERENCE ON INTELLECTUAL PROPERTY RIGHTS [NCIPR-2023]**

21 JULY, 2023



Organized by

VIJAYA COLLEGE

R V Road, Basavanagudi, Bengaluru 560 004.

Affiliated to Bengaluru City University, Accredited by NAAC with 'B++' Grade
Accorded by UGC as "College with Potential for Excellence"

AND



In Association with

BANGALORE INSTITUTE OF LEGAL STUDIES

Affiliated to Karnataka State Law University and Approved by Bar Council of India
R V Road, Basavanagudi, Bengaluru 560 004.

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Full Length Papers

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Sri. G V Viswanath, IAS (Retd.)

President, BHS HES, Bengaluru.

Message

The One Day National Conference on "Intellectual Property Rights" is timely. There are numerous complications in this matter that have to be discussed, and a greater understanding of the implications has to be analysed. I am sure this conference will throw up interesting ideas, and also tell us, among other things, how we can promote our unique products, and also protect our own heritage products from being subjected to copyright by others.



Sri. N B Bhat, IPS (Retd.)

Secretary, BHS HES, Bengaluru.

Message

Conferences and seminars provide good platform for sharing latest developments in a particular field of study .One day National Conference on Intellectual Property Rights, organized by Vijaya College, RV Road in association with Bangalore Institute of Legal Studies, is one such opportunity for students and scholars to know and understand more about IPR. My best wishes to the organizing team and the participants for the successful event.



Dr. K S Sameera Simha

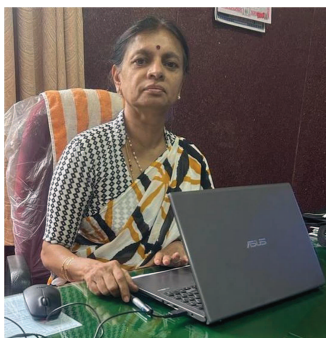
Dean, Vijaya College, R V Road, Bengaluru
and
Joint Secretary, BHS HES, Bengaluru.

Message

I am totally impressed by this concept of conducting the National Conference on Intellectual Property Rights. Conducting conferences is one of the powerful ways of giving total education on a needed important topic in a democratic country.

The understanding on this is needed for every young citizen of the country. Students also learn the method of conducting conferences.

Thus this conference is a fitting program of education of a college of the order of Vijaya College. I congratulate the principal, members of faculty and the students involved in conducting this useful conference.



Prof. K S Shailaja

Principal, Vijaya College, R V Road, Bengaluru.

Message

The need of the hour today is to be aware of Intellectual Property Rights and its implications. There is an enormous amount of innovativeness across the globe. To safeguard one's creativity and beget the credit for originality, knowledge of IPR is paramount. I hope this platform dealing with IPR will be beneficial to all.



Prof. Preeti S. Desai

Principal, Bangalore Institute of Legal Studies
R V Road, Bengaluru.

Message

It is not a cliché to say that the 21st century is owned by innovators. Without doubt, the world today is dominated by the path-breaking advancements in science and technology, touching the lives of mankind in unprecedented ways and to an unimaginable proportions. The genetically modified organisms, the human genome projects, coupled with the vast potential being unleashed by artificial intelligence are some such earth-shattering inventions that are taking the global scientific, commercial, and legal regime by a storm. The role of scientific community and innovators has grown so exponentially that the law and society of the new millennium are in fact finding it challenging to cope with the persistently growing demands for protection, recognition, and proliferation of the intellectual and commercial rights of such inventors. It is heartening to note that the sovereign countries have been delicately balancing this daunting task of reconciliation of community rights vis-a-vis individual interests, like a skillful and artistic ballerina, through the intellectual property rights regime. IPRs have become so indispensable today that it is inconceivable to imagine any sphere of activity without one or the other aspect of creativity and the rights associated with it are being felt.

In this context, it goes without saying that the academic community has a stupendous responsibility of disseminating the knowledge of and about IPRs wherever and whenever possible! I am extremely elated to note that Vijaya Degree College, R V Road, in association with Bangalore Institute of Legal Studies, is organising one day National Conference on IPR on 21-07-2023. I am sure that it will provide a stimulating platform to the participants to articulate their views on the multifarious dimensions. I wish the conference a huge success!!

Editorial.....



Dr. Nethravathi B P
Convenor, NCIPR – 2023
Editor

I am extremely happy to share that a One-Day National Conference on Intellectual Property Rights held on 21st July 2023 was organized by Vijaya College, R V Road, Basavanagudi, Bengaluru in association with Bangalore Institute of Legal Studies, R V Road, Basavanagudi, Bengaluru with active support from BHS HES, Bengaluru, co-sponsored by Canara Bank, Bengaluru.

The theme of the conference was chosen based on industry demands and academic requirements.

In this connection, it was proposed to compile research papers and abstracts received from various professionals and students in the form of a book. After scrutiny, a total of 27 abstracts were selected and printed as abstract book and distributed to all participants.

The conference NCIPR-2023 witnessed 276 participants with 25 paper presentation and 03 invited talks by the speakers. A total of 10 full length papers have been selected after scrutiny and review by the experts in the field of Intellectual Property Rights. Also, the book comprises of key note address and two special invited speakers' write-ups.

I hope the effort made to bring the proceedings in a book of full length papers becomes a source of reference for present and future research persons working on IPR and related field.

I thank RRRNA for allotting ISBN number for the conference proceeding Book.

I am grateful to have the opportunity to be the convener of the conference and editor for this Proceedings book. I thank the patrons, committee members, my colleagues and all those who have responded and contributed to the success of the conference.

Acknowledgement

SPEAKERS

1. Mr. T. S. Sridhar

Senior Counsel (General Electric, USA) (Retd),
Member, BHS HES

2. Dr. K V Shantha

Associate Professor (Retd),
Department of Mathematics, University of Delhi

3. Mr. M.G. Kodandaram, IRS,

Assistant Director (Retd),
Advocate And Consultant

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TECHNICAL COMMITTEE INCHARGE

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CPE Coordinator

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Invited Talks

Technical Session 1



Mr. T. S. Sridhar
Senior Counsel IP (General Electric, USA) (Retd.)
Member, BHS HES, Bengaluru

Nation, Innovation and Intellectual Property

Nation – Developed Vs Developing countries

Countries are classified by the United Nations, into **developed and developing countries based on the** industrialization, the standard of living, **GDP, GNP, per capita income**, which all play a significant role in the nation's economy.

Global Innovation

Innovation is the practical application of ideas that result in different new types of new offerings, like products, services, processes, and business models, intending to improve or disrupt existing applications or creating new solutions.

Global Innovation Index (GII) - Intellectual property role in GII

The World Intellectual Property Organization (WIPO), a United Nations specialized organization, created the GII which strives to represent the multi-dimensional aspects of innovation assessment and comprehensive analysis across 132 economies. The index, which consists of around 80 metrics categorized into innovation inputs and outputs, rates international economies based on innovation activities.

- **Innovation inputs metrics** include Facilities; Market competence; Business expertise; Organizations; Human Resources, and Research.
- **Innovation output metrics** include information and technology, innovative, and creative outputs (**Intangible – Patents, Trade mark, Copyright etc...**)

The World's Most Innovative Countries

Switzerland, the United States, Sweden, the United Kingdom and the Netherlands are the world's most-innovative economies, according to WIPO's 2022 Global Innovation Index (GII). China is nearing the top 10 while Türkiye and **India enter the top 40 for the first time**, according to the GII 2022.

Innovation and Intellectual Property

Innovation means doing something new that improves a product, process or service. Many innovations can be protected through intellectual property (IP) rights

Inventions and patents

Inventions are the bedrock of innovation. An invention is a new solution to a technical problem and can be protected through patents. Patents protect the interests of inventors whose technologies are truly ground-breaking and commercially successful, by ensuring that an inventor can control the commercial use of their invention. An individual or company that holds a patent has the right to prevent others from making, selling, retailing, or importing that technology. This creates opportunities for inventors to sell, trade or license their patented technologies with others who may want to use them.

More than 85% of all patent filings in 2021 occurred in China, US, Japan, Korea and EPO (European Union)

- The top 10 countries accounted for 96.1% of the world total in 2021.

The GIPC Index consists of five key sets of indicators to map the national intellectual property environment for the surveyed countries.

The major indicator categories are:

1. Patents, related rights and limitations
2. Copyrights, related rights and limitations
3. Trademarks, related rights and limitations
4. Enforcement
5. Membership and ratification of International Treaties

IP as a career

Intellectual Property (IP) opens doors to a plethora of career opportunities and choices. With very few exceptions, IP as a field is inter-disciplinary, and multi-disciplinary expertise is an essential element for success in the field. From science and technology, to business, economics, management and law, IP pervades several streams.

Some basic career options available to an aspiring IP professional are:

Patent Research and Analytics, Patent Drafting and Filing, Patent Prosecution, Patent Maintenance and Portfolio Management, Patent Licensing and Technology Transfer, Patent Strategy, Patent Valuation, Patent Development and Co-ordination and Patent Litigation and Alternative Dispute Resolution

Trade Mark Search, Filing, Prosecution and Maintenance, Trade Mark Litigation, Trade Mark Management, Trade Mark and Brand Licensing, Franchising and Merchandizing.

CONCLUSION

IPRs play a crucial role in driving economic growth, GDP and Per Capita Income of the country by driving, nurturing and protecting innovation, through commercialization of IP, particularly Patents and Trademarks, while other forms of IP like copyrights too play a significant role. India though ranked 40th in the Global Innovation Index for the first time, has significantly progressed in the enhancement and nurturing Innovation as it is ranked 7th in the top 10 patent filing countries in the world by the world Intellectual property ranking in 2022.

India needs to not only Innovate, protect innovation through IP filing like patents, it should also utilize the “**Make in India**” initiative by the Government and start **commercializing IP** my manufacturing products for the Indian and world markets, License some of the key patents to generate revenue eventually moving ahead in world Innovation index ranking, eventually raising the **per capita income** as well as **GDP** of the country.

* * * * *

Technical Session 2



Dr. K V Shantha
Associate Prof (Retd.) University of Delhi

Intellectual Property Rights in Research and Academia

Intellectual property is created by the brain power of an individual or a group of people. As compared to material property which can be bought, shared, or transferred, intellectual property cannot be exchanged or divided. Unfortunately, intellectual property can be stolen from its rightful owner(s). This is especially problematic in the realm of academia, where many students and teachers make cutting-edge research their life's pursuit. The loss of a lifetime of original work can be devastating and career-ending to such hardworking researchers. To protect and nurture new breakthroughs in academic research, and to enable new frontiers to be scaled in various fields of learning, intellectual property rights become a mission-critical part of academia and research. In today's world, with the prevalence of the Internet across the world, content from published research and academic conferences becomes easily available to many. This makes plagiarism very easy to accomplish but very difficult to track. IPR is extremely important as this prevents the theft of knowledge and property from academicians and enables the bedrock of integrity and ethics in research to be preserved intact.

In research and academia, there are two main types of intellectual property rights: copyrights and industrial property rights. Copyrights are typically associated with creative works like research papers, software programs including mobile applications, and hardware architecture

and design specifications for semiconductor chips. Industrial property rights are associated with the design and operation specifications for movable objects, patents, trademarks, and the external appearance, including the three-dimensional specification, of an innovative research product. While copyrights in academic research span across all academic domains, industrial design rights typically tend to be focused on research related to engineering, science, and technology.

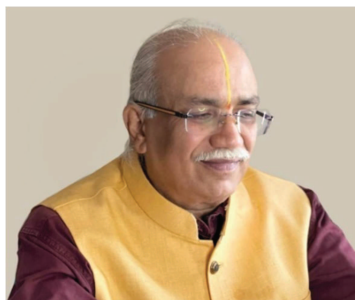
IPR considerations in academic research are not just limited to institutions of learning. Collaborative research can include academicians from different parts of the globe, where IPR laws and regulations across a spectrum of countries need to be taken into consideration.

Research can also include collaboration between corporate titans and universities, a prominent example of which is how companies like Google work closely with researchers from different universities to build new products.

IPR in research is vital to foster innovation and creativity to thrive, and to ensure that researchers feel secure that their work will be protected and rewarded justly.

* * * * *

Technical Session 3



Mr. M. G. Kodandaram, IRS
Assistant Director (Retd.)
Advocate & Consultant

Navigating Indian Economy through Intellectual Property

The Indian economy, with its massive population exceeding 1.3 billion and rapid developmental strides, holds immense potential for future growth and advancement. Positioned as one of the world's fastest-developing economies, India offers a diverse workforce and an expansive consumer market. While recent times have witnessed both optimism and concerns about India's GDP growth due to the pandemic-induced slowdown, recent quarters have showcased signs of recovery and positive growth.

Agriculture remains a cornerstone of India's economy, employing a substantial portion of the population and ensuring food security. The manufacturing sector, including Micro, Small, and Medium Enterprises (MSMEs), holds strategic importance for economic development and job creation. By harnessing technology and global supply chains, India's manufacturing sector has demonstrated adaptability and resilience. Initiatives like 'Make in India' and 'Atmanirbhar Bharat' (Self-Reliant India) aim to bolster domestic manufacturing and decrease dependency on imports. Furthermore, the services sector, encompassing Information Communication Technology (ICT), fintech, and tourism, contributes significantly to India's GDP.

Globalization has ushered in a transformative era for the international economy, enabling unprecedented exchanges of goods, services, human resources, investments, and ideas. Technological advancements, particularly in communication, have facilitated information sharing and cross-border collaboration.

IPRs in the Global Context

In developed economies, IPRs have emerged as powerful drivers of economic growth, nurturing innovation and ensuring market competitiveness. IP plays a pivotal role in shaping a nation's economic expansion and competitive edge. Developed nations prioritize creating intangible assets through IPRs to propel their economies forward. India, as one of the world's largest and rapidly growing economies, also recognizes IPRs' significance in encouraging innovation, attracting investments, and fostering economic development.

India's IPR landscape encompasses legal rights granted to individuals or entities for their intellectual creations, such as inventions, trademarks, copyrights, and designs. These rights offer creators and innovators exclusive opportunities to commercialize their works, fostering further creativity and innovation. IPRs are crucial for supporting innovation, spurring economic growth, and overall development. With its diverse economy, India acknowledges the role of IPRs in becoming a global economic powerhouse. Key aspects of India's IPR landscape include:

1. **Patents:** Patents provide inventors with exclusive rights to their creations for a limited period, promoting technological advancements across sectors like pharmaceuticals, biotechnology, IT, and renewable energy. India has made strides in patent law, aligning with global standards through initiatives like the Patent Cooperation Treaty (PCT) system.
2. **Copyrights:** Copyright protection safeguards original works of authorship, fostering creativity and artistic expression. India's Copyright Act offers comprehensive protection and was updated in 2012 to align with digital rights management.
3. **Trademarks:** Trademarks protect distinctive symbols, names, or logos, enabling businesses to establish brand recognition and competitive advantage. Strong trademarks contribute to brand reputation and market competitiveness.
4. **Industrial Designs:** Industrial designs protect the visual appearance of products, encouraging aesthetic innovation and rewarding creators.
5. **Geographical Indications (GIs):** GIs protect products linked to specific regions, preserving cultural heritage and supporting local economies.
6. **Traditional Knowledge (TK):** TK safeguards indigenous knowledge, offering economic potential while respecting cultural heritage.

Commercializing IPRs for Economic Growth

Commercializing IPRs involves transforming intellectual assets into profitable products, services, or licensing opportunities. Effective utilization of IPRs is essential to achieve commercial benefits. Various approaches to commercialization include licensing, technology transfer, spin-offs, franchising, collaborations, and more. Leveraging IPRs enables creators and organizations to monetize innovations, attract investments, and stimulate economic growth.

In a knowledge-driven economy, IP constitutes intangible assets generated through intellectual endeavors. Businesses now recognize the significance of IP in enhancing value and gaining a competitive edge. IP contributes to economic growth by promoting innovation, attracting investments, and driving entrepreneurship. Additionally, it supports branding, market competitiveness, and the creative industries, fostering a culture of continuous innovation.

IP's Economic Impact

IP's influence on the economy is substantial and multifaceted. It fuels innovation, economic growth, and competitiveness. A robust IP framework, with effective laws, enforcement mechanisms, and awareness programs, maximizes IP's economic benefits, sustains innovation ecosystems, and supports development. IP stimulates innovation, fosters economic growth, encourages FDI, and enables technology transfer and collaborations.

India's IP landscape faces challenges such as backlog, piracy, enforcement, and public awareness. However, opportunities abound through innovation, collaborations, start-ups, and leveraging digital transformation. Strengthening enforcement, supporting R&D, and facilitating technology transfer are vital for India's economic progress through IP.

Charting the Course Ahead

IPRs play a pivotal role in driving economic growth, innovation, and competitiveness. By effectively managing and navigating the Indian economy through IP, India can unlock its immense potential and emerge as a global leader in innovation and economic prosperity. Embracing the power of IPRs enables India to harness opportunities in the evolving global economy, driving sustainable and inclusive development for the benefit of all. Through strategic policy reforms, innovation promotion, and collaboration, India can position itself as a knowledge-driven economy and drive long-term growth and prosperity.

* * * * *

Full Length Papers

A Critical Analysis on the Copyright in the Cyberspace

Ashraya. S. Chakraborty¹, Shreya Gopi²

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²Universal School of Law, Bangalore.
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I INTRODUCTION

Cyberspace is a type of living organism¹ that is ever-evolving over time. Although theoretically simply existing in computer memory, cyberspace is a virtual environment that is alive and interactive.² As a result, the legal system needs to tighten up and catch up. Although this new frontier will never cease developing, it may still be too early to decide how to manage it. However, as it becomes increasingly ingrained in (and essential to) our everyday lives, many are worried about defining appropriate behaviour in this new environment. These days, it is possible to exchange, distribute, circulate, and save electronic copies of voice files, music files, images, money, news stories, clips, biodata, letters, and many other sorts of information. Thus, the modern generation is heavily dependent on computer technology due to the simple interface and efficient processes carried out in an electric manner through computers. Through this, the threat of the worst form of criminality known as "Cyber-crime" exists.³

Computer and internet usage are widely accepted and now permeate modern commerce and society at large. In the era of modern business, the benefits of computers and cyberspace are immeasurable, and this contemporary society cannot run properly without them. Gains have downsides, though. The fact that computers can be used from any location and have no geographic limits has made this even more practical. E-commerce is very common these days, especially among enterprises. The benefits and reach of e-commerce or company on the World Wide Web can quickly and effectively reach web users everywhere in the world. However, this has facilitated the rise of cybercrime.⁴

II COPYRIGHT LAW AND ITS INTENTIONS

¹Illegal and harmful content on the Internet: Communication from the European Commission to the European Parliament, Available at: <https://www.law.indiana.edu/fclj/pubs/v50/no1/wilske.html>. Accessed on 29.06.2023 at 06:23 AM

²3 Darrel Menthe, Jurisdiction in cyberspace: A theory of international space, Available at: <https://www.mtlr.org/volfour/menthe>. Accessed on 29.06.2023 at 08:42 AM.

³Prof. Tripti Bhushan & Yash Arora, 'Intellectual Property Rights and Its Protection in Cyberspace and media laws' Vol-6 Issue-6 2020, IJARIE-ISSN(O)-2395-4396, http://ijarie.com/AdminUploadPdf/Intellectual_Property_Rights_and_Its_Protection_in_Cyberspace_and_media_laws_ijarie13_054.pdf. Accessed on 29.06.2023 at 10:20 AM.

⁴Harish Chander, Cyber Laws and IT Protection, PHI learning Private Ltd. Publication, New Delhi, 2012, at page no. 14.

The purpose of the copyright, according to its seventh objective, is to safeguard the artistic labour of others, stimulate authors, composers, and directors to make original works, and grant them the sole right to reproduce. Original works of literature, theatre, music, art, cinematography, sound recordings, and computer software are all protected by copyright.⁵

The production and distribution of books, periodicals, and newspapers; the creation of dramatic and musical works for performances; the publication of musical works and films; broadcasting; and many more businesses make up today's copyright labour. Being Intellectual Property, copyrights are more easily and swiftly transferred from one country to another than other types of property.⁶The development of technology has simplified and made copyrighted content simple to duplicate. Consequently, it is difficult and frequently impossible to control copyright infringement. Books, recorded tapes, video cassettes of movies, and computer software can easily be transported from one country to another, manufactured into thousands of copies, and distributed. Worldwide, unauthorised home recording of radio and television shows has grown commonplace.⁷

III Physical Characteristics of Copyright

1. It is very important IPR for progress & improvement of intellectual & culture of the society.
2. Copyright is the intangible property right which requires originality and creativity in the work and it
3. encourage & motivate the creativity of authors. Author's right was born immediately when work was created.
4. Copyright is legal and moral right & which protect expression of idea and not idea itself.
5. It is bundle of exclusive rights means it include right to reproduction, communication, adaptation, translation
6. and sell the creative work for certain period of time.
7. It consist neighbouring rights which includes right of performer, producers of phonograms & broadcasting
8. organization.
9. It is heritable, transferable and automatic right means it does not require any formality of registration.
10. It maintains a balance between social & personal interest by including some exceptions like fair use it does not amount to infringement.

⁵Copyright Law WIPO, available at: www.wipo.int. Accessed on 29.06.2023 at 11:30. AM.

⁶Narayanan, P., Law of Copyright and Industrial Designs (Eastern Law House Publication, Kolkata, 3rd edn., 2002).

⁷Dr. Gupta & Agarwal, Cyber Laws, Premier Publishing Company, Allahabad, 2010

Civil & criminal remedies available against the infringement of copyright. Copyright law not only punish those who copy, distribute, download but also person who enables copying, download or communication with public is called as secondary infringer.⁸

IV The Information Technology Act, 2000

Digital signature, electronic governance, attribution, acknowledgment, and dispatch of electronic records, security of electronic records and digital signatures, regulation of certifying authorities, obligations of those who purchase digital signature certificates, a cyber-regulation appellate tribunal, and offences and liabilities of network service providers are just a few of the many topics covered by the Act. The Indian Evidence Act, the Indian Penal Code, the Bankers' Books Evidence Act, and the Reserve Bank of India Act are the four schedules that specify the appropriate adjustments that must be made to each of these acts.⁹

The aims of the Act:

1. In order to ease the harmonisation of the rules governing alternatives to paper-based methods of communications and information storage, the United Nations has called on all governments to give model legislation favourable consideration when they establish or modify their laws.
2. To give legal recognition to transactions made through electronic data exchange and other forms of electronic communication, often known as e-commerce, which uses alternatives to paper-based methods of information storage and transfer.
3. To make it easier to file documents electronically with government organisations in order to encourage effective service delivery by way of trustworthy electronic records.¹⁰

V Copyright Infringement in the Cyberspace

Digital technology has made it easy to copy content from one site, edit it, or simply reproduce it on another site, which has presented significant issues for the traditional interpretation of individual rights and protection. It only takes a mouse click to download, upload, save, transform, or create a derivative work. Because it incorporates text, pictures, and even audio and video, a web page qualifies for copyright protection just like a book, magazine, or

⁸Mrs. Kavita R. Yadav, 'Copyright In Cyberspace' An International Peer Reviewed & Referred Scholarly Research Journal for Interdisciplinary Studies, ISSN 2278-8808, SJIF 2015:5.403, PP4370- 4371, Accessed on 29.06.2023 at 12:09 PM

⁹JIPR13(1)(2008)35-42

¹⁰Dr.Farooq Ahmad, Cyber Law in India, New Era Law Publications, New Delhi, 2012,Page No.28.

multimedia CD-ROM. The owner has the sole authority under copyright law to permit the reproduction of copyrighted works, the preparation of derivative works, distribution, etc.¹¹

VI A work Prima Facie determined as violated the Copyright norms

- a. When someone violates the terms of a licence that has been granted or a condition imposed by a competent authority under this Act, or when they act without a licence granted by the owner of the copyright or the Registrar of Copyrights under this Act
 - i. Does anything for which the owner of the copyright is granted the exclusive right by this Act;
 - ii. Allows for profit the use of any location for the communication of the work to the public where such communication constitutes a violation of the work's copyright, unless he was unaware and had no reason to suspect that such communication to the public would constitute a violation of the copyright; or
- b. When any person
 1. manufactures or sells or lets for hire, or
 2. distributes either for the aim of commerce or to such an extent as to harm the owner of the copyright; or
 3. by means of trade shows in public; or
 4. India's imports
- c. Copyrighted works are deemed to have been violated in each of the aforementioned situations. To obtain compensation from the infringer, the owner of the software copyright will need to demonstrate misleading similarity, a strong case, and irreparable harm.

VII Copyright in the Internet Sphere

Finding the line between private usage and public use is one of the fundamental issues copyright owners face in the Internet age.¹² The Indian Copyright Act¹³ makes this distinction between replication for public use and private use, just like all copyright laws around the world¹⁴. Only with the right holder's permission may a reproduction be used publicly. It is still debatable whether communication done through the Internet counts as "communication to the public." The phrase "communication to the public" is defined in great detail in the Indian Copyright Act.

The equivalent of works in digital form is another feature of digital media. All digital works are nothing more than computer-readable bits of information. According to the copyright

¹¹Tabrez Ahmad, *Cyber Law and E-Commerce*, APH Publishing Corp., New Delhi, 2003

¹²Nandan Kamath, *Law Relating to Computers, Internets and E-Commerce* 230 (Universal Law Publishing Co. Pvt. Ltd., 2nd edn., 2005).

¹³Slahuddin Ahmed, "Cybersquatting: Pits and Stops", 1(1) *ILI Law Review* 79, 81 (2010).

¹⁴Zohar Efroni, "The Anticybersquatting Consumer Protection Act and the Uniform Dispute Resolution Policy: New Opportunities For International Forum Shopping?", 26 *The Colum. Jour. of Law & the Arts* 335 (2003).

statutes, author works are classified as extremely distinctive categories with varying regulations and exemptions that apply depending on the nature of the work. While there are some hazy distinctions made between various subject matters, it is typically not too difficult to do so.¹⁵ Although software programmes are regarded literary works in the context of digital media, the actual output of those lines of source code can be interpreted as a wide range of conventional subject matter.¹⁶

VIII Cyberspace and India

The expansion of internet use was first relatively gradual. However, the number of cybercafés in the nation increased dramatically in the late 1990s.¹⁷ As a result, the number of internet users in India has dramatically increased because to the availability of more affordable internet access through cybercafés.¹⁸ Let's examine the data and statistics related to internet usage in India.

The internet has revolutionized today's world; it has a much wider reach than any other form of communication. However, along with this novelty come significant hazards, including the possibility that this gift known as the internet will be abused, leading to an increase in criminal activity and cases of aiding criminal activity that must be controlled. The fundamental characteristics of the internet are its limitlessness and lack of restrictions. This is a fundamental aspect of the internet and presents a serious dilemma when discussing the subject of jurisdictions.¹⁹

IX Issues

Over the Internet, the right of reproduction presents some fundamental issues.²⁰ This results from the fundamental characteristics of Internet transmission. Every stage of transmission involves some form of reproduction. Without temporary copying, messages cannot move across the networks and arrive at their destinations during the Internet transmission process. Temporary copying happens on the user's computer even when they just want to browse. Coverage of the temporary reproductions was a contentious topic at the 34th Diplomatic Conference of the World Intellectual Property Organisation (WIPO)²¹ in December 1996, but

¹⁵ Copyright Issues, available at: <https://www.bidsketch.com/blog/everything-else/copyright-issues/> Accessed on 30.06.2023 at 05:45 AM..

¹⁶ How to Copyright Digital Media, available at: <https://www.legalzoom.com/articles/how-to-copyright-digital-media> Accessed on 30.06.2023 at 06:33 AM.

¹⁷ Indian Jurisdiction of Cyber Space, available at: <https://shodhganga.inflibnet.ac.in/bitstream/10603/188821/10/8%20chapter%206.pdf>. Accessed on 30.06.2023 at 08:45 AM

¹⁸ *Ibid*

¹⁹ Cyber Space and Jurisdiction, available at: <http://jciil.lsyndicate.com/wpcontent/uploads/2016/07/CYBERSPACE-AND- JURISDICTION-FINAL-PAPER-Prevy-Tarunya.pdf>. Accessed on 30.06.2023 at 11:45. AM.

²⁰ Copyright Issues on Internet, Available at <https://www.mondaq.com/unitedstates/copyright/307738/advanced-copyright-issues-on-the-internet>. Accessed on 30.06.2023 at 12:40 PM.

²¹ Intellectual Property Law: Wipo, available at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_909_2016.pdf. Accessed on 30,06.2023 at 02:30 PM.

no agreement was reached. Should a reproduction's usage be restricted when it occurs during an authorised use of the work and its only goal is to make the work perceptible, or when the reproduction is temporary or incidental in nature? Reproduction must take place in a physical form in accordance with Indian law, but it also includes "storing it in any medium by electronic means." There are conflicting views on the legality of temporary reproduction and permanent reproduction until case law clarifies whether reproductions occurring in Internet communications fall under the purview of the right of reproduction granted by the law. It will be fascinating to watch if the courts use the idea of an imitation's economic relevance to bring it into the ambit of the copyright act's reproduction rights.²²

IX Cases

The Sony Case:

The Court continued by stating that, "Under Sony²³," the owner of a copyright cannot extend his monopoly to goods that are "capable of substantial non-infringing uses."²⁴In fact, the most credible explanation for the exponential growth of traffic to the website is the vast array of free MP3 files offered by other users, not the ability of each individual to space-shift music one already owns," said Sony, claiming that Napster had failed to demonstrate that space-shifting constituted a commercially significant use of the service. Therefore, even if space shifting qualifies as a fair use, it is insufficient to shield the user from liability under the law of the staple article of commerce.

MGM v Grokster Case (545 U.S. 913 (2005))

Instead of using the Sony rule in this instance, the Court decided to follow the conventional criteria for contributory infringement and vicarious liability. This case's technology is extremely dissimilar from Sony's.²⁵ According to the court's ruling, a distributor of a product can be held accountable for copyright infringement committed by a third party if they "distribute a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, going beyond mere distribution with knowledge of third-party action." The Court notes that because it would be "impossible to enforce rights in the protected work effectively against all direct infringers, the only realistic alternative is to pursue secondary liability against the distributor of the device."Because there was "no evidence that Sony had desired to bring about taping in violation of copyright or taken active steps to increase its profits from unlawful taping," the

²²Protection of right to reproduction in internet under copyright law <http://medcraveonline.com/FRCIJ/FRCIJ-06-00228.pdf>.

²³The Sony Legacy, available at:

<https://ideaexchange.uakron.edu/cgi/viewcontent.cgi?article=1026&context=akronintellectualproperty>.

Accessed on 30.06.2023 at 03:44 PM

²⁴ Decoding Indian Intellectual Property Law, available at: <https://spicyip.com/2018/08/in-a-copyright-infringement-dispute-delhi-high-court-holds-that-makers-of-kbc-didnt-engage-in-copyright-infringement.html>.

Accessed on 30.06.2023 at 03:47 PM.

²⁵MGM Studio Inc. v. Grokster, available at: <https://supreme.justia.com/cases/federal/us/545/913/>. Accessed on 30.06.2023 at 05:45 PM.

Court distinguished its prior ruling in Sony. When deciding whether or whether the entity was advocating infringement, the Court takes intent into account. The evidence in this case demonstrated unequivocally that Grokster intended to encourage copyright infringement by appealing to former Napster users for business, failing to take action to prevent infringement by users of their software, and profiting from the sale of advertisements.²⁶

X CONCLUSION AND SUGGESTIONS

Since a person invests his skills and effort to create intellectual property, it should be preserved at all costs as one of their most important assets. On the other hand, it is vital that severe rules be implemented in this area so that future crimes involving IPR can be prevented.²⁷ The new domain name dispute law should be created with the intention of providing legal recourse to trademark and service mark owners against defendants who acquire domain names "in bad faith" that are either identical to or confusingly similar to a trademark. It should serve as a crucial tool for trademark owners to defend their intellectual property online. A society over-reliance on security by barriers, rather than conscience, as John Perry Barlow stated in reference to encryption, "will eventually wither the latter by turning intrusion and theft into a sport, rather than a crime."²⁸ The future of copyright in cyberspace may be best determined by people's fundamental ideas of what is fair and equitable.²⁹

Legislations will always lag behind in terms of new technological developments like the Internet, so these legislative bodies must make every effort to anticipate what kinds of technology will emerge that will once more challenge existing or developing copyright laws.³⁰ Copyright disputes will be much easier to resolve if one international body is in place to regulate infringements occurring between the nations. Technological solutions are critical in preventing and detecting copyright infringement.³¹

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²⁸ Atul SatwayJaybhaye, "Cyber Law & IPR issues: Indian Perspective" BLR, 2016.

²⁹ Protection of Copyright in the Digital Environment of ISPs, available at: <https://www.mondaq.com/india/copyright/370058/protecting-copyright-in-the-digital-environment>. Accessed on 30.06.2023 at 11:40 PM.

³⁰ Copyright Protection in the Digital Environment: Indian Perspective and International Obligations, available at: <http://nopr.niscair.res.in/bitstream/123456789/44436/1/JIPR%2022%286%29%20303-310.pdf>. Accessed on 30.06.2023 at 12:10AM.

³¹ Copyright in Digital Era, available at: http://www.rmlnlu.ac.in/webj/alok_kumar_yadav.pdf Accessed on 30.06.2023 at 12:30AM.

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Intellectual Property Rights Vs Science: Prospects and Challenges

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Abstract: *Intellectual Property Rights (IPR) play a crucial role in promoting scientific innovation and encouraging the development of new discoveries. However, application of IPR to science also presents several challenges. This review paper explores the prospects and challenges associated with IPR in the context of scientific advancements. It examines the positive impact of IPR on scientific research, innovation, and knowledge dissemination, while also addressing concerns related to access to knowledge, collaborative research, and the balance between public and private interests. By analyzing these aspects, this paper aims to suggest strategies & solutions to create an environment that values knowledge sharing, which ultimately accelerates scientific progress & maximises the societal impact of scientific research.*

Keywords: IPR, Science, Prospects, Challenges, Strategies, solutions, Future directions.

INTRODUCTION

1. Brief overview of IPR and its significance in scientific research

IPR stands for Intellectual Property Rights. IPR a set of legal rights that protect creations of the human intellect, such as inventions, artistic works, designs, symbols, names, and images used in commerce (1). The main purpose of IPR is to provide incentives for innovation and creativity by granting exclusive rights to the creators or owners, allowing them to control and profit from their intellectual creations. Since Research and Development (R&D) in Science involves huge cost and investment of time, it is right that the researcher reaps the benefit of the findings. At the same time, R&D should also benefit the society as a whole. IPR should ensure that it strikes the right balance in benefits to researchers and to society.

2. Objectives of the paper

The objectives of this paper are:

- 1 To understand the prospects of IPR in science.
- 2 Challenges IPR poses to scientific innovations.
- 3 Strategies to address these challenges by looking into a few case studies.
- 4 Recommending future directions, which bring about a balance between IPR & Scientific advancement.

Prospects of IPR in Science

1. Protection of scientific discoveries and inventions

It involves granting legal rights to researchers, scientists, and inventors to safeguard their intellectual assets, providing them with exclusive control over the use, commercialization, and dissemination of their innovations. Several mechanisms are commonly used to protect scientific discoveries and inventions:

Patents: Patents are the most common form of protection for scientific inventions. They provide exclusive rights to the inventor for a limited period, during which others are prohibited from making, using, selling, or importing the patented invention without the inventor's permission.(2)

Copyrights: Copyright protection applies to original creative works, such as scientific publications, research papers, software code, and artistic expressions. It grants the creator exclusive rights to reproduce, distribute, and display their work for a specific period, usually the lifetime of the creator plus 50 to 70 years. (2)

Trade Secrets: Some scientific discoveries, particularly in industry or technology sectors, may be protected as trade secrets. This involves keeping valuable information confidential and not disclosing it to the public. Trade secrets are protected indefinitely as long as they remain secret and provide a competitive advantage. (2)

Trademarks: Although less common in scientific discoveries, trademarks can be used to protect brand names, logos, and symbols associated with scientific products or services. (2)

Plant Breeders' Rights: In agricultural research, plant breeders may seek protection for new plant varieties they have developed through the Protection of Plant Variety and Farmers Right Act (PPVFR). PPVFR grants exclusive rights to produce, sell, and distribute the new plant variety for a specified period. (3)

2. Encouragement of research and development

The prospects of Intellectual Property Rights (IPR) in science present several opportunities to encourage research and development (R&D) and drive scientific progress. Here are some key prospects of IPR in science that can promote R&D:

Commercialization and Technology Transfer: IPR protection facilitates the commercialization of scientific discoveries and technologies. It provides a means for researchers and institutions to secure licensing agreements and collaborations with industry partners, leading to the translation of research findings into real-world applications. (4)

Investment and Funding Opportunities: Strong IPR protection can attract investment in R&D. Investors are more likely to support research projects and start-ups when they can have confidence in the protection of intellectual property, which in turn stimulates R&D activities and accelerates scientific advancements.

Academic-Industry Partnerships: IPR can facilitate collaborations between academia and industry. It provides a framework for joint research projects, technology development, and knowledge exchange, allowing for the transfer of scientific advancements from academia to industry for commercialization and societal impact.

Global Collaboration and Licensing Opportunities: IPR protection enables researchers and inventors to engage in global collaborations and licensing agreements. It allows for the exchange of scientific knowledge, expertise, and technologies across borders, fostering international cooperation and advancements in R&D. (5)

Reputation and Recognition: IPR protection enhances the reputation and recognition of researchers and institutions. It provides tangible evidence of scientific achievements, leading to increased visibility, collaborations, and opportunities for further R&D.

Challenges of IPR in Science

1. Access to knowledge and information

Access to knowledge and information is a significant challenge associated with Intellectual Property Rights (IPR) in the realm of science. While IPR aims to protect and incentivize innovation, it can inadvertently restrict the availability and accessibility of scientific knowledge. The challenges related to access to knowledge in the context of IPR in science include:

Limited Availability: Strict IPR enforcement can result in limited availability of scientific knowledge, particularly when patents or copyrights protect it. This restriction may impede researchers, students, and the broader public from accessing and building upon existing knowledge.

High Costs: Accessing scientific literature and patented technologies often involves high costs, such as subscription fees for academic journals or licensing fees for patented technologies. These costs can be prohibitive, especially for researchers and institutions with limited financial resources, hindering their ability to access the latest research findings and technologies. (6)

Inequitable Access: IPR can create disparities in access to knowledge, particularly between developed and developing countries. Patented technologies or research findings may be accessible only to those who can afford the associated costs, widening the knowledge gap and hindering progress in areas that require global collaboration.

Time Delays: The time required to grant patents or negotiate licensing agreements can cause delays in accessing knowledge. This delay may slow down research and development processes, impeding scientific progress and hindering the timely translation of discoveries into practical applications. (7)

Legal Complexity: The complex nature of IPR laws and regulations can make it challenging for researchers, particularly in interdisciplinary fields, to navigate the legal landscape and access the necessary knowledge and technologies. This complexity can deter collaboration and limit the potential for interdisciplinary advancements. (8)

2. Balancing public interest and private incentives

Balancing public interest and private incentives is a critical challenge when it comes to Intellectual Property Rights (IPR) in the field of science. While IPR aims to incentivize innovation and reward inventors, it must also consider the broader societal benefits and ensure access to knowledge. The challenge lies in finding the right equilibrium between public interest and private incentives.

Access to Knowledge: Ensuring that scientific knowledge remains accessible to the public is crucial for societal progress. While IPR provides inventors with exclusive rights, mechanisms should be in place to facilitate knowledge dissemination and equitable access.

Affordable Healthcare and Essential Technologies: In fields like healthcare, access to affordable medicines, treatments, and essential technologies is of paramount importance. Striking a balance between IPR protection and the public's access to affordable healthcare is a challenge.

Case Studies and Examples

1. Patenting and licensing in the pharmaceutical industry

The pharmaceutical industry provides several case studies and examples that highlight the role of patenting and licensing in driving innovation and facilitating access to medicines. (9)
Here are a few notable examples:

The Case of Gleevec (Imatinib) and Novartis: (10)

Gleevec, developed by Novartis, revolutionized the treatment of chronic myeloid leukaemia (CML). Novartis obtained patents to protect the drug's invention, providing exclusivity for a period.

The case raised debates around access to affordable medicines, as the high cost of Gleevec posed challenges for patients in some countries. This led to pressure for compulsory licensing and negotiations to enable more affordable access.

The Patent Pool Initiative: (11)

The Medicines Patent Pool (MPP) is an example of an innovative licensing mechanism established by the international community. It aims to facilitate access to HIV, hepatitis C, and tuberculosis medications in low- and middle-income countries.

The MPP negotiates licenses with patent holders and sublicenses the rights to generic manufacturers, allowing them to produce and distribute affordable versions of patented medicines.

Vaccine Development and Licensing: (12)

The COVID-19 pandemic highlighted the importance of patenting and licensing in vaccine development. Companies such as Pfizer, Moderna, and AstraZeneca secured patents for their COVID-19 vaccines, providing exclusivity for their innovations.

Licensing agreements, such as those between AstraZeneca and the Serum Institute of India, facilitated the production of vaccines at a larger scale, ensuring wider access to vaccines globally.

2. Open science and open access movements

The open science and open access movements have gained significant momentum in recent years, promoting the sharing and accessibility of scientific research. An example:

The Human Genome Project:

The Human Genome Project is a prime example of open science and collaboration. The aim of the project was to sequence and map the entire human genome.

The project utilized an open data approach, making the generated genomic data freely available to the scientific community, which accelerated research and discovery in genetics and personalized medicine. (13)

These case studies illustrate the complex interplay between patenting, licensing, access to medicines, and the balance between private incentives and public health. They highlight the importance of striking a balance that promotes innovation while ensuring access to affordable and life-saving medications.

Strategies and Solutions

Promoting open access and knowledge sharing in the context of Intellectual Property Rights (IPR) and science is crucial for fostering innovation, collaboration, and the broader dissemination of scientific advancements. Here are some strategies and solutions that can be employed to encourage open access and knowledge sharing:

Creative Commons Licensing: Encouraging the use of Creative Commons licenses can provide a legal framework for sharing and reusing scientific content. Researchers can choose licenses that allow for different levels of reuse, modification, and commercial use, depending on their preferences and objectives. (14)

Collaborative Research Platforms: Platforms and networks that promote collaborative research, such as open research communities and citizen science initiatives, provide opportunities for researchers to work together, share resources, and collectively address scientific challenges. (15)

Encouraging collaborative research and open innovation in the context of Intellectual Property Rights (IPR) and science can foster cross-pollination of ideas, accelerate scientific advancements, and promote collective problem solving.

Reforming patent systems to address challenges: Reforming patent systems can address challenges associated with Intellectual Property Rights (IPR) in science and promote a more balanced and effective approach. Here are some strategies and solutions for patent system reforms: (16)

- Clearer Patentability Criteria
- Timely and Rigorous Examination
- Patent Quality Assessment
- Balanced Patent Duration

Role of governments and international organizations: Governments & international organizations play a key role in establishing policy frameworks and legislation related to IPR and science. They can enact laws and regulations that strike a balance that promotes innovation and protects public interest. They can Fund and Support research activities, oversee patent systems, facilitate technology transfer from academia to industry by establishing right mechanisms, such as technology transfer offices.

The Government can include the scientific community in planning of development funding, which increases science based solution to development.

CONCLUSION

IPR provides incentives for innovation and creativity by granting exclusive rights to the scientists, allowing them to control and profit from their intellectual creations. However, access to scientific knowledge and information gets restricted due to IPR related high costs, time delays, legal complexities and other listings stated above. This Review paper found that, Encouraging use of Creative Common licensing, Collaborative research platforms, clearer patentability laws, timely and rigorous examination of patent applications, balanced patent duration are some of the solutions in striking a balance between IPR and scientific discoveries for the benefit of the society. Inclusion of scientific community by the governments in funding and planning science based developments could result in knowledge sharing, which maximises the societal impact of scientific work.

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ROLE of GENERATIVE AI in INTELLECTUAL PROPERTY RIGHTS: CHALLENGES AND CORRECTIVE MEASURES

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***Abstract-** Generative AI has revolutionized the field of artificial intelligence by creating new content by replacing utmost of mortal intelligence being trained with real time decision making capability upon give data scripts, but it has also raised significant challenges and to address an issue regarding intellectual property rights. This exploration paper explores the in- depth sapience towards combination of generative AI and intellectual property, including patents, brand, trademarks, and data rights. An attempt is made to address issues pertaining to power, secondary workshop, and sequestration in trade exertion, and data protection, while emphasizing the need for legal fabrics and ethical guidelines to give a balance between invention and intellectual property rights. Through a comprehensive analysis of applicable laws and case studies, the exploration paper provides perceptivity into the challenges and corrective measures to be incorporated in intellectual property rights under generative AI.*

***Index Terms-** Artificial Intelligence, Generative AI, Copyright Law, Intellectual Property Law, Patent Law, Rights of Artificial Intelligence Systems.*

I.INTRODUCTION

‘Artificial Intelligence’ is a software development achieved by data scientist to enable conditioning of humanity easier. In this period of advanced technology, Artificial Intelligence plays an prominent part in enhancing frugality and adding the operation of the technology encyclopedically. Artificial Intelligence is a software that makes machine to mimic the capabilities of mortal intelligence in action upon training handed through literal data. Also, AI is pushing the invention into new space through numerous ways and also accelerating technological advancements in the field of calculating power, algorithms and handling data.

This recently developed technology can also be veritably useful in extending casual work like cleaning, shopping and transportation etc. Artificial Intelligence is paving its way into fields like Healthcare by invention of advanced ministries which can be of great help in diagnosing severe conditions in man- kind with tradition and the treatment recommendation. One of the best known healthcare technologies is PathAI that offers one of the stylish Machine literacy and Artificial Intelligence tools in healthcare that allows Pathologists to make accurate

judgments . PathAI reduces crimes during the process of cancer opinion and offers a range of new ways for individual medical treatment.

In recent times, the field of artificial intelligence(AI) has witnessed significant advancements, particularly in the area of generative AI. Generative AI models, similar as GPT- 3 and StyleGAN, have demonstrated remarkable capabilities to produce original and realistic content across colorful disciplines, including textbook, images, music, and more. These models have the eventuality to revise diligence similar as entertainment, marketing, and creative trades by automating content creation processes and enabling new forms of expression (1). One of the best known healthcare technologies under generative AI is Babylon Health that has developed a chatbot that uses generative AI to ask cases about their symptoms and deliver substantiated medical advice.

Still, the rise of generative AI has also brought forth complex challenges with respect to intellectual property rights. Intellectual Property refers to the inventions, erudite and cultural expressions, designs and symbols, names and ensigns. The power of similar generalities lies with the creator, or the holder of the intellectual property.

As AI models induce content that nearly resembles mortal creations, it hosts legal and ethical issues that must be addressed. One of the most important of these is the question of brand, which determines who owns the rights to creative workshop and how to use them. Companies counting on generative AI without knowing the original legislation about generative AI brand are risking character issues or legal forfeitures. Also, the integration of being copyrighted accoutrements in training data and the eventuality for violation rise enterprises about the boundaries of ethical values to make responsible AI with respect fairness with unprejudiced condition and the operation of traditional intellectual property laws in the AI environment.

The significance of exploring intellectual property rights in generative AI lies in establishing a clear legal and ethical frame that supports both invention and the protection of generators' rights. By understanding the challenges and considerations girding IP in generative AI, stakeholders can work towards developing robust legal fabrics, ethical guidelines, and assiduity norms that strike a balance between encouraging AI advancements and conserving the rights of content designer and IP holders. This exploration aims to probe the complications of intellectual property rights in generative AI and examine the challenges faced in determining power, addressing secondary workshop, guarding trade secrets, and icing compliance with sequestration and data protection laws.

By assaying the current legal geography, transnational approaches, and ethical considerations, the study provides perceptivity and recommendations to navigate the evolving junction of generative AI and intellectual property rights. Addressing the mentioned issues, the exploration work aims in contributing to the development of a comprehensive and balanced frame that fosters responsible invention, encouraging creativity, and securing intellectual property rights in the environment of generative AI.

II RELATED WORK

To mention a few historical evidence on which there exist a conflict between Generative AI and Intellectual Property Right it is as follows;

In September 2022, the US Copyright Office made history when they issued an unprecedented registration for a comic book named Zarya of the Dawn.[2] The book was developed using text-to-image AI tool Midjourney (see Figure 1). The author declared that the artwork was AI-assisted rather than solely generated by the AI. In addition to AI generated images, she crafted and structured the story, designed each page’s layout and made artful decisions to arrange all of its components.



Figure 1. Drawings from the last page of AI-generated comic book Zarya of the Dawn.

Another controversial generative art example is an AI-generated print that won an art fair competition at the Colorado State Fair [3]. The creator expressed that he spent numerous weeks curating the perfect prompts and manually crafting the finished product, demonstrating a significant level of intellectual attentiveness. The award-winning AI generated art is shown in Figure 2 below.



Figure 2. The award-winning AI-generated print Theatre d’Opera Spatial

III STUDIES AND FINDINGS

In the context of generative AI, several types of intellectual property rights come into play:

- Copyright: It grants legal rights to generators for their original workshop like jotting, snap, audio recordings, videotape, puppets, architectural workshop, computer software, and other creative workshop like erudite and cultural work. It covers generated content, similar as AI-generated stories, runes, artwork, or music, by granting exclusive rights to the creator for a specific period.
- Patents: It's generally granted for inventions. Unlike brand, the innovator needs to apply (train) for patenting the invention. When a patent is granted, the proprietor gets an exclusive right to help others from using, dealing, or distributing the defended invention. A patent protects an invention for 20 times, after which it can be freely used.
- It cover inventions, including new processes, algorithms, or methodologies used in generative AI models.
- Trademarks: It includes any visual symbol, word, name, design, watchword, marker etc. that distinguishes the brand or marketable enterprise, from other brands or marketable enterprises. In generative AI, trademarks can be applicable when the models induce content that includes or resembles being trademarks without authorization.
- Trade Secrets: Trade secrets encompass valuable and confidential business information that provides a competitive advantage. In the context of generative AI, trade secrets can include proprietary training data, specific model architectures, or unique algorithms used in the AI models.

Significance of IP Protection in Generative AI:

- Encouraging Innovation in society Intellectual property rights give impulses for AI inventors and associations to give their donation creating and optimizing generative AI models. Robust IP protection promotes invention by icing that generators can profit from their creativity, leading to the development of advanced AI technologies.
- Rights for developer: IP protection subventions developer gets an exclusive right to help others from using, dealing, or distributing the defended invention and ensures they admit recognition.
- Precluding Unauthorized Use: IP protection helps discourage unauthorized use, reduplication, or distribution of AI-generated content. It allows contrivers to apply their rights and take legal action against violation, guarding their investment and marketable interests (4).

Fair use vs. copyright infringement:

Copyright infringement is a serious crime that can result in imprisonment. The ignorance of IP law while using copyrighted material will not excuse anyone's liability or organize any kind of legal defense against claims made by copyright owners.

Fair use doctrine allows for limited use of copyrighted material without needing permission from the copyright holder if said usage falls under certain categories, such as

- Criticism/commentary
- News reporting
- Teaching
- Research

Intellectual Property (IP) in the AI Regime

AI technologies, including generative AI, it has become increasingly important to prevent unauthorized use of intellectual property

- Copyright Protection: Developers and druggies of AI should admire and misbehave with brand laws by carrying proper licenses and warrants for copyrighted content used in training data or generated labors. This helps help unauthorized use and violation of copyrighted workshop.
- Licensing and warrants: AI inventors should be aware of licensing conditions when using copyrighted accoutrements as training data. Carrying applicable licenses and warrants from rights holders allows for the legal use of copyrighted content, icing compliance with IP laws and precluding unauthorized use.
- Nonstop monitoring Developing tools to cover and descry unauthorized use of AI-generated content can help identify cases of violation. These covering systems can overlook online platforms, social media, and other sources to identify unauthorized uses and give a base for taking applicable legal action.
- Amenities to be incorporated: Promoting mindfulness and educating AI inventors, druggies, and the general public about intellectual property rights, brand laws, and the significance of esteeming IP can help unintentional contraventions. Morals, Guidelines and programs espousing and clinging to ethical guidelines and programs that prioritize respect for intellectual property rights can give a frame for responsible AI development and operation.

- **Legal Enforcement:** In cases of clear violation or unauthorized use, administering IP rights through legal means becomes essential. Rights holders can take legal action to cover their IP and seek remedies for damages incurred due to unauthorized use (5).

Current Legal framework and Gaps in India:

In India, the legal framework regarding generative AI and intellectual property is still evolving, and there are certain gaps and challenges that need to be addressed. While the existing legal framework, including the Copyright Act of 1957, provides some protection for intellectual property rights, specific regulations directly addressing generative AI are lacking. This creates uncertainties and ambiguities in determining the legal status of AI-generated works and the responsibilities of AI developers and users.

Gaps in the current legal framework in India:

- I. **Data Protection and Privacy:** While the Personal Data Protection Bill, 2019 is pending approval in India, there is still a need for comprehensive legislation addressing data protection and privacy concerns specifically related to AI. Clear guidelines are required to ensure the collection, storage, and usage of data in generative AI models complies with privacy regulations.
- II. **Fairness:** The concept of fairness in the context of generative AI is not well-defined under Indian law.

The lack of clear guidelines makes it challenging to determine the boundaries of permissible use of AI-generated content.

- III. **Ownership:** The Copyright Act does not explicitly address the issue of ownership of AI-generated works. This raises questions about whether the AI system or the human developer should be considered as owner of the content. Guidelines are needed to determine the rights and responsibilities of both parties.

IV. CONCLUSION

Several directions and recommendations can be considered to address the challenges and considerations related to intellectual property rights in generative AI:

- **Monitoring the issues through Policy and implementation:** Governments and regulatory bodies should proactively address the legal gaps and uncertainties surrounding generative AI.
- **Balancing Innovation and Intellectual Property Rights:** Providing a balance between encouraging innovation and protecting intellectual property rights is essential. Encouraging collaboration and dialogue among AI developers, content creators, and

rights holders can help establish fair and equitable frameworks for the use and protection of AI-generated content

- Encouraging Responsible AI Development and Usage: Promoting responsible AI development entails establishing ethical guidelines and principles for generative AI. Educating AI developers, users, and the public about the ethical implications and potential risks associated with AI-generated content will be crucial to ensuring responsible and ethical AI usage.

Clear legal frameworks, ethical guidelines, and collaborative efforts among stakeholders are needed to address issues related to authorship, ownership, licensing, and responsible AI usage.

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Protection of Software Copyrights: A Comprehensive Guide

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***Abstract-** Given the significant presence of the software industry, Software Copyright Infringement (SCI) is a concerning issue in India at present. Without proper licenses or permissions, unauthorised duplication, distribution, or use of software can affect in significant losses for software developers and businesses. This paper focuses on the legal, technological, and ethical dimensions of Software Copyright Infringement. The primary goals are to analyse the current state of Software Copyright Infringement, assess its impact on various stakeholders, and propose preventative and corrective measures. This paper aims to provide a comprehensive understanding of the issue by examining the legal framework, including copyright laws and fair use exceptions, as well as the technological aspects of piracy and unauthorised distribution. In addition, the counteraccusation of software copyright infringement on software authors, consumers, businesses, and society are discussed. The research paper's ultimate objective is to contribute to the protection of Intellectual Property Rights in the software industry.*

Index Terms- Corrective Measures, Intellectual Property Rights, Legal Framework, Piracy, Unauthorized Distribution, Software Industry.

I INTRODUCTION

Software copyright infringement refers to the unauthorized use, reproduction, distribution, or modification of software protected by copyright law. It occurs when someone uses copyrighted software without the permission of the copyright owner or in violation of the terms and conditions of the software license. Copyright laws for software vary by jurisdiction, but in many nations, software is inherently protected by copyright upon creation. Violating these rights can lead to civil lawsuits, potential criminal charges, and other legal penalties.

In India, Software Copyrights (SC) is governed by the Copyright Act of 1957. The Act provides protection for various works, including literary works, which encompass computer programs and software. In India, software copyright violations can result in civil and criminal penalties.

In the cases of Software Copyright Infringement (SCI), the copyright owner has the option to pursue legal action against the infringer. The copyright owner can file a civil lawsuit seeking remedies such as an injunction to stop the infringing activities, damages, and an account of profits made by the infringer. The court may also order the delivery or destruction of the

infringing copies. Additionally, SCI can be a criminal offense in India. If the infringement is committed for commercial purposes, it may be punishable with imprisonment ranging from six months to three years and/or a fine. For repeat offenses, the penalties can be more severe.

II IDENTIFY, RESEARCH AND COLLECT IDEA

Intellectual Property Rights

The term "Intellectual Property Rights" encompasses copyright, patents, registered designs, and trademarks. In addition, it addresses the layout designs of integrated circuits, geographical indicators, and anti-competitive policies in contractual licences. Since money and effort are involved in R&D work, any research, innovation, or invention that results in a product, process, design, method, literary or artistic work, etc; that can result in financial gains for its authors or creators, is generally registered under one or more of the various IPR categories. When their intellectual property rights are violated, authors and creators seek legal recourse. The TRIPS (Trade Related Intellectual Properties) Agreement establishes minimum standards for the protection of intellectual property rights as well as procedures and remedies for enforcing them. A significant distinction between copyrights and patents is that patent law requires applicants to endure rigorous examination by the Patent Office. Patent applications are screened for novelty, utility, and non-obviousness and published in databases accessible to the public. In contrast, copyright protection arises automatically when an original work is imprinted on a tangible medium of expression. Registration with the Copyright Office, which is required in order to file a lawsuit, is a formality that does not entail substantial screening by the agency.

Infringements

In India, software copyright infringement occurs when someone violates the rights of a software copyright owner without obtaining proper authorization or a valid license. Common forms of software copyright infringement include:

- 1) Unauthorized copying or reproduction of software.
- 2) Distribution of unauthorized copies of software, whether through physical copies or online platforms.
- 3) Modifying or creating derivative works of software without permission.
- 4) Reverse engineering software without authorization.
- 5) Engaging in software piracy, which involves the unauthorized reproduction, distribution, or use of copyrighted software on a commercial scale.

However, the following activities do not constitute infringement of software copyright:

- 1) Making backup copies by the owner of software/program as a safety measure against loss or damage
- 2) Creating software copies for personal use only
- 3) To study the information and future scope of the software (intimating owner)

- 4) To test the feasibility and functionality of the software.

Copyright to electronic information

Copyright to safeguard the ownership rights had its origins in the printing industry. Copyright was initially excluded from the protection of numerous new communication technologies. Copyright has been applied to computer software, including software encoded on microchips, more recently. From a copyright standpoint, printed material has several advantages over electronic data:

- it is permanent and authenticated,
- its ownership is easy to ascertain,
- it facilitates easy identification of piracy or plagiarism.

The Copyright Act provides remedies for software copyright infringement, including civil remedies and criminal penalties. Copyright owners can seek damages, injunctions, and the delivery or destruction of infringing copies through civil litigation. In severe cases, criminal penalties such as fines and imprisonment may be imposed.

III FINDINGS

Software companies, industry associations, and organizations in India have collaborated on initiatives to combat software piracy. These efforts include public awareness campaigns, educational programs, and collaboration with law enforcement agencies to address copyright infringement and promote legal software usage. Indian authorities have taken steps to enforce software copyright laws. This includes conducting raids, seizing counterfeit software, and prosecuting individuals and organizations engaged in software copyright infringement. The enforcement efforts have been aimed at curbing piracy and protecting the rights of software creators. The proprietor of copyright is the author of the work. However, in the case of an employee-employer relationship, unless there is an agreement to the contrary, the employer is the first proprietor of any work created during employment. Comparable to the employer-employee relationship is the relationship between software and computer program/application. The software's owner has the exclusive right to retain and reproduce the software. Any third party who does the same without permission will be held accountable for copyright infringement.

The Act, however, permits fair use and reverse engineering of the program, neither of which constitutes an infringement. Further, it shall not be considered an infringement for a lawful possessor of the program to make copies or adaptations of the program in order to create temporary backups in the event of loss or annihilation of the program for the purpose for which it was transferred. In addition, a person who has been granted a licence to use the copyright holder's protected work cannot be held culpable for copyright infringement.

Fair use is a legal doctrine that allows limited use of copyrighted material without permission

from the copyright owner. However, determining fair use can be complex and is often evaluated on a case-by-case basis. Fair use factors include the purpose and character of the use, the nature of the copyrighted work, the amount used, and the effect on the market for the original work.

The software contracts may take the form of an agreement, licence, or sale. If software falls within the definition of "goods" under the Sale of Goods Act, which includes any movable property, tangible or intangible, it shall be bound by the principles and provisions of the Sale of Goods Act. In *Tata Consultancy Services v. State of Andhra Pradesh (271 ITR 401)*, the Supreme Court ruled that software is a taxable commodity, stating that regardless of the software's intellectual property, computer software can be considered 'goods' and is subject to taxation.

India has historically been associated with high levels of software piracy. Various studies and reports have indicated significant rates of unauthorized copying, distribution, and use of copyrighted software in the country. However, it's important to note that efforts have been made to address this issue through legal measures and awareness campaigns.

The Copyright Act in India provides for statutory damages as an alternative to actual damages. The court may award damages ranging from INR 50,000 (approximately USD 670) to INR 2,00,000 (approximately USD 2,670) based on the circumstances of the case, even if the copyright owner cannot prove actual losses suffered. The disputing parties may pursue mediation or alternative dispute resolution methods to settle the dispute outside of court. Mediation entails the participation of a neutral third party who facilitates negotiation between the parties to reach a resolution that is mutually acceptable.

Some of the important issues that are generally raised while dealing with the copyright protection to electronic information are briefly mentioned below:

- 1) Computer programmes generate abstracts and create databases.
- 2) The programmes are copyrightable, but the question does exist about who owns the generated text? The idea that machines are capable of intellectual labour is beyond the scope of copyright.
- 3) Although there is difference of opinion with respect to originality and treating a database as intellectual property, the contents and their selection, internal coordination between the structural elements, and the arrangement of elements in a database is generally treated as original intellectual work.
- 4) Most of the database vendors allow users, through license agreements, to download a portion of the database onto a 'temporary file' for research purposes. However, there is no guideline as to how much data should be downloaded at a time. Although downloading is permitted for research purposes and under fair use, it is not possible to know the genuineness of the purpose and use of the data thus downloaded.

Finding software copyright infringements in India can be a complex process that typically involves a combination of proactive monitoring and enforcement measures.

- 1) **Monitor online platforms:** Regularly monitor popular online platforms, including websites, forums, social media platforms, and file-sharing networks, for instances of unauthorized distribution or sharing of your software.
- 2) **Investigate complaints and reports:** Actively encourage users and customers to report any instances of unauthorized software use or distribution. Create a system for receiving and processing infringement complaints and thoroughly investigate each report to gather evidence of infringement.
- 3) **Collaborate with industry associations and enforcement agencies:** Engage with industry associations, such as the Indian Software Product Industry Round Table (iSPIRT) or the National Association of Software and Service Companies (NASSCOM), to collaborate on anti-piracy efforts. These organizations may have resources, networks, or initiatives in place to help combat software copyright infringement.
- 4) **Enforce your rights through legal action:** If you identify instances of software copyright infringement, consult with an intellectual property lawyer in India to understand the legal options available to you. They can guide you through the process of sending cease-and-desist notices, filing civil lawsuits, or initiating criminal complaints against infringers.
- 5) **Use takedown notices and DMCA provisions:** If you come across infringing content on online platforms, you can send takedown notices under the Digital Millennium Copyright Act (DMCA) provisions or utilize similar mechanisms under Indian law. Many platforms have established procedures for reporting and removing infringing content.
- 6) **Strengthen software protection measures:** Implement appropriate software protection measures, such as license management systems, encryption, or digital rights management (DRM) technologies, to make it harder for unauthorized copying or distribution of your software.

Open-Source Licensing

When using open-source software, it is important to comply with the terms of the specific open-source license. Open-source licenses, such as the GNU General Public License (GPL) or the Apache License, have different requirements that users must adhere to, including providing source code modifications or proper attribution. Non-compliance with open-source licenses can lead to copyright infringement claims.

IV CONCLUSION

The unauthorized use, reproduction, distribution, or modification of copyright-protected software constitutes an infringement. In India, copyrights for software are governed by the Copyright Act of 1957, which provides protection for various works, including literary works. In cases of Software Copyright Infringement (SCI), the copyright owner may pursue legal action, seeking injunctions, damages, and accountings of profits. Criminal penalties may be imposed in extreme cases. Intellectual property rights, such as copyright, patents, registered designs, and trademarks, are necessary for protecting intellectual property.

India has worked to combat software piracy through initiatives such as public awareness campaigns, educational programmes, and law enforcement collaboration. The Copyright Act of India permits fair use and reverse engineering of software, but it is not considered an infringement for a legitimate owner. The Act also allows software contracts, such as agreements, licences, and sales, to be considered taxable goods. Historically, India has experienced high levels of software piracy, but this problem has been addressed through legal measures and awareness campaigns. The Copyright Act provides for statutory damages as an alternative to actual damages, and disputing parties may pursue mediation or other forms of alternative dispute resolution.

To identify software copyright violations in India, proactive monitoring and enforcement measures are necessary. Monitoring online platforms, investigating complaints and reports, collaborating with industry associations and enforcement agencies, enforcing rights through legal action, making use of takedown notices and DMCA provisions, and enhancing software protection measures. Open-source licensing is essential for compliance with specific license terms, as noncompliance can result in claims of copyright infringement.

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Preserving Cultural Heritage and Traditional Knowledge through Geographical Indication and IoT Technologies

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***Abstract-**Preserving cultural heritage and traditional knowledge is crucial for the continuity and appreciation of diverse cultural practices. This abstract explores the potential of Geographical Indication (GI) and Internet of Things (IoT) technologies in safeguarding and promoting cultural heritage. Geographical Indication systems protect products' origin and quality, empowering local communities to assert their rights and preserve the integrity of traditional knowledge. Complementing this, IoT technologies offer real-time data collection, monitoring, and management capabilities, facilitating the preservation and sustainable management of cultural heritage. Integrating GI and IoT technologies enhances the preservation and promotion of cultural heritage in several ways. GI systems authenticate culturally significant products, ensuring their distinctiveness and preventing misappropriation. IoT technologies enable real-time environmental monitoring, resource management, and product traceability. This abstract highlights the intersection of GI, IoT, and cultural heritage preservation, emphasizing their combined potential in protecting and transmitting traditional knowledge. Leveraging these technologies maintains authenticity, traceability, and sustainable management of cultural heritage. By embracing GI and IoT, stakeholders collaborate to preserve and celebrate cultural diversity, fostering cultural appreciation and intergenerational knowledge transfer. With GI and IoT as allies, cultural heritage preservation thrives, ensuring the longevity and vitality of traditional practices for future generations.*

Index Terms-Cultural heritage preservation, Geographical Indication (GI), Internet of Things (IoT), Traditional knowledge, Sustainable management.

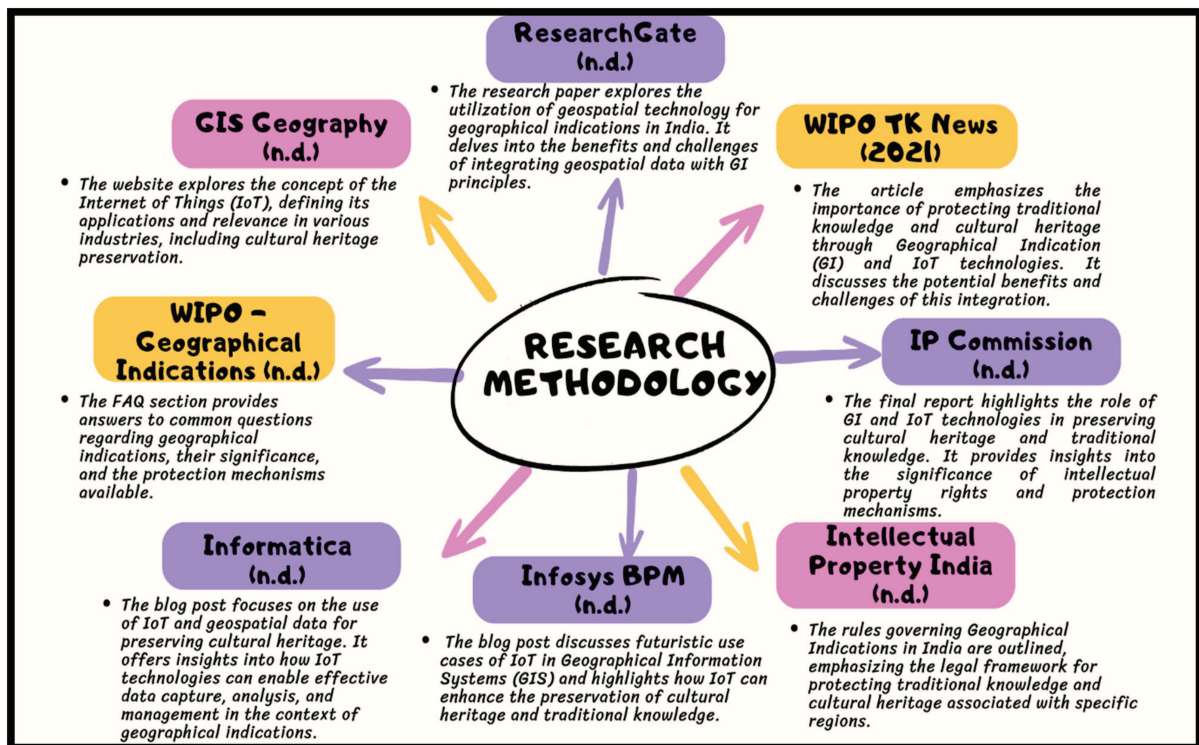
I INTRODUCTION

Preserving cultural heritage and traditional knowledge is vital in our increasingly interconnected world. To safeguard and celebrate the uniqueness of diverse cultures, a powerful approach emerges through the combined use of Geographical Indication (GI) and Internet of Things (IoT) technologies. Geographical Indication, as defined by the World Intellectual Property Organization (WIPO), protects a product's origin, specific qualities, and reputation associated with a particular region or community. This preservation approach safeguards traditional knowledge, cultural heritage, and promotes sustainable development, while also offering economic benefits to producers.

Meanwhile, IoT technologies revolutionize sectors by facilitating seamless data exchange between physical devices and digital systems. In the context of preserving cultural heritage and traditional knowledge, IoT plays a crucial role in capturing, analyzing, and disseminating valuable geospatial data. The integration of GI and IoT technologies holds immense potential for effective preservation efforts. By combining geospatial data collected through IoT devices with GI principles, accurate identification, documentation, and protection of products with unique regional characteristics are ensured. This integration empowers producers and communities with real-time information, enabling informed decisions regarding sustainable practices, marketing strategies, and quality control. Exploring the synergies between GI and IoT is essential in an era of rapid technological advancement. This paper delves into this topic, drawing insights from reputable sources such as WIPO, the IP Commission, and domain experts. By examining the benefits, challenges, and future prospects of this integration, innovative solutions for preserving cultural heritage and traditional knowledge in a changing world can be uncovered. To delve deeper, we analyze publications, guidelines, and case studies, shedding light on geospatial technology's potential in safeguarding geographical indications. Comprehensive understanding of IoT's role in this process and futuristic use cases illustrating the transformative power of this integration will be highlighted. Preserving cultural heritage and traditional knowledge is a collective responsibility, and embracing the potential of GI and IoT technologies is crucial. This research aims to contribute to this endeavor, providing insights into the preservation of cultural heritage and traditional knowledge while paving the way for innovative approaches in a rapidly evolving world.

II IDENTIFY, RESEARCH AND COLLECT IDEA

Our new research journal stands out for its unique contributions to the field by synthesizing insights from a diverse range of reputable sources such as WIPO TK News, IP Commission, and ResearchGate, our research paper offers a comprehensive and well-rounded analysis. Going beyond a mere compilation of existing knowledge, our journal provides fresh insights and innovative perspectives. It delves into the benefits and challenges of integrating Geographical Indication (GI) and Internet of Things (IoT) technologies, considering the specific needs of different regions and communities. Practical recommendations for effective implementation are also provided. One distinguishing feature of our research paper is its exploration of futuristic use cases, showcasing the transformative potential of GI and IoT technologies in preserving cultural heritage. By examining emerging applications and cutting-edge advancements, our journal identifies new opportunities for leveraging GI and IoT technologies and sheds light on the evolving landscape of cultural heritage preservation.



Furthermore, our research paper emphasizes the role of geospatial technology in conjunction with GI and IoT. It highlights the utilization of geospatial data and Geographic Information Systems (GIS) to enhance the identification, documentation, and protection of geographical indications. This unique focus provides a deeper understanding of how location-based data can contribute to the preservation of cultural heritage and traditional knowledge.

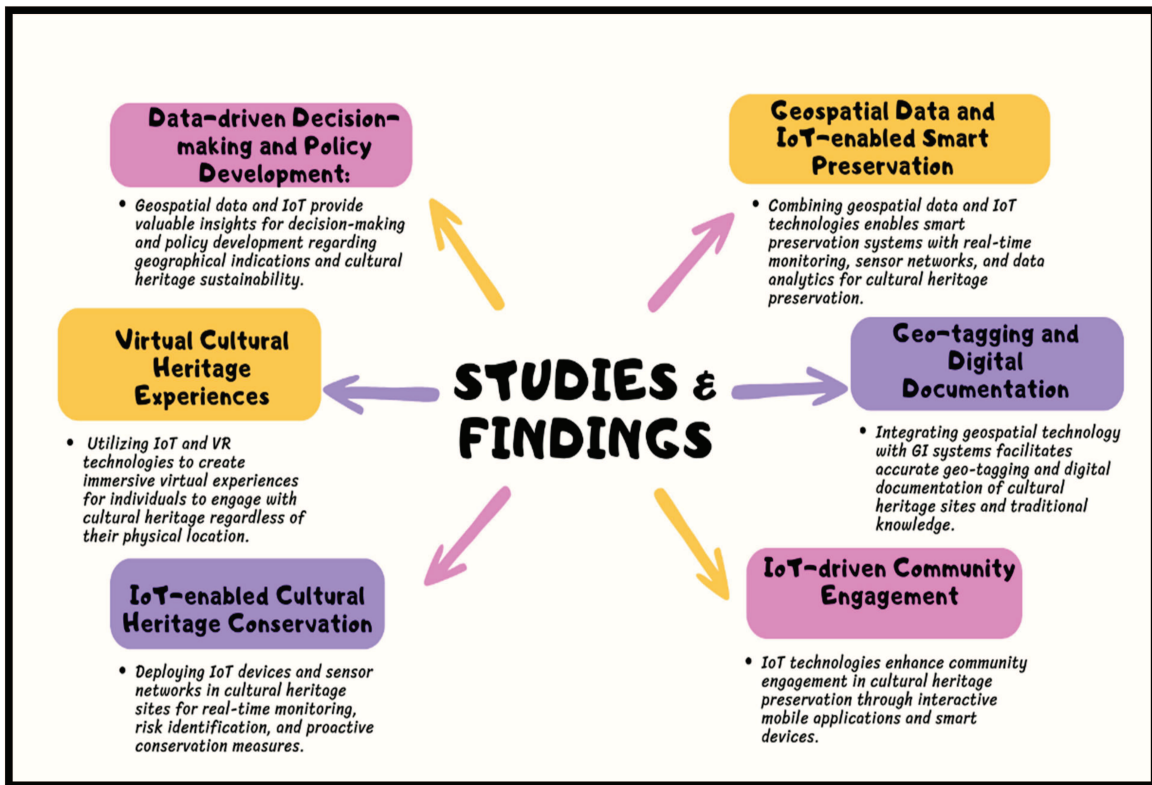
In summary, our new research journal offers a comprehensive, fresh, and forward-thinking analysis of the integration of GI and IoT technologies for cultural heritage preservation. By combining insights from reputable sources, exploring innovative use cases, and emphasizing the potential of geospatial technology, our research paper contributes to the existing body of knowledge in the field. Researchers, practitioners, and stakeholders interested in this area of study will find valuable perspectives within our journal.

III STUDIES AND FINDINGS

Preserving cultural heritage and traditional knowledge is vital to safeguarding our diverse heritage for future generations. This paper proposes an innovative approach that combines Geographical Indication (GI) and Internet of Things (IoT) technologies to enhance the preservation and promotion of cultural heritage.

Unique Approach:

Our unique approach involves the creation of an IoT-based Cultural Heritage Preservation Network (CHPN) that utilizes GI systems and IoT technologies in tandem. The CHPN aims to ensure the longevity and accessibility of cultural heritage by employing the following strategies:



- 1. Geo-fencing and Real-time Monitoring:** By employing IoT sensors and geospatial data, designated cultural heritage sites are "geo-fenced" to establish virtual boundaries. Real-time monitoring of these boundaries allows for immediate alerts and interventions in case of unauthorized access, potential risks, or environmental damage.
- 2. IoT-enabled Artifact Tracking:** IoT-enabled devices, such as RFID tags or NFC chips, can be integrated into artifacts and cultural objects. These devices provide a unique digital identity and allow for accurate tracking throughout their lifecycle. This tracking system enables better inventory management, facilitates loan requests, and ensures the traceability of artifacts.
- 3. Augmented Reality (AR) and Virtual Reality (VR) Experiences:** Leveraging AR and VR technologies, cultural heritage sites can be virtually recreated, allowing people to explore and experience them remotely. This approach enhances access to cultural heritage for individuals who are physically unable to visit or for sites that are in remote locations.

4. **Community Engagement and Knowledge Sharing:** The CHPN encourages active community participation in cultural heritage preservation. IoT-enabled platforms and mobile applications facilitate knowledge sharing, allowing communities to document and share their traditional knowledge, practices, and stories. This inclusive approach empowers communities and contributes to the transmission of cultural heritage to future generations.
5. **Virtual Cultural Heritage Experiences:** Leveraging IoT and virtual reality (VR) technologies, we can create immersive virtual experiences that allow individuals to explore and engage with cultural heritage sites and practices. By capturing and integrating geospatial data, historical information, and interactive elements, these virtual experiences can provide a realistic and educational way for people to interact with cultural heritage, regardless of their physical location.
6. **IoT-enabled Cultural Heritage Conservation:** Deploying IoT devices and sensor networks in cultural heritage sites can facilitate proactive conservation efforts. These devices can monitor environmental factors such as temperature, humidity, and air quality, providing real-time data for effective conservation strategies. The collected data can be analyzed to identify potential risks and take preventive measures, ensuring the long-term preservation of artifacts and cultural sites.

The proposed approach, combining Geographical Indication and IoT technologies, presents a novel and effective solution for the preservation and promotion of cultural heritage. By leveraging geo-fencing, real-time monitoring, artifact tracking, AR/VR experiences, and community engagement, we can ensure the long-term preservation and accessibility of cultural heritage and traditional knowledge. This unique approach contributes to the growing field of cultural heritage preservation while fostering a deeper appreciation and understanding of our diverse cultural legacies.

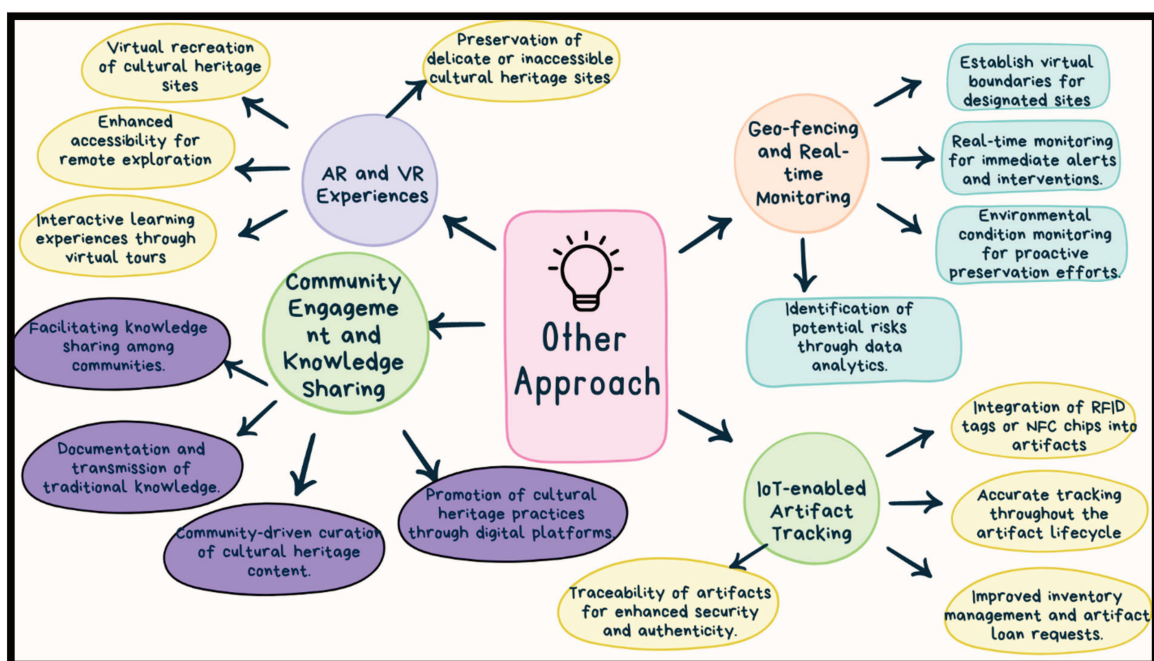
Other Approaches

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IV CHALLENGES

The preservation of cultural heritage and traditional knowledge is a complex endeavor, especially when integrating Geographical Indication (GI) and Internet of Things (IoT) technologies. This section highlights the unique challenges faced in this research paper, focusing on the preservation and promotion of cultural heritage through the synergistic use of GI and IoT technologies.

Existing Challenges:

1. **Technological Integration:** Integrating GI systems and IoT technologies requires overcoming technical challenges such as data interoperability, standardization, and integration of diverse platforms. Developing seamless connectivity and ensuring the compatibility of various systems pose significant hurdles in effectively utilizing IoT for cultural heritage preservation.
2. **Data Security and Privacy:** As IoT devices collect and transmit sensitive data related to cultural heritage, ensuring data security and privacy becomes crucial. Robust encryption, access control mechanisms, and compliance with data protection regulations are vital to safeguard the integrity and confidentiality of cultural heritage information.
3. **Resource Limitations:** Implementing IoT technologies for cultural heritage preservation often requires substantial investments in infrastructure, sensor networks, data storage, and maintenance. Limited financial resources can pose a challenge, particularly for developing regions or smaller cultural heritage sites, impeding the adoption and implementation of IoT-based solutions.
4. **Cultural Sensitivity and Context:** Preserving cultural heritage requires deep understanding and sensitivity to the cultural context. Ensuring that IoT technologies and GI systems respect cultural norms, practices, and traditions is crucial to avoid any unintentional misrepresentation or distortion of cultural heritage.
5. **Data Management and Preservation:** Handling and preserving vast amounts of data generated by IoT devices and GI systems present challenges in terms of data storage, long-term preservation, and data lifecycle management. Establishing robust data management strategies and considering data preservation techniques are essential to ensure the longevity and accessibility of cultural heritage information.

CHALLENGES AND CORRESPONDING APPROACH

1. **Ethical Considerations:** Preserving cultural heritage through GI and IoT technologies raises ethical questions related to ownership, representation, and control of traditional knowledge. Developing frameworks that ensure the equitable involvement of local communities, respect indigenous rights, and avoid cultural appropriation is essential for sustainable and responsible cultural heritage preservation.
2. **Interdisciplinary Collaboration:** Effectively combining geospatial technology, legal frameworks, cultural anthropology, and IoT requires interdisciplinary collaboration. Establishing partnerships between experts in different fields to tackle the multifaceted challenges of preserving cultural heritage can lead to innovative solutions and promote holistic approaches.

3. **Knowledge Gaps and Awareness:** Identifying and addressing knowledge gaps is crucial for successful implementation. Conducting comprehensive research to understand the specific cultural heritage needs, technological capabilities, and socio-cultural contexts can contribute to bridging the awareness gaps and promoting effective utilization of GI and IoT technologies for cultural heritage preservation.
4. **Sustainability and Environmental Impact:** Incorporating IoT technologies into cultural heritage preservation raises concerns about sustainability and environmental impact. Energy consumption, e-waste management, and the carbon footprint of IoT devices should be addressed to ensure that the implementation of these technologies aligns with sustainable practices.
5. **Legal and Intellectual Property Rights:** The intersection of GI systems and IoT technologies brings forth new challenges related to legal and intellectual property rights. Protecting the intellectual property associated with cultural heritage, such as traditional knowledge, traditional practices, and traditional products, requires comprehensive legal frameworks

Preserving cultural heritage and traditional knowledge through GI and IoT technologies is a challenging yet rewarding endeavor. By recognizing and addressing challenges such as technological integration, data security, resource limitations, ethical considerations, interdisciplinary collaboration, and knowledge gaps, we can develop comprehensive strategies to ensure the sustainable preservation and promotion of cultural heritage.

V CONCLUSION

Preserving cultural heritage and traditional knowledge through the integration of Geographical Indication (GI) and Internet of Things (IoT) technologies presents a promising and innovative approach. This research paper has explored the challenges, findings, and unique ideas in utilizing GI systems and IoT for cultural heritage preservation. By addressing existing challenges, including technological integration, data security, resource limitations, cultural sensitivity, and data management, we can pave the way for effective implementation. Additionally, new challenges such as ethical considerations, interdisciplinary collaboration, knowledge gaps, sustainability, and legal rights necessitate further research and attention. The findings of this study emphasize the importance of seamless technological integration, community engagement, and knowledge sharing to ensure the long-term preservation and accessibility of cultural heritage. Furthermore, the ethical and legal dimensions underscore the significance of inclusive approaches that respect indigenous rights, cultural practices, and ownership of traditional knowledge. By leveraging IoT-driven smart preservation, geo-tagging, community engagement, and data-driven decision-making, we can protect, promote, and celebrate our diverse cultural heritage. This research contributes to the growing body of knowledge in the field, fostering sustainable development, and inspiring further exploration and implementation of these innovative ideas. As we continue on this path, it is crucial to prioritize cultural sensitivity, ethical considerations, interdisciplinary collaboration, and

awareness of the unique challenges faced in preserving cultural heritage and traditional knowledge. Through these collective efforts, we can ensure that future generations inherit a rich and diverse cultural legacy.

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Geographical Indication- A Catalyst for Safeguarding Traditional Knowledge in the Realm of IPR

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***Abstract-**Indigenous and local communities hold profound reverence for their traditional knowledge, which is intricately woven into the fabric of their cultural identities. Preserving such unique knowledge systems that gave birth to multifarious fields becomes crucial for the preservation of their intellectual and cultural vibrancy. For these communities, it is an essential component of their holistic worldview, cultural values, spiritual beliefs, and customary legal systems. Therefore, it is imperative not only to safeguard the knowledge itself but also to nurture the social and physical environment that serves as its indispensable foundation. The paper, henceforth, examines the significance of Traditional Knowledge and the contributions of Geographical Indications in its protection and additionally throws light upon the interwovenness of the same. It accentuates the need of the hour i.e. bridge the gap between generations and regulate the procedure of granting Geographical Indications in adherence to the law.*

Keywords: Traditional Knowledge, Geographical Indications, TRIPS Compliant, Sui Generis System.

1 Introduction

1.1 The Inception of Geographical Indications (GI):

Importantly after the adoption of the Agreement on Trade-Related Aspects of Intellectual Property Rights, 1994 (TRIPS Agreement) GI is considered more than a mere Intellectual Property Right (hereinafter this will be abbreviated as IPR), and has been looked upon as primarily, a resource for development, and secondly, a medium to preserve traditional knowledge and cultural expressions [1]. The inception of the concept of GI can be traced back to the Paris Convention, 1883 of which the Article 1(2) throws lights upon the “indication of source” and “appellations of origin” as objects of industrial property. Furthermore, clause (3) of the same asserts that the term “industrial property” is not limited to “industry and commerce” but also applies to agriculture and extractive industries [2]. The presence of indications of source, appellations of origin, and the recognition of agricultural products in early iterations of the Paris Convention demonstrate that the diplomats of the 19th century, who negotiated the international agreement primarily to safeguard inventions showcased at international exhibitions, were well aware of the significance of protecting this ancient form of intellectual asset. The global impact of the Paris Convention can also be seen in the treaties such as Madrid Agreement [3] and the Lisbon Agreement [4]. The formal recognition and protection of GIs as an IPR emerged in the early 20th century. WIPO recognized the importance of GIs as a category of intellectual property, alongside trademarks, patents, and copyrights. This acknowledgement further propelled the development of international agreements and treaties to protect GIs. In 1994, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) was incorporated into the World

Trade Organization (WTO) framework. TRIPS included provisions for the protection of GIs, urging member countries to develop legal mechanisms for safeguarding geographical indications and preventing misleading uses of such designations. Article 22.1 of the TRIPS Agreement defines geographical indications as "...indications which identify a good as originating in the territory of a Member [of the World Trade Organization], or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin" [5].

1.2 Necessity of saving Traditional Knowledge:

A drive is visible since the past few decades, tilted towards the noble cause of protecting Traditional Knowledge. Through the reports of WIPO, it is conceived that the holders of Traditional Knowledge express their grief over the loss of their traditional lifestyles and also over the established gap in the transmission of the same to the younger generation due to legal complexities. Furthermore, what is more threatening is the misappropriation and damning usage of such pristine knowledge. Traditional Knowledge as an Intellectual Property is not absolutely protected, neither under the existing Indian Patent Act, 1970, nor under The Copyright Act, 1957. Misappropriation of TK has led to the granting of undesirable patents on inventions based directly on TK related to local bio-diversity, resulting in a form of TK piracy [6]. However, to provide a shield against the probable "Biopiracy", certain provisions under the aforesaid acts ensure safeguard to Traditional Knowledge to some extent. For instance, Section 25 and Section 64 of the Indian Patent Act, 1970, [7] elucidate on certain grounds for the revocation of patent application in the interest of protecting Traditional Knowledge. However, this does not constitute an umbrella protection against multifarious kinds of infringement and exploitation of such rooted knowledge

2 Definition and Significance

2.1 Definition of GI :

GI is a distinctive symbol used on products that represent a specific geographic origin and resemble unique qualities due to their exclusive production within a particular region. This designation encompasses various goods, particularly agricultural products, which are influenced by diverse elements like soil composition and climate, and can be traced back to their place of origin. Essentially, GI highlights the exceptional character of a product resulting from a multitude of factors, including local traditions and expertise, displayed in its production within a specific geographical location. Henceforth, it can be asserted that GI originates due to the various geographical and environmental factors namely human factor, natural factor, or a symphony of both, all of which bestows some distinguishing traits upon the products [8]. The regulating statute in the jurisdiction of India is the Geographical Indication of Goods (Registration and Protection) Act, 1999 which provides that GI, in relation to goods, means an indication which identifies such goods as agricultural goods, natural goods or manufactured goods as originating, or manufactured in the territory of a country, or a region or locality in that territory, where a given quality, reputation or other characteristic of such goods is essentially attributable to its geographical origin and in case

where such goods are manufactured goods one of the activities of either the production or of processing or preparation of the goods concerned takes place in such territory, region or locality, as the case may be [9].

2.2 Understanding the Concept of Traditional Knowledge:

The conceptual and policy dimensions pertaining to traditional knowledge (TK) remain somewhat ambiguous, as there lacks a universally agreed-upon definition or a clear narrative that establishes firm boundaries for its nature and how it can be effectively managed and utilized [10]. Nonetheless, in the contemporary world the impact of Traditional Knowledge [11] ripples in many dimensions and inputs insights in various fields by generating cultural, social, ecological, agricultural and industrial values [12]. Despite lacking the uniform deliberation upon defining the concept, its revelation can be primarily traced to the study of WIPO, which outlines the general scope of Traditional Knowledge as:- “The term ‘traditional knowledge’ refers to the content or substance of knowledge resulting from intellectual activity in a traditional context, and includes the know-how, skills, innovations, practices and learning that form part of traditional knowledge systems, and knowledge embodying traditional lifestyles of indigenous and local communities, or contained in codified knowledge systems passed between generations” [13] Another important deliberation is accredited to the Convention on Biological Diversity, 2006 which opined that the concept of Traditional Knowledge involves, innovations and practices of indigenous and the lifestyles of the local communities which they employ for the conservation and sustainable use of biological diversity.

3 Traditional Knowledge and Its Vulnerability

3.1 The Present Scenario of Traditional Knowledge:

Since Traditional Knowledge is a vast repository of ancestral practices, wisdom, and cultural heritage, it encounters significant challenges in the face of modernization and globalization. These challenges pose a threat to the preservation and vitality of traditional knowledge systems, leading to potential erosion and loss of invaluable cultural heritage. Moreover, the existing intellectual property frameworks present a significant challenge to the effective protection of traditional knowledge. Traditional knowledge often does not fit within the conventional requirements of intellectual property rights, such as novelty and individual authorship. This issue has been acknowledged by the World Intellectual Property Organization (WIPO), which highlights the need for specialized legal mechanisms to safeguard and recognize traditional knowledge within the intellectual property framework.

3.2 The Repercussions of Biopiracy:

Biopiracy entails the illicit acquisition of living organisms, including microorganisms, plants, animals, and even human beings, as well as the associated traditional cultural knowledge [14]. Biopiracy is considered unlawful as it disregards international conventions and domestic

laws, failing to acknowledge, honor, or fairly compensate the legitimate owners of appropriated life forms and the associated traditional knowledge concerning their cultivation, utilization, and economic advantage.[15] It has been witnessed on numerous instances where companies and individuals have profited from Traditional Knowledge without informed consent or fair benefit-sharing arrangements with the communities that hold such knowledge. This exacerbates the gap between the exploiters and the victims where the holders of the knowledge, if fortunate, acquires merely a fraction of the economic gains generated through the commercialization of their knowledge. One of the landmark incidents in the history of biopiracy is the “Neem Dispute, 1993”,[16] wherein the patent was first filed by W.R. Grace and the Department of Agriculture, USA in European Patent Office for method of controlling fungi on plants comprising of contacting the fungi with a Neem oil formulation. Neem (*Azadirachta indica*), a tree indigenous to the Indian subcontinent, which held immense traditional knowledge value due to its various uses in medicine, pest control, and personal care, the mention of which could also be seen in ancient Indian texts around 2000 years old. In response to this a legal action was initiated by The Research Foundation for Science, Technology and Ecology (RFSTE), India, in cooperation with the International Federation of Organic Agriculture Movements (IFOAM) and Magda Aelvoet, former green Member of the European Parliament (MEP). Subsequently, The European Patent Office (EPO) eventually revoked the controversial patent, however, it was followed by an appeal which again was dismissed in 2005. The aforementioned case, underlined the need of providing protection to the sacred Traditional Knowledge which, throughout the pages of history, have been carried by the domestic communities. Furthermore, it successfully led to the establishment of Traditional Knowledge Digital Library (TKDL).

4 Geographical Indications as a Tool for Safeguarding Traditional Knowledge

4.1 Role Played by GI

The conventional legal systems of Intellectual Property Rights (IPR) protection, such as patents, copyrights, and trademarks, are inadequate for safeguarding indigenous knowledge associated with biological resources. This is primarily because these systems are designed to protect individual property rights, while indigenous knowledge is predominantly collective in nature. Additionally, recognizing and protecting informal knowledge for IPR purposes presents challenges, including the fact that traditional knowledge evolves over time and may be passed down orally across generations, making it difficult to meet the novelty and inventive requirements of patent grants. Moreover, similar knowledge often exists across different communities, further complicating the application of conventional IPR mechanisms. Be that as it may, Geographical indications are well-suited for safeguarding traditional knowledge as they aim to acknowledge and reward members of a community or group that adhere to traditional practices embedded in their culture. Unlike other forms of intellectual property rights, such as patents or copyrights, geographical indications focus on recognizing the link between products and their specific geographic origins rather than innovations or creations. It not only acknowledges and reward investors who uphold the long-standing

standard of quality, but they also restrict the use of specific symbols to a designated group rather than granting exclusive monopolistic rights. Unlike other IPR, GI is non-transferable, as they remain valid as long as the collective tradition is upheld by the community.

4.2 Case Studies on Geographical Indications and Traditional Knowledge:

On significant occasions, GI has proved to be a pivotal tool in mitigating the depletion of Traditional Knowledge worldwide. Following are the standing evidences which highlight the contribution of GI in this noble cause of granting protection to the same:-

4.2.1 Turmeric Patent (India) :- In 1995, the United States granted a patent on turmeric's wound healing properties to the University of Mississippi Medical Center. However, the Indian Council for Scientific and Industrial Research (CSIR) objected to the patent and provided evidence of prior art to the US Patent and Trademark Office (USPTO). Eventually, 32 references in different languages, including Sanskrit, Urdu, and Hindi, were located to support India's claim. As a result, the USPTO revoked the patent.

4.2.2 Champagne (France):- In the entire world, Champagne helms the best example of Traditional Knowledge being protected by GI. Champagne's traditional knowledge encompasses the specific grape varieties, vineyard practices, and production techniques that have been passed down through generations of winemakers in the Champagne region of France.

5 CONCLUSION

In conclusion, Geographical Indications (GIs) serve as a vital mechanism for safeguarding traditional knowledge within the realm of intellectual property rights (IPR). The future prospects of GIs in IPR hold great significance as they promote equitable benefit-sharing, preserve biodiversity, and support sustainable development. It is imperative to continue advancing international cooperation, harmonization of regulations, and legal frameworks to ensure the effective protection and preservation of traditional knowledge through GIs.

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Geographical Indications: A Safe Zone for Indigenous Knowledge in Karnataka

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Abstract: *Indigenous Communities plays a key role in uniting the essentials of traditional knowledge. India's rich heritage and culture is reflected in native communities for generations. Government of India has been taking initiatives to standardise regional products with respect to its unique quality by giving due recognition to its place of birth through Geographical Indication (GI) tags. Karnataka the sixth largest state and fourth popular destination for tourism stood second in securing GI tags in India on handicrafts, agricultural, manufactured and food products. GI tags give a boost to consolidate unorganized sector. GI tags help next generations to learn and protect indigenous knowledge that leads to rural employment there by promoting entrepreneurship, innovation management and Intellectual Property Rights. GI helps local communities to go global. The present study focuses on GI products of indigenous communities in Karnataka, its promotional policies and outreach programmes to make GI products competitive in the domestic and international markets.*

Key words: *GI, Indigenous Knowledge, GI Products, GI Policies and Promotion.*

Introduction

India has a rich indigenous knowledge that revolve around different spheres of life across various art, culture, science and technology domains. Indian indigenous knowledge is available in various forms such as classical texts, manuscripts and/or oral communication for thousands of years. Some of the indigenous practices are livelihood means of the concerned knowledge holders. Indian indigenous community's practices exist out of human needs and their association with nature. Indigenous knowledge is an integral part of any country's development and progression.

Geographical indication is a distinct intellectual property granted to a product produced by a group or indigenous community that have specific geographic origin. It acts as a safety cushion to protect the ownership rights on goods produced through indigenous knowledge of a particular community in a region.

Karnataka is one among the state in India, which possess a unique regional specific traditional knowledge and diverse cultural practices. Protection of indigenous knowledge is one of the primary concerns to address the piracy of Intellectual Property in Karnataka. Karnataka is protecting its indigenous knowledge by tapping the potential of GI.

Indigenous knowledge, a key for development:

Geographical Indications for indigenous knowledge-based products can contribute to development of rural areas and rural employment generation. GI products help to create a premium brand price. GI products contribute to local employment creation, which may help to uplift the rural poverty and unemployment at grassroot level. Geographical indications may bring value to a geographical area not only in terms of jobs and higher income, but also by promoting the region as a whole. In this regard GI products may contribute to the creation of a “regional brand.”

GI Tags – Commercialization of Indigenous Knowledge:

Customers look for specific attributes and quality present in the products they buy because of their specific geographical origin possessing indigenous knowledge. “Place of origin” suggests that the product will have a specific quality or characteristic that may be valuable. Often, customers are prepared to pay more for such products. Consequently, it led to the development of specific markets for products associated with indigenous knowledge. Brand recognition is an essential aspect of marketing. Geographical indications transmit information about the region specific products by labelling those as GI products. GI products help to tie the loose ends in the unorganized sector there by promoting brands for local products.

Eminent GI products of Karnataka:

Karnataka with total of 48 GIs is the second state in India to receive highest number of geographical indications till date. The GI tagged products of Karnataka under handicraft sector are Mysore Silk, Bidriware, Channapatna Toys & Dolls, Mysore Rosewood Inlay, Kasuti Embroidery, Mysore Traditional Paintings, Ilkal Sarees, Ganjifa Cards of Mysore, Navalgund Durries, Karnataka Bronze Ware, Molakalmuru Sarees, Sandur Lambani Embroidery, Kinhal Toys, , Karnataka Bronzeware (Logo), Ganjifa Cards of Mysore (Logo), Navalgund Durries (Logo), GuleguddKhana, Udupi Sarees, Mysore Silk (Logo) and Kolhapuri Chappal.

GI products under agricultural sector are Coorg Orange, Mysore Betel Leaf, Nanjanagud Banana, Mysore Jasmine, Udupi Jasmine, Hadagali Jasmine, Monsooned Malabar Arabica Coffee, Monsooned Malabar Robusta Coffee, Coorg Green Cardamom, Devanahalli Pomello, Appemidi Mango, Kamalapur Red Banana, Byadagi Chilli, Udupi Mattu Gulla Brinjal,

Bangalore Blue Grapes, Bangalore Rose Onion, Malabar Pepper, Sirsi Supari, Chikmagalur Arabica Coffee, Baba Budangiris Arabica Coffee, Coorg Arabica Coffee, Gulbarga Tur Dal, Indi Limbe and Kari Ishad Mango.

Under food stuff sector Dharwad Pedha and under manufacture sector Mysore Agarbathi, Mysore Sandalwood Oil and Mysore Sandal Soap have obtained GI tag.

Limitations of Geographical Indication:

Even though geographical indications provide protection and benefits, it suffers from various drawbacks. Geographical indications can only be granted to a particular product. Indigenous knowledge consists of much more than just tangible products obtained from age-old knowledge that includes rituals, stories, songs, folklore, etc. which cannot be sold as products originated out of specific geographical area. Geographical indications merely avoid misleading and false indication of origin of other products. GI tags for indigenous knowledge which would not be utilised commercially is of little use.

Initiatives taken by Government of Karnataka to promote Geographical Indications:

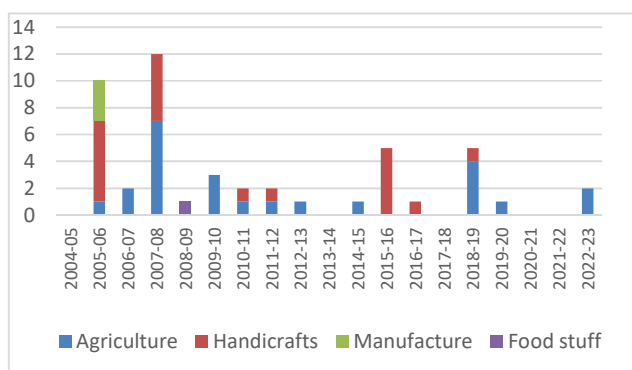
- Chief minister of Karnataka announced Mysuru-based GI tagged products like Mysuru Mallige, Nanjangud Rasabale, Mysuru Betel Leaf, Mysore Rosewood inlay, Ganjifa cards etc. as branded products in July 2023 budget session. A new policy will be framed with respect to production, research, marketing and branding of GI products.
- *Visvesvaraya Trade Promotion Centre*, under the ministry of industries and commerce of Karnataka has filed a various applications with registrar of geographical indications on behalf of several indigenous communities. It is instrumental to provide assistance to indigenous communities to reach their product to global level.
- Karnataka government takes part in a Republic Day parade and Independence Day parade with its tableaux'. Mysuru Dasara Celebrations helps to create market for GI products in Karnataka. In this regard it is drafting plans to showcase the GI products at public outreach places.

Table 1: Registration of GI Products in Karnataka from 2004-05 to 2022-23

YEAR	Agriculture	Handicrafts	Manufacture	Food stuff
2004-05	0	0	0	0
2005-06	1	6	3	0
2006-07	2	0	0	0
2007-08	7	5	0	0
2008-09	0	0	0	1
2009-10	3	0	0	0
2010-11	1	1	0	0
2011-12	1	1	0	0
2012-13	1	0	0	0
2013-14	0	0	0	0
2014-15	1	0	0	0
2015-16	0	5	0	0
2016-17	0	1	0	0
2017-18	0	0	0	0
2018-19	4	1	0	0
2019-20	1	0	0	0
2020-21	0	0	0	0
2021-22	0	0	0	0
2022-23	2	0	0	0
Total	24	20	3	1

Source: <https://ipindia.gov.in/registered-gls.htm>

Figure 2: Registration of GI Products in Karnataka from 2004-05 to 2022-23



CONCLUSION

GI products are enablers to protect the indigenous knowledge against the misleading and deceptive trade practices. GIs play key role in rural industrialization. This study observed GI practices in Karnataka to safeguard indigenous knowledge. Karnataka being one of the states which possess high number of geographical indications in the country is instrumental in formulating policies to create a safe zone for its GI products.

Impact of Product Patent on Pharmaceutical Industry

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INTRODUCTION

On May 8, 1981, Prime Minister, Late Mrs. Indira Gandhi, addressing the World Health Assembly in Geneva, said: "Affluent societies are spending vast sums of money understandably on the search for new products and processes to alleviate suffering and to prolong life. In the process, drug manufactures have become a powerful industry. My idea of a better- ordered world is one in which medical discoveries would be free of patents and there would be no profiteering from life or death."¹

Article 21 of the Indian Constitution guarantees every person and citizen of India the right to life and the right to personal liberty. Further, Article 47 of the Indian Constitution declares that it is the duty and obligation of the Indian state to improve public health. In addition, Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) adopted by India asserts that nations have an obligation to facilitate the right to health. Thus, the Indian government operates under the premise that medicines critical to the important healthcare needs of India's population must be both available and affordable. Indeed, this paradigm is the foundational basis for India's vision for the right to health under the Article 21 of the Indian Constitution²

The emergence of intellectual property rights is a result of innovation, creativity, and commercial values. Patents are a type of intellectual property that refers to the rights given to an individual for the invention of a good or a process that has some value in the course of trade. A patent is not a novel idea. In fact, inventions are one of the most valuable intellectual property assets for the owner because they grant them the sole right to use, sell, and distribute those inventions once they receive patent protection over them, which lasts for at least 20 years from the date the patent application was filed. There have been countless inventions throughout history.

India has stood out among the developing nations because of its robust generic pharmaceutical sector, which has allowed it to offer medications at some of the lowest costs in the world. There is a lot of credit for advancement goes to India's 1970 Patents Act. This process was made easier by two crucial provisions. The first was the establishment of a

¹ Quoted in B.K.Keayla, Conquest by Patents, 1998

² Uday S. Racherla "Historical Evolution of India's Patent Regime and Its Impact on Innovation In The Indian Pharmaceutical Industry

process patent regime for chemicals, and the second was the reduction in the length of time that pharmaceutical patents could be granted.

The obligations to implement the Agreement on TRIPS changed the conditions that had seen the Indian pharmaceutical industry take roots. The critical issue was the reintroduction of the product patent regime³

The establishment of the World Trade Organization (WTO) has incited a gigantic change in viewpoint in world trade. The admission to Trade-Related (Aspects of) Intellectual Property Rights (TRIPS) was wrangled during the Uruguay round trade courses of action of the General Agreement on Tariffs and Trade (GATT) and "one of the fundamental clarifications behind joining authorized development issues into the GATT framework was the medication for business"⁴

EVOLUTION OF PHARMACEUTICAL PATENTS

The Indian pharmaceutical industry, is currently the largest global supplier of cost-effective generic drugs. Thus, the drugs made in India are exported to more than 200 countries around the world, with the United States of America (USA) being India's biggest market.⁵

India's experience in three distinct eras—colonization, post-independence, and globalization—are reflected in the Indian patent system. The Indian Patents and Designs Act of 1911, which was written by the British, passed India's first patent laws during the "colonisation" phase. In 1947, India became independent. The British-imposed, foreigner-favoring patent restrictions, however, hampered the growth of the Indian pharmaceutical industry during the "post-independence" phase and required independent India to purchase even basic medications at exorbitant prices. In order to conduct a thorough examination of the current patent laws, the Indian government established a high-powered committee in 1949, which was led by Bakshi Tek Chand, a distinguished judge of the Lahore High Court. The Chand Committee's most important discovery was that the current Indian patent rules provided asymmetrically high protections to foreign multinational corporations (MNCs) while severely inhibiting the development of the domestic manufacturing sector.

In 1957, the Government of India appointed another committee led by the distinguished retired Justice of the Supreme Court of India, N. Justice Rajagopala Ayyangar, to examine the question of revising the Patents Act and advising government. This committee's recommendations acted as a catalyst for changing the Indian patent law, which eventually led to India Patents Act of 1970. The India Patents Act of 1970 incorporated major provisions to reduce the social costs of the foreigner-owned patents. Thus, the Patents Act of 1970 (a)

³ The 1970 Patents Act had amended the Patents and Designs Act of 1911, which provided a product patent regime.

⁴ "TRIPs and Pharmaceuticals: Implications for India", <http://www.cuts-india.org/1997-8.htm#Pharmaceutical> (Visited on April 18, 2023)

⁵ Available at: https://link.springer.com/chapter/10.1007/978-981-13-8102-7_12 (last visited on November 06, 2023)

prohibited patents on products useful as medicines and food, (b) shortened the term of chemical process patents, and (c) significantly expanded the availability of compulsory licensing. This led to the birth and growth of the powerful Indian pharmaceutical generic drugs industry. Indeed, the India Patents Act, 1970, was momentous in the history of the Indian pharmaceutical industry as it enabled domestic firms to replicate the drugs patented by MNCs, creating a booming generic pharmaceutical industry. As MNCs began to exit the Indian market due to significantly diminished IP protection, the Indian pharmaceutical companies began to fill the void and dominate the global business of reverse-engineered highly cost-efficient generics that sold at exceptionally cheaper prices compared to the counterparts marketed by MNCs. This is how the generic pharmaceutical industry of India was able to become one of the most prolific drug manufacturing industries in the world, ranking third globally in annual volume⁶.

PATENT LAW AFTER TRADE-RELATED INTELLECTUAL PROPERTY RIGHTS (TRIPS) AGREEMENT

In 1994 India consented to the TRIPS arrangement and thus Patent Laws of India were additionally revised by the TRIPS understanding. Prior patent was allowed uniquely for technique or interaction in India which was changed in consistence with the TRIPS arrangement in the year 2005. After that licenses are allowed for technique or interaction as well as for items. Benefit of this alteration is taken by different organizations and people. The quantity of Indian patent applications has expanded after this alteration. As of late, different public and worldwide organizations began their innovative work interaction and putting resources into India as the execution of licensed innovation or IP laws in India are better, when contrasted with prior patent framework in India and different arrangements identifying with encroachment of patent law is characterized in Patent Act, 1970.

On January 1, 1995, the TRIPS Agreement went into force, which meant that India as a member of the WTO was required to abandon some of its long held position in the intellectual property field to comply with the provisions of the TRIPS Agreement. As a developing country, India obtained a 5-year transition period⁵ and an additional 5 years to amend patent laws on patent protection of pharmaceuticals⁷. The following analysis is based on the amendments to the Indian Patent Law of 1999, 2002, and 2005 and delineates the impact of the TRIPS Agreement on India's pharmaceutical patent system.

According to Article 70.8 of the TRIPS Agreement, members that have not offered patent protection for pharmaceuticals and agricultural chemical products as of the date of entry into force of the WTO Agreement are required to provide a way for applications for patents for such inventions to be filed as of that date. The purpose of the TRIPS Agreement provision is to maintain the novelty and priority of such applications. This is also called the "mailbox" application system and is used by developing countries during the transition period.

⁶ *Id* at 4

⁷ Article 65.4 of the TRIPS Agreement

At the same time, in accordance with the requirements of Article 70.9 of the TRIPS Agreement, although it is not necessary to directly provide patent protection during the transition period, exclusive marketing rights are to be granted to pharmaceuticals and agricultural chemical products provided that, subsequent to the entry into force of the WTO Agreement, a patent application has been filed and a patent granted for that product in another member and marketing approval obtained in such other member. The Patents (Amendment) Act, 1999, was issued on March 26, 1999, but effective since January 1, 1995, which is the effective date of the TRIPS Agreement. The Amendment of 1999 added Chapter IVA after Chapter IV of the Patents Act, 1970, to specifically regulate exclusive marketing rights.

According to the Amendment⁸ product patent applications can be submitted in the food and pharmaceutical fields, which however will not be subject to patent examination until December 31, 2004. At the same time, the Amendment provides another way to obtain protection, namely, exclusive marketing rights to sell or distribute the article or substance in India. For the application for exclusive right to sell or distribute an article or a substance, the Controller⁹ shall first examine whether the invention is not an invention within the meaning of the Patents Act¹⁰.

The applicant shall have the exclusive marketing right to himself/herself, his/her agents or licensees to sell or distribute in India the article, or the substance from the date of approval granted by the Controller for a period of 5 years or till the date of grant of patent or the date of rejection of the application for grant of patent, whichever is earlier.

The Patents (Amendment) Act, 2002, was promulgated on June 25, 2002, and came into force on such dates as the Central Government appointed, by notification in the Official Gazette, and different dates were designated for different provisions of this Act¹¹. In order to meet the TRIPS standards, many provisions of the Patents Act, 1970, were amended, including the definition of invention, the object of patent protection, the patent term, the requirements of patent application, compulsory licenses, and the Bolar exception, which have a significant impact on India's pharmaceutical patent system.

The Patents (Amendment) Act, 2005, was promulgated on April 4, 2005. While some specific provisions came into force on dates set by the Central Government, the remaining provisions came into force on January 1, 2005, when India's transition period expired. The Amendment of 2005 is crucial for India to fully implement the TRIPS obligations. The most important change introduced by the Amendment is the omission of Section 5 of the Patents Act, 1970¹². The Amendment also omitted Chapter IVA "Exclusive Marketing Rights,"

⁸ Chapter IVA Exclusive Marketing Rights of The Patents (Amendment) Act, 1999.

⁹ In Indian Patents Act, Controller means the Controller General of Patents, Designs and Trademarks.

¹⁰ Section 3 of the Patents Act, 1970.

¹¹ Section 1 of the Patents (Amendment) Act, 2002.

¹² Section 5 of the Patents Act, 1970.

which was inserted into the Act by the Amendment of 1999¹³. This means that, after the expiration of the transition period, in accordance with the TRIPS requirement¹⁴, patents shall be available for any inventions, whether products or processes, in all fields of technology.

Granting product patents to pharmaceutical innovation has affected developing countries like India by directly restricting the availability of affordable drugs and by indirectly eliminating the generic competition that had survived so long by providing patented medicines at an affordable price. While ensuring that the inventors are given their patent rights and their accompanying benefits, it is also vital to keep in mind the rights of the people.

Article 21 of the Constitution guarantees protection of life and personal liberty to every citizen. Since the right to health is integral to the right to life, the government has a constitutional obligation to provide health facilities. Therefore, the government must ensure that the patent holders do not exercise their exclusive right over their patented products for a long time, giving them unfair exploitation of the patent. People must be able to access and afford life-saving drugs.

Section 3(d) of the Patents Act, 1970 was amended to ensure that patented products do not stay patented for a long time by making minor or insignificant modifications. This Amendment had aimed to prevent 'patent evergreening'.

Evergreening refers to the practice whereby pharmaceutical firms extend the patent life of a drug by obtaining additional 20-year patents for minor reformulations or other iterations of the drug without necessarily increasing the therapeutic efficacy¹⁵. And the Novartis case very well highlights the importance of this provision.

Table showing the number of patents granted/ rejection and abandoned under Section 3(d).

Jurisdiction of Patent Office	Granted	Rejected	Abandoned
(Total Applications 500)	(207)	(72)	(221)
Chennai: 94 (18.80%)	27	27	40
Kolkata: 83 (16.60%)	40	09	34
Mumbai: 157 (31.40%)	69	16	72
New Delhi: 166 (33.20%)	71	20	75

Source: Data from Intellectual Property India, <http://ipindiaservices.gov.in>

¹³ Section 21 of the Patents (Amendment) Act, 2005.

¹⁴ Article 27.1 of the TRIPS Agreement.

¹⁵ R, Sushmita. "Ever Greening: An Abuse of the Patent System" academic, 16 Jan. 2015, <https://www.lawctopus.com/academike/evergreening-an-abuse-of-the-patent-system/>. (last visited on July 7, 2023).

In 1998, Novartis AG, an international pharmaceutical company, filed an application as per the TRIPS agreement before the Madras Patent Office for granting a patent for an anticancer drug named 'Glivec'.

The fact was that another drug under the name Zimmerman patent existed used for the same purpose as 'Glivec'. The Madras Patent Office rejected the application on the grounds that the innovation lacked novelty and failed to satisfy the test of non-obviousness. It was held that the drug is not patentable under Section 3(d) of the Patents Act as it did not have any significant therapeutic efficacy over its already existing form.

In its two writ petitions filed before the Madras High Court under Article 226 in 2006, Novartis stated that Section 3(d) of the Patents Act was unconstitutional. It reasoned the same by arguing that the Section violated Article 14 of the Constitution and was also non-compliant with the TRIPS agreement.

In 2007, the case got transferred to the Intellectual Property Appellate Tribunal (IPAB). In its decision, the tribunal stated that the drug had passed the test of novelty and non-obviousness, but it could not be patented as it was held as a non-patentable drug by way of Section 3(d).

In 2009, Novartis filed a Special Leave Petition (SLP) before the Supreme Court. The issue was to ascertain the meaning of a known substance and efficacy under Section 3(d). The Supreme Court in 2013 held that the beta crystalline form of Imatinib Mesylate is a new form of the known substance, that is, Imatinib Mesylate and that the word efficacy referred to therapeutic efficacy. As a result, the Novartis drug showed no increase in therapeutic efficacy and hence cannot be patented. Thus, the Supreme Court's judgment attempted to avoid the evergreening of patents.

Large pharmaceutical companies tend to make small and inconsequential changes to the already patented drugs, claiming patent rights over 20 years. This is an unsustainable practice, especially in a developing country like India, where the population is high, and there is a need for life-saving drugs every day. Moreover, the availability of medicines at a cheaper rate is critical, which would not be possible if the companies continued to hold patent rights.

When a patent holder hasn't made the necessary steps to provide the drugs at a reasonable price, the controller or any other person interested in the product can step in and offer or apply for a compulsory license. This ensures that the patent-holding company doesn't have unmitigated power to manufacture and distribute the drug. The Drug Prices Control Order (DPCO) is an order issued under section 3 of the Essential Commodities Act (ECA), 1955. It seeks to regulate the prices of pharmaceutical drugs. It also comes up with the list of drugs to which the price ceiling shall apply and the formula or method for calculating the ceiling price. Until 2013, the ceiling price was fixed based on the cost-based pricing method. The ceiling price was calculated as a multiple of the cost that it took producers to promote and distribute a pharmaceutical drug.

In 2013, India adopted market-based pricing, whereby the government determined the ceiling prices, that is, the maximum mark-up that a retailer can charge over the reference price. The same is the simple average of the prices of all the brands with a market share of greater than or equal to 1 per cent based on market data provided by a market research firm, IMS Health¹⁶

With respect to medicines and pharmaceutical products, there must be a more sensitive and lax approach. Article 7 of the TRIPS Agreement states that the protection and enforcement of IPRs should contribute to the promotion of technological innovation and in a manner conducive to economic and social welfare¹⁷

CONCLUSION

A proper application of Section 3(d) is necessary to ensure that no essential drugs remain patented for an unreasonable amount of time. Governments must make domestic patent laws more flexible. And they must promulgate provisions that ensure that the disadvantaged populations of the country also have access to essential drugs priced expensive. In addition, the government must exercise flexibility in granting compulsory licenses to protect the patent holders' rights so as to make sure that the patent owners get a reasonable amount of royalty for their inventions. Also, they must track the distribution of drugs manufactured by the generic manufacturers after granting compulsory licenses to avoid creating grey markets. Patent holders can be encouraged to license out their drugs at a lower price. They could also be given tax benefits as further encouragement. Government can further acquire the patent rights of certain life-saving drugs and enable the manufacture of these drugs by generic companies. By taking similar steps, the governments, especially in underdeveloped and developing countries, can ensure that the patent holders' rights are protected. And thus, also ensuring that the public's health is protected by providing the public access to patented drugs

¹⁶ "Economic survey 2020-2021" Indian budget,
<https://www.indiabudget.gov.in/economicsurvey/doc/echapter.pdf>.

¹⁷ Ayyangar, Shri Justice N. Rajagopala. "Report on the revision of the Patents Law" https://spicyip.com/wp-content/uploads/2013/10/ayyengar_committee_report.pdf.

INTELLECTUAL PROPERTY RIGHTS – THE LEGAL ROLE IN FINTECH SECTOR

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***ABSTRACT:** The digital Era has made a strong impact on Intellectual property law. Increase in technology and internet has paved a way for the people to create, distribute and the way of observing the information has changed drastically. The IPR are encompassing, particularly in the technology sector. Not only in the technology sector but also in the financial technology sector also. There are various types of IPR like Copyrights, trademarks, trade secrets and industrial designs etc.*

Financial technology which is known as FINTECH is growing over the years drastically and especially after the pandemic. Fintech enhances a a brand-new economic possibility and it creates more businesses, and gives heavy competition among the competitors in the financial sector. It focuses on the audit, accounting firms, hedge funds, institutional investors, insurance companies, start-ups and many more. Many firms like Google Pay, Bharat pe and Phone pe have started fintech services like digital lenders, payment aggregators, and Gateways, Payment banks, peer to peer lending platforms, prepaid insurance payments and UPI payments which is familiar to the society. With the increasing number in corporations the role IPR is very important for the innovations and productive technologies in the fintech sector. This paper highlights the glimpses of IPR role protecting in fintech sector, to examine the important concepts related to IPR innovations and also some legal considerations related to IPR in the field of Fintech. The paper is based on the secondary data associated with conceptual study.

INTRODUCTION

People have their own way to gain knowledge throughout their life time. An intellectual property is kind of child brain which has their original idea, creative thought etc. It is an intangible in nature. According to Article 2 of the WIPO (World Intellectual Property Organisation) – Central Organisation for the protection of Intellectual Property Laws and the expert organization of the UN, “Intellectual Property shall include the rights relating to literary, artistic and scientific works, inventions in all fields of human endeavour, scientific discoveries, industrial designs, trademarks, service marks and commercial names and designations, protection against unfair competition, and all the other rights resulting from intellectual activity in the industrial, scientific, literary or scientific fields.”

On the other part the financial technology which is popularly termed as FINTECH is changing the world for five years which make use of technology in financial services. The innovators use fintech to

FinTech innovators are leveraging the use of FinTech to: (i) address the complexity of the traditional financial regulatory environment, (ii) provide greater speed, accuracy and efficiency in analyzing data and making real-time financial risk decisions, and (iii) enhance financial security to keep up with a market that is rapidly evolving in terms of customers' financial needs and expectations.

IMPORTANCE OF IPR IN FINTECH SECTOR

Need of IPR in Fintech sector intellectual Property Rights (IPR) are critical for the company's inventions and competitive technology in the fintech industry. The registration of IPR is important for technology ownership and protection, intellectual property registration and enforcement, branding, models, and business secrets¹.

In the fintech market, the certification of IPR becomes highly vital for the innovations and productive technologies. Intellectual property rights protect things such as software, hardware and branding. Where competitive technology is involved, understanding the issues associated with the development and deployment of IP rights is crucial.

REVIEW OF LITERATURE

Sagar Kishore Savale and Varsha Kishor Savale, article received on 22 April 2016, "Intellectual Property Rights". The paper is on different types IPR. Mainly focused on patents and its types. The paper has also highlighted on types of prior art like novelty, validity, clearance etc. The other objectives of this paper was focused on GATT and its legal foundation. The study is on secondary data.

Karishma Singh, November 2, 2022," Relation between IPR and Fintech law in India". The study focuses on the importance of IPR and Fintech and hence the relationship between IPR and fintech with respect to law. The study was conducted based on the secondary data.

STATEMENT OF PROBLEM

The legal aspects of IPR is very important to understand. Many papers have been presented on IPR, but understanding the legal concepts on fintech sector is also equally important.

OBJECTIVES OF THE STUDY

- To know the legal consideration for Intellectual Property Rights (IPR) in the field of Fintech.

RESEARCH METHODOLOGY:

The research paper is an attempt of conceptual research, based on the secondary data sourced from various reports, journals, magazines, articles and the websites. Available secondary data was extensively used for the study.

VARIABLES OF THE STUDY

The different types of Intellectual Property in Legal protection of Fintech:

A. Copyright and Software protection: The right that an individual receives in lieu of work extracted from his/her intellectual effort is referred to as “copyright” . In India, no person can claim copyright or any equivalent right in any work, whether published or unpublished, unless it is in compliance with the requirements of the “Copyright Act of 1957”. After the amendment of 1994, programs designed to operate computers are included in the meaning of “literary works” under the Act.

Fintech heavily relies on software development. Copyright protection safeguards the code, user interfaces, and other creative aspects of software applications in the fintech domain. Startups and entrepreneurs should consider copyrighting their software to prevent unauthorized use and reproduction, which could potentially infringe upon their intellectual property rights.

The arrangements under Section 51 in consonance with Section 14(a), it would be evident that any unauthorised storage, propagation, distribution of replicas, or adaptation of copyrighted software would amount to an infringement of copyright in the programme of a FinTech.

B. Trademark Protection for Fintech Brands:

Trademark is of any title, term, sign, structure, mechanism, form of products, labelling, colour combination etc., which helps us to choose and applies to identify and differentiate their products from the other products.

In the fintech industry, building a strong brand is crucial for distinguishing oneself from competitors. Trademarks protect the unique names, slogans, logo and overall branding of fintech businesses. Registering a trademark ensures exclusivity and prevents unauthorized use by others, enhancing brand recognition and reducing the risk of consumer confusion.

Concerning infringement, a trademark is abused when a person adopts a corporation’s domain name without authorization. The unlawful use of a web domain containing a registered trademark is in direct violation of the Indian trademark law.

C. Trade Secrets and confidentiality:

A trade secret is any equation, design, technology, equipment, method, strategy, data synthesis, or computer programme (referred to collectively as proprietary information). Additionally, these confidential facts are used in the company to provide a market edge or the possibility for a competitive gain. This needs to be protected as the competitors of a business always try to acquire it with the use of unethical techniques. The protection of trade secrets in India is based on equity principles, actions for fraudulent misrepresentation, and contractual responsibilities.

Fintech companies often possess crucial trade secrets, including proprietary algorithms, customer data, risk assessment models, and other valuable information. Protecting these trade secrets becomes vital in an industry known for intense competition. Measures such as non-disclosure agreements, restricted access controls and employee education on data privacy and security can help maintain the confidentiality of sensitive information.

D. Patent Protection:

Fintech innovations often involve novel processes, systems, or algorithms. Securing patents for these innovations can be crucial to safeguarding their economic value. However, obtaining patents in the fintech sector can be challenging due to the constantly evolving nature of technology and the presence of prior patents. Understanding the patentability requirements and conducting a thorough patent search is essential to ensure that your fintech solution is eligible for protection.

E. Design Protection:

Innovation and distinct visual interface, logos, and icons are vital components of Fintech branding. Registering these designs can provide crucial protection against unauthorized use and build brand recognition. Pursuing design patents or registering for design rights can help safeguard your Fintech products unique visual features and present a competitive advantage.

F. Regulatory Compliance:

Fintech ventures must navigate a complex and evolving regulatory landscape. Ensuring compliance with financial regulations such as anti-money laundering (AML), data protection, and customer privacy laws is vital. Failure to comply with relevant regulations can result in severe penalties, loss of reputation, and potential legal actions. Understanding and adhering to the specific requirements of the jurisdictions in which your fintech operates is crucial for long – term success.

CONCLUSION

As the Fintech industry continues to thrive, understanding and managing intellectual property rights becomes increasingly important securing patent protection for unique innovations, registering copyrights, protecting trade secrets, and maintaining strong design and trademark protection are crucial steps in safeguarding your Fintech products and services. In addition, ensuring regulatory compliance remains vital in order to avoid legal pitfalls and maintain a competitive edge in this rapidly evolving industry. By being proactive and diligent in addressing legal considerations surrounding IPR, Fintech entrepreneurs can effectively protect their investments and drive innovation in this exciting field.

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Intellectual Property Rights and NEP: Need for Restructuring Assessment

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***Abstract** - The National Education Policy 2020 is based on the principle that education must develop not only cognitive capacities but also the affective component. It emphasizes conceptual understanding; creative and critical thinking; scientific temper, and the promotion of life skills such as communication, cooperation, teamwork, and resilience.*

Intellectual Property refers to creations of the human mind, such as inventions; literary and artistic works; designs and, symbols, names and images used in commerce. IPR aims to foster an environment in which creativity and innovation can flourish.

The tenets of NEP 2020 are designed keeping in mind the scope for novel ideas and creation of new knowledge. But the mode of testing students' learning at present, is based on rote-learning. There is no creative or original component in using Google to submit assignments or in memorizing answers that are re-produced at exams. Mere duplication of answers is against the ideals of IPR. My paper attempts to posit that the principles of IPR can be ensured by an effective re-hauling of the assessment and evaluation system with specific reference to school and pre-university education.

Keywords: assessment, education, intellectual property, reform

INTRODUCTION

It is well known that 'Necessity is the mother of all invention.' And so is knowledge for all advancements. Education makes way for knowledge accumulation. This amassment does not always lead to new knowledge. There is a need to take stock of assessment practices in an ever-expanding society. It is essential to take a closer look at the purpose of assessment in order to negotiate the content and methods of teaching and evaluation. Considering school and pre-university education as grass-root level learning, the paper aims to enumerate the necessity of integrating assessment with innovation and creativity which pave the way for Intellectual Property.

ASSESSMENT

Assessment is a crucial determinant of the quality of questioning which in turn is reflective of the quality of teaching. Ranging from questions asked by the educator in classrooms while teaching, questions for assignments, periodical tests, mid-term exams or the end-of-semester /academic year exams, students are assessed to decipher if the objectives of learning are met or not. Exams today are more a test of endurance and memory, not learning, as, majority of the questions are based on rote-learning. The canvas of the world education sector has witnessed phenomenal changes with

countries implementing various reforms to harness and to aid the latest in technology. The reforms have concentrated on the syllabi and not on the ways of questioning. Just as specific outcomes of learning are crucial in lesson plans, there must be ‘specific objectives of questioning’ in order to assess application, creativity and innovation. If scope for critical thinking and innovative ideas is not put in place at the grass-roots level by providing a platform to innovate through assessment questions, there can be no new knowledge contribution from a student who is accustomed to answering by memorization.

“If all other elements of the course point in one direction and the assessment arrangements in another, then the assessment arrangements are likely to have the greatest influence on the understood curriculum” Erwin and Knight, 1995, pg181

Unfortunately, assessment often works against, rather than for, learning:

Assessment can encourage passive, reproductive forms of learning while simultaneously hiding the inadequate understanding to which such forms of learning inevitably lead.

In some cases: courses tend neither to develop basic concepts well, nor use assessment tasks which allow staff or students to know whether concepts have been learned. Boud, 1995b, p39

The end result of examinations is not just an appraisal of students’ learning and performance, but is a reflection of the entire education course during their years of study. Taking the example of 10thBoard /SSLC and 12th Board /II PUC exams, students prioritise only a few subjects like Mathematics and Science, which help them score well in the board examinations. Subjects like Art & Craft, Yoga, Sports and other co-curricular activities are included in the curriculum but, no prominence is given to them in the board examination. Students eventually pay less attention to creative pursuits and concentrate on subjects which determine board exam scores. The creative process is curbed. The consecutive years at school enforce this idea that concentrating on anything which is not a ‘core’ subject is nothing but a waste of time. The collateral associated with these examinations are very high and students modify their learning based on what will be assessed. This shifts the student’s centre of attention away from understanding, critical thinking, analysing and doing which go against the tenets of IPR. The results of the examination have a direct or indirect bearing on teacher appraisal, promotion and job security (Richard J. Shavelson, Robert L. Linn, Eva L. Baker, Helen F. Ladd, Linda Darling-Hammond, Lorrie A. Shepard, Paul E. Barton, Edward Haertel, Diane Ravitch, and Richard Rothstein • August 27, 2010) As a result, teachers often teach students for tests with a primary focus on higher percentage and thereby reinforcing students’ learning to memorizing and reproducing ‘bookish’ knowledge.

IP and IPR

The World Intellectual Property Organization (WIPO) defines Intellectual Property as creations of the human mind, such as inventions; literary and artistic works; designs and; symbols, names & images used in commerce. It is legally protected through patents, copyrights and trademarks. Intellectual property rights (IPR) refer to the legal rights given to the inventor or creator to protect

his/her invention/creation for a certain period of time. The IPR system aims at fostering an environment in which creativity and innovation can flourish.

INDIA AND INNOVATION INDEX:

WIPO's 2022 Global Innovation Index (GII), has ranked Switzerland, the United States, Sweden, the United Kingdom and the Netherlands as the world's most-innovative economies with China on the threshold of the top 10. India is ranked 40. In education, one of the sub-pillars of Global Innovation Index marking, India is ranked 93 out of 132 countries with a score of 41.1

“The India Innovation index lays down the broad pillars on which the country's innovation landscape is determined. The innovation index is based on 7 pillars: human capital, investment, knowledge workers, business environment, safety and legal environment, knowledge output, and knowledge diffusion... **The overall index score is about 14.56. This is arguably low but we are ambitious to enter into the top 25 nations on the Global Innovation Index.** Although our performance has improved on the GII over the years, in order to achieve our ambitious targets, we need to traverse the distance.” – NITI Aayog, India Innovation Index, 2021

The rankings of Global Innovation Index, 2022 and, India Innovation Index, 2021 clearly call to attention the need for innovative practices to be formulated so as to be relevant in the global sphere. Contribution to Intellectual Property begins by asking the right questions in order to beget creativity, innovation and invention as, “Good teaching is more a giving of right questions than a giving of right answers” – Josef Albers

NEP-2020

“The Vision of National Education Policy envisions an education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower. The Policy envisages that the curriculum and pedagogy of our institutions must develop among the students a deep sense of respect towards the Fundamental Duties and Constitutional values, bonding with one's country, and a conscious awareness of one's roles and responsibilities in a changing world. The vision of the Policy is to instill among the learners a deep-rooted pride in being Indian, not only in thought, but also in spirit, intellect, and deeds, as well as to develop knowledge, skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen.”

The Vision and Principles of NEP 2020 aim at creating holistic learning and seamless education for all. But, to ensure that the vision is realised, the assessment system needs to be revamped. We are still testing using age old patterns some of which are obsolete and irrelevant to the changing versions of society that is influenced by technological advancements and global economies. While memorizing few basic concepts is valid, application of knowledge in practical and real-time

situations is required. Even as NEP 2020 recommends student-centric system of curriculum, the assessment is still summative. The current assessment and evaluation reinforce retaining knowledge and re-writing the same in the exams. Even the continuous assessment tests at different intervals in the academic structure promote rote-learning.

“It is important to understand that students’ performance in assessments conducted for accountability, certification and selection purposes will enhance only when the formative assessment is practiced to tightly integrate pedagogy, learning and assessment in classrooms. School should not prepare students for just one kind of assessments instead it should prepare them for life by providing them with meaningful educational experiences for attaining the higher aims of education.”

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Program Schedule

Sl. No.	Time	Events
1	08.30AM – 09.30AM	Registration
2	09.30AM – 10.00AM	Inaugural Function
3	10.00AM – 10.45 AM	Technical Session 1 Sri T. S. Sridhar Topic: <i>Nation, Innovation and IPR</i>
4	10.45AM – 11.00 AM	Tea Break
5	11.00AM – 11.45 AM	Technical Session 2 Dr. K. V. Shantha Topic: <i>Role of IPR in research and academics</i>
6	11.45AM – 12.45 PM	Oral Presentation 1 (Auditorium) Staff
7	12.45PM – 01.30 PM	Lunch Break
8	01.30 PM – 02.30 PM	Oral Presentation 2 (Auditorium) & Oral Presentation 3 (Computer Lab)
	02.30 PM – 03.15PM	Technical Session 3 Sri. M G Kodandaram, IRS Topic: <i>Navigating Economy through IPR</i>
10	03.15 PM – 03.30 PM	Tea Break
11	03.30 PM – 04.00 PM	Valedictory Function
12	04.00 PM – 04.30 PM	Certificate distribution



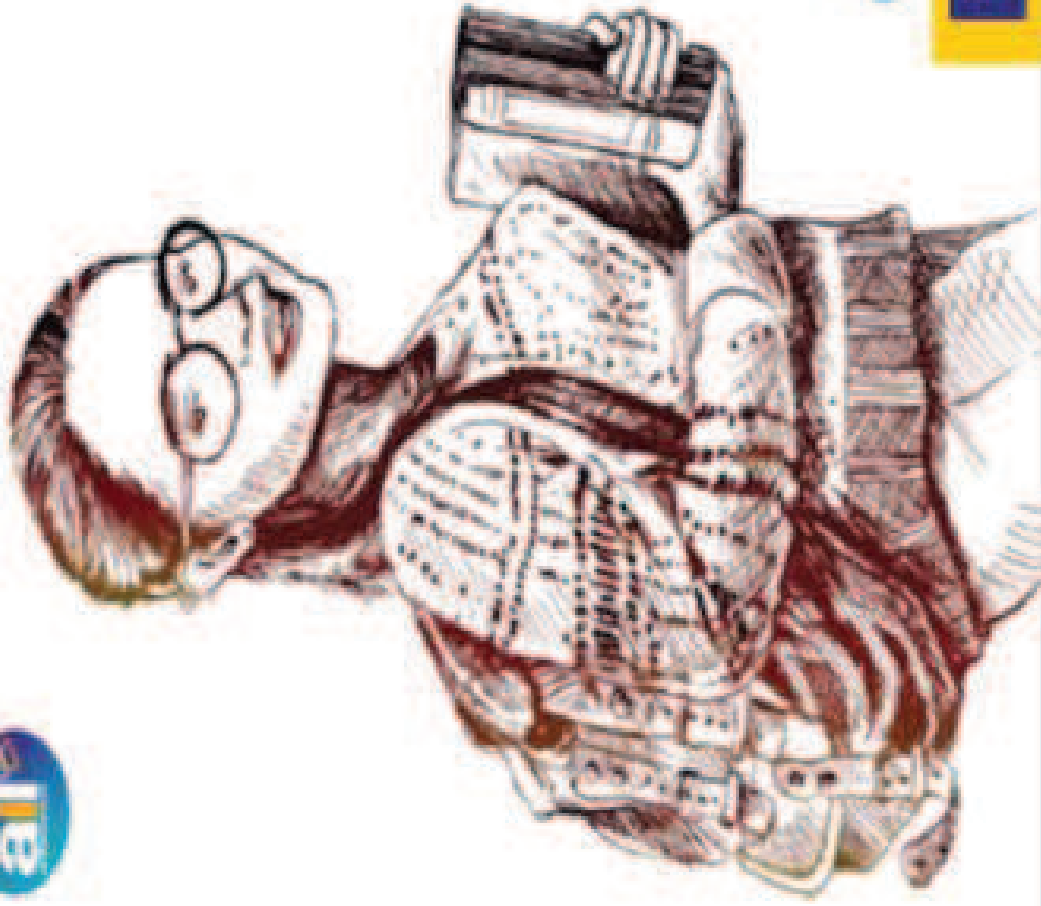
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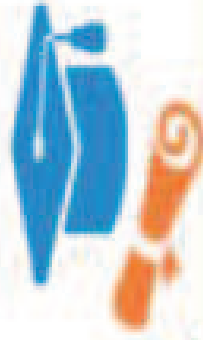
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