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Patent Laws in Technological Innovations

Santoshini Moharana,
Advocate, High Court of Odisha, Cuttack, Odisha, India
moharanasantoshini4@gmail.com

Abstract

Technological innovation is accelerating at an unprecedented pace, presenting significant challenges and opportunities for Patent law. This abstract explores the evolving landscape of patent protection, examining key trends and considerations that will shape the future of patent laws in the context of technological innovation. The traditional function of patent- incentivizing invention- must adapt to the complexities of emerging technologies like artificial intelligence, biotechnology, and software, while simultaneously addressing concerns about access competition, and societal impact. This abstract argues that the future of patent law hinges on striking a delicate balance between fostering innovation and promoting broader access to technological advancements. It examines the increasing importance of international harmonization efforts to streamline patent procedures and standards in a globalized world. Furthermore, it discusses the crucial need for improved patent quality and efficiency, leveraging data analytics and AI to enhance patent examination processes and reduce backlogs. The abstract also explores the growing concerns surrounding patent abuse, including the activities of patent rolls, and the necessity for effective mechanisms to mitigate these issues. Beyond these practical considerations, the abstract delves into the broader societal implications of patent law. It considers the role of patents in promoting open innovation models and the need for adopting patent systems to accommodate collaborative research and development. Finally, it emphasizes the importance of incorporating societal values into patent policy, particularly in areas such as essential medicines and environmentally impactful technologies, ensuring that patent protection serves the greater public good. By addressing these multifaceted challenges, the

future of patent law can effectively foster technological innovation while safeguarding access, competition and societal well-being. After all, the tapestry of innovation and technology has been woven together to create a complex and a rich whole. To make the technologies efficient, faster and better, innovation has played a vital role by putting life into technologies throughout the history by making them efficient, faster and better. Intrinsically, technology is about innovation. The word "Innovation" means the process that involves progress or creation of new thoughts and implementation of those ideas into a product, process or service. Thus, putting an intention into action is what called as innovation but that intention must be the lifeblood of progress.

Keywords: Technological Innovation, Patent Law, Artificial Intelligence, Access and Competition, International Harmonization.

Technology and Innovation: A transitional tapestry Introduction

Every time the word "Technology" appears, we inferred the images of few gadgets for instance smart phones, futuristic robots or complex algorithms. But the word "Technology" is far more meaningful and it refers to the application of knowledge and tools to extend human capabilities in solving an issue. Technology has been a driving force behind human progress since centuries from the invention of necessities to the invention and expansion of internet by shaping the society from every inch. Because, major changes have been brought by the societies within the societies with the help of technology and its advancements. With the help of digital revolution, society has changed its form of communication, work culture etc. by building a strong relationship between the innovation and technology.

Innovation has become an oxygen box for the existence and acceptance of technology, without any hint of innovation, no technology is considered as a reality. Thus, innovation is not a matter of luck but it is a matter of hard work, it's about taking that idea, nurturing it, developing it, and ultimately implementing it in a way that creates value. It's a process that involves creativity, problem-solving, and a willingness to challenge the status quo. Innovation demands for a supportive environment, for being an oxygen to the technology. An environment that encourages creativity and experimentation by taking risks, an organization that fosters the custom of innovation is where the innovation can breathe through technology.

The process through which the tapestry is woven by blending innovation into technology can be complex and challenging. Navigating this complex landscape requires a nuanced understanding of technology's potential and its limitations. We need to foster

innovation while also considering the ethical and societal implications of new technologies. Education plays a crucial role in equipping individuals with the skills and knowledge to thrive in a technologically driven world. Critical thinking and digital literacy are essential for navigating the vast sea of information and discerning truth from falsehood. In today's rapidly changing world, innovation is more important than ever in the blood of technology.

Envisioning the future, the possibilities of technology and innovation seem endless. From personalized medicine to sustainable energy solutions, technology holds the key to addressing some of the world's most pressing challenges, while there are countless areas where the impact of innovation has been marked from artificial intelligence to the field of biotechnology. However, it is crucial that we approach technological development with a sense of responsibility, ensuring that it serves humanity and contributes to a more equitable and sustainable future. So that the fruits of the tapestry can be shared by all and must be benefited to all.

To make the world more sustainable and equitable, the tapestry of technology and innovation must be woven together to serve the purpose of creating a brighter future with the threads of creativity, human endeavour and ingenuity. A tapestry which will not only accept the technology but also embraces the innovation, have the capacity to push the boundaries around the creativity.

Technological innovation: An undeniable innovation of 21st Century

According to Abernathy and Clark "An innovation is the initial market introduction of a new product or process whose design departs radically from past practice. It is derived from advances in science, and its introduction makes existing knowledge in that application obsolete. It creates new markets, supports freshly articulated user needs in the new functions it offers, and in practice demands new channels of distribution and aftermarket support."

Technological innovation is the process of creating and implementing new technologies, or significantly improving existing ones, to solve problems, meet needs, and create new possibilities. It involves a complex interplay of ideas, research, development, and implementation, often leading to new products, processes, or services.

Evolution of technological innovation can be traced back from the early humans and stone age for instance from the basic need of humans for survival. Because necessity has been considered as the mother of invention and in the early humans and stone age, innovation took place from the use of stone tools for hunting, preparing food etc., discovery and control of fire, development of clothing and shelters to get protection from colder climates. After the

stage of early humans and stone age, technological innovation has witnessed a turning point during the Agricultural revolution, where they invented farming tools such as wheel, plow and irrigation systems to cultivate crops and domestic animals, and for the cooking equipment, they had invented pottery for the first time during 10,000 BCE. While inventions of advanced tools and weapons made of metal led to the Bronze Age and Iron Age and invention of writing system for the maintenance of records or transmission of knowledge, invention of advance mathematics, science, architecture and engineering skills with the contribution of ancient civilizations like Mesopotamia, Egypt, Greece, and Rome etc. led to the innovation in antiquity, marked another future for technological innovations. Innovation took place in the form of three-field system in agriculture, in the form of sources of power through windmill and the watermill and in the form of printing press invented by Johannes Gutenberg, during middle age which is also known as a period of transition for the society. In the beginning of 18th Century, development of modern technology during Industrial revolution such as development of steam engine for the purpose of transportation and manufacturing, mass production of goods, and harnessing of electricity marked another future for technological innovations. An explosion of technological innovation has been seen in the field of electronics and computing, biotechnology, and renewable energy etc. during the 20th and 21st centuries, known as information age. Technological innovations have been an integral part of human history, shaping our societies, economies, and the way we live. From the earliest stone tools to the latest advancements in artificial intelligence, technology continues to evolve and transform the world around us. Thus, Technological innovation has been driven by the Human needs and curiosities, scientific discoveries, economic incentives, social and cultural factors since centuries to become an undeniable force in the 21st century.

Technological innovation is underpinned in technology, which can be defined as a complex system composed of more than one entity or subsystem of technologies and a relationship that holds between each entity and at least one other entity in the system for achieving specific goals. New technology is driven by inventions of new things and new ways of doing things (originating in advances in basic and applied science) that are transformed into usable innovations in markets to satisfy needs, achieve goals, solve problems of adopters that take advantage of important opportunities, or to cope with consequential problems/environmental threats.

For shaping the 21st Century, an undeniable innovation has been introduced to the society by playing a pivotal role in bringing changes in the necessities and goals of the various facets by supporting

the corporate, industrial, economic and social factors for competitive advantage of firms and nations and improving overall human progress. Being characterized as a troubleshooter, the practices of technological innovations has been introduced as an undeniable innovation in the 21st century concept of society. Revolution has been brought by the innovations happening in the technological field globally on the lifestyle of human beings from commonplace to the groundbreaking. Transformation of communication by inception of internet and mobile devices through the platform of social medias has been a significant impact of technological innovations. By increasing efficiency and productivity, industries have been transformed through technological innovations like automation and artificial intelligence, while in manufacturing and logistics, robots are performing complex tasks and for tasks like data analysis, customer service or medical diagnosis, use of innovations like AI Algorithms has been increasing. Apart from the abovementioned impacts, educational sector has been impacted profoundly by the technological innovations, after introduction of online learning platforms and digital resources to make education more accessible and personalized at the fingertips of education professionals.

Patent: Evolution of an ancient shield to innovations

A patent is a license that confers an exclusive right or title to the owner for a limited or specific period of time to exclude others from making, using, or selling an invention and the violation of these exclusive rights or title of the patent holder is known as patent infringement. In India, the act that govern the patent is Patents Act, 1970. The main motive behind the enactment of the Patent Act is to encourage people to come up with new ideas in their field by awarding them exclusive rights over their inventions.[43]

The word patent has owed its origin from a Latin word called "Patere", which means to lay open or to make available for public inspection. The idea of patent lies in the purpose to protect and enjoy an innovation for a certain period of time, for which innovation has been considered as cornerstone of patents. Thoughts that took place and converted into ideas that has capability to brought innovations must be protected from those who have generated an ill intention towards such innovations, for those who have intentions to generate benefits from such innovations. Thus, the concept of patent may mean to grant some exclusive rights to the inventors not only for the benefits of the inventor but also for the benefits of the concerned society.

The concept of patent has been structured many times through centuries, to built the

[43] Patent- Types & Laws related to them in India

modern patent concept for the society that lives in 21st century. During ancient times that is around 500 BCE, it has been witnessed that patent was granted as an exclusive right for a year to the luxury item inventors in the city of Sybaris. But according to some historians, these systems were not entertained in a formalized manner as it was in rudimentary forms. Apart from ancient evidence, Guilds was in practice of providing patent for the skills and techniques from being copied by others, in medieval Europe. In 1474, for the first time, patent was given with an exclusive right feature in a legal platform, when The Republic of Venice has enacted law that governs the system of patents. The statute has granted an exclusive right to inventors to use, sell or manage, for a period of 10 years, which marked a significant step towards the protection of intellectual property during the period of Renaissance Italy. After the period of 14th century, the journey of patent was greatly influenced two historical events, one of them is Royal Grants and the other is Statute of Monopolies 1624. The modern concept of patent is relatable to the concept of Letters Patent also known as a practice of Royal Grants, where Letters of Patent was issued by the monarchy of England to grant an exclusive power or right with the purpose to create monopolies in respect of such power or right and the concept of patent was created to enjoy monopolies by the inventors in an exclusive way, though it was not in the practice of England to provide monopolistic rights in the form of patent to the inventors during 16th Century. While A landmark development occurred with the enactment of the Statute of Monopolies in 1624. This statute limited the Crown's power to grant monopolies, except for "projects of new invention." This laid the foundation for the modern patent system in England, focusing on protecting genuine inventions. The codification and development of patent system took place during 18th and 19th centuries, where many countries including India has enacted certain legislations on the concerned topic. In England, court decisions refined the interpretation of patent laws, establishing key principles such as the requirement for a detailed description of the invention (patent specification). By the late 19th century, many countries had codified their patent laws, including the United States (1790), France (1791), and Germany (1877). These codified laws provided a more structured and formalized framework for granting and enforcing patent rights. In India, the legislation related to patent system was developed during the reign of British Rules, where the Act VI of 1856 was the first legislation in India regarding the patent which was afterward repealed by Act IX of 1857 since it‘s been enacted without the approval of the British Crown. In 1859, another legislation was introduced for granting ‘exclusive privilege’. This legislation is known as Act

XV of 1859. This legislation undergoes some changes of the previous legislation, namely, granting of exclusive privileges to useful inventions only, an extension of priority period from 6 months to 12 months, excluding importers from the definition of investors. In 1872, the Act of 1859 was combined to provide protection relating to designs. The act was renamed "The Patterns and Designs Protection Act" under Act XIII of 1872 which was further amended in 1883. This act was remained in force for 30 years and was again amended in 1888.

The Indian Patent and Design Act, 1911 repealed all the previous acts that have been enacted. The present Patent Act, 1970 came into force in the year 1972, further amending and combining the prevailing law relating to Patents in India. This act was again amended by the Patents (Amendment) Act, 2005, wherein product patent was extended to all or any fields of technology including food, drugs, chemicals, and micro-organisms. This amendment repealed provisions relating to Exclusive Marketing Rights (EMRs) whereas a provision for enabling grant of compulsory license and pre-grant and post-grant opposition has been introduced.44

The exclusivity provided by the patent essentially acts as a shield, preventing others from making, using, or selling the patented invention without the inventor's permission. This protection encourages innovation by giving inventors the confidence to invest time and resources into developing their ideas, knowing that they will have a period of exclusivity to reap the rewards. Patents aren't just for complex scientific breakthroughs. They can cover a wide range of inventions, from new gadgets and software to innovative processes and even certain types of plants. To be patentable, an invention must generally meet certain criteria: it must be novel (new), non-obvious (not something that would be readily apparent to someone skilled in the relevant field), and useful (have a practical application). While patents offer crucial protection, they also play a vital role in fostering innovation. The patent system encourages the disclosure of inventions, making knowledge accessible to the public and inspiring further innovation. The information contained within patents can be a valuable resource for researchers, scientists, and entrepreneurs, sparking new ideas and building upon existing technologies.

Despite the criticisms faced by the patents such as that patents can stifle innovation by creating monopolies and hindering competition while others pointed out to the high cost and complexities of the patent process, which can be a barrier for small inventors, patents remain a cornerstone of the innovation ecosystem. They provide a vital incentive for inventors to create and

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share their discoveries, driving technological progress and economic growth. Understanding the power of patents is crucial for anyone involved in the world of innovation, whether they are inventors, entrepreneurs, investors, or simply interested in the future of technology. They are more than just legal documents; they are the shields that protect innovation and fuel progress.

Mask of beauty and complexities behind the shield of innovation in a technological era

As the beauty of patent lies in the features of being granted in an exclusive way, for limited period of time, territorial protection from exploitation of patent, there arise the question of requirements of the patent which revolves around the corner of innovation that Patent laws are built upon several fundamental principles. First and foremost is the requirement of **novelty**. An invention must be new and not already known to the public. This means it cannot have been previously published, used, or disclosed anywhere in the world. Secondly, the invention must involve an **inventive step** or be **non-obvious**. It cannot be a mere modification of existing technology that would be obvious to someone skilled in the relevant art. This principle aims to prevent the patenting of trivial advancements. Thirdly, the invention must be **industrially applicable** or have **utility**. It must be capable of being made or used in some kind of industry. Patent has been beautified by the purpose it serves like-one, it fosters the development of new and useful technologies by granting an exclusive right to the inventors, without such protection incentive to innovate must have been diminished, secondly is that by granting inventors a period of market exclusivity and allowing them to commercialize their inventions and generate revenue, it promotes protection of investments of the inventors, Thirdly, patent encourages economic stability by leading to new products, services, and industries, which ultimately create jobs and boost the economy, and Fourthly, it helps in advancement of technology. Furthermore, patents contribute to the dissemination of knowledge. In exchange for the exclusive rights granted, inventors are required to publicly disclose the details of their inventions. This disclosure, documented in patent applications, becomes a valuable resource for other researchers, scientists, and entrepreneurs. While the patent holder enjoys a period of exclusivity, the knowledge contained within the patent becomes part of the public domain after the patent expires, fueling further innovation and building upon existing technologies. In this way, patents can be seen as a mechanism for balancing the interests of the inventor with the broader needs of society.

Patents, those seemingly simple documents granting exclusive rights to an invention, are a double-edged sword,

which represents its complexities. They are simultaneously hailed as engines of innovation and criticized as barriers to progress. While their core purpose – to incentivize creativity and protect intellectual property – is laudable, the reality of patents is far more nuanced, encompassing a complex interplay of legal, economic, and social factors. Examining the multifaceted nature of patents reveals a system with both significant benefits and inherent drawbacks.

The primary justification for patents lies in their role as a catalyst for innovation. By granting inventors a temporary monopoly, patents allow them to recoup the substantial investment of time, resources, and expertise required to develop a new technology. This exclusivity, it is argued, encourages research and development, fostering a climate where innovation can flourish. Without the protection afforded by patents, inventors might be hesitant to share their discoveries, fearing that their ideas would be immediately copied and exploited by competitors. The patent system, therefore, acts as a crucial incentive, driving technological advancement and economic growth. This is particularly true in industries with high research and development costs, such as pharmaceuticals, biotechnology, and electronics. However, the patent system is not without its flaws. One major criticism is that patents can create monopolies, hindering competition and potentially stifling further innovation. This can be particularly problematic in areas like healthcare, where patent protection on essential medicines can limit access and drive-up costs. Another concern is the complexity and cost associated with obtaining and enforcing patents. The patent process can be lengthy, expensive, and require specialized legal expertise. This can create a significant barrier for small inventors and startups, who may lack the resources to navigate the system effectively. Large corporations, on the other hand, often have the resources to amass vast patent portfolios, which they can use to stifle competition and maintain their dominance in the market. This can lead to a situation where the patent system, intended to encourage innovation, actually serves to protect the interests of established players at the expense of smaller, more innovative companies. Furthermore, the definition of what constitutes a patentable invention can be ambiguous, leading to disputes and litigation. The criteria of novelty and non-obviousness can be subjective, and the line between a genuine invention and a minor improvement can be blurred. This can lead to frivolous patent applications and costly legal battles, clogging up the patent system and diverting resources away from genuine innovation.

Squaring up of issues of the patent law evolution around technological innovation

Striking the right balance between protecting intellectual property and fostering a competitive environment is a crucial challenge. Reforming the patent system to address its shortcomings, perhaps through stricter examination criteria, streamlined processes, and greater accessibility for small inventors, is essential to ensuring that patents truly serve their intended purpose: to fuel innovation and benefit society as a whole.

Patents, while designed to foster innovation, face a multitude of challenges in the modern world. These challenges span legal, economic, and ethical dimensions, impacting inventors, businesses, and society as a whole. So, the challenges and complexities faced by the Patents while fostering technological innovation are –

- Process of quality and examination of patent-The issues are as follows

  a. Patent offices worldwide are overwhelmed with applications, making thorough examination difficult. This can lead to the granting of patents for obvious or trivial inventions, weakening the system.

  b. Examiners may not have the specialized knowledge to assess complex inventions, particularly in rapidly evolving fields like software and biotechnology.

  c. The criteria for "inventive step" or "non-obviousness" can be subjective, leading to inconsistent decisions and uncertainty for applicants.

- Involvement of cost and complexities around patents are high such as involving attorney fees, filing fees, and examination fees etc.

- Patent Regulations are of complex nature: Patent laws are intricate and vary across jurisdictions, requiring specialized knowledge and making it challenging for inventors to navigate the system.

- Patent thickets, where numerous overlapping patents cover different aspects of a technology, can create a minefield for innovators. This can stifle innovation by making it difficult and expensive to bring new products to market.

- Patent trolls, entities that acquire patents primarily to sue others for infringement, can drain resources from legitimate innovators and create a chilling effect on research and development.

- The patentability of software and biotechnology inventions has been a subject of ongoing debate and legal challenges. The line between

patentable innovation and abstract ideas or discoveries can be blurry.

- The fast pace of technological change in these fields can make it difficult for patent laws to keep up, leading to uncertainty and potential for abuse.
- Patent laws must strike a balance between rewarding innovation and promoting competition and public access to knowledge.
- Patents can have significant social implications, particularly in areas like healthcare and environmental technology, requiring careful consideration of their impact on society.

The abovementioned existing challenges demand for a better system of patent in serving the purpose of technological innovation. Thus, addressing the challenges around the patent can be game changer for the technological innovations and they can be addressed by improving Patent Quality, Strengthening examination procedures, providing examiners with better resources and expertise, increasing transparency, Reducing Costs and Complexity, Streamlining the patent process, offering assistance to small inventors, promoting alternative dispute resolution mechanisms, Curbing Abusive Litigation, Implementing measures to deter patent trolls and frivolous lawsuits, Clarifying Patentable Subject Matter, Providing clearer guidelines for patenting software and biotechnology inventions, Balancing Public Interests, Considering the social impact of patents and ensuring access to essential goods and technologies, Promoting International Cooperation, Harmonizing patent laws and strengthening international enforcement mechanisms.

Patent Laws in Technological Innovations- An insight to the future

The patent system, a cornerstone of modern innovation, finds itself at a critical juncture. Designed to incentivize creativity and protect intellectual property, it now navigates a complex landscape of rapidly evolving technologies, shifting economic realities, and growing societal concerns. The future of patents hinges on its ability to adapt and address these challenges, ensuring it continues to serve its core purpose: fostering progress for the benefit of all. The future of patents is a dynamic and evolving landscape, shaped by technological advancements, economic shifts, and societal needs. Here are some key trends and potential developments that could define the future of patents:

- AI and Automation:

  • AI-Assisted Patent Processes: Artificial intelligence (AI) is poised to revolutionize patent drafting, searching, and examination. AI tools can analyze vast amounts of data to identify

prior art, generate patent applications, and even predict the likelihood of patent grant. This can streamline the patent process and improve efficiency.

• AI-Generated Inventions: As AI becomes more sophisticated, the question of patenting AI-generated inventions will become increasingly relevant. Who owns the intellectual property when an AI creates something new?

This will require new legal frameworks and ethical considerations.

- Blockchain and Decentralization:

• Patent Registries on Blockchain: Blockchain technology could be used to create secure and transparent patent registries, making it easier to track patent ownership and transactions. This could also help reduce fraud and improve the efficiency of patent administration.

• Decentralized Patent Systems: Decentralized patent systems, potentially based on blockchain, could empower individual inventors and small businesses by making it easier and more affordable to obtain and manage patents.

- Focus on Quality and Efficiency:

• Enhanced Examination: Patent offices may adopt more rigorous examination procedures, leveraging AI and specialized expertise to ensure that patents are granted only for truly novel and non-obvious inventions.

• Streamlined Processes: Efforts to streamline the patent process, reducing costs and delays, will likely continue. This could involve simplifying application procedures, improving communication between applicants and examiners, and promoting alternative dispute resolution mechanisms.

- Addressing Patent Thickets and Trolls:

• Policy Reforms: Policy reforms aimed at curbing abusive patent litigation and addressing the problem of patent thickets are likely to be explored. This could involve measures to increase transparency, limit frivolous lawsuits, and promote collaborative approaches to patent management.

- Global Harmonization and Cooperation:

• International Patent System: Further efforts towards international harmonization of patent laws and procedures are expected. This could lead to a

more streamlined and efficient global patent system, making it easier for inventors to protect their inventions across borders.

• Cross-Border Enforcement: Strengthening international cooperation in patent enforcement will be crucial to combat counterfeiting and protect intellectual property rights in a globalized world.

- Balancing Innovation and Access:

  • Social Impact of Patents: Greater emphasis will be placed on the social impact of patents, particularly in areas like healthcare and environmental technology. Striking the right balance between protecting intellectual property and ensuring access to essential goods and services will be a key challenge.

  • Open Innovation Models: Alternative models of innovation, such as open-source development and collaborative research, may gain prominence, complementing the traditional patent system.

- Specialized Patent Courts:

  • Expertise in Patent Litigation: The establishment of specialized patent courts with judges possessing technical expertise could improve the efficiency and quality of patent litigation.

- Patents and Emerging Technologies:

  The rapid development of emerging technologies, such as artificial intelligence, biotechnology, and nanotechnology, will pose new challenges for patent law. Clearer guidelines and legal frameworks will be needed to address the unique issues raised by these technologies.

Thus, the future of patents is likely to be shaped by a combination of technological advancements, policy reforms, and evolving societal needs for a better societal life. The patent system will need to adapt to these changes to effectively promote innovation, protect intellectual property, and serve the broader public good through technological innovations.

Role of the Government in Protecting Technology Innovations

Recognizing the need for the protection of Intellectual Property (IP) as a vital component of innovation and scientific advance and that many of the benefits of inventions will be lost if the resulting IP is not protected, MeitY has made significant strides in recent years in creating a conducive ICT-IPR ecosystem for creation, protection, awareness and commercialization of IP as well as IP Rights. Some of the major initiatives of the division are:

- **Establishment of Centre of Excellence in Intellectual Property (CoE-IP)** – An initiative which was envisioned

with the objective of helping innovators, startups and SMEs to understand the value of intellectual property (IP), offer value added services and ensure adequate protection of the IPRs.

- **Providing IP Facilitation Support to MeitY Societies and Grantee Institutions** – Established for creating state-of-the-art R&D paradigm in the country Innovation and IPR Division has been supporting its, R&D societies and grantee institutions in filing IPRs which includes patents, copyrights, designs and trademarks.
- **Support for International Patent Protection in E&IT (SIP-EIT) – II for Micro, Small and Medium Enterprises and Technology Startup Units** – A scheme by MeitY to provide support to MSMEs and Startups that are trying to secure intellectual property rights on a global level.
- **IPR Awareness through Financial Support to Industry Bodies and Academia** – To enhance innovation, competitiveness and economic growth in India, it is imperative to harness IP. More specifically, with the phenomenal growth of Indian IT/ITES sector and its need to move up the value chain, it is important to foster innovation and legally protect and exploit IPRs generated in India.
- **Providing Help-Desk services For IPR or Patent Analysis and Management System (PAMS)** – CoE-IP had initiated the Patent Analysis Management System (PAMS) portal for providing a range of value-added intellectual property related services.
- **Creation of IPR Awareness through Digital Media** – To give an in-depth understanding of the various types of IPRs, a user-friendly e-learning multimedia toolkit has been developed by CoE-IP. The prime purpose and focus of the IP Panorama is to create IPR awareness among the targeted stakeholders comprising tech Startups MSMEs, and academia belonging to the ICT domain.[45]

Conclusion

Today, every business in the world is the product of innovation. In an innovative world, evolving in every sector, protecting the rights of people is important especially

[45] Patents and Technology Innovations in India (*Authors : Nilanshu Shekhar, Akanksha Anand, Rishabh Manocha)*

rights involved in intellectual properties. According to the report published by National Association of Software and Services Companies (Nasscom), Technology innovation is gaining pace in India with Indian companies having filed 1,38,000 tech patents in India from 2015 to 2021. Thus, to constitute a stronger and better future for patents around technological innovations, some reformations after addressing the issues in this article is necessary to be taken by the government. In India, even though the Patent Act, 1970 is in force but still have some lacunas after various amendments to deal with digital world that concentrating only on fostering technological innovations. Indian Patent Act can fulfill the needs of protecting technological innovations if the complexities can be resolved through legislations, which will be provided with an environment that will transform the technical knowledge or ideas into valuable products and services for their commercialization, so that they can be connected with technological partners to facilitate early-stage technologies. Overall, the future of patent laws in technological innovations is likely to be one of continued evolution and adaptation. Patent laws will need to keep pace with the rapid pace of technological change, while also ensuring that they promote innovation and competition.

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