

# THE MORAL AND ECONOMIC VALUE OF INTELLECTUAL PROPERTY RIGHTS IN THE VIRTUAL WORLDS

*Eisha Vashishtha\**

## Abstract

*Owning a property and its assertion in the world has roots in the most innate desire of man to control and possess something. Property ownership can also be seen as an artificial construct that is shaped by societal and cultural influences. Property rights are imperative for the protection of individual autonomy, freedom and such is also the expression encapsulated by the intangible Intellectual property rights. Granted legal protection in a tangible world, they now face challenge from the virtual world like Metaverse which is starting to come of age. Technologies like virtual and augmented reality (VR/AR) facilitate this interaction and can be powerful tools of innovation in areas of research and development, prototype developments, education and training and the like, to bolster universal IPR environment. Nevertheless, they may also facilitate infringement of existing IP rights in an intangible simulation where anyone can be anyone, without establishing accountability. As the lines between real and virtual worlds increasingly become blurred, it will be a matter of time when the policy makers will be faced with a complex and age-old task of formulating laws that try to catch up with technology. It will be equally important to determine these laws on the touchstone of “moral” and “economic value” of IPR, the two inherent rights flowing from property ownership. Since these technologies will keep evolving, a foresight is important to achieve a balance between Law and innovation through pre-emptive legal solutions which can be systematized at present.*

**Keywords:** Property rights, Intellectual Property, Virtual reality, Moral value, Economic Value

## 1. Introduction

Through the history of human civilizations, the right over property, whether by an individual, a community, a religious institution or royalty seems to be as natural as the air, wind and water itself. Anything which could be seen as property was deemed to be

---

\* Practising Lawyer at High Court, Mumbai and Research Scholar, Shankarrao Chavan Law College, Pune.

so and had a distinctive economical value. Property ownership also played a significant role in shaping social and political relationships. Property rights are often used as a basis for defining citizenship and property ownership was closely tied to notions of social status and power. Property ownership was also used to shape political power, as those who owned property were more likely to be able to influence political decisions.

In ancient Mesopotamia, one of the oldest known civilizations had developed around 5<sup>th</sup>-3<sup>rd</sup> BCE called as the “*Sumerian Civilization*” which has left in its legacy many evidences of the earliest known property rights. These rights were closely tied to the concept of individual ownership of land. The “*Code of Ur-Nammu*” is one of the oldest known legal codes from Mesopotamia containing provisions for the transfer of property through inheritance, sale and gift. The Code also establishes rules for the use of land, such as regulations for irrigation and for the allocation of land for various purposes such as for houses, gardens and fields. Despite being under a King’s reign, individual ownership of land was prominent. “*Lagash*” was one of the most pivotal cities during the span of Sumerian civilization and excavations from the cite uncovered a tablet which records the sale of a land parcel to “*En-Hegal*”<sup>1</sup> or the ruler of Lagash, demonstrating that even a king could not just seize a property and had to buy it.<sup>2</sup>

In ancient Greece (12<sup>th</sup> century BCE–600 AD), property ownership was more developed than in some other ancient civilizations. Citizens, including both free<sup>3</sup> men and women, were able to own land, houses and other resources such as slaves, animals and goods. However, the concept of individual ownership of property was still somewhat limited by the fact that citizens were expected to use their property for the benefit of the community. The citizens were required to pay taxes on their property and in some cases, their land could be taken away for public use. In ancient Rome (8<sup>th</sup>-5<sup>th</sup> Century BCE), individual property ownership was well-established with individuals owning land/other resources and were able to trade them freely. The Roman law recognized the rights of property ownership and protected it. In ancient China, the concept of property ownership

---

<sup>1</sup> Circa 2540 BCE.

<sup>2</sup> Samuel Noah Kramer, *The Sumerians: Their History, Culture, and Character*, 75 (The University of Chicago Press, Chicago, 1963).

<sup>3</sup> I specifically use the term “free” to indicate the fact that slavery was a norm of the society in ancient Greece and slaves were equated to a commodity or property. In Aristotle’s *Politics* (Book One, Part VI), 350 BCE describing Greek societies, he refers to slaves as “*ktêma empsuchon*”, a piece of property that breathes in his work.

existed but was limited by the government's right to redistribute land. Land was controlled by the state and allocated to families for cultivation.

As time progressed the genesis of this right was being understood. The history has given us a cornucopia of jurisprudence analysing the nature of property and the right over it. Heralding these jurisprudential thoughts are the "Theories of Property" by some key philosophical figures. These theories explore and present a rationale or justification behind this inborn yearning to possess something. *Howard Williams*<sup>4</sup> in his analysis of *Kant's* "Metaphysical Elements of Right" observes *Kant's* outlook on property as "*The Mode of having something external to myself as my own*"<sup>5</sup>. *Bentham's* psychological theory assigns the concept of property to metaphysics which probably is the most suitable environment, one where this right could find a perfect justification in its abstractness. The proponents<sup>6</sup> of the *Natural Law theory* simply dispense this right to be as natural as the nature itself. All along one will often, in these theories, find the inevitable intertwining of law and morality and I do subscribe to this notion in justifying the right to property. The idea that property rights are a natural right can be traced back to the philosopher John Locke specifically, who argued that individuals have a natural right to the fruits of their labour. In John Locke's view<sup>7</sup>, when a person mixes their labour with unowned resources, they acquire a property right in the resulting product. An apt example could be when a person cultivates a piece of land, they acquire a property right in the crops they grow on that land. Locke believed that property rights are a natural right because they are a necessary condition for human flourishing.

In its true reflection, he identifies the undeniable relationship between morality and property right. From a utilitarian perspective, property rights are justified because they lead to greater overall happiness and wellbeing. When people have secure property rights, they are more likely to invest in and improve their property which can increase productivity, create wealth and improve living standards for everyone. By putting on the lens of distributive justice the property rights can also be justified as a way of ensuring a

---

<sup>4</sup> Emeritus Professor in Political Theory at the Department of International Politics, Aberystwyth University.

<sup>5</sup> Howard Williams, "Kant's Concept of Property", 27(106) *The Philosophical Quarterly* 32-40 (1977).

<sup>6</sup> Blackstone, Pufendorf, Locke and Grotius.

<sup>7</sup> Graham A.J. Rogers, "John Locke - Two Treatises of Government", available at: <https://www.britannica.com/biography/John-Locke/Two-Treatises-of-Government> (last visited on January 5, 2023).

fair distribution of resources. In looking at most of the modern laws on property rights, the reflection of morality is undeniably a solid bedrock of foundation. In fact, through testamentary succession, the right of property is one of the few material rights we all possessed as soon as we were born. At this point, the law on property ownership and rights could be seen as settled but that was until the advent of Intellectual Property Rights.

## **2. A New Genre of Property: Intellectual Property Rights**

The relationship between physical property and intellectual property is similar in that both involve the concept of ownership and control over resources. Like physical property, IP is considered a form of property that can be owned, bought and sold. The legal protection of IP rights such as patents, trademarks and copyrights allow creators and inventors to have exclusive rights to their creations, which can be used to generate income and investment for further development. But before I indulge further into this relationship, it is important to understand the origin of this property right as well.

Somewhere in 6<sup>th</sup> century BCE from the ancient Greek city of Sybaris came a baker who probably believed he was good at his work and decided to distinguish the bread he used to bake by branding on it a little mark that quietly announced to all, the origin and the maker of bread. Suddenly, this became a common practice amongst the bakers of that time and fortunately it also became a part of documented history of ancient Greece. For us, it became the earliest record of a new type of property, the “Intellectual Property”. With excavations throughout the world and study of documents surviving the ages, it was found that such practices of marking goods were prevalent at different places of the world and at different times. Be it the Potter’s Mark, branding of animals, trade guilds limiting the knowledge of their craft from going outside or merely inscribing an object with a distinguished insignia, the IP was present throughout the times in its rudimentary forms. One of the earliest laws articulated on patents was the Venetian Patent Statute of 1474, passed in the Republic of Venice which granted patents for inventions and designs. The law granted patents for a period of ten years and covered a wide range of inventions and designs, including mechanical devices, ship designs, and even foods and medicines. The law also established a system of penalties for those who infringed on the patents granted

under the statute. In 1421 in the Republic of Florence, *Filippo Brunelleschi*<sup>8</sup> was the architect of a “cargo boat”, for which he obtained special rights of use in exchange for revealing it to the public although, there was no formal law under which he was granted this right.

Then came the Statute of Anne or the Copyright Act 1710, which was the first legal framework for copyright in the world and it was a groundwork of modern copyright law. The law recognized the rights of creators and authors to control the use of their works and to profit from them, and it established the principle that copyright protection should be limited in time. The Berne Convention for the Protection of Literary and Artistic Works in 1887 was the first ever international treaty on intellectual property rights (IPR). It gave legal protection to an important moral right of the creator which was the principle of ‘automatic copyright’ underlining that copyright protection is granted without the need for registration or the use of a copyright notice. Under the Berne Convention,<sup>9</sup> authors have the right to claim authorship of their works, and to object to any distortion, mutilation, or modification of their works that would be prejudicial to their honour or reputation. These rights are collectively known as the moral rights of authors, and they are separate from the economic rights that are typically associated with copyright protection. The moral rights recognized by the Berne Convention was an instrumental in giving direction towards achieving a balance between economic rights and moral rights in the realm of intellectual property while also protecting the interests of authors and creators.

In essence, the Berne convention was an essential co-mingling of law and morals. In fact, the complete idea of protecting intellectual property is very firmly wedged in the idea of morality. But, just at this point, a perspective shift was needed to analyse a different school of thought which completely denounced the idea of legal protection to intellectual property. One can assume that according to this school of thought, the moral right of the creator was obviously under looked but, the rationale behind this idea is absolutely worthy of judicious thought, scrutiny and debate. It is after which the horizons of morality may suddenly seem to shift towards a wider spectrum.

---

<sup>8</sup> Italian Architect and Engineer of the Renaissance period, who is best known for his work on the dome of the Cathedral of Santa Maria del Fiore in Florence, Italy.

<sup>9</sup> The Berne Convention for the Protection of Literary and Artistic Works, 1886, art. 6bis.

The central standpoint of this school is that IPR laws smother innovation and originality by creating mock roadblocks to the use and development of knowledge and ideas. They argue that copyright and patent laws, in particular, restrict the free flow of information and ideas, which is essential for the growth of knowledge and culture. One of the earliest and most influential figures in this movement is the American legal scholar, *Lawrence Lessig*<sup>10</sup>. In the late 1990's and early 2000's, *Lessig* wrote extensively about the negative effects of copyright laws on creativity and innovation, and he developed the concept of "free culture". Despite the years of domestic as well as international recognition and protection given to intellectual property rights, the debate still persists. At this point I would specifically view these two school of thoughts on the scale of morality which, is a central pillar of the whole idea as is any other law and would later emphasize on it from a different point of view, an economical one. In my understanding I see that both sides do reflect a peculiar morality, a very important trait of the property rights. Flowing from all property law theories, the legal protection to intellectual property is simply a "morality" in itself, to which I duly subscribe.

On the other hand, the "free movement" also reflects a larger range of morality, one which covers all of us, one which we all know as "public interest". The IPR<sup>11</sup> restrict the use of a creation to one individual or a group of individuals which is monopolized, thereby hindering the public interest and especially when we talk about patents. Although this is a highly debated subject, I don't intent to add any further argument to this at this stage. But what is clear is that the modern IPR Laws have sought to achieve a delicate balance between these two ideologies which, in my interpretation reflects distinct moral groundings<sup>12</sup>. Here, I have to remark that by itself, morality could not have secured the intellectual property a legal right. The next vital facet of this protection is the vast economical value attached to the intellectual property.

---

<sup>10</sup> Along with him, the free movement is also credited to the American academic and political activist Richard Stallman, founder of the Free Software Foundation, 1985 and Carlos Affonso Souza, Brazilian lawyer and politician.

<sup>11</sup> Intellectual Property Rights.

<sup>12</sup> See, Adam D. Moore, "A Lockean Theory of Intellectual Property Revisited", (2012), available at: <https://www.britannica.com/biography/John-Locke/Two-Treatises-of-Government> (last visited on Januaray 6, 2023), also see, Marc J. Randazza, "Freedom of Expression and Morality-Based Impediments to the Enforcement of Intellectual Property Rights (2015-2016). Both have explored a critical relationship between law morality but analysing the nature of morality as a norm.

### 3. Economic Value of IPR-Real and Virtual world

The amount of the economy generated by intellectual property rights is difficult to quantify, as it depends on a number of factors like the specific industries/markets in question and the specific types of IPR being considered, to name a few. However, it can be measured in a number of ways like the economic value of the products and services that are protected by IPR, such as copyrighted works, patented invention and trademarked brands. These products and services can generate significant revenue for their creators or owners and can also contribute to economic growth and job creation. A report<sup>13</sup> published by the Intellectual property office stated that the revenue generated by the Intellectual property for the year was 981.35 crores which was 13.7% higher compared to the previous year along with a decline in the expenditure at only 212.59 crores. The Indian Council for Research on International Economic Relations (ICRIER) reported<sup>14</sup> the potential of various industries in which virtual reality can be applied, such as healthcare, education, real estate, and entertainment, and identifies the potential benefits and challenges of adopting the technology in each sector.

To cite a focus area from the report, education sector seems to hold tremendous potential. In the education sector, virtual reality can be used to create interactive and engaging learning experiences, allowing students to explore complex concepts and ideas in a more visual and interactive way. The report also suggests that virtual reality can be used to provide students with access to educational content and resources that may not be available in their local area. It was also foresighted of the report to identify challenges which include a lack of infrastructure, limited access to funding/investment and the need for regulatory frameworks to govern the use of the technology. It is safe to presume that the report is huge pedestal for highlighting the growth opportunities and challenges that the technology presents across various sectors and which may attract entrepreneurship and innovation in these sectors.

Another way to measure the economic value of IPR is to look at the value of the IPR assets themselves. This includes the value of patents, trademarks and copyrights as

---

<sup>13</sup> The Office of the Controller General of Patents, Designs, Trademarks and Geographical Indications, India, "Annual Report" (2019-2020).

<sup>14</sup> "Virtual Reality: The Next Growth Frontier for India", Indian Council for Research on International Economic Relations, India (2017).



assets that can be bought, sold, licensed or used as collateral. This can also include the value of the IPR-related investments such as venture capital and private equity investments in start-ups and other companies that own IPR assets. A study<sup>15</sup> by the World Intellectual Property Organization or WIPO found that on an average the industries that are more reliant on IPR have higher productivity and wages than other industries. The report provides an overview of the economic benefits of intellectual property and the ways in which IP rights can contribute to economic growth. It also provides an analysis of the IP-intensity of different industries and countries, and the relationship between IP and various measures of economic performance such as productivity, wages, and R&D<sup>16</sup> spending. In the United States of America, IPR-intensive industries have been found to have higher productivity, higher wages and higher levels of R&D spending than non-IPR-intensive industries. Another study<sup>17</sup> by the European Patent Office or EPO has found that the patent intensity of a country is positively related to labour productivity growth. The study found that the productivity of firms in countries with high patent intensity is on average 30% higher than in countries with low patent intensity.

A good example of the economic value of IPR in the virtual world is the video game industry. Video game companies invest significant amounts of time and resources into creating and developing new games, including designing characters, creating storylines and programming game mechanics. IPR in the video game industry incentivize investment in research and development, leading to new and innovative games that can capture consumer's attention and generate significant revenue. Major gaming companies like Nintendo, Sony and Microsoft invest billions of dollars in research and development each year to create new games and consoles and IPR definitely play a crucial role in protecting these investments and ensuring a return on their investment.

IPRs also have a significant impact on the international trade and globalization. A lot of countries have developed their economy by exporting goods and services protected by IPR. This has helped to increase the competitiveness of these countries in the global market, and has also helped to create jobs and stimulate economic growth. There is also a direct co-relation between a stronger patent protection in a country with

---

<sup>15</sup> World Intellectual Property Rights Organisation, *Intellectual Property and Economic Growth* (2008).

<sup>16</sup> Research and Development.

<sup>17</sup> European Union Intellectual Property Office, *IPR-intensive industries and economic performance in the European Union-Industry-Level Analysis Report*, (September, 2019).



increased foreign direct investment and higher rates of productivity and growth<sup>18</sup>. Evidently, what drives the governments to protect IP is this economic value and morality is what gives the IP laws a concrete pedestal, which not so coincidentally concurs with many policy objectives. Hence, it seems that our contemporary and modern laws have ensured that the notion of legally protecting intellectual property prevails.

In the virtual world, it is certainly much easier to violate the IPR and it can create what we can call as a “negative economy”, just as it exists in the real world. Negative economy is simply the economy created through illegal use of IPR’s i.e., through infringement. The protected works can be easily copied and distributed without the owner's permission leading to significant economic losses for creators and copyright holders but still creating an economy. IPR provides a legal protection to prevent unauthorized use and exploitation of digital works, allowing creators and copyright holders to monetize their works and generate income.

#### **4. The Rise of a New World - A Virtual One**

Up to this point, I focused on the property rights in the age of man peppered over ancient to antiquity to modern era and now I find an entirely new perspective to analyse this right. More precisely, an entirely new world, the virtual world. Man can relate to things around him which have a physical manifestation in one way or another with one or many of his senses. The archetype completely changes when man is in a world without his physical presence but his brains is completely immersed in it.

Virtual reality is now a relatively known concept, though it may be abstract in many minds. VR<sup>19</sup> is an artificial environment that is created using computer simulation technology. It is experienced through specialized equipment such as a head-mounted display or HMD with hand-held controllers. The HMD displays the virtual environment in 3-D and the controllers allow users to interact with and navigate the environment. It is what is described as an “immersive technology”. Immersive technology refers to a range of technologies that are used to create a sense of being physically present in an intangible environment and there is a very good reason that they are called as “immersive”. The

---

<sup>18</sup> Bronwyn H. Hall and Rosemarie Ham Ziedonis, “The Patent Paradox Revisited: An Empirical Study of Patenting in the US Semiconductor Industry (1979-1995)” 32(1) *The RAND Journal of Economics* 101-128 (2001).

<sup>19</sup> ‘Virtual Reality’- The term is interchangeably used with ‘Virtual world’.

virtual environment can be designed to be indistinguishable from reality or to be a completely different and even imaginary places. The goal of VR interaction is to make it as natural and intuitive as possible so that the user can focus on the experience rather than the technology. One of the most popular examples of such a virtual world is “Metaverse”<sup>20</sup>. The idea isn’t nascent rather it is decades old and has churned the imagination of man in fictional embodiment before it even came to the definite world. A science fiction story “Pygmalion's Spectacles”<sup>21</sup> that describes a pair of goggles that allow the wearer to experience a fully-realized virtual world, was the first ever reference to the idea. *Ray Bradbury* penned a science fiction short story<sup>22</sup> that features a virtual reality room that can create lifelike simulations of any environment. And perhaps, the most popular one of our generation’s is the movie, “The Matrix” in 1999, which explores the concept of a simulated reality created by sentient machines called agents, to pacify and subdue the human population. In 1968, fiction came to life when *Ivan Sutherland*<sup>23</sup> developed a device which he names as the "Sword of Damocles," was a primitive form of VR that used a CRT monitor to display simple wireframe graphics. Overtime, the technology has been continuously improved and is now at the stage of commercialization at the global scale.

Today, the applications of VR are immense and it can be used for entertainment, educational, therapeutic as well as for research and development. Currently, the biggest area of application is Gaming. In medicine, VR can be used to provide therapeutic treatments for mental and physical conditions. In tourism sector, VR can give users a virtual tour of different places around the world, allowing them to explore and experience new locations without having to physically travel.

Notably, VR has caught the interest of governments thought out the world as it has demonstrated a clear potential for military and space applications. The VR sector in

---

<sup>20</sup> A virtual world designed by Meta (formerly Facebook).

<sup>21</sup> Stanley G. Weinbaum, *Pygmalion's Spectacles* (Simon & Schuster, New York, 1935).

<sup>22</sup> Ray Bradbury, *The Veldt*, (The Saturday Evening Post, Indianapolis, 1950).

<sup>23</sup> He was a computer scientist and engineer, who developed the first head-mounted display in the 1960’s. Along with him the credit of developing VR is given to Morton Heilig who developed the *Sensorama* in 1962, which was first VR-like devices and used a headset and various sensory inputs. I would also give credit to Palmer Luckey, who developed the Oculus Rift which was acquired by then Facebook and is now used to access the Metaverse.

India is also experiencing this shift at dynamic pace. A report<sup>24</sup> by a renowned market intelligence company called “Research and Markets” projects that the total market size of augmented and virtual reality in India is expected to advance at a CAGR<sup>25</sup> of 38.29% to US \$14.07 billion by 2027. It also highlights that about 260 start-ups are engaged in this sector. These numbers have motivated the Indian government to step up and launch initiatives to further boost the sector. Under the aegis of the Ministry of Electronics & Information Technology, the tech giant “Meta” and MeitY<sup>26</sup> Startup Hub or MSH, an initiative of the ministry, came together to launch a XR<sup>27</sup> Start-up Program focuses on skilling and building technological capabilities for the metaverse. Another initiative has come from IIT, Madras which have started a “Consortium for Virtual Reality/Augmented Reality/Mixed Reality Engineering-Mission in India” or CAVE which aims at building applications in the VR. India’s top think tank i.e., NITI<sup>28</sup> Aayog identifies five key sectors where artificial intelligence can have a transformative impact in India which are healthcare, agriculture, education, smart cities and smart mobility. Referring specifically to virtual reality, the Aayog laws emphasis on use of VR to train medical professionals, simulate surgical procedures, and improve patient outcomes as well as VR-based learning which can transform education and skill development in India<sup>29</sup>.

Likewise, there is already a plethora of such illustrations and they indicate something very critical, innovation. It is apparent that these initiatives aim to strengthen the economic and technological ecosystem of the country and so here, a question has to be asked. Will the creations of the virtual world come under the umbrella of the laws of the physical world? And since we are fixating on creations and innovation, the question is, whether the IP Laws of the real world apply to the creations or inventions in the virtual world? The answer seems to be complex and perhaps compounded but definitively worth an investigation and intellectual enquiry. The outlook is that anyone can access the virtual world and create an IP in it, in the form of copyrights, designs or trademarks or even

---

<sup>24</sup> Research and Markets, “India Augmented Reality and Virtual Reality Market, By Product Type, By Organization Size, By Offering, By Application, By End User, By Region, Competition Forecast & Opportunities”, (August 2021) available at: <https://www.researchandmarkets.com/reports/5647180/india-augmented-reality-and-virtual-reality> (last visited on January 8, 2023).

<sup>25</sup> Compound Annual Growth Rate.

<sup>26</sup> Ministry of Electronics and Information Technology, Government of India.

<sup>27</sup> Extended Reality, which is a broad term covering virtual, augmented and mixed reality.

<sup>28</sup> National Institution for Transforming India.

<sup>29</sup> NITI Aayog, “National Strategy for Artificial Intelligence” 21 (Government of India, 2018).

software patents<sup>30</sup>. It is not unanticipated that with time the development and consolidation of IP in virtual worlds may show the same progression as they did in the real world. So now would the same laws apply to a property that is created in the virtual world? The possibilities and limitations of that have to be prudently gauged if one is seeking to inset the same set of principles which apply to intellectual property rights as of now. But before venturing into bringing the present laws to apply to the new virtual worlds, an age-old legal justification seems to be required. The statistics discussed earlier in the arena of virtual and augmented reality suffice an economical need but can moral justification be found in the virtual world as we discuss virtual property rights becomes indispensable.

### **5. Finding the Morality & Economic Value in the Virtual World**

In the most elemental form, morality is a set of principles and values that guide human behaviour and decision-making, and it can be applied to the virtual world in a similar way as it is applied to the physical world. Similarly, in the virtual world people have the same moral obligations to respect the privacy, property and rights of others as they do in the physical world. However, the virtual world raises new moral questions and challenges, especially for IPR such as the morality of virtual reality, online identity, the ethics of creating and manipulating digital entities. Even more complicated question is a scenario that virtual world is itself an intellectual property, so whom should the creations inside it belong to? *Firstly*, IPR in the virtual world should be protected as a moral right because they are a form of property and individuals and companies have a right to own and control their creations, whether they are physical or digital. These rights can provide incentives for innovation and creativity, which is beneficial for society as a whole. *Secondly*, virtual world is unique in many ways and most pivotal element of it is the human behaviour. It is absolutely boundless and so it inclines more towards deviant behaviours<sup>31</sup>. Hence, answering the first question, seeing property created in virtual world as real-world property and establishing the limits of behaviours in the virtual world may be necessary by law specifically and by the same analogy to all aspects of the virtual world including IP laws. If these laws become operable in the virtual world, the moral

---

<sup>30</sup> I do not wish to include patents here as so far; I don't see it foreseeable at the moment due to the limitations of patent laws but I do want to keep the possibility pen for future.

<sup>31</sup> The Belamire Incident of virtual groping.

rights will *ipso facto* be granted to the creators. The second question is preposterously complex and to answer it, one has to first explore the “ownership” or “identity” of the real creator of IP. In my understanding, the answer to this question requires empirical investigation and to put it only in a theoretical perspective will hinder the foreseeability of challenges which may and will arise in future. The IPR in the virtual world to be seen as a moral right will also depend on a variety of factors such as the nature of the digital goods in question, the potential impact on society and the potential impact on individuals and companies.

The second aspect is the economic value derived from the virtual worlds which must act as the biggest motivation for governments to ensure the rights of creators are shielded. Taking the best example known, the Metaverse, has real world economic entities carrying on their businesses in it and the virtual world money is the “Cryptocurrency”. This cryptocurrency translates into real world money. A number of international brands like Samsung, UPS, Gucci, Sotheby’s to name a few, have already capitalized on the opportunity. Any person can simply buy a plot in a district of ‘*Decentraland*’ in Metaverse and set up his own business like an art gallery, a fashion store or a design hub. Many corporate giants which are already present in metaverse, carry on their routine business meetings as they do in the real world. The Non-Fungible tokens or NFT’s are blockchain technology-based digital assets which have great economic potential. The most expensive NFT to sell in metaverse was an artwork called ‘*The Merge*’ by digital artist *Pak*, which sold for US \$91.8m and was bought by 30,000 investors collectively. Like so, umpteen examples shuffling a large number in real money are present. Metaverse itself is integrating several technologies for its working to become an indispensable tool for business who aim reducing fixed costs whilst focusing on leading innovation. Technologies like Blockchain, 5G, VR/AR, Decentralized finance or Defi have shown steep increase in adoption from 2018 onwards and promise to lead from the front in future.<sup>32</sup>

Overall, already the value and potential of metaverse is staggering and what I have covered here is merely a speck of its enormity. Technology wise, the only challenges present for metaverse seem to be security, reach and affordability, which ostensibly is

---

<sup>32</sup> Deloitte, “Metaverse: The Hype, Possibilities and Beyond” (December 2022).

projected to be overcome in a few years. Nevertheless, the potential of virtual world is tremendous and it

## 6. The Position of Law

At present, the Metaverse at best is marred by regulatory uncertainty directly credited to it still being in its developmental phases. If one enters metaverse, it may seem like a metropolitan at one end and countryside on another. In fact, it just an empty digital space yet to present some unique landscapes aimed to build an economic ecosystem. Activities which are regulated by law in the real world are driving forces behind the rise of Metaverse. These activities include digital payments, entertainment, healthcare and some illegal ones like gambling too. After the rise of internet and its percolation deep into our lives, it was a challenge to law makers for regulate it but, it had to be done as it became fundamental to all our existence. Coming to Metaverse again, it relies heavily on virtual reality technology which includes hardware such as headsets, haptic feedback devices, motion capture systems and software platforms for creating and experiencing virtual environments. The Metaverse is a complex and dynamic environment and artificial intelligence as well as machine learning algorithms can be used to optimize user experiences, personalize content, and automate tasks such as content moderation and fraud detection. These technologies are clearly a step ahead of what we aim to protect through our current legal system. So, the challenge here is manifolds and traditionally law protects what has been solidified through practice in society. Yet, it is surprising to think that after all these years, there is still no easy way to fight online crimes especially which are trans-national in the matters of jurisdiction and this has been an international legal issue for decades now. Time and again, several countries come together to debate on this issue and on how to fortify the legal framework but, the nature of the online world presents some safe and almost invincible havens to the offenders. In matters of criminal law this is a daunting challenge but as far as matters of civil nature are concerned, the present laws can be a readily available stepping stone into providing required laws in place before legal disputes arise. This becomes specifically applicable to IP laws.

The IP laws prevalent in India are already equipped to deal with infringements occurring online and may act as a skeletal framework for virtual world. Nevertheless, a multitude of things have to be considered before they become ready to be applicable in

the virtual worlds. Another law which can help compliment IP laws is the contract law. *For example*, the ‘end-user license agreements’ are tailor made and the user has no choice but to accept it although he/she may be inadvertently giving up or sharing the right on his intellectual property. If under such agreements, IPR’s can be specifically omitted, a great deal of IP-related legal issues can be avoided. Likewise, several laws can be tuned to suit the future of businesses in the virtual world.

The IPR framework in India is largely in accordance with the provisions of the TRIPS Agreement but this is not without certain challenges like implementation, issues related to enforcement, judicial interpretation and the balance between protecting IP rights. Other than this, there are also administrative challenges in the implementation of intellectual property laws such as lengthy and complicated application and approval processes which can discourage innovators and creators from seeking protection for their works. The concept of ‘software patents’, an emerging category of IP under which inventions relating to AR/VR technology can be filed are still alien. The nature of software-patents is confusing but it hasn’t stopped many countries from providing it legal protection thereby ensuring that legal nitty-gritties do not hinder innovation. In the United States, software-related inventions can be eligible for patent protection under the Patent Act if they are novel, non-obvious and useful. The US Patent and Trademark Office<sup>33</sup> has been granting patents for software-related inventions since the 1991<sup>34</sup>. In Australia, the position on software patents has been restrictive with the Australian Patent Office only granting patents for software-related inventions if they involve a technical contribution that is not obvious to a person skilled in the relevant field.

From the judicial perspective, there have been instances brought before courts which give a certain insight into the inflexibility of law to adapt to technological changes since the law itself presents this inflexibility to judiciary. For example, the ‘Manual of patent office practice and procedure’<sup>35</sup> in chapter 09.03.05.10, under Section 3 (k) exclude mathematical or business method, computer programme and algorithms as patentable. In such a situation, the harbinger of hope is the “judicial interpretation” which must weigh

---

<sup>33</sup> USPTO.

<sup>34</sup> The patent (EP0404178), a computer-implemented invention, specifically for a method for producing a master disk for producing a disk drive in a computer was granted on May 22, 1991, to British Telecom.

<sup>35</sup> The Office of the Controller General of Patents, Designs, Trademarks, India, Version 3.0 (November 26, 2019).



such subject matters of patentability as per the nature of technology. In *Accenture Global Service GmbH vs. The Assistant Controller of Patents*<sup>36</sup> stated that both the patent act and the Manual of Patent Office Practice and Procedure<sup>37</sup> do not require a software to demonstrate a special adoption of hardware to be patented. In the case of *Telefonktiebolaget LM Ericsson (Publ) vs. Lava International Ltd.*<sup>38</sup>, the Delhi High court held that if an algorithm creates a technological or practical effect to result in a physical realization, it becomes patentable. The same contemporary interpretation was given by the court in the case of *Ferid Allani v. Union of India & Ors*<sup>39</sup>. It has been a definitive duty of the courts to fill the gaps left open by the law and in these cases, it may seem that it is being done. Yet, there are many more of those cases where the decisions are inconsistent with the once discussed. This is another such area which could be ironed out by simple legislative process aimed at ensuring that in all technical matter an expert must mandatorily advise the court or the court should be duty-bound to seek such advice.

When it comes to the authorities responsible for administration of the IP Laws in India, it becomes absolutely indispensable for them to keep up with the developments in the technological realm for a better understanding of processing of IPR applications. This could be achieved by regular awareness and training modules designed specifically for different technologies and overall, help in creation of an IP favourable environment in India. The burden on the shoulders of judiciary is heavy as a part of its responsibility in bringing these changes in the society which the society itself is not prone to adapt to very easily. The judiciary has been safeguarding the property rights since time immemorial and yet again it comes back to it to do the same for virtual property rights. It is also its role as a pillar of democracy and an inherent constitutional mandate.

## 7. Conclusion

It is in the nature of law and its process to bring under its umbrella the lacunas and shortfalls in existing system only when they become glaring. In terms of IP Laws, that may not be the case if fastidiousness can be shown by regulatory and administrative authorities. For this, as the government focuses on strengthening innovations relating to

---

<sup>36</sup> Patent Application No. 01398.DELNP/2003.

<sup>37</sup> MPPP.

<sup>38</sup> CS(OS) No.764/2015.

<sup>39</sup> W.P.(C) 7/2014 & CM APPL. 40736/2019.

AR/VR, it is equally important for it to invest in a body which is simultaneously tasked with researching the regulatory gaps and ambiguities as well as suggesting solutions to cover them. It is essential to strike a balance between the different interests involved, such as protection of IP, privacy and freedom of expression, while also fostering innovation and creativity. As suggested earlier, one approach to achieving this balance is to rely on existing legal frameworks such as copyright and trademark laws and apply them to virtual reality in a flexible and adaptive manner. Another approach is to create new laws specifically for virtual reality, taking into account its unique features and the challenges it presents. In any case, it is pertinent to approach the issue of balancing laws in virtual reality in a collaborative and inclusive manner, taking into account the perspectives of all stakeholders like technology companies, governments, consumers, and civil society organizations. It is also important to be mindful of the rapidly evolving nature of virtual reality technology and to regularly reassess the legal framework to ensure that it remains relevant and effective.

It is an innate characteristic of societies to bring in the change after the need for change starts effecting it, before that it seems to be absolutely banal or even perfunctory. But that should be a trait of only those societies which existed in the past. The current age of man cannot afford to be so, especially when democratic processes are in force. When it comes to law it can both be extremely malleable or rigid, but that is the challenge we must undertake now to ensure that the growth of the nation is not stunted by a lack of competence or circumspection.