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The Complex Terrain of Digital Copyright Laws in India's Gaming Industry

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ABSTRACT

The Indian gaming industry is growing at a rapid pace, propelled by advancements in technology and a youth demographic that is quickly embracing this new hobby. Amidst this growth, there are several challenges in the form of Copyright Laws that exist on a digital medium, and the young programmers who are grappling to evolve and create new games face these issues. This article will therefore look at the evolution of Copyright Laws in India and discuss how they apply to the gaming sector today. This article will argue that the use of gaming today is far removed from that of playing on a traditional brass-framed arcade box, and that today's digital gaming is based on creating games through a combination of AR, VR and AI. With this form of gaming, comes certain challenges in the form of protecting creators from piracy and plagiarism, and the judicial and quasi-judicial apparatus in India has worked to put in place boundaries to protect the interests of creators and promote innovation. The Copyright Act of 1957 in India forms the backbone of the law and was amended for the first time in 1984, and again in 1994. Legally, the plays within the digital medium require a nuanced approach to copyright infringement. The judiciary is now faced with the more difficult task of deciphering whether the infringement occurred in the online medium only. The 2000 WTO agreement under the TRIPS is another facet that influences balance the principles of this trade. It is clear that there is a need to reform copyright law to meet the needs of the gaming industry and the young entrepreneurs who are driving it.

Keywords: Gaming, IPR, Copyright IT Act 2000, AR and VR Technologies, Artificial Intelligence.

I. INTRODUCTION

India's shift to digital gaming is unmistakable by its sheer size and the speed of technological advancement, and it continues to eat up space within its entertainment industry. The expanding youth demographic in India, coupled with rapid growth in data accessibility and smartphone penetration, paint a clear picture of India's rapidly growing digital gaming industry. As per a report by KPMG (India) in partnership with the Indian gaming industry (including mobile

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gaming) based on data accumulated from different industry sectors, the online gaming segment in India is expected to witness a compound annual growth rate (CAGR) of 22.1 per cent, from FY2020 through FY2023. Also factoring in the exponential growth of the Indian digital-gaming industry and the growing depth of creativity and intellectual property at the heart of the game-development and distribution industry, the question that arises is whether this multibillion dollar industry in India is adequately protected under Indian law.

From simple 2D, pixelated games to detailed 3D, narrative-filled gaming experiences with high-end graphics and immersive technology backed by Virtual Reality (VR) and Augmented Reality (AR) platforms, the Indian gaming ecosystem has evolved over the years. The maturing Indian gaming ecosystem has witnessed significant growth with the emergence of many domestic game-development studios and investments by leading global gaming companies. It has seen the emergence of well-established competitive esports leagues transforming into mobile-based gaming. In line with global trends, gaming has also become a mainstream choice of consumer entertainment. With this growth, there has been an explosion of copyright abuses in the gaming industry in the country. Piracy of video games, unauthorised and illegal video game copying and distribution, unauthorised sale of art assets of video games, cheating, in-game/multilayer abuse, abusive use of bots, data-theft, and user impersonation are some of the challenges faced by the sector.

The first major issue of copyright law is with respect to creators and developers of games. Copyright law grants these individuals and entities rights over their creative works, allowing them to extract rents from them. It provides copyright protection for the code, the images (or otherwise the visual assets), the music and any other content within a video game. Copyright serves to encourage innovation and investment in this sector. This is crucial because games involve large-scale investments and, as a result, copyright protection is fiercely contested. Copyright protection in India is governed by the Copyright Act, 1957, which was passed in 1957 by the Parliament of India. The Copyright Act has witnessed several amendments since its enactment. The last major amendment came in 1994. A literal reading of the Copyright Act does not explicitly provide protection to computer programs, yet the Copyright Office has nevertheless proceeded to grant copyright protection to them.

It's hard to overstate copyright law's importance in this context, not least because it provides the incentive for developers to see the fruits of their labour. But it also creates an ethos of respect for intellectual property that, along with other factors, encourages the creation of genuinely new ideas. Because intellectual property is treated with more respect, piracy – a pervasive problem in the digital domain – is less likely to be contemplated. Copyright law helps to define the legal

boundaries of your ability to use elements from third-party assets, and to clarify where such use may infringe on another's work.

When it comes to the specific legal framework surrounding the digital aspects of copyright infringement, India's law, which is set in motion by the Indian Copyright Act of 1957, is thorough insofar as it was written and is enforced with the conventional understanding of copyright infringement as a tangible object. However, with these cases, there are two important issues: how easily digital data can be reproduced, and how effectively will an Indian court be able to enforce rights in faraway jurisdictions where the offending content is hosted. Additionally, there are those grey areas of law that seem to try to predict the future but inevitably struggle with the nascent technologies that are constantly emerging, such as, for example, game mods and fan-created content. Understanding and manoeuvring within this arduous thicket of digital copyright laws in India is the beginning of predicting what the local gaming industry will undergo in the future.

With digital gaming booming in India as never before, and generating new forms of art like never imagined before, the laws on copyright and intellectual property must now change to keep Innovation free and growing. Copyright is not just the law that concerns the lawyers: it underpins the economics of our business, makes the art form diverse and ethical, and affects all our livelihoods.

(A) Definitions and key terms

- **Video Game:** An interactive form of entertainment that requires an electronic and often digital engine, offering audiovisual feedback, computational logic and user control via a system of human-computer interfaces (HCI).
- **Game Assets:** items integral to the creation of a video game, such as character designs, environmental art, soundtracks, and code.
- **Code:** The programming language constructs and algorithms that define a game's functionality.
- **Infringement:** Unauthorised use or reproduction of material that has been copyrighted by someone else.
- **Fair use:** Legal doctrine to permit the unlicensed use of copyright materials for certain purposes and under certain conditions; courts are to consider a range of factors, including the purpose and character of the use.

II. HISTORICAL CONTEXT AND EVOLUTION

A historical approach offers the most clarity to follow the winding thicket of digital copyright law that has enabled contemporary India's games industry, carving out the space that the international copyright regime had already made available, and the way that copyright laws expanded and adjusted to fit the specific needs of digital technology and the internet.

Copyright law, which gives the author the right to control sharing of creative works, is a relatively recent juridical protection for authors, dating back to the Statute of Anne, signed into law in England in 1710, and then extended to the rest of the empire in 1711. The Statute of Anne was the first law to give rights over works to authors for a specified term of years. Since then, copyright law has expanded and been extended as society has developed and technologies have increased, from recording newspapers and books to including the music of Chopin, the Western and old Chinese martial arts, and then eventually to digital contents. Copyright protection of games is similarly borne out of early video gaming. We can think of two distinct factors leading up to this moment: the first being William Higginbotham's *Tennis for Two* in 1958, and the famous *Spacewar!* created by MIT students, taking us into the start of contemporary video games. *Tennis for Two* and *Spacewar!* aren't simple electronic or arcade games, which have been around for longer. They are the starting point of what we call video games today. The games are videotext, not merely electronic games that required specialised electronic equipment to play. Like pinball, they weren't really seen as art and were considered a youthful, male pastime. In fact, the game industry broadened their demographic possibilities in the early 2000s, attracting more women and older players, quickly competing with film for revenues, and has been considered by some to be an art form since the turn of the 21st century. However, many are st

ill skeptical of their artistic value. Video games have developed from their early forms. The international scene then became even more homogenised with the introduction in 1886 of the Berne Convention for the Protection of Literary and Artistic Works, which embedded provisions like automatic protection and the minimum level of protection that countries must afford works for domestic authors if they wanted to avail themselves of the Berne regime. Digital technology and the internet presented new problems, which required further changes to international copyright, most notably the World Intellectual Property Organization Copyright Treaty (WIPO Copyright Treaty) of 1996, which governs copyright in the digital age.

India's gaming industry pivoted in the shape of the country's own technological and economic trajectory over the past two decades: from an isolated, nascent and relatively homogeneous

industry – with arcade and console platforms – to a global contender. Games could be played in arcades and owned on consoles, but were out of reach for the masses because of high costs and geographical challenges. In the new millennium, as the internet’s revolution took centre stage in the country, PC and then mobile gaming unfolded. However, mobile games powered by low-cost smartphones coupled with cheap data was what really shifted the arc of India’s gaming to its current trajectory. Not only did India’s gaming industry explode into consumers’ lives, but India also emerged on the fast track to become one of the fastest markets for games in the world. By 2020, India had a vibrant ecosystem of more than 4,000 developers and at least 300 publishers, along with an estimated 300 million gamers.

As this industry matured – from the 2D sprite-based play of *Space Invaders* (1978) to the 3D, hyper-realistic freedom of action of *Grand Theft Auto V* (2013) – companies seeking to safeguard the industry-driving creative content of their games had to develop technical and legal safeguards to protect their game assets: the original artwork of the game, its sound design and narrative voice. In this way did video games come to be treated as protected speech under copyright law and the First Amendment – a historical marker forthcoming in the *Brown v. EMA* decision, crediting video games with book-, movie- and music-level status as art worthy free speech protected from government censorship.

India’s legal regime quickly had to accommodate the rapid evolution of copyright to both roll with technological revolution – and to control the new digital games sector.

The Copyright Act of 1957 established a general framework of copyright protection and enforcement in India, largely in consonance with international standards that prevailed then. Adapted for traditional literate structures of literary, musical and other aesthetic work, it took several decades before its provisions came close to embracing digital content.

To adapt to the digital age, the act has been amended three times, the first in 1994 and most recently in 2012. In amid revised penalty language and the abolition of some sillier loopholes was a new set of protection measures designed to address copyright infringement in the digital age. For example, penalties extended to so-called ‘piracy’, i.e., the unauthorised copying, distribution and downloading of copyright material.

First, by declaring that computer programs are included among the ‘literary works’ protected under copyright (1994). This was crucial if copyright protection was to be extended to works of software, an essential aspect of the structure of video games. Second, with the introduction in 1999 of a right to ‘make available to the public’ the original work (ie, distribute it to the public using the Internet). Third, via amendments actually completed in 2012 to trenchant

improvements in copyright protection against infringement via the Internet, via DRM, and alterations to reflect author's rights in the digital age.

Furthermore, the Information Technology Act, 2000, and its amendments, while not explicitly written with a focus on copyright in games, have particularly also had a key role to play in the world of digital copyright. They were instrumental in creating a framework for laws pertaining to electronic commerce and digital communications. And, in turn, because most of our games are now distributed and played online, these laws indirectly touch our industry by dictating to us how our games can be made available and experienced via digital means.

The evolution of Indian digital copyright law, too, is another chapter in an ongoing saga of creating spaces that allow for the coexistence of the interests of copyright owners with the realities of techno-development as well as the dynamism of the rapid, ever-changing landscape of the digital games industry. Just as the industry changes, so too will the law. From the birth of copyright law to the digital present, the picture is thus one of dynamism in how law carves out a space for the activities of those who want to make creative choices in the digital world.

The first important decision extending legal protection to video games came in the case *Atari Games v. Oman*, concerning Atari's *Breakout*, which had been coded by Steve Jobs and Steve Wozniak while they were members of Apple. Originally, the Copyright Office denied copyright protection to the game, since they could find nothing sufficiently novel in it. The decision was subsequently overturned on appeal, in part on the basis that the 'storyline' was conveyed via 'aesthetic, audio-visual content including sequential complexity', demonstrating that video games are sufficiently creative to warrant legal protection.

The entry of PlayStation and Xbox into the Indian market born out of this, along with a desire to localise content to suit the Indian masses. The image of Lord Hanuman on the cover of "Hanuman: Boy Warrior" (2006) for PlayStation 2. Courtesy Sony India One of the consequences of this has been the development of video games that feature a distinctly Indian flair. Mythological deities have inspired PlayStation 2's 'Hanuman: Boy Warrior' (2006), and PlayStation's 'Don 2' (2010) – both are inspired by the popular Bollywood actor Shah Rukh Khan. The localisation of video games has coincided with a massive spike in the Indian gaming population across all platforms – from consoles such as PlayStation and Xbox, to PCs and the growing mobile sector.

Parallely, with growth of the gaming sector, there were collaborations across country. A South Korean game company Krafton is credited with the development of 'Battlegrounds Mobile India', an alternative to China born 'PUBG' in India. All this proves the importance of

protecting intellectual property rights in the growth of Indian Gaming.

India's intellectual property law framework stems from the Copyright Act of 1957, under which all video games are considered as multimedia applications. The Ministry of Electronics and Information Technology (MEITY) has also classified video games under the multimedia applications category. Since video games are composed of different expressive materials – namely, literary, artistic, musical and audiovisual works as well as computer programmes – the Act protects games collectively, under the copyright provisions relating to all such expressive materials. Since video games can be seen as a collection of different forms of expressive materials, copyright protection is granted under Section 2(f), which deals with cinematograph films.

The copyright generally vests with the developers of the game. With respect to some games, the publishers may also hold copyrights. The duration of such protection under the Indian law is 60 years from the date of publication, hence the person or entities holding the copyright would have a long avenue to enjoy their rights given their intellectual effort.

A focus on building culturally relevant new games with protections granted to them under Indian copyright law shows how dynamic the Indian games landscape is becoming, and how important intellectual property rights are to promoting the growth of a globally significant Indian gaming sector. In India, video games are protected under the Copyright Act 1957. Video games are recognized under multimedia applications as recognized by MEITY⁷ and since it consists of assets that are protected under their respective titles like literary work, artistic work, musical work, software code programming, musical work, and sound recording, as it is already dealt with in Chapter III, it should be protected under Section 2(f) which is cinematograph films. It is essential to understand that the copyright is usually owned by the developer and, in some cases, by the publisher. The copyright term would be 60 years from the date of publication.

In the contemporary scene, the video game industry is a multi-billion dollar enterprise, with major studios like Ubisoft, Rockstar, and Activision leading the charge in producing games with intricate storylines, meticulously composed music, and detailed character and environment design. A significant case highlighting the importance of copyright in the gaming world was *NetEase v. Alibaba*, where Alibaba was ordered to pay NetEase approximately 7.2 million U.S. dollars over copyright infringement for the mobile game "Three Kingdom Tactics," underscoring the heightened significance of copyright protection in gaming.

III. DIGITAL COPYRIGHT LAWS IN INDIA

The regulatory regime governing the copyright law of India is a multi-layered structure

consisting of domestic legislation, international treaties and the evolving judicial philosophy that seeks to address the demands arising out of the digital era, especially in the ever-evolving gaming industry. It aims to protect and safeguard the interests of intellectual property creators and harness innovation in the digital sphere.

1. Copyright Act, 1957

The Copyright Act, 1957 establishes the statutory basis of copyright law in India, which primarily protects literary, dramatic, musical and artistic works, cinematograph films, and sound recordings. It provides authors the exclusive right to perform or display their works in public, reproduce, communicate the work to the public, and prepare derivative works on their creations, all of which are vital to the game-producing industry since games often combine numerous modes of creative expression.

- **Literary Works:** The Act's category of a computer program, a database or a compilation as a literary work protects video games, as code constitutes protection for game logic while narrative scripts protect the fictional story.
- **Artistic Works:** The graphics, visual effects, and character designs in a game are considered artistic works protected under copyright law, and thus developers have rights over the art they produce.
- **Cinematograph Films and Sound Recordings:** multimedia elements such as in-game footage and a video game's soundtrack are protected, enforcing copyright on entire complete games.

The Copyright Act has been amended piecemeal over time to respond to the challenges created by digital technologies.

- **1994 Amendment:** It overhauled copyright in ways that gave protection to computer programs as literary works, and made them eligible for thematic copyright protection, an initiative without which there would among other things be no video games.
- **1999 Amendment:** Introduced notion of 'communication to the public' for the first time, and was written for the distribution realities of digital content (in other words, online games).
- **2012 Amendment:** Enhanced anti-piracy protections against copyright infringement online, affirming the importance of digital-rights management (DRM) technologies and clarifying fair-use copyright exceptions (essential for folks in the games business).

2. Fair Dealing and Gaming Content

While Section 52 of the Copyright Act offers some protection, its applicability is limited. Not all instances of infringement are pursued by companies, especially if they do not significantly impact their reputation. However, caution is advised when gamers stream content online without explicit permission, as this could lead to copyright infringement claims, particularly if the streaming does not include commentary or review elements. The legal landscape remains murky around esports and competitive gaming, which currently lacks explicit protection under the Copyright Act, indicating a need for more comprehensive legislation in this area.

3. Information Technology Act, 2000

Although this law doesn't explicitly elaborate on copyright issues, the Information Technology (IT) Act, 2000 and subsequent amendments are internally linked to the concerns arising out of copyrights in the digital realm. The IT Act, 2000 offers provisions related to electronic commerce (e-commerce) and cybercrime (offences committed in a computer).

- Section 43A and Section 72A: key sections that mandate compensatory and penal measures for unauthorised access to, and disclosure of, personal and sensitive data, that indirectly support the confidentiality of all content, including games.
- Section 67C: compels intermediaries to retain and preserve technical records for a particular time-period, enabling copyright policing by ensuring that all digital transactions trackable and verifiable.

IV. INTERNATIONAL TREATIES AND INDIA

India's respect for copyright in the digital age is also evident in its adherence to international treaties establishing a world regime of copyright laws, obligations and enforcement.

Berne Convention for the Protection of Literary and Artistic Works

India became a member of the Berne Convention in 1928, which declares that copyright works created in one member country – there are now 167 of them – are protected in all member countries, and vice versa. Thus, the same rules of universal protection that allows Walt Disney to command worldwide royalties for Mickey Mouse also protects Indian developers' works in other countries. Without this protection, the global circulation of video games would be extremely limited.

World Intellectual Property Organization Copyright Treaty

Key in promoting copyright's protection in the digital environment, India became a signatory

to the WIPO Copyright Treaty (WCT), which was adopted at the end of 1996. Under Article 11 of the WCT, India committed to protect the rights, which are specifically relevant to the digital environment. The treaty further requires member states to implement sanctions against the circumvention of technological measures and against the removal or alteration of rights management information, which will have a significant impact on the gaming industry by protecting against piracy and online distribution of games.

The digital copyright jurisprudence in India comprises the 1957 Copyright Act following the international Berne Convention for the Protection of Literary and Artistic Works 1886, the 2000 Information Technology (IT) Act, India's obligations under the 1994 TRIPS (Trade Related Aspects of Intellectual Property Rights) agreement and the Universal Copyright Convention (UCC) 1952. Taken together, these, along with the peculiar industries specifically associated with digital technology, have created a comprehensive, modern legal framework to address the challenges of the digital age. This framework is contributing to the growth of the gaming industry through the recognition that creative works are protected and should, therefore, be exploited to encourage further innovation and development. The creative economy is an ecosystem that requires a balance between recognising creative work as proprietary, yet accessible and affordable, especially to the young. As technologies digitise and the gaming industry grows and embraces them, the legal structures to protect and safeguard creators' rights will also evolve accordingly.

(A) Game assets that can be protected under copyright laws

- **Character Design:** The visual design of a game's characters, envisioning their visual look, aesthetic, and personality.
- **Environment:** The artstation of a game world, the 3D models and 2D images (backgrounds, environment shots, story boards and artwork, etc) that build that world.
- **Audio Design and Music:** Game audio, including original music compositions, sound effects, and voice acting.
- **Dialogue and Narrative:** Characters' written dialogue, and the storylines that guide gameplay plot and character interactions.
- **Game Code:** The foundational programming that underpins a game's mechanics and interactions.
- **User Interface/User Experience (UI/UX) Design:** How a game's elements interact with each other and the player, including animation, audio and responsiveness.

- **Game Logos:** The distinctive symbols or emblems that identify a game and that can be protected by trademark and copyright law.

Drawing on precedents from other entertainment industries, which were well-developed and regulated by the time the Indian gaming industry had matured, the judiciary has developed a framework for copyright protection specific to video games including entering it as a matter of course under Section 2(f) of the Indian Copyright Act, which extends to the category of cinematograph films. Judges have focused on mens rea issues, or the actual intent of the infringer, to determine whether the fair dealing exceptions under Section 52 of the Indian Copyright Act had been legitimately pleaded as a defence or misused by an infringer as a shield to avert legal consequences.

V. JUDICIARY AND COPYRIGHT IN GAMING

Key legal battles in the realm of copyright infringement include:

Mattel v. Jayanth Agarwalla:

Mattel, a leading toy and game manufacturer, created the popular board game "Scrabble." The company operated websites associated with the game. Defendants launched "Scrabulous," an online game that closely mimicked "Scrabble," and used metatags and hyperlinks suggesting an association with Mattel's product.

They claimed no intention of misappropriation, arguing that the term "scrabble" was public domain, and hence, not subject to copyright infringement. They also contended that a board game, as a three-dimensional object, couldn't be copyrighted under the Copyright Act.

The court restricted the defendants from using the "Scrabble" trademark, recognizing its distinctive nature. It was decided that the game's color scheme and tile arrangement could fall under the Designs Act of 2000, provided they exhibited originality, thus not covered by the Copyright Act of 1957.

Sony Computer Entertainment Europe Ltd. v. Harmeet Singh

Sony Computer Entertainment found that its PS Vita and PlayStation 3 systems were being tampered with by Harmeet Singh and others, who installed pirated game versions and sold them. This act involved decrypting Sony's original codes to facilitate the running of pirated games.

The court examined whether such actions constituted a breach of software copyright.

A clear infringement was identified, leading to an ex-parte decision for a permanent injunction against the defendants, prohibiting the sale of pirated games and modification of Sony's

consoles.

Courts have also had prior experience dealing with video game source code in a landmark copyright case: *Nintendo v. Tengen*, with Nintendo, makers of the high-profile Famicom console (known as the Nintendo Entertainment System in North America) and the US video-game giant Atari Inc, makers of the Atari VCS console. When Nintendo brought their Famicom console into North America, it coincided with a time when many publishers began creating their own games for the market, rather than contracting with console makers like Atari to create games solely for that console. The result was an unstable market as many publishers manufactured cheap copies of popular titles. In response, Nintendo developed a lock-out mechanism – a fixed code (later known as the 10NES chip) that allowed licensed cartridges to work on their system, thereby only allowing officially approved games on their hardware. Tengen, an Atari subsidiary, was permitted to license certain Nintendo games and sell them for a variety of consoles, but the company also engaged in a process of reverse engineering to obtain the source code for the 10NES hardware through a Freedom of Information Act (FOIA) request from the US Copyright Office, apparently with the intent to officially licence third-party games for Nintendo hardware. Nintendo sued Tengen on grounds of copyright infringement, with the central legal question being whether Tengen’s actions were copyright infringement or whether they qualified under fair use. The US District Court and the US Court of Appeals for the Ninth Circuit ruled that Tengen’s activities amounted to copyright infringement because the source-code theft could not be explained only by the desire to evade Nintendo’s licensing system – its purpose was commercial gain, and as such it was not protected by the doctrine of fair use. Although Nintendo won the case, the story may have ended with commentators criticising Nintendo’s more monopolistic practices, with penalties issued by the Federal Trade Commission for violating the Sherman Act.

VI. CHALLENGES IN THE GAMING INDUSTRY

The Indian gaming industry is looking upstream into a challenging new world of digital copyright law and the rules governing it. Gaming piracy, pirated copies and copying, reverse engineering and modding of copyright works are some of the most pressing matters of copyright infringement that have to be addressed by a gaming industry that cares not just about revenue for economic development but also the integrity and creativity of the same.

(A) Copyright Infringement Issues

Copyright infringement in digital games therefore includes everything from piracy and leeching to unauthor under copyright, but that are also of potential concern to law enforcement and

regulation.

(B) Piracy and Unauthorised Reproduction

Perhaps the most obvious form of copyright infringement in digital games is piracy, the copying and distribution of games without authorisation. Piracy in India is enabled by cheap and widely available internet connections, and by the subversive copy-and-paste culture that allows for the easy reproduction of digital goods. Piracy entails not merely copying, but also the distribution of pirated games through various outlets, including underground forums, peer-to-peer networks and illegal websites. Beyond immediate monetary losses to companies and creators, digital piracy discourages investment and innovation in the video-game industry.

The legal system in India, for example, has all the mechanisms to shut down piracy and prevent unauthorised reproduction, through provisions in the Copyright Act of 1957. But by the time one realises that one has a case on one's hands, it is already too late because of the inherent characteristics of the medium – it is easy to replicate, and easy to distribute swiftly and anonymously. Other problem with piracy is that it is global, and it is not easy to enforce jurisdictions on the internet. Given that pirated copies of various media can so easily cross borders, often resulting in criminality on both sides of the border, one would expect a serious effort on the part of law enforcers, but that doesn't always happen unless it's a blatant case.

(C) Reverse Engineering and Modding

Under the heading of reverse engineering, a human can break down every layer that exists beneath all the software code and metadata – lean down to see the code, the mechanics, the pattern of how it all follows a rule. Reverse engineering has both good and righteous uses, such as assuring that programmes work together. It is an integral part of software life where the ever-shifting interoperability of systems allows such things as speaking English to a German-language software programme. On the other hand, it makes workarounds easier to someone trying to skate past copyright protection, all that's needed to reproduce a digital game is the code – for instance.

User game modification – otherwise known as 'modding' – exists in a legal twilight zone. On the one hand, modding can prolong a game's effective useful life by increasing its appeal. Adding further features or levels to a game, for example, can enhance its shelf life by years. On the other hand, a 'mod' might infringe copyright on the part of the originator, unless permission has been granted – especially where a 'mod' riffs off a proprietary asset or otherwise changes the function or content of the original.

(D) User Generated Content

User Generated Content (UGC) is yet another copyright issue that needs to be addressed. While fostering creativity within the game, greater personalisation and the power of YouTube let individuals claim intellectual property as their own, the court law, said to be ambiguous, often leaves it open for these large entities to adopt UGC and exploit it for their own commercial gains. Specifically, in India, the existence of certain challenges like the lack of robust copyright laws and clear legal safeguards for fantasy gaming platforms or esports, needs to be addressed. Esports are currently exempted from explicit legal protections, and the inclusion of esports under the Copyright Act of 1957 could strengthen the legal constitution.

(E) Intellectual Property Rights Enforcement

Everywhere, where IPR enforcement is critically important online, including the meat grinder of intellectual content generation that are gaming communities, IPR policy's articulation and technological contextualisation are more strategic, more fluid, balancing incentives for producers to remain active and stay on task.

Jurisdictional Challenges

In intellectual property law generally, and with respect to games in particular, one of the most significant barriers to the enforcement of rights is one of jurisdiction. The pervasive and accessible online environment in which many games are distributed and played frequently puts copyright restrictions' territorial dimension – and the borderlessness of the internet – in conflict with one another. This mismatch can create problems for enforcement, as conduct that amounts to an infringement in one jurisdiction might not even do so in another.

For example, a game made in India and protected by Indian copyright law can still be pirated, hosted by a server in a country that is not particularly serious about copyrights. It is difficult to act on copyright infringement: it is bound in international agreements and treaties, in local laws and bilaterals. And it is expensive.

Secondly, as games have become increasingly reliant on cloud gaming and streaming, an apparent jurisdictional issue has arisen, namely where one plays a game hosted on a server located anywhere in the world whose distribution is governed by geographical copyright licences. It is unknown which jurisdiction's copyright regime applies.

(F) Online Distribution and Digital Rights Management

Now that so many more games are actually distributed in digital form without boxes, these new modes of distribution and online marketing are radically reconfiguring the copyright

enforcement challenges – and opportunities. Built into the digital distribution of games via digital marketplaces and distribution platforms are some truly vast new questions about distribution and copy protection law, as well as the requirements that those who wish to distribute digital games omit technological protection measures (TPMs) and circumnavigate access-control measures. That's because 'TPMs are used by copyright owners to control access to their works ... [and] to control or prevent copying' of copyright works. Digital Rights Management (DRM) technology is an important form of TPM. DRM is a class of technologies that control copying – copying of works, or physically controlling the use, storage, modification or distribution of digital content, like games, music or ebooks.

A DRM system can be as simple as a serial key that needs to be checked offline against a database; it can also be any number of onerous, always-online or constantly revalidating regimes that regularly require the user's copy of a game to 'call home' and check in with the official mother ship to prove that it's legit. DRM can function by reducing the incentive to pirate, but it regularly provokes pitched battles over user rights and the balance between the pursuit of copyright protection and the need to respect consumer freedoms. Angry voices cry that, by making the experience of playing a game too difficult for legitimate users (for example, most DRM schemes used for computer games require users to stay online at all times), they generate 'friction' that serves to drive users towards piracy a system that has the effect of undermining the value of the copyrights that are supposedly being protected in the first place.

DRM also raises legal concerns. It can unlawfully impede privacy rights and fair use. There are currently no legal provisions in Indian law specifically addressing DRM, so they require a gumming together of several different sections. As such, it is currently technically unlawful to break DRM for permitted purposes, such as making personal backups or modifying protected materials for the visually challenged.

(G) Copyrighting Game Mechanics vs. Aesthetics

Reconciling that distinction between game mechanics and aesthetics presents a more fine-grained debate in copyright law. The mechanics are those rules, systems and apparatuses that enable gameplay. They are the consoles, the visible arcs of a bowling alley, the scoring system, the parallel lives of the occasional used Avatar. They comprise frameworks within which the magic happens. In Dungeons and Dragons parlance, they represent the rules, yet not the entirety of the game. It is the mechanics that mark the difference between a Monopoly board games and a game of chess. The aesthetics, on the other hand, give a game its look, sound and alluring 'feel'.

Despite taking a wide-ranging approach, however, the Indian Copyright Act of 1957 doesn't make a firm distinction between the two – hence the ambiguity over whether they are copyrightable or not. Copyright law protects the expression of an idea, not the idea itself. That is to say, all the artistic components (graphics, individual music tracks, storylines, etc) are protectable, but the game's underlying mechanics (ie, the tools that are in effect the functional aspects of the game), are not the sort of thing copyright protection extends to. Again, this distinction between creative expression and functional components reflects international copyright law.

But in India, where general legal guidance on the nuances of video games' copyright (and copyrightability) are limited – and especially regarding cases where mechanics are closely related to narrative and aesthetic content – this vagueness might result in disputes on what exactly within video games is copyrightable, in need of more detailed legal reasoning – and even through legislative updates – by tending towards the distinctiveness of video games.

VII. ROLE OF LICENSES IN GAME DEVELOPMENT AND DISTRIBUTION

Licences are the building blocks of the legal regime that surrounds the development, manufacture and distribution of video games. third-party assets and software are often used in developing and releasing a video game, in addition to the use of other forms of software.

(A) Open Source and Proprietary Software Licenses

One of the most important distinctions between open-source games and proprietary games is in the software licences used to make them: open-source licences facilitate making use of, modifying and distributing software more widely than proprietary licences, which restrict use, modification, and distribution in the service of the creator (or someone who holds the intellectual property rights to that software).

For example, most Indian games task developers with understanding and dealing with these licences: their games 'use' third-party assets, whether open source or proprietary, and are under terms of use – breaking these leads developers into legal trouble. This is copyright in action.

(B) Licensing Agreements for Game Assets and Tools

Commercial games often incorporate licensed assets (for example, actors, object models, game engine, music and sound effects) and tools. Essential terms of every licence agreement for such assets set forth the parties' rights and duties. Typically, licensed assets and tools are restricted to use in the example game project. Jurisdictions may also impose intellectual property taxes or fees. A percentage of the revenues earned from selling a game will be paid to these jurisdictions.

For Indian developers, it's doubly important since the gaming developers work in a global ecosystem of developers and publishers – if they violate either Indian law or the laws of any other jurisdiction, they could be facing copyright infringement or other litigation.

(C) Protecting Game Storylines, Characters, and Artwork

We're long past dismissing games as just interactive movie fiction. Copyrighting game storylines, characters and artwork is another layer of protection in development. Copyright law protects these elements as part of the artistic and literary works on their own terms.

If you're in India, the easiest way for these creative properties to be safeguarded through a registration of copyright is to provide proof of ownership, with a date of creation. Copyright is automatic from the moment of creation, but registration empowers you to enforce your rights through such action in court.

But the real-time, collective nature of game development – by which storyline, characters and other key elements can evolve over the course of game development and be conceived by various development team members – makes it all the more imperative for all developers to enter into agreements early in the development process so there is as little confusion as possible over who owns what copyright and what are the assignments of those copyrights.

(D) Emerging Technologies

As the gaming sector in India prepares to enter a new digital copyright regime in light of emerging technologies such as Augmented Reality (AR), Virtual Reality (VR), Blockchain, Non-Fungible Tokens (NFTs), and Artificial Intelligence (AI), we are likely to face novel legal challenges and implications for copyright law.

(E) Augmented Reality (AR) and Virtual Reality (VR) Games

AR and VR technologies have revolutionized the gaming industry by offering immersive experiences that blur the lines between the digital and physical worlds. AR integrates digital elements into the user's environment in real-time, whereas VR creates a completely immersive virtual environment. The unique nature of AR and VR content raises significant copyright questions, particularly regarding the environment in which the game is played and the integration of real-world objects within the game.

In India, the current copyright framework does not specifically address the nuances of AR and VR. For instance, if a game incorporates the image of a real-world building or artwork within its virtual environment, it may conflict with the copyright of the original creator. As such, developers must navigate these issues carefully, often requiring licenses or agreements to use

real-world elements within their games.

(F) Blockchain and NFTs in Gaming

In 2021, blockchain technology and NFTs (literally, Non-Fungible Tokens) demonstrated new models of ownership and exchange that completely overturn the existing rules governing traditional gaming – including the ownership and transfer of digital items, in a way that is secure, transparent and forever unalterable.

Ownership and Copyright of Digital Assets

Using NFTs, gamers can ‘own’ such virtual content as in-game assets, characters, or images as separate properties that they can buy from or sell to others. This translates into creating ownerships and copyrights in digital content, which raises issues surrounding ownership and copyright laws when traditional notions of ownership and copyright cannot logically apply to digital assets. While India has no clear legal position on NFTs and how copyright law will treat them – it is an area, like everything connected with blockchains, that operates without a clearly legislated framework. Laws will need to be introduced to create a framework in which the creators, owners and use of digital assets can be defined.

Blockchain and NFTs integration in gaming, on the other hand, present legal questions involving issues of smart-contract enforceability, the anonymity of blockchain transactions, and jurisdictional issues arising from the worldwide nature of blockchain networks. Blockchain networks could lead to copyright violations as the immutability of blockchain makes it difficult to control or remove non-authorized content once it is written on the blockchain.

(G) Artificial Intelligence in Game Development

AI technology can be used to produce more realistic game environments and creature behaviours. It can be used to automatically generate content.

Copyrightability of AI-generated Content

This may sound historic, but this issue is brought home to us as the use of cutting-edge AI in game development is increasingly permeating the videogame industry. The question of copyrightability of machine-generated content would challenge copyright law in India, an area that presently still awaits the courts to delineate it. The present uncertainty hangs over the head of developers and other creators who would potentially wish to protect, and potentially monetise, AI-generated content in their game, including narratives, characters, sounds and imagery.

Beyond copyright, this also involves questions of ethics, as in the area of bias in AI training

algorithms, how AI might replace the jobs of human developers, and whether we can do anything about it. The law must meet and keep pace with these challenges, to ensure that the game is fair and that we don't get caught by unexpected complications in experiments. AI might be a game-changer when it comes to culture, but not a magical one.

VIII. SUGGESTIONS

In order to avoid copyright infringement issues, several approaches can be taken such as:

- Digital Rights Management (DRM) systems such as Steam ensure games are running properly with a licence, and allow for piracy reduction. However, this can lead to access problems for consumers. The Digital Millennium Copyright Act (DMCA) is a law in the US that can be used to take down a website that's using someone's protected work without permission. This includes a 'Takedown' notice that enables the removal of infringing content. Having a licence is the quickest way creators can protect their work and prevent reuse.
- Implement DRM systems to control unauthorized reproduction and distribution, while being mindful of consumer access rights and the risk of inadvertently encouraging piracy.
- Secure licenses for game assets and technologies to ensure legal protection of developers' works.
- Push for legal reforms to provide clearer guidelines for the use of emerging technologies such as AR, VR, AI, and blockchain in gaming.
- Advocate for the inclusion of esports and user-generated content (UGC) under copyright protection to enhance the legal framework.

IX. CONCLUSION

The rapid growth of companies in the Indian gaming industry is a testament to the critical balance that copyright laws should strike between driving innovation and protecting IP rights. Although the country's copyright law (and the United States') continues to play its part in providing copyright remedies against flagrant and clear macroeconomic offenders in the world of digital copyright infringements, its inadequacy to account for new technological norms of day, as highlighted by the landmark decision in the Google-Oracle case in the US, and the global nature of the gaming industry calls for its judicial and legislative overhaul. Their roles in adjudication and reform of copyright law emphasise the ongoing dynamism of this legal balancing act.

Legal and ethical evolution, even as new technologies emerge and interact with one another and international copyright law both compete with and react to one another. As the legal cases clearly show, the fight will continue as the balance between innovation and fair licensing struggles with new technologies such as digital distribution, DRM, and user-generated content. In fact, the laws will need to be even more flexible and responsive than before, because they need to serve the interests of creators, as well as make the system work in the fast-changing reality of our digital age.

For that reason, the article recommends a multifaceted approach to all of this as related to copyright governance in gaming, with a focus on legal reform, multilateral cooperation and technological specificity. This translates to, among other things, closer integration of DRM systems, securing appropriate licences, addressing evolving technologies such as immersive tech in virtual reality (VR), augmented reality (AR) and mixed reality (MR), artificial intelligence (AI) and blockchain, and creating a ‘global dialogue’ for copyright enforcement to delineate jurisdictions.

More importantly, it urges an appreciation for the broad differences between gaming and other forms of endeavour – chiefly, the division between game mechanics and aesthetics, and the licensing aspects of gaming that are fundamental to how games are developed and distributed. Early copyright registrations and agreements can help clarify ownership and assignment of copyrights in game storylines, characters, artwork and other elements.

The pace of change in Indian gaming means that legal frameworks should evolve in response to what the realities of digital technology and the global nature of the market demand. This means revising and refining copyright laws, as well as working on more effective cooperative bodies and measures to ensure that Indian creators’ intellectual property is protected overseas. It is in the interest of all to find a sensible middle ground between protecting copyright and encouraging innovation and creativity.

To conclude, the Indian gaming industry navigating through the treacherous political landscape of digital copyright laws underscores the need for legal reform and international cooperation to take computational changes into account and to solve the growing problem of copyright infringement and evolve the law to meet the global distribution of games. Mere trade liberalisation will not help attain the objectives of the agreement on Trade-Related Aspects of Intellectual Property Rights. India’s regulation of gaming builds on the earlier failures of copyright reform. Copyright issues on global platforms require action at the international level. Without change, India faces the danger of deferring reforms that would safeguard the rights of

creators and usher in an era of growth, creativity and innovation that would benefit the entire world.

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