

WIPO Committee on Development and Intellectual Property

Understanding Intellectual Property in Video Games

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Disclaimer

This training material is designed to serve two audiences: (1) government representatives and policymakers, who make decisions affecting the industry and (2) creators and right holders involved in the video games ecosystem.

It is of an illustrative nature to help users understand the many business and legal issues they may encounter in developing and eventually distributing a video game on numerous platforms.

The material is for educational purposes and is not intended to replace the expertise of lawyers and other key personnel within the industry in negotiating deals.

1. Introduction

Video games are the most dynamic and rapidly evolving sector of the creative industries. They are a unique blend of technology, entertainment and interactive experiences capable of captivating and engaging a global audience. Video games have become a primary form of entertainment, surpassing film and music, and expanding beyond entertainment into education, health, science and the military. Video games are engaging, with detailed stories and graphics; and innovative, incorporating elements of storytelling, art, music and design with cutting-edge software and hardware technologies. This fusion has led to the emergence of narrative-driven games, cinematic experiences and immersive virtual worlds that provide players with unparalleled interactive entertainment.

The video game industry has experienced exponential growth, fuelled by factors such as technological advancements, increasing digital accessibility in emerging and established markets and greater market penetration of next generation consoles. These include more powerful mobile devices, the growth of live services and video game streaming services, cross-platform play, cloud computing, mixed reality and generative artificial intelligence (AI). The market size has expanded significantly, attracting players of all ages and backgrounds, from casual gamers to hardcore enthusiasts. According to analysts, the global games market will generate revenues of 187.7 billion United States dollars by the end of 2023.¹

Consumer interest is at its highest due to the quality of the titles and tremendous growth in the streaming of game content and user-generated game related videos. It is destined to further increase once mixed reality and, eventually, the metaverse attract a mainstream audience. More games have been localized, making them accessible to a greater number of players, while at the same time we are seeing greater worldwide distribution and exposure of games from nontraditional markets.

¹ More information is available on the Newzoo website, <https://newzoo.com>.

2. An overview of the video games ecosystem

Defining video games can be challenging, given their diverse array of genres, such as first-person shooters, role-playing games, casual or social games, sports games and battle royale games. Game design is versatile and constrained only by the developer's creativity. Similarly, the video game industry is complex, encompassing a wide spectrum of realities, each with distinct requirements and objectives, from sole independent developers to global corporations. These complexities, together with the industry's ability to reinvent itself and update content, easy global distribution, few production challenges and strong consumer engagement, contribute to its success.

2.1 Geography

Regarding consumer spending and game development, the global gaming industry has historically been dominated by the United States of America (with its major publishers), Japan (home to companies such as Sony and Nintendo) and Europe (United Kingdom, Germany and France).² However, in recent years, significant changes have occurred due to the rise of mobile devices and digital distribution, making games more accessible, especially in regions where gaming has had a smaller presence. China has emerged as a major player, driven by its growing economy, large population and smartphone adoption.

With regard to regional markets, Asia-Pacific, led by China, Japan and the Republic of Korea, is the largest, accounting for more than 50 per cent of global market revenue. India, with its large population and rapidly growing smartphone market, presents significant

² Note that 'Europe' refers to the geographical region, not the European Union of which the United Kingdom is no longer a part of.

potential. North America is the second-largest market, followed by Europe. The Latin American market is growing, particularly in countries such as Argentina, Brazil, Chile, Colombia and Mexico. However, the smallest market, Africa and the Middle East shows potential for growth as gaming populations expand.

2.2 Demographics

The video game industry is not only economically impressive but also showcases the broadening appeal of games across demographics. It has been predicted that worldwide, the number of players will reach 3.38 billion in 2023.³ Updated numbers are constantly shared by analysts and trade associations, particularly in the Asia-Pacific region, Europe and North America, demonstrating how traditional stereotypes of gamers (young males) are being overturned. The gaming industry's appeal spans age, gender and skill levels, making it a continually growing and profitable field. Women account for 46 per cent of players and the average age is 35 (this varies by genre and country). This diversification in demographics is due to easy access through mobile devices and web portal games, along with the range of games available at various price points, from casual mobile games to high-budget games for consoles.

Online connectivity has transformed the way people play and engage with video games. The advent of high-speed Internet and prevalence of online gaming platforms have facilitated seamless multiplayer experiences, global competitions and social interactions among players worldwide. The rise of social gaming has further enhanced the sense of community, allowing players to connect, collaborate and compete in shared virtual spaces.

³ Ibid.

2.3 Technological trends

Technological advancements drive the video game industry's evolution. The rapid development of hardware capabilities, graphics processing power, virtual reality (VR), augmented reality (AR), cloud gaming infrastructure and generative AI have revolutionized the gaming experience. They enable developers to create more immersive and visually stunning games that push the boundaries of creativity and interactivity.

2.4 Key stakeholders

The video game industry is constantly developing, with an increasing number of stakeholders and significant changes in distribution, platforms and technology.

Platforms

Video games are generally played on three platforms, namely, consoles, personal computers (PCs) and mobile phones. The industry has shifted from console/PC dominance to mobile devices, with smartphones and tablets now accounting for more than 50 per cent of the global market. Consoles still play a significant role and sales continue to grow, especially in some countries, with PlayStation, Switch and Xbox notable systems having varying sales and regional popularity. Each platform offers digital stores and subscription services for purchasing games and additional content. PC gaming has made a comeback, as a result of digital distribution and platforms such as Steam, Epic Game Store and GOG. The predominance of mobile gaming is due to easy access, various price points and improved quality.

Mobile gaming is divided between Apple's iOS and Google's Android OS, with China's third-party app stores also making an impact. It has become the leading platform based on the number of gamers and revenue, largely driven by the Chinese market. Developers are attracted to mobile gaming due to the lower costs and global distribution opportunities. The

Box 1 Mobile gaming revolution

The proliferation of smartphones and tablets has sparked a mobile gaming revolution. Mobile games offer accessible and convenient gaming experiences, reaching a vast and diverse audience. The availability of free-to-play models, in-app purchases and mobile advertising has transformed the monetization strategies within the industry, making mobile gaming a lucrative market segment.

mobile market is anticipated to continue growing, driven by increased access to games, technological advancements, cross-platform play, cloud computing and the boom in esports. In-app purchases are a major driver of revenue. Industry players are adapting to changing trends and

technologies, creating a diverse and evolving environment.

The major players, including first-party companies and major publishers, contribute significantly to the development and distribution of games across the various platforms.

First party

First-party companies are those that manufacture hardware and develop and publish software for video game consoles, and include:

- Microsoft: entered the video game industry with the release of the Xbox in 2001. Has since released several Xbox consoles and is focusing on digital distribution and a multi-platform subscription model. Xbox Game Studios includes more than 20 development studios.
- Nintendo: mainstay in the industry for nearly 40 years and known for iconic franchises such as Mario and Zelda. Strong first-party development, as well as collaborations with other studios.
- Sony: introduced PlayStation in 1994, with successful exclusive titles and strong first-party development studios.
- Valve: although not a traditional first party, a major source for PC games through its platform Steam. It also entered the hardware arena with a handheld PC gaming device.

Publishers and developers

Most games are developed and published by third-party publishers. Several large third-party publishers dominate the industry, often working with in-house and independent development studios. They include Tencent, Sony, Nintendo, Microsoft, NetEase, Activision Blizzard, Electronic Arts (EA), Ubisoft, Epic Games, Sega, Take-Two, Square Enix, Bandai Namco, Time Warner, Konami and Capcom. While major publishers also have a presence in mobile gaming, some focus solely on mobile and social web platforms. Major mobile publishers include Tencent, NetEase, Activision Blizzard King, EA Mobile, Bandai Namco, Rovio, Roblox, Supercell, Niantic, Zynga and Gameloft.

Last but not least, are the developers - and their creators and innovators without whom there would be no video games – who play an essential role in the industry, creating and publishing games across a range of platforms, from consoles and PCs, to mobiles and social media. Their impact on the industry is significant, with each contributing to the diversity and growth of the gaming market.

2.5 Distribution models

The video game industry has undergone significant shifts in its distribution methods. Traditional retail sales were once the primary method of distributing games, but the introduction of digital distribution changed that, enabling players to download games on devices and eliminating the need for physical copies. Improvements in technology, device access and bandwidth capabilities have made it easier for consumers to access a wide range of games. Digital distribution has led to a surge in independent game development and improved access to both new and older titles. Despite the rise of digital distribution, retail sales continue to be relevant in some countries due to factors such as limited bandwidth, payment options and the appeal of physical copies.

Box 2 Digital distribution and services

The industry has witnessed a significant shift from physical game distribution to digital platforms. Digital distribution allows for instant access, updates, and a more environmentally friendly approach. Additionally, the rise of subscription services, cloud gaming platforms and game streaming services has transformed how games are accessed, creating new opportunities for developers and players.

Cloud gaming is the next frontier in game distribution. It enables gamers to stream games from remote servers rather than relying on local hardware, eliminating the need for high-end hardware and allowing users to play on simpler devices such as smartphones and tablets. Major companies,

including Microsoft, Google, Sony, Tencent, Amazon and Facebook, are investing in cloud gaming services, which has the potential to reach a broader audience, particularly in regions where higher-end hardware is less accessible. The business models are also evolving, including monthly subscriptions, ad-supported free services and individual game purchases. Cloud gaming presents new opportunities for publishers and developers to expand their reach and revenue potential.

Overall, the video game industry continues to evolve to meet the changing preferences of gamers. It is adapting to new distribution models, with digital and cloud-based platforms becoming increasingly significant, though retail remains relevant for specific market segments.

2.6 The evolution of the video game ecosystem

The industry has evolved significantly over the years, driven by factors such as technological advances, changes in monetization models, community involvement, AI and immersive technologies such as VR and AR.

Business models

The traditional method of selling games at a premium price has changed due to digital distribution and free-to-play models. Supported by microtransactions and downloadable

content, free-to-play games have become highly profitable, generating billions in revenue. Live services, offering ongoing content and features, have become popular as they reduce development expenses and extend game life.

Video games and community

Social interaction has always been a part of video game culture, with modern trends including streaming, esports and fan-player-commentator interaction. Live and video on demand streaming platforms such as Twitch and YouTube Gaming have created a space for gamers to connect, watch gameplay and engage with streamers. Top streamers can influence consumer purchases and make millions through subscriptions, advertising and donations. Streaming involves various intellectual property (IP) rights, including copyright and trademarks and streamers must adhere to terms and conditions set by developers/publishers and respect third-party content rights. Legal challenges can arise when streamers use unlicensed material or engage in inappropriate conduct.

Esports and competitive gaming

Esports refers to professional competitive gaming, which has experienced significant growth, with substantial prize pools, media rights and sponsorship. It is a complex ecosystem, with governance, IP, labor and competition law considerations. The developer or publisher controls the underlying IP, which can impact on the structure and regulation of esports. Esports has become hugely popular, attracting massive audiences and lucrative sponsorships. Professional esports tournaments, leagues and teams have become major events, blurring the lines between traditional sports and gaming. The growth of streaming platforms and content creators has further propelled the appeal, creating a new form of entertainment and engagement.

Artificial intelligence

AI is used in game development for generating content and enhancing gameplay. Video games serve as test-bed environments for AI to research and develop new capabilities. It has the potential to streamline game development, reduce costs and enhance design creativity.

Immersive technologies

Virtual reality (VR) and augmented reality (AR) are emerging technologies in the industry. VR headsets such as Oculus Rift and PlayStation VR offer immersive experiences for gamers. Mobile AR games, popularized by Pokémon GO, have become prevalent on smartphones. Future technologies such as consumer-grade headsets may further integrate AR and VR in the industry. Developments reflect the dynamic nature of the video game industry, with new technologies and business models continuing to shape its future.

2.7 Legal challenges

The evolving nature of the video game industry, however, presents legal challenges and risks that companies must address. It is crucial that game companies navigate these challenges by staying informed on evolving regulations, consulting legal experts, and proactively addressing issues related to IP, monetization, privacy, labor, and antitrust. This can help mitigate legal risks and ensure compliance. Challenges include:

- Intellectual property issues:
 - protection and enforcement of IP rights, including copyright, trademark and patent;
 - concerns – and potential for disputes – over the use of third-parties IP protected material in video games, virtual worlds, streaming or other media; and
 - questions related to the use of AI-generated content and player-created content.

- Monetization challenges:
 - legal issues associated with different monetization methods, such as in-game currency, loot boxes and microtransactions;
 - compliance with banking, consumer protection and tax laws, particularly in relation to virtual currencies; and
 - regulation of gambling-like mechanics in video games, especially loot boxes.

- Privacy concerns:
 - collection, management and sharing of personal and player data, especially in the context of online gaming and social media integration;
 - compliance with data protection laws, especially concerning children's data; and
 - addressing cybersecurity threats, including hacker attacks and ransomware.

- Labor and employment issues:
 - issues related to employment practices, including diversity and inclusion concerns;
 - classification of workers as employees or independent contractors; and
 - potential impact of changing labor laws on gaming industry employment practices.

- Antitrust concerns:
 - antitrust issues involving major tech companies such as Microsoft, Apple, Google and Facebook, which could indirectly affect the video game industry;
 - legal challenges related to market share, licensing fees and competition in the distribution market; and
 - litigation concerning platform fees and payment processing systems for in-app purchases.

The industry is characterized by its rapid growth, technological progress and online connectivity, along with the revolution in mobile gaming, shift to digital distribution and rise of esports. These have shaped the industry's landscape and continue to drive its evolution. New trends and innovations will emerge, offering exciting possibilities for developers, players and the gaming community at large. The industry's ability to adapt, embrace innovation and cater to the ever-changing demands of players will determine its future success and longevity.

3. Intellectual property and video games

In the context of video game development and publishing, IP law plays a crucial role in protecting and commercializing creative works. Video games are composed of various subject matters of IP, including game engines, concept and in-game art, music, story, game world, middleware and graphics. This IP is what consumers essentially purchase when they buy a game, as it grants them a limited license to enjoy the larger entertainment experience it provides.

As the video game industry continues to evolve, substantial investments are made in game development, often exceeding film budgets in time and resources. Protecting this capital investment from competitors and pirates becomes increasingly important. Additionally, maximizing the value of the video game IP is crucial; this may involve developing game franchises or leveraging the in-game IP for other media such as film, television and merchandise. IP is complex and in constant development in response to technological challenges, but understanding the current legal framework is essential.

3.1 A definition

Although there is no universally agreed definition of a video game and its characteristics, for the purposes of this guide, video games (also called computer games, electronic games or digital games) can broadly be described as interactive multimedia creations or as complex digital products comprising software and audiovisual elements that can be protected by different forms of IP, from copyright protection for the audiovisual components (characters, dialogues, music, among others), to patents for software or hardware components and trademarks.

Most elements of a video game can be protected by IP and are divided into two macro categories:

1. Software elements, protectable by copyright and/or patent. Software is often built on top of a game engine. This can include its own suite of creative tools and/or be combined with independent middleware that can help with aspects of the game such as rendering (generating an image), physics simulation or AI and machine learning.
2. Audiovisual elements, protectable by copyright, trademarks and/or design. Generally video games have a graphic user interface (GUI) that includes various forms of visuals such as models, objects, environments and characters, which can be both two-dimensional and three-dimensional. They can also include audio in the form of music, sound or voice acting, and there is often a script, story and dialogues.

Every video game is also a mix of newly created (by developers/artists) IP and third-party IP (belonging to others). The key to a successful IP strategy is to maximize protection of the new IP while reducing the risk of infringing third-party IP via licensing and/or taking advantage of the limitation and exceptions the IP regimes provide (as will be discussed).

3.2 Global business vs. territoriality in intellectual property

The video game industry is global and, therefore, with digital distribution, every developer can theoretically distribute their game anywhere on the planet. IP law is territorial/regional and even though it has reached a certain international harmonization, there are still substantial differences between jurisdictions. IP strategies must contend with the challenges of international and supranational regulation.

3.3 Copyright

Copyright protects original and expressive works of authorship, such as literary, dramatic, musical and artistic works (but not the ideas themselves). Originality standards, criteria for protection and subject matter might vary between jurisdictions.

Video games are cultural artefacts that involve literary, artistic, musical and even other forms of authorship and expression, and seem obvious candidates for protection under copyright. Copyright can confer broad protection and is, therefore, a crucial form of IP protection for game companies, offering powerful and versatile tools to safeguard their original works of authorship, including literary and audiovisual works and computer programs. Copyright

Box 3 Copyright

Copyright protection is central to video game development, as it safeguards the original expression of ideas within the game. It covers various components, such as the game's source code, graphical assets, music, dialogue and narrative. Copyright protection allows developers to prevent others from copying or reproducing their game's content without permission.

grants exclusive rights to the rightsholder, such as the right to copy and distribute the work, and protection arises automatically on creation or fixation. The length of copyright protection is another element making it attractive to game developers. At

international level, the minimum duration is 50 years after the death of the author, though much national legislation provides for longer terms (70 years in the United States of America, in the European Union and the United Kingdom, and 100 years in Mexico). When the term expires the works pass into the public domain.

Copyright laws around the world have been harmonized to some extent through the Berne Convention for the Protection of Literary and Artistic Works, adopted in 1886 and updated in 1971, and, more recently, through the 1996 WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty. The European Union has also contributed to harmonize the essential rights of authors, performers, producers and broadcasters within the Member States through 13 directives and two regulations.⁴ Differences among countries still exist, however.

There is no international consensus on either the legal nature of video games or how they should be classified for the purposes of copyright assessment. And in both national and

⁴ More details at <https://digital-strategy.ec.europa.eu/en/policies/copyright-legislation>.

international copyright laws, there is no explicit mention of video games in the lists of protected subject matter. To simplify, there are two main approaches to the legal nature of video games:

1. the unitary approach, where a video game is considered as predominantly a computer program, audiovisual work or a complex subject matter or
2. the distributive approach, where each protectable subject matter within the video game is considered a separate work.

In the United States of America, video games can be protected as either audiovisual work or literary works (the software). In the United Kingdom, however, for a video game to be protected, it must belong to one of the categories of works listed in the Copyright, Designs and Patents Act 1988 (CDPA).⁵ The act lists eight categories (literary, artistic, dramatic and musical works, film, sound recording, broadcast and typographical arrangement), but video games are visibly missing, hence protecting a video game as a whole might be more problematic. In the European Union, video games are protected as a complex work comprising of software and non-software elements (*Nintendo v. PC Box*)⁶, despite the Court of Justice suggesting elsewhere (for instance in *Levola*⁷ and in *Cofemel*)⁸ that the requisite criteria for protection only turns on two conditions: (1) that the work is original, an author's own intellectual creation and (2) that it must be expressed with sufficient precision and

⁵ Section 1, Copyright, Designs and Patents Act 1988.

⁶ Case C-355/12, *Nintendo Co. Ltd and Others v. PC Box Srl and 9Net Srl* (ECJ January 23, 2014).

⁷ Case C-310/17, *Levola Hengelo BV v Smilde Foods BV* *ECJ 13 November, 2018.

⁸ Case C-683/17 *Cofemel – Sociedade de Vestuário SA v. G-Star Raw CV* (European Court of Justice (ECJ), September 12, 2019).

objectivity, although it need not be in a permanent form (thus making the word “complex” when defining video games probably redundant).

These different classifications have substantial consequences when it comes to game cloning. This is a practice that involves creating video game replicas, where the objective of the clone is to take advantage of a popular game by duplicating its gameplay experience. Beyond this lack of clarity over the protection of the video game as a whole, copyright protects aspects of video games, including stories, characters, music, art, graphics and software code.⁹

There are no formalities required but some countries have voluntary registration systems that developers might want to take advantages of, for example the United States of America. In some countries, the works must be fixed to be protected, but this criterion is generally quite easy to fulfil in the video game ecosystem. Copyright protection is automatic and arises as soon as an original work is created or fixed (depending on jurisdiction). This contrasts with patents and trademarks, which involve application/registration processes and fees and trade secrets, which require specific steps for protection.

Copyright provides specific rights to the rightsholders, including making copies, creating derivative works, distributing, public performance and public display. These rights are not absolute as Copyright also provides for specific limitations, exceptions and defences. These, however, are less harmonized internationally. This means an activity that does not require permission in country A might be a copyright infringement in country B.

The most famous example worldwide is probably the United States of America doctrine of fair use. This concept in copyright law is often misunderstood and wrongly referred to by

⁹ See Gaetano Dimita, Yin Harn Lee, and Michaela MacDonald, Copyright Infringement in the video game industry, (WIPO 2022), https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=576652 .

non-experts. It allows limited use of copyrighted material without permission under certain conditions, as determined by four factors: (1) purpose and character of use, (2) nature of the work, (3) amount and substantiality of the portion used and (4) effect on the potential market for the work.¹⁰ What constitutes fair use is often not that straight forward. Importantly, fair use is a United States of America doctrine (along with a handful of other countries), while others, for instance the European Union's Member States and the United Kingdom, do not have similar provisions. This can lead to legal issues for companies trying to use copyright material in products or content intended for international markets. Even if a use is within the traditional boundaries of fair use in the United States of America, it may still lead to litigation and associated costs in other countries. Fair use may pose risks and should be carefully considered.

In the European Union, copyright law allows for various exceptions and limitations that Member States can choose to implement in national laws. These exceptions and limitations are specific and must meet certain conditions. They must also comply with the three-step test, which ensures they apply only to special cases, do not conflict with the normal exploitation of copyrighted works and do not unreasonably harm the legitimate interests of copyright owners. Key EU exceptions and limitations include:

- caricature, parody or pastiche
- freedom of panorama (use of copyrighted works in public places)
- quotations for criticism or review
- incidental inclusions of copyrighted works in other materials
- illustration for teaching or scientific research
- non-commercial reproductions for private use
- non-commercial reproductions by public libraries, schools, or museums
- non-commercial uses for persons with disabilities

¹⁰ 17 U.S. Code § 107

These exceptions and limitations are implemented differently across Member States. Similar to the United States of America fair use doctrine, the provisions affect video games in two ways:

1. A valid claim to any of these exceptions can prevent the enforcement of copyright in a game; for example, a video game parody may be possible without the copyright owner's authorization.
2. Games can legally incorporate third-party copyright works under these exceptions; for instance, a game character may parody a film character.

It is advisable for game developers to consult legal experts with international and local expertise to determine the correct application of these exceptions and limitations, as they can vary and be complex.

3.4 Trademarks

Trademarks serve to differentiate products and services and can include words, names, symbols, graphics and short phrases. For video games, then, potential trademarks range from the names and logos of the publisher and developer, to the title or logos of a video game series and the characters within a video game or franchise. Moreover, in recent years, the scope of potential signs or identifiers has broadened substantially, and now includes

Box 4 Trademarks

Trademark protection is vital in the video game industry, particularly for game titles, logos, symbols, and brand identities. Trademarks help developers establish a distinctive identity for their games, preventing confusion among consumers and protecting their reputation in the marketplace.

shapes, sounds, animations, colours and even, potentially, smell, taste and touch, depending on the relevant jurisdiction. These more contemporary forms of trademarks, often referred to as nontraditional trademarks, are increasing in popularity, as the tools or technological means for ensuring

more precise identification improve. The video game industry has shown interest in nontraditional trademarks, particularly shape and sound trademarks, such as Sony's PlayStation robot sound and Nintendo's Super Mario coin sound. Under the EU trademark

system, multimedia trademarks combining audio and visual elements can also be submitted. This may be relevant for protecting animations representing brands and gameplay elements, but it is too early to determine its effectiveness in preventing the copying of gameplay elements.

Trademark protection is primarily registration-based. Registering a trademark ensures protection throughout a specific jurisdiction or region (the European Union, for instance). The trademark owner is required to use the registered mark within five years and pay the fees, or the registration may be revoked. While different countries may have varying requirements and limitations for trademark registration, most reject signs that are considered deceptive, immoral, scandalous or contrary to public policy and morality.

Not registering a trademark or failing to register in relevant regions can be risky, as someone else may legitimately register a similar mark. This limits the use of the trademark in uncovered territories, goods or services. Opposing fraudulent registrations can be a burdensome and costly process.

Another way trademarks are becoming increasingly important in the context of video games is their use in games and virtual worlds, with respect to both emergent fictional marks and virtual trademarks. For instance, there are potential marks that might be included within a video game that could both function as a mark in the context of the game, and eventually become used as a mark outside the game.

3.5 Patents

Patents are a form of IP that protect certain inventions. For example, in the United States of America, patentable subject matter includes new and useful processes, machines and manufacture or composition of subject matter, but does not extend to abstract ideas, phenomena or laws of nature. In Europe, for the members of the European Patent

Convention (which is not a treaty of the European Union)¹¹ inventions are patentable provided they are novel, inventive and capable of industrial application, can be described in a sufficiently clear and complete manner to be carried out by a person with ordinary skill in the art, and are not explicitly excluded by the European Patent Convention.

There are two main kinds of patents relevant to video games, namely, hardware patents and software patents. Hardware enjoys the typical protection afforded to electronic devices and the use of hardware patents in video games can be traced back to the application for the original Pong video game as a “television gaming apparatus”. The protection for software, including gameplay or mechanics, is more complex and arguably more straightforward in the United States of America (where patentability is historically extremely open-ended and

Box 5 Patents

Patent protection may apply to certain technological innovations or unique gameplay mechanics that meet the criteria for patentability. While not all aspects of a video game may be eligible for patent protection, developers may seek patents to safeguard their technical advancements and gameplay innovations.

included protection for software) than in Europe, where the European Patent Convention excludes computer programs “as such” from patentable subject matter. This meant there was

limited scope for software protection in Europe. However, with recent jurisprudence, that seems to have broadened, with protection being conferred, provided the software is implemented in a manner that creates a technical effect.

3.6 Design

Design protects the appearance of a product. Until recently, design was not much used by the video game industry, though in recent years, applications for registration in the European Union have increased exponentially. Only certain graphic elements of a video game – the

¹¹ See ‘The European Patent Convention’ on the website of the European Patent Office <https://www.epo.org/en/legal/epc>.

icons used, GUI and appearance of the characters, for instance – can be protected as designs. In short, design rights protect how elements of the game look but not how they work. For a design to be protected, it must fulfil the requirements of novelty and individual character. A design is novel or new where no identical design or designs, where the features differ only in immaterial details, have previously been made available to the public. It will have individual character, where the overall impression it produces on the informed user differs from that produced by a design previously made available to the public. An application to register a particular game element will be unsuccessful if a similar, earlier design already exists.

4. Video game development

Video games are unique creative endeavours that combine art, storytelling and interactive experiences. Developers invest significant time, effort and resources in designing and creating these immersive digital worlds. IP protection plays a crucial role in safeguarding their creations from unauthorized use, imitation and infringement.

Understanding and addressing IP issues from the outset of video game development is essential for developers. It enables them to protect their creative works, secure their market position and potentially monetize their IP through licensing or partnerships. By respecting and upholding IP rights, the industry fosters innovation, encourages new creative works and ensures a fair and competitive environment for developers.

IP protection is a fundamental consideration in video game development. Copyright, trademark, patent and trade secret protection play key roles in safeguarding the creative works, innovative technologies and branding elements associated with video games.

Developers must navigate the legal landscape and take proactive steps to protect their IP.

For instance:

- Video games typically include various forms of artistic content, such as character, environments and music. Copyright protection safeguards these creative assets, preventing others from using them without permission.
- The underlying code of a video game, which is considered a literary work, is protected by copyright. This ensures that others cannot directly copy or replicate it.
- Trademarks protect the names, logos and other branding elements associated with video games and video games companies. This helps establish and maintain brand identity in the gaming industry.
- In some cases, unique and innovative game mechanics or technologies may be eligible for patent protection. This can give game developers a competitive edge and encourage innovation.

Overall, IP protection is an essential tool for video game creators and businesses, offering them the legal framework to protect their creative and financial interests and to encourage innovation, culture and investment. It plays a significant role in supporting the growth and sustainability of the video game industry.

4.1 Intellectual property considerations during the concept phase

The concept phase is a critical stage in video game development, as this is where innovative ideas are generated and initial designs take shape. While ideas are floating around without a defined shape, trade secrets and confidentiality are extremely important. They protect valuable information such as game design documents, prototypes, algorithms and business strategies, which can be hard or impossible to protect under IP law. Implementing confidentiality agreements and securing sensitive information helps prevent unauthorized access or misuse.

Developers must be aware of the importance of IP protection from the game's inception.

From the start, it is important to have a clear understanding of IP and an IP strategy, which basically means finding the best way to maximize your own IP while avoiding infringing third-party IP. In this phase a developer should immediately consider the following:

- **The team:** have an agreement in place between team members to clarify the ownership of the IP you create. Ideally, incorporate the team in a company. Consider using nondisclosure agreements.

- **The tools:** check you have licenses for all the tools you want to use. Read them before signing to understand what is allowed, and what is not allowed. Familiarize yourself with the terminology of nondisclosure agreement, memos, contractual agreement and so forth. If something is not clear, seek professional advice.
- **Keep good records:** record what you create and what you use. Keep track of who is participating in the creative process and where the ideas came from. Be careful to track whether you are using or being inspired by other works, and where you are taking the assets and/or inspiration from. Start training your team on IP and what not to do.

Video games are a mix of original and licensed IP. These are not mutually exclusive, and most games will include both. With original IP, developers must remember that:

- Copyright will safeguard the original expression of your ideas, such as game artwork, characters, music, dialogues and storylines:
 - Copyright is automatic but it is important to write it down to fix it in a material form.
 - Ensure your video game and assets are original, and you have the paperwork to prove it.
 - Clearly define ownership of copyright assets via contracts with team members, contractors or third-party contributors.
 - Avoid infringing existing copyright works by understanding limitations and exceptions or acquire proper licenses for third-party assets such as music or other copyright material.
- Trademarks protect the unique branding elements associated with a video game, such as names, logos, symbols and catchphrases:
 - Trademark must be registered in a category of goods and services. Registration is generally straightforward but professional help is advised.
 - Conduct a trademark search to verify that the chosen game title, logo and other branding elements do not infringe on existing industry trademarks.
 - File for trademark registration to strengthen legal protection and prevent potential conflicts.
 - Understand the differences in trademark law and registration procedures across different regions or countries to protect the game's brand globally.
- While patents may not apply to all aspects of video game development, certain technological innovations or unique game mechanics may be eligible for protection:
 - Identify unique technological aspects or gameplay mechanics that may be eligible for patent protection.
 - Conduct thorough research to ensure the novelty and non-obviousness of the invention before pursuing a patent application.
 - Understand the nuances of patent laws in different countries, as they vary in requirements, scope and duration of protection.
- Protecting trade secrets and maintaining confidentiality is crucial during the concept phase, to safeguard valuable information about the game's design, mechanics or other proprietary aspects:

- Establish clear confidentiality agreements with employees, contractors and collaborators to protect confidential information.
 - Take appropriate measures to secure prototypes, design documents and other sensitive information from unauthorized access.
- Understanding how to enforce and defend IP rights is also essential:
 - Regularly monitor the marketplace for potential infringement and take appropriate actions to protect your IP.
 - If necessary, respond to any infringement by issuing cease and desist notices to the responsible parties.
 - Seek legal advice from experts specializing in IP law to enforce or defend rights as required.

With licensed IP, we refer to assets that belong to others, from software code to assets such as characters, music or likeness to real people. To use them without risking potential IP infringement, you will need a licence (unless the use falls within the limitations and exceptions). The licence is the contract that specifies what you can and cannot do with the IP, for how long and where, and determines the financial implications.

Determining whether you need a license or not to include an asset in your game might not be straightforward in particular if you are planning to include existing buildings, objects or people, even if deceased or historical. This is a non-exclusive list of potentially complex assets which will require a case-by-case analysis to understand the risks, as discussed below. Remember that making changes to your game will be cheaper and less disruptive at this stage than further down the line.

It is important to always check for similarities between your creations and any registered right or preexisting works, and the sooner the better. This is generally called a 'knockout search' as it is used to knockout any undesirable asset or consequence of using that asset. For instance, the logo or title you choose might already be registered by someone else as a trademark or design or you might even discover that a particular name/sign you plan to use, might not be something you want to be associated with in another language or in another country. For these knockout searches, you can easily use any search engines or search on the free WIPO databases.

4.2 Intellectual property considerations during the development phase

The development phase of a video game is where ideas take shape, code is written and assets are created. For developers to safeguard their work, prevent infringement and maximize the value of their assets, IP issues must be given due consideration. Good management of IP throughout the development phase sets the foundation for a successful and legally compliant video game. At this stage, it is of fundamental importance to raise IP awareness among your team, and IP should be part of the creative conversations between team members. The game is constantly evolving, and it is not too late to change it to avoid paying for a license or to increase the scope of your IP protection.

IP clearance and a protection strategy go hand in hand, so include these in your milestones. Consider IP every time you reach the point where you are sure (or relatively sure) the content/asset is not going to change in the final product; for instance, if you are applying to register a trademark or design, you want to do this quickly, but, in this phase, things might still be evolving, and it is advisable to wait before registering and setting a budget if you are still uncertain.

Intellectual property clearance

Clearance involves checking you have the rights you need to launch the game safely. Start with those elements that will be expensive to change later on; the game title, for example, or the main character's name, storyline plot or the engine or software. IP clearance will be easier if you have kept good records.

Protection strategies

Copyright protection is of paramount importance in video game development, encompassing aspects such as software code, artwork, music and audiovisual elements. There are no formalities, so the process is straightforward. The majority of your original creation is protected by copyright. In some jurisdictions, including the United States of America, there is a registration system, and you might want to register to strengthen the enforcement of your copyright. Developers should nevertheless:

- Ensure all assets and content established during the development phase are original and do not infringe existing works.
- Establish clear ownership of copyright materials and obtain necessary licenses for any third-party assets incorporated into the game.

Trademarks play a vital role in protecting the distinctive branding elements associated with a video game, including its name, logos, symbols and slogans. For trademark (and design), ensure that titles, names and particular symbols are not similar to ones already registered or owned by competitors, not only to avoid infringement but also to increase the strength of your protection. Remember you are still in time to change them. The timing of registration is important – but you do not want to pay the registration fees for an asset you might need to change later. Remember to:

- Conduct comprehensive research to ensure the chosen game title, logos and branding elements do not infringe on existing trademarks in the gaming industry.
- Properly use trademarks in association with the game and consider registering them to strengthen legal protection and prevent potential conflicts.
- Continuously monitor the marketplace for potential trademark infringements and take appropriate action to enforce and protect trademarks.

As mentioned above, if you are doing something inventive, talk to a patent attorney to determine whether there is scope for a patent application. Developers should be aware of potential patentable features. At this stage, they should be contemplating eventual patent strategies, including evaluating the scope of patent protection desired and considering applications in relevant jurisdictions to secure maximum protection.

Protecting trade secrets and maintaining confidentiality is still crucial, as valuable information regarding game mechanics, algorithms and design may be at risk. Developers should be prepared to:

- Implement robust confidentiality agreements with employees, contractors and collaborators to protect sensitive information.
- Implement security measures to prevent unauthorized access to code repositories, design documents and other proprietary assets.

Licensing IP rights can play a significant role in game development, enabling developers to incorporate third-party assets or collaborate with other creators. Developers should be prepared to:

- Negotiate and document license agreements carefully to ensure compliance with the terms and conditions of using licensed assets.
- Understand the implications of incorporating open-source software (OSS) into the game and comply with applicable licensing obligations.
- Understand the implications of incorporating assets generated by third parties AI.

A note on open-source software

Open source means the software is under a license that allows the use, study, modification and redistribution of the source code. Freeware (a software that is released without charge) is not necessarily an open source. The most common open-source licenses are GNU GPL, LGPL, BSD, MIT, MPL, ZLIB and Apache, and can be divided into the three families (see table).

Open-source licenses by family

Permissive (BSD, MIT, Apache)	Weak copyleft* (LGPL)	Copyleft* (GPL)
<ul style="list-style-type: none"> • Many freedoms/rights granted. • No copyleft effect. • Obligation to credit. 	<ul style="list-style-type: none"> • Many freedoms/rights granted. • Obligation to credit. • Obligation to identify your modifications. • Copyleft effect in some specific cases. 	<ul style="list-style-type: none"> • Many freedoms/rights granted. • Obligation to credit. • Obligation to identify your modifications. • Copyleft effect.

*Copyleft licenses require that derivative works (modifications or adaptations) of the original work are also distributed under the same terms as the original. This means if you create a work based on a

copyleft-licensed work, you must make your work available under the same copyleft terms. See the relevant license's website for updates and full details.

Open source has its benefits and challenges, and it is ultimately your – hopefully, educated – decision whether to embrace it or not.

A note on generative artificial intelligence

Generative AI is an AI capable of generating text, images or other media, using generative models (see below at 8.1). While we are still in the early stages of generative AI, and given the case law is scarce, there are two issues to consider when deciding whether to take advantage of this groundbreaking technology. The first is the risk of infringing the third parties' copyrights in the assets used to train the model. Simplifying, if the model has been trained using assets protected by IP without the necessary authorizations and in absence of available limitation and exceptions (input infringement), an output created by the user with substantial similarities with one of those assets is potentially infringing their IP (output infringement). As a developer using the generative AI, you must check the license to determine potential risks and liabilities.

The second issue is the possibility that the asset you created with AI might not be protectable by copyright, which must be given serious consideration. The protectability of works entirely created by AI with minimum creative input from the user is questionable and the standard in different countries are very different and currently fast changing. It might not be an issue if the asset in question is in the background or somehow secondary, but it might be a very unpleasant surprise not to be able to enjoy copyright protection if the asset is central to the video game.

Finally, and importantly, remember if you are using AI to check or write code (GitHub Copilot, ChatGPT, Tabnine), you are effectively uploading your code to the system. Are you comfortable with this? And are there any potential copyright or trade secret issues?

Here again it is of uttermost importance to read the relevant terms of services of the AI tools one wishes to use and make an – hopefully – educated decision on whether to proceed or not.

4.3 Intellectual property considerations during the launch phase

In the previous two phases, the IP considerations were internal to the team/studio and eventual mistakes had little or no legal consequence. Things get real now as all your assets are finalized, and business decisions have to be taken, with external consequences.

IP issues during the publication and distribution phases of a video game are critical to protect creative works, maximize revenue and maintain control over IP assets, and avoid expensive and detrimental litigation. Mistakes can dramatically undermine the success of the project, but by proactively addressing copyright, trademark, trade secret, licensing and enforcement concerns, developers can safeguard their work, deter infringement and maintain a strong market presence.

It is time to finalize your IP strategy and correctly clear everything required to avoid IP issues. Remember, you want the strongest possible protection for your IP; and you want to make sure you have permission to use all the tools and assets that belong to others before including them in your game.

Compliance and clearance

Many of the issues will not be straightforward, and you will need to conduct a risk assessment. Having a clear table of assets, their IP (own or third party) and risk assessment, could be useful, along with conducting regular IP audits (see figure below).

The process might look tricky and time consuming, and it is. Run a compliance review to be sure you have the IP license you need, and that you registered all the IP you think you might need. Be cautious about using generative AI, open-source software, real people, and

architectural and historical buildings; they present some further complexities and legal advice is often advisable. You will be publishing soon, and at that point it will be too late.

Risk assessment

Conduct a risk assessment

For each asset in your game, identify any third party IP and how you have the right to use it. The table below can guide you.

Safe	Potential risk	DON'T!
<ul style="list-style-type: none"> • Original creations (*check if others have made something similar). • Works in the public domain. • Someone else's IP when licensed and used consistently with the agreement. 	<ul style="list-style-type: none"> • Creation heavily inspired / partially copied from existing IP without permission. • AI & Open Source. • Real people or brands, architectural and historical buildings. 	<ul style="list-style-type: none"> • Use someone else's IP without permission. • Assume that a legal exception applies everywhere.

Key tips at concept phase



#LevelUPYourIP
#MakeIPYourBusiness

WIPO

Source: Level 3 launch Phase Power UP, Videogame Development: A Quest for IP, WIPO. All power ups and podcasts at <https://www.wipo.int/sme/en/videogames.html>.

Before launching the video game, developers should:

- Apply to register all the IP available and deemed relevant from a business perspective (including voluntary copyright registration).
- Clear all the necessary third-party rights (or have a budget available for legal assistance if the use is thought to be within limitations and/or exceptions).
- Develop and enforce licensing agreements for third-party use of copyrighted assets, ensuring compliance with the terms and conditions set forth.

- Incorporate an end-user license agreement (EULA) or terms of service (ToS), including how they want their IP to be used/enjoyed by the players, ideally including language about streaming, derivative content created by the players and esports, among others.
- Monitor the market continuously for potential IP infringement, within the gaming industry and beyond.
- Be ready to take appropriate legal action, such as issuing cease and desist letters, to address any unauthorized use of your IP.
- Collaborate with industry associations and organizations to combat piracy and protect IP rights collectively.

5. Regulation

Beyond IP, when making a game, developers and publishers need to be aware of several key areas of regulation, such as data privacy, consumer protection, gambling, advertising and marketing, including dealing with children and influencers. Moreover, as they have become an increasingly prominent form of entertainment and cultural expression, and as the industry continues to grow, the video game industry itself and regulators around the world have developed and/or are developing frameworks to address concerns associated with video games. By implementing regulations in these areas, regulators strive to strike a balance between fostering creativity and innovation in the video game industry, and safeguarding the interests of consumers and society at large. As the video game landscape continues to evolve, ongoing collaboration between regulators, industry stakeholders and the gaming community is vital to address emerging challenges and ensure a responsible and enjoyable gaming experience for all.

Content ratings and classification

Content ratings and classification systems play a crucial role in informing consumers of the appropriate age group for a particular game and its content. Regulators often establish guidelines and rating systems to ensure transparency and help parents make informed decisions regarding the suitability of games for their children.

Age restrictions

Age restrictions are another essential aspect of video game regulation. They are designed to protect children from accessing games with content that may be unsuitable for their age group. Regulators often enforce age verification mechanisms to prevent underage individuals from purchasing or accessing games intended for mature audiences.

Consumer protection

Consumer protection measures within video game regulation aim to ensure fair and transparent practices in the industry. This includes regulations related to:

- Preorder and refund policies: regulating practices related to preordering games and providing clear refund policies to protect consumer rights.
- Advertising and marketing: ensuring that video game advertisements do not mislead consumers and accurately represent the game's content and features.
- In-game purchases and microtransactions: implementing regulations to prevent deceptive or predatory practices associated with in-game purchases, loot boxes and other forms of microtransactions.

Privacy and data protection

With the increasing integration of online features and services in video games, data privacy and protection have become crucial concerns. Policymakers can address this by:

- Strengthening privacy laws by enacting or enhancing data protection regulations that require developers to implement robust security measures, obtain explicit user consent for data collection and ensure transparency in data practices.
- Regulating targeted advertising by addressing the collection and use of personal data for advertising within games, particularly when involving minors.
- Promoting industry standards by encouraging the adoption of industry-best practices for data privacy, such as anonymization techniques, data minimization and regular security audits.

Loot boxes

The integration of monetization mechanics such as loot boxes in video games has raised concerns among regulators. Many countries have addressed this issue by introducing regulations that require disclosure of odds and restrictions on their sale, particularly to minors.

Online safety

Online safety regulations aim to protect players from various risks associated with online interactions within video games. These typically cover:

- Privacy and data protection: establishing guidelines for the collection, use and storage of players' personal information to safeguard their privacy rights.
- Online harassment and bullying: implementing measures to combat offensive online behaviour within gaming communities.
- Age-appropriate online environments: ensuring that online multiplayer games have mechanisms to restrict interactions between players of different age groups.

6. Secondary ecosystems: esports, streaming and cosplay

Video games have transcended their traditional boundaries and given rise to thriving secondary ecosystems that have become integral to the gaming culture. These have gained tremendous popularity, shaping the way people engage with and consume video game content. Such ecosystems thrive on IP licenses issued by the relevant video game companies or the lack of IP enforcement.

Esports

Esports refer to competitive gaming at a professional level, where players and teams compete in organized tournaments. It has rapidly evolved into a global phenomenon with a massive following. Key aspects with profound IP implications include:

- Professional tournaments: esports competitions feature highly skilled players competing in various game genres, including multiplayer online battle arenas (MOBAs), first-person shooters (FPS) and fighting games.
- Spectatorship and fandom: esports events attract millions of viewers, who watch matches online or attend live events, fostering a passionate community of fans.
- Infrastructure and investment: the esports ecosystem encompasses team organizations, leagues, sponsors and investors who provide financial support, infrastructure and opportunities for players to pursue careers as professional gamers.

Streaming

Streaming involves transmitting video game content in real time over the Internet, allowing viewers to watch and interact with streamers. This has become a significant part of the gaming ecosystem, with platforms such as Twitch and YouTube Gaming dominating the space. Key aspects with profound IP implications include:

- Live gameplay: streamers broadcast their gameplay experiences, offering entertainment, commentary and interaction with their audience in real time.
- Community engagement: streamers build communities through chat interactions, fostering a sense of camaraderie among viewers and streamers themselves.
- Content creation and monetization: successful streamers often expand their content beyond live gameplay, creating videos, tutorials and other forms of gaming-related content. They monetize their efforts through subscriptions, donations, sponsorships and ad revenue.

Cosplay

Cosplay, short for costume play, involves fans dressing up as characters from video games, anime or other forms of pop culture. It has grown into a vibrant and creative aspect of the gaming ecosystem. Key aspects with profound IP implications include:

- Character embodiment: cosplayers meticulously recreate costumes, makeup and props to resemble their favourite video game characters, bringing them to life at conventions, events and online communities.
- Artistic expression and craftsmanship: cosplay showcases the creativity and craftsmanship of individuals who design, sew, sculpt and assemble intricate costumes and accessories.
- Community and conventions: cosplay communities foster a sense of belonging, providing a space for like-minded enthusiasts to connect, share tips and celebrate their shared love for gaming and pop culture. Conventions such as Comic-Con serve as platforms for cosplay competitions and gatherings.

The secondary ecosystems surrounding video games have expanded the boundaries of the gaming industry, creating opportunities for players, spectators and enthusiasts to engage with games in unique and immersive ways. Esports, streaming and cosplay have become integral parts of gaming culture, showcasing the talent, creativity and passion of individuals within these communities. As these ecosystems continue to evolve, they contribute to the growth and diversification of the gaming industry, further enhancing the overall gaming experience and solidifying video games as a significant cultural phenomenon and extremely IP-rich environment.

7. Financing and video game tax relief

Video game development is a capital-intensive endeavour, requiring substantial financial resources. Video game financing encompasses a range of models and strategies tailored to the diverse needs and goals of game developers. There are various funding models and strategies employed in video game financing, including publisher funding, crowdfunding, self-funding and venture capital investment. Ultimately, the choice of financing model depends on the developer's goals, resources, creative vision and appetite for risk. As the industry continues to evolve, innovative financing approaches will likely emerge, offering new opportunities for developers to bring their creative visions to life.

Publisher funding

Publisher funding has traditionally been a prevalent financing model in the video game industry. Publishers provide financial support to game developers in exchange for a share of the revenue generated by the game, offering upfront capital for game development, and covering expenses such as salaries, production costs, marketing and distribution. They negotiate contractual terms with the developers, including milestones, royalty rates and IP

rights. Publishers also often provide additional resources, such as marketing expertise, distribution channels and access to established IP, to enhance the success of a game.

Crowdfunding

Crowdfunding has emerged as a popular alternative funding model for video games, leveraging the support of the gaming community thanks to Kickstarter and other platforms. Developers pitch their game concepts to potential backers on crowdfunding platforms, offering rewards and incentives in return for financial contributions. This creates a direct connection with fans, allowing developers to engage directly with their audience, build a dedicated community and gain valuable feedback during the development process. Further, this allows for independent creative control, given crowdfunding grants developers greater freedom by reducing dependence on external stakeholders and providing an avenue for unique and niche game ideas.

Self-funding

Self-funding involves game developers financing their projects independently, using personal funds, savings or revenue generated from previous projects. Self-funded developers often focus on smaller-scale projects to mitigate financial risks and gradually build resources and reputation over time. Self-funding allows developers to retain complete creative control over their games and maintain ownership of IP rights.

Venture capital investment

Venture capital investment has become increasingly practiced in the video game industry, particularly for high-growth potential projects. Firms provide substantial capital in exchange for an ownership stake in the company, betting on the video game's success and potential

financial returns. They often provide strategic guidance, industry connections and operational support to help developers navigate the competitive landscape and maximize their chances of success. Venture capital-funded studios typically focus on developing innovative and scalable games with the aim of securing significant market share or achieving successful exits through acquisitions or initial public offerings.

Tax relief programs

Video games have evolved from niche pastimes to a multibillion-dollar industry with global reach and cultural significance. The creation of video games is a complex, resource-intensive process, involving not only software development but also art, design, sound engineering and marketing efforts. As a result, governments worldwide have begun to offer tax relief programs to support the industry, which have emerged as a valuable tool for encouraging creativity, promoting economic growth and maintaining international competitiveness. When designed and executed thoughtfully, these programs can deliver significant benefits to the industry and the broader economy, making them a compelling option for governments.

8. Future trends: generative artificial intelligence, mixed reality and the metaverse

As technological advances continue to shape our digital landscape, emerging concepts such as generative AI, mixed reality and the metaverse have generated significant attention. These technologies hold the potential to transform the way we interact with digital environments and create opportunities for social, economic and cultural experiences. However, to ensure responsible development and usage, policymakers need to address various considerations surrounding these concepts, focusing on areas such as privacy, security, IP and the ethical implications.

Generative artificial intelligence

Generative AI refers to the use of artificial intelligence algorithms to generate original and creative content, including images, music and text. Policy considerations for generative AI include:

- IP rights: clarifying legal frameworks to address ownership and copyright issues surrounding AI-generated content, including the recognition of AI as a cocreator or the attribution of AI-generated works to their human creators and the potential liabilities.
- Accountability and transparency: establishing guidelines and regulations that require transparency in disclosing AI-generated content to users and ensuring accountability for any harmful or malicious use.
- Ethical considerations: assessing the ethical implications of AI-generated content, including the potential for misinformation, deepfakes and the impact on cultural heritage and artistic integrity.

Mixed reality

Mixed reality combines virtual and augmented reality technologies to create immersive experiences that blend the digital and physical worlds. Policy considerations include:

- Safety and security: addressing concerns related to physical safety, cybersecurity and user well-being within mixed reality environments, including measures to protect against physical accidents, malicious attacks and unauthorized access.
- IP and content moderation: developing policies to regulate IP rights and content moderation within mixed reality experiences, ensuring compliance with IP laws and preventing the distribution of inappropriate or harmful content.
- Ethical use and societal impact: exploring the ethical implications of mixed reality technologies, such as their impact on privacy, social interactions and the potential for addiction or psychological effects.

The metaverse

The metaverse refers to a collective virtual shared space where users can interact with a computer-generated environment and other participants in real time. Policy considerations for the metaverse include:

- Privacy and data protection: establishing robust data protection regulations to safeguard personal information within the metaverse and ensuring user consent for data collection and usage.
- Interoperability and standards: encouraging industry collaboration to develop interoperable standards that allow seamless integration and exchange of assets and experiences across different metaverse platforms.
- Economic and social inclusion: ensuring equitable access to the metaverse by addressing issues such as the digital divide, affordability and accessibility for marginalized communities.

As generative AI, mixed reality and the metaverse continue to evolve and shape our digital landscape, policymakers play a crucial role in addressing the associated challenges and opportunities. By establishing policies and regulations that prioritize privacy, security, IP rights and ethical considerations, policymakers can promote responsible development, usage and innovation in these domains. Collaboration between governments, industry stakeholders and wider society is essential to ensure these technologies enhance our lives while upholding values of inclusivity, safety and respect for individual rights.

9. Conclusion

Policymakers can play a significant role in supporting and nurturing the local video game industry by implementing various initiatives and policies.

Intellectual property

Strengthen IP laws to protect local developers' creations from piracy and infringements, and foster IP harmonization activities to reduce frictions in global dissemination.

Regulation

Simplify and streamline regulatory processes related to video game development, distribution and sales, and establish, if required, a rating and certification system to ensure games meet appropriate content standards without stifling creativity.

Advocacy

Work closely with industry associations and advocacy groups to represent the interests of local game developers and ensure their concerns are heard.

Cultural and artistic support

Promote diversity and inclusivity in the industry by supporting underrepresented groups and their creative contributions; for instance, by offering grants for developers creating games with cultural, artistic or educational value.

Education and research

Collaborate with educational institutions to establish game development programs and courses to enable a skilled workforce. Organize workshops, seminars and conferences to facilitate knowledge-sharing and skill development within the local gaming community.

Foster partnerships with universities to encourage game-related research and development (R&D). Allocate funds for R&D initiatives to support the creation of innovative and cutting-edge video games.

Infrastructure and resources

Create and/or fund coworking spaces and incubators for game developers, offering affordable office space and access to cutting-edge hardware, software and development tools.

Financial incentives and access to funding

Offer tax incentives or credits for video game development studios to reduce operational costs and encourage investment in the industry. Provide grants or subsidies to support small and independent game developers in funding their projects and innovations. Encourage

investors to invest in local game development studios. Facilitate access to loans and funding for game developers to help cover development costs.

Networking and collaboration

Support and promote local game industry events, such as conferences, conventions and expos, to promote networking and collaboration opportunities. Establish industry clusters or hubs that bring game developers, publishers and investors together to encourage innovation and collaboration. Host local gaming events and competitions to foster interest and enthusiasm for the industry among the general population.

Trade missions and promotion

Organize trade missions to promote local game developers and facilitate connections with international markets and potential investors. Assist local studios in marketing their games globally through various promotional activities.

By implementing these policies and initiatives, policymakers can provide valuable support to the local video game industry, helping it to grow and thrive, and to contribute to the local economy and cultural landscape.

Bibliography

Boyd, S. Gregory, et al. *Video Game Law: Everything You Need to Know About Legal and Business Issues in the Game Industry*. CRC Press, 2019.

Dimita, Gaetano, et al. "Copyright infringement in the video game industry." *wipo.int*. World Intellectual Property Organization, July 30, 2022. <https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=576652>.

Greenspan, David, and Gaetano Dimita. *Mastering the Game: Business and Legal Issues for Video Game Developers*. World Intellectual Property Organization, 2022.

"Interactive Entertainment Law Review." *elgaronline.com*. Edward Elgar Publishing, 2023. <<https://www.elgaronline.com/view/journals/ielr/ielr-overview.xml>>.

Lemley, Mark A., and Sonali Maitra. "Video Game Law." *ssrn.com*. June 1, 2023. <<https://ssrn.com/abstract=4466453>>.

Nabel, Dan, and Bill Chang. *Video Game Law In A Nutshell*. West Academic, 2018.

Scelsi, Christina, and Ross Alan Dannenberg, editors. *Computer Games and Immersive Entertainment: Next Frontiers in Intellectual Property Law*. 2nd ed. ABA Book Publishing, 2019.

Van Dreunen, Joost. *One Up: Creativity, Competition, and the Global Business of Video Games*. Columbia Business School Publishing, 2020.

World Intellectual Property Organization. "Video Game Development: A Quest for IP." *wipo.int*. 2023. <<https://www.wipo.int/sme/en/videogames.html>>.