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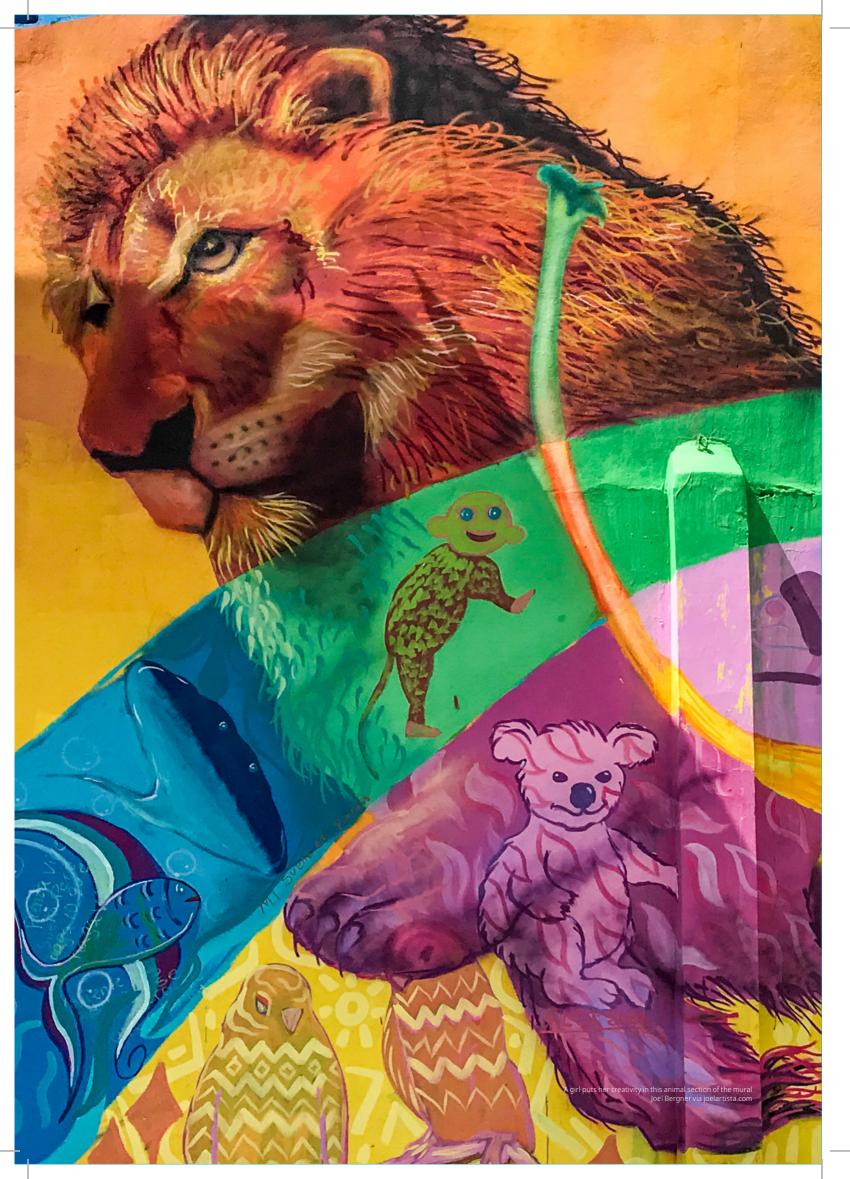
As part of the implementation of the follow up actions from WIPO Director General Mr. Daren Tang's official visit to Santo Domingo, the Dominican Republic (March 21-23, 2022), the Division for Latin America and Caribbean and the RNDS Projects Team in close collaboration and partnership with the Ministry of Industry, Trade and MSMEs (MICM) embarked on a project to create and strengthen intellectual property (IP) competencies among video game developers with a view to creating value, jobs and the internationalization of video game development as a service.

The project was developed upon the identification of the distinct need to enhance the internationalization and export potential of the Dominican Republic's services through IP channels and support the implementation of the recently launched National Strategy for the Export of Modern Services through a concrete impact-oriented project.

This Diagnostic Review is the first deliverable of the Project. The Review aims to draw a realistic picture of the video game industry to create a videogames ecosystem of the sector with knowledge of IP and identify necessary conditions to facilitate its use. The Report identifies that IP has the potential to enhance the value of the videogames ecosystem and proposed concrete policy recommendations including a structured training and mentoring program.

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1. Subject Matter And Scope

The video game industry has become a dominant force globally, captivating millions of players and generating substantial revenue worldwide. Mr. Pablo Asencio, interim director of the Institute of Dominicans Abroad (INDEX)¹, highlighted during the "DUSA Codes: Video Game Technology Immersive Fair", that the video game sector has the highest turnover in the digital industry, exceeding US\$170 billion, and is expected to exceed US\$200 billion by 2023².

From a global standpoint, in 2022, video game revenues alone reached an astounding US\$192.7 billion, a staggering 93.2% more than the estimated earnings of the cinema industry, which stood at US\$99.7 billion³. The top 10 games markets globally, ranked based on their revenue for 2022, were dominated by the following countries: (i)) United States of America (US\$46 bn), (ii) China (US\$ 44 bn); (iii) Japan (US\$19.1 bn); (iv) South Korea (US\$7.4 bn); (v) Germany (US\$6.5 bn); (vi) United Kingdom (US\$5.5 bnB); (vii) France (US\$4.1 bnB); (viii) Canada (US\$3.3 bnB); (ix) Italy (US\$3.1 bnB); and (x) Brazil (US\$2.6 bnB)⁴.

The Dominican Republic's video game industry has shown promising growth, although it does not yet rival the top 10 game markets globally. Data from the General Directorate of Customs (DGA) indicate a steady increase in imports of video game consoles and games starting in 2020, with a total of 13,898 units imported, amounting to over US\$678,255. This includes popular gaming consoles like Nintendo Switch, Xbox, and PlayStation, as well as various games and accessories⁵. This information confirms that the consumer base in the Dominican Republic is continuously growing.

The peak of the video game industry can be credited in large part to the impact of the COVID-19 pandemic, as lockdowns drove (mostly) young people to use and develop video games⁶. The Dominican Republic also witnessed a surge in video game popularity during this period, driven by increased access to technology and the Internet. Nevertheless, compared to other parts of the world, the development and popularity of video games in the Dominican Republic have seen stagnation.

Consequently, as the industry continues to evolve, it has become essential to conduct a comprehensive diagnostic review of the video game landscape in the Dominican Republic to understand its current state, challenges, and potential opportunities. In the context of the Dominican Republic's cultural and creative industries, the video game sector is an integral part of the "orange economy".

The orange economy is a growth model introduced in 2012 through the 2030 National Development Strategy⁷, which seeks to strengthen cultural and creative industries. Its goal is to expand the country's cultural offerings to create more appealing products and services for tourism while promoting cultural heritage, reinforcing national identity, and securing new markets.

In 2021, the Dominican Republic launched its first National Strategy for Modern Services Export. With this strategy, the Dominican Republic aims at building a competitive export services sector,

- 1 Institute of Dominicans and Dominicans Abroad.
- 2 Dominican Republic. Bibliographic source: https://presidencia.gob.do/noticias/
- gobierno-promueve-la-programacion-de-videojuegos-como-nueva-industria-generadora-de

 Dominican Republic. Bibliographic source: https://eldinero.com.do/234451/los-videojuegos-generan-us93000-mas-que-la-industria-cinematografica/#:~:text=Solo%20los%20ingresos%20de%20videojuegos,el%20sector%20de%20
- ios%20gamers
 Netherlands. Bibliographic source: https://newzoo.com/resources/rankings/top-10-countries-by-game-revenues.
 According to this source, the revenues are based on consumer spending in each country and exclude hardware sales, taxes, business-to-business services, online gambling, and betting revenues. In addition, these estimates are based on a combination of primary consumer research, transactional data, quarterly company reports, and census data.
- 5 Dominican Republic. Bibliographic source: https://eldinero.com.do/195518 videojuegos-una-industria-gue-mueve-miles-de-millones-de-dolares/
- 6 Dominican Republic. Bibliographic source: https://eldinero.com.do/195518/ videojuegos-una-industria-que-mueve-miles-de-millones-de-dolares/
- 7 Dominican Republic. Bibliographic source: https://mepyd.gob.do/mepyd/wp-content/uploads/archivos/end/marco-legal/ley-estrategia-nacional-de-desarrollo.pdf



Flag of Dominican Republic Steve Allen via Envato Elements

including by leveraging its young and creative talents. The main categories of modern services targeted in this strategy include the development of software and video games.

This Review seeks to explore various aspects of the video game industry, including market size, technological infrastructure, regulatory environment, local game development efforts, and the social impact of such an industry. By providing relevant insights, the Review aims to guide stakeholders such as government agencies, investors, developers, and gaming enthusiasts in shaping the future of the video game industry within the country.

The Dominican Republic's rapidly growing economy and unique cultural diversity present fertile ground for the gaming sector to succeed. Understanding the preferences and behaviors of the growing number of young gamers is becoming crucial for developing relevant and engaging content. Moreover, the rise of e-sports and competitive gaming communities has fostered a sense of camaraderie among players, contributing to the formation of a vibrant gaming culture in this nation. As such, exploring opportunities to support and foster this community may open new avenues for economic growth and talent development.

Despite the obvious potential, the industry faces internal challenges, ranging from infrastructural limitations to intellectual property (IP) concerns and the need for robust online safety measures. Identifying and addressing these obstacles will be essential in facilitating sustainable growth while safeguarding the interests of all stakeholders.

Ultimately, this Review endeavors to act as a compass to guide the video game industry in the Dominican Republic toward an inclusive and prosperous future. By identifying areas for improvement and understanding the current landscape, stakeholders can collaboratively work toward elevating the country's gaming ecosystem, fostering innovation, and providing world-class gaming experiences to both local players and a global audience. The potential for positive transformation within the Dominican Republic's video game industry is huge, promising a bright and exciting future for all parties involved.

This study has been commissioned by the World Intellectual Property Organization (WIPO) as part of a project deployed in partnership with the Ministry of Industry, Commerce and MSMEs (MICM) of the Dominican Republic. The project aims at strengthening and unlocking the value of the Dominican Republic's video game sector through facilitating the understanding and use of IP tools by video game developers/entrepreneurs.

It is worth mentioning that the National Strategy for Export of Modern Services, which aims to transform the national environment toward one of creativity and innovation, identifies the video game sector as a "technology-intensive niche" which would enable better positioning for the creative and cultural industries of the region.

1.1 General Objective

The primary objective of this Review is to comprehensively assess the video game industry in the Dominican Republic. This entails mapping the industry, analyzing both the public and private sectors operating within it, identifying its strengths and weaknesses, and proposing potential public policies and private initiatives to optimize its growth. Furthermore, a particular focus of the Review will be on the protection of IP resulting from the creation and distribution of video games. The Review will include an examination of the obstacles and opportunities associated with the use of IP tools in the context of the local video game industry.

1.2 Specific Objectives

The specific objectives of the Review are as follows:

(a) Industry overview

- Provide a general description of the key players in the video game development industry in the Dominican Republic, including the relevant actors.
- Analyze the commercialization and distribution processes in the industry.

(b) Industry statistics and demographics

- Collect and organize statistical data on the video game industry in the Dominican Republic, including job creation and participation by age and gender.

(c) Actions taken by relevant actors

- Describe the efforts made by relevant actors in promoting and regulating the video game industry in the Dominican Republic.

(d) Strengths and weaknesses assessment

- Identify the strengths and weaknesses of the video game development industry in the Dominican Republic, with a special focus on IP aspects.

(e) Business practices of developers

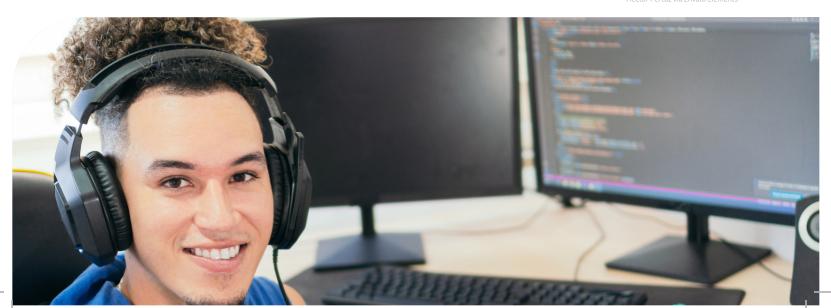
- Investigate whether developers operate as informal freelancers or incorporated entities, exploring potential impacts on financing possibilities.

(f) IP protection practices

- Evaluate how developers protect their IP.

Portrait of a self-employed man working at home, looking at the camera smiling.

Hector Pertuz via Fovato Flements





Developers Launching Program on Laptop seventyfourimages via Envato Elements

(g) Access to academic resources

- Determine the availability and adequacy of academic resources for aspiring developers and whether those resources are consistent with global industry standards.

(h) Existing public policies and private initiatives

- Identify any implemented public policies and private initiatives that aim to incentivize the video game industry in the Dominican Republic.

(i) Regulatory framework analysis

- Analyze the current regulatory framework related to IP and assess whether developers have adequate protection under this framework.

(j) Improvement areas

- Identify potential areas for improvement in the existing regulatory framework.

(k) IP protection measures

Identify measures under Dominican Republic regulations that developers could take to
ensure minimum protection of their IP and assets and enhance their access to funding and
financing opportunities through incorporation.

(I) Strengthening strategies

- Identify potential public policies and private initiatives that could strengthen the video game development industry in the Dominican Republic.

(m) IP capacity building

Identify opportunities for capacity building and skill development initiatives related to IP

2. Definitions And Acronyms

The key terms and concepts relevant to this Review are shown below:

BAFICI: Buenos Aires Video Game Festival

CDDV: Dominican Video Game Developers Community

CORFO: Chilean Economic Development Agency

Developers: Game developers and designers

DGA: Directorate General of Customs Administration

DGII: General Direction of Internal Taxes

ECLAC: Economic Commission for Latin America and the Caribbean

HEXXARD: A community of developers dedicated to fostering a vibrant gaming ecosystem in

the country

INDEX: Institute of Dominicans Abroad

INTEC: Technological Institute of Santo Domingo

Interviewees: Refers to the group of 22 individuals who participated in the interview phase.

IP: Intellectual property

ITLA: Technological Institute of the Americas

Law No. 20-00: Law No. 20-00 on Industrial Property

Law No. 65-00: Law No. 65-00 on Copyright

MESCyT: Ministry of Higher Education, Science and Technology

MICM: Ministry of Industry, and Commerce and Small and Medium Enterprises of the

Dominican Republic

ONAPI: National Office of Industrial Property

ONDA: National Copyright Office

Participants: Refers to the total group of 45 individuals who participated in the interview phase

and completed the survey

PUCMM: Mater et Magistra Pontifical Catholic University

Relevant actors: Encompasses game developers and designers, policy- makers, government

agencies, associations, and investors

Review: This diagnostic review of the video game industry in the Dominican Republic

RNC: National Registry of Contributors

Survey respondents: Refers to the group of 29 individuals who completed the survey

TECH: Technological University of the Dominican Republic

UNIBE: Ibero-American University of Santo Domingo

Unicaribe: University of the Caribbean

WIPO: World Intellectual Property Organization

3. Research Methodology

For this comprehensive Review, we have chosen to employ the correlational research approach, as it makes it possible to collect and analyze relevant data on various aspects of the Dominican Republic's video game industry. Our aim is to provide a complete understanding of the industry's current ecosystem and its interplay with IP instruments. Through this approach, we also aim to identify both the obstacles and opportunities associated with the usage of IP within the video game sector.

By examining the existing landscape, we intend to uncover relevant insights to identify potential public policies and/or private initiatives to strengthen the video game development industry.

As part of our methodology, the Review will incorporate both qualitative and quantitative criteria, allowing us to explore the intricate dimensions of the industry. Qualitative analysis will enable us to delve deep into the experiences and perceptions of the relevant actors to understand their perspectives on the industry's current state and potential challenges. In contrast, quantitative data will provide us with concrete figures and statistical information that will be vital for robust and evidence-based decision-making.

Through this combined approach of correlational research, qualitative analysis, and quantitative data evaluation, we aim to produce a comprehensive and actionable Review. The ultimate goal is to provide valuable insights that can contribute to the advancement and sustainable development of the video game sector in the Dominican Republic.

3.1 Developer interviews and data collection

We conducted a series of virtual discussions with interviewees in the first semester of 2023. These interviews were a crucial component of our research, aimed at validating and gaining an in-depth understanding of the current landscape of the Dominican Republic's video game industry.

Each interview was approached with meticulous diligence. To ensure relevance and accuracy, we tailored a specific questionnaire for each developer interviewed, considering their unique skills and professional experiences. This approach enabled us to delve into the intricacies of their work; identify industry customs; and, importantly, explore potential areas for improvement to further boost and optimize the market's potential.

As part of our transparency and commitment to the research, we have compiled a sample of the broader questions asked during these interviews, which is presented in Annex I. Additionally, we have provided a list of all interviewees in Annex II.

Their input has played a crucial role in shaping this Review's findings and recommendations. Through this collaborative effort, we are confident that the insights gained will contribute significantly to advancing the video game industry in the Dominican Republic. Our team remains dedicated to delivering a comprehensive and impactful Review that serves as a valuable resource for industry stakeholders, policy-makers, and all those committed to the growth of this vibrant sector.

3.2 Survey

In addition to conducting virtual interviews with the interviewees, we further employed a digital survey as part of our data collection process. The survey was carefully designed and administered using Google Documents, allowing for convenient and efficient data gathering. The purpose of this survey was to round out the insights obtained through the interviews and provide a broader perspective on various aspects of the video game industry in the Dominican Republic.

The survey, which is presented as Annex III of this Review, was carefully crafted to address specific aspects and concerns relevant to the industry. It covered a range of topics, including market trends, challenges faced by developers, IP protection practices, access to resources, and potential growth opportunities. By collecting responses from a diverse pool of industry participants, we sought to obtain a comprehensive understanding of the prevailing sentiments and experiences within the video game sector.

Twenty-nine developers agreed to respond to the survey. Their participation has been instrumental in enriching the dataset and providing valuable quantitative insights to round out the qualitative data gathered from the interviews. With the active participation of individuals in both the interview phase and the survey completion, the total number of participants is 47, 45 of whom are Dominican citizens. The basis for all the percentages presented in this report is 45 when referred to participants.

For reference and transparency, the list of survey respondents is provided in Annex IV of this Review. The input of each survey respondent has been processed with the utmost confidentiality and respect, and we extend to them our sincere gratitude for their valuable time and contributions to this research endeavor.

By combining the qualitative insights garnered through interviews with the quantitative data derived from the survey, we have been able to build a robust foundation for our analysis and recommendations. The comprehensive data collection process has enabled us to offer evidence-based insights and propose strategic initiatives to bolster and maximize the potential of the video game development industry in the Dominican Republic.



Expressing opinions. Shot of a person filling in some paperwork.

YuriArcursPeopleimages via Envato Elements

4. Legal Framework Applicable To The The Video Game Industry In The Dominican Republic

The intrinsic value of a video game resides within its intangible components, which can be safeguarded through the principles of IP. The legal framework of the Dominican Republic includes numerous categories that can provide effective safeguards. Nonetheless, a bespoke category designed to encompass the distinct facets of its inception, evolution, and distribution is imperative for a more robust protective approach.

The intangible elements of a video game eligible for protection include codes, visuals, sounds, videos, narratives, scripts, titles, subtitles, covers, distinctive symbols, middleware, and other pivotal components. By drawing inspiration from our legal statutes and the array of protective mechanisms available, video games embody audiovisual creations and computer programs that harmonize artistic components to facilitate user interaction. Their classification can range from pragmatic software endowed with graphical interfaces to intricate audiovisual compositions,, whether independently or in harmonious fusion.

Thus, within the Dominican legal framework, the protection of video games transcends the confines of a single category. Instead, it navigates through an intricate tapestry of copyright and industrial property, ensuring that each thread of creativity is diligently safeguarded. As the gaming industry evolves and new dimensions of innovation emerge, the relevant actors must remain vigilant and, adapt to the ever-changing landscape of virtual creativity.

4.1 Legal Framework Concerning the Protection of Video Games

- Dominican Constitution of June 13, 2015,
 Official Gazette No. 10805 of July 10, 2015.
- Law No. 20-00 on Industrial Property of May 8, 2000,
 Official Gazette No. 10044 of May 10, 2000.
- Law No. 65-00 on Copyright of August 21, 2000,
 Official Gazette No. 10056 of August 24, 2000.

4.2 Legislation Regulating Copyright

The Dominican Constitution stands as a pivotal milestone in shaping the legal landscape across various sectors, with a profound impact on IP regulations. Within this foundational document lies a cornerstone that safeguards and governs creative and innovative works.

Broadly speaking, the realm of copyright, as governed by Law No. 65-00, serves as a robust shield for original artistic, scientific, and literary works right from their moment of inception. This protective umbrella extends to works authored or co-authored by Dominican nationals or residents, works published for the first time within the Dominican Republic, or those crafted by nationals or residents of countries participating in international treaties in which the Dominican State is an active participant.

Furthermore, it is imperative to emphasize that copyright grants two categories of rights: moral and economic. Moral rights primarily encompass the author's entitlement to be recognized as the work's creator, the preservation of the work's integrity, and its maintenance of anonymity. Economic rights pertain to the economic aspects of the work, including reproduction, distribution, and public dissemination. While moral rights are perpetual, inalienable, irrevocable, and non-transferable, economic rights are subject to assignment or licensing, with a protection term spanning the author's lifetime plus 70 years following their death. In cases of co-authorship,

the term begins with the passing of the last co-author. For anonymous works, protection spans 70 years from publication; in the absence of publication, it extends to 70 years following creation. However, if the author's identity becomes known, the term reverts to the author's lifespan plus 70 years after their death.

The significance of categorizing a video game within a specific type of copyright classification resides in the scope of its rights. Consequently, this classification impacts the duration of protection, the presumption of authorship and ownership, as well as the application of acknowledged rights. This classification aids in comprehending the intricate nature of video games within the realm of copyright law, aligning their protection with the diverse facets they encompass.

Law No. 65-00 contains an array of creative endeavors expressed in written form, artworks, theatrical productions, musical compositions (with or without lyrics), visual art, and applied art within the realm of video games. It also covers audiovisuals (creations woven from a sequence of images that evoke motion and are accompanied by or devoid of sound, destined for display via projection or communication devices) and computer programs (in short, the codes that enable the machine to execute a task).

4.3 Legislation Regulating Industrial Property Rights

Law No. 20-00 also protects the elements of a video game. This framework covers the invention of a gaming apparatus or its components, distinctive signs, and undisclosed information regarding on the development of the video game.

For patentable inventions meeting the requirements and registered locally, exclusive exploitation rights persist last for 20 years. Designs, such as a game console, can find refugebe protected as industrial designs, focusing on appearance rather than technical function; protection lasts, upheld for 5 years and is extendable. Distinctive game elements, – whether titles, characters, or symbols, – can be registered as trademarks, trade names, or emblems, with protection for 10 years, renewable.

Equally noteworthy is the protection of undisclosed information in the development of video games. As the gaming landscape becomes increasingly competitive, dDevelopers often rely on trade secrets to maintain a competitive edge. Law No. 20-00 acknowledges the significance of such undisclosed information and provides a legal framework to ensure that this valuable knowledge remains confidential and shielded from prying eyes.

4.4 Additional Rules and Regulations Applicable to the Video Game

- Decree No. 599-01 which serves as the regulatory framework for implementing Law No. 20-00 on Industrial Property. It outlines the procedural intricacies of the patent application process, providing comprehensive guidance for applicants.
- Law No. 358-05 on Consumer or User Rights Protection. The covers the commercialization
 of video games falls under the scope of this law since, as it establishes a robust system
 for safeguarding the rights of consumers and users. The goal is to ensure equity and legal
 clarity in relationships involving suppliers, consumers of goods, and users of services.
 The scope of this law extends across the public and private spheres, both domestically
 and internationally.

5. The Video Game Sector In The Dominican Republic

marked by significant advancements. Collaborations between institutions such as Escuela de Chavón in the Dominican Republic and the Parsons School of Design (The New School) led to events like the "Game Design Workshop", which laid the groundwork for further developments8. Additionally, the ITLA played a significant role, conducting workshops on game creation and launching the country's first educational video game, "La Trinitaria". The goal of this game was to promote national values and Dominican pride among young individuals and displayed Dominican talent in game development, even if it was not for commercial purposes9.

With the right measures, investment, and a shift in public perception, the Dominican Republic's video game industry can unlock its full potential and become a prominent player in the global gaming arena. By addressing challenges and capitalizing on existing strengths, the video game industry can flourish, creating a thriving ecosystem for innovation, creativity, and economic growth.

The Dominican Republic has a rich legal history marked by a series of significant legislative developments. Regarding the general objective of this Review, among these legal milestones are the Dominican Constitution of 2015, Law No. 20-00 on Industrial Property, and Law No. 65-00 on Copyright. Each of these laws plays a vital role in shaping the legal and IP landscape within the country. In this sense, we will briefly explore the historical context and significance of these laws, shedding light on their origins and implications.

Dominican Constitution of June 13, 2015:

The Dominican Constitution of 2015 is the supreme law of the Dominican Republic. It was enacted on June 13, 2015, and published in the Official Gazette No. 10805 on July 10, 2015. This constitution replaced the previous constitution of 2010. It outlines the principles of government, establishes the rights and responsibilities of citizens, and defines the structure and functions of various branches of government. The adoption of this constitution reflects the nation's evolving political and social landscape and its commitment to democratic governance.

Law No. 20-00 on Industrial Property of May 8, 2000:

Law No. 20-00 on Industrial Property was enacted in the Dominican Republic on May 8, 2000, and published in the Official Gazette No. 10044 on May 10, 2000. This law governs various aspects of industrial property, including patents, trademarks, trade secrets, and related IP rights. It establishes the legal framework for the protection and regulation of these rights within the country. The enactment of Law No. 20-00 likely reflects the Dominican Republic's commitment to international agreements and treaties related to IP protection. It aligns the country's legal system with global standards, ensuring that inventors, creators, and businesses are granted the necessary protection for their innovations and trademarks.

Law No. 65-00 on Copyright of August 21, 2000:

Law No. 65-00 on Copyright was enacted in the Dominican Republic on August 21, 2000, and published in the Official Gazette No. 10056 on August 24, 2000. This law specifically addresses copyright protection, which is essential for safeguarding the rights of authors, artists, musicians, and other creators. It outlines the scope of copyright protection, the duration of copyright, and the rights of copyright holders. The enactment of Law No. 65-

Dominican Republic. Bibliographic source: https://www.elcaribe.com.do/sin-

categoria/ videojuegos-made-dominican-republic/
Dominican Republic. Bibliographic source: https://hoy.com.do/lanzan-primer-videojuego-educativo-dominicano/

00 reflects the Dominican Republic's compliance with international copyright agreements, such as the Berne Convention for the Protection of Literary and Artistic Works. It ensures that creators are recognized and compensated for their creative endeavors and that the country's IP framework is in line with global standards.

These laws represent significant legal pillars within the Dominican Republic, providing the framework for constitutional governance and IP protection. An understanding of their historical development is essential for comprehending the legal and regulatory environment within the country.

The global games industry: Value chain and local impact 5.1

The last decade, which saw the emergence of the smartphone gaming market, has been crucial for consolidating the global games sector. From a \$70.6 billion market in 2012 that surpassed the \$100 billion mark in 2016, worldwide gaming consumption will reach the \$200 billion mark by 202310. This young, intensive, and technological sector is experiencing more than 150% growth in revenues, resulting in a cultural and creative product that generates tremendous opportunities for emerging creators worldwide.

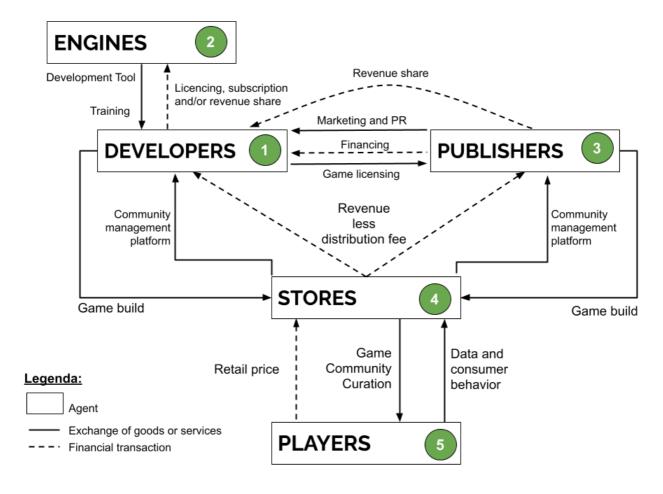


Figure 1. Zambon (2020). Hubs criativos no desenvolvimento da indústria de jogos digitais. UNESP

In the value chain of the digital games sector (see image above), we found that Dominican Republic participants only have a role as game developers and players, while distribution, publishing, and development tools are based overseas.

Much of the financial results of this market are concentrated in transnational agents based in half a dozen countries in North America, Europe, and Asia. The 10 most prominent companies in sales in the gaming sector in the world concentrate more than 45% of all industry-generated income, which is centralized mainly in distribution platforms, console manufacturers and publishers, and mediators between development and commercial launch. The 100 largest companies in the gaming sector corner 77.4% of the sector's revenue. All other gaming ventures in the world compete for just over \$44.45 billion10.

Future \$90.04B \$26.60B \$22.22B \$44.45B

Future of the Games Industry in 2022

Figure 2. Revenue of the games industry – Own production with data from Newzoo (2023)

To understand the Dominican Republic's position in the global production chain, it is important to note the geographical disparities and economic concentration of the industry. In addition, this information shows that the contact of developers with other agents in the value chain is fundamental to the economic sustainability of the sector. As commercial and business dynamics are inherently internationalized, the prosperity of the productive sector depends on its ability to relate to the agents that control the distribution process.

5.2 The video game ecosystem: Relevant facts

This section will include relevant data on the Dominican Republic's video game sector. These data have been compiled from the online discussions with interviewees conducted during the first semester of 2023, as well as from the digital survey.

- Demographics and representation: Among all the participants, it is worth noting that 11% were women, accounting for 5 individuals, while approximately 89% were male, totaling 40 individuals. This observation highlights the need for increased efforts to promote gender diversity within the sector.
 - Age and experience: Out of all the interviewees, 23% started their journey in video game development between the ages of 11 and 17, 45% between 18 and 24, and 32% between 25 and 31. Regarding experience, 45% of the interviewees have less than 5 years of experience, 18% have between 6 and 10 years, 14% have between 11 and 15 years, and 23% have more than 16 years of experience, reflecting a diverse range of expertise in the industry.
 - Employment and educational background: Out of all the participants, 58% of developers engage in video game development as either their primary or secondary employment, while 24% work in similar activities. A small percentage (18%) chose not to disclose their employment status. In terms of educational background, out of all interviewees, 64% are self-taught in the field of video game development, 22% have taken at least one certified course related to video game development, 7% have a bachelor's degree in a related field, and 7% have attained a master's degree in video game development or a related career.

Dominican video games developed and IP protection: We identified a total of 61 video games created by Dominican developers, which are currently available to the public through diverse distribution platforms as shown in Annex V (Video Games Developed by Dominicans). Identification of 41 of these video games arose from the interview process, analysis of the data included in the survey, and related research. The rest of the games were included in a comprehensive list of Dominican video games provided by the CDDV.

Among these 61 video games, only one game, Cute Ninja, is registered with the National Office of Industrial Property (ONAPI). This represents less than 2% (1 out of 61) of the identified games. However, during the interviews, only one pair of developers informed us that their video game, Americas Tower Simulator, is registered with the National Copyright Office (ONDA).

On the topic of distribution platforms, it clearly seen that Play Store stands out as the most popular choice, with 91% of the interviewees utilizing it to distribute their games (20 developers). Steam follows closely behind, with 64% of developers (14) opting for this platform. Itch.io is chosen by 45% of developers (10), while App Store is utilized by 23% (5 developers). It is worth noting that only a single interviewee (less than 5%) distributes their games on the Nintendo Switch platform. These statistics highlight the diverse range of distribution channels preferred by local developers.

- Income and funding sources: Among all the survey respondents, we identified two main sources of income: (i) microtransactions and sales, amounting to 7%, and (ii) advertising, constituting 3% of total income. In terms of funding, the sources included personal generated capital (3%) and contributions from family and close acquaintances (3%).
- Income-generating activities: Out of all the survey respondents, we identified 11 types of income-generating activities carried out by the developers. These include digital content development (24%), movie and TV productions (7%), other digital and technology-related activities (14%), cultural and creative activities (3%), software monetization (3%), participation in international events to promote video game development (3%), information technology (IT) software development (3%), sales (3%), video game development (17%), services rendered as an outsourced contractor (3%), and the response "none" (17%).
- Formal business incorporation: Out of all the participants, we identified four legal entities that have been duly incorporated with the Mercantile Registry and registered with the General Direction of Internal Taxes (DGII). These companies include Moro Studio S.R.L., Entretenimiento y Tecnología S.R.L., GetComponent Studio S.R.L., and Battlezone Gaming Club S.R.L. Interestingly, only 9% of the developers have formalized their businesses, while the majority operate as freelancers (84%), and a smaller fraction are employees of related companies (7%). Notably, there is potential for freelancers to register individually with the DGII, yet our survey revealed that only 3% of the freelancers have done so.
- Economic significance: We incorporated a question in the survey aimed at understanding average revenue. Regrettably, we received only a single response.
 Consequently, out of all the total survey respondents, a mere 3% shared that their average revenue stands at RD\$200,000 (approximately US\$3,623).

Furthermore, despite our efforts to acquire this data through the MICM, the DGII was unable to provide the information due to privacy constraints.



Astra mobile game screenshot. Google Play Store

5.3 Main actors in the public and private sector

The public sector in the Dominican Republic comprises key actors who play significant roles in the video game industry, either by actively promoting its growth or by serving as regulators. Among the primary public entities relevant to the video game industry are as follows:

(a) National Copyright Office (ONDA)

ONDA is an institution under the authority of the MICM. It plays a vital role in the development and protection of the video game sector in the Dominican Republic. As a public entity, its objective is to regulate, protect, and manage all matters related to copyright law. Among its functions, ONDA safeguards the rights of artists in the creation and production of cultural goods and services in the country. By enforcing copyright regulations, ONDA ensures that video game developers' original works are protected from unauthorized use or reproduction, thereby encouraging creativity and innovation within the industry.

(b) National Office of Industrial Property (ONAPI)

ONAPI is an institution under the authority of the MICM. Its primary responsibility is to oversee the concession, registration, and validity of distinct types of industrial property, including patents, utility models, industrial designs, and distinctive signs. Through this role, ONAPI plays a crucial role in protecting the IP rights of creators and developers in the video game industry.

(c) Ministry of Industry, and Commerce and Small and Medium Enterprises (MICM)

The MICM plays a critical role in the Dominican Republic, as it oversees policies, strategies, and programs related to industry, exports, commerce, and small enterprises. It also serves as the regulator of the gas and petroleum sector, thereby impacting the overall business environment. It provides support to local enterprises, including game developers. In 2021, the MICM unveiled the Dominican Republic's National Strategy for Modern Services Export, aimed at boosting services exports in sectors such as the creative

economy, the audiovisual industry, telecommunications, and IT. The strategy was developed through consultations with various sectors and in collaboration with the Economic Commission for Latin America and the Caribbean (ECLAC), the National Trade in Services Committee, and the Coalition of Services of the Dominican Republic. It focuses on five pillars: capacity development, regulatory framework, investment and financing, ecosystem, and market promotion. The strategy opens up new economic opportunities in online-traded modern services, including telecommunications, IT, video games, software, and other business services, complementing traditional sectors like tourism and construction.

In June 2023, the MICM organized the first National Congress of Creative Industries "RD Naranja", in partnership with the Ministry of Culture and support from Banco Popular, Propagas, and Black & Decker. The aim of the congress was to strengthen the Dominican creative ecosystem by empowering young talents to turn their creativity into profitable businesses. The event included talks on monetizing creative talent and pricing work, along with panels on finding project sponsorships, enhancing the video game industry in the Dominican Republic, and tips for effective project presentations. Workshops on product photography for social media and exporting Dominican fashion were also offered.

Through these initiatives and collaborations, the MICM plays a significant role in fostering economic growth and opportunities for creative industries, including the thriving video game sector in the Dominican Republic.

(d) Ministry of Higher Education, Science and Technology (MESCyT)

The MESCyT is responsible for overseeing higher education, science, and technology in the Dominican Republic. It plays a key role in promoting and regulating the National System of Higher Education, Science, and Technology, thereby ensuring adherence to relevant laws and policies. MESCyT's mission is to develop sectors that enhance economic competitiveness and sustainable human development while fostering critical and democratic citizens who contribute to the country's progress.

In 2021, MESCyT, along with ITLA and community technology centers (CTCs), signed a cooperation agreement to provide access to technical and technological careers offered by ITLA in municipal districts with CTCs. This agreement allows young people to utilize CTC centers and receive education in diverse technological areas offered by ITLA, including interactive simulations and video game development, telecommunications, artificial intelligence, renewable energies, information networks, software development, multimedia, sound, mechatronics, automated manufacturing, medical device manufacturing, industrial design, analytics, data sciences, and other career areas approved by MESCyT.

MESCyT also collaborates with higher education institutions to host the annual Higher Education Entrepreneurs Competition, aiming to nurture an entrepreneurial culture and mindset among students. The competition offers prizes, with RD 400,000 for the first place, RD 350,000 and RD 300,000 for the second and third places respectively, and RD 200,000 for the Entrepreneurship Center with the most impactful execution.

The winners of the Higher Education Entrepreneurs Competition of 2023 were twin students from the University of the Caribbean (Unicaribe), William and Wellington Hiciano. Both are pursuing degrees in Information Technology at Unicaribe and serving in the Dominican Republic Army. Their winning project, EDUFLIGHT, is a remarkable immersive and personalized air traffic control simulator. EDUFLIGHT edged out 16 other projects from various higher education institutions, highlighting the innovative capabilities of students in the video game industry.

(e) General Direction of Internal Taxes (DGII)

The DGII is responsible for the administration and collection of internal taxes and tariffs in the Dominican Republic. It manages the National Registry of Contributors (RNC) and plays a vital role in the development and protection of formal business operations within

the country. For the video game industry, compliance with tax regulations and proper registration should be essential for its growth and sustainability.

(f) Directorate General of Customs Administration (DGA)

The DGA operates as an autonomous branch of the Ministry of Treasury and is tasked with regulating and enforcing national and international regulations related to import and export processes in the Dominican Republic. Additionally, the DGA collects import and export tariffs. Given that most of the material components of the video game sector are imported to the Dominican Republic, the DGA's role is crucial, possibly necessitating the development of a special tariff system for these products to support the industry's development.

The active involvement and collaboration of these public entities are essential for creating a conducive environment for the growth and development of the video game industry in the Dominican Republic. By promoting IP protection, fostering a supportive business climate, and addressing import and export challenges, the public sector can contribute significantly to the industry's progress and competitiveness.

(g) Private sector

The private sector in the Dominican Republic also has a vital role in the promotion and development of the video game industry. Notably, communities and organizations such as HEXXARD and CCDV are dedicated to fostering a vibrant gaming ecosystem in the country.

The HEXXARD and CCDV communities bring together individuals with a shared passion and goal: to drive the growth and advancement of video games in the Dominican Republic. These communities serve as platforms for collaboration, networking, and knowledge-sharing among game developers, designers, artists, and enthusiasts.

CCDV, for instance, focuses on creating opportunities for game developers and entrepreneurs to display their creations, exchange ideas, and receive feedback from peers and industry experts. Through events, workshops, and game jams, CCDV encourages innovation and creativity, nurturing a supportive environment for aspiring game developers. As an illustrative example, we can highlight the CCDV's Game Developer Day initiative in collaboration with the Technological Institute of Santo Domingo (INTEC) and Unity Technologies. This event attracted developers from diverse regions of the country and featured a range of engaging presentations and exhibitions.

Similarly, HEXXARD is dedicated to empowering and promoting local talent in the video game industry. The community organizes meetups, conferences, and educational initiatives to enhance skills, share best practices, and explore the latest trends and technologies in gaming.

The efforts of these private-sector communities round out the initiatives taken by the government entities, such as MESCyT and MICM, to boost the video game industry in the country. Together, the public and private sectors create a conducive environment that encourages creativity, entrepreneurship, and sustainable growth in the gaming sector of the Dominican Republic. As a result, the country can tap into its vibrant talent pool, unlocking the full potential of the video game industry and positioning itself as a regional hub for gaming innovation and development.

5.4 Education and background of participants

Data on gender representation in the video game sector are crucial for understanding the current state of diversity in the Dominican Republic's gaming industry. With only 11% of the participants being women, there is an obvious gender gap in the field. Addressing this disparity can lead to a more inclusive and dynamic industry, where diverse perspectives and talents can contribute to innovation and creativity.

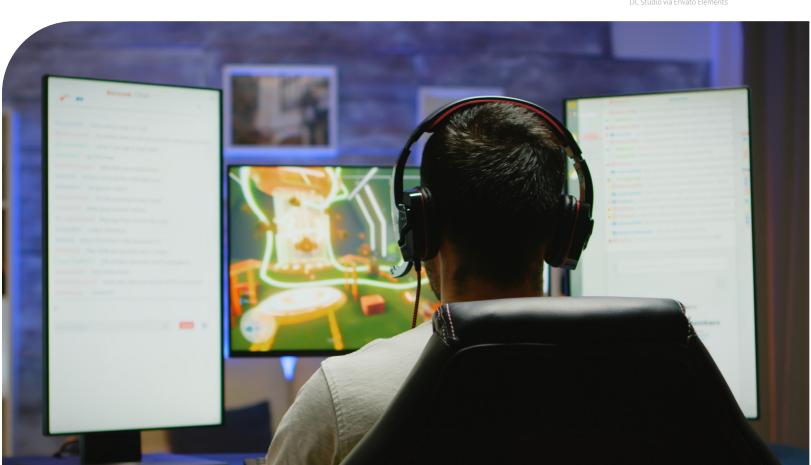
Age and experience distribution among the interviewees provides valuable insights into the demographics of video game developers in the country. The fact that 23% of the interviewees started their journey in video game development between the ages of 11 and 17 is impressive, indicating a growing interest and engagement in the industry among young individuals. This highlights the importance of nurturing and supporting young talents who show an early interest in the field.

Additionally, the fact that 45% of interviewees begin their journey between 18 and 24 years of age suggests that many individuals pursue video game development as they transition to higher education and beyond. It may also signify an increasing number of academic institutions offering courses and programs in game development, making it accessible to young adults. The percentage of interviewees with less than 5 years of experience (45%) indicates a significant presence of newcomers in the industry, while those with more than 16 years of experience (23%) shows that there is a stable group of veterans who have contributed to the sector's growth over time. This diverse range of experience levels reflects a dynamic landscape in which fresh talents and seasoned professionals coexist.

Among all the participants, an encouraging 58% of developers are actively engaged in video game development as either their primary or secondary employment, indicating a strong interest and commitment to the industry. Additionally, 24% are involved in similar activities, suggesting the presence of related fields that contribute to the overall growth of the creative ecosystem.

However, it is important to note that a small percentage (18%) chose not to disclose their employment status, which may be attributable to specific reasons such as confidentiality or diverse work arrangements. Further analysis and clarification may be required to understand this group better and potentially uncover hidden trends.

Regarding the educational background of the interviewees, the figures present a varied landscape of qualifications. While 64% are self-taught in the field of video game development, highlighting the power of self-driven learning and passion within the industry, a significant portion (22%) have proactively pursued certified courses related to video game development. This implies a growing interest in structured education and indicates an availability of formal training opportunities.



Back view of young man with hands raised celebrating victory. DC Studio via Envato Elements Moreover, it is encouraging to see that 7% of the interviewees hold a bachelor's degree in a related field, demonstrating the recognition of video game development as a specialized and interdisciplinary domain. Similarly, another 7% hold a master's degree in video game development or a related career, indicating a higher level of expertise and commitment to the field.



Despite the progress in academic offerings and the fact that there is a sizable percentage of individuals who have pursued a bachelor's or master's degree, there is still room for improvement. The industry's demands have evolved, and there is a growing need for greater depth in specific areas, particularly pertaining to the artistic aspects of game development. While universities and institutions like the Technological Institute of the Americas (ITLA), the Technological University of the Dominican Republic (TECH), the Ibero-American University of Santo Domingo (UNIBE), INTEC, and Mater et Magistra Pontifical Catholic University (PUCMM) have taken steps to include game development-related courses in their programs, there is a need to further enrich the curriculum with a focused emphasis on artistic creativity, design aesthetics, and storytelling aspects that are integral to successful game development, as emphasized by industry professionals and developers.

The array of current academic offerings related to video game development in the Dominican Republic is diverse in terms of programs and courses that cater to different interests and aspirations within the industry. Some examples are as follows:

ITLA offers a higher education program in interactive simulations and video games, providing the opportunity to acquire knowledge in areas including programming, marketing, vector design, artificial intelligence, scripting and storyboard, 3D modeling, video game marketing, concept art, technical drawing, 2D and 3D animation, image and sound editing, game design, virtual reality, and motion capture. This higher education program lasts two years and four months.

TECH offers a bachelor's degree in game design. Its objective is to instruct students in the complex and extensive process of video game development, from conception to finalization and product launch. This bachelor's degree lasts three years and four months and is offered in online form.

CHAVÓN School of Design offers a technical program in animation. It focuses on traditional drawing integrated with contemporary and digital media, catering to the high labor demand of major animation studios such as Disney, Nickelodeon, DreamWorks, and Blue-Sky Studios, among others. This technical program lasts three years.

ITLA, INTEC, PUCMM, and other higher education institutions offer bachelor's degrees in software development, telecommunications, and related fields, with specialized courses in video game design.

UNIBE, ITLA and PUCMM offer workshops and/or diplomas in 2D video game development with Unity, programming of video games with Unity, game design with Unreal Engine, development of augmented reality applications, and design and programming of user interface and 3D models for mobile applications in augmented reality.

In conclusion, the data provide valuable insights into the employment and educational trends in the Dominican video game sector. While progress has been made, there are opportunities to strengthen academic offerings, particularly in the artistic aspects, and improve accessibility to

specialized training within the country. By addressing these areas, the industry can nurture a thriving and well-rounded generation of game developers, fostering innovation and creativity in the dynamic landscape of video game development in the Dominican Republic.



Americas Tower Simulator mobile game screenshot Google Play Store

5.5 IP protection in current video games developed in the Dominican Republic

The analysis of the data and identification of 61 video games indicate that Dominican developers are highly engaged in the video game development industry, demonstrating their creativity and talent through a wide range of projects. The diversity of these games, spanning from action-packed adventures to educational simulations, is a testimony to the innovation and dedication of local developers. Their contributions play a significant role in driving the growth and vibrancy of the gaming sector in the country.

It is essential to acknowledge that the 61 identified video games represent merely a portion of the games created or currently in development by Dominican developers. The actual number of games may be higher, further underlining the active presence of developers in the sector.

When it comes to the question of IP protection, the data suggest that the majority of developers have not taken specific measures to safeguard their creations. As evidenced by the fact that only one video game (Cute Ninja) has been registered as a trademark with ONAPI, IP protection seems to be a relatively low priority for many developers, accounting for less than 2% of the identified games.

Similarly, during the interviews, it was disclosed that only one pair of developers took the initiative to register their product (Americas Tower Simulator) with ONDA. This indicates that while some developers recognize the importance of protecting their IP, it remains a limited practice within the broader community.

Several factors contribute to the lower emphasis on IP protection among developers. One possibility is that developers prioritize other aspects of game development, such as the creative process, gameplay mechanics, and community engagement over formal registration of their IP. The complexities and resource-intensive nature of the IP protection process could also deter many developers, especially those with limited resources and knowledge of legal procedures.

In addition, ONAPI assisted us with a survey of current distinctive and duly registered signs which are related to "Software", "Games" and "Gamer". This information can be summarized as follows:

- Nineteen different holders possess trademarks protecting "software", either as a product (International Class 9) or as a service (International Class 42). However, it is worth noting that some of these trademarks may not specifically protect video games.
- Only one holder possesses a registered trademark in International Class 42 that includes "video game".
- Four holders possess trademarks protecting "game" in International Class 28. However, it
 is worth noting that three out of these four registrations specifically refer to "electronic

gambling game machine", "board game", and "roulette game", while only one registration protects "games" in general.

Two holders possess trade names that include the term "gamer". One of these two trade
names protects the commercial activity of providing game guides and free strategy tools
for players on any gaming platform, while the other registration protects the organization
of video game events.

Considering the number of participants and the active engagement we have seen in this industry, this information reaffirms that many developers and companies in the video game industry may not be prioritizing the formal protection of their software creations through trademark registration. This lack of registration could potentially leave their IP vulnerable to infringement or misuse by others.

The presence of only one registered trademark in International Class 42 that includes "video game" indicates a lack of emphasis on protecting video-game-related services under this class. Video game development involves not just the creation of software but also various related services, such as online gaming platforms, game design consulting, and game streaming services. By registering trademarks for these services, developers can establish their brand identity and distinguish their offerings from competitors in the market.

Moreover, the presence of trade names containing the term "gamer" highlights the growing interest in gaming-related businesses or activities. Nonetheless, the fact that there are only two registered trade names in this category suggests that many gaming-related businesses may not have formalized their commercial activities. By registering trade names, these businesses can secure their identity in the market and build brand recognition among consumers.

In conclusion, the data reaffirm the active involvement and talent of Dominican developers in the video game industry. However, the limited adoption of IP protection measures suggests a need for greater awareness and accessible resources to encourage more developers to safeguard their IP. Additionally, the relatively low level of formal protection for IP assets should be addressed. By providing workshops, seminars, and educational programs focused on IP protection, the gaming community can be better equipped to protect their creative works and foster a culture of IP rights within the industry. This, in turn, can contribute to the long-term growth and success of the video game development sector in the Dominican Republic.

Thichaa via Envato Elements





ominican peso in a magnifying glass. Johan10 via Envato Elements

5.6 Funding of ventures

The limited variety of funding sources presents a noteworthy challenge for emerging developers, as the data underscore that they primarily rely on self-financing or contributions from family and friends to support their projects. This scarcity of funding alternatives is intricately linked to the prevailing perception that a sizable portion of developers in the industry operate without formalized business structures.

Among all the survey respondents, two main sources of funding were identified: (i) microtransactions and sales, amounting to 7%, and (ii) advertising, constituting 3%. However, the analysis revealed that the industry's income streams need diversification to thrive and grow. To achieve greater diversification and sustainability, the local industry should foster more development and explore additional sources of income, such as royalties, independent advisory services, and opportunities to develop and produce more sales.

Developers have had to engage in other income-generating activities closely related to video game software development. Only 5 survey respondents out of 29 (17%) reported conducting revenue-generating activities directly tied to the development of video game software, which include monetization, video game development, and video game software sales.

Interestingly, our research found that there is no established angel investor or venture capital ecosystem specifically targeting the video game industry in the Dominican Republic. While formalization could potentially increase the interest of private equity funds in investing in the industry, such an ecosystem is currently non-existent.

Furthermore, the data highlighted that no survey respondent has been able to finance their development projects through the national banking system. Independent developers have faced challenges in obtaining approval for personal or work capital loans from local established banks. However, it is worth noting that some banks have held contests to incentivize the development of technology-based software, and prizes have been granted to further develop promising projects.



vr game and virtual reality. adult man gamer in 3d glasses playing on shooting simulation video game Ksenia Shestakova via Envato Elements

5.7 Forms of legal incorporation

As mentioned in Section 5.2, we identified only four participants who had duly incorporated their business activity with the Mercantile Registry and registered with the DGII. These companies are Moro Studio S.R.L., Entretenimiento y Tecnología S.R.L., GetComponent Studio S.R.L., and Battlezone Gaming Club S.R.L. This means that only 8.89% of the developers have formalized their businesses, while the majority operate as freelancers (84%), and a smaller fraction are employees of related companies (7%). Notably, there is potential for freelancers to register individually with the DGII, yet our survey revealed that less than 3% of the freelancers have done so.

During our research, it became clear that the video game industry in the Dominican Republic largely operates in an informal manner. Most of the private actors that create, develop, and market their products do so as unregistered, informal freelancers, as related in Section 4.1 of this Review. This informal structure poses a significant obstacle to the industry's development in the country, as it affects access to investment and financial support.

Investment in any industry typically requires some level of formalization, and the lack of it can hinder the ability to secure necessary resources for efficient and effective product development. The fact that no survey respondent has received funding from a non-related angel or venture capital investor, or financing from a financial institution, may be a direct result of the non-

registered status in which most developers operate. When conducting surveys with established developers in the Dominican Republic, we learned that many of the obstacles they face are related to financial backing or the lack thereof. Local financial entities are often hesitant to invest or provide loans to unregistered independent freelancers.

It is important to identify the obstacles that prevent or deter unregistered freelancers from formalizing their businesses. Among the main barriers are costs, legal requirements, and a lack of guidance in the formalization process. The estimated registration fees and taxes associated with incorporating and registering a basic corporate entity in the Dominican Republic amount to US\$150. While this amount may not seem steep, when considering legal assistance and other procedural costs, many independent developers perceive formalization as unattainable, as overall costs average US\$650 for the incorporation of a simple limited liability company.

Furthermore, the formalization process involves several steps in various public entities, such as registering the commercial name with ONAPI, incorporating the corporate entity at the competent Mercantile Registry Office, and being added to the National Taxpayer Registry at the DGII. Despite attempts to streamline the formalization process through initiatives such as the Mercantile Registry of Santo Domingo's Formalízate program, which assists in the drafting of incorporation documents and registration procedures, the consensus is that without proper guidance, formalization remains challenging.

Formalization is essential for the development of the video game industry in the Dominican Republic. It offers tangible benefits that protect the work product of video game developers and the developers themselves. When formalized, incorporated entities attain a separate legal patrimony from their owners, providing an added layer of protection to the developer's assets.

Some of the key advantages of formalizing a company include the possibility of raising capital through the issuance of common or preferred shares, convertible notes, or other equity-like instruments. This provides a crucial source of funding that can drive the development and expansion of the business, enabling investment in technology, human resources, and market expansion.

Formalization also allows for the hiring of high-quality personnel by offering vesting agreements for the gradual acquisition of an ownership stake in the company. This motivates employees to commit to the long-term success of the business, align their interests with those of the company, and contribute significantly to its sustainable growth. At the same time, vesting agreements allow bootstrapping entrepreneurs the ability to secure talent at low initial salaries.

Protecting IP and assets is another fundamental benefit of formalization. With a solid legal structure in place, the company's assets are shielded from events such as death, divorce, and third-party claims against the developer. This contributes to business continuity and the security of strategic assets. Additionally, formalization is the only road to scalability, opening up the possibility of selling shares to investors, private equity funds or conducting a public offering if the product or service proves successful. This can generate significant returns for founders and shareholders, enabling a strategic and financial exit.

In short, informal business activity is not compatible with business growth and scalability. Formalizing the company provides access to financing, high-quality talent, legal protection, and expansion opportunities that are essential for thriving in a competitive and ever-evolving business environment.

To overcome the challenges of formalization, efforts should be made to raise awareness among developers about the benefits of incorporation and provide guidance and resources to simplify the process. Government agencies and industry associations could collaborate to offer workshops and seminars focused on legal incorporation, and potentially introduce incentives to encourage more developers to formalize their businesses. By facilitating formalization, the industry can attract more investment, access financial support, and pave the way for sustainable growth and innovation in the Dominican video game sector.

5.8 Challenges faced by the video game industry

The Dominican video game industry has indeed experienced significant growth, yet persistent concerns remain regarding IP protection and challenges confronted by developers. This section is dedicated to identifying these challenges and presenting possible ways to tackle them.

5.8.1. Legal and financial

5.8.1.1. Regulatory gaps in legislation in the Dominican Republic

The imperative for a specialized legal framework to address the unique aspects of video games is becoming increasingly apparent. In the realm of IP, video games occupy a multifaceted space that encompasses not only traditional forms of artistic expression but also intricate technological components.

One notable aspect is the intricate interplay between copyright and technological innovation within video games. Traditional copyright regimes, rooted in literary and artistic works, may inadequately capture the interactive, dynamic, and often collaborative nature of video game development. International treaties and agreements, such as the Berne Convention, lay the foundation for copyright protection, yet they may fall short in addressing the complex fusion of narrative, gameplay mechanics, and visual aesthetics that define modern video games.

Video games often involve multidisciplinary collaboration, including programmers, artists, musicians, writers, and designers. This collaborative nature poses challenges in determining authorship, ownership, and the allocation of rights. Internationally, WIPO recognizes the importance of addressing these issues, and discussions on the harmonization of copyright laws continue. However, a specialized legal framework could provide clearer guidance on how these collaborations are legally structured and how rights are apportioned among contributors.

Additionally, the global nature of the video game industry requires legal measures that can effectively address cross-border issues. The digital distribution of video games, online multiplayer interactions, and the potential for infringing activities across jurisdictions require a comprehensive framework capable of handling international disputes and enforcement.

5.8.1.2. Cost and procedural barriers in IP registration

The cost and procedural requirements involved in IP registration can be discouraging for developers. For example, for protection under copyright of computer programs with ONDA, the RD\$15,000 (approximately US\$272) fee, coupled with the need for new registrations for each source code modification, plus potential legal fees, can be disheartening for bootstrapping developers aiming to protect their creations under copyright law.

Similarly, the cost of the registration process for distinctive signs with ONAPI in only one international class ranges from RD\$6,900 to RD\$7,365 (approximately US\$125 to US\$134) and costs RD\$5,320 (approximately US\$97) for every additional international class. These figures do not include the legal fees and expenses, if applicable, which run from US\$200 minimum. By exploring affordable registration options and efficient strategies, developers could secure their IP without incurring excessive expenses.

Furthermore, to address the issue of multiple registrations for each source-code modification, the Dominican government could consider introducing a more flexible system that allows developers to update their registrations without incurring additional costs. This would incentivize developers to keep their IP up to date and fully protected as their projects evolve. Additionally, the government could consider establishing a dedicated support unit within ONDA and ONAPI to assist developers throughout the registration process. This support unit could offer personalized guidance, answer queries, and ensure that developers can navigate the requirements more efficiently.

5.8.1.3. Lack of awareness of IP and its benefits

Several developers mentioned a lack of awareness and resources as barriers to pursuing formal IP protection. As a result, they may opt to focus on building and promoting their games while considering IP protection at a later stage. To address the cost barriers, the Dominican government could explore options such as providing grants or subsidies to cover a portion of the registration fees for eligible developers. This financial assistance could make IP protection more accessible, particularly for independent developers and startups with limited resources. It could also offer discounted rates for independent developers or small businesses and establish a tiered fee structure based on the scale and complexity of the project, which could make IP protection more accessible.

Furthermore, collaborating with industry associations and organizations can help in spreading awareness about the importance of IP protection. These partnerships can facilitate the organization of workshops, webinars, and conferences on a larger scale, reaching a broader audience of developers. To enhance the impact of these educational initiatives, it may be beneficial to involve successful local game developers who can share their experiences with IP protection and its positive impact on their careers. Real-life success stories can serve as powerful examples and motivate other developers to prioritize IP protection.

5.8.1.4. Financial constraints

One of the most significant obstacles faced by Dominican game developers is the lack of financial resources. This applies not only to their academic training but also to obtaining licenses, permits for commercializing their games, acquiring equipment, and addressing associated taxes. Some of the potential solutions to this obstacle are as follows:

Government funding and support dedicated to supporting the local video game industry could significantly alleviate financial burdens.

Establishing grants or subsidies for independent game developers or small studios can provide the necessary resources to kick-start projects and sustain growth.

Industry partnerships could provide financial backing, mentorship, and access to resources that smaller developers might lack.

Public-private initiatives can pool resources to support promising game development projects.

Educational support to offer specialized game development training and scholarships could help reduce the financial burden on aspiring developers seeking quality education in the field.

Crowdfunding platforms tailored to the gaming industry can help developers raise funds directly from interested players and supporters and in this way help to validate market demand for their games.

Tax incentives for game developers could encourage investment in the industry and provide relief from some financial pressures associated with taxes.

Offering workshops or resources on monetary management and budgeting specifically tailored to game developers can empower them to make informed financial decisions and optimize their resources effectively.

Investor networks or pitching events where developers can highlight their projects to potential investors and secure financial backing can be highly beneficial.



Human Rights Hammer Book. Ktsimage via Envato Elements

5.8.2. Policies

5.8.2.1. Gender disparity in industry

The findings included in this Review bring attention to the gender disparity within the sample of game developers and highlights the need for addressing gender diversity within the industry. While the game development field has seen considerable growth and expansion in recent years, it is clear that women remain underrepresented, and there is a clear gender imbalance in the industry.

The low percentage of female game developers may be attributed to numerous factors, including societal stereotypes, limited access to opportunities, and potential gender biases within the industry. To foster a more inclusive and diverse game development community, the government, educational institutions, and industry stakeholders could collaborate to create scholarships, mentorship programs, and internships specifically targeted at women interested in pursuing a career in game development. These initiatives could help break down barriers and provide women with more opportunities to enter and thrive in the industry.

Furthermore, raising awareness about the contributions of female game developers and demonstrating their success stories can serve as motivation for aspiring women to pursue careers in the field. Highlighting diverse role models and their achievements can challenge existing stereotypes and inspire more women to consider game development as a viable career option.

Promoting inclusive workplace policies and cultures within game development studios is also crucial. Companies can implement diversity and inclusion training, adopt policies that prevent discrimination and harassment, and actively create an environment where all employees, regardless of gender, feel valued and supported.

Finally, industry events and conferences can play a role in promoting gender diversity. Organizers can ensure that panels and speaker lineups are diverse and representative of the industry's various talents, experiences, and perspectives.

5.8.2.2. Distribution platforms and access

The statistics presented on distribution platforms offer valuable insights into the preferences of local developers. While the Dominican video game industry has seen achievements, it still faces challenges in gaining traction on major gaming consoles like Xbox, Wii, and PlayStation. Limited access to licenses, insufficient financial resources for equipment and local talent, and a lack of educational opportunities in the field have hindered its growth in this market segment. To address these challenges and enhance the industry's potential, developers have found success by exploring alternative distribution platforms. Digital distribution platforms like Steam, Epic Store, Itch.io, Play Store, and Apple Store have opened up new avenues for reaching a broader audience and displaying their creations. These platforms provide easier entry points for developers, allowing them to publish their games with relative ease and without the stringent licensing requirements of major consoles.

While these digital platforms offer opportunities, it is crucial to acknowledge the competitive nature of these marketplaces. With numerous games being released regularly, developers face the challenge of standing out from the crowd and getting noticed by players. Therefore, strategies to improve visibility and marketing efforts in these digital marketplaces are essential.

In addition to exploring alternative platforms, the Dominican government could play an initiative-taking role in supporting local developers to gain access to major gaming consoles. The government could explore possibilities for partnerships or collaborations with console manufacturers or game publishers to address the licensing and financial barriers faced by local developers. This could involve negotiating favorable terms for local developers or providing financial incentives to encourage console manufacturers to engage with the Dominican gaming industry.

Furthermore, the government could consider establishing a dedicated fund or grant program to provide financial support to promising game development projects. This funding could be allocated to assist developers in obtaining licenses, acquiring equipment, and enhancing their access to educational opportunities.

To foster a stronger gaming community and encourage collaboration, the government could organize networking events, game development conferences, and workshops that bring together local developers, industry experts, and potential investors. This would create a conducive environment for knowledge exchange and potential partnerships.

By combining efforts from the private sector, government, and educational institutions, the Dominican video game industry can overcome the obstacles it faces and reach new heights of success on both digital and major console platforms. A multifaceted approach that includes financial support, partnerships, and community-building initiatives will strengthen the industry and bolster its competitiveness on the global stage.



5.8.2.3. Limited access to game jams

Game jams are intensive events where participants, often including video game developers, designers, and enthusiasts, come together to create video games within a set timeframe, typically ranging from 24 to 72 hours. The primary purpose of a game jam is not only to produce finished games but also to encourage collaboration, experimentation, and the rapid development of creative ideas. The games created during these events are usually shared with the public, offering developers the chance to receive feedback, recognition, and even explore potential commercialization opportunities.

For these reasons, the lack of initiatives such as game jams, local gaming events, and online forums can be highlighted as a challenge for video game developers in the Dominican Republic. These activities play a crucial role in building and nurturing a vibrant game development community, fostering collaboration, creativity, and skills development. Without such initiatives, developers may feel isolated and disconnected, thereby hindering their growth and potential impact on the industry. However, there are several viable solutions to address this challenge and cultivate a thriving game development community.

To overcome this challenge, local game development organizations, universities, and government bodies can collaborate to organize regular game jams within the country. These events can be promoted through social media, industry websites, and local gaming communities. By encouraging participation and providing support for coordination, venues, and prizes, these entities can create an environment where developers can demonstrate their talents, learn from others, and form valuable connections within the community.

5.8.2.4. Export and promotion of video games

While the Dominican video game industry has made significant strides domestically, there is immense potential for expansion and global recognition. Exporting video games and tapping into international markets can be a major driver of growth for local developers.

Exportation of Dominican video games comes with its own set of challenges and requires a comprehensive approach, including the following:

Market research: Before entering international markets, developers should conduct thorough market research. This includes identifying target demographics, understanding cultural nuances, and evaluating the competition. Government agencies can provide support by offering market research resources and insights.

International conferences and trade shows: Encouraging local developers to participate in international gaming conferences and trade shows can provide valuable exposure and networking opportunities. Government agencies can sponsor or facilitate participation in such events to promote Dominican game development on a global scale.

Localization: Adapting games to the cultural and linguistic preferences of the target market is crucial for success. This involves translating content, adjusting gameplay elements, and ensuring that the game resonates with the local audience.

Trade agreements: Exploring trade agreements and partnerships with other countries can facilitate the export of video games. Negotiating favorable terms and reducing trade barriers can encourage foreign markets to embrace Dominicanmade games.

A comprehensive approach is similarly required for the promotion of Dominican video games and could include the following:

National gaming events: Organizing national gaming events, competitions, and conventions can serve as a platform to showcase local talent and promote Dominican games. These events can attract players, industry professionals, and the media, thereby increasing visibility.

Online promotion: Leveraging online platforms, including social media, game streaming, and video-sharing platforms, can be an effective way to promote games globally. Developers should invest in marketing strategies tailored to their target audience.

Collaborating with influencers: Partnering with local and international gaming influencers and content creators can help spread the word about Dominican games. Influencers can provide reviews, gameplay videos, and live streams to engage with potential players.

Government support for promotion: The government can allocate resources to support promotional campaigns for Dominican games on an international scale. This support can include funding for marketing efforts, participation in international events, and collaborations with foreign gaming publications.

Lastly, the following approach should be taken to capture new markets and further trade in video games:

Diversification of genres: While it essential to focus on existing markets, developers should also consider diversifying their game offerings. Exploring different genres, themes, and gameplay styles can help appeal to a broader audience.

Research and adaptation: Understanding the gaming preferences of various international markets is critical. Developers should be willing to adapt their games based on market-specific insights, ensuring that they align with the tastes of the target audience.

Cross-platform compatibility: Making games compatible with various platforms, including PCs, consoles, and mobile devices, can expand the reach of Dominican games. Cross-platform games have the potential to attract a more extensive player base.

Government initiatives: The Dominican government can actively engage with international trade organizations and associations related to the gaming industry. By participating in discussions and negotiations, the government can promote favorable trade conditions for Dominican video game developers.

IP protection abroad: Developers should be aware of the importance of protecting their IP when entering international markets. The government can provide guidance on international IP protection and connect developers with legal resources.

With a strategic approach to export, promotion, market expansion, and international trade in video games, the Dominican Republic can position itself as a competitive player in the global gaming industry. Collaborative efforts between the relevant actors can unlock new opportunities and foster economic growth in this creative sector.

5.8.3. Education

5.8.3.1. Changing the perception of video game development

One of the significant barriers faced by video game developers in the country is the prevailing perception of video games as a mere pastime and not a viable career path. This skepticism is prevalent among older generations, who view video game development as a waste of time. Overcoming this stigma and changing this mindset is essential to fostering a flourishing video game industry in the Dominican Republic.

The Dominican government and industry stakeholders could work together to promote the positive aspects of the video game industry, illustrating its economic contributions, job opportunities, and potential for creative and technological innovation. Public awareness campaigns, targeted at both older generations and the broader public, could be used to challenge misconceptions and display success stories of game developers who have made significant contributions to the industry.

Furthermore, collaborations between educational institutions and the game development industry could help in integrating video game development programs and courses into the curriculum, demonstrating its value as a valid career path and encouraging young talent to consider it as a profession.

5.8.3.2. Bridging the gap in training and resources

The reliance on international platforms like Unity, Unreal, and foreign universities and institutions for specialized training presents a significant challenge for Dominican game developers. The fact that training resources are primarily available in English can create barriers for developers who may not be fluent in the language, thereby limiting their access to high-quality education and the building of skills in the field of game development.

To address this challenge and foster the growth of a skilled and diverse developer community, efforts should be made to bridge the language gap and create localized resources in Spanish. Several solutions can be considered:

Translation and localization: Translate existing training materials, tutorials, and documentation from English to Spanish. This would make them accessible to a broader audience of developers in the Dominican Republic and other Spanish-speaking countries. Collaboration with international platforms and educational institutions to encourage multilingual offerings can also be pursued.

Local educational initiatives: Partner with local universities, colleges, and technical schools to develop game-development programs and courses in Spanish. This would provide aspiring developers with formal education opportunities tailored to their language and cultural context. Government support and incentives for these educational initiatives can play a vital role in their establishment and success.

Online Learning Platforms: Create online learning platforms specifically for game development in Spanish. These platforms can offer video tutorials, courses, and resources covering various aspects of game development, from programming and design to marketing and publishing. They can be designed to be affordable or even free, to make them accessible to a broader audience.

Workshops and webinars: Organize workshops, webinars, and seminars on game development topics conducted in Spanish. Experts in the industry can deliver these sessions, sharing their knowledge and insights with aspiring developers. These events can be organized by government agencies, industry associations, or private companies to increase their reach.

Local game development communities: Foster local game development communities and forums where developers can interact, collaborate, and share knowledge in Spanish. These communities can be valuable resources for peer support, networking, and skills development.

Partnerships with international entities: Collaborate with international platforms and organizations to encourage the creation of Spanish-language content and resources. Joint initiatives can help ensure that the needs of Spanish-speaking developers are met on a global scale.

Government support: The government can play a crucial role in supporting the development of localized resources by allocating funds for the creation and promotion of Spanish-language game development education and training programs.

By investing in localized training resources and education, the Dominican Republic can empower its developers with the skills and knowledge necessary to compete on a global level. Bridging the language gap will lead to a more inclusive and diverse developer community, fostering innovation and creativity within the country's game development industry.

In conclusion, the video game industry in the Dominican Republic faces funding challenges and lacks a diverse range of investment sources. To foster growth and sustainability, the industry should explore more funding opportunities, encourage formalization of businesses, and actively seek support from both private and public sectors.

Initiatives such as developing educational programs and workshops to raise awareness among game developers about the importance of IP protection, establishing an angel investor network or venture capital funds dedicated to the gaming industry, as well as fostering collaboration between financial institutions and game developers, could go a long way in addressing these challenges and supporting the growth of the industry.

Close up details of graphics cards at cryptocurrencies mining rig. Modern technology.

5.8.4. Identification of the cluster maturity stage

Before proposing actions for the development of the games sector, it is necessary to carry out an analysis of the stage of development of the games cluster in the Dominican Republic. Each of the stages reveals specific challenges to be faced by the cluster, as well as the most important synergistic actions to overcome these challenges. Furthermore, this section will build the roadmap needed by the Dominican Republic games cluster to reach the maturity stage.



Figure 3. KST (Knowledge, Structure, Trust) model - Three mechanisms of cluster development - Stachowicz & Knop, 2009; Knop, Krannich & Olko, 2009

Clusters are networked regional productive agglomerations of a given economic sector. Analyzing the productive agglomeration of the games sector from the perspective of evolutionary economic geography, we can see that the games cluster process in the Dominican Republic is organized according to the mechanisms of knowledge management, trust and cooperative actions between agents, and the structure available in this network of cooperation. From the data collected in the research instruments, a model was applied that evaluates the Dominican Republic's game cluster among five evolutionary stages. We observe the evolutionary process in two-dimensional axes of time and cluster size. In the case of size, not only the number of economic agents in relation to the sector in question are considered, but also the growth of levels of competition, innovation, social capital, and trust.

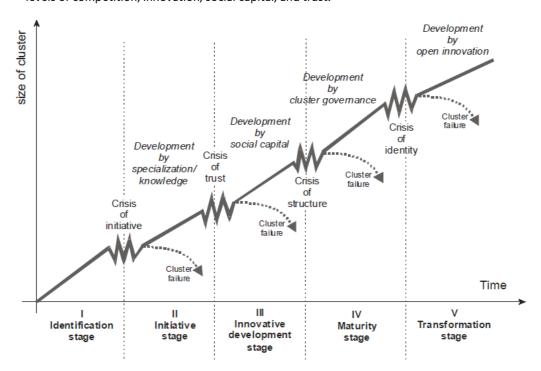


Figure 4. Model of cluster Life-cycle with the crises occurring through the process | Knop & Olko (2011)

1.	Identification	
2.	Initiative	
3.	Innovative Development	
4.	Maturity	
5.	Transformation	

The games sector in the Dominican Republic is still in the first stage of the cluster, (I) Identification, in which the different business units, the third sector and the public power go through the process of identifying local agents and their respective partners to carry out cooperative actions. From this identification process, they face a crisis of initiative, a moment in which sectoral agents align expectations and mobilize potential partners to share information and perceive the need to recognize and define common potential and objectives. Actions led by the MICM with the support of WIPO, in particular in the form of the first National Strategy for Modern Services Export, contribute to streamlining the ecosystem and make it possible to overcome the first challenge for cluster maturity.

The results of this project's actions, including the Skills and Knowledge Building Program, the Mentorship Program, and the promotional event, will help catalyze the cluster's shift into the second stage, that of maturity. In this stage, called **(II) Initiative**, the cluster subjects have already identified themselves and engaged in the pursuit of a common objective; they now seek to specify the principles of this cooperation, based on maintaining a competitive advantage in this process. It is at this stage that the first utilitarian collaboration actions begin, through training programs in the search for access to common resources. In the evolution process of clusters, after the initiative to carry out the first activities in common, this growing relationship between agents leads to a potential **crisis of confidence**, in which the difference in vision and expectations ends up leading to internal conflicts between the cluster agents, or even to barriers that hinder broader processes of cooperation and synergy.

The solution in this case involves carrying out collaborative innovative projects, in addition to initiatives that work on common values, especially through the development of social capital. This process of creating social capital involves promoting networking based on responsibility and honesty among cluster members. This process also involves creating emotional engagement actions. One of the processes for building social capital is to carry out activities and events that – much more than talking about the industry and its products – promote social interaction among participants. In other words, it is when games cease to be the center of activity and people become the subject of action, with the primary objective of creating ties between cluster members.

In this process, actions such as periodic meetups that promote relationships among different segments become central and are often rounded out by social events in bars and restaurants. We can still highlight game jams as environments with the potential to generate this social capital, as long as they are carried out with in a synergetic integration of business agents, professionals, and academics. Once the crisis of trust is overcome, the initiative phase and utilitarian collaboration can also make room for incubation programs, capable of connecting beginners and experienced developers in a dynamic process of mutual collaboration. This creates bonds that eventually mitigate the crisis of trust.

Once the crisis of trust between agents has been overcome, the games cluster in the Dominican Republic will enter the **(III) Innovative Development** stage. Trust enables the start of altruistic collaboration processes, in which the cluster agents begin to help each other.

After overcoming the **crisis of confidence**, the next bottleneck arises after the exchange of knowledge between agents triggers a demand for skills and infrastructure that are indispensable for the continuous initiation, coordination, and control of network activities. This is the so-called **structure crisis**, in which these skills become necessary for the continued development of the cluster. Overcoming this step is necessary for the cluster to reach the desired stage of **(IV) Maturity**.



Asian programmer checking the operation of the code.

Cait00sith via Envato Elements

The **structural crisis** must be anticipated with synergic actions that make possible the necessary elements for the evolution of this cluster. Such actions are developed through cluster governance. Cluster governance is about the intended collective actions of cluster actors to upgrade a cluster in order to build and maintain a sustainable competitive advantage. Cluster governance specifically aims to facilitate and improve innovation processes, allowing companies in the sector to be able to become viable in current business models, updated creation tools, and optimized distribution processes. In other words, it is focused on the main strategic question faced by the actors involved in the innovation processes of a cluster, being concerned with the constant movement of this value chain, how it can be reconfigured over time and where possible new synergies can be found.

Comparative Study Of The Video Game Industry

6.1. International legal frameworks taken as reference

Brazil: Bill No. 2.796/2021, which regulates the manufacture, import, commercialization and development of electronic games in the country and also provides tax incentives for the game development or production sector.

Argentina: Law No. 11.723 of September 26, 1933 (Copyright Law).

Colombia: Law 1915 of July 12, 2018, by which Law 23 of 1982 is modified and other provisions are established regarding copyright and related rights.

6.2. Good practices

In this section we look at a few of the notable practices and regulations in the realm of the legal framework for the video game industry that have addressed unique challenges and opportunities presented by this dynamic sector.

(a) Brazil: Comprehensive copyright protection and tax incentives

Brazilian law adopts a distinct approach by not categorizing literary, architectural, artistic, and scientific works, computer programs, or game rules as inventions or utility models. Instead, it designates the graphic interface, scenarios, characters (including visual and psychological aspects), soundtrack, plot, texts, and dialogues of video games for copyright protection. To further safeguard video game creations, Brazil ensures that designs and drawings are registered with the School of Fine Arts and the National Library.

Moreover, on October 19, 2022, the Brazilian House of Representatives approved Bill No. 2.796/2021, which addresses the regulation of electronic games and introduces enticing tax incentives for the video game development sector. The bill extends support to computer programs, applications, devices, and accessories integral to electronic game execution. Additionally, the legislation embraces friendly competitions between users, with the government taking an active role in age classification and human resource development for the gaming industry.

However, an amendment to the bill includes the regulation of fantasy sports by characterizing them within the scope of games. In fantasy sports, each player takes on the role of a coach and creates fictional teams of real athletes from a given sport. Each squad is formed according to a virtual budget, and all participants compete against each other based on the performance of those players in real events. This process can involve real money with prizes for the players' performance. Fantasy sports companies lobbied for the inclusion of the amendment in order to avoid regulation as sports betting, which should increase taxation in the sector. In the context of this process, the regulation characterizes games as software without considering the definition of "interactive audiovisual" historically used in the country. The change in the regulatory definition may impact the implementation of audiovisual policies to stimulate the sector.

(b) Argentina and Colombia: Modernization of the copyright framework

Argentina has been working on modernizing its copyright framework to address digital content, including video games. The country has been considering updates to its copyright law to adapt to the digital age and provide better protection for digital works. These updates could potentially have a positive impact on the video game industry.

Moreover, Colombia has been making efforts to update its copyright legislation to address digital content and technological advancements. The country has been working on amendments to its copyright law to bring it in line with international standards, which could also benefit the video game sector. Specifically, Law 1915 specifies the scope of some authors and related patrimonial rights with respect to digital rights and establishes provisions on technological protection measures.



partial view of lawyer looking at contracts near book with copyright law title isolated on grey.

6.3. Success cases

There are several notable success cases in Latin America regarding the protection of video games.

1. Chile

In recent years, Chile has emerged as a significant key participant in the Latin American video game industry. The country has implemented supportive policies and initiatives to foster the growth of the local game development ecosystem.

- Supportive policies and initiatives: The Chilean government, through entities like the
 Chilean Economic Development Agency (CORFO), has been a driving force in fostering the
 growth of the video game ecosystem. CORFO has provided funding, grants, and resources
 to support video game startups and studios. These initiatives seek to reduce barriers to
 entry and stimulate innovation within the industry
- Community and networking: Santiago, the capital of Chile, has become a hub for video game enthusiasts and professionals. The city hosts events like the Santiago Game Summit and Chile Game Jam, which serve as platforms for game developers to display their work, exchange ideas, and connect with industry experts. These events contribute to a vibrant

and collaborative game development community.

2. Argentina

Argentina has a growing video game development scene. The country has produced successful indie games and has seen increased recognition in international gaming competitions.

- The government of Argentina has shown its commitment to nurturing the video game industry by offering financial support, grants, and funding to local game developers.
 These resources aid in the creation, development, and marketing of video games, helping studios bring their creative visions to life.
- The Buenos Aires Video Game Festival (BAFICI) serves as a significant platform for highlighting local and international indie games. The festival not only provides exposure for developers but also emphasizes the artistic and cultural aspects of video game creation. It promotes the convergence of technology, art, and entertainment, highlighting the potential of video games as a form of artistic expression.

3. Brazil

Brazil's video game industry has been gaining momentum, and the country has taken steps to enhance its legal framework for the protection of video games.

The passage of Bill No. 2.796/2021, which regulates the manufacture, importation, commercialization, and development of electronic games, reflects Brazil's commitment to fostering a conducive environment for the video game industry.

The Brazilian government's support includes tax incentives for the game development and production sector, which has the potential to attract investments and stimulate growth.

4. Mexico

Mexico has a growing game development industry, with various studios creating games for both domestic and international audiences.

- Recognition and awards: Mexican game developers have achieved success in international gaming competitions, receiving recognition and accolades for their creativity and innovation. These achievements bear witness to the country's potential as a hub for game development talent.
- Government interest and innovation: The Mexican government has expressed interest in supporting the video game industry. Initiatives that promote entrepreneurship and innovation align with the goal of fostering a dynamic and competitive game development ecosystem.

These successful cases demonstrate the dedication of these countries to nurturing their respective video game industries through a combination of supportive policies, funding, events, and initiatives. The growing prominence of video games in Latin America reflects the region's commitment to technological innovation, creativity, and economic development.

7. Recommendations

7.1. Recommendations to strengthen the video game industry in the Dominican Republic

The video game industry in the Dominican Republic holds immense potential for growth and innovation. To harness this potential, it is crucial to establish a comprehensive and strategic framework that fosters the development and prosperity of the sector. By implementing a series of targeted initiatives and policies, the Dominican Republic can position itself as a regional and global hub for video game development, attracting talent, investments, and international recognition.

- Tax incentives: Implement tax incentives and benefits that encourage skilled professionals to remain in the Dominican Republic's gaming industry. This will prevent a talent drain to other regional or international markets. For example, Canada offers a range of tax incentives, including labor-based incentives, research and development (R&D) tax credits, and production services tax credits. These incentives have attracted major game studios, leading to the growth of a thriving game development industry in the country. Further, France provides a video game tax credit that covers up to 20% of eligible expenses related to game development. This credit has led to increased investment in the French game industry and the creation of innovative and successful titles.
- Affordable registration options: The Dominican government should explore the possibility of introducing more affordable IP registration options, especially for independent developers and startups. This could involve reduced fees for copyright protection and international trademark registration. A tiered fee structure based on the scale and complexity of projects can also be considered to make IP protection more accessible. Additionally, a more flexible registration system could be an alternative, allowing developers to update their IP registrations without incurring additional costs for each source code modification. This will encourage developers to keep their IP up to date and fully protected as their projects evolve.
- **Financial assistance:** To alleviate the financial burden of IP registration, the government can provide grants or subsidies to cover a portion of the registration fees for eligible developers.

A happy interracial man is sitting at home and using a credit card and laptop while smiling at the camera. Zamrznutitonovi via Envato Elements



These subsidies can target independent developers, small businesses, and innovative projects that contribute to the growth of the game development sector.

- Internationalization programs for professionals: Implement comprehensive scholarship
 programs that enable local game developers and professionals to pursue advanced courses,
 workshops, and exchange programs in established game development hubs around the
 world. This will enhance their skills, promote exposure to industry best practices, and expand
 international networks.
- Business missions for internationalization: Offer subsidies for local game development companies to participate in major international gaming events and expos such as the Game Developers Conference, Gamescom, and the Tokyo Game Show. This exposure will facilitate networking, partnerships, and knowledge-sharing with global industry leaders.
- Game jams, regional business events and international business events: Encourage the organization of game jams, where local developers can collaborate intensively to create and develop game concepts within a short period. Also, organize business events within the Dominican Republic that attract companies and investors from Central America and the Caribbean. Such events can include conferences, workshops, and networking sessions to highlight the country's potential as a regional game development hub. Similarly, host international business events that draw companies and investors from a broader global spectrum. This will bolster the Dominican Republic's reputation as a significant player in the global gaming ecosystem.
- Permanent and international industry forum: Establish a consistent platform for
 collaboration and communication between various stakeholders in the gaming industry,
 including government bodies, universities, and industry players. This forum can drive policy
 discussions, identify challenges, and create collective strategies for industry growth. Extend
 the industry forum's scope to include international representatives. This will foster crossborder partnerships, knowledge-sharing, and joint initiatives that can elevate the Dominican
 Republic's status in the global game development community.
- Educational game adoption: Collaborate with educational institutions and authorities
 to integrate educational games and solutions developed by local studios into the national
 educational curriculum. This not only promotes learning through gamification but also
 supports local game developers.
- Cross-border co-production opportunities and global co-production opportunities:
 Facilitate connections between Dominican game studios and potential co-production partners in Central America and the Caribbean. This can lead to collaborative game projects and expand the industry's reach. Similarly, explore connections with international studios from regions such as North America, Latin America, MENA, Europe, and Asia in order to foster global co-production opportunities. Co-production ventures can lead to diverse and innovative game projects.
- Establishment of physical hubs and support for playtesting labs: Create well-equipped
 and structured physical hubs in key development centers. These hubs should provide a
 conducive work environment, networking opportunities, and resources that align with the
 needs of game developers. Also, provide resources and support for the establishment of
 playtesting labs. These labs will help game developers gather feedback and refine their games
 before release.
- Public fund for prototypes, full game development, and research and development: Allocate public funds specifically designated to the development of video game prototypes. This support can enable studios to experiment with innovative concepts and ideas. In addition, establish a fund dedicated to financing the complete development of video games. This can provide crucial financial backing for studios to bring their projects to market. Similarly, create a public fund to support applied research and the development of technologies within the digital games sector. This can drive innovation and technological advancements within the industry.

- Sectoral mapping and surveys: Conduct regular surveys and sectoral mapping of local game development companies. This will provide valuable insights into business models, industry trends, and growth opportunities.
- Subsidized loan lines: Facilitate access to subsidized loans aimed at financing projects and companies within the Dominican game development sector. This financial assistance can help accelerate game development initiatives.
- **Internship and training programs:** Increase the competitiveness of local game studios by offering funding for internship programs. This will enable studios to hire and train emerging professionals, thereby contributing to skills development.
- Entrepreneur qualification programs: Support programs that offer free courses aimed at qualifying entrepreneurs to establish and operate successful game studios in the Dominican Republic.
- Free beginner and advanced technical courses: Offer funding for beginner-level technical
 courses that provide aspiring game developers with the foundational skills needed to enter
 the industry. Similarly, provide funding for advanced technical courses that allow experienced
 professionals to further enhance their expertise in game development.

7.2. Indicators to support the implementation of initiatives and policies for the Dominicanvideo game industry

From the data collected for this Review, we can highlight two main challenge categories (with a total of four objectives) that the Dominican Republic game development cluster must face to achieve maturity level.

The first challenge stems from the need to boost the sector economically, allowing economic exchanges and the volume of money generated by the industry to justify the efforts made for its constant growth and evolution. Actions to address this challenge should have two objectives: (a) increase the formalization of game creators in the Dominican Republic and (b) expand the creation of economically sustainable IP in the Dominican Republic.

The second challenge concerns the issue of training and professional seniority as fundamental processes for establishing a dynamic and internationalized cluster. Actions to face this challenge must (c) expand the appropriation of international standards and the transfer of frontier knowledge to professionals and (d) incorporate techniques and good production and business practices.

A set of monitoring indicators for each challenge is provided below. The effectiveness of our proposed actions can be measured by monitoring how they affect these indicators. The indicators evaluated are qualitative and quantitative, so that different measurement forms can be used to observe the actions' results.

To evaluate the impact of the actions monitored, we recommend several methods for validating counterfactuals, in order to enable verification of the results with or without the existence of programs and actions. In other words, these will assess whether the growth of indicators such as "Average number of employees per company" or "Annual revenue per company" occurred due to the actions or to factors external to the measures implemented. In this evaluation method, we do not compare indicators between the beneficiary agents of the actions and non-beneficiary agents within the cluster itself. This is because cluster development actions generate spillovers of their effects on all ecosystem agents, even those not directly involved in the activities.

7.2.1. Challenge 1: Business ecosystem

Challenge

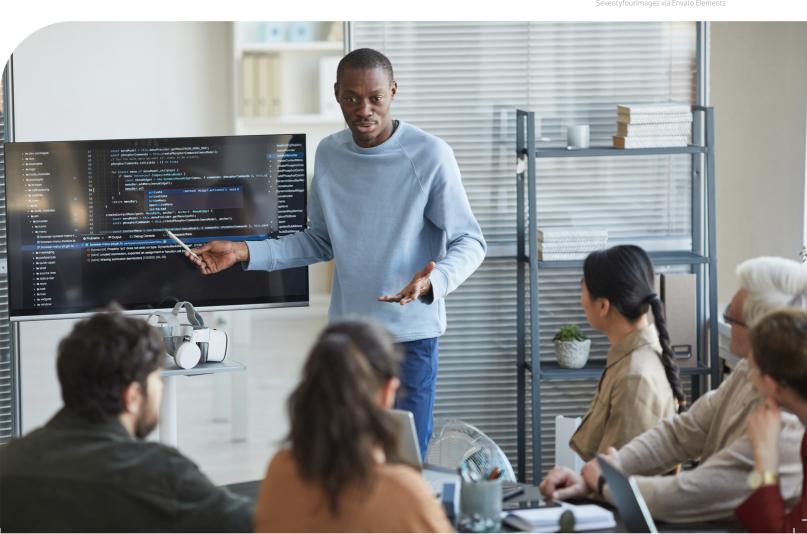
. The Dominican Republic's business ecosystem is at the incipient stage, with low levels of export and IP licensing.

Objective

Monitoring indicators

- (i) Number of new companies formalized annually
- (a) Increase the formalization of game creators in the Dominican Republic.
- (ii) Number of active formalized companies
- (iii) Annual revenue per company
- (iv) Brain-drain among undergraduate and graduate professionals
- (b) Expand the creation of economically sustainable IP in the Dominican Republic.
- (v) Amount of private investment raised by Dominican producers
- (vi) Number of commercial releases of own IP games
- (vii) Number of licensing agreements with international publishers

African Man Presenting in IT Meeting. Seventyfourimages via Envato Elements



7.2.2. Challenge 2: Professional qualification

Challenge **Objective Monitoring indicators** (viii) Offer of senior and full-level professionals in the sector (ix) Quality assessment of training courses (c) Expand the appropriation of (x) Assessment and selfinternational standards assessment of professional and the transfer of aptitude in view of the labor frontier knowledge market demands to professionals. (xi) Participation of professionals in major international knowledge fairs and conferences 2. Low professional seniority and reduced level (xii) Participation of of use and entrepreneurs in major appropriation international conferences of state-of-the-(xiii) Number of events and art methods knowledge transfer workshops and technologies. with world-class agents (d) Incorporate techniques (xiv) Co-productions with and good production foreign companies of and business practices. international standard (xv) Number of companies in international delegations and missions (xvi) External development contracts with international-



African Man Presenting in IT MeetingAfrican american programmer writing code and using holographic program.

DC Studio via Envato Elements

standard companies

7.3. Action plan to develop the Dominicangames industry

In a roadmap for the Dominican Republic game development sector to achieve an international level and a maturity stage, several actions can be undertaken to support its ecosystem development. However, the priority to implement one action over another depends on the effectiveness of overcoming the identified challenges and on feasibility given the resources and infrastructure of the cluster, i.e, the lower the feasibility, the higher the costs (economical, political, social) of implementing the action.

Forty-two possible strategic actions are listed along with their costeffectiveness evaluation:

Actions	Effectiveness	Feasibility
Provide free English classes with content applied to the digital games sector.	High	High
Subsidize free courses for beginner technical skills to work in the digital games sector.	High	Medium
Promote actions to increase the inclusion, accessibility, and diversity (of gender, ethnicity, origin, etc.) of the gaming sector.	High	Medium
Promote mentoring programs among experienced professionals and newcomers to the gaming industry.	High	Medium
Carry out a game studio incubation/ acceleration program.	High	Medium
Subsidize free management and business courses to qualify entrepreneurs to increase the competitiveness of game studios.	High	Medium
Establish an advisory office to support intellectual property registration.	High	Medium
Hold connection events between agents from other creative industries to license IP for game development.	High	Medium
Carry out business missions for the internationalization of companies, through subsidies for international events (GDC, Gamescom, Pocket Gamer, XDS, Tokyo Game Show, etc.).	High	Low
Create a public fund for the development of original IP digital game prototypes.	High	Low
Establish a properly structured physical hub to promote work environments, connections, and the carrying out of actions inherent to the gaming industry.	High	Low
Provide financing for the creation of playtest laboratories.	High	Medium
Create a public fund for the development of original IP full games production.	High	Low
Raise the competitiveness of game studios by subsidizing internship programs and training professionals within companies.	High	Medium

High	Low
High	Low
High	Medium
Medium	High
Medium	Medium
	High High High High Medium Medium Medium Medium

Promote actions that connect game studios with co-production opportunities with local studios.	Medium	Medium
Support events with lectures to train companies and professionals in the digital games sector.	Medium	Medium
Promote mentoring programs and specialized consulting for game studios.	Medium	Medium
Hold a permanent forum for connections between different agents of the gaming industry, institutions, and municipal and state public authorities for the development of the sector.	Medium	Medium
Subsidize free courses for advanced technical skills to work in the digital games sector.	Medium	Medium
Structure a program of basic practices to help new professionals enter and build a portfolio.	Medium	High
Promote gaming events and actions as a way to solve existing demands for public authorities and civil society (industry 4.0, health, education, training, etc.).	Medium	Medium
Subsidize the contracting of business intelligence reports and platforms (BI, marketing, analytics).	Medium	Medium
Support research and extension programs that touch on the activities of the digital games sector.	Medium	Medium
Hold fairs and events aimed at the consumer public, with an exhibition of games, e-sports championships, and actions to expand gamer culture in the country.	Low	Medium
Promote subsidized loan lines to finance projects and companies in the gaming sector.	Medium	Low
Sponsor original digital game awards and festivals.	Medium	Low
Encourage scientific publications, research, and innovative production through specific grants and awards.	Low	Medium
Finance a fund for research and development of technologies aimed at the digital games sector.	Low	Low

7.4. Training program for emerging game studios

Finally, to support the creation of a greater number of Dominican game development studios capable of creating more original IP games with export and international licensing potential, we can suggest a basic course with the following three modules:

Module 1: planning and structuring a games company

Knowledge and skills to teach a game creator how to operate a game studio, covering a global understanding of the industry, techniques, and methods of business planning; formalization and protection of IP; market research; and financial and project management.

- Objectives: (a) increase the formalization of game creators in the Dominican Republic and (d) incorporate techniques and good production and business practices.

Module 2: prototyping and game design laboratory

Hands-on game prototyping lab, to learn how to handle team building, ideation, development, and testing for validating game ideas and original IP.

 Objectives: (b) expand the creation of economically sustainable IP in the Dominican Republic and (c) expand the appropriation of international standards and the transfer of frontier knowledge to professionals.

Module 3: investment raising

Development of technical and behavioral skills to attract private investment, culminating in a public presentation of projects for publishers and international investors.

- Objectives: (b) expand the creation of economically sustainable IP in the Dominican Republic and (d) incorporate techniques and good production and business practices.

Content

Module 1 - Planning and structuring a games company

- 1 Games industry overview
- 2 Business planning for a game studio
- 3 Formalization, regulatory framework and IP
- 4 Introduction to market research
- 5 Scope and financial management in game projects
- 6 Game project team management

Module 2 - Prototyping and game design laboratory

- 7 How to form an ideal team for independent projects
- 8 Ideation: game design workshop
- 9 Game jam prototyping marathon
- 10 Playtest: learning to evaluate the quality of games

$\textbf{Module 3} - Investment \ raising$

- 11 Attracting private investment in the games industry
- 12 Forming a slideshow for publishers and investors
- Presentation and oratory techniques for investment pitches
- 14 Pitch test
- 15 Demo day

8. Conclusion

In the Dominican Republic, the video game industry is on the cusp of transformative growth and influence. While

it has made significant strides, numerous challenges highlight the need for strategic action to propel the industry to new heights. To achieve this, a holistic approach is essential, focusing on key aspects such as legal protection, gender diversity, financial support, training accessibility, and community collaboration.

The analysis of the Dominican Republic's video game industry reveals a multifaceted landscape with unique opportunities and challenges. The industry has exhibited significant growth and potential, driven by the creativity and talent of local developers. However, several key areas require attention and action to ensure its continued success and development.

Gender disparity: The industry currently suffers from significant gender disparity, with women representing only a small percentage of developers. Efforts should be made to create a more inclusive environment through initiatives like scholarships, mentorship programs, and awareness campaigns to encourage more women to pursue careers in game development.

Changing perceptions: The perception of video game development as a mere pastime needs to change. Public awareness campaigns, educational initiatives, and collaborations between educational institutions and the industry can help showcase the economic and creative potential of the sector.

Legal framework: The dynamic and ever-evolving nature of the video game industry demands a specialized legal framework. Traditional copyright laws may not fully take into account the intricacies of video game development. Firstly, the collaborative nature of video game creation, involving professionals from diverse domains, creates complexities in determining ownership and rights distribution. Additionally, given the industry's global reach, there is an urgent need for legal provisions to effectively address cross-border challenges, especially concerning digital distribution and online multiplayer interactions. Establishing a specialized legal framework is crucial to address these issues related to (a) authorship, ownership, and equitable rights allocation within the industry; (b) facilitating the organizing of collaboration; and (c) just rights distribution among contributors. Furthermore, it is essential for resolving international disputes and ensuring regulatory enforcement across various jurisdictions.

Financial constraints: Many developers face financial barriers, including expenses related to IP protection and to their need to update their IP registrations, entailing additional costs for each source code modification. Government support in the form of grants, subsidies, and tiered fee structures can make IP protection more accessible. Additionally, partnerships with private-sector entities can provide financial backing and resources to aspiring developers.

Distribution platforms and access: While digital distribution platforms offer opportunities, developers face challenges in gaining access to major gaming consoles. The government can play a role in negotiating favorable terms for local developers with console manufacturers and providing financial incentives to encourage their engagement.

Bridging the gap in training and resources: The lack of localized training resources in Spanish is a significant challenge. Translating materials, creating local educational initiatives, and offering online learning platforms can bridge the language gap and empower developers with the skills they need.

Limited access to game jams: The absence of game jams and local gaming events hinders community-building and skills development. Collaborative efforts between local organizations, universities, and the government can be made to help organize regular game jams and events. This will foster a sense of community and collaboration among developers.

Funding diversification: Developers primarily rely on microtransactions and advertising for

revenue. The industry should explore additional income sources, such as royalties, advisory services, and sales, to diversify funding options and ensure sustainability. Investment ecosystem: Currently, there is no established angel investor or venture capital ecosystem targeting the video game industry in the Dominican Republic. Encouraging formalization of businesses and fostering collaboration between financial institutions and developers can attract more investment to the industry.

Prevalence of informal operations: The industry's informal business nature is a significant obstacle to its development, particularly in terms of accessing investment and financial support. Investment typically requires a level of formalization, and the lack of this latter can hinder developers' ability to secure necessary resources for efficient product development. It is concerning that none of the survey respondents have received funding from non-related angel or venture capital investors or financing from financial institutions. This is possibly a direct result of the informal business nature prevalent among developers.

By confronting these challenges head-on and seizing the opportunities they present, the Dominican Republic can secure its standing as a regional game development powerhouse. This would set the stage for a more dynamic, diverse, and prosperous future where innovation knows no bounds. The Dominican video game industry can emerge as a global force, contributing not only to the country's economic growth but also enriching its cultural tapestry.

Additionally, in light of the findings and insights gathered throughout our comprehensive review of the video game industry in the Dominican Republic and the international landscape, it is clear that there is an urgent need for a specialized legal framework tailored to the unique and evolving nature of video games.

Video games, as a form of creative expression and intricate technological innovation, present a multifaceted challenge that conventional copyright laws may struggle to address adequately. One critical aspect is the complex interplay between copyright and technological innovation within video games. Existing copyright regimes, primarily designed for traditional literary and artistic works, may fall short in capturing the interactive, dynamic, and often collaborative nature of video game development.

International treaties such as the Berne Convention provide a foundation for copyright protection but may not fully encompass the fusion of narrative, gameplay mechanics, and visual aesthetics that define modern video games. Moreover, the collaborative nature of video game creation, involving various professionals — from programmers to artists, musicians, writers, and designers — raises questions about authorship, ownership, and rights allocation.

While international discussions on harmonizing copyright laws are ongoing, a specialized legal framework for video games could offer more clarity on how collaborations are structured legally and how rights are distributed among contributors. Furthermore, the global nature of the video game industry necessitates legal measures capable of addressing cross-border issues effectively. With digital distribution, online multiplayer interactions, and the potential for infringing activities spanning multiple jurisdictions, a comprehensive framework is needed to handle international disputes and enforcement.

In our comparative study of the video game industry, we observed several good practices in other countries that have addressed the unique challenges and opportunities presented by this dynamic sector:

(a) Brazil's comprehensive copyright protection and tax incentives

Brazil takes a distinctive approach by extending copyright protection to various elements of video games, including graphic interfaces, scenarios, characters, soundtracks, plots, texts, and dialogues. This approach ensures that video game creations are adequately safeguarded. Additionally, Brazil has introduced enticing tax incentives to support the video game development sector, including computer programs, applications, devices, and accessories integral to electronic game execution. Its legislation also encourages friendly competition among users while promoting age classification and human resource development for the gaming industry. However, it is worth noting that

certain regulatory amendments, such as the inclusion of fantasy sports, may impact the sector's development.

(b) Argentina and Colombia's modernization of copyright framework

Both Argentina and Colombia have been actively working on modernizing their copyright frameworks to adapt to the digital age and provide better protection for digital works, including video games. These updates align with international standards and could have a positive impact on the video game industry. Colombia in particular has introduced provisions on technological protection measures and the scope of the author and related patrimonial rights concerning digital rights.

To unlock the Dominican Republic's video game sector potential and position the country as a regional and global hub for video game development, a comprehensive and strategic framework is essential. This framework should encompass a range of targeted initiatives and policies aimed at fostering the development and prosperity of the sector. Here is a summary of these key initiatives:

Tax incentives: Implement tax incentives to retain skilled professionals within the Dominican gaming industry, thereby preventing talent drain to other international markets. Take inspiration from countries like Canada and France, which have successfully used tax incentives to attract major game studios and stimulate industry growth.

Internationalization programs for professionals: Establish scholarship programs enabling local game developers and professionals to pursue advanced courses and exchange programs in established game development hubs worldwide, enhancing their skills and expanding international networks.

Business missions for internationalization: Offer subsidies for local game development companies to participate in major international gaming events, fostering networking, partnerships, and knowledge-sharing with global industry leaders.

Game jams, regional business events, and international business events: Promote the organization of game jams, regional business events, and international business events to highlight the Dominican Republic's potential as a game development hub and facilitate networking and collaboration.

Permanent and international industry forum: Create a consistent platform for collaboration and communication between government bodies, universities, and industry players to drive policy discussions and identify challenges, extending its scope to include international representatives.

Educational game adoption: Collaborate with educational institutions to integrate educational games developed by local studios into the national curriculum, promoting learning through gamification and supporting local game developers.

Cross-border co-production opportunities: Facilitate connections between Dominican game studios and potential co-production partners in Central America, the Caribbean, and other international regions to expand the industry's reach and foster collaborative projects.

Establishment of physical hubs and support for playtesting labs: Create well-equipped physical hubs in key development centers, providing a conducive work environment and resources for game developers. Support the establishment of playtesting labs to gather feedback and refine games.

Public fund for prototypes, full game development, and research and development:

Allocate public funds for video game prototypes, complete game development, and research and development, driving innovation and technological advancements within the industry.

Sectoral mapping and surveys: Conduct regular surveys and sectoral mapping of local game development companies to gain insights into business models, industry trends, and

growth opportunities.

Subsidized loan lines: Facilitate access to subsidized loans for financing projects and companies within the Dominican game development sector, providing crucial financial support.

Internship and training programs: Offer funding for internship programs to allow studios to hire and train emerging professionals, thereby contributing to skills development.

Entrepreneur qualification programs: Support programs that offer free courses to qualify entrepreneurs to establish and operate successful game studios in the Dominican Republic.

Free beginner and advanced technical courses: Provide funding for beginner and advanced technical courses, equipping aspiring game developers with the skills needed to thrive in the industry.

By strategically implementing these initiatives, the Dominican Republic can cultivate a thriving video game industry, attracting talent, investments, and international recognition while contributing to economic growth and innovation in the country.

Annex I

Sample of the broad interview questions

- 1. Have you completed any congress, technical course, or degree related to video game development, interactive simulations, or related areas? If yes, please indicate the corresponding institutions.
- 2. When did you start developing video games?
- 3. How many video games have you developed and in what formats?
- 4. Are you part of a company dedicated to video game development, or do you engage in these activities independently? Please confirm if you are aware of whether such a company, if applicable, is duly incorporated in the Dominican Republic and registered with the DGII.
- 5. Do you create video games that are your own original work, or are you hired by a third party to develop a video game based on their chosen characteristics?
- 6. Do you commercialize the video games you have developed through mobile phones, on digital distribution platforms such as Steam, Apple, Google, or other platforms such as arcades or consoles? If you commercialize your video games, do you sell them directly to consumers, or to intermediaries such as publishers or game studios?
- 7. If you commercialize the video games you develop, please indicate, based on your experience, the most sustainable business model: (i) free model: revenue is generated through in-game advertising; (ii) freemium model: revenue is generated through microtransactions that consumers can make; (iii) subscription model: consumers make recurring payments; (iv) payment model: consumers pay once to download the video game; or (v) paymium model: consumers pay to download the video game and can also make microtransactions.
- 8. Are you aware of the existence of any publisher companies in the Dominican Republic, i.e., companies dedicated to tasks related to the release of video games, marketing, and public relations for the promotion of such video games?
- 9. Do you usually do business with publishers, in which they take on the distribution rights of the game and finance the development of the video game?
- 10. Do you typically use the first-access-selling (early-acess) feature for the video games you develop, through which users agree to purchase the game you are developing to participate in that phase, as well as to acquire it at a lower price once the definitive version is available?
- 11. Do you typically handle all the tasks assigned to the game designer, developer, and artist? If not, do you usually seek assistance from third parties to help you with these tasks?
- 12. Are you aware of any entity that groups all video game studios in the Dominican Republic?
- 13. Apart from video game development, do you engage in the creation of applications, computer systems, or websites?
- 14. Have you been able to access any type of financing for the development of your video games from the Dominican government or any international entity? Have you been able

to participate in any competitions organized by the Dominican government to obtain a grant, subsidy, or tax reduction?

- 15. Have you participated in events or exhibitions organized by the Dominican government in the Dominican Republic related to the promotion of local video games?
- 16. Are you aware of any technical capacity related to video game development and production that is currently not being offered as part of the technical or specialized programs in the Dominican Republic?
- 17. What barriers have you identified during the development, production, and launch of a video game?
- 18. What factors have positively and negatively influenced your experience in video game development?
- 19. Have you protected your copyright or industrial property rights for any element of a video game developed by you?
- 20. What barriers have you identified when seeking protection for an element of a video game?

Annex II

List of interviewees

- 1. Alán Franco
- 2. Danny Peña
- 3. Dianna Lora
- 4. Elaine Gómez
- 5. Enmanuel López
- 6. Fidel Soto
- 7. Francisco Custodio
- 8. Frandy Jimenez
- 9. Frederick Ventura
- 10. Héctor Hungria
- 11. Jean Sena
- 12. Joel Peña
- 13. Leorian Ricardo
- 14. Manuel Custodio
- 15. Marco Marmolejos
- 16. Moisés Peláez
- 17. Oswald Moreno
- 18. Reynardo Pérez
- 19. Riana Peña
- 20. Walter García
- 21. Wellington Hiciano Morales
- 22. William Hiciano Morales

Annex III

Survey questions

Q1. Do you develop digital video games?

- Yes, either as a main or secondary activity.
- No, I work in support activities for game development or other industry-related activities.

Q2. Do you develop video games independently, or are you part of a company engaged in the aforementioned activity? If you are part of a company, please provide its corporate name.

- Independently.
- I belong to a company engaged in video game development.
 Corporate name:

II. About the business

Q3. In which category do you belong?

- Formalized business entity (incorporated with the Chamber of Commerce and Production and registered with the General Directorate of Internal Taxes). [jump to session III]
- Independent professional. [jump to session IV]
- Non-formalized business entity (not incorporated). [jump to session III]

III. Information (Formalized and Non-formalized business)

Q.4 The main location of your company/game studio is:

- Telecommuting from home.
- Own office.
- University.
- Other Specify: ______.

Q.5 Please provide the following information:

-	Corporate name of the company:
_	Website:
	Contact Email:
	Instagram:
	Address:
	Year of foundation and/or start of activities:
	Main digital games in your portfolio (maximum 5 video games):
_	Were you subcontracted for the development of these video games? Specify your
	contribution:
_	Are you affiliated with any association? Which one?

Q.6 What activities does your company perform? You can choose any applicable options.

- Digital video game development.
- Sound.
- Localization.
- Monetization.

- Publishing.
- Distribution.
- Retail sales.
- Software development and information technology services.
- Digital content development.
- Animation.
- Film / TV.
- Research.
- Consulting.
- Business training.
- Educational services.
- Advertising and promotion.
- Other cultural and creative activities. Specify: ______
- Other digital and technological activities. Specify: ______

Q.7 What are the sources of income for your company regarding video game development?

- Sales.
- In-game sales (microtransactions).
- NFTs or non-fungible tokens.
- Commissions in the game market.
- Advertising/Sponsorship.
- Subscription.
- Crowdfunding presale.
- Sale of physical products.
- Licenses.
- User profile (aggregated data).
- Other. Specify: ______.

Q.8 Which of these financing sources has your company received or is currently receiving?

- Founders, family, friends, and other acquaintances.
- Funds provided by the State for video game development.
- Grants. Specify: ______.
- National accelerator/incubator.
- International accelerator/incubator.
- Loans.
- Crowdfunding or virtual crowdfunding.
- Angel investors.
- Venture capital.
- National publisher.
- International publisher.
- No private source.
- Other private sources. Specify:

Q.9 What were your monthly revenues in 2022 (approximately)?

- RD\$10,000.00 to RD\$20,000.00.
- RD\$30,000.00 to RD\$50,000.00.
- RD\$50,000.00 to RD\$80,000.00.
- RD\$80,000.00 to RD\$100,000.00.
- More than RD\$200,000.00.
- Other. Specify: ______

Q.10 Regarding the internationalization of your company or business, select the applicable options:

- Has participated in international video game promotion events.
- Has participated in international trade missions.

- Has participated as an exhibitor or speaker in events.
- Has developed video games in another language.
- Has bilingual or multilingual staff on its team.
- Has customers in other countries (players B2C).
- Has customers in other countries (companies B2B).
- Has a digital presence in other languages (website, application, social media profiles, newsletters, etc.).
- Has promotional material in other languages (brochures, presentations, folders, reels, press releases, etc.).
- Has contracted services from other countries.
- Has hired a fixed-term international commercial representative/agent.
- Has hired international public relations (PR) with fixed-term contracts.
- Has a formalized company in other countries.
- Has commercial offices in other countries.
- Has production units in other countries.
- Other. Specify: ______.
- Not involved with the international market.

Q.11 What is the number of partners/employees/subcontractors in the business?			
Please complete according to the area and Area	Partners	Employees	Subcontractors
Administrative and Financial			
Art and Design			
Programming and Project Management			
Marketing and Sales			
Other areas			

Q.12 Does	tne comp	any nave ti	raining pr	ograms <i>:</i>

-	Yes. Specify:
-	No. What is the reason? Specify:

Q.12.1 Select any applicable options.

Examples: characters created for games or other media.

- I develop my own IP.
- I license my IP to third parties.
- I license IP from other companies.
- I participate in transmedia projects (programs within games, movie characters in games, etc.).
- I engage in co-development with IP from the audiovisual industry (Animation TV, Cable TV, Streaming).
- I engage in co-development with IP from the audiovisual industry (Live Action TV, Cable TV, Streaming).
- $\,-\,$ $\,$ I engage in co-development with IP from the radio/podcasts industry.
- Co-development with other industries (please specify).
- I participate in metaverse projects (please specify).
- I protect my IP. Specify: ______.
- I do not protect my IP.
- Other. Specify: ______
- Not applicable (N/A).
- I am familiar with and have contracts with employees or partners to protect IP.
- I have some knowledge and have some contracts with collaborators or partners to protect IP.
- I am not familiar with and do not have contracts with employees or partners to protect IP.

Q.13 Would the company like to be part of a talent matching event to meet new local industry professionals?

- Yes
- No

IV. Information (Individual professionals)

Q.14 The main location of your company/game studio is:

- Telecommuting from home.
- Own office.
- University.
- Other Specify: _____

Q.15 Please provide the following information:

-	Corporate name of the company:
	Website:
-	Contact Email:
	Instagram:
-	Address:
-	Year of foundation and/or start of activities:
-	Main digital games in your portfolio (maximum 5 video games):
-	Were you subcontracted for the development of these video games? Specify your
	contribution:
-	Are you affiliated with any association? Which one?

Q.16 About you (select all the aplicable)

- Hombre
- Mujer
- No binario
- Blanco (a)
- Negro/Marrón
- Amarillo(a)
- Indígenas
- Origen español o latino
- Norteamericano
- Persona Trans
- Extranjero(a) P
- ersona con discapacidad
- Tiene más de 50 años
- Refugiado
- Persona LGTBQI+

Q.17 What activities do you do? You can choose any options that apply.

- Digital video game development
- Sound
- Location
- Monetization
- Publication
- Distribution
- retail
- Software development and information technology services
- Digital content development

- Animation
- Cinema/TV
- Investigation
- Consultancy
- Business training
- Educational services
- Advertising and dissemination
- Services Outsourcing.
- Other cultural and creative activities.
- Other digital and technological activities.

Q.18 Have you ever produced a complete, proprietary game? If so, how many?

Q.19 If you've created a complete, proprietary game, what are the revenue streams?

- Sales.
- In-game sales (microtransactions).
- NFTs or non-fungible tokens.
- Commissions in the game market.
- Advertising/Sponsorship.
- Subscription.
- Crowdfunding presale.
- Sale of physical products.
- Licenses.
- User profile (aggregated data).
- Other. Specify: _______.

Q.20 What was the activity in which you had your largest source of income in 2022? Select only one:

- Digital video game development
- Sound
- Location
- Monetization
- Publication
- Distribution
- retail
- Software development and information technology services
- Digital content development
- Animation
- Cinema/TV
- Investigation
- Consultancy
- Business training
- Educational services
- Advertising and dissemination
- Services Outsourcing.
- Other cultural and creative activities.
- Other digital and technological activities.

Q.21 Regarding the internationalization of your work, select the applicable options:

- Has participated in international video game promotion events.
- Has participated in international trade missions.
- Has participated as an exhibitor or speaker in events.
- Has developed video games in another language.
- Has bilingual or multilingual staff on its team.Has customers in other countries (players B2C).
- Has customers in other countries (companies B2B).
- Has a digital presence in other languages (website, application, social media profiles, newsletters, etc.).

- Has promotional material in other languages (brochures, presentations, folders, reels, press releases, etc.).
- Has contracted services from other countries.
- Has hired a fixed-term international commercial representative/agent.
- Has hired international public relations (PR) with fixed-term contracts.
- Has a formalized company in other countries.
- Has commercial offices in other countries.
- Has production units in other countries.
- Other. Specify:
- Not involved with the international market.

V. Intellectual Property

Q.22 Select any options that apply Examples: characters created for games or other media

- I develop my own IP
- I license my IP to third parties
- License IP from other companies
- I participate in transmedia projects (programs within games, movie characters in games, etc.)
- I do co-development with IP from the audiovisual industry (Animation TV, Cable TV, Streaming)
- I do co-development with IP from the audiovisual industry (Live Action TV, Cable TV, Streaming)
- I do co-development with IP from the Radio/Podcast industry
- Co-development with other industries
- I participate in metaverse projects
- I protect my IP
- I do not protect my IP
- Not Applicable (N/A)

Q.23 About intellectual property:

- I know and have contracts with employees or partners to protect IP
- I superficially know and have some contracts with collaborators or partners to protect IP
- I do not know and do not have contracts with employees or partners to protect IP
- Other:_____

Q.24 What are they protecting under intellectual property?

- Trademarks (Denominative, figurative, mixed, three-dimensional, sound, olfactory)
- Commercial Name (including sign or emblem)
- Business slogans
- Characters
- Source code
- Musical piece
- Stories (Arguments)
- Choreographic Works
- I do not protect my IP

VI. Challenges

Q.25 What are the main challenges in the video game sector? For example, taxes and internationalization of foreign resources, importation of development kits, the best type of business structure, implications of hiring methods, etc.

Q.26 What are the areas of expertise that you develop? What areas do you consider to be deficient or in need of development?

Q.27 How do you see the training of professionals? Do you believe that there is a need for courses? In what areas?

Evaluation of actions for the development of the Dominicanvideo game industry

Please select the category based on the importance that you understand.

Effectiveness	Impact that this action will have on the development of the digital gaming sector in the Dominican Republic.	
Viability	How feasible do you think this action is to implement in the current context of the digital gaming sector in the Dominican Republic?	
Priority	How urgent is the implementation of this action compared to others?	

- Support for the organization of business events in the Dominican Republic with international visibility to attract companies and investors from Central America and the Caribbean and build the country's image as a global center for digital game development.
- Support for the organization of business events in the Dominican Republic with regional visibility to attract companies and investors from Central America and the Caribbean and build the country's image as a regional center for digital game development.
- Internationalization programs for professionals with scholarships, exchange programs, and courses at foreign institutions.
- Conducting Trade Missions for the internationalization of companies through subsidies for international events (GDC, Gamescom, Pocket Gamer, XDS, Tokyo Game Show, etc.).
- Support for events with conferences by international guests aimed at training companies and professionals in the digital gaming sector.
- Organization of fairs and events targeting the gaming audience in the Dominican Republic, featuring game exhibitions, E-sport championships, and initiatives to expand gamer culture in the country.
- Establish a permanent forum for coordination among various stakeholders in the video game industry, institutions, universities, local and federal government for the development of the sector in the Dominican Republic.
- Promote a permanent forum to connect representatives of the video game industry in the Dominican Republic with international partners.
- Organize networking events for professionals and companies in the video game industry in the Dominican Republic to collaborate on national services and subcontracting.
- Organize networking events for professionals and companies in the video game industry in the Dominican Republic to collaborate on international services and subcontracting.

- Promote public procurement of educational games and game-based solutions developed by Dominican studios for use in the local education system.
- Promote events and initiatives to meet existing demands from public authorities and civil society through games (industry 4.0, health, education, training, etc.).
- Support networking events in Santo Domingo and other locations focused on sharing information, resources, and opportunities within the Dominican community.
- Promote actions that connect Dominican game studios with co-production opportunities with studios in other Central American and Caribbean countries.
- Promote actions that connect Dominican game studios with other international coproduction opportunities (North America, Latin America, Europe, Asia, etc.).
- Establishment of well-structured physical hubs in major development centers, promoting work environments, connections, and actions aligned with the gaming industry.
- Promote fiscal incentives and benefits to retain professionals in the video game industry, preventing their migration to other regional or international markets.
- Public fund for the development of digital game prototypes.
- Public fund for the full development of games.
- Public fund for applied research and technology development in the digital game sector.
- Public fund to sponsor the production of events in the digital game sector in the Dominican Republic.
- Support the creation of playtesting labs.
- Support the conducting of surveys and sector mapping of companies, providing information on business models, maturity levels, and industry practices.
- Promote subsidized loan programs to finance projects and companies in the game development sector in the Dominican Republic.
- Enhance the competitiveness of Dominican game studios through financing internship programs and professional training within companies.
- Financing free courses on BASIC technical skills to work in the digital game sector.
- Financing free courses on ADVANCED technical skills to work in the digital game sector.
- Financing free courses to qualify entrepreneurs for the competitiveness of game studios in the Dominican Republic.
- Implement an incubation/acceleration program for game studios in the Dominican Republic.
- Promote the organization of game jams.
- Support the implementation of new technical and higher education courses aligned with market practices and industry needs in the game development sector.
- Support research and extension programs in the Dominican Republic addressing activities in the digital game sector.

- Foster scientific publications, research, and innovative production through specific scholarships and awards.
- Promote events and actions to connect researchers, graduate programs, and research laboratories with game development studios in the Dominican Republic.
- Support the organization of symposiums, conferences, and experience-sharing events that promote the intersection between academia and the video game industry.
- Conduct periodic mappings of information on professionals working in the game industry in the Dominican Republic.
- Establish a centralized and shared ecosystem action calendar with stakeholders in the sector.
- Promote actions to increase inclusion, accessibility, and diversity (gender, ethnicity, origin, etc.) in the game sector.
- Promote mentoring and specialized consulting programs for game studios.
- Financing for reports and business intelligence platforms (BI, marketing, analytics).

Annex IV

List of survey respondents

- 1. Adrian Nande Suarez nandeadrian@gmail.com
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Annex V

Video games developed by Dominicans

1. Americas Tower Simulator

developed by William and Wellington Morales.

Available on Steam

https://store.steampowered.com/app/2057500/Americas_Tower_Simulator/

2. Animal.id

developed by Omar Antonio Díaz. Available on Google Play

3.

4. Antrio

developed by Marco Marmolejos.

Available on Steam

https://store.steampowered.com/app/2012950/Antrio/

5 Astra

developed by Moisés Peláez, Enmanuel Toribio and Juan Miguel Alba. Available on Google Play

https://play.google.com/store/apps/details?id=com.tbdsoft.asteroiding

6. Beat Me

developed by Frederick Ventura.

Available on Google Play

 $https://play.google.com/store/apps/details?id=com.DoGame.Beatme\&hl=es_AR$

7. Black Helmet

developed by Héctor Hungria.

Will be available on Steam

https://www.caribeatomic.com/black-helmet?fbclid=lwAR1YS_nTQWLHvGCqNT9EwJY6-Ke9DMorkDpqa5JJliUD4b64C3mrnl6M3ZQ

8. ColorFly

developed by Haniel Obed Báez and GM2.

Available on Google Play

https://play.google.com/store/apps/details?id=com.tana.pinchfly

9. Creativerse

developed by Raúl Roa.

Available on Steam

https://store.steampowered.com/app/280790/

Creativerse/?fbclid=IwAR3vkX2klcMtspiaEWGTbZukf6u5gQZq_aR--

A9815LoVAyIw75o1ZfNYk8

10. Cute Ninja Remaster (Beta)

developed by Manuel Custodio.

11. Dominican Power

developed by Frederick Ventura.

Available on Google Play

 $https://play.google.com/store/apps/details?id=prueba1.SDS\&hl=es_AR$

12. Endless Memories

developed by Robert Runfino Lembert.

Available on Nintendo Switch

https://www.nintendo.com/es-co/store/products/endless-memories-switch/

and Steam https://steamcommunity.com/app/1155700

13. Factor D

developed by José Omar Carrizo.

Demo available on Steam

https://store.steampowered.com/app/1887360/FACTOR_D/?fbclid=IwAR1JMv6Q-

jPdRmVHsJMzDbKlwk-9S0eVvot9-lw8X5pjter5tldCzvvMaOY

14. Findo Laberinto

developed by Frederick Ventura.

Available on Google Play.

https://play.google.com/store/apps/details?id=com.DefaultCompany.Findo&hl=es_AR

15. Flags Quiz Master

developed by Omar Antonio Díaz.

Available on Google Play

https://play.google.com/store/apps/details?id=com.visionarys.flagsquiz.app

16. Flapped Dino

developed by Omar Antonio Díaz.

Available on Google Play.

https://play.google.com/store/apps/details?id=com.visionarysgames.fappeddinoapp

17. Fly Away

developed by Angélica Lora.

Available on Google Play.

https://play.google.com/store/apps/details?id=com. Angelica Lora.

FlyAway&fbclid=IwAR0K7ZkBuZ14-qgxrX5d2960b0Uw-

uGaOe3cmzSfaukkCUNRf6B5IGSMtuk

18. Hellish Flash

developed by Eliezer Terrero.

Avaiable on Itch.io for Hellish Flash 2.23

https://eliezerytdev.itch.io/hellish-flash

19. Home Run Demon

developed by Fidel Soto.

20. Kulebra and the Souls of Limbo

developed by Galla Studio.

Available on Steam

https://store.steampowered.com/app/1678600/Kulebra_and_the_Souls_of_Limbo__

Prologue/

and on Itch.io https://gallagames.itch.io/kulebra-and-the-souls-of-limbo-demo

21. La Trinitaria

developed by ITLA and coordinated by Marco Marmolejos.

Educational video game.

22. Maddy's Adventures

developed by Eliezer Terrero.

Available on Google Play

https://play.google.com/store/apps/details?id=com.EliezerYT.

MaddyAdventure&fbclid=IwAR2wjrvLs6b783gqFdfQGirKjg9dIrgTSprzwUHJB6Nd_vAce6bQETS-ssU and Itch.io https://eliezerytdev.itch.io/maddys-adventures?fbclid=Iw

AR0pRleAEE1 ey OKWwWP7y8QjKgl53pUHFotJgG7pYaavYr4aXu0mOdN9TyMax and the standard of the stan

23. Marker Dots

developed by Román Jaquez.

Available on App Store

https://apps.apple.com/us/app/marker-dots/id1662041315

24. Miyuki Jump

developed by Flamper DM and Francisco Luffy.

Available on Google Play

https://play.google.com/store/apps/details?id=com.flamperdm.miyukijump

25. Moto Rx

developed by Omar Antonio Díaz.

Available on Google Play

https://play.google.com/store/apps/details?id=com.visionarysgames.

otorxapp

26. NoneLands

developed by Moisés Peláez.

Available on Game Jolt

https://gamejolt.com/games/nonelands/45528?fbclid=IwAR1IYfIY_

 $xmHrcd_8a3XdVP0gSrbyR1kzWHBBw52FTC9EzYnY0rZiRBfalg$

27. Reverse Run

developed by Haniel Obed Báez and GM2.

Available on Google Play

https://play.google.com/store/apps/details?id=com.tana.reverserun

28. Runners Heroes

developed by Enmanuel Lopez and his partner, Federico.

Available on Google Play

https://play.google.com/store/apps/developer?id=Tecreven+Studio&hl=es_AR

29. Skipping Frog

developed by Román Jaquez. Available on App Store

https://apps.apple.com/us/app/skipping-frog/id6444859077

30. Star Champion Deluxe

developed by Omar Antonio Díaz.

Available on Google Play

https://play.google.com/store/apps/details?id=com.visionarysgames.starchampion.app

31. Super Boy Lite

developed by Omar Antonio Díaz.

Available on Google Play

https://play.google.com/store/apps/details?id=com.visionarysgames.superboylite

32. Super Boy Maker

developed by Omar Antonio Díaz.

Available on Google Play

https://play.google.com/store/apps/details?id=com.visionarysgames.

superboy&referrer=utm_source%3Dapps.facebook.com%26utm_

campaign%3Dfb4a%26utm_

33. Super Charadas – Adivina la palabra (Charada)

developed by Johan Jiménez. Available on Google Play

https://play.google.com/store/apps/details?id=com. Mangu Games.

SuperCharadas&fbclid=IwAR1XIS_mD0bPsuCS-QqG_8obSILdaA91gPxM6eNRihzsj75qQxJJrIXrDiM

34. Super Jochy

developed by Manuel Custodio.

Available on App Store

https://apps.apple.com/sv/app/super-jochy/id6444662622 and Google Play https://play.google.com/store/apps/details?id=com.CustodioGameStudio. SuperJochy&hl=es_AR

35. Teteo Island

developed by Jhondy Darío.

Available on Itch.io

https://jhondy.itch.io/teteo-island and Google Play https://play.google.com/store/apps/details?id=com.JhondyGames.TeteoIsland

36. The Blunderbuss

developed by Frederick Ventura.

Available on Steam

https://store.steampowered.com/app/1875160/The_Blunderbuss/

37. Viking Adventures

developed by Enmanuel López, and his partner, Federico.

Available on Play Store

 $\label{lem:https://play.google.com/store/apps/details?id=com.tecreven.vikingadventures \& hl = es_AR$

38. Visionarys

developed by Omar Antonio Díaz.

Available on Google Play

https://play.google.com/store/apps/details?id=visionarys.app

39. WallBall

developed by Eliezer Terrero.

Available on Google Play

https://play.google.com/store/apps/details?id=com.EliezerYT.WallBall and Itch.io https://eliezerytdev.itch.io/rolling-ball

40. Wormy

developed by Moisés Peláez, Enmanuel Toribio and Juan Miguel Alba.

Available on Google Play

https://play.google.com/store/apps/details?id=com.tbdgames.wormy

41. Yara-ri

developed by Marco Marmolejos.

Educational video for how to use the DGII platform.

42. Yun Online

developed by Frederick Ventura.

List of the Dominican video games provided by the Dominican Video Game Developers Community (CDDV):

1. Aplasta Colores

developed by Jose Javier Rosario.

2. Brick Evolution

developed by 5DayStudio. Available on Google Play.

3. Charlie Charlie

developed by Enmanuel Toribio. Available on Google Play.

4. Demo Supligen

developed by Oswald Moreno and Manuel Salcedo. Available on Google Play.

5 Durim

developed by Moisés Peláez. Available on Google Play.

6. Happy Bunny

developed by Raydelto Hernández.

7. HipoFly

developed by Gp89Developers. Available on Google Play.

8. Jumpin

developed by AnimatykStudio. Available on Google Play.

9. Jumping Bunny

developed by Raydelto Hernández.

10. Krispy Kreme RD

developed by Raydelto Hernández. Available on Google Play.

11. Miyuki Jump

developed by Alpha Eve. Available on Google Play.

12. Móntate en una Máquina

developed by Oswald Moreno and Manuel Salcedo. Available on Google Play.

13. Numeracy

developed by Jose Javier Rosario. Available on Google Play.

14. Save the Balloons

developed by Raydelto Hernández.

15. Speed Legacy

developed by Gp89Developers. Available on Google Play and Amazon.

16. Start Bolita

developed by 5DayStudio. Available on Steam.

17. Swipe Ninja

developed by Oswald Moreno, Manuel Salcedo and Argenis Sánchez. Available on Google Play.

18. Truck Racing Underground

developed by Oswald Moreno and Manuel Salcedo. Available on Google Play.

19. Tube Fairies

developed by Erick Tamayo. Available on Google Play.

20. War of Imperium

developed by Oswald Moreno and Manuel Salcedo. Available on Google Play.

Annex VI

Survey results

The survey targeted both companies and individuals involved in game development, either as a primary or secondary activity, as well as those engaged in support or other industry-related roles. Out of the 29 respondents, 18 individuals (representing 62% of the total) are directly involved in game development. They hold various positions, ranging from primary roles in game creation and production to secondary functions.

The remaining 11 respondents (making up 38% of the total) are engaged in activities that support game development or are involved in other industry-related activities. While their roles may not be directly related to the game creation process, their contributions significantly impact the industry's operation and progress.

We divided the respondents in the survey (ANNEX III) into two paths. The formalized business and non-formalized business entities responded to session III (Q.4 to Q.13) and the independent professionals responded to session IV (Q.14 to Q.21). All respondents were asked to respond to session V (Intellectual Property) and VI (Challenges).

Of the 29 respondents, we have 7 developers working for a company, 19 working independently and 3 running their own game development companies, two of them formally registered with the Mercantile Registry Office. Thus, a quarter of the respondent developers work as employees of companies and the rest work independently.

I. Companies

Business activity (N=3)



This graph represents the responses of the three formalized companies responding to this survey, regarding other cultural and creative activities developed by them. All respondents in this review are engaged in this digital game development activity. The other categories of cultural and creative activities present in the graph are the following, each with an active company, they are: software development and technology services information, app development in augmented reality, animation, cinema/TV, educational services, publication and development of digital content.

One company declared that it engaged in other cultural and creative activities that were not specified in the previous categories but did not identify which activity.

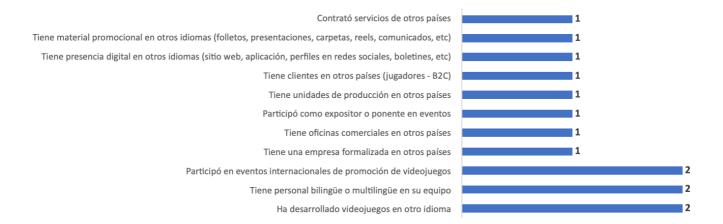
Sources of revenue and financing (N=3)

Of the three respondents to the questions concerning the sale of games, one mentioned sponsorship, another microtransactions, and another sales.

Of the three respondents to the questions concerning financing, each reported that their capital or resources came from people close to them, and one mentioned having received government financial support to support their project's development.

Concerning revenue in the previous year (2022), two of the respondents chose not to answer this question, and another declared that they were not operating in that period.

Internationalization (N=3)

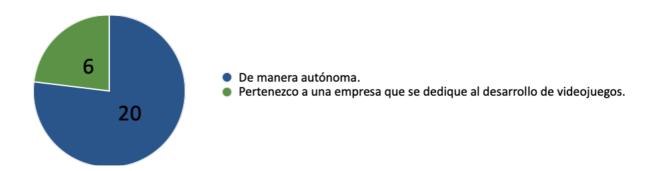


The games industry is highly internationalized, so even micro and small companies can (and need to) operate internationally.

Two of the formalized companies responding to the survey (n=3) declared participating in international events, having a bilingual or multilingual person on the team, and having already developed games in other languages.

Other aspects related to the international presence and the use of different languages were mentioned by one of the three respondents were contracted. These were "Services from other countries participated as an exhibitor or speaker at events", "You have promotional material in other languages (brochures, presentations, carpets, reels, notices, etc.)", "Has commercial offices in other countries", "Have a digital presence in other languages (website, application, profiles on social networks, newsletters, etc.)", and "You have a company formalized in different countries and have production units in other countries."

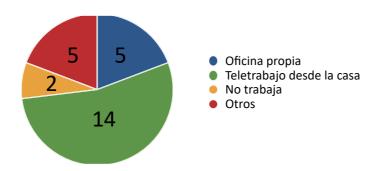
II. Individual developers



Out of the 26 respondents who are developers (n=26), 20 respondents (77% of the total) are involved in game development independently, as individual developers or in small independent teams. Only 6 respondents (23% of the total) are part of a company dedicated to game development.

This distribution points to an industry that still has few established companies. Therefore, the lack of formal jobs in the area may mean that those interested working in it may end up choosing to be partners.

Workplace (N=26)



Of the 26 respondents, 14 (54% of the total) work remotely from their homes, using technology to connect and collaborate with their respective occupations; 5 respondents (19% of the total) have their own office as their workplace; 5 respondents (19% of the total) reported having occupational situations not specified in the previous categories; and 2 respondents (8% of the total) are not currently working, possibly by choice or because they are looking for a job.

This distribution indicates a significant tendency among the respondents to work remotely, possibly driven by changes in the work landscape in response to events such as the COVID-19 pandemic. The flexibility of telecommuting can offer advantages in terms of comfort, productivity, and work-life balance for many professionals.

In addition, telecommuting may be related to the non-formalized nature and small size of companies and the possibility of working for companies in other countries.

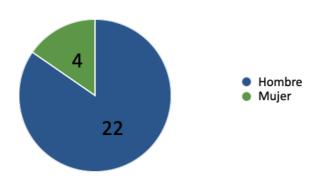
Year of start of activities (N=26)



The findings indicate that most respondents (42%) have less than two years of experience in game development, which may show the recent entry of new professionals in the sector. It suggests that this is a novel and nascent industry, given that most of its workers have been in the market for a short time.

In the sample, 2 respondents (8% of the total) have more than 15 years of experience, 1 respondent (4% of the total) 10–14 years, 7 respondents (27% of the total) 5–9 years, 5 individuals (19% of the total) 2–4 years, and 11 respondents (42% of the total) have been working for less than two years.

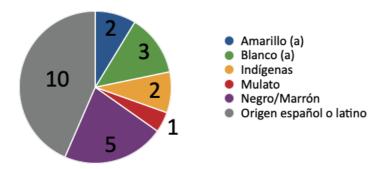
Gender distribution (N=26)



The findings indicate that, of these respondents involved in this specific context of games, 85% are men (22 respondents), with women representing a smaller number, at only 15% (4 women).

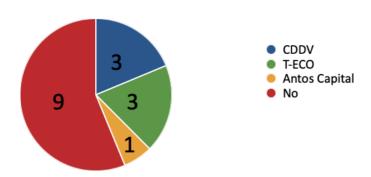
This distribution reflects the historical profile of the gaming and technology industry, which has long been predominantly male-dominated. However, it is essential to note that the proportion of women in the games industry has increased over the years as more efforts are made to promote inclusion and gender diversity

Diversity (N=24)



The findings indicate a diversity of ethnicities and demographic characteristics represented in a group of 24 respondents (n=24) with three of the developers not responding to this enquiry. The category "origins Español o Latino" is the most prevalent, with 42%, followed by the categories "indigenous" and "Blanco (a)" with 13% and 8%, respectively. Other categories, such as "Amarillo (a)," "mulatto" and "negro/marrón", are less represented, with only 1 or 2 people in each.

Affiliation (N=16)



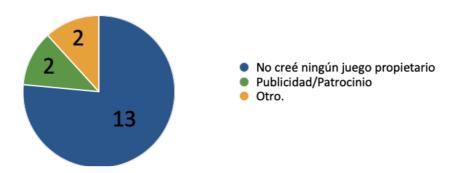
Most of the developers are not affiliated with any organization. However, those who are highlighted CDDV and T-ECO as their main affiliations (three each). One respondent mentioned affiliation with Antos Capital.

Activities (N=23)



The most frequently undertaken activities are within "Game development" (65%) or "Digital content" (48%), in first and second place, respectively, followed by "Other digital and technological activities" and "Other cultural and creative activities". Audiovisual animations stand out (43%), but Cinema and TV are also carried out activities (22%).

Revenue sources of individual professionals' proprietary games (N=17)



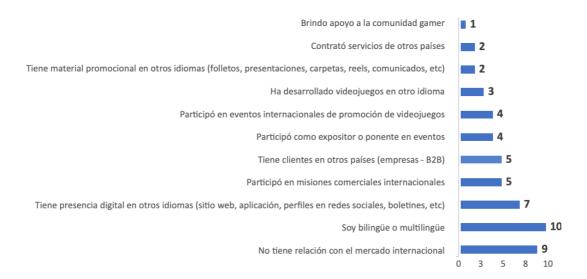
Regarding complete and proprietary games, of the 17 respondents, only 2 said they had done so, and the revenue model was advertising/sponsorship.

Revenue sources of individual professionals (N=20)



Although they developed digital games, this is not the developers' most significant source of income, with 30% identifying other technological or digital activities as a source of income. Three activity groups stood out as the activity that provided the most revenue: development for digital content, development of games, and works for TV and cinema, with 15% of responses each.

Internationalization of individual professionals (N=26)

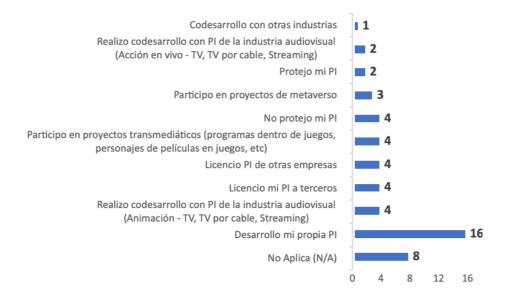


Although it is a nascent industry, an international aspect is present: 38% have bilingual or multilingual developers, 27% have a digital presence in other languages, 19% have participated in international missions, and 19% have clients in other countries, among other features.

Around 35% of the participants stated they had no relationship with the international market.

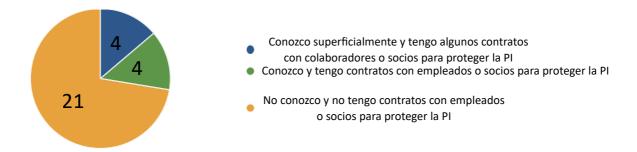
III. Intellectual property

Protection of Intellectual Property (N=29)



Of the 29 respondents, most developers stated that they develop their original IP (55%), but many said that they do not protect it (14%). Some 14% license IP to third parties and 14% license IP from other companies. Of the respondents, 28% reported that the question does not apply.

Knowledge about intellectual property (N=29)



IP protection capacity is low: 72% reported that they do not have enough knowledge to protect developed IP, 14% believe that they have knowledge and have contracts to protect IP, and 14% consider that they have superficial knowledge.

Types of intellectual property (N=29)



Most IP is in the form of trademarks (38%), characters (28%), trade names (24%), and source code (21%) that are produced by developers, with again a significant portion (38%) stating that they do not protect IPs.

IV. Challenges

The challenges for developers include financial, educational, legal, structural, and market aspects. Challenges are highlighted regarding institutional support, incentives, and agreements to boost the gaming industry in the country and allow sustainable growth in the sector.

- Funding and resources: One of the challenges is the lack of funding for digital game development projects. The industry demands considerable financial resources to create high-quality products, but financing and investment access are complex. Respondents refer to the need to carry out crowdfunding campaigns for development.
- The importation of development kits, equipment, and technologies for creating digital games was also pointed out. Import restrictions and red tape (such as the fees charged by Steam and the difficulty of importing devkits), taxes, and the internalization of foreign resources were mentioned.
- Education and training: The lack of professional training specialized in developing digital games is another challenge. According to the respondents, there are no specific courses in the area, meaning there is little skilled labor. The lack of management, business, and marketing training courses was also mentioned.
- Legislation and government support: Laws and regulations specific to the gaming industry
 were mentioned as a factor (with one respondent suggesting the need for legislation
 similar to that for cinema). The absence of legislation that is more comprehensive
 and adapted to the reality of games can make it difficult for the sector to grow and
 protect developers.
- There is a perception that there is still no interest in the development of the industry on the part of government bodies. Creating policies and programs that offer tax benefits, subsidized financing, and other forms of stimulus to the sector could boost innovation and sustainable growth.
- Market and distribution: Respondents pointed out that they do not have access to the market or ways to stand out in it. They also reported that no local publishers or distributors can help with the process.

Areas of competence

- Concept artist, game software development, animation
- Character creation, modeling, animations, and programming
- Development of educational and training simulators
- Design, conceptualization, and 2D and 3D art
- Game design, 3D modeling, animation, and environment
- General game development, including areas such as programming, VFX, and optimization
- Game production
- Development in Godot and Unity
- 3D modeling, 3D animation, programming with C# and VFX
- Digital content creation

Areas considered deficient or in need of development.

- Schedule
- Marketing / Digital marketing
- Management
- Level design
- Games production
- Sound / Sound design area
- Efficiency in programming areas

- Curriculum offer for better education in the country
- Community support and improvements for players
- Artistic area (specifically design and animation)

Evaluation of professional training

- The general perception is that the training of professionals in the area of games is
 deficient and needs improvement. Some interviewees mentioned that the subjects
 offered in existing courses are not adequate and do not address relevant topics for game
 development. The importance of more specialized and complete training is highlighted.
- Need for courses and specializations: There is general agreement that courses and educational offerings are needed to improve knowledge and entrepreneurship in games.
 The suggestion of specializations was mentioned by some interviewees, with a focus on practical and complete projects for game development.
- Areas of training needs: There is a need for more professional training in development areas such as programming, 3D modeling, animation, and software. Other areas mentioned include game art, special effects, game marketing, production, and team management.
- Lack of adequate educational offer: Some interviewees mentioned inadequate course offerings, primarily focusing on programming fundamentals and pedagogy in existing courses.
- Importance of technical training: The importance of technical courses for specific areas, such as 3D modeling, animation, and programming with C#, among others, was highlighted.
- Need for educational institutions: The lack of educational institutions focused on offering beginner courses in game development to attract more people, especially those with limited resources, was mentioned.
- Improve games-related areas: There is a consensus that offering courses in all gamerelated areas is necessary to enhance several aspects of the sector.

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