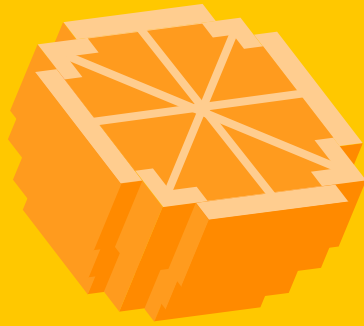


VIDEO GAMES MORE THAN JUST A GAME

The Unknown
Successes of Latin
American and
Caribbean Studios



Video games is the
Orange Economy's
fastest-growing sector
in the world and in
Latin America and
the Caribbean.

In Video Games: More than Just a Game, you will get to know 50 Latin American and Caribbean studios, their trends, and their successes with over 350 video games. This report will help you understand the industry's potential as a business, the new role of esports, the impact of video games on women and on the skills for the future. You will be able to see funding schemes, the role of governments in making their industries known on the international market, and the importance of forums for exchanging knowledge. The video games industry has not only succeeded in incorporating cutting-edge technology into the entertainment sector but also into other more traditional sectors such as education and health. **Video games are here to stay** because they earn more than the motion industry and the highest-grossing movies. We invite you to be part of the most important game in history.



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Introduction



Video games have become the leaders in sales and growth for the entire entertainment industry. Video game sales grew by 56%¹ over the past five years and for 2018, they are projected to value US\$137 billion dollars², triple the projected earnings for the motion picture industry³. In 2017, video game earnings were six times greater than those reported for the music industry⁴, and their annual growth rate was double that of the automobile industry.⁵

In Latin America and the Caribbean, there are 397 million gamers and 80% of them are concentrated in Mexico, Brazil, Argentina, Colombia and Venezuela. Our region has experienced the second-fastest ascent in the industry with an annual growth index of 13.5%,⁶ comparable to the growth of data processing services in the US. Latin American talent is closer than ever to forming part of a highly competitive sector where technology links up with art to develop sophisticated games that require high performance, and in many cases, big investment.

The video game industry is no longer limited to only entertainment. It is now expanding to become a tool for education or for increasing sensitivity to social problems. The different game genres, ranging from action, to learning, sports, and many others, unite gamers from around the world and generate millions of dollars. Such is the case in Argentina, with record sales of US\$500 million in 2016.⁷ Today this industry enjoys one of the highest growth rates in the history of entertainment and represents an opportunity to put Latin American talent on the global map. This will not happen, however, unless we develop the business infrastructure and consumer technology necessary to compete in international markets.

The objective of this study, carried out by the IDB, is to promote and give visibility to one of the sectors of the creative economy with the greatest potential, not only for the entertainment and software industries, but also for others such as health and

education. This study will explore how the industry is not only capable of generating wealth, but also of creating more sophisticated jobs as new technologies develop along with the creative sectors. This presentation will highlight the region's 50 most prominent video game studios, as well as the challenges facing the industry in Latin America. This industry has the potential not only to trigger new future jobs for the younger generations that grew up playing, but also to become an instrument for a new type of learning. (See page 07).

- 1 Newzoo. (2018). Newzoo Global Games Market Report 2018. Available at: <https://newzoo.com/insights/trend-reports/newzoo-global-games-marketreport-2018-light-version/>
- 2 Newzoo. (2018). Newzoo Global Games Market Report 2018.
- 3 Statista. (2018). Global Box Office Revenue from 2016 to 2020. Available at: <https://www.statista.com/statistics/259987/global-box-office-revenue/>
- 4 IFPI. (2018). Global Music Report 2018. Available at: <http://www.ifpi.org/news/IFPI-GLOBAL-MUSIC-REPORT-2018>
- 5 D. Leggett. (2018). Global Automotive Market Report. Available at: https://www.just-auto.com/analysis/global-automotive-market-report-q2-2018_id183996.aspx
- 6 Newzoo. (2018). Newzoo Global Games Market Report 2018.
- 7 P. Cerminaro. (2017). Games.ar: la industria de los videojuegos crece en Argentina. Noticias Perfil. Available at: <https://noticias.perfil.com/2017/06/21/games-ar-la-industria-de-los-videojuegos-crece-en-argentina/>

Potential Impacts of Video Games Based on their Design

According to: intensity | content | online/offline | competitive/cooperative



- ▶ Social Skills
- ▶ Motor Skills
- ▶ Digital Skills
- ▶ Curiosity and Creativity
- ▶ Problem Solving
- ▶ Perseverance
- ▶ Executive functions



- ▶ Violence
- ▶ Aggression
- ▶ Addiction
- ▶ Normalization of sexism
- ▶ Social isolation
- ▶ Depression

An Industry
that is Not
a Game



It is the time to do away with preconceived notions, beginning by seeing the video game industry as an opportunity for the growth and the development of the Latin American and Caribbean region. Neither players, businesses, investors, governments nor the public can be indifferent to the socio-cultural phenomenon and economic impact of the video game sector.

The motion picture with the highest gross revenues during its first weekend of release was Avengers: Endgame, with box office receipts of US\$357 million dollars.⁸ What few people know is that the video game Grand Theft Auto V (GTA V) broke this record in one day, grossing US\$800 million dollars.⁹ Furthermore, it is currently estimated that GTA V has reached revenues of US\$6 billion, while Avatar, the highest grossing film ever, has barely surpassed US\$2.7 billion.¹⁰ These figures mean that a successful video game has as much or more earning power than the highest grossing box office hit, not only at the time of its release but also over the life of the product.

Video games reach over 2.3 billion players around the world and some 234 million of these can be found today in Latin America¹¹ Many play to lower stress levels but the motivation to play is a socio-economic phenomenon that appeals to a variety of social strata and age groups, comparable to sports. Sports have managed to re-invent and adapt themselves to new tastes, attracting millions of new consumers, by building larger stadiums, exclusive television channels, and even by overhauling the sports segments of the news. Video games have a similar potential for creating a new culture for how we use and consume video

games. Today they fill giant stadiums, are featured on specialized channels on television and YouTube, and create their own electronic teams of players for esports. It is not difficult to imagine that these new contents and the demand for increasingly more sophisticated games will create a greater demand for software developers, animators, musicians and professional players. These gamers will be the ones to push the boundaries, to transform their passion into a profession.

-
- 8 The Numbers. (2019). Biggest Opening Weekend at the Domestic Box. Available at: <https://www.the-numbers.com/box-office-records/domestic/all-movies/cumulative/all-time>
 - 9 K. Acuña. (2013). Grand Theft Auto V Becomes The Fastest Video Game To Make \$1 Billion. Business Insider. Available at: <https://www.businessinsider.com/gta-v-1-billion-in-three-days-2013-9>
 - 10 The Numbers. (2018). All Time Worldwide Box Office. Available at: <https://www.the-numbers.com/box-office-records/worldwide/all-movies/cumulative/all-time>
 - 11 Newzoo. (2018). Newzoo Global Games Market Report 2018.

Video Game Revenues

The video games sector has the highest profits in the digital industry. This industry presents an opportunity for Latin America.

US\$5 billion

of income generated in Latin America

+13,5%

Annual growth
2017-2018

3,6%

Share of global income

650,580,000

Population

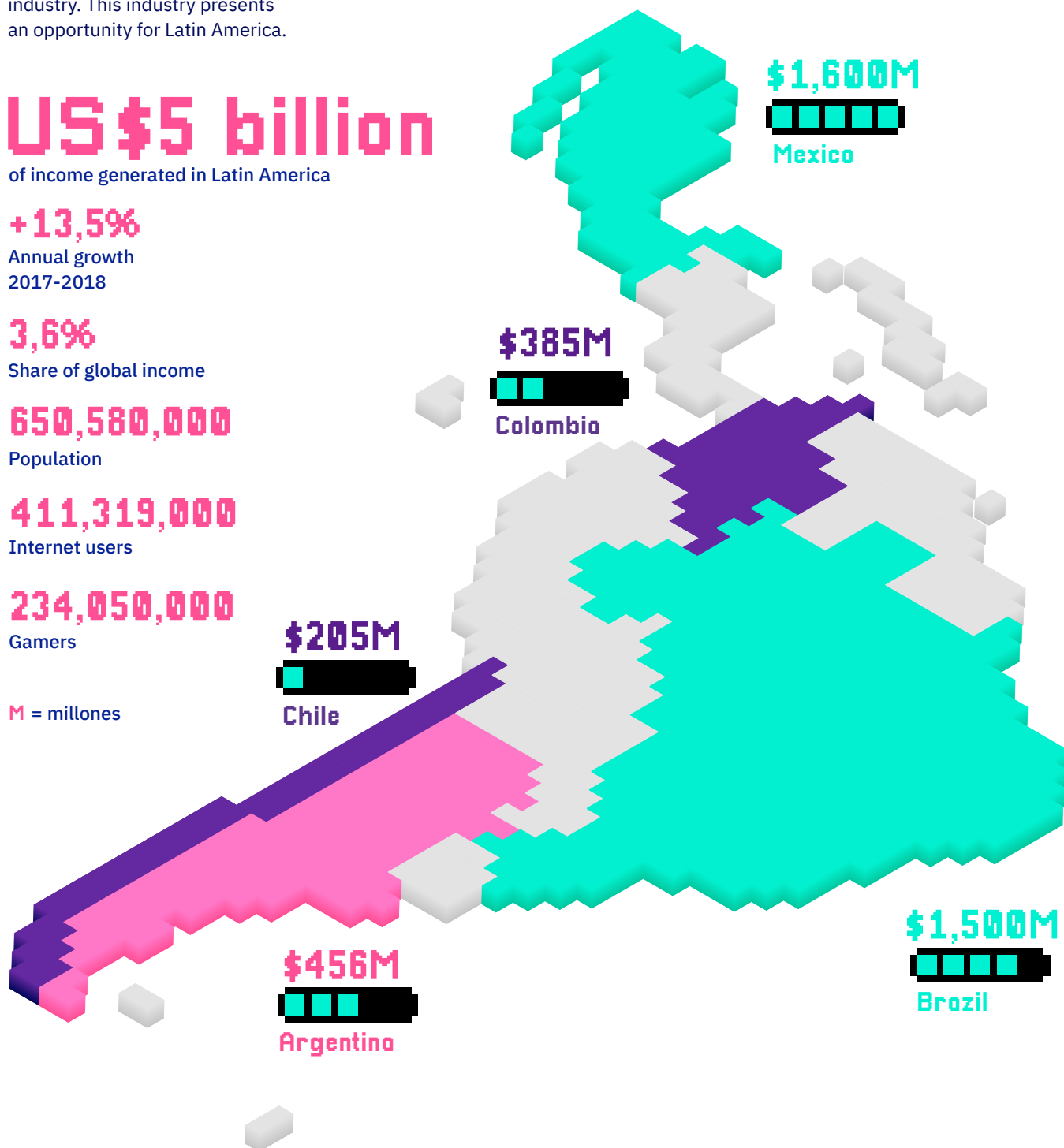
411,319,000

Internet users

234,050,000

Gamers

M = millones



Source: Newzoo 2018. Available at: newzoo.com/global-games-market-report

Leading Latin American Countries

Brazil

66.3 million
players¹²

Mexico

49,2 million
players¹³

Argentina

18,5 million
players¹⁴

The video games sector generates the highest revenues in the digital industry. This industry presents an opportunity for Latin America

Uruguay is a country that has reacted to demand. In 2010, ORT University in Montevideo pioneered an undergraduate degree program in Animation and Video Games within its Faculty of Communication and Design. It did not take long for other universities in the region to offer their own educational programs, where skills such as abstract thinking, mental agility, problem solving, mathematics and marketing fuse with creativity. Video game training covers subjects that include animation, arts and digital media, video production, 2D and 3D animation, sound development, narrative, architecture, characterization, scenery, programming technology, virtual and augmented reality and marketing. These are only some of the subject areas, given that teams can be made up of dozens of professionals from different fields: for example, psychologists, educators or acrobats.

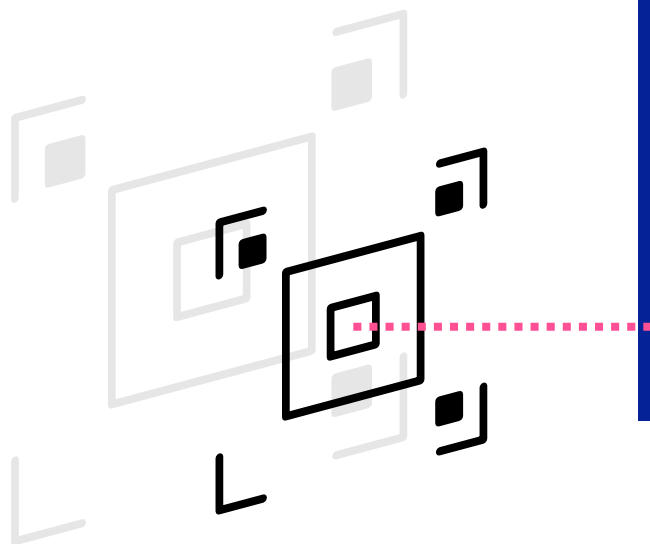
The creativity and technological fluency required for developing video games will be indispensable skills to compete for jobs in the future. The professionalization of video game development means a vast number of opportunities in terms of employability in the region of Latin America and the Caribbean. There are more than two thousand employees in nearly 50 video game studios in Argentina,¹⁵ over four thousand in Brazil,¹⁶ and in Colombia there are 50 studios that each employ

between 6 and 18 persons.¹⁷ At the top of the industry, a single video game studio can have close to one thousand employees, as in the case of China, which in 2017 had 6,111 studios, or the US with over 2,457 studios and 65,678 employees. Although a direct correlation cannot necessarily be found between the number of employees and a company's profits—for example in Finland, a company with only 250 employees generates over US\$1 billion per year—it is important to continue monitoring the jobs that are directly or indirectly generated by the industry to understand the technical demand that will be needed in our countries. According to Dean Takhshil, editor of Venture Beats, the new platforms that could create more jobs in the future include VR, AR, esports, toys to life—the physical figures that are used to interact with video games—and television. Even though video games can be created in any part of the world, it is important to devise a strategy for Latin America and the Caribbean to retain its talent that will train future youth in university and technical degree programs, as well as the policies that will allow new video game studios to compete in domestic and international markets. Governments must give serious attention to this industry, which is not precisely a game, and which can become a more competitive and sustainable force.

- 12 Newzoo. (2017). Newzoo The Brazilian Gamer. Available at: <https://newzoo.com/insights/infographics/the-brazilian-gamer-2017/>
- 13 Newzoo. (2017). Newzoo The Mexican Gamer. Available at: <https://newzoo.com/insights/infographics/the-mexican-gamer-2017/>
- 14 Newzoo. (2017). Newzoo The Argentinean Gamer. Available at: <https://newzoo.com/insights/infographics/the-argentinean-gamer-2017/>
- 15 Ministerio de Cultura, Presidencia de la Nación. (2016). Cinco datos sobre la industria de los videojuegos en Argentina. Available at: <https://www.cultura.gob.ar/noticias/cinco-datos-sobre-la-industria-de-los-videojuegos-en-argentina/>
- 16 Oficina Económica y Comercial de España en Sao Paulo. (2017). La industria de los videojuegos en Brasil sigue creciendo. Available at: <https://www.icex.es/icex/es/navegacion-principal/todos-nuestros-servicios/informacion-de-mercados/paises/navegacion-principal/noticias/NEW2017705409.html?idPais=BR>
- 17 Bring IT on, Colombia. (2018). ¿Cómo ha crecido la industria de videojuegos en Colombia? Available at: <http://www.colombiabringiton.co/es/content/como-ha-crecido-la-industria-de-videojuegos-en-colombia>

The exchange of knowledge is a very significant factor in this industry, given that it is new, highly technical, and made up of thousands of people who develop content. Generating spaces and alliances for learning about the markets, distribution, internationalization and the demand between the US and Asia is one of the strategies that cannot be ignored by the industry.

The increasing penetration of the mobile phone will give us an opportunity for content creation but it will vanish quickly if we do not prepare ourselves for the new demands of this market.



Some cases of video games with **Virtual Reality (VR) and** **Augmented Reality (AR)**

Latin America is taking its first steps into the world of virtual and augmented reality, for both mobile platforms and sophisticated PC and console games, with industry participants betting on the creation of the first specialized space.

One of the first cases is that of the Chilean firm Iguanabee, who developed the first augmented reality game, Raise, which made use of Google's Project Tango.

The Colombian firm, Teravision Games, was one of the first Latin American firms to bet on his new technology. Its first title, Flashy Fish, was featured in Samsung's Gear VR's application store which gave it the confidence to develop two new contents.

In Brazil, virtual reality is making strong strides. Black River Studio was acquired by the Korean giant, Samsung and now has hits like Finding Monsters in its portfolio. Or, for example the studio, IMGNATION, which developed virtual reality experiences based on the Angry Birds universe, for the Finish company Rovio.

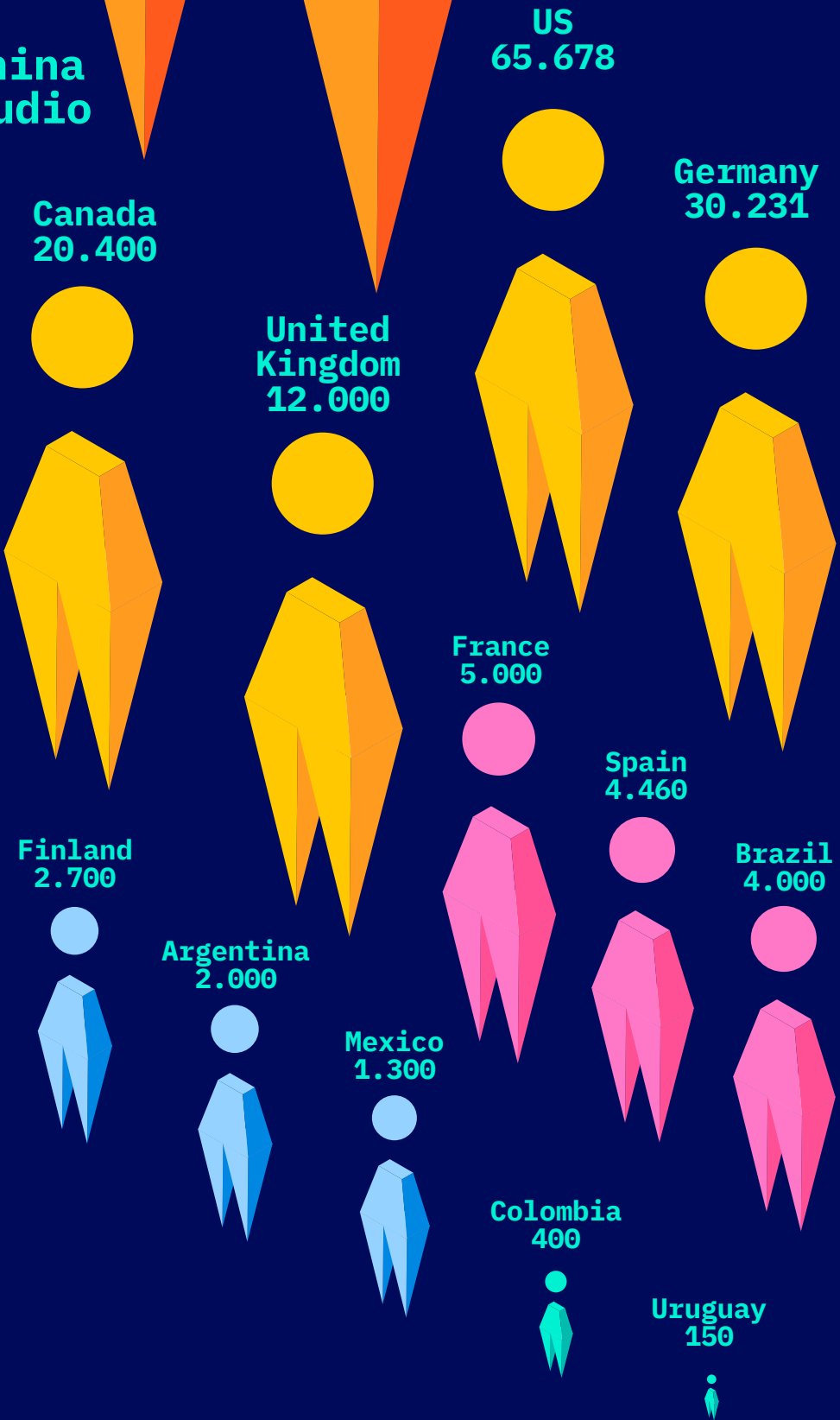
One of the more interesting cases is that of developer Ana Ribeiro and the firm Arvore VR that launched VR PIXEL RIPPED 1989 in Steam, HTC, and PlayStation. Praised by the press, the game is an international hit. The firm continues to bet heavily on Voyager, a virtual reality entertainment center conceived by Arvore in collaboration with Roberto Justus, which was inaugurated on July 10th 2018 in the JK Iguatemi Shopping Center in São Paulo. The space houses over 20 games and its proposal is to democratize access to virtual reality in Brazil.

Argentina, Uruguay, and Mexico have made their first inroads into the market with games such as Alchemist Defender (winner of the National Video Game Contest Uruguay 2017), Game Coder (Mexico) and Ship Ahoy from OKAM Studio.

Video Game Studios and the Number of Jobs per Country



1.000 x China studio



China
<https://venturebeat.com/2017/02/14/where-the-in-the-world-are-the-game-jobs/view-all/>

Spain
<http://www.dev.org.es/images/stories/docs/game%20development%20in%20spain%202016.pdf>

Brazil
<https://www.icex.es/icex/es/navegacion-principal/todos-nuestros-servicios/informacion-de-mercados/paises/navegacion-principal/noticias/NEW2017705409.html?idPais=BR>

Finland
<http://www.neogames.fi/en/industry-info/>

Mexico
<https://www.entrepreneur.com/article/266639>

US
<https://venturebeat.com/2017/02/14/where-the-in-the-world-are-the-game-jobs/view-all/>

Colombia
<http://colombiabringiton.co/videojuegos>

IGDA Colombia

Germany
<https://www.game.de/en/labour-market/>

Uruguay
CAVI - Uruguayan Gamedev Association

Canada
http://theesa.ca/wp-content/uploads/2016/11/2016_booklet_Web_compressed2.pdf

Argentina
<https://www.cultura.gob.ar/noticias/cinco-datos-sobre-la-industria-de-los-videojuegos-en-argentina/>

United Kingdom
<http://ukie.org.uk/>

Japan
<https://venturebeat.com/2017/02/14/where-the-in-the-world-are-the-game-jobs/view-all/>

Korea
<https://venturebeat.com/2017/02/14/where-the-in-the-world-are-the-game-jobs/view-all/>

France
<https://www.diplomatie.gouv.fr/en/french-foreign-policy/economic-diplomacy-foreign-trade/events/article/france-is-second-in-the-world-for>

Video Games Can Save the World



Games for change, is a global initiative launched in the US in 2004, which facilitates the creation and distribution of social impact games that can be used as critical tools for humanitarian and educational tasks.¹⁸

According to the magazine, Ed Tech,¹⁹ Jane McGonigal is quoted as saying, “We normally think of games as being fun, kind of trivial, maybe something to pass the time, but what if we thought about them as a platform for inventing the future of higher education?”

McGonigal, who since 2000 has been a video game developer, thinks that it might be just as easy to save the real world as it is to save the world in a video game. She explains how the human experience is optimized through video games: there are tasks to be accomplished, the player is surrounded by potential collaborators, and there is an accelerated learning process in a low-risk environment.

It has been shown that video games can improve how we learn, how we deal with conflict, how we work as a team, how we solve problems that affect the world or how we handle our own lives.

Alpha Beat Cancer, a video game created by Beaba and Mukutu Games studios in Brazil, use a game to help children between the ages of 3 and 6 who have been diagnosed with cancer. The objective of the game is to give children a simple and clear way of understanding their diagnosis and the different stages of treatment they will undergo.

A virtual space can become a community where its players come together to communicate, develop and educate themselves, and can serve as an alternative to traditional educational methods. A good example is Minecraft, the second-most sold game of all time, which makes it possible for its players to create a three-dimensional world through creativity. Minecraft offers an infinite number of resources for creating worlds, which has led to the generation of servers to create communities within the game itself. There is even an educational edition, called MinecraftEdu,

used in over 40 countries. One of the successful versions of this well-known game emerged to prevent bullying in public spaces. It also became a precursor to Autcraft, the first Minecraft server for children with autism. This server was developed by a father for his autistic child and it is now used by more than nine thousand players. Within this community, children with autism are free to express their likes without reproach, and within this virtual space they have managed to experience what is more difficult away from the screen: to speak, write, read and play.

Video games have also experienced a rise in the representation and celebration of Lesbian, Gay, Bisexual, Transgender Queer (LGBTQ) communities, both on and off screen. Phillip Penix-Tadsen, in his book, *The Routledge Companion to Gender, Sex and Latin American Culture* states:

“Today, new communities constructed around gaming and gender or sexual identity are booming, aimed at nurturing an inclusive environment sensitive to the needs and desires of gamers from different backgrounds. LGBTQ groups such as Gaymers Mexico and Gaymers Brazil, each with over 1,000 members, share social media content related to gaming as well as queer issues. Brazil’s female gaming group Garotas Gamers boasts more than 50,000 regular users, while several smaller female gaming groups in Brazil and various *Chicas Gamers* groups out of Mexico, Argentina, Colombia and other Latin American countries have membership numbers in the thousands on social media. Although the advent of social gaming and an increased capacity for interpersonal communication in real time has brought challenges for gamers of different gender backgrounds, it has also created new opportunities to

¹⁸ Games for Change. (2018). About Us. Available at: <http://www.gamesforchange.org/who-we-are/>

¹⁹ Buck, T. EdTech (2013). The Awesome Power of Gaming in Higher Education. Available at: <https://edtechmagazine.com/higher/article/2013/10/awesome-power-gaming-higher-education>

establish communities based on shared interests, affinities and experiences, making gaming an experience that is approachable to, and shared by, an ever more diverse population of players.”

Le Loupgarou, a video game developed in Barbados was inspired by the lack of representation of the Afro-Caribbean queer community. The video game is about a fire in a plantation, a pact with a creature named Baccou and a civil rights activist dressed as a damsel. In this video game, the main character is the Caribbean version of Wolf Man and along the way the player must hunt souls in dark streets and survive to distinguish his own history and identity, as well as those of the souls he has hunted.

In the case of Le Loupgarou, not only do the history and identity of the characters stand out, but it also preserves elements of Caribbean traditions. In this way, video games can be effective means for preserving the culture and promoting the interests of our countries beyond their borders. Indigenous and aboriginal groups around the world take advantage of this interactive media in a unique way to create awareness of their beliefs, for keeping their traditions alive and for attracting new players with unique content.

In Latin America and the Caribbean, there is an abundance of video games associated with regional indigenous cultures, and we have found some focused not only on highlighting elements of indigenous mythology and culture, but also on promoting and preserving these cultures. In many of these cases, these video games have been developed actively with the direct collaboration of indigenous populations.

Among the games based on elements of indigenous mythology, we can find Chacmool Xek, from Mero Studios in Mérida, Mexico, Inka Madness, from the developer, Pariwana Studios in Lima, Peru, or El Canto de la Autana, from the Venezuelan studio Alfer, inspired by the mythology of various tribes from this country. These games incorporate cultural elements

in fun and simple ways, not only to introduce them to an international audience, but also to promote local tourism by incorporating elements of each country’s cultural heritage and natural monuments into the games.

Others, such as Mayan Pitz, from the Guatemalan developer Digital Partners and Pok ta Pok, from the Mexican studio Locomoción—both interactive adaptations of the ancient “*juego de pelota*” (ball game) of the Mesoamerican cultures—use indigenous history and practices not only as aesthetic elements but also as a conceptual basis for the games in themselves, allowing contemporary players to experience a simulation of the sacred game of the Mayas, Aztecs and other Mesoamerican indigenous groups.

Among those games that focus on the promotion and preservation of indigenous cultures in the different regions, we have Juatsjinyam/ Aprendiendo, from the young Colombian developer Ayda Milena, who designed the game to help teach and thus preserve the language of her own Camëntsá people. Even more ambitious is the Colombian company Juegos SAI, which promotes the diffusion and preservation of the “ancestral indigenous wisdom” of the country’s different tribes. This series of games, that include titles such as Magic Stories of the Ancestors 1 and 2, (Cuentos mágicos de los ancestros 1 y 2), Hidden Objects (Objetos escondidos), and Children’s Activities (Actividades infantiles) endeavor to guarantee that the youngest players learn about the regional indigenous cultures while they play games on telephones and tablets.

There are also games—such as the winner of the Best Debut Game in the 2015 BAFTA Game Awards, Never Alone, from Upper One Games, developed together with the Inuit community in Alaska—that go beyond incorporating established myths and legends, by including the indigenous communities themselves in the actual production of the games. For example, the Brazilian Game Huni Kuin: O

Caminos da Jiboia was developed in collaboration with the Kaxinawa people, who call themselves Huni Kuin and inhabit the border area between Brazil and Peru. The game presents the Huni Kuin to the public at large, through their songs, graphics, stories, myths and rituals. Likewise, the producers of the multi-platform game Mulaka collaborated with the Tarahumaras in the north of Mexico to produce a game based on their spiritual beliefs and everyday life, in particular their ability to run long distances in their native desert wilderness.

There are also “serious games” or “activist games,” made to go beyond entertainment or leisure and attempt to transmit some type of message to the player—be it for education, for publicity or for ideology. Today in Latin America and the Caribbean, educational and activist games are developed for many purposes, among which are the promotion of indigenous cultures and consciousness raising of the everyday problems faced by these groups. The Paraguayan game Y’apo provides an example of how these games can spread serious information and messages: it is a simple game, distributed for free online, which documents the displacement of the Y’apo Indians by the Paraguayan

authorities. More than one hundred Avá Guaraní families from the Y’apo community were thrown off their lands to make room for cattle raising and soy crops for export. They had to take refuge in the forest since the police forces destroyed and burned down their homes and sacred spaces. The video game works like an announcement, newsreel, notice and protest against these injustices.

Elisabeth LaPensée, a Canadian Indian game developer, artist and professor has collaborated in games such as Invaders, Techno Medicine Wheel, and Survivance, all made to generate social impact, preserve the oral history of the diverse groups, and educate players about indigenous beliefs, values and traditions.²⁰

Through video games, Latin American and Caribbean indigenous cultures have found a new medium for the diffusion and preservation of their myths, beliefs, languages and lifestyles. In addition to using them to educate and disseminate concepts within their own communities, interactive games utilize innovative methods for conserving and expanding the knowledge of these cultures the world over, and have brought indigenous cultures to groups that otherwise would never have been reached.

From
Entertainment
to Sports



In addition to being a tool for communication and transformation, video games have revolutionized traditional game sectors. For some time now, sports have been taken off the field and put into virtual reality. Now, instead of hearing about a game being suspended for bad weather, we hear about a problem with a server. Sports have conquered the virtual world as much as video games have conquered sports. Although it seems impossible, they attract more spectators than the most popular sport in the US: NFL Football.

What is a fact is that video games have begun to be perceived the same way as any live sports match. The most recent examples have been the announcements that video games would be considered as an exhibition sport in the Asian Games in Jakarta, Indonesia in 2018 and as an official sport in the Asian Games in Hangzhou, China in 2022. Likewise, the International Olympic Committee is exploring the possibility of including video games in the upcoming Paris Olympics for 2024.²¹

The Esports Mega-Industry

Esports or electronic sports are types of competitions developed for video games. In 2017, esports brought together some 258 million spectators around the world. In comparison, the American National Football League had 204 million spectators during its regular season in 2016. The sustained growth of video games leads to the prediction that by 2021, the esports industry will be worth US\$2 billion dollars and attract 650 million spectators.²² This segment of the industry has become an area of opportunity as much for developers as for players, investors and fans of video games.

Virtual sports players compete in a variety of games of different genres. For example, League of Legends or Dota 2, in the genre of MOBA (multiplayer online battle arena); Overwatch or the Counter-Strike series, in genre of first person shooter (FPS); Starcraft, in the genre of real-time strategy (RTS); Street Fighter or Super Smash Bros among the fight games; FIFA and Rocket League in the genre of sports games, among others.

It is almost surprising to see how the professional entertainment of esports players is very similar to that for traditional sports figures. Virtual sports tournament players train several hours a day with a coach, they analyze and observe the games of other teams, carry out physical exercises to keep in shape and work with sports psychologists to manage stress. All have their sights on a common goal: compete for recognition and for a variety of prizes valued up to US\$24 million dollars.²³ Esports players' contracts are worth thousands or even millions of dollars. Even though a player must be of age to enter into a contract, there are many young players who compete in diverse categories. The average age of professional players ranges between 20 and 26 years old. Another type of team is also appearing where we not

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- ²¹ BBC. (2017). Esports: International Olympic Committee considering esports for future Games. Available at: <http://www.bbc.com/sport/olympics/41790148>
- ²² BBC. (2017). Esports: International Olympic Committee considering esports for future Games.
- ²³ H. Dawn. (2017). What are esports? A beginner's guide. Telegraph. Available at: <https://www.telegraph.co.uk/gaming/guides/esports-beginners-guide/>

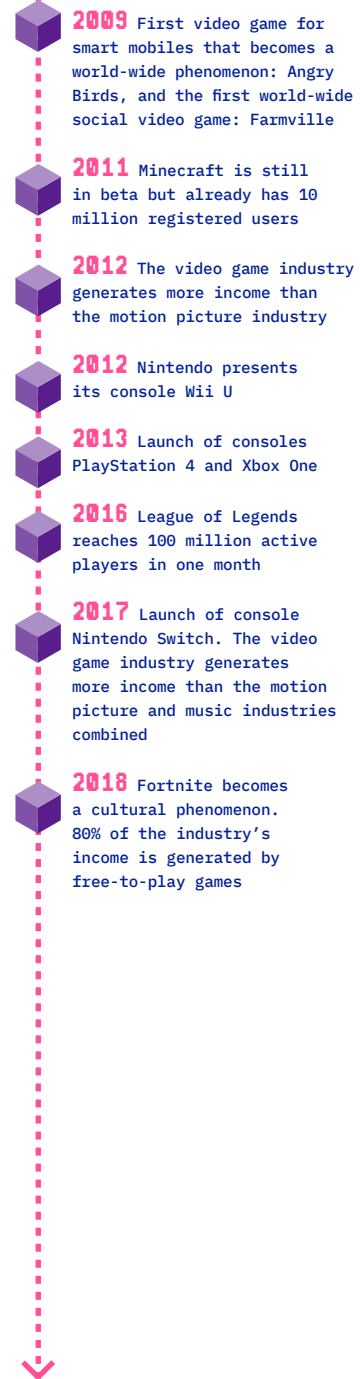
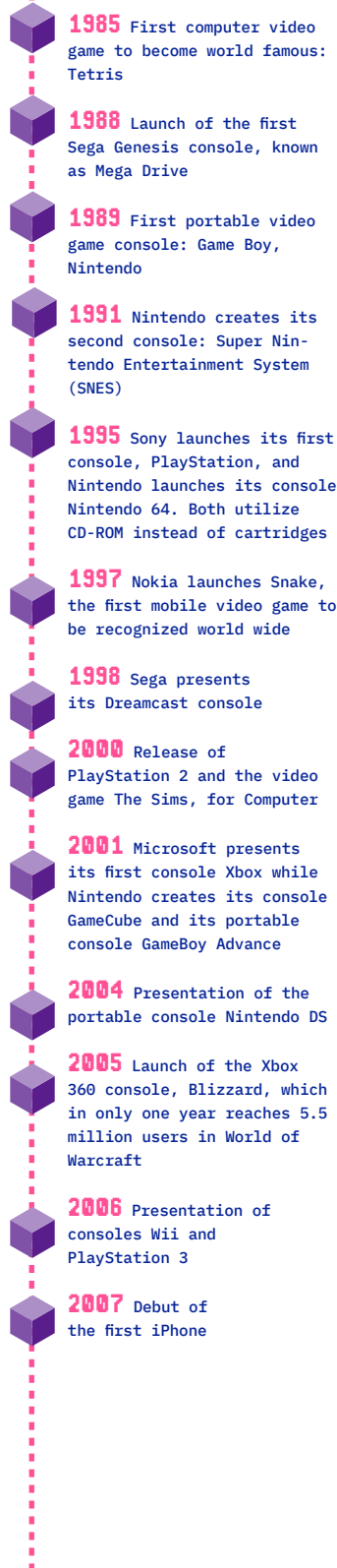
only see girls but also players who average 67 years old, such as in the case of the Silver Snipers of Stockholm Sweden—the only esports team in the world made up of senior citizens. According to a recent CNN report, in a health feature, they interviewed a member of the Silver Snipers team, 62 year old Monica Idenfors, who is known in the gamer community as Teen Slayer. The feature pointed out the benefits that games bring to more mature players and emphasized the positive effects they experience in terms of levels of concentration and mental activity, which could help reduce some of the mental effects of aging.

Did you know that:

- ▶ The Carolina University in Saltillo, Mexico is the first university to give scholarships for esports; students who form part of the university's esports team while they study their degree program?
- ▶ The Collegiate Esports League in Mexico includes some 55 universities and more than 3,800 players?²⁴
- ▶ In Brazil there a Brazilian Association of Esports Clubs (ABCDE)?²⁵
- ▶ Some studies have shown that that the reflexes and mental agility of gamers are significantly better than those of the rest of the population (BBC)?²⁶
- ▶ A professional esports player carries out more than 300 actions per minute, giving new meaning to the term, multitasking?²⁷
- ▶ Given the complexity of games such as the League of Legends or StarCraft, some scientists consider that certain video games might serve as better indicators of greater intelligence than chess?²⁸
- ▶ The grand final of the League of Legends Latin America North was transmitted live simultaneously in 100 movie theaters in 8 countries (Mexico, Guatemala, Honduras, El Salvador, Costa Rica, Panama, Colombia and Peru)?²⁹
- ▶ As of 2019, the Latin America South League and Latin America North League, the two most important leagues of the continent (not counting CBLol) will merge into one single Latin America League, consisting of eight teams and will be based in Santiago de Chile?³⁰

- 24 Liga Colegial del Esports. (2018). ¿Qué es la LCE? Available at: <https://www.esla.pro/lce>
- 25 Focus Latinoamérica. (2016). Crean asociación de eSports en Brasil. Available at: <https://focusgn.com/latinoamerica/crean-asociacion-esports-brasil>
- 26 BBC. (2015). Is computer gaming really sport? Available at: <http://www.bbc.co.uk/guides/zygq2hv>
- 27 BBC. (2015). Is computer gaming really sport?
- 28 BBC. (2015). Is computer gaming really sport?
- 29 League of Legends. (2018). Noticias Esports. Available at: <https://lan.lolesports.com/noticias/la-final-de-lln-regresa-cinepolis-101257>
- 30 Available at: <https://esports.xataka.com/lolleague-of-legends-1/riot-latam-fusionara-clis-lln-unica-competicion-latinoamericana-league-of-legends>

Time Line: The History of Video Gamess

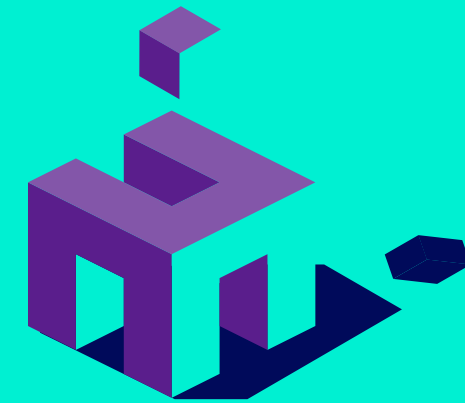


The Business of Video Games



“You have to learn the
rules of the game. And
then you have to play
better than anyone else.”

—**Albert Einstein**



Choose a job you
love and you will
never have to work
a day in your life.”

—**Confucius**


As in many industries, there is no guaranteed road map to success and there is no perfect formula for turning entrepreneurships into great projects. In the video game industry, many of the entrepreneurial game developers had been, at one time or another, avid players that decided to turn their passion into a business.

31 El Heraldito. (2014). Mujeres principales víctimas del Candy Crush. Available at: <https://www.elheraldito.hn/mundo/607288-217/mujeres-principales-victimas-del-candy-crush>

A good understanding the video game industry will take you much farther. Video games have easy access to different distribution channels on platforms that include iOS, Android, PlayStation 4, Xbox One, Nintendo Switch, or PC. Nonetheless, it is a highly competitive industry where hundreds of video games are created everyday and distributed on different platforms.

There are no fool-proof formulas for ensuring success but if you know what kind of game you want to make, where it will be played and for whom it is being created, it will get you off to a good start.


Know What, Where and for Whom

 **Understand the target audience, the genre and the platform of the game.** There is a symbiosis among these three elements and dominating them thoroughly will help you obtain a more effective product. To define these variables, it is necessary to investigate the following. Which games similar to the one you want to make are already on the market? What features do they have in common or what elements could still be explored? What are the demographics (age, sex, occupation) of the target users? For example, in 2014, the game Candy Crush revealed that its players were women between the ages of 25 and 55 and that 70% of the searches in Google for the game were being made by women.³¹ You must also know what the game session like what type (local multiplayer, online, single player) it is and if it is popular on the streaming channels.

As for the target audience, it is important to determine their aesthetics, which other entertainment products

they consume, or how they pay for the content they use (do they pay themselves or do their parents pay). You should also know what platforms they prefer, when they play and under what conditions (standing on the subway or lying on an armchair at home), how long they play, if they play while doing other things, or whether they play with the volume turned up or in silence. Knowing this type of information will help you to better exploit the characteristics of each genre.

As for determining the platform, it is important to study aspects such as: which controls will be used most and how should they be adapted to your game; or whether or not the game should be made for a portable device, a tactile device, or should it require an external display. Furthermore, the methods of payment available on the platforms will define which forms of monetization are possible (micro-transactions, premium, videos). Consideration should also be given to whether or not the platform chosen has some kind of content restriction (violence, nudity, cultural or religious references)

 **Quality.** It is important to pay close attention to every aspect of the video game—from art design, music, game mechanics and narrative, to performance and the absence of bugs (software errors)—will be vital for achieving the best possible player experience. In the 2017 report of the US Entertainment Software Association (ESA), where they analyzed trends and sales figures by type of game, it showed that the quality of graphics was the most important factor for buyers (68%), compared to price (65%) the level of interest in the story (59%) and online gameplay (50%).

Thus it can be concluded that graphics are the main factor in the decision on which game to purchase.

🎮 **Originality.** Having a product that is different will make it stand out. This difference can lie in the type of art, music, topic, mechanics or any other aspect of the game. Each studio will therefore try to find the perfect balance between the new and the familiar. Indie studios tend to be more audacious and willing to take chances while the large studios behind the AAA games tend to be more risk averse and conservative in this area.

🎮 **Scope.** Just like other sectors of the entertainment industry, sometimes the magnitude of a project will depend on the available budget, the time frame, the technology, the size and level of experience within the team and a host of other factors. Therefore, to ensure the quality of the product and reach the expected level of success, it will be crucial to carefully define the scope of the project while keeping these restrictions in mind.

🎮 **Funding.** There are various mechanisms for financing video game developments: self-financing, publishers (the person who strategically invests and distributes the video game), crowdfunding platforms, public funding and the investments that are generally made by the larger video game studios.

🎮 **The Launch.** The way a game goes live can largely define how a video game will be received by the consumer. Launching it in only a few markets (soft-launch) or coming out with an Alpha or Beta version (unfinished versions) are strategies that provide a chance to polish the final details by utilizing the comments of the players. The right date of the launch can determine whether a game will break through or be lost in a sea of new launches.

Promotion Channels

Promotion is part of the development of a video game and it is necessary

to have it carefully planned in a way that maximizes the opportunities for success. There are various means and methods to promote a game and some of the most common and effective are:

🎮 **Advertising:** Just like motion picture producers, large studios use advertising agencies who are familiar with the target markets. Since these agencies know exactly how to speak to each market, they can determine which media or combination will be most effective: television, web, promotion with other video games, social media, etc.

🎮 **Social Media:** Social media has been key to highlighting the advances and news related to video games—above all, Twitter, Instagram and Facebook and specialized forums.

🎮 **Publications in Specialized Media:** Among these are: GamersOn, from Colombia; Rock Paper Shotgun, Develop, GamesIndustry.biz from the UK; TouchArcade, Edge Magazine, GamesBeat, GameSpot.com, Gamasutra.com, and Polygon.com from the US; and Gamereactor, from Europe. Previews and promotional features that allow players to follow the creative process are some of the ways to garner interest and end up with a larger number of players.

🎮 **Consumer Events:** There are a great number of events around the world that attract the public to video games and their studios. Among them are: E3 and PAX in the US, Gamescom in Germany; EGX in the UK, and G-Star in South Korea. Reviews or pre-release features that allow players to follow up on the process of creation will increase expectations and thus a greater number of players.

🎮 **Developer Events:** There are various annual events where the industry comes together with spaces dedicated to firms and developers. Some of these are: Game Developers Conference (GDC) in the US; Gamescom in Germany and Tokyo; Game Show, in Japan; Gamelab in Spain; Develop in the UK; Game Connection in France; or BIG in Brazil.

How are Video Games Financed?

There are various mechanisms for financing video game developments, although it can be said that currently the most common method in Latin America is self-financing. From the sample of games from the video game studios, 220 were self-published. This means that they were not necessarily inked to a publisher, which generally takes a percentage of the profits in return for some type of funding.

The main funders of video game have historically been publishers, such as EA, Square Enix, Capcom, Nintendo, and others, who play a role very similar to record labels—that invest in exchange for distribution rights.

Their role had been fundamental, given that games required physical support that was very costly and inaccessible to the majority of developers. Now, with the growth of the number of developers and digital distribution, the relationship between studios and publishers has changed. Today their main function is not about financing games but about promoting them, improving their exposure and increasing the number of players. They can also help studios improve their games by providing various types of support and assistance as necessary. For a game to attract the interest of a publisher, it should have undergone a year or two of development or have enough maturity to show its potential. Otherwise it is difficult to reach an agreement if there is nothing convincing to show.

Other sources of financing are public funds and incentives that have played a key role in the industry in many countries. These funds allow new independent creators to come into the video game sectors with the greatest potential for growth.

In **France** in 2007, under the management of the Centre National du Cinéma et de l'Image Animée (CNC), a fiscal incentive plan was instituted for video game development firms. Under certain conditions, these fiscal incentives

Events in Latin America

Argentina

Exposición de Videojuegos

Argentina (EVA)

Web: expoeva.com

Fechas: 1, 2 y 3 de noviembre

Lugar: Centro Cultural de la Ciencia, Ciudad de Buenos Aires

Argentina Game Show

Web: argentinagameshow.com

Fechas: 26, 27 y 28 de octubre

Lugar: Costa Salguero, Ciudad de Buenos Aires

Brazil

Brazil Independent Game

Festival (BIG)

Web: <http://www.bigfestival.com.br>

Fechas: 23 de junio al 1 de julio

Lugar: San Pablo y Río de Janeiro

Brasil Game Show

Web: brasilgameshow.com.br

Fechas: 10, 11, 12, 13 y 14 de octubre

Lugar: Expo Center Norte, San Pablo

Colombia

Colombia 4.0

Web: <http://col40.co>

Fechas: 23, 24, 25 y 26 de octubre

Lugar: Corferias, Bogotá

Chile

Semana del Videojuego Chile

Checkpoint, http://videogameschile.com/news?nid=6&n=v_g_chile_anuncia_su_evento_anual_%22checkpoint_2018%22.

Festigame

Sitio web: festigame.com

Fechas: 3, 4, 5 de agosto

Lugar: Espacio Riesco, Santiago

Uruguay

Level Uy

Web: <http://leveluy.com>

Fechas: 12 y 13 de diciembre

Lugar: Torre de las Telecomunicaciones, Montevideo

Gamelab Montevideo

Web: <http://www.gamelab.es/eventos/montevideo/>

Fechas: 27 de noviembre

Lugar: Torre de las Telecomunicaciones de Antel, Montevideo

Peru

Más Gamers Festival

Web: festival.masgamers.com

Fechas: 31 de agosto y 1 y 2 de septiembre

Lugar: Centro de Exposiciones Jockey, Lima

Costa Rica

Game Com - Connecturday

Web: fb.com/Connecturday

Fechas: 24, 25 de noviembre

Lugar: Museo de los Niños, San José

Mexico

Pixelatl

Web: elfestival.mx

Fechas: 4, 5, 6, 7, 8 de septiembre

Lugar: Cuernavaca, Morelos

Paraguay

GameDevPY

Web: [fb.com/](https://fb.com/events/197429891055824/)

events/197429891055824/

Fechas: 31 de mayo

Lugar: Universidad Autónoma de Asunción, Asunción

Source: En la siguiente página web pueden ver un listado más exhaustivo de otros eventos: <http://www.eventsforgamers.com/>

offered a tax credit equivalent to 20% of the total expenditure assigned directly to the creation of a video game. In addition to providing incentives for keeping talent from leaving the country, the plan has had an economic impact. For example, for every euro paid in tax credits for video games, eight were invested in the sector and the tax authorities collected nearly €1.8 in tax and social security income.

In **Canada**, according to a study by KPMG in 2017, tax credits helped to reduce labor costs by between 17.5 and 50%. In total, there is a cost advantage of 30.6%, compared to the US. It is worth emphasizing that the matchmaking service of the Canadian Trade Commissioner Service, together with the financing from the Media Fund Canada, has helped to internationalize independent game studios by giving them visibility and increasing the demand for the studios. In 2016, the industry employed some 20,400 persons in more than 470 studios and contributed \$3 billion dollars to the country's GDP.

In **Spain** in 2018, the Ministry of Energy, Tourism and the Digital Agenda, through the public entity, Red.es, set up the Program to Impulse the Video Game Sector that managed to mobilize 6.25 million euros. The minimum quantity deliverable to each project was €20,000 euros and the maximum was 80% of the budget up to a maximum of €150,000 euros per beneficiary. There was a competitive process for securing the funding financed by the Pluri-Regional Operative Program of Spain 2014-2020, part of the European Regional Development Fund (FERDER)³².

In the **United Kingdom**, the Video Game Tax Relief program allows

video game developers to recover 20% of their production costs. To be eligible, the game must pass the “cultural test” of the British Film Institute (BFI) where, for example, the competing video game studio must be responsible for the majority of the planning, design, development and testing of the game. Requirements such as the preservation of the language and the use of UK cultural identity are given a high percentage of the score so as to impulse and preserve the cultural identity of the country.

In **Argentina**, the Ministry of Production and Labor has various funds for entrepreneurs. The Seed Fund finances up to 250,000 Argentine pesos; the Acceleration Fund finances up to 50,000 Argentine pesos for technological or social entrepreneurship, and an entrepreneurship expansion fund has been established for those firms with a high degree of differentiation and innovation that have a potential for growth on a global scale. Fiscal benefits include the possibility to deduct up to 75% of the start-up investment from the tax on profits, as long as the amount does not surpass 10% of net annual profit.³³

In **Brazil**, the National Cinema Agency (Ancine) provides opportunities for Brazilian video game developers. The program selects the games with the greatest potential and provides funding in turn for a percentage of the profit.³⁴

In **Chile**, the Corporation for the Promotion of Production (Corfo) through the Program of Creative Industry, offers various lines of support for financing activities in various stages of production: development, international and domestic commercialization, and internationalization. The first criteria focuses on support for the initial stage of video game production so that enough

32 Gobierno de España. (2018). FEDER. Available at: <http://www.red.es/redes/es/actualidad/magazin-en-red/redes-abre-una-convocatoria-que-movilizar%C3%A1-625-millones-de-euros-para-el>

33 Available at: <https://www.argentina.gob.ar/financiamiento-para-emprendedores>

34 J. Johnson. (2017). Will Games Become Brazil's Next Big Export? Available at: <https://iq.intel.com/will-games-become-brazils-next-big-export/>

of the basic product can be seen to attract funding or investors and then move on to the next stage of production. Support for international and national market presence focuses on strengthening the marketing campaign in different territories, since it is necessary to have a publisher in order to begin an international distribution campaign.

It should be pointed out that the video game industry in Chile is one of the highest growing segments in the entertainment industry. By 2015, there were already more than 36 video game studios or firms that created 160 PC, console, mobile and web browser games in HTML5 format, generating nearly US\$13 million dollars in video game services, according to VG Chile (VG), an association of the major firms in the industry.³⁵

In **Colombia**, Since 2012, Innpulsa Colombia, in association with the Ministry of Culture, has given support to the cultural and creative industries within the orange economy. The Orange Law, passed in 2017, will reinforce this support even more. From its start, this entity has implemented various instruments of support for the different stages of development in the firms and has concentrated on three basic fronts: co-financing (or non-refundable resources), credit, and private investment. Much of this funding is granted through calls for proposals or rediscount financing issued through Bancóldex.³⁶ Orange Bonds, launched in 2018 by Bancóldex, are the first world-wide emission for financing the orange economy. This financial instrument functions like any other ordinary bond but its resources are

destined to financing or refinancing, via credit, activities and projects linked to the creative economy that include video games within the category of content software. The objective of this initiative is to incorporate new actors that believe in the benefits of investing in business projects based on creativity and intellectual property.³⁷

In Colombia, Crea Digital and Apps.co are two other initiatives, organized by the Ministry of Information Technology and Communications (MinTIC) and the Ministry of Culture, respectively. Through calls for proposals, the selected high-potential video games are given economic support and then, together with other products of the orange economy, they are monetized and commercialized in international markets.³⁸

In **Uruguay**, video games developed for export, which covers the majority, are free from paying corporate income tax³⁹ and educational video games made for domestic consumption are exempt from paying value-added tax. The Office for Telecommunications and Audiovisual Services (MIEM-Dinatel) issues calls for proposals focused on funding for video games. For example, in 2018 it awarded two prizes of approximately US\$50,000 and US\$20,000 dollars.⁴⁰

These are only some examples and it is important to note that in Latin America there are a variety of calls for proposals that focus mainly on the internationalization and export of games, which is key to giving them visibility.

Crowdfunding, which also provides part of the funding for video games, increased between 2013 and 2015. Under this system, future players can finance the development of a video game by pre-ordering the game in

³⁵ Corfo, 2018. Available at: https://www.corfo.cl/sites/Satellite?c=C_NoticiaNacional&cid=1476719123712&d=Touch&pagename=CorfoPortalPublico%2FCorfo_NoticiaNacional%2FCorfoDetalleNoticiaNacionalWeb

³⁶ Available at: https://www.innulsacolombia.com/sites/default/files/terminos_referencia_parte_i_capital_naranja_publicados_final_.pdf

³⁷ Available at: <https://www.bancoldex.com/noticias/queson-los-bonos-naranja-2331>

³⁸ Available at: <http://www.mincultura.gov.co/areas/comunicaciones/convocatorias/creadigital2018/Paginas/default.aspx>

³⁹ Available at: <https://www.dgi.gub.uy/wdgi/page?2,beneficios-fiscales-89,preguntas-frecuentes-ampliacion,0,es,0,PAG;CONC;1017;8;D;esta-exonerada-de-iraela-produccion-de-software-destinados-al-exterior-soporte-logico;2,PAG>

⁴⁰ Available at: <http://www.anii.org.uy/apoyos/innovacion/119/actividadesde-fomento-para-industriascreativas/>

advance. In Latin America, there are several successful cases on Kickstarter.com: In 2013, Argentine developer Agustín Cordes, released the game *Asylum the Horror*,⁴¹ which attracted 3,169 pre-orders, securing nearly US\$120,000 dollars.⁴² That same year, Behold Studios from Brazil, with the game *Chroma Squad*, attracted 3,964 sponsors who contributed R\$97,148 Brazilian reales.⁴³ In 2015, Alonso Martin from Mexico, with the game *Heart Forth* attracted 7,472 sponsors who contributed \$232,365 Mexican pesos to help give life to this project.⁴⁴ In the 2019 report of the “State of the Game Industry” (GDC), however, some 47% of developers expressed that they were not interested in using crowdfunding, as opposed to the 26% who said that they were interested in trying it, although they had not yet done so.⁴⁵

Investors have begun to see video games as an opportunity. In 2018, the video game *Brainz*, from one of the leading Colombian studios, the creators of *World War Doh*, was

acquired by Jam City, a video game studio from California.⁴⁶ Although there has been a sustained growth of investors within the industry that have confidence in Latin American studios, there is still a long way to go for these studios to make themselves known in the market and attract domestic and international investors. We need more and more cases like *Brainz* so that investors can see our region as a new financial destination.

According to a study by Newzoo in 2017, Latin America is already the second-fastest growing video game region, with 13.5% growth year to year, behind Asia’s 16.8%. This represents an opportunity for our video game studios and for future talent that would like to enter the industry. Finally, it should not be forgotten that in order to be attractive to investors, there must be more than a good idea. Video games are entrepreneurship like any other, and they have to be backed by a good team of workers and a global vision that allow them to create more universal products for competing in a global market.

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- 41 *Asylum the Horror*. (2013). En Kickstarter. Available at: <https://www.kickstarter.com/projects/agustincordes/asylum-kickstart-the-horror>
 - 42 F. Borjas. (2015). *Shenmue III y los 10 videojuegos más exitosos de Kickstarter*. Juegosadn,eleconomista. es. Available at: <https://juegosadn.eleconomista.es/shenmue-iii-ylos-10-videojuegos-de-mas-exito-de-kickstarter-ar-2573/>
 - 43 Kickstarter. (2013). Available at: <https://www.kickstarter.com/projects/1893273284/chroma-squad-managergame-with-japanese-stylesupe?ref=discovery>
 - 44 Kickstarter. (2015). Available at: <https://www.kickstarter.com/projects/1893273284/chroma-squad-manager-game-with-japanese-style-supe?ref=discovery>
 - 45 Informa Tech Survey, (2019). *State of The Game Industry* (GDC) 2019, pp. 21
 - 46 D. Takashi. (2018). *Jam City acquires Brainz, the makers of award-winning indie World War Doh*. Available at: <https://venturebeat.com/2018/03/14/jam-city-acquires-brainz-the-makers-of-award-winning-indie-world-war-doh/>

Giants in the Latin American Industry

Globant

This is the fastest-growing information technology service firm for outsourcing in Latin America. It has become a leader in software (whose local industry generates a total of \$2.97 billion dollars annually, according to CESSI, the Argentine Software Chamber) and has been the subject of business cases at Harvard Business School, MIT Sloan School of Management and Stanford. With over 2,500 employees and sales of US \$90 million dollars a year, it has offices in Argentina (Buenos Aires, La Plata, Córdoba, Chaco, Tandil, Rosario and Bahía Blanca) Uruguay (Montevideo), Colombia (Bogotá), the UK (London), and the US (Boston and San Francisco), which is responsible for 80% of its production. Among its clients are Google, Yahoo!, Coca-Cola, the Santander Group, Renault and LinkedIn. It currently exports 95% of its production. Last year, through the acquisition of Nextive, a firm with 130 employees and sales of US\$10 million dollars, it opened the way to positioning itself in the segment of mobile and social network entertainment.

Brainz

Alejandro González and Jairo Nieto founded Brainz Games in Bogotá, Colombia, in 2011. Since its creation, it has developed four mobile video games, which to date have been downloaded over 5 million times in some 160 countries around the world. When they started out, they received the support of two angel investors and later formed part of the portfolio of Promotora, the most important Colombian risk capital fund. Most recently in 2018, it was acquired by Jam City, a world leader in mobile games with iconic brands such as Harry Potter, Family Guy, Marvel Avengers, and Futurama. Brainz's next launch will be World War Doh, a still-unreleased strategy game, which has already won Apple's award for the Best of 2017, in the category of Tech and Innovation, as well as the prize, Best in Show: Audience Choice, in the 2017 Casual Connect USA Conference.

The Main Challenges Facing the Video Game Industry in Latin America



Frank Capra, the Italian-American director and winner of three Oscars in the thirties and forties, said that movies are one of the three universal languages, together with music and mathematics. Now more than ever, it is true that movies, music and mathematics fit together, but why not include video games, where all the elements are used to seduce an audience of millions, no matter what their age?

In the same way that the universality of the languages of cinema and music have been able to reach and excite all ages in even the most remote places. In the world of entrepreneurship, the universal language emerges by accommodating products to the needs of the regions; that is, that they undergo an adaptation, where products that already exist are modified to fit into the local market and become successful. Video games face a similar challenge known as localization, but this is not the only one. In the following sections, we will discuss various challenges, including monetization, promotion, attracting users, the black market and the ability to attract investment for the products being developed.

The Importance of Localization in the International Market

Localization, meaning the acculturation of the content of the game and the translation to the language of the destination, is a critical step for exporting video games. A game should be understood by the people who play it and clearly, language is the first barrier that must be overcome. Nonetheless, other software adaptations have to be considered, given that connections are not the same in every country and not all cultures permit the same levels of violence, vulgar language or sexual content in the games. There are cultural, political, ideological, moral and legal differences that could make

some content incomprehensible without the due localization. All of these processes are costly and require an analysis of return on investment of the associated costs.

Monetization

It is critical to understand the Latin American market in order to develop a strategy for monetizing video games. For example, A. Helm pointed out in 2012, "According to the Livra survey, internet users state that one of the main reasons that they do not purchase applications is that they do not have a credit or debit card."⁴⁷ Another reason has been the lack of access to smart phones, although in Latin America this has changed. According to "The Mobile Economy Latin America and the Caribbean 2017," the adoption of smart phones will reach 71% by 2020.⁴⁸ Mobile phones now represent an opportunity for the monetization of games in Latin America.⁴⁹ Today there are various types of monetization. The ones that remain "outside the design of video games, such as the ability to place an advertising banner within the video game and those that are found inside the video games, such as shortened wait times, access to higher levels, or unlocking a new character..."⁵⁰ Among those found within the games, we have a variety of options. Some depend on the sale of virtual goods, such as many of the games found on Facebook and others that focus on the publicity within the games or that offer hybrid models. Independently of the model and the strategy that is chosen, it is worthwhile

47 A. Heim. (2012). Social gaming in Latin America: Beyond the challenges, an opportunity to seize. Available at: <https://thenextweb.com/la/2012/06/17/social-gaming-in-latin-america-beyond-the-challenges-an-opportunity-to-seize/>

48 GSMA. (2017). The Mobile Economy Latin America and the Caribbean 2017. Available at: <https://www.gsma.com/latinamerica/mobile-economy-latin-america-caribbean-2017/>

49 A. Heim. (2012). Social gaming in Latin America: Beyond the challenges, an opportunity to seize. Available at: <https://thenextweb.com/la/2012/06/17/social-gaming-in-latin-america-beyond-the-challenges-an-opportunity-to-seize/>

50 Available at: <https://blog.demiumgames.com/2017/03/21/las-3-estrategias-de-la-monetizacion-de-videojuegos-f2p/>

to invest in data analysis to understand how users download and what are their preferences. The investment in the data analysis will also help understand players and make informed choices regarding the best monetization strategy.

Monetization models for video games can be classified into six categories:

Paid made-to-order:

Custom-made game with single game payment

Premium: Multiple individual payments for a game

Paid mobile: Multiple individual payments for a game

Subscription: Multiple seasonal and time-limited payments to play a game, divided into parts on PC or multiple regular fixed payments for playing the game online

Freemium

(Free-to-Play):

Multiple current payments for advertising inside the game or multiple micropayments for in-app purchases

Licensing: Single (or multiple) temporal license fee for access to IP or single (or multiple) one-time license royalty for access to IP

Source: Patrycja Klimas
(2017). Current Revenue
(Monetisation) Models of Video
Game Developers. Available at:
[https://www.researchgate.net/
publication/319665976_Current_
Revenue_Monetisation_Models_of_
Video_Game_Developers](https://www.researchgate.net/publication/319665976_Current_Revenue_Monetisation_Models_of_Video_Game_Developers)



Promoting Games and Attracting Users

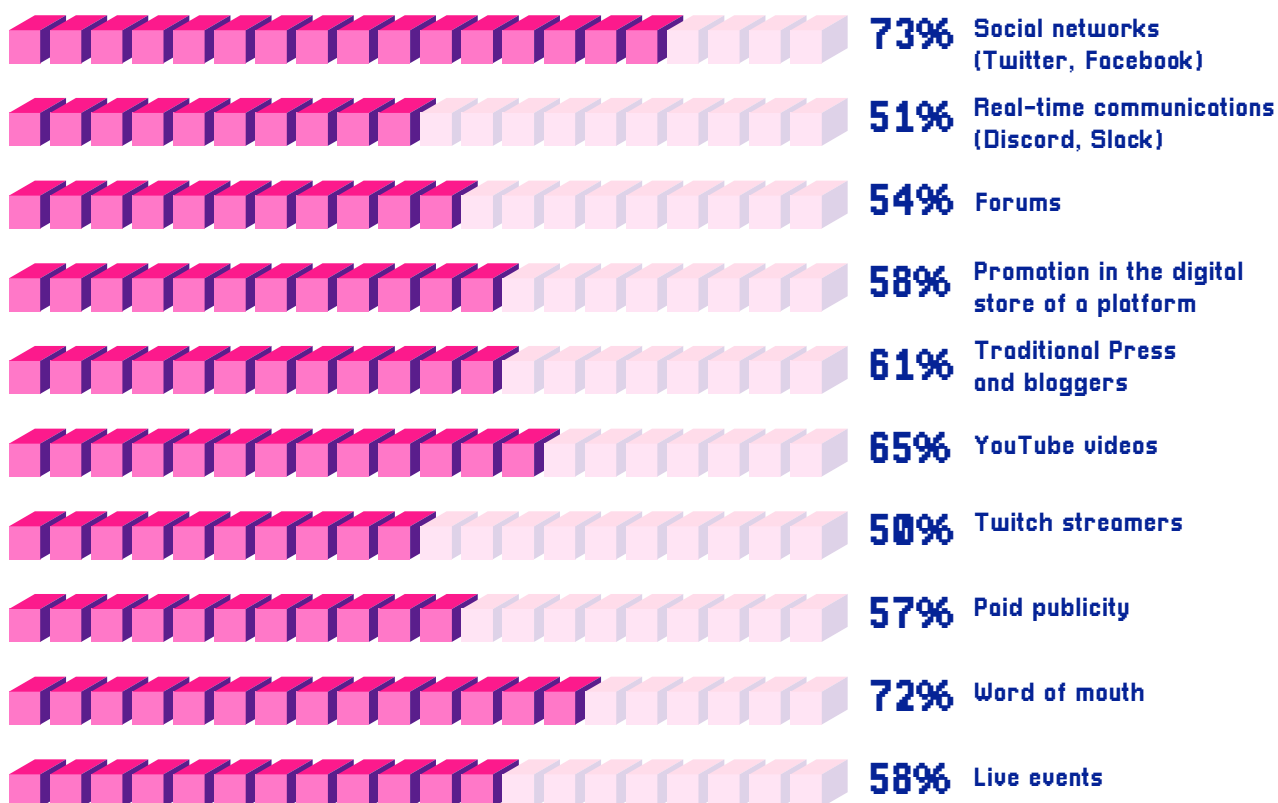
Among the major challenges that affect the promotion and capture of users is the access to data on potential users in the target market. Another challenge is the cost of promotion on social media, which is necessary for attracting a larger audience, but we know that marketing in social media is not sufficient and that applications to be visible, they have to be featured in specialized stores. The Main objective of this process of

optimizing mobile apps is to improve their positioning in online searches or in the categories of the app stores such as Google Play and AppStore. The point is to optimize the visibility of the game and thus increase the number of downloads or installations.⁵¹ Nonetheless, because of their high costs, these promotion schemes often put Latin American studios at a disadvantage because they have to compete with thousands of games all over the world that are published every day, which increases costs.⁵²

⁵¹ ASO Marketing Móvil. Studio34. Available at: <https://www.estudio34.com/as0-marketing-movil/> (consulted in 2018).

⁵² M. Barclay. (2016). Latin America's video game industry is booming. Here's why this is good for the region. Available at: <https://www.weforum.org/agenda/2016/06/the-importance-of-video-games-for-latin-americas-creative-economy/>

In which promotional means did you make the biggest investment (time or money) for your most recent game?



Source: "State of the Game Industry 2019" (GDC), p. 22

Promoting international games in the Latin American market can also be a challenge because of the logistical and regulatory barriers that increase the price of the game. One notable case is the price of international video games in the Brazilian market, which have some of the highest prices in the retail market. A 2015 study comments, “The cost, combined with Brazilian taxes increases the price for the final user by more than 70%, while other factors such as transportation and distribution also increase the cost.”⁵³

The Black Market and Piracy

There is much more media piracy in Latin America and the Caribbean than in other regions. Nearly 50% of internet users in South America use pirated systems, including cyberlockers, file storage systems, and peer-to-peer (P2P) live retransmission of internet protocol TV (IPTV).⁵⁴ Some 20.7% of South American users used P2P, compared to 16.3% globally. This higher level of P2P files is caused by the more generalized use of Ares Galaxy, better known as Ares. Many users of this free program rate it as the fastest and best in its category because any type of file can be downloaded, including music, movies, software and video games.⁵⁵ The low availability of these products and the high import taxes on video games and consoles in the region have led to a culture of imitations and forgeries. For example, Brazil did not begin to officially import video games until 1990. Likewise, prices were high and the selection was very limited, providing the incentives for illegal imports and commercialization.⁵⁶⁻⁵⁷ Even though piracy continues in Brazil, well-known companies such as Sony and Microsoft have turned this situation into a

business opportunity by manufacturing their consoles in the country. With piracy, everyone loses: the public sector, the private sector, the creative talent and the potential workers who could enter this industry.

The Importance of Foreign Investment and Becoming Known Internationally

One of the great challenges for video game studios is getting their products recognized internationally. Having the right networks, participating in business forums, exhibiting products at international fairs, and finding investors and publishers are key tasks and can be daunting. Currently there are business groups and associations, government initiatives, public-private alliances, and regional programs that invest in positioning the video game industry on the international map.

Trade promotional agencies and business groups in the industry of each country play important roles in the promotion of foreign investment. For video game studios who want to enter international markets, it is important to identify these types of associations or federations. Among the most important are the International Game Development Association (IGDA) and the Federation of Video Games of Latin America (Latam Federation).

The International Game Development Association (IGDA): The mission of this non-profit association, which is the largest in the world, is to support and train video game developers in any part of the world. It has chapters established in Brazil, Chile, Colombia, Costa Rica, Guatemala, Paraguay and Peru and new chapters are being set up in Argentina and Mexico.⁵⁸

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- 53 Tech in Brazil. (2015). The Market for Video Games in Brazil. Available at: <https://techinbrazil.com/the-market-for-video-games-in-brazil>
 - 54 Alianza TV. (2016). South America Television Piracy Landscape. Available at: <http://www.alianza.tv/files/NetnamesAlianzaReport012016.pdf>
 - 55 Alianza TV. (2016). South America Television Piracy Landscape. Ibid.
 - 56 J. Johnson. (2017). Will Games Become Brazil's Next Big Export? Available at: <https://iq.intel.com/will-games-become-brazils-next-big-export/>
 - 57 Tech in Brazil. (2015). The Market for Video Games in Brazil
 - 58 International Game Developers Association. (2018). Chapters-Professional. Available at: <https://www.igda.org/?page=chaptersprofessional>

The Federation of Video Games of Latin America: It was founded by the major Latin American associations of video game developers and represents the firms, studios and business persons dedicated to the development, promotion and growth of the industry. Among the countries in the Federation are Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, El Salvador, Mexico, Peru, Paraguay and Uruguay.

Federation of Video Games of Latin America

<http://www.latamvgfederation.org/>

ADVA

adva.vg

Argentina

BGD

abv.org.bo

Bolivia

Abra Games

abragames.org

Brazil

UG Chile

videogameschile.com

Chile

COVA

fb.com/igdacolombia

Colombia

ASODEV

fb.com/Asodev-Costa-Rica-154167465255847

Costa Rica

AVES

El Salvador

AMDV

fb.com/mexicogames

Mexico

CUA

cva.pe/

Peru

IGDA Paraguay

igda.org/members/group.aspx?code=paraguay

Paraguay

CAVI

cavi.uy

Uruguay

Among the initiatives of governments, public-private alliances, and regional programs are the following:

The Brazilian Export Program for Game Developers (BGD Export):

Created by the Brazilian Game Developers Association (Abragames), in association with Apex- Brazil, the Agency for Investment Promotion and Trade, its objective is to promote the Brazilian games industry internationally by developing new business opportunities for the firms.⁵⁹ This program covers the registration fee of video game creators in the key events of the industry, including the Game Developers Conference, (GDC) in San Francisco and Gamescom in Cologne, Germany.⁶⁰

 **ProChile:** Is the institution of the Ministry of Foreign Relations of Chile in charge of promoting the country's goods and services exports. This institution, through competitions, offers the opportunity to participate in international video game fairs; for example, Game Developers Conference in San Francisco, and Gamescom in Cologne, Germany. The winners of these competitions receive financial support, the coordination of meetings with potential buyers, trade missions, and orientation for establishing offices abroad⁶¹.

The Argentine Agency for International Investment and Trade:


This is a public-private entity that works on a variety of activities dedicated exclusively to the internationalization of firms in the video game sector and access to global market opportunities through the creation of custom-made action plans for each firm. The plan can include training in areas that range from developing business models for video game studios to legal aspects and the acquisition of certifications required to remain competitive in the global market. This support is provided through two programs: Entrepreneur Passport and Soft Landing, whose objectives are the training for establishing offices abroad and trade promotion in events

such as Game Connection Americas in San Francisco, Gamescom in Cologne, Germany, Big Festival in Brazil, and Ronda Eva in Buenos Aires, where they are given a stand, and an agenda for meetings and business round tables.⁶²

The Investment and Foreign Trade Promotion Agency (InvestBA),

of the Under-secretariat for Economic Development of the Ministry of Economics and Finance of Buenos Aires: This is an agency which, in addition to offering custom-made missions, training for the internationalization of firms and an international collaborative network of Argentinians around the world, has three different modalities of support for studios or video game developers. At a sectorial level, it works alongside The Argentine Video Game Development Association (ADVA) where they have a co-financing plan (70% InvestBA, 30% ADVA). InvestBA chooses their clients by announcing a call for proposals for the selection of firms. Their support consists of guidance for executing an internationalization plan, which can range from attending high level conferences to organizing meetings with investors. This initiative also includes an invitation from international buyers to the Argentine Video Game Exposition (EVA), organized by the ADVA and considered one of the most important video game development events for the local industry. The second modality is through the global entrepreneur program, which establishes linkages with potential partners or investors and can lead to support for travel and entry fees for events or conferences such as Games Connection and Game Developers Conference in San Francisco. The third modality is through their exchange programs where they have agreements with different cities. For example, through the agreement with Paris & Co., the Paris Agency for Economic Development and Innovation, an entrepreneur can travel to Paris for a month to participate in workshops and meet with potential publishers or investors.

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- 59 Brazilian Game Developers Association. Available at: <http://www.braziliangamedevelopers.com.br/about.html> (Consulted in 2018).
- 60 J. Johnson. (2017). Will Games Become Brazil's Next Big Export? Available at: <https://iq.intel.com/will-games-become-brazils-next-big-export/>
- 61 ProChile. Available at: <https://www.prochile.gob.cl/promociona-tus-productos-y-servicios-en-el-extranjero/ferias/> (consulted in 2019).
- 62 Available at: http://www.inversionycomercio.org.ar/quienes_somos.php

 **ProColombia:** Is the entity in charge of promoting tourism, foreign investment in Colombia, non-mining and non-energy exports, and the image of the country. ProColombia supports the animation and video game sector because it considers that Colombia's talent can make greater inroads into international markets.⁶³

This entity has supported various initiatives that have enabled video game developers and studios to attend international events such as Games Developers Conference, Gamescom, PAX, E3, Game Connection, and many others. ProColombia has carried out business round tables at one of the most important international events in the country: Colombia 4.0. This is a key event for the internationalization of the sector, since it offers services and instruments that facilitate the design and execution of internationalization strategies that foster the generation, development and closing of business deals. One key initiative for the video game industry has been Colombia Bring IT On, that was born in 2014 from an alliance between the Ministry of Information Technology and Communications and ProColombia. Its objective is to position the information technology and digital creative industries in international markets for buyers, publishers and foreign investors so that they find technological business solutions among Colombian talent.⁶⁴

 **The Cultural Industries Market of the South (Micsur):** Is the first cultural industries market in South America that has emphasized support for video games. At the Micsur event, delegations from the member countries can set up stands, and showcases and participate in business forums, or attend seminars which focus on the integration of trade among their creative and cultural

industries. The event is attended by delegations of producers, buyers and sellers in the industry, including some from outside the region. For example, in Argentina, the call for participating in the delegation is carried out by the Cultural Board. The next Micsur event will take place in Chile in 2020.



















































 **The Inter-American Development Bank (IDB):** Through its platform ConnectAmericas, the IDB supports online business forums for developers, publishers and third-party providers. Through its bi-annual forum Outsource2LAC, which is dedicated to fomenting business forums for the region's small and medium-sized firms. This forum brings together global export services, covering the registration fee and part of the travel costs of video game developers in Latin America and the Caribbean. Since 2013, this signature initiative of IDB'S Demand Solutions (www.iadb.org/DemandSolutions), has taken up the task of highlighting all the sectors of the cultural and creative industries, including video games. The overall objective is to give visibility to the sector, and showcase the creative talents that are behind the video games. Furthermore, Demand Solutions organizes an annual contest to recognize the best start-ups of Latin America and the Caribbean in the various sectors of the creative industries, including video games.

These examples show the important role played by these trade fairs and events to showcase video game studios and connect them with potential buyers and with professionals and journalists in the industry. The following section provides a list of the international events mentioned in this publication.

⁶³ Available at: <http://www.procolombia.co/compradores/es/explore-oportunidades/animacion-y-videojuegos-0>

⁶⁴ Available at: <http://www.colombiabringiton.co/comprador>

Video Games Events

| Events | For Consumers | For Developers | Latin America & the Caribbean | International | City |
|--|---|---|---|---------------|---------------------------|
| Argentina Game Show |  | |  | Argentina | Buenos Aires |
| Brasil Game Show |  | |  | Brazil | São Paulo |
| Brasil Independent Game Festival (BIG) |  |  |  | Brazil | São Paulo, Rio de Janeiro |
| Casual Connect Europe | |  | | UK | London |
| Casual Connect | |  | | US | San Francisco |
| ChinaJoy |  | | | China | Shanghai |
| Colombia 4.0 |  | |  | Colombia | Bogotá |
| Devcom | |  | | Germany | Cologne |
| Develop Conference | |  | | UK | Brighton |
| DICE Summit | |  | | US | Las Vegas |
| E3 |  | | | US | Los Angeles |
| EGX |  | | | UK | London |
| Exposición de Videojuegos (EVA) | |  |  | Argentina | Buenos Aires |
| Festigame Chile |  | |  | Chile | Santiago |
| G-Star |  | | | South Korea | Busan |
| Game Com - Connecturday |  | |  | Costa Rica | San José |
| Game Connection Americas | |  | | US | San Francisco |
| Game Connection Europe | |  | | France | Paris |
| GameDevPY | |  |  | Paraguay | Asunción |
| Gamelab Barcelona | |  | | Spain | Barcelona |
| Gamelab Montevideo | |  |  | Uruguay | Montevideo |
| Games for Change Festival | |  | | US | New York |
| Gamescom |  |  | | Germany | Cologne |
| GDC (Game Developers Conference) | |  | | US | San Francisco - Paris |
| Level UY | |  |  | Uruguay | Montevideo |
| Más Gamers Festival |  | |  | Peru | Lima |
| Nordic Game Conference | |  | | Sweden | Malmö |
| PAX East |  | | | US | Boston |
| PAX South |  | | | US | San Antonio |
| PAX West |  | | | US | Seattle |
| PG Connects Helsinki | |  | | Finland | Helsinki |
| PG Connects London | |  | | UK | London |
| PG Connects Seattle | |  | | US | Seattle |
| Pixelatl | |  |  | Mexico | Cuernavaca Morelos |
| Semana del Videojuego Chile | | |  | Chile | Santiago |
| Tokyo Game Show | |  | | Japan | Tokyo |

For a more exhaustive list of other events, see: <http://www.eventsforgamers.com/>

According to Latin Solidaria, “collective financing platforms also represent an opportunity for video game creators, since by presenting their idea, they can measure its success or relevance and at the same time secure funding.” In the section, “How are Video Games Financed?” we show some Latin American cases of crowdfunding that were able to attract more than US\$200,000 dollars to finance their games. Today we can assert that although crowdfunding has lost some of its popularity, in 2017 alone, video game developers managed to secure US\$25 million dollars from this platform.⁶⁵ Crowdfunding has funded some of the most highly acclaimed indies, such as Pillars of Eternity, which in 2012 attracted 73,986 patrons, who contributed some US\$3,986,929 dollars,⁶⁶ or Divinity Original Sin 2 that in 2016 brought in US\$2,032,434 dollars from 42,713 patrons.⁶⁷

The integration of new technologies into video games is also an opportunity to attract new patrons through crowdsourcing. Prior to 2017 when the race to finance technology through blockchains began, the 6 out of 10 highest-grossing crowdfunding ventures were in video games, mobiles and portable electronic accessories.⁶⁸ Augmented and virtual reality (AR/VR) offer unique experiences and the quality continues to improve over time. It is difficult to know if they will effectively transform the video game industry but it is a sector of technology which, according to MarketsandMarkets, is estimated to globally reach US\$15.89 billion dollars by 2020, with an annual growth rate of 49.61%.⁶⁹

Likewise, esports presents an opportunity to attract foreign investment. Currently some 45% of esports profits are generated in Asia, 36% (US\$392 million dollars) in the US, and Latin America trails far behind at only US\$1.1 million of the 2017 global market,⁷⁰ Nonetheless, this industry has an unexploited potential for growth that could reach levels comparable to the major professional sports leagues in the US and Canada (NFLA), and with events

such as the Super Bowl and the World Cup tournaments.

Intellectual Property: A Mile to be Run

In conversations with Micaela Mantegna, a video game specialist and founder of @Geekylegal, an initiative that disseminates the importance of intellectual property rights as they relate to technology, explains, “We should not only think of video games but also of all the products, services and contents that are derived from this industry, such as the YouTube and Twitch channels dedicated to games, esports events, financing platforms, content development platforms and the influencers that appear every day promoting different brands, games....” The variety of options generated by this industry is highly complex and makes it all the more challenging to understand how to protect the rights of creators. In December of 2017, more than 50 million children and teens visited Roblox, the platform that offers an opportunity for young users to create, share, play and win money.⁷¹ This platform, for example, clearly describes who can use the materials it offers and how.⁷² Nonetheless, there are many other instances where rights are not necessarily well-defined nor do they know how to safeguard the creation of all the products and services that are generated in the industry.

We asked Micaela Mantegna what would constitute the extent of the protection afforded to the thousands of video game studios. Would it be like the fashion industry where only the logo has to be registered or can any YouTuber monetize the content by simply playing the game? She confirmed for us that many of the derivative works from video games, such as video games that are played in esports tournaments, are protected by copyright. Whether or not it is permitted to charge for these games varies according to the game or platform. Since this situation can change, no one can be certain that in the future some company won’t allege that its rights

⁶⁵ Available at: <https://solidaridadlatina.com/actualizacion-es/videojuegos-populares-financiados-con-crowdfuding/>

⁶⁶ Kickstarter. Available at: <https://www.kickstarter.com/projects/obsidian/project-eternity> (Consulted in 2019).

⁶⁷ Kickstarter. Available at: <https://www.kickstarter.com/projects/larianstudios/divinity-original-sin-2> (Consulted in 2019).

⁶⁸ Wikipedia. (2018). List of highest funded crowdfunding projects. Available at: https://en.wikipedia.org/wiki/List_of_highest_funded_crowdfunding_projects

⁶⁹ Idbconnect. (2016). Available at: <https://www.idgconnect.com/idgconnect/analysis-review/1013575/latin-america-vr-contender>

⁷⁰ Available at: <https://www.statista.com/statistics/443147/estimate-of-global-marketrevenue-of-esports-by-region/>

⁷¹ Available at: <https://www.forbes.com.mx/esta-pagina-tiene-mas-visitas-de-jovenes-que-netflix-y-youtube/>

⁷² Available at: <https://en.help.roblox.com/hc/en-us/articles/206388086-Can-I-Use-Copyrighted-Material-on-Roblox->

have been infringed upon and impede players from transmitting its games in a sports championship or on a Twitch streaming if they do not have a license to do so. The creators of content have to keep in mind that broadcasting rights for events is a profitable business for many industries such as television, and internet platforms. The infraction of the terms and conditions, even if unintentional, exposes them to the closing of accounts and therefore to the loss of their followers.”

The importance of intellectual property laws is a pending topic in Latin America and the Caribbean and it should be shared and studied by all creators and entrepreneurs. To facilitate an understanding of what can actually be registered, we have prepared a checklist and some suggestions on the topic.

What Can We Protect in the Development of a Video game and How Can We do It?

The development of a video game is a process that involves various elements that can all be protected by different intellectual property tools. The most common are: copyrights, trademarks, patents, and trade secrets, where each of them covers a certain aspect of the game. A video game can be protected

as a finished product, but protection can also be given to each element of a game, such as its software, art, music, design, scripts, characters, etc. Copyrights protect the artistic intellectual creations as long as they comply with the requirement of being original. They do not necessarily have to be innovative or novel, because in the context of copyrights, “originality” means that a work is different from what has been created previously. In some specific cases, when an element complies with the requirements of several categories, the protections on the same element can overlap without being exclusive. It is important to point out, however, that copyrights do not protect an idea, only the concrete expression of an idea that is consolidated into a particular work. The easiest way to understand this concept is to think that an idea might be a game about “heroes that save the world from the forces of evil,” and that the “concrete expression” could be things as different as Mass Effect, Space Channel 5 or Tomb Raider.

The following table shows some of the most common options for protecting the elements of a video game. Since the limits of each element are somewhat imprecise and there can be some overlap, in each case, a copyright attorney should be consulted.

What Can We Protect in Video Game Development?

| General Rule | Copyrights | Trademarks | Patents | Trade Secrets |
|--------------------|--|--|--|---|
| | Protect the creative elements of authorship that comply with the requirement of originality. | Are distinctive signs, designs, or expressions that identify the product or service in the market and in the mind of consumers. It can be a name, a word, a symbol or even colors, aromas, or sounds, as long as they are distinctive. | Protect inventions that offer a heretofore unknown specific solution in the state of the art, and must comply be novel or non-obvious to someone versed in the art. Invention patents can cover an object, a procedure, an apparatus invented to make or manufacture an object, etc. | Is that information that provides a commercial advantage, that a firm keeps secret. |
| Protected Elements | Video game as a complete product | Studio Name or Logo | | Information about distribution channels |
| | Script | Title or logo of a franchise, (for example, Assassin's Creed) or of a release, (Assassin's Creed: Odissey) | | Unrevealed conceptual art |
| | Stage design | In some cases, fictional characters can also receive trademark protection. | | Contact information (clients, suppliers, publishers, talent, etc.) |
| | Software | | | Internal work methods |
| | Engine | | | Confidential Agreements |
| | Fictional characters | | | |
| | Music | | | |

Since Video Games Are Complex Intangible Assets, Here Are Some Useful Suggestions:

Sign confidentiality agreements: Before presenting an idea to potential investors or colleagues, it is advisable to have a confidentiality agreement already in place. The agreement should define the limits of the information to be shared so that all original elements are contractually protected while the project is being developed⁷³.

Safeguard the creative process: Preserve all the elements of your work (conceptual art, sketches, first builds, etc.) and document the process as much as possible so that you will be able to prove the origin and development of your ideas, as well as your authorship.⁷⁴

Research the criteria for copyright protection in your target market: Investigate the criteria used in the copyright process for each country where you plan to register your game. Some elements may be protected by themselves or overlap with other elements; for example, there may be different protections for video games, software, audiovisual works, music, the script, or the character design.⁷⁵

Be sure to register your trademarks: When developing a trademark, make sure that it is not similar to another that already exists in the same category or that can lead to confusion. Trademarks can apply to the name of a saga, for example, Assassins Creed, the name of the development studio and, in special cases, even the name of a character when it is associated with a point of origin; for example, inevitably Mickey Mouse is associated with Disney.⁷⁶

Find out what should be patented: Securing a patent is a costly and time consuming process. Therefore, if you develop products that interact with your games, we suggest that you evaluate the patent option. For example, Nintendo patented the shape and button mechanism used in the joysticks for its consoles.⁷⁷

Within the industry, the general rule is that patents apply primarily to hardware developments. Software is protected by copyrights, with the exception of cases in some countries where patents are issued under certain circumstances.

⁷³ Available at: <https://malditosnerds.com/opinion/GEEK-Y-LEGAL-Guia-Legalpara-Desarrolladores-de-Videojuegos-20190207-0007.html>

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ A. Luzardo & L. Gasca. (2018). *Emprender un futuro naranja: Quince preguntas para entender mejor a los emprendedores creativos en América Latina y el Caribe*. Available at: <https://publications.iadb.org/es/emprender-un-futuro-naranja-quince-preguntas-para-entender-mejor-los-emprendedores-creativos-en>

Three Concepts You Should Understand Before Making Your Game

Once a game has been released to the public, there is no copyright law that keeps others from using similar or common principles or elements to create other games. They cannot be protected unless their identities can be clearly recognized. No protection is provided for genres, only for the concrete expressions of each creation. Copyrights guard the expression of each creator only to the extent that it is expressed in literary, artistic or musical form.

The concept of originality.

Within copyright protection, the term, “originality” means that there is a new creation that has characteristics that can be differentiated from others of its kind and that it is not a copy of something that already exists. It does not have to be something completely new or that had not been expressed before. It is enough to have a minimum of originality to be automatically protected. This does not imply any judgment of the content or aesthetic value of the creation. Copyrights give the author just as much protection for a child’s sketch as for the masterpiece of a famous artist.

Intellectual Property refers to creations that come from the mind: inventions, literary and artistic works, as well as symbols, names and images utilized in commerce. Patents, copyrights and trademarks are protected through legislation which makes it possible to gain recognition or earnings from inventions or creations. By balancing the interests of innovators with the public interest, the system of intellectual property fosters a suitable environment for creativity and innovation.



The Phenomenon of the Video Game Industry



Since their beginnings, both the consumption and the production of video games have been global phenomena. From the conception to the completion of their games, today more than ever, Latin American and Caribbean developers target the global market, connecting with players and markets around the planet.

Over the last few decades, the prospects for collaboration between video game producers in Latin America and the Caribbean and global video game firms have grown considerably.

The prospects are now greater for the region's studios to successfully make their products known to the rest of the world and reach players who will download virtual copies of their games on virtual distribution platforms such as PlayStation Store, Xbox Live and Steam. The vast majority of Latin American and Caribbean studios develop video games for export, tailoring their design to fit the tastes of a global public. The objective of many independent studios is to produce a hit game, such as the Uruguayan Kingdom Rush, that has earned a Metacritic review of 89% or Trivia Crack, a question and answer game from the Argentine studio Etermax, with some 77 million players in 22 countries.⁷⁸ There are obvious incentives for regional developers to look beyond their national borders when promoting their products. Mexico, for example, was recognized as the sixth most important world exporter in animation, video games and software, an industry that was responsible for over 7.4% of its country's GDP as well as for some two million direct

and indirect jobs.⁷⁹ Therefore it is not surprising that in 2017 the Argentine video game industry exported 95% of its creations, mainly to the US, Europe and Asia.⁸⁰

From the first machine video games that appeared in bars, restaurants and shopping centers in the late seventies and early eighties, to the casual games that are manipulated today on mobiles and social networks, there have been notable cases of multinational firms with branches and operations in Latin America and the Caribbean. In Brazil, several key cases can be seen: for example, SNK, the Japanese giant from the seventies and eighties who was responsible for series such as King of Fighters and Metal Slug, established a manufacturing and distribution center there in the early eighties. As a result, these games became more accessible and thus more popular around Brazil and neighboring countries. Nonetheless, the Brazilian company, Tectoy and the Japanese firm Sega were the ones to establish more long-lasting inter-regional relations, with the Brazilian company becoming the official representative of the Japanese firm for the Brazilian market. Tectoy was responsible for the linguistic and cultural adaptation of

⁷⁸ Google. (2014). Preguntados: la aplicación que sacudió a Latinoamérica y al mundo. Available at: <https://www.thinkwithgoogle.com/intl/es-419/recursos-y-herramientas/m%C3%B3vil/preguntados-app-latinoamerica/>

⁷⁹ S. González. (2017). México, sexto exportador en animación y videojuegos. Available at: <http://www.jornada.com.mx/2017/10/09/economia/025n1eco>

⁸⁰ El Día. (2018). Videojuegos argentinos material de exportación. Available at: <https://www.eldia.com/nota/2018-3-18-7-38-36-videojuegos-argentinosmaterial-de-exportacionrevista-domingo>

Sega's most popular games, publishing dozens of localized titles, including *Mônica no Castelo do Dragão* (1991) and *Chapolim x Dracula. Um Duelo Assustador* (1989) over the decades of the collaboration. This collaboration resulted not only in the success of Tectoy but also in the domination of Sega in the Brazilian market, where it controlled over 75% of the market share in 1995. This was far ahead of the then world leader Nintendo that did not officially enter the Brazilian market until 1993.⁸¹

Today multinationals are showing a renewed interest in establishing operations in Latin America and the Caribbean. After Konami, another Japanese video game firm set up offices in Mexico in 2008, it was rewarded with a growth rate of 351% in regional sales over four years. This record prompted the Japanese executives to make their first visit to Mexico in the forty-year history of the company.⁸² By 2012,

Konami had already announced that sales of *Pro Evolution Soccer 2012* had already gone over a million copies and that they would give a discount to Latin American players in order to maintain their loyalty.⁸³

It wasn't until early 2014 that Sony decided to debut its complete line of PlayStation in Latin American markets, establishing official presence in 19 countries in the region. Their first regional publicity campaign centered on the theme, "We are all players," and included individualized hardware packages with *Pro Evolution Soccer* or *FIFA* and a commitment to produce localized and exclusive versions of future individualized games for regional players.⁸⁴ After Sony came Square Enix, the Japanese developer of series that include *Final Fantasy* and *Tomb Raider*. Square Enix established operations in Mexico and India to take advantage of the emerging markets in these countries and their surrounding regions.⁸⁵

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- 81 P. Penix-Tadsen. (2016) *Cultural Code: Video Games and Latin America*, 109-110.
 - 82 F. Rubio. (2012). Gamers'latinos impulsan a Konami.CNN Expansión, 28 agosto 2012: Available at: <https://expansion.mx/negocios/2012/08/27/konami-se-la-juega-con-mercado-de-la>
 - 83 E. López. (2012). PES 2012 vende más de un millón de copias en América Latina. *StarMedia.com Tecnología*, 4 octubre 2012.
 - 84 K. Orland. (2014). Sony Offers New Hardware Bundles, First PlayStation Ads for Latin America. *Gamasutra*, 10 noviembre 2014. 4.
 - 85 M. Rose. (2013). Square Enix Wants to Tap into India, Latin America Mobile Audiences. *Gamasutra*, 7 March 2013.

Alternative Projects and Great Hits

PANDRAMICAL Fernando Ramallo is a designer and creator of Argentine games. David Kanaga is known for his dynamic musical scores, for the island explored in Proteus and the synesthetic race game, Dyad. Between the two of them they designed Panoramical, a video game about the discovery of beautiful moments. In this game, players manipulate the appearance, the sound and the sensation of more than a dozen fascinating landscapes in an immersive musical adventure through space and time. Pacific mountains can be turned into devastating valleys or into solitary jazz forests. Days can be turned to night, oceans into deserts and many other transformations. Each change of scenery also transforms the musical background of the game. In total there are 15 unique worlds and each has 18 different audiovisual dimensions under the control of the player. In the past few years, Panoramical has shown off its unique and beautiful experience at a number of game festivals, museums and events all over the world.

NAVE ARCADE is an arcade; not a video game-style arcade but a giant rectangular machine which requires a token to make it work (footnose vice). Nave arcade has been taken to more than 127 different locations and there is no stop in sight. Its creators, Maxi and Hernán in 2010 thought that it would be a game that would only evoke nostalgia but it has turned into quite the phenomenon since there is no other model in the world like this one. Nave Arcade is an experimental game that bet on creating experiences and it ended up with a demand that was never expected.

KERBAL SPACE PROGRAM is a successful game from Squad, a Mexican video game developer that began as a marketing agency that specialized in the creation of interactive technologies. The company's interest in developing a new project led them to focus on the idea of a video game, named Felipe, one of its employees. Since then, Squad has concentrated on the development of games, improving the Kerbal Space Program with constant updates. On May 31st, 2017, Take-Two, the headquarters of Rockstar and 2K Games, announced the purchase of Kerbal Space Program. The portfolio of Take-Two includes a vast series of hit video games, including BioShock, Grand Theft Auto, Red Dead and XCOM.

AGAR.IO is a multi-player action and strategy game where the players take control of some small cells. These cellular avatars begin small, but they grow each time they devour agar (the compound used to cultivate bacteria), or other cells that are smaller than them. The players, therefore, should try to grow while avoiding being swallowed by the competition. One of the keys to Agar's success is that it has been propagated through social media and streamed on Twitch.tv and YouTube. Agar.IO was announced in 4chan by Matheus Valadares, a 19 year old Brazilian developer. On July 24th, 2015, Miniclip published a mobile version of Agar.IO for iOS and Android. During this same year, Agar.IO was the most sought after game on Google and the second most sought after in 2016. The mobile versions of the game were downloaded more than ten million times during the first week of its release.



Incubators and Accelerators are Also Looking for Video Game Studios



Incubators and accelerators, sponsored by global entities in Latin America and the Caribbean, represent another important facet of the relationship between regional developers and the global video game industry. By definition, incubators support new companies and start-ups during their first months or years of operation, by providing services such as shared operating spaces, training, marketing and financing. Accelerators operate in a similar manner but tend to focus on intensive programs for a limited number of months to improve or refine the operations of already existing companies.

In order to establish itself as the first publisher in Latin America, Square Enix, one of the largest publishers at the time in Japan, began operations as a regional accelerator in 2012 with a game competition where several studios participated. As a result, they teamed up with Argentine Okam Studios to develop *Ultimo Carnaval*, an RPG collectible card game published in 2014. In addition to this published title, Square Enix has collaborated with studios in Brazil, Argentina and Colombia, including the studio from Bogotá, Brainz, which was behind the game *Social Street Soccer* in 2011.

Even though Square Enix closed its Latin America office in 2014, and not all the games were published, Martina Santoro, from the video game studio Okam, assures us that the studios involved are happy to have worked on such an ambitious project. “They really taught us how to work with international partners. They showed us how to get organized and to understand what international studios are really looking for to compete in these markets. This experience opened our eyes about

both the technological and creative expectations. This experience raised us up a notch.⁸⁶

Sony began its Latin American game incubation program in 2008, with the idea of training regional talent on the particularities of its platforms by offering them a tool kit to develop software for the PlayStation 3 and PlayStation Portable consoles. This would increase Sony’s credentials as a supporter of independent developers.⁸⁷

With this incubation program, to date Sony has contributed to the development of a series of games. Among them are: *Monster Bag* from the Chilean studio Iguanabee; *Fenix Rage* from Green Lava in Costa Rica; *To Leave* by Freaky Creations in Guayaquil, Ecuador; *Squares*, by the Peruvian developer, Leap Games; *Omen of Sorrow* by AOne Games in Santiago, Chile; and *Patito Feo: El juego más bonito* (Ugly Duckling: the most beautiful game) by the Argentine studio, Tonika Games. The gamut of visions represented in the above-mentioned games shows the diversity and richness of the talented developers in Latin America and the Caribbean.

86 A. Garst. (2018). Kotaku. Available at: <https://kotaku.com/the-story-behind-squareenixs-failed-latin-americanvide-1830085992>

87 Penix-Tadsen. (2016). CulturalCode. Video Games and latinAmerica, 120-122.

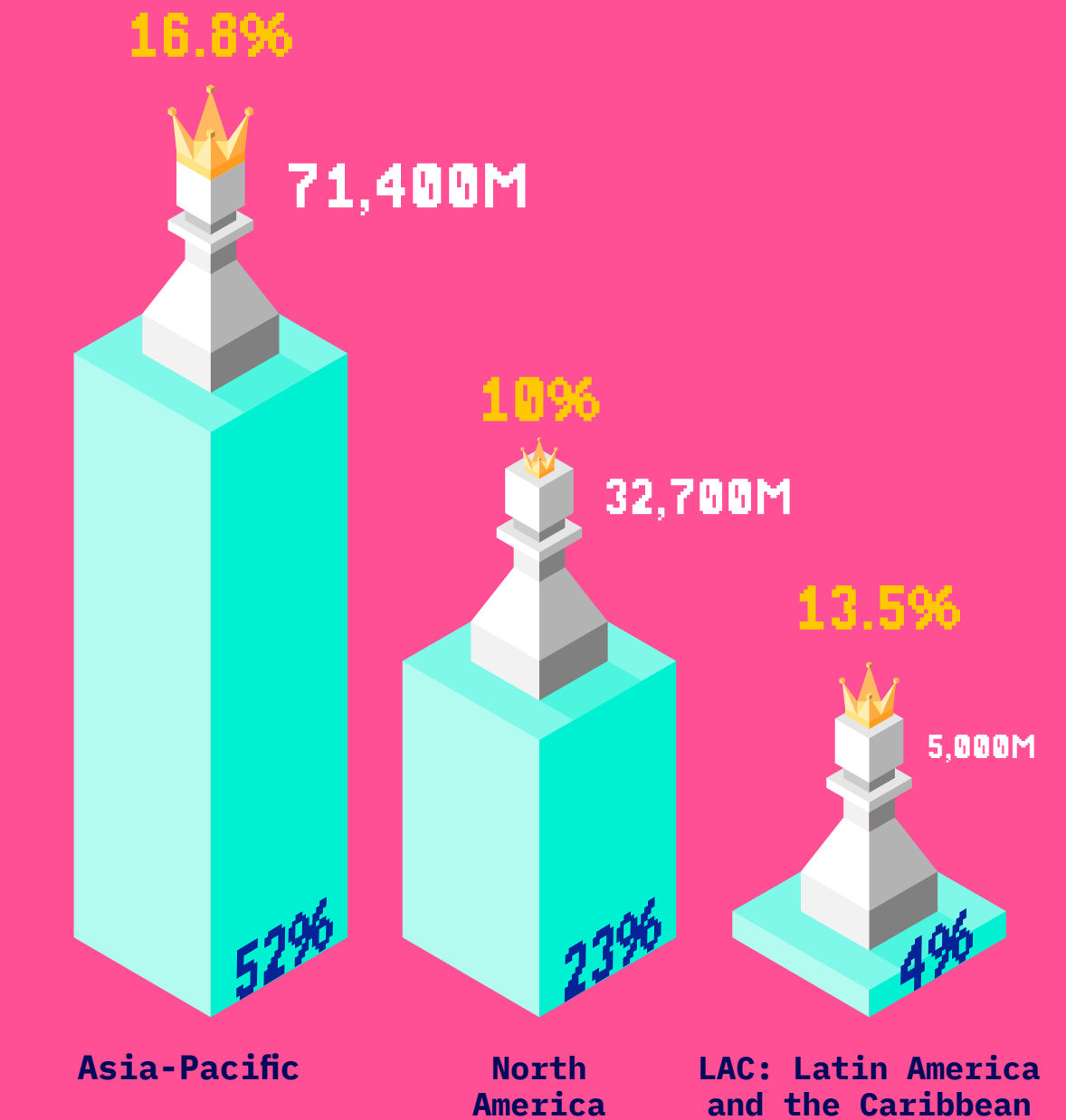
Although many of these initiatives began when digital penetration and connections on our continent were far from being the most adequate, in the last five years the panorama has changed in our favor and smart phone use is predicted to reach 71 % by 2020.⁸⁸

Today we not only consume more video games, we are the second fastest growing region. Digital penetration and video game studios have been able to position products successfully in the international market and the support of multinational firms has been

favorable for the growth of investment in Latin America. For all these reasons it is very important for governments and the private sector to continue to open opportunities for the exchange of knowledge with industry market leaders in areas such as Asia and the US and offer this exchange to the Latin American and Caribbean market in order to strengthen the region. These international experiences will make the professional development of these teams more robust and will give the visibility needed in this market that is growing exponentially.

⁸⁸ Available at:
http://www.el-nacional.com/noticias/mundo/imparablecrecimiento-industriagamer-latinoamerica_226001

Global Market of the Video Game Industry



Year-to-Year Increase



Total income of the entire market



Share of local market



Millions

Source: Global Market - Global Segmentation 2017

What Methodology
was Used for this
Publication?



To develop this publication, more than 350 games from the 26 IDB member countries were evaluated and 50 studios were selected to be showcased here. The purpose of this mapping is provide Latin American examples that show the potential of video games, one of the sectors of the orange economy. If we give the industry greater visibility, understand how it works, the challenges it faces, and its potential for education and stimulating XXI Century skills, we can strengthen its potential and ecosystem.

The Orange Economy

This is the set of activities that, in combination, allow ideas to be transformed into cultural goods and services, whose value can be based on intellectual property. The orange universe has two parts: **1) the cultural economy and creative industries** and, at their point of intersection, the conventional cultural industries, and **2) the areas of support for creativity.**

Innovation

Is the transformation of new ideas that generate economic and social value. An opportunity to accelerate the process of improving lives, rethinking how to generate alternative solutions by taking advantage of collective creativity and intelligence (Inter-American Development Bank).

Video Games

A video game is a game that we play with an audiovisual apparatus and can be based on a story. We did not consider casino video games.

Methodology

The selection of the 50 studios was made by analyzing more than 350 video games. The games were classified according to the number of downloads, the quality of the game, the sales and income generated, the investment received, the financing, the topic, the creativity and its level of differentiation in the industry. An analysis was also made of the reviews of the games in specialized sites, local and international recognition, and, where applicable, their social impact. The classification was ranked on a score from 1 to 5, with 1 being the lowest and 5 the highest. This process helped us to find the highest-ranking games and then group them by studio. Once we grouped the games by studio, we set out to analyze the data given on the following pages of this section, which includes information on the number of employees in the sample, the most-used platforms, the home countries of the studios, and the number of games published. This data, along with an explanation of the trends that characterize the industry in Latin America and the Caribbean, shows the diversity, the potential and the opportunities in the industry.

Studios per Country

Argentina

Dedalord
Etermax
Lemon Chili Games
NGD Studios
OKAM Studio
Pixowl
QB9 Entertainment
Ravegan
Videogamo

Brazil

Aquiris
Behold Studios
Black River Studios
Cupcake
Gazeus Games
Hoplon
JoyMasher
Kokku
Rockhead Games
Rogue Snail
Webcore Games

Chile

ACE Team
AOne Games
Gamaga
Giant Monkey Robot
Iguanabee
Niebla Games
TinyBytes

Colombia

Brainz
Efecto Studios
Teravision Games

Costa Rica

Fair Play Labs
Green Lava Studios

Ecuador

Freaky Creations

El Salvador

The Domaginarium
The Stonebot Studio

Mexico

1 Simple Game
HyperBeard
Larva Game Studios
Lienzo
We The Force
Xibalba Studios

Paraguay

Posibillian Tech
Paraguay

Peru

Bamtang Games
LEAP Game Studios

Uruguay

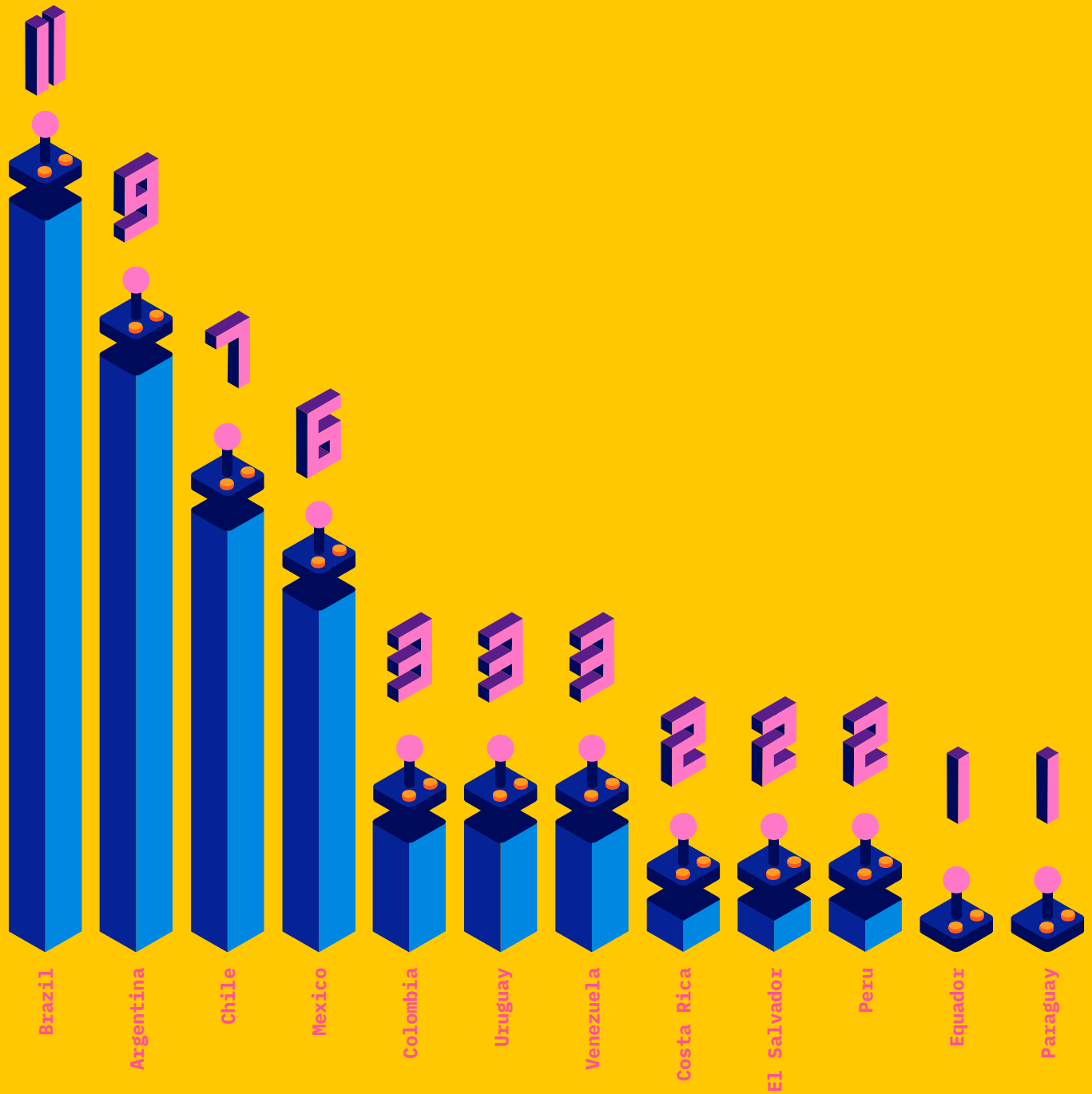
Ironhide
Pomelo Games
Trojan Chicken

Venezuela

Gasp
La Cosa Entertainment
Sukeban Games



How many studios were showcased by country?



Which platforms were used to develop video games? Which were used the most?



¿Dónde fueron publicados?

| | | | |
|---------------------|-------------------|-----------------------|----------------------|
| iOS.....176 | Web/ Facebook/ | PS4.....29 | VR/GearVR/ |
| Android.....165 | Kongregate.....95 | Xbox One.....13 | MicrosoftXR.....6 |
| Amazon Fire.....13 | PC (Windows/Mac/ | Xbox 360.....10 | AppleTV.....1 |
| Tizen.....4 | Linux).....87 | PS3.....8 | OnLive.....1 |
| Blackberry.....3 | | PS Vita.....8 | Custom |
| Windows Phone.....1 | | PSP.....7 | Arcade/Console.....1 |
| | | Nintendo Switch.....4 | |
| | | Nintendo Wii.....1 | |

* The same video game can be published on more than one platform.

The information presented is based on the showcased studios.

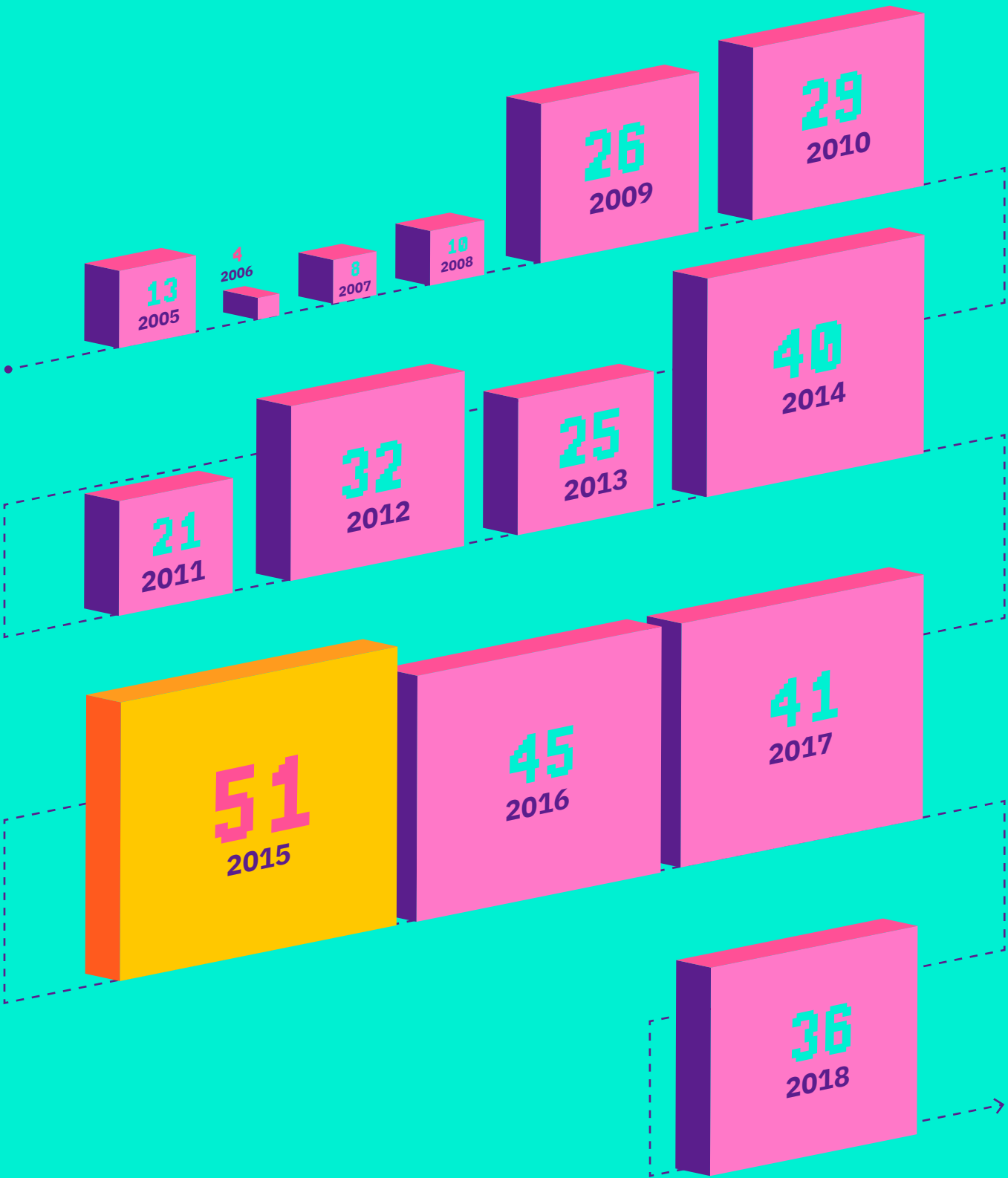
How did the 50 sample studios in this study publish their video games?



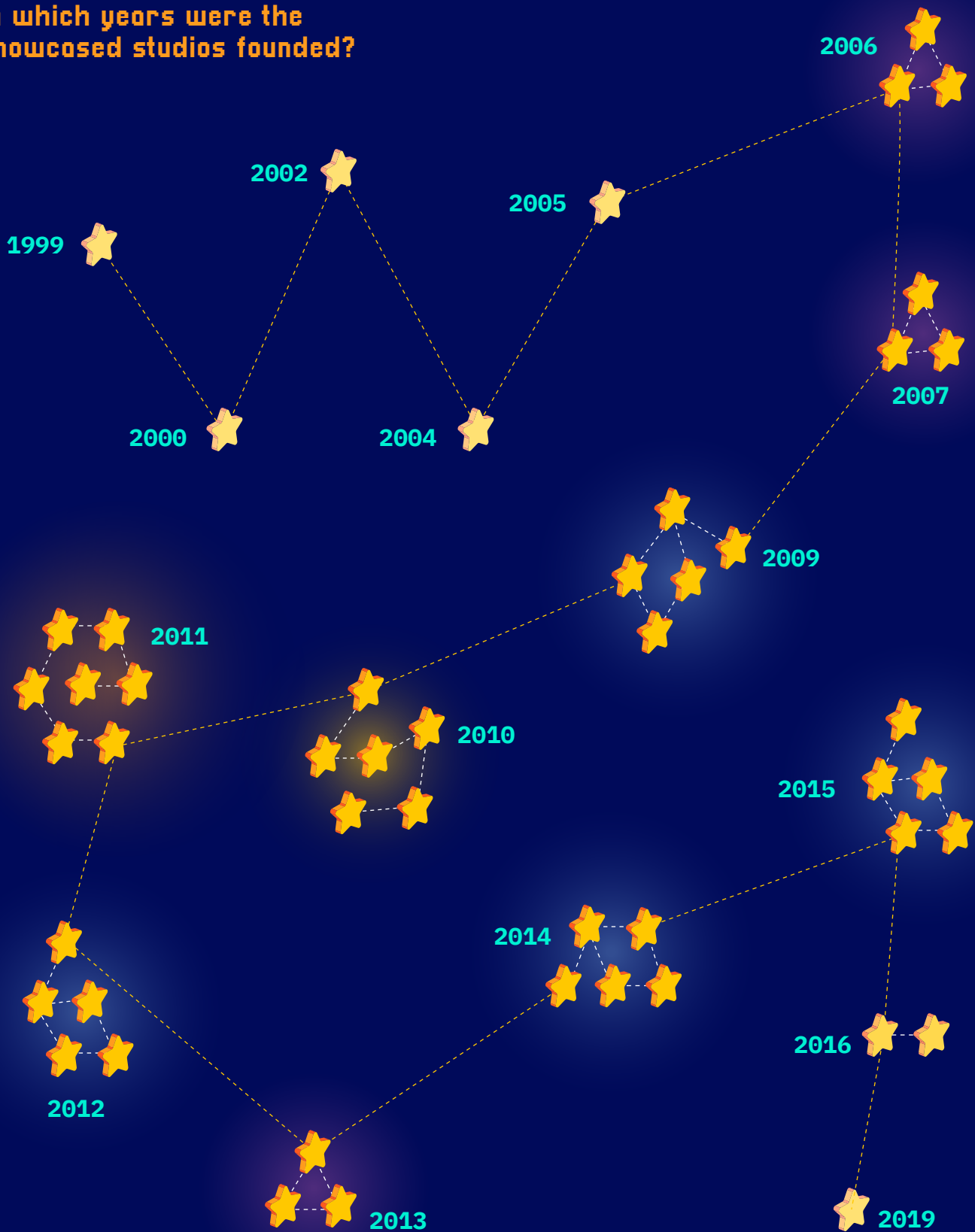
Some of the publishers for these 50 studios were:

| | | |
|-------------------|---------------------|--------------------|
| Ánima Studios | Guerrilla Games | Plan Ceibal |
| Atari | Iceberg Interactive | Shockwave |
| Atlus | Konami | Slang |
| Bandai Namco | Kongregate | Sony Europa |
| Big Fish Games | Lego | South Park Studios |
| Cartoon Network | MTV | SpilGames |
| Chillingo | Marvel | Square Enix |
| Comedy Central | Mattel | TNT |
| DHX | Microsoft Studios | Tonika |
| Disney | Minority Media Inc. | VH1 |
| Editora Caixote | Namco | Wargaming Labs |
| FDG Entertainment | Nickelodeon | |
| Gamevil | Paradox Interactive | |

How many video games were published per year by the featured studios



In which years were the showcased studios founded?



How long did it take each studio
to develop the featured video games?



19 months

Consoles



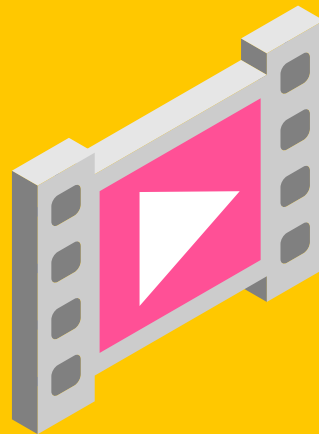
11 months

PC + Web



9 months

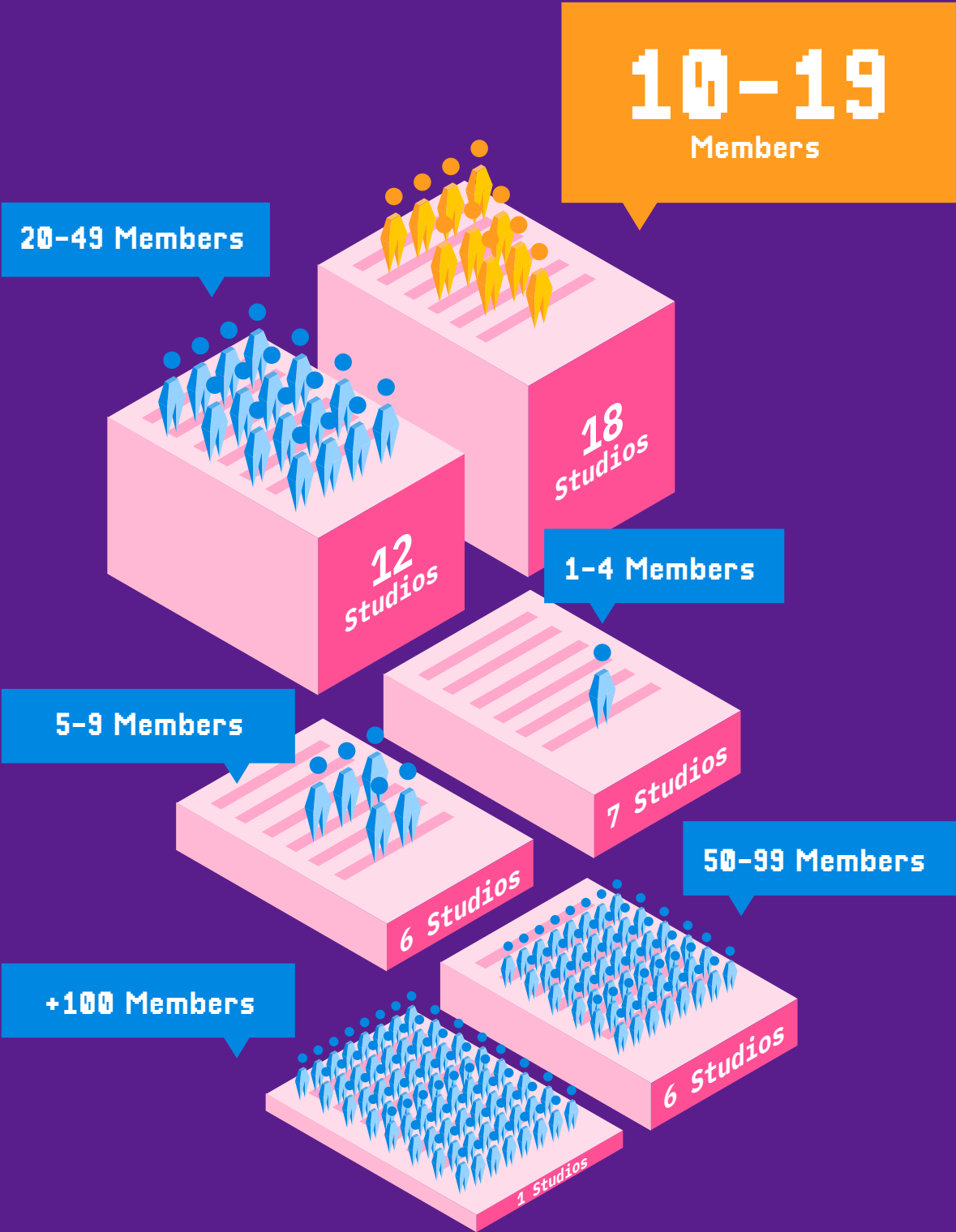
Mobiles



14 months

Others

How big is the team at each of the featured studios?



**50 Latin
American and
Caribbean
Studios**





Dedalord



Dedalord, an independent studio established in 2010, focuses on the development of original creations to generate internationally recognized brands and products. It has developed custom-built games for the most important clients in Latin America and their main character, Frederick J. Richardson III, (better known as Fred) has been the star of a large variety of games. Fred can be described as an anti-hero, agile, but with a bit of bad luck. He is often found in a perpetual adrenaline-fueled panic as he runs around trying to escape deadly traps. To date, the most popular game has been Running Fred, which has totaled more than 35 million downloads and 554 million game sessions. Awards received: Skiing Fred: Best Mobile Game IGDA, and Running Fred: EVA Sapo Award for best mobile game, 2012

| Games | Launch Date | Platform | Publisher | Development Time |
|--------------------|-------------|--|------------|------------------|
| Psychoban | 2010 | Android, iOS | Dedalord | 6 months |
| Falling Fred | 2011 | Android, iOS | Dedalord | 3 months |
| Running Fred | 2012 | iOS, Android, Kongregate, Kindle Fire, OUYA, BlackBerry, Windows | Dedalord | 6 months |
| Skiing Fred | 2013 | iOS, Android, Amazon | Dedalord | 6 months |
| Skiing Fred Versus | 2014 | iOS | Dedalord | 3 months |
| Super Falling Fred | 2015 | Android, iOS | Dedalord | 3 months |
| Party of Heroes | 2015 | iOS, Android, Kongregate | Kongregate | 12 months |
| Supersonic Jack | 2015 | Android, iOS | Dedalord | 5 months |
| Zombie Zombies | 2016 | Android, iOS | Dedalord | 12 months |
| Clicker Fred | 2017 | Android, iOS | Dedalord | 5 months |
| Football Fred | 2018 | Android, iOS | Dedalord | 18 months |

Dedalord



02

Etermax

Argentina



Founder
Máximo Cavazzani



Studio Website
etermax.com



Locations
Buenos Aires, Argentina;
Montevideo, Uruguay and
Berlin, Germany



Date of Foundation
2009



First game release
2011



Team size
+250



Best-known game
Trivia Crack (Preguntados)



etermax

Founded in 2009, the Argentine firm Etermax is the fastest-growing mobile-game developer in the region. Among its most popular games are Awarded Crack (Apalabrados), Trivia Crack (Preguntados) and Pictionary. TM. Trivia Crack has become the 5th most played game in the world, surpassing some 350 million users and leading the rankings in the US, Turkey and some other 44 countries. In the last few years, Etermax has become recognized as the leading game developer in Latin America, with a team of over 250 employees that continues to grow, with offices in Argentina, Germany and Uruguay.

| Games | Launch Date | Platform | Publisher | Development Time |
|---|-------------|--------------|-----------|------------------|
| Awarded Crack (Apalabrados) | 2011 | iOS, Android | Etermax | 3 to 6 months |
| Trivia Crack (Preguntados) | 2012 | iOS, Android | Etermax | 3 to 6 months |
| Bingo Crack | 2012 | iOS, Android | Etermax | 3 to 6 months |
| Word Crack (Mezcladitos) | 2012 | iOS, Android | Etermax | 3 to 6 months |
| FC Barcelona Trivia Fans | 2014 | iOS, Android | Etermax | 3 to 6 months |
| Real Madrid Trivia Fans | 2014 | iOS, Android | Etermax | 3 to 6 months |
| Skydoms | 2015 | iOS, Android | Etermax | 3 to 6 months |
| Trivia Crack Kingdoms (Reino Preguntados) | 2015 | iOS, Android | Etermax | 3 to 6 months |



15:51

77 %



RONDA 1 / 25



Cecilia

VS

@walt.gri...



141630



Lemon Chili Games



Argentina



Founder
Fernando Sarmiento



Studio Website
lemonchiliGames.com



Location
Buenos Aires, Argentina



Date of Foundation
2016



First game release
2017

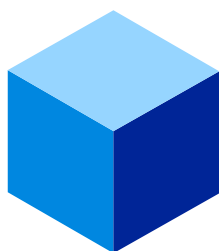


Team size
20



Best-known game
Floyd's Sticker Squad

Out of the same creative group as Peppermelon, has come the team of Lemon Chili Games. This animation studio has created characters for international clients such as Google, MTV, Lego, Nickelodeon and Cartoon Network. Building on the expertise of their founding partner, Lemon Chili has utilized its proven production quality, creativity, user-oriented design and unique set of characters to create mobile video games with added value that go far beyond industry trends. Their first video game, Floyd's Sticker Squad, has scored over 80,000 downloads the world over and was the winner of the Google Play Indie Games Festival 2018 in São Paulo, Brazil.



Games

Launch Date

Platform

Publisher

Development Time

| | | | | |
|-----------------------|------|--------------|--|--------|
| Floyd's Sticker Squad | 2017 | iOS, Android | | 1 year |
| Tower Power | 2017 | iOS, Android | | 1 year |



04

NGD Studios

Argentina



Founders-Directors
Andrés Chilkowski,
Martin Cao and César
Guarinoni



Studio Website
ngdstudios.com



Location
Buenos Aires, Argentina



Date of Foundation
2002



First game release
2005



Team size
70



Best-known games
Master of Orion and
Regnum Online



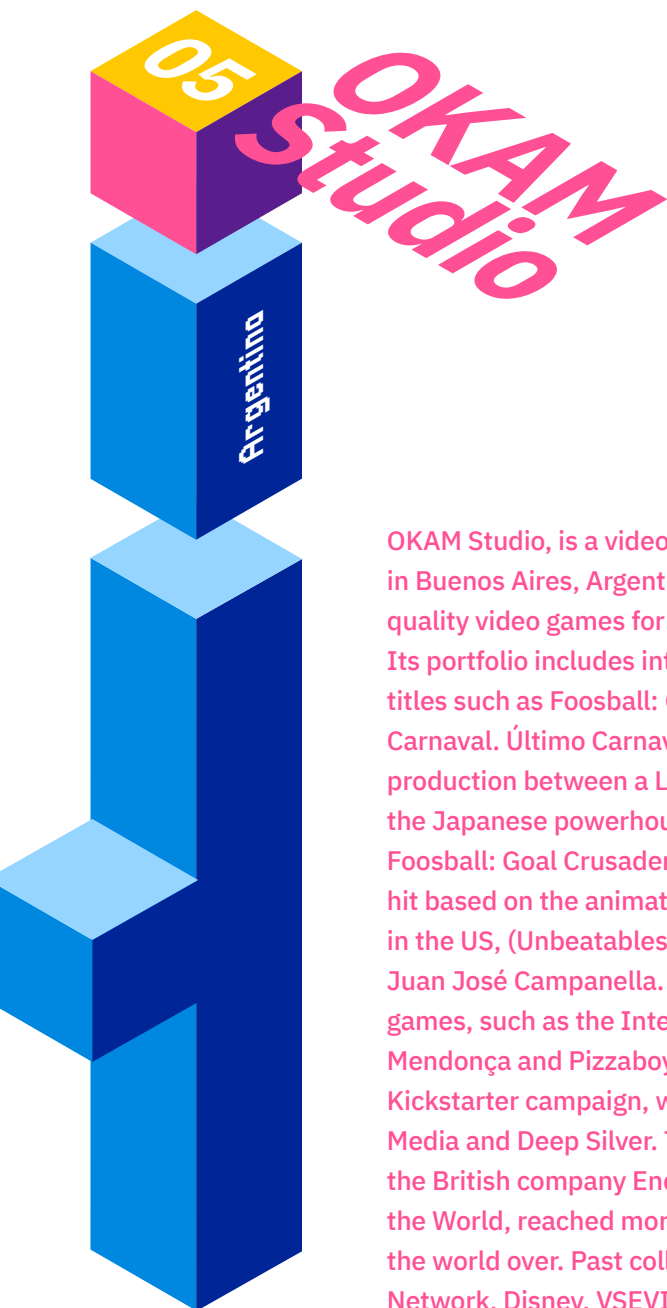
NGD Studios, founded in Buenos Aires, Argentina in 2002, develops high-end games, focusing on deep, connected experiences. Its team has more than 75 developers and over 30 published titles, including the Master of Orion reboot. NGD Studios boasts a long record of projects, made both independently or in collaboration with other important companies that offer world-class games. Its titles include Master of Orion, the first AAA game to be totally developed within the region, and Champions of Regnum, the first 3D MMO to be developed in Latin America.

| Games | Launch Date | Platform | Publisher | Development Time |
|--------------------------|-------------|---------------------|-----------------|------------------|
| Regnum Online | 2007 | PC | NGD Studios | 5 years |
| Sir Lovalot | 2010 | iOS | NGD Studios | 5 months |
| Fly Kiwi Fly! | 2010 | iOS, BlackBerry | NGD Studios | 4 months |
| Freaking Inkies | 2010 | iOS | NGD Studios | 6 months |
| Bunch of Heroes | 2011 | PC | NGD Studios | 2 years |
| Level Up | 2011 | Web | Cartoon Network | 8 months |
| Champions of Regnum | 2012 | PC | NGD Studios | 4 months |
| Finn & Jake's Epic Quest | 2012 | Web | Cartoon Network | 5 months |
| Fly Kiwi Fly 2! | 2013 | iOS, Android | NGD Studios | 8 months |
| Renegade Brigade | 2014 | PC, Consoles | NGD Studios | 6 months |
| Master of Orion | 2016 | Windows, Linux, Mac | Wargaming Labs | -- |




NGD Studios

DEFEAT FATZII





OKAM Studio, is a video game developer located in Buenos Aires, Argentina, specializing in high-quality video games for mobile, PCs and consoles. Its portfolio includes internationally-renowned titles such as Foosball: Goal Crusaders and Último Carnaval. Último Carnaval marks the first co-production between a Latin American studio and the Japanese powerhouse, Square Enix, while Foosball: Goal Crusaders is an interactive smash hit based on the animated movie called Underdogs in the US, (Unbeatables, UK) by Oscar winner Juan José Campanella. OKAM has also developed games, such as the Interactive Adventures of Dog Mendonça and Pizzaboy, which after a successful Kickstarter campaign, was published by Koch Media and Deep Silver. Their co-production with the British company Endemol, Mr. Bean Around the World, reached more than 25 million gamers the world over. Past collaborators include Cartoon Network, Disney, VSEVIL Daedalic and Kongregate.

-  **Founders**
Martina Santoro, Santiago R. Villa and Lucas Gondolo
-  **Studio Website**
okamGames.com
-  **Location**
Buenos Aires, Argentina
-  **Date of Foundation**
2010
-  **First game release**
2010
-  **Team size**
8
-  **Best-known games**
Ship Ahoy, The Interactive Adventures of Dog Mendonça & Pizzaboy

| Games | Launch Date | Platform | Publisher | Development Time |
|---|-------------|----------------------------|---------------------------|------------------|
| Último Carnaval | 2014 | iOS, Android, Blackberry | Square Enix Latin America | 11 months |
| Mr Bean Around the World | 2015 | iOS, Android | Endemol / Tiger Aspec | 7 months |
| ROV Tactics | 2018 | iOS, Android | Okam Studio | 10 months |
| Ship Ahoy! | 2018 | HTC Vive, Oculus VR, Steam | Okam Studio | 7 months |
| The Interactive Adventures of Dog Mendonça & Pizzaboy | 2106 | PC, Mobile | Koch Media / Deep Silver | 9 months |

OKAM Studio





Pixowl

Argentina



Founders
Sébastien Borget
and Arthur Madrid



Studio Website
pixowl.com



Locations
San Francisco, United States,
and Buenos Aires, Argentina



Date of Foundation
2011



First game release
2011



Team size
30



Best-known games
The Sandbox, The Sandbox
Evolution, Peanuts: Snoopy's
Town Tale, Goosebumps
HorrorTown and Garfield:
Survival of the Fattest

Pixowl Inc. is a mobile-game firm focused on the World Builder Games. Founded in San Francisco in 2011, and with development studios in Buenos Aires, Argentina, Pixowl explains, “We turn gamers into builders.” Pixowl’s experienced team of dynamic international innovators is intent on meeting and surpassing the demands of mobile players around the world by presenting exciting games that combine their own characters with innovative comics and stories.

| Games | Launch Date | Platform | Publisher | Development Time |
|-----------------------------------|-------------|-----------------------------|-----------|------------------|
| Safari Party | 2011 | iOS | Pixowl | 6 months |
| The Sandbox | 2012 | Steam, iOS, Android, Amazon | Pixowl | 2 years |
| Garfield: Survival of the Fattest | 2015 | iOS, Android | Pixowl | 2 years |
| Snoopy’s Town Tale | 2015 | iOS, Android, Amazon | Pixowl | 19 months |
| The Sandbox Evolution | 2016 | Steam, iOS, Android, Amazon | Pixowl | 2 years |
| Goosebumps HorrorTown | 2018 | iOS, Android, Amazon | Pixowl | 20 months |
| Tap Knight | 2018 | iOS, Android | Pixowl | 3 months |

CREATE AMAZING PIXEL WORLDS

Pixelowl



QB9 Entertainment

07

Argentina



QB9 Entertainment produces video games for the new digital generations, combining innovation and 360 design. Starting out as a small web-game start-up, securing contracts with large entertainment firms, it soon began to find success with its own creations in the casual games download market. In 2009, it was one of the first teams in South America to obtain a developer license from Sony, and several of its PSP games have topped the sales lists for Spain, Portugal and Italy. It currently has a world-wide distributor license for all of Sony's platforms. Later, QB9 launched Mundo Gaturro, a children's MMO that won the SAPO 2010 Award from the Argentine Association of Video game Developers (ADVA) and Mate.ar, 2012, in the children's game category. Today, with over 21 million accounts created, Mundo Gaturro has maintained its popularity. In 2014 QB9 was bought out by the Clarín Group and currently operates as the Group's video game division. Since 2016 it also been developing official games based on the sports figure Leo Messi. The series includes Messi Craft and Messi Runner.



Founder
Alfredo Cotton



Studio Website
qb9.com



Location
Buenos Aires, Argentina



Date of Foundation
2005



First game release
2007



Team size
32



Best-known games
Mundo Gaturro, PlayEnglish, Patito Feo: El juego más bonito, Zoombok, Elements, Doors, Monthsi Runner and QB9 3D Skin Editor para Minecraft.



| Games | Launch Date | Platform | Publisher | Development Time |
|---|-------------|----------|-------------------------------------|------------------|
| Soundboard | 2005 | Web | Cartoon Network | -- |
| The Mummy | 2005 | Web | TNT LA | -- |
| Crouch End | 2005 | Web | TNT | -- |
| Battleground | 2005 | Web | TNT | -- |
| PC Under Attack | 2005 | Web | Cartoon Network LA | -- |
| The Judge | 2005 | Web | TNT | -- |
| Match Music | 2005 | Web | TNT LA | -- |
| Be a Dare Devil | 2005 | Web | TNT | -- |
| The Critic | 2005 | Web | TNT | -- |
| And the Winner is | 2005 | Web | TNT LA | -- |
| P48 | 2005 | Web | TNT LA | -- |
| Gladiator | 2005 | Web | TNT LA | -- |
| The Doors | 2006 | Web | TNT | -- |
| Volcano! | 2006 | Web | Comedy Central | -- |
| South Park: Asskicker | 2007 | Web | Comedy Central / South Park Studios | 5 months |
| Rumble for Romance | 2007 | Web | VH1 | 4 months |
| Mencia Madness 2: Even more madness! | 2007 | Web | Comedy Central | 4 months |
| Zoombook: The Temple of Sun | 2007 | Windows | Mumbo Jumbo | 8 months |
| Redneck Shotgun | 2008 | Web | Comedy Central | 4 months |
| The Who Pinball | 2008 | Web | VH1 | 4 months |
| Line by Line | 2008 | Web | Shockwave | 6 months |
| Pipes | 2008 | Web | Tamarind | 4 months |
| New York Goes to Hollywood | 2008 | Web | VH1 | 4 months |
| South Park: Double Bunny | 2008 | Web | Comedy Central / South Park Studios | 5 months |
| Mencia Madness 3 | 2008 | Web | Comedy Central | 5 months |
| The Jeff Dunham Show The Game | 2009 | Web | Comedy Central | 3 months |
| Princess and the Frog: Love at First Bright 2 | 2009 | Web | Disney | 1 month |
| Princess and the Frog: Love at First Bright | 2009 | Web | Disney | 3 months |
| Disney Fairies: Fairies Flitteriffic Fortunes | 2009 | Web | Disney | 3 months |
| Kingdom Hearts: Magic Clash | 2009 | Web | Square Enix/Disney | 4 months |
| Pop Shoppers | 2009 | Web | Shockwave | 4 months |
| Saqqarah | 2009 | Web | Code Minion | 8 months |
| South Park Pandemic | 2009 | Web | Comedy Central / South Park Studios | 4 months |

QB9 Entertainment

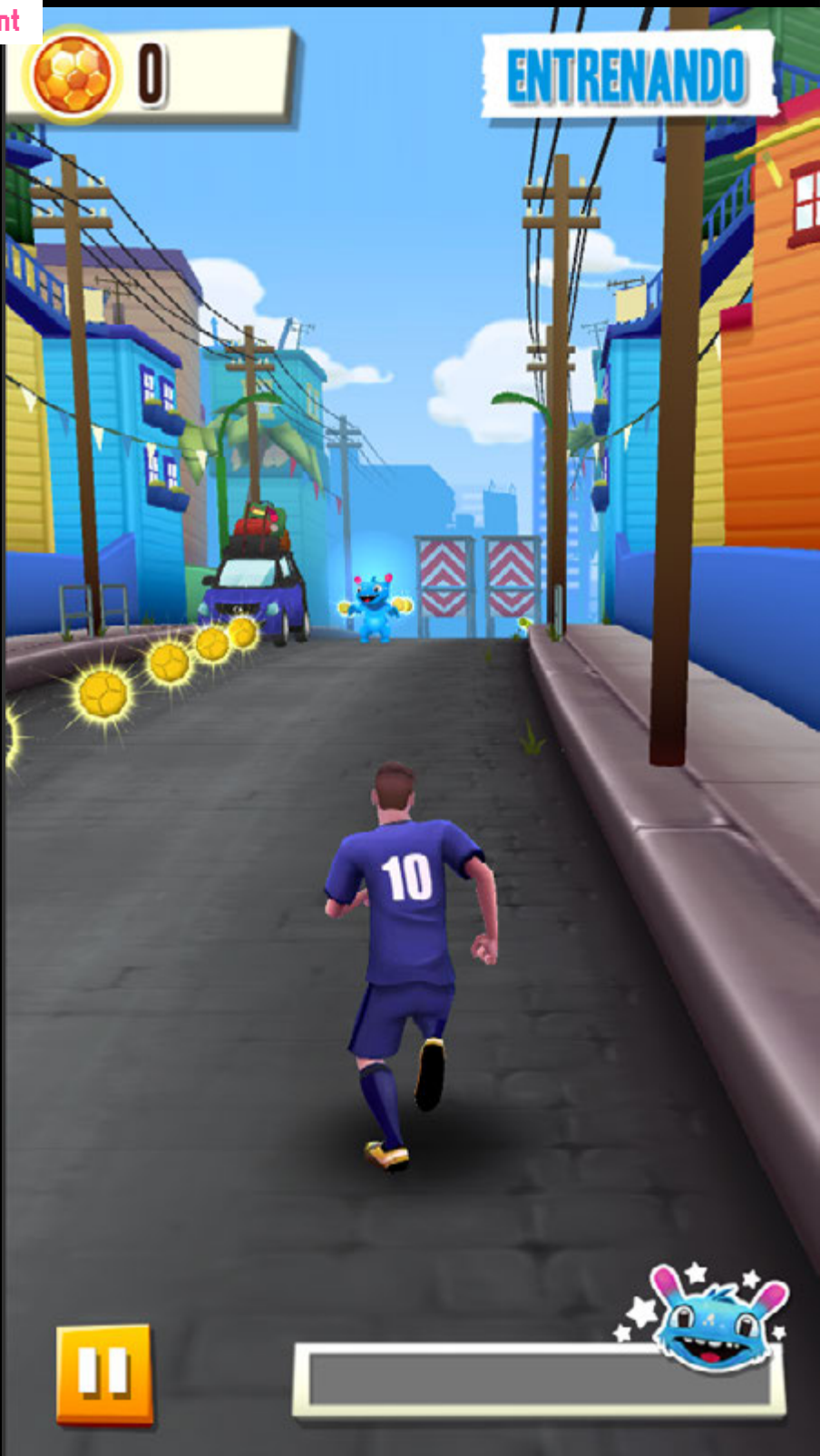
| Games | Launch Date | Platform | Publisher | Development Time |
|---|-------------|----------------------|--------------------|------------------|
| Wizards of Waverly Place: Magic Duel | 2009 | Web | Disney | 3 months |
| Sonny With a Chance: So Random Scavenger Hunt | 2009 | Web | Disney | 3 months |
| Space Buddies: Pet Propulsion | 2009 | Web | Disney | 2 months |
| Wall-E Collection | 2009 | Web | Disney | 4 months |
| Kung Pow Dragon | 2009 | Web | Shockwave | 4 months |
| Mahjong Panda | 2009 | Web | Shockwave | 4 months |
| Shoshiland | 2009 | Web | QB9 | |
| Elements | 2009 | Windows | Mumbo Jumbo | 8 months |
| Lego Pharaohs Quest | 2010 | Web | Lego | 4 months |
| Stealth Rides Undercover Run | 2010 | Web | Lego | 4 months |
| Lego Toy Story: The Rescue of the Far West Princess From the Moon | 2010 | Web | Lego | 3 months |
| MegaRig Dinosaur Hunters: Dinosaur Rescue | 2010 | Web | Mattel | 4 months |
| Broke | 2010 | Web | AOL | 6 months |
| Zombie Highway | 2010 | Web | AOL | 2 months |
| Alice in Wonderland's Hidden Secrets | 2010 | Web | Disney | 4 months |
| Patito Feo: El juego más bonito | 2010 | PlayStation Portable | Tonika/Sony Europa | 8 months |
| PlayEnglish DLC. Capítulos extras | 2010 | PlayStation Portable | Tonika/Sony Europa | 3 months |
| PlayEnglish | 2010 | PlayStation Portable | Tonika/Sony Europa | 9 months |
| Mundo Gaturro | 2010 | Web | QB9 | 1 year |
| Doors of the Mind: Inner Mysteries | 2010 | Windows | Big Fish Games | 6 months |
| Max Steel Gaming site + 6 Games Suite | 2011 | Web | Mattel | 1 year |
| Ninjago Spinjitzu Masters | 2011 | Web | Lego | 1 year |
| Ninja Turtles | 2011 | Web | Nickelodeon | 6 months |
| Doors of the Mind | 2011 | iOS | QB9 | 5 months |
| The Mystery Team: Cazadores de Pistas | 2011 | PlayStation Portable | Tonika/Sony Europa | 8 months |
| Teenage Mutant Ninja Turtles: Dark Horizons | 2012 | Web | Nickelodeon | 2 months |





| Games | Launch Date | Platform | Publisher | Development Time |
|---|-------------|--------------|---------------|------------------|
| Frankenweenie, Experimentos electrificantes | 2012 | Web | Disney | 3 months |
| Food Truck Wars | 2012 | Web | QB9 | 4 months |
| Monster Fighters | 2012 | Web | Lego | 8 months |
| Pecezuelos | 2012 | Web | Disney Latino | 6 months |
| Gaturro Penales | 2012 | iOS | QB9 | 3 months |
| Phineas y Ferb: Código P | 2013 | Web | Disney Latino | 4 months |
| Plim Plim Cumple | 2013 | iOS, Android | QB9 | 3 months |
| Learn English With Barney | 2014 | iOS, Android | QB9 | 6 months |
| Plim Plim Universe | 2014 | iOS, Android | QB9 | 6 months |
| Lego Ninjago Rebooted | 2014 | iOS, Android | QB9 | 4 months |
| Turn 2 Figth | 2014 | iOS, Android | QB9 | 10 months |
| Color With Barney | 2015 | iOS, Android | QB9 | 4 months |
| Strawberry Shortcake: Reach for the Stars | 2015 | iOS, Android | QB9 | 6 months |
| Mundo Gaturro Pocket | 2015 | iOS, Android | QB9 | 14 months |
| Gatucraft | 2015 | Web | QB9 | |
| Cosmik Kittens | 2016 | iOS, Android | QB9 | 6 months |
| Messi Runner: World Tour | 2016 | iOS, Android | QB9 | 10 months |
| Mundo Gaturro Diseña tu cómic | 2016 | iOS, Android | QB9 | 6 months |
| Matchbox Adventure | 2016 | iOS, Android | QB9 | 10 months |
| Mundo Gaturro: Gaturcarts VR | 2016 | iOS, Android | QB9 | 1 month |
| Messicraft | 2016 | Web | QB9 | |
| Primeras Palabras | 2017 | iOS, Android | QB9 | 2 months |
| Gatibujos | 2017 | iOS, Android | QB9 | 6 months |
| Gatubúsqueda | 2017 | iOS, Android | QB9 | 10 months |
| Messi Tap and Score | 2018 | iOS, Android | QB9 | 5 months |
| Messi Ultimate Challenge | 2018 | iOS, Android | QB9 | 5 months |

QB9 Entertainment



QB9 Entertainment





Ravegan is a game development studio located in the city of Cordoba, Argentina. Since 2006, it has participated in over 150 projects for over 50 international clients, working on multiple platforms and covering all related disciplines in the field. Since 2015, it has developed and published its own independent games, becoming the first studio in Cordoba, and in fact the third in the entire country, to publish its own console games (PlayStation 4 and Xbox One). All its projects have been 100% self-financed, with sales of over 30,000 copies among PlayStation 4, Xbox One and Steam. For 2018 its latest project, Teratopia, is being formulated for these same platforms and with the firm commitment to maintain its position as one of the leading PC and console game developers in Latin America.

-  **Founder**
Daniel Igarza
-  **Studio Website**
ravegan.com
-  **Location**
Córdoba, Argentina
-  **Date of Foundation**
2016
-  **First game release**
2016
-  **Team size**
13
-  **Best-known game**
Blue Rider

| Games | Launch Date | Platform | Publisher | Development Time |
|------------|-------------|-----------------------------|-----------|------------------|
| Blue Rider | 2016 | Xbox One, PlayStation 4, PC | Ravegan | 11 months |



Ravegan



"Teratopia" (gameplay capture) / ©2018 Ravegan / All Rights Reserved / www.ravegan.com



"Teratopia" (gameplay capture) / ©2018 Ravegan / All Rights Reserved / www.ravegan.com



Videogamo is a video game studio founded in 2010 in Buenos Aires, Argentina, which specializes in dedicated hardware and software. Among its most relevant projects is NAVE Arcade (2012), a space shooter that can only be played in its own custom-built arcade cabinet. The game, which keeps track of the all-time high scores, travels all round Argentina and the plan is to eventually go around the world.

The second game (in process) is Dobotone, a video game console for parties, featuring two-button controllers and a built-in dashboard for modifying in-game physics on the fly. Dobotone has already been presented in cities such as Toronto, Los Angeles, San Francisco, Washington, New York, London and Tokyo, where it won the prize for Best Experimental Game in the 2016 Tokyo Game Show.

-  **Founders**
Máximo Balestrini
and Hernán Sáez
-  **Studio Website**
videogamo.com
-  **Location**
Buenos Aires, Argentina
-  **Date of Foundation**
2010
-  **First game release**
2010
-  **Team size**
3
-  **Best-known games**
NAVE Arcade and Dobotone

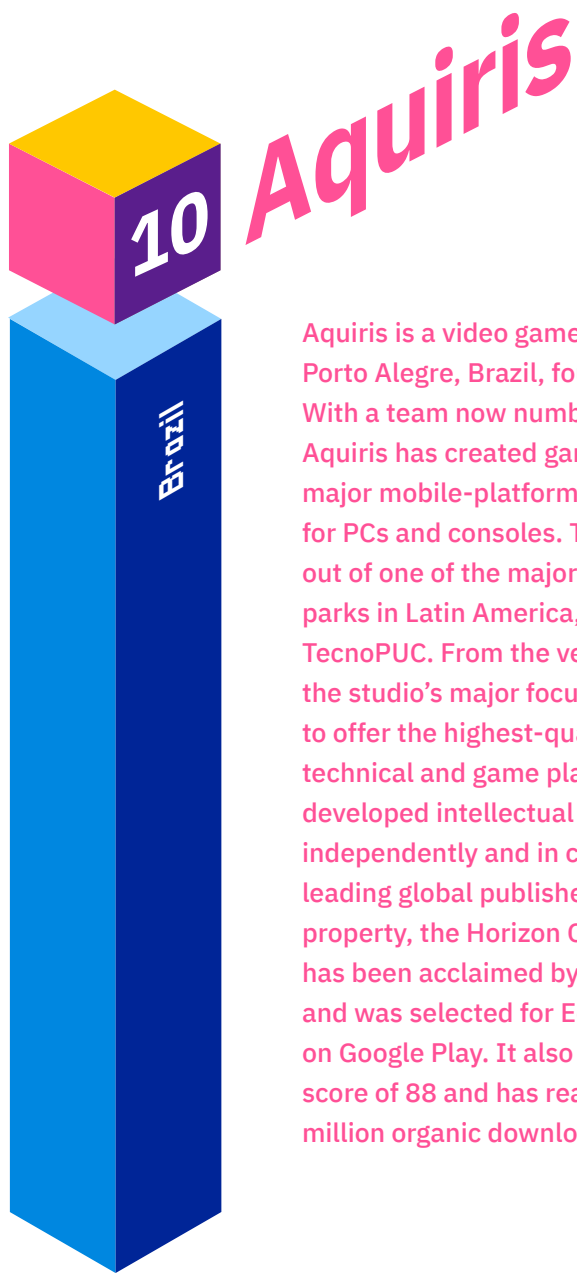
| Games | Launch Date | Platform | Publisher | Development Time |
|---------------|-------------|----------|-----------|------------------|
| HOY | 2010 | Web | Videogamo | 2 months |
| ESCAPE | 2011 | Web | Videogamo | 2 months |
| Santos Pedos! | 2011 | Web | Videogamo | 2 days |
| NAVE Arcade | 2012 | Arcade | Videogamo | 2 years |

Videogomo



Videogamo





Aquiris is a video game studio based in Porto Alegre, Brazil, founded in 2007. With a team now numbering over 80, Aquiris has created games for all the major mobile-platforms as well as for PCs and consoles. The firm works out of one of the major technological parks in Latin America, called TecnoPUC. From the very beginning, the studio's major focus has been to offer the highest-quality artistic, technical and game play and it has developed intellectual property both independently and in cooperation with leading global publishers. Their main property, the Horizon Chase franchise, has been acclaimed by the App Store and was selected for Editor's Choice on Google Play. It also has a Metacritic score of 88 and has reached over 10 million organic downloads.

AQUIRIS

-  **Founders**
Amilton Diesel, Mauricio Longoni and Israel Mendes
-  **Studio Website**
aquiris.com.br
-  **Location**
Porto Alegre, Brazil
-  **Date of Foundation**
2007
-  **First game release**
2007
-  **Team size**
80
-  **Best-known games**
Ballistic Overkill and Horizon Chase

| Games | Launch Date | Platform | Publisher | Development Time |
|---------------------------|-------------|-------------------|-----------------|------------------|
| Ben 10 Wrath of Psychobos | 2013 | iOS, Android | Cartoon Network | 10 months |
| The Great Prank War | 2015 | iOS, Android | Cartoon Network | 8 months |
| Horizon Chase | 2015 | iOS, Android | Aquiris | 6 months |
| CN Superstar Soccer Goal! | 2016 | iOS, Android | Cartoon Network | 1 year |
| Ballistic Overkill | 2017 | PC | Aquiris | 18 months |
| Horizon Chase Turbo | 2018 | PlayStation 4, PC | Aquiris | 10 months |

Aquiris



Behold Studios

Brazil

Behold Studios is a small Indie studio from Brazil, which has already surpassed the million-player mark and earned more than 55 international awards, including the Independent Games Festival of 2013. Since 2012, it has introduced a series of humorous animated drawings, featuring the Knights of Pen & Paper which have had several sequels, spin-offs and DLCs. Behold was also successful in its Kickstarter campaign for Chroma Squad, launching it in collaboration with Bandai/Namco and distributing it for desktops, cell phones and consoles. Its latest creation is the Galaxy of Pen and Paper, which has become a science fiction adventure. Behold's team plans to keep developing their own games and promoting their quality while remaining a small studio which they consider to be a family of creators dedicated to fulfilling their dreams.



Founder
Saulo Camarotti



Studio Website
beholdstudios.com.br



Location
Brasilia, Brazil



Date of Foundation
2009



First game release
2009



Team size
10



Best-known games
Knights of Pen & Paper,
Chroma Squad and Galaxy
of Pen & Paper

| Games | Launch Date | Platform | Publisher | Development Time |
|------------------------|-------------|---|--------------------------------------|------------------|
| The Gravedigger | 2009 | iOS, Android | Behold Studios | 6 months |
| Super Cutes | 2011 | iOS, Android | Behold Studios | 3 months |
| Save My Telly | 2012 | iOS, Android | Behold Studios | 6 months |
| Knights of Pen & Paper | 2012 | iOS, Android, PC | Behold Studios / Paradox Interactive | 12 months |
| Chroma Squad | 2015 | iOS, Android, PC, PlayStation 4, Xbox One | Behold Studios / Bandai Namco | 24 months |
| Galaxy of Pen & Paper | 2017 | iOS, Android, PC | Behold Studios | 30 months |

Behold Studios



Shop

day 3

\$ 120 





Black River Studios



Brazil



Founder
Samsung Research and Development Institute



Studio Website
blackriverstudios.net



Location
Manaos, Brazil



Date of Foundation
2014



First game release
2015



Team size
50+



Best-known games
Finding Monsters, Angest, Conflict 0: Shattered and Dead Body Falls

Black River is a game development studio founded in 2013 and headquartered in Manaus, Brazil. Known for excellence in its virtual-reality games, it boasts a catalog of award-winners, including Finding Monsters, Angest, Conflict 0: Shattered, and Dead Body Falls. Most recently, Black River has expanded its scope to work on other platforms such as mobiles, PCs and consoles. The studio is currently funded by Samsung's Amazonian R&D Institute. Over the years, Black River has received a number of awards from the Brazilian game development community, including the awards for best virtual reality (Angest 2017), and best narrative (Angest, 2017 and Dead Body Falls 2018).

| Games | Launch Date | Platform | Publisher | Development Time |
|----------------------------|-------------|------------------------|---------------------|------------------|
| Galaxy Eleven | 2014 | Android | Black River Studios | 9 months |
| Triads | 2015 | Tizen | Black River Studios | 4 months |
| Automata | 2015 | Tizen | Black River Studios | 4 months |
| Balloma | 2015 | Tizen, Android | Black River Studios | 4 months |
| Rococo | 2016 | Gear VR | Black River Studios | 6 months |
| Finding Monsters Adventure | 2016 | Gear VR, Android | Black River Studios | 18 months |
| Rock & Rails | 2017 | Android, Microsoft XR | Black River Studios | 15 months |
| Angest | 2017 | Gear VR & Microsoft XR | Black River Studios | 14 months |
| Conflict 0: Shattered | 2017 | Android | Black River Studios | 8 months |
| Conflict 0: Revolution | 2017 | Tizen, Android | Black River Studios | 8 months |
| Dead Body Falls | 2018 | Android | Black River Studios | 14 months |

Black River Studios



Black River Studios





Cupcake Entertainment



Founders

João Vitor de Souza
and Gabriel Stürmer



Studio Website

cupcake.se.com



Locations

Porto Alegre, Brazil,
and Tallinn, Estonia



Date of Foundation

2012



First game release

2013



Team size

13



Best-known games

Letters of Gold
and Letters Blast

Cupcake Entertainment is one of the largest video game companies in Brazil and is intent on becoming the world leader in casual brain puzzle games. Its goal is to provide a fun experience while exercising the brain with world-class puzzle games. Most of their players are women over 45 that form a community of “super fans.” Cupcake Entertainment was funded by accelerators GameFounders, Start-Up Chile and received a million-dollar investment from Playlab.

| Games | Launch Date | Platform | Publisher | Development Time |
|-----------------|-------------|------------------------|-----------------------|------------------|
| Letters of Gold | 2013 | iOS, Android, Facebook | Cupcake Entertainment | 9 months |
| Words of Gold | 2014 | iOS, Android, Facebook | Cupcake Entertainment | 9 months |
| Numbers of Gold | 2016 | Facebook | Cupcake Entertainment | 9 months |
| Letters Blast | 2018 | Facebook | Cupcake Entertainment | 9 months |
| Letters Monster | 2018 | Facebook | Cupcake Entertainment | 9 months |

Cupcake Entertainment

LETTERS BLAST



14 Gazeus Games



Gazeus Games is a producer and one of the major Brazilian developers of casual and social games on mobile platforms. This dedicated multi-disciplinary team focuses on producing the highest-quality entertainment experience.

Their main goal in creating their games is to make real connections between people, linking entertainment to interaction among players. Currently some nine million active gamers in over 50 countries connect to Gazeus Games through Facebook or other apps.



Founder
Dario Kadhi Souza



Studio Website
gazeus.com



Ubicaciones
Rio de Janeiro, Brazil;
São Paulo, Brazil,
and Montreal, Canada



Date of Foundation
2006



First game release
2006



Team size
68



Best-known games
Buraco, Tranca,
Spades, Mahjong,
Dominó and Paciência



Gazeus Games

| Games | Launch Date | Platform | Publisher |
|---------------------|-------------|--------------|-----------------------|
| Sueca | 2011 | Android | Gazeus / jogatina.com |
| Truco | 2012 | Web | Gazeus / jogatina.com |
| Bingo | 2013 | iOS | Gazeus / jogatina.com |
| Paciência | 2013 | iOS, Android | Gazeus / jogatina.com |
| Burraco Italiano | 2013 | iOS, Android | Gazeus / jogatina.com |
| Canasta | 2013 | Android | Gazeus / jogatina.com |
| Buraco | 2013 | iOS, Android | Gazeus / jogatina.com |
| Tranca | 2013 | iOS, Android | Gazeus / jogatina.com |
| Mahjong Solitaire | 2014 | iOS, Android | Gazeus / jogatina.com |
| Mahjong Solitaire 2 | 2014 | Android | Gazeus / jogatina.com |
| Dominó | 2014 | iOS, Android | Gazeus / jogatina.com |
| Gin Rummy | 2014 | iOS, Android | Gazeus / jogatina.com |
| Mahjong Zen | 2015 | iOS | Gazeus / jogatina.com |
| Copas | 2015 | iOS | Gazeus / jogatina.com |
| Canasta Turbo | 2015 | iOS | Gazeus / jogatina.com |
| Sinuca Bola 8 | 2015 | iOS | Gazeus / jogatina.com |
| Spades | 2016 | iOS, Android | Gazeus / jogatina.com |
| Euchre | 2016 | iOS, Android | Gazeus / jogatina.com |
| Blackjack Cassino | 2017 | iOS, Android | Gazeus / jogatina.com |
| Solitaire Town | 2017 | iOS, Android | Gazeus / jogatina.com |
| Mancala Jogatina | 2017 | iOS | Gazeus / jogatina.com |
| Yatzy Party | 2018 | iOS, Android | Gazeus / jogatina.com |
| Lets Zeppelin | 2018 | Android | Gazeus / jogatina.com |
| Plushie Mania | 2018 | Web | Gazeus / jogatina.com |





Founders

Tatiana Moreira, Jonathas Rosa, Rodrigo Campos, Eros Carvalho



Studio Website

hoplon.com



Location

Florianópolis, Brazil



Date of Foundation

2000



First game release

2002



Team size

74



Best-known games

Heavy Metal Machines, Taikodom and Apocalypse: Party's Over



Founded in the year 2000, Hoplon, with a highly-skilled team of more than 70 professionals, is one of the leading game developers in Brazil. Based in Florianópolis, this studio created an innovative MOBA game called Heavy Metal Machines, which mixes auto races with combat. More than 700,000 gamers the world over have downloaded and played the game. Hoplon's main goal is to attract casual gamers. This game has made a name for itself in terms of Gameplay standards, becoming an exceptionally competitive game in the international esports community.

| Games | Launch Date | Platform | Publisher | Development Time |
|-------------------------|-------------|----------|---|------------------|
| Taikodom | 2008 | Windows | Hoplon | -- |
| Apocalypse Party's Over | 2016 | PC | Hoplon, coproducido con Izyplay Game Studio | -- |
| Heavy Metal Machines | 2018 | PC | Hoplon | 4 years |

Hoplon



HEAVY METAL
MACHINES

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HOPLON



Brazil

JoyMasher



Joy Masher is an independent game studio, founded by Danilo Dias and Thais Weiler in early 2012. From the very beginning their objective has been to apply modern video know-how to create games that look like classics from earlier eras. They plan to stay true to their focus on offering classic games, remaining independent with no outside capital and expanding their scope without expanding their staff.



Founders

Thais Weiler and Danilo Dias



Studio Website

joymasher.com



Location

Curitiba, Brazil



Date of Foundation

2012



First game release

2012



Team size

2



Best-known games

Oniken and Odallus

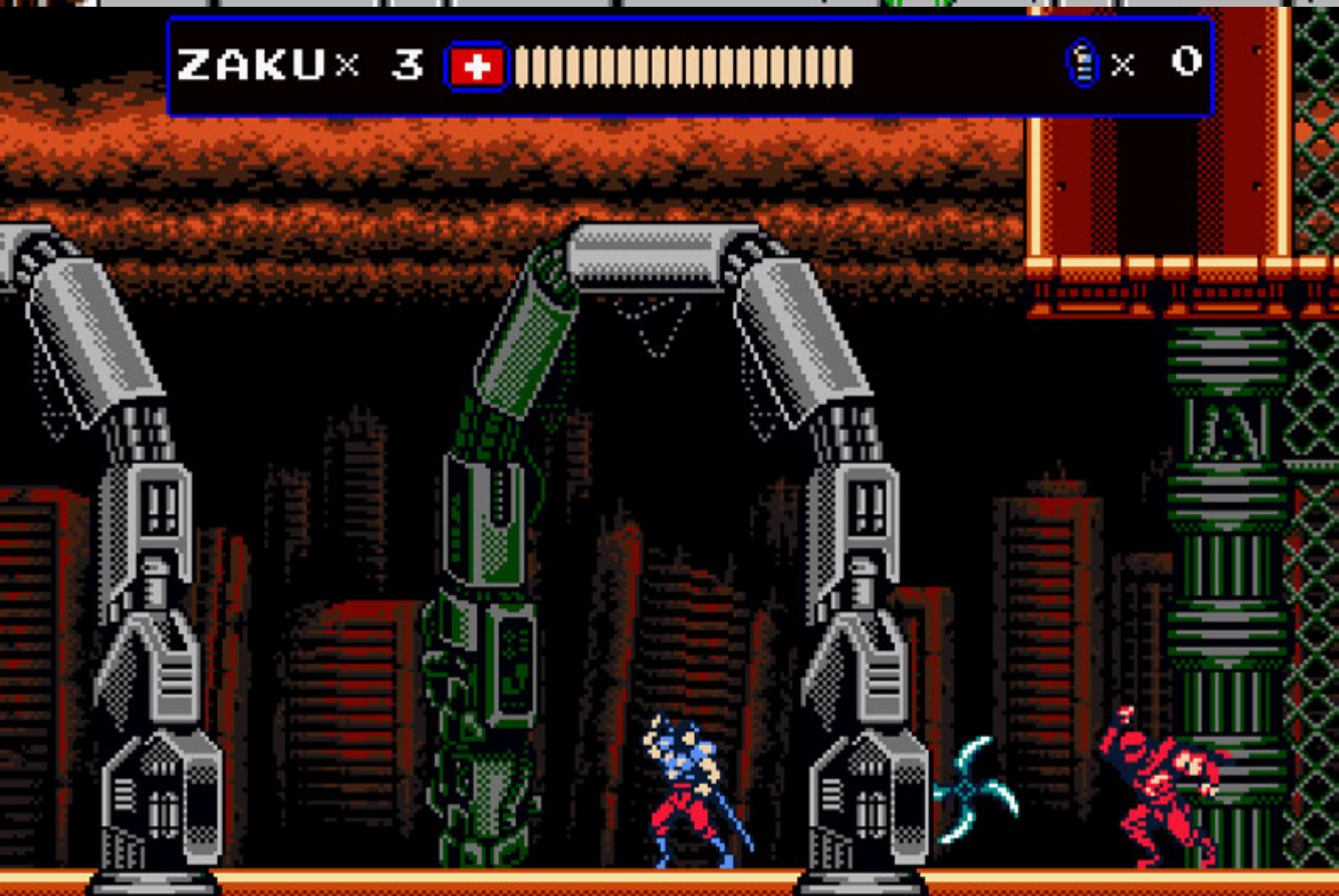
| Games | Launch Date | Platform | Publisher | Development Time |
|---------|-------------|----------|-----------|------------------|
| Oniken | 2012 | PC | JoyMasher | 2 years |
| Odallus | 2015 | PC | JoyMasher | 18 months |

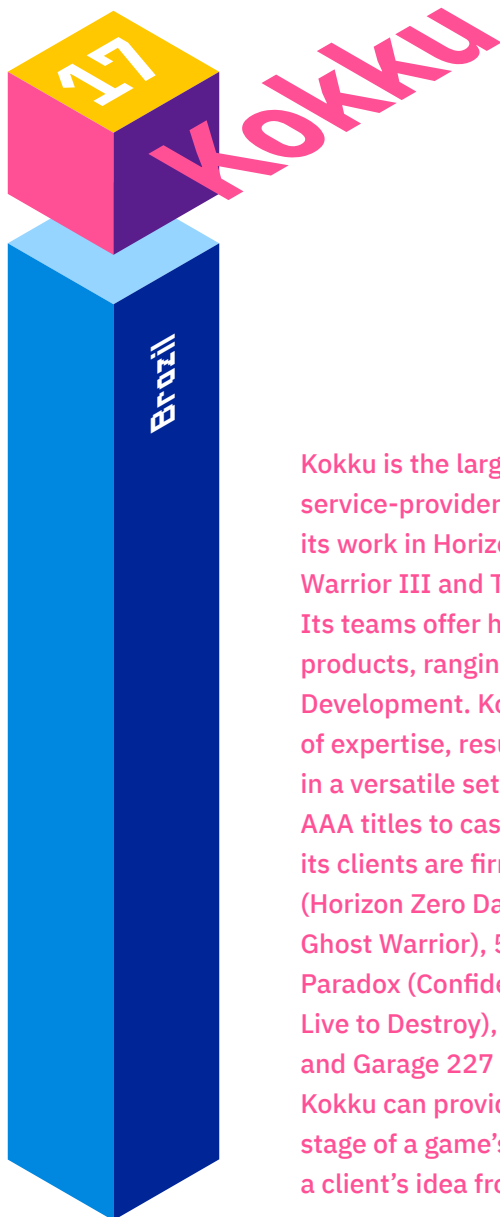


ZAKU × 3





6 × 0





Kokku is the largest video game development service-provider firm in Brazil, well-known for its work in Horizon: Zero Dawn, Sniper Ghost Warrior III and Tantra Rumble, among others. Its teams offer high-quality services and products, ranging from 3D Art to Full Game Development. Kokku has built up a high level of expertise, resulting from its collaborations in a versatile set of projects, ranging from AAA titles to casual mobile games. Among its clients are firms such as Guerrilla Games (Horizon Zero Dawn), CI Games (Sniper Ghost Warrior), 505 Games (Confidential), Paradox (Confidential), High Voltage (They Live to Destroy), GameOlic (Tantra Rumble) and Garage 227 (Shiny), to name only a few. Kokku can provide services to develop any stage of a game's development or implement a client's idea from scratch.



-  **Founder**
Thiago de Freitas
-  **Studio Website**
kokkuhub.com
-  **Location**
Recife, Brazil
-  **Date of Foundation**
2011
-  **First game release**
2012
-  **Team size**
84
-  **Best-known games**
Horizon: Zero Dawn and
Sniper Ghost Warrior III

| Games | Launch Date | Platform | Publisher | Development Time |
|---|-------------|-------------------------|-----------------|------------------|
| Sniper Ghost Warrior III (Programming) | 2017 | PlayStation 4, Xbox One | CI Games | Confidential |
| They Live to Destroy (3D Art Development) | 2017 | VR | High Voltage | 4 months |
| Horizon: Zero Dawn (3D Art Development) | 2017 | PlayStation 4 | Guerrilla Games | 16 months |
| Tantra Rumble (Co-Development) | 2018 | PC, Steam | GameOlic | 10 months |

Kokku



18 Rockhead Games

Brazil



Founders

Fernando D'Andrea
and Christian Lykawka



Studio Website

rockheadstudios.com.br



Location

Porto Alegre, Brazil



Date of Foundation

2010



First game release

2012



Team size

15



Best-known games

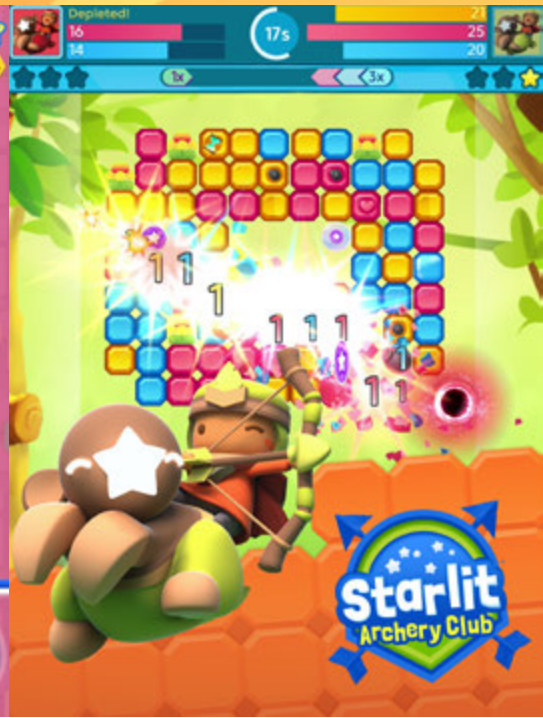
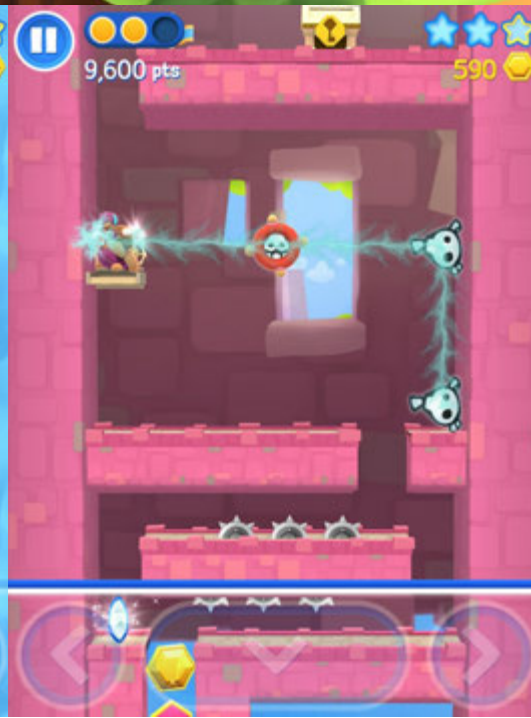
Starlit Adventures,
Starlit Archery Club
and Master of Words

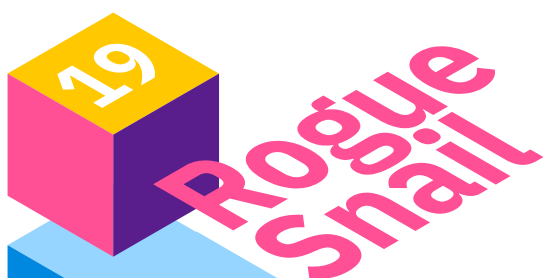


Rockhead Games is the firm that developed Starlit Adventures, a mobile game with over 10 million downloads worldwide and widely featured by both Apple and Google. Currently their projects include new games and other media, including comic books, animated TV series and toys based on the in-game universe.


| Games | Launch Date | Platform | Publisher | Development Time |
|-----------------------|-------------|--------------------------------------|--------------------|------------------|
| Pixel Shaper | 2012 | Windows Phone, Windows | Rockhead | 3 months |
| Master of Words | 2013 | iOS, Android, Windows, Amazon | Rockhead | 6 months |
| Ronaldinho Super Dash | 2014 | iOS, Android | Joker | 6 months |
| Starlit Adventures | 2015 | iOS, Android, PlayStation 4, AppleTV | Rockhead/MiYi Game | 2 years |
| Starlit Archery Club | 2017 | iOS, Android | Rockhead/Wostore | 2 years |

Rockhead Games





Rogue Snail is a Brazilian game development studio with official headquarters in Minas Gerais and São Paulo. Their team is made up of professionals that work out of Rio de Janeiro, Paraná and even Germany. Since 2014, their games have all been developed remotely and, with titles that include Relic Hunters Zero, Chroma Squad and Star Vikings, have reached millions of gamers. In 2017 they received investment funding from the South Korean incubator GTR and funded their new project Relic Hunters Legend through Kickstarter. Rogue has received more than 20 Brazilian and international prizes, including Best Indie Game from-Google Play 2017, Game of the Year -GTR Conference Melbourne, and best design game at the SBGames Independent Game Festival Awards.

-  **Founders**
Betu Souza, Ciao Lima and Marcos Venturelli
-  **Studio Website**
roguesnail.com
-  **Location**
Pouso Alegre, Brazil
-  **Date of Foundation**
2014
-  **First game release**
2015
-  **Team size**
7
-  **Best-known games**
Relic Hunters Zero and Relic Hunters Legend

| Games | Launch Date | Platform | Publisher | Development Time |
|----------------------|-------------|---|---------------|------------------|
| Chroma Squad | 2015 | PC, Xbox One, PlayStation 4, iOS, Android | Bandai Namco | 2 years |
| Relic Hunters Zero | 2015 | PC | Rogue Snail | 5 months |
| Star Vikings Forever | 2016 | PC, iOS, Android | Akupara Games | 1 year |
| Relic Hunters Legend | 2018 | PC, Nintendo Switch, Xbox One, iOS, Android | Rogue Snail | 3 years |

Rogue Snail



REIIC
HUNTERS





Webcore Games

Brazil

Webcore Games is a video game studio located in São Paulo Brazil, founded in 1999. The studio develops IP for video games, AR and VR applications. Their products service different sectors, including entertainment, publicity and education, using diverse platforms, consoles, mobiles, PCs and the web.



Founders

Camila Malaman, Fernando Chomis and Winston Petty



Studio Website

webcoreGames.com.br



Location

São Paulo, Brazil



Date of Foundation

1999



First game release

2006



Team size

16



Best-known games

My Night Job, Turma do Chico Bento (under Insolita Studios name), Freekscape (under Kidguru Studios name) and Cavedays (under Insolita Studios name)

| Games | Launch Date | Platform | Publisher | Development Time |
|---|-------------|------------------------|------------------|------------------|
| Cavedays (Insolita Studios) | 2006 | PC, Mac | Insolita Studios | 1 year |
| Freescape (Kidguru) | 2010 | PlayStation Portable | Creat | 1 year |
| Turma do Chico Bento (Insolita Studios) | 2012 | Facebook, Orkut | Level Up! | 2 years |
| The Name of Things | 2016 | iOS, Android | Webcore Games | 6 months |
| So Many Butts | 2016 | iOS, Android | Editora Caixote | 8 months |
| Find Stuff | 2016 | iOS, Android | Webcore Games | 8 months |
| My Night Job | 2016 | PlayStation 4, PC, Mac | Bit Composer | 9 months |
| Hello Kitty - Almanaque de Atividades para crianças | 2017 | iOS, Android | Webcore Games | 6 months |
| This is Betsy a Contrary Girl | 2017 | iOS, Android | Editora Caixote | 1 year |
| Starlit Adventures (coproducción) | 2018 | PlayStation 4 | Rockhead | 7 months |

Webcore Games



MY NIGHT JOB

STEAM

PS4



Founders

Andrés Bordeu, Carlos Bordeu y Edmundo Bordeu



Studio Website

aceteam.cl



Location

Santiago, Chile



Date of Foundation

Founded in 2002 but began operations as Ace Team in 2007 with the development of Zeno Clash



First game release

2009



Team size

From 10 to 15 persons, depending on the stage of the development



Best-known games

Rock of Ages, Rock of Ages II, Zeno Clash y Zeno Clash II

ACE Team is an independent video game development studio with a track record of over ten years and international recognition for the exceptionally high quality and originality of their products. Their games

are on the most important global digital platforms: Steam (PC), Xbox One and 360, PlayStation 3 and 4. They have received numerous industry prizes and commentaries in the specialized press, such as:

Zeno Clash - #65 in the Top 100 PC Games of All Time, PC Gamer Magazine UK February 2011

Rock of Ages - Most Original Game 2011.

Inside Gaming Awards Machinima.com

ACE Team - Best Debut Studio Finalist - 10th Annual Game Developer Choice Awards

Zeno Clash - Excellence in Visual Arts Finalist - Independent Games Festival 2009

The Deadly Tower of Monsters - Instant Classic Video Game Forbes Tech April 2016

Zeno Clash - Indie Game of the Year 2009 - PC Gamer

Rock of Ages - Best Downloadable Game of E3 2011.- Gaming Excellence.com

ACE Team - Honorable Mention as one of the Best Developers in 2009 - Gamasutra December 2009

ACE Team 2011 Glitch Prize for the Best Development Studio in Chile - Glitch.cl

Zeno Clash - PC Game of the Month - IGN April 2009

Zeno Clash: Ultimate Edition - Honorable Mention as one of the Best Console Downloadable Games of 2010 - Gamasutra December 2010.

| Games | Launch Date | Platform | Publisher | Development Time |
|------------------------------|-------------|--|---|------------------|
| Zeno Clash | 2009 | Xbox 360, PC | ACE Team/Iceberg Interactive/Tripwire Interactive/Atlus | 2 years |
| Rock of Ages | 2011 | Xbox 360, PlayStation 3, PC | Atlus | 20 months |
| Zeno Clash II | 2013 | Xbox 360, PlayStation 3, PC | Atlus | 20 months |
| Abyss Odyssey | 2014 | Xbox 360, PlayStation 3, PlayStation 4, PC | Atlus | 16 months |
| The Deadly Tower of Monsters | 2016 | PlayStation 4, PC | Atlus | 16 months |
| Rock of Ages II | 2017 | Xbox One, PlayStation 4, PC | Atlus | 20 months |

ACE Team





JONATHAN DIGBY STACY SHARP GREG MEADOWS LUDWIG FUCHS INTRODUCING THE ROBOT - THE DEADLY TOWER OF MONSTERS
WRITTEN BY EDMUNDO BORDEU EXECUTIVE PRODUCER THE BORDEU TWINS PRODUCED BY ATLUS AND DIRECTED BY DAN SMITH



JONATHAN DIGBY STACY SHARP GREG MEADOWS LUDWIG FUCHS INTRODUCING THE ROBOT - THE DEADLY TOWER OF MONSTERS
WRITTEN BY EDMUNDO BORDEU EXECUTIVE PRODUCER THE BORDEU TWINS PRODUCED BY ATLUS AND DIRECTED BY DAN SMITH



Chile

AOne Games was established in 2015 to develop world-class video games and in only three years it earned distribution contracts on all the major video game platforms. Furthermore, it entered into strategic alliances with the leading firms in the sector and raised a million dollars of private capital and support from the government of Chile's Corfo, Prochile, Sercotec and the Council for Culture and Arts programs. AOne Games received international recognition for its first product, Omen of Sorrow: Best Technical Challenge in EVA 2017, Second-Most Anticipated Future Release in 2017 and second-best demo of 2017 in the Shoryuken Fighting Game Awards. That same year it was chosen for one of the Unreal Dev Grants, given by Epic Games.



Founders
Max Kubler and
Sebastián Gano



Studio Website
aoneGames.com



Location
Santiago, Chile



Date of Foundation
2015



First game release
2018



Team size
25



Best-known game
Omen of Sorrow

| Games | Launch Date | Platform | Publisher | Development Time |
|----------------|-------------|---------------|-----------|------------------|
| Omen of Sorrow | 2018 | PlayStation 4 | Soedesco | 3 years |

AOne Games





Gamaga

Chile

Gamaga, founded a decade ago by Rodrigo Contreras, Gonzalo Giménez and Leonel Polgatti, is one of the first video game firms to be created in Chile. Like many start-ups, it began in one of its CEO's rooms in 2008, where the team developed games in Flash for browsers. Today, however, Gamaga has a team of over 30 persons who develop AAA mobile games that have attained over 160 million downloads. Its two flagship games: Banana Kong, published by FDG Entertainment, and Operate Now: Hospital, published by Spil Games, lead a portfolio of over 30 games. This track record has allowed it to step up its focus on value creation, know-how and quality. Gamaga has managed to increase its revenue by 50% per year and its work has received international recognition. These accomplishments have served to build up not only its own reputation but also that of the Chilean video game industry in general by showing the country's capacity for developing games for the global market.



Founder
Rodrigo Contreras



Studio Website
gamaga.com



Location
Santiago, Chile



Date of Foundation
2009



First game release
2009



Team size
33



Best-known games
Banana Kong and Operate Now: Hospital

| Games | Launch Date | Platform | Publisher | Development Time |
|------------------------------|-------------|--------------|--|------------------|
| Kermix | 2008 | Web | | -- |
| Undead Run | 2013 | Web | Gamaga | -- |
| Operate Now Saga | 2013 | Web | SpilGames BV | -- |
| Banana Kong | 2013 | iOS, Android | FDG Entertainment | -- |
| Operate Now: Hospital | 2016 | iOS, Android | SpilGames BV | -- |
| Operate Now: Animal Hospital | 2018 | iOS, Android | SpilGames BV | -- |
| SpilGames BV | 2018 | iOS, Android | iEntertainment/Discovery Investigation | -- |

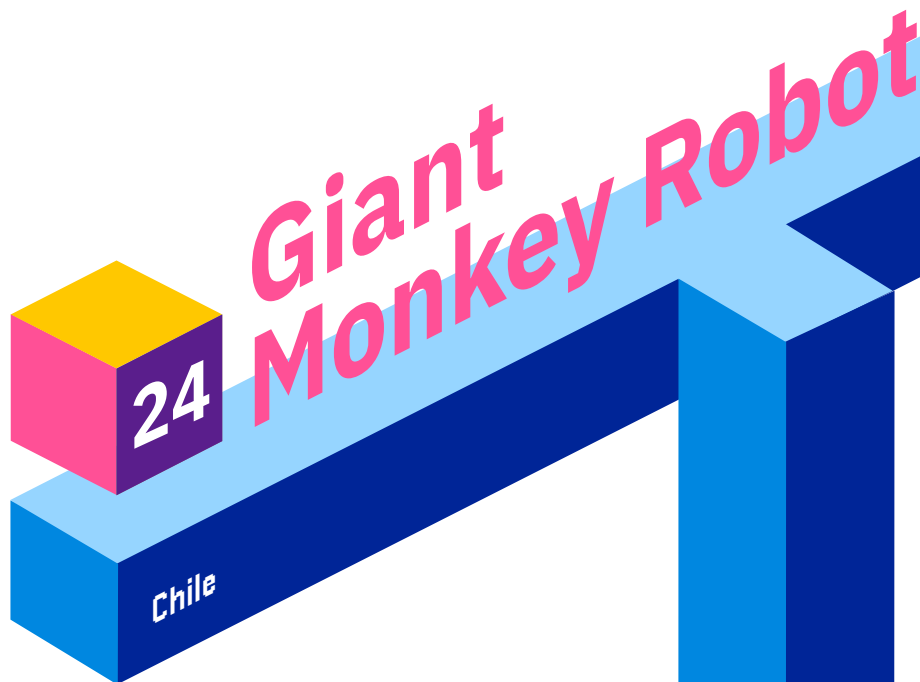
Gomogo

Banana Kong



OPERATE NOW HOSPITAL





Giant Monkey Robot is a development studio based in Chile, founded in 2017 by a group with 15 years of experience and over 30 games published on consoles, mobile, and PC platforms. They specialize in games as a service (GaaS) and in incorporating new technologies that add value to the gaming experience. Their first published game, BalanCity, received the prize for Best Mobile/ Tablet Game in the Game Connection America Awards 2017 and has been nominated for various other prizes.



Founders

Juan Pablo Lastra,
Benjamin Prieto Ballas
and Tomás Henríquez



Studio Website

giantmonkeyrobot.com



Locations

Santiago, Chile, and San
Francisco, United States



Date of Foundation

2017



First game release

2017



Team size

30



Best-known game

BalanCity

| Games | Launch Date | Platform | Publisher | Development Time |
|-----------|-------------|---------------|--------------------|------------------|
| BalanCity | 2018 | iOS & Android | Giant Monkey Robot | 1 year |

Giant Monkey Robot

BalanCity

Max Height: 357



New City



Scenarios



576

Max height 190



440





Iguanabee is a video game development firm with seven years of experience that has allowed them to shape their products. It has developed games for diverse platforms, from PC and web to consoles, including mobile and Smart TV.

It incorporates innovation into all its projects, which has led to collaborations with clients and publishers such as Google, Sony Worldwide Studios, LG, Wacom and Cartoon Network.



Founders

Iván Vera and Daniel Winkler



Studio Website

iguanabee.com



Location

Santiago, Chile



Date of Foundation

2011



First game release

2011



Team size

11



Best-known games

Headsnatchers, Raise and MonsterBag

| Games | Launch Date | Platform | Publisher | Development Time |
|------------------------|-------------|----------------------|------------------------|------------------|
| Ciclania | 2014 | Mac, Windows, Web | Tekit | 9 months |
| Mr Deadline | 2014 | Web | Wacom | 2 months |
| MonsterBag | 2015 | PlayStation Vita | Sony Worldwide Studios | 18 months |
| Raise | 2016 | Android | Google | 8 months |
| Clarence - Time Wizard | 2018 | Web | Cartoon Network | 3 months |
| Headsnatchers | 2019 | PlayStation 4, Steam | Iceberg Interactive | 1 year |

Iguanobee



26 Niebla Games



Niebla Games is a team based in Valparaíso, Chile, and dedicated to the development of original video and board games. Its projects have received recognition and support from several Chilean public and private institutions, including Corfo, the Ministry of Culture, Arts & Patrimony, and ProChile. It has also been given space in international exhibitions such as Indie MEGABOOTH, of Pax East and Pax West 2018, the Busan Indie Connect Festival 2018 and the Indie Game Area of Tokyo Game Show 2018. Their current projects in development include the video collectible card game called “Causa, Voices of the Dusk,” and the mobile strategy puzzle game “Hexland Heroes.”

-  **Founders**
Maureen Berho and Nicolás Valdivia
-  **Studio Website**
nieblaGames.com
-  **Location**
Valparaíso, Chile
-  **Date of Foundation**
2015
-  **First game release**
2017
-  **Team size**
8
-  **Best-known games**
Causa, Voices of the Dusk

| Games | Launch Date | Platform | Publisher |
|---------------------------|-------------|----------|----------------------------|
| Causa, Voices of the Dusk | 2019 | Windows | Niebla Games PlayStation 4 |

Causa

VOICES OF THE DUSK

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Selección de idioma: ENG ▾

HOME

G

MEDIA

COMMUNITY

BLOG

tana de reproducción inicial: 1920 x 1080.]

**Contratista de Masara**

Oculto. Cada vez que juegues otra Unidad de Riqueza, te Restauras 2.

0

ARISTÓCRATA

3

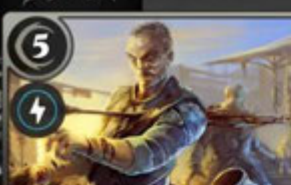
**Noble de Sulani**

Oculto. Tus Unidades de Riqueza reducen su nivel en 1.

0

ARISTÓCRATA

1

**Ajuste de Cuentas**

Destruye a una Unidad oponente. Recobra 2.

5

EVENTO

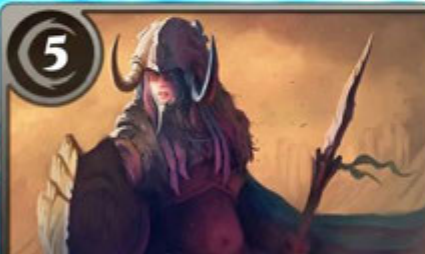
**Hoja de Burkán**

Iniciativa: Gastas 3. Tus Unidades obtienen Letal.

4

MERCENARIO

3

ORONAR
EL MÁS BUSCADO**Protectora de Masara**

Vigilante. Iniciativa: Gastas 4. Tus otras Unidades obtienen +0/+2.

3

MERCENARIO

4



Hoja de Burkán

**[NIEBLA] EL JUAN**
HOVATO

16

4



TinyBytes

Chile



Founders

Andrés Ayala and
Andrés Constantinidis



Studio Website

tinybytes.com



Location

Santiago, Chile



Date of Foundation

2014



First game release

2015



Team size

7



Best-known game

Massive Warfare: Aftermath

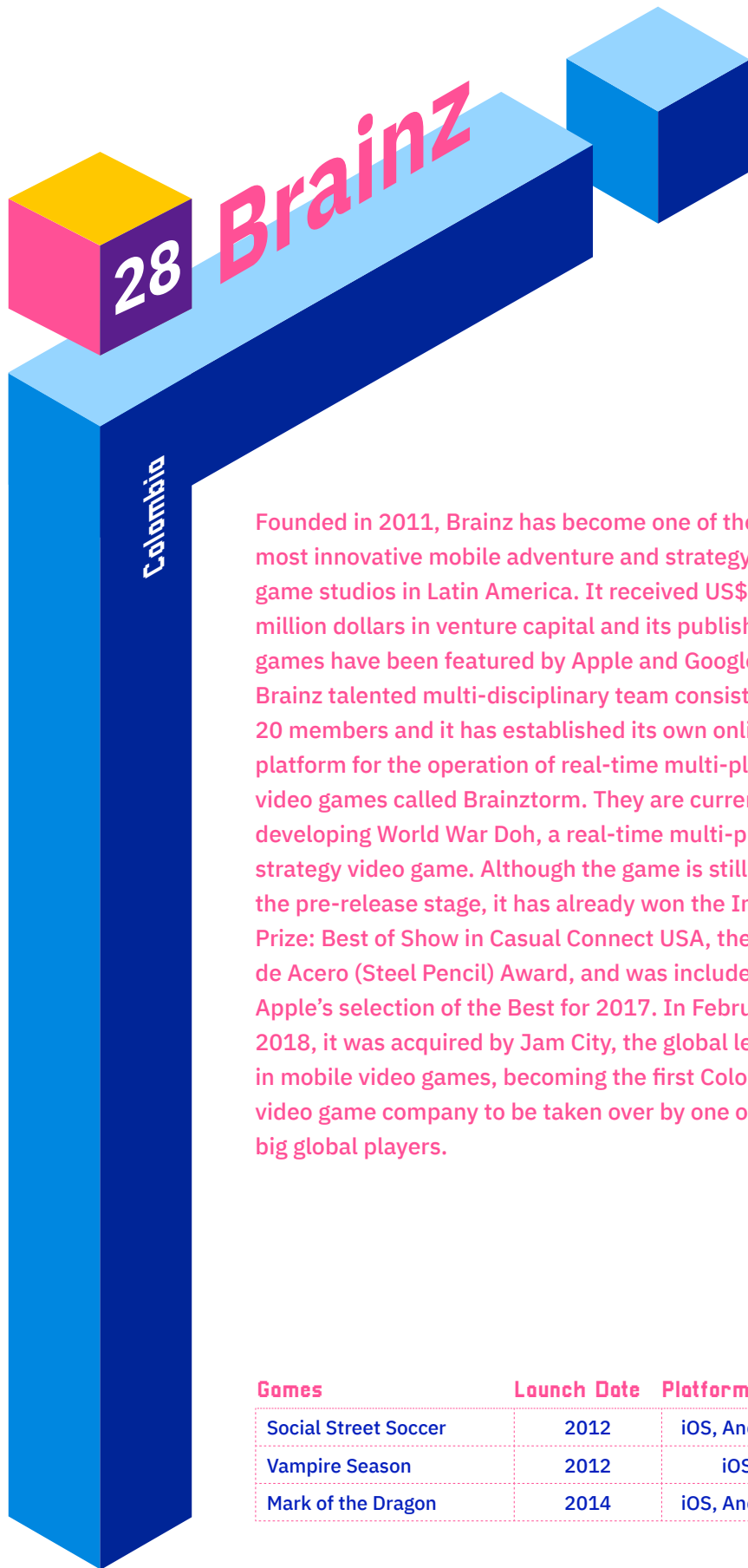
tinybytes.games

Tiny Bytes Games creates global communities for mobile gamers. Its products have developed a technology that allows players to communicate, compete, collaborate and share by forming communities connected to their games. In 2018, they secured \$1.4 million dollars in funding from Initial Capital and London Venture Partners, marking the first time that these investors supported a video game company in Latin America. One of its flagship games has been Massive Warfare: Aftermath, with over five million downloads and a nomination for the Indie Prize London 2018. It was also recognized at the Game Connection Europe Development Awards 2018, Unity Game Awards 2018 and granted the Applovin Indie Developer Award in the same year.

| Games | Launch Date | Platform | Publisher |
|--------------------------------|-------------|---------------|-----------------|
| Battle of Toys | 2014 | iOS & Android | TinyBytes Games |
| Ziggy Zombies - Zig Zag Racer | 2015 | iOS & Android | TinyBytes Games |
| Zoo Landing | 2015 | iOS & Android | TinyBytes Games |
| Magnate Millonario Capitalista | 2015 | iOS & Android | TinyBytes Games |
| Smokin' Hot - Endless Climber | 2015 | iOS & Android | TinyBytes Games |
| Sidecars - Double Dash Racer | 2015 | iOS & Android | TinyBytes Games |
| Ink Mania - Atirador Infinito | 2015 | iOS & Android | TinyBytes Games |
| Bitcoin Wonder Machine - Free! | 2015 | iOS & Android | TinyBytes Games |
| Monkey Rope: Saltador Infinito | 2016 | iOS & Android | TinyBytes Games |
| Massive Warfare: Aftermath | 2017 | iOS & Android | TinyBytes Games |

TinyBytes





Founders
Jairo Nieto and
Alejandro González



Studio Website
brainz.co



Location
Bogotá, Colombia



Date of Foundation
2011



First game release
2012



Team size
20



Best-known games
World War Doh (Q4 2018)
and Vampire Season

Founded in 2011, Brainz has become one of the most innovative mobile adventure and strategy video game studios in Latin America. It received US\$2.8 million dollars in venture capital and its published games have been featured by Apple and Google. The Brainz talented multi-disciplinary team consists of 20 members and it has established its own online platform for the operation of real-time multi-player video games called Brainztorm. They are currently developing World War Doh, a real-time multi-player strategy video game. Although the game is still in the pre-release stage, it has already won the Indie Prize: Best of Show in Casual Connect USA, the Lapiz de Acero (Steel Pencil) Award, and was included in Apple's selection of the Best for 2017. In February of 2018, it was acquired by Jam City, the global leader in mobile video games, becoming the first Colombian video game company to be taken over by one of the big global players.

| Games | Launch Date | Platform | Publisher | Development Time |
|----------------------|-------------|--------------|-----------|------------------|
| Social Street Soccer | 2012 | iOS, Android | ZQ Game | 20 months |
| Vampire Season | 2012 | iOS | Brainz | 18 months |
| Mark of the Dragon | 2014 | iOS, Android | Gamevil | 16 months |

WINNER!



 **Coins**
150

 **Power**
192



PlayerName1234
Clubname

+25



VS.



OppName12345
Club Name



Good luck!

Well played!

Wow!



Thanks!

Good game!

Oops

3

1

1:40

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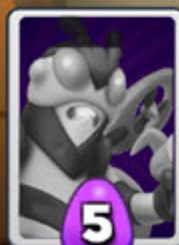
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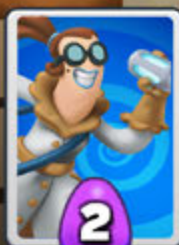
Next:



4



5



2



4



3





-  **Founder**
Eivar Rojas Castro
-  **Studio Website**
efectostudios.com
-  **Location**
Bogotá, Colombia
-  **Date of Foundation**
2011
-  **First game release**
2006
-  **Team size**
35
-  **Best-known games**
Cell Factor, Chavo Kart and ARK: Survival Evolved

Efector Studios is a video game development studio with over 10 years of experience in providing high production value services to top-class studios. It is now following its own creative path as an independent developer for the PC and Console markets with original IP and targeting hardcore audiences. Efector Studios has developed several games including: Cellfactor: Combat Training (PC), Cellfactor: Revolution (PC), Cellfactor: Psychokinetic War (PSN, XBLA), Monster Madness: Battle for Suburbia (PlayStation 3, Xbox 360), AAA Lucha Libre: Heroes del Ring (PlayStation 3, Xbox 360), Grabbity: Fall for It (iOS, Android), El Chavo Kart (PlayStation 3, Xbox 360) ARK: Survival Evolved (PC, Xbox One), King and Heroes (PC) and Dark & Light (PC).

| Games | Launch Date | Platform | Publisher | Development Time | Codesarrollo |
|----------------------------------|-------------|---|------------------------|------------------|---|
| Cell Factor: Combat Training | 2005 | PC | Ageia PhysX | 5 months | Artificial Studios |
| Cell Factor: Revolution | 2007 | PC | Ageia PhysX | 5 months | Artificial Studios |
| Monster Madness | 2007 | Xbox 360, PlaySation 3 | South Peak Interactive | 18 months | Artificial Studios |
| Cell Factor: Psychokinetic Wars | 2009 | Xbox 360, PlaySation 3 | Ubisoft | 18 months | TimeLine Interactive |
| Aaa Lucha Libre: Héroes del Ring | 2010 | Xbox 360, PlaySation 3 | Slang, Konami | 2 years | -- |
| Chavo Kart | 2014 | Xbox 360, PlaySation 3 | Slang | 18 months | -- |
| Ark: Survival Evolved | 2015 | Steam, Nintendo Switch, PlayStation 4, Xbox One, iOS, Android | Studio WildCard | 3 years | Studio Wildcard, Instinct, Virtual Basement |
| Dark And Light | 2017 | Windows | Snail Games USA | 4 months | Snail Games USA |

Efecto Studios



EFFECTOSTUDIOS



DARK
LIGHT

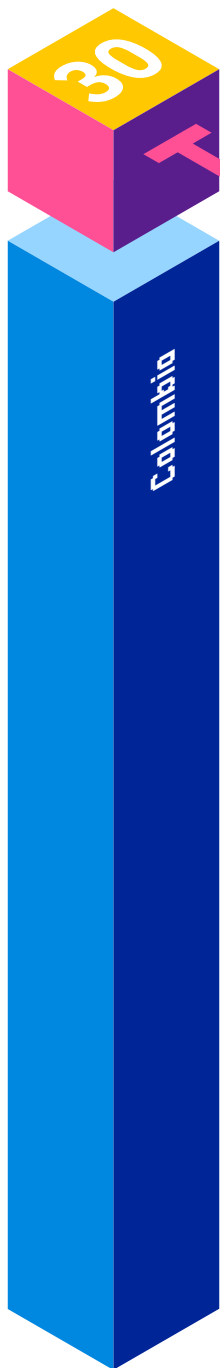


UNREAL
ENGINE



UNREAL ENGINE EFFECTOSTUDIOS





Teravision Games

Teravision Games (TG) was founded in Caracas, Venezuela in 2006, becoming one of the first video game companies in the region. Since this time, it has created more than 70 video games for Namco Atari, Disney, Nickelodeon, PBS, DHX, Unicef, Nat Geo and Discovery, among others. One of its greatest strengths is that it bridges narrative worlds with game mechanics. It has carried out developments based on well-known productions such as Ninja Turtles (Nickelodeon)*, Phineas and Ferb (Disney) and Las Leyendas (Ánima Studios). In 2010 they began to relocate their operations to Colombia, completing the move with the closure of the Caracas studio in 2017. Now all of their operations are centralized in Bogotá. At the moment, they are concentrating on developing PC and console video games. Their own flagship game, Neon Fury, is a virtual reality production for Oculus Rift, HTC Vive and PlayStation VR.

TERRAVISION GAMES



Founders
Paul Mackie,
Luis Daniel Zambrano
and Enrique Fuentes



Studio Website
teravisionGames.com



Locations
Bogotá, Colombia.
Originally, Caracas,
Venezuela



Date of Foundation
2006



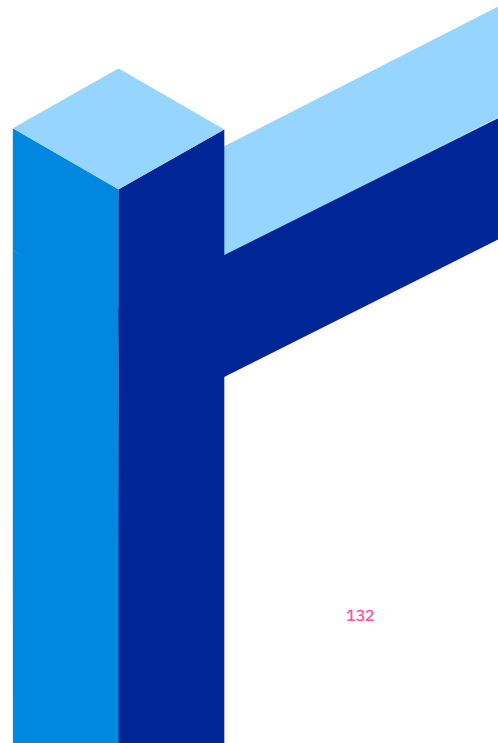
First game release
2007



Team size
28



Best-known games
Las Leyendas: El Pergamino
Mágico, TMNT Booyakasha
Blitz and Neon Fury



Teravision Games

| Games | Launch Date | Platform | Publisher | Development Time |
|--|-------------|-------------------|------------------------------------|------------------|
| Lt. Fly vs. The Spiders from Above | 2007 | PlayStation 4 | Guerrilla Games | 16 months |
| Lt. Fly II: Kamikaze Rescue Squad | 2008 | Web | MTV/Shockwave | 4 months |
| Phineas & Ferb - Robot Attack | 2009 | Web | Disney | 3 months |
| Wizards of Waverly Place: Whisks & Wizards | 2009 | Web | Disney | 5 months |
| Phineas & Ferb - Magnetic Voyage | 2009 | Web | Disney | 4 months |
| Glenn Martin DDS | 2009 | Web | Nickelodeon/Shockwave | 8 months |
| Lt. Fly rise of the Arachnids | 2010 | iOS | Namco | 8 months |
| Swiper's Big Adventure | 2010 | Windows, Mac | Nickelodeon | 10 months |
| Glenn Martin DDS Update | 2010 | Web | Nickelodeon/Shockwave | 2 months |
| Gwen The Magic Nanny | 2010 | Windows, Mac | Namco | 10 months |
| Yar's Revenge - First War | 2011 | Facebook | Atari | 5 months |
| Math Evolve | 2011 | iOS, Android | Interaction Education | 6 months |
| Hans Hans Battle for Asgard | 2013 | Web | Carvajal/NDiMedia/Teravision Games | 4 months |
| Capacity Umigo | 2013 | iOS | Wildbrain | 6 months |
| Chica's Adventures | 2014 | Mobile | PBS | 4 months |
| TMNT Booyakasha Blitz | 2014 | Web, iOS, Android | Nickelodeon | 5 months |
| DrDimensionpants - Pants Panic | 2014 | Web, iOS, Android | DHX | 4 months |
| DrDimensionpants - Flyin' | 2014 | Web, iOS, Android | DHX | 4 months |
| Breadwinners - Punch it B | 2015 | Web | Nickelodeon/Stolo | 4 months |
| Penfold Page | 2015 | iOS, Android | Quivervision (Puteko) | 2 months |
| Finado & Moribunda | 2017 | iOS, Android | Ánima Studios | 10 months |

TeraVision Games



31

Fair Play Labs

Costa Rica



Founder
Claudio Pinto Murray



Studio Website
fairplaylabs.com



Location
San José, Costa Rica



Date of Foundation
2006



First game release
2008



Team size
22



Best-known game
Color Guardians

Fair Play Labs is a Costa Rican studio established in 2006, out of its dream that they could create world-class video games while having fun in the process. With more than 14 years in the market, it is one of the studios with the most experience and longest track record in Costa Rica. Their portfolio contains over 80 video games, some made with their own IP, and others for third parties in the US, Europe and Asia. They develop games for over ten different platforms, from mobiles to latest-generation video game consoles. Among their own six games, the one with the highest number of downloads to date has been Color Guardians, which reached more than a million downloads when it was part of the PlayStation Plus program.

| Games | Launch Date | Platform | Publisher | Development Time |
|-----------------------------------|-------------|---|---|------------------|
| Wackylands | 2006 | iOS | Fair Play Labs | 6 months |
| CubeHead | 2007 | iOS | Fair Play Labs | 8 months |
| Boss | -- | iOS, PlayStation Portable, PlayStation Vita | Chillingo en iOS, Fair Play Labs en PSN | 1 year |
| Journey to Real Madrid | 2012 | iOS | MEDL Mobile | 1 year |
| Color Guardians | 2015 | Steam, PlayStation Portable, PlayStation Vita | Fair Play Labs | 16 months |
| Garfield: Survival of the Fattest | 2015 | iOS, Android | Pixowl | 2 years |

Fair Play Labs



Green Lava Studios

32

Costa Rica



Founders

Eduardo Ramírez, Diego Vásquez and José Mora



Studio Website

greenlavastudios.com



Location

Moravia, Costa Rica



Date of Foundation

2010



First game release

2012



Team size

3



Best-known games

Fenix Rage, Fenix Furia, My Name is Mayo and Mr. Massagy

Green Lava Studios is an independent video game development workshop located in Costa Rica. The studio specializes in the development of video games, mainly for PlayStation, Xbox and Steam. Its international awards include: Square Enix Latin American Game Contest 2012 –Runner Up Award and the Game Maker Showcase Game of the Year 2014 Award. The studio has exhibited its video games in international events such as the E3, Gamescom, and Comic-con, among others. Green Lava Studios has only received outside investment from an inheritance left to the founder, who, with a total of US\$450, obtained some software licenses and the rights to register Green Lava Studios as a business. Once the studio was established, it was able to successfully go out and find projects that made it possible to finance its own projects.

Green Lava Studios

| Games | Launch Date | Platform | Publisher | Development Time |
|--------------------------------------|-------------|--|---------------------------------------|------------------|
| Dream Tale: The Golden Keys | 2012 | Windows | Big Fish Games, Strategy First | 4 months |
| Bonfire Trail | 2012 | iOS, Android | Square Enix, Funbox Media | 6 months |
| Pueblo Pitanga: Enemigos Silenciosos | 2013 | Windows | Organización Panamericana de la Salud | 7 months |
| Pittsville Town: Silent Enemies | 2013 | Windows | Organización Panamericana de la Salud | 2 months |
| Fenix Box | 2013 | Android, Steam, Amazon Fire TV | Green Lava Studios | 7 days |
| Yolocaust: A Love Story | 2013 | Android | Green Lava Studios | 7 days |
| Dream Tale: Rainbow | 2016 | Android, Amazon | Green Lava Studios | 3 months |
| Fenix Rage | 2014 | Steam | Reverb Triple XP | 19 months |
| Fenix Furia | 2016 | PlayStation 4, Xbox One | Reverb Triple XP, Cross Function | 1 year |
| My Name is Mayo | 2016 | PlayStation 4, PlayStation Vita, Steam | Green Lava Studios | 1 month |
| Mr. Massagy | 2016 | PlayStation 4, Steam | Green Lava Studios | 6 months |
| Birdcakes | 2018 | PlayStation 4, Xbox One, Steam | Green Lava Studios | 1 year |



Green Lovo Studios





Freaky Creations is an independent video game development studio, located in Guayaquil. It was founded in March of 2012 by the same 12 Ecuadorian developers who continue to operate the studio today. For their first project, To Leave, they managed to secure public funding through Epsola and the Center for Information Technology, as well as private investment through Telconet.

Their objective is to design games that are completely different from others in the industry and to expose the player to under-explored areas of the human condition. The games explore human experiences such as loneliness, freedom, selfishness, addiction, psychopathy, obsession, manias, chauvinism, etc. Freaky Creations is the first and only studio in Ecuador to launch a video game for PlayStation, one of the largest platforms in the industry.



Founders

Estefano Palacios, Jorge Blacio, Javier Ron, Ambar Troya, Gustavo Totoy, Pedro Lucas, Emmanuel Ayala, Juan Pérez, Danny Camino, Enrique Bernous, Roberto Bernous and Carlos Bohórquez



Studio Website

freakycreations.net



Location

Guayaquil, Ecuador



Date of Foundation

2012



First game release

2018



Team size

12



Best-known game

To Leave

| Games | Launch Date | Platform | Publisher | Development Time |
|----------|-------------|---------------|------------------|------------------|
| To Leave | 2018 | PlayStation 4 | Freaky Creations | 5 years y medio |



The Domaginarium

34

El Salvador



the Domaginarium



Founder
Sergio Rosa



Studio Website
thedomaginarium.com



Location
San Salvador, El Salvador



Date of Foundation
2011



First game release
2011



Team size
1

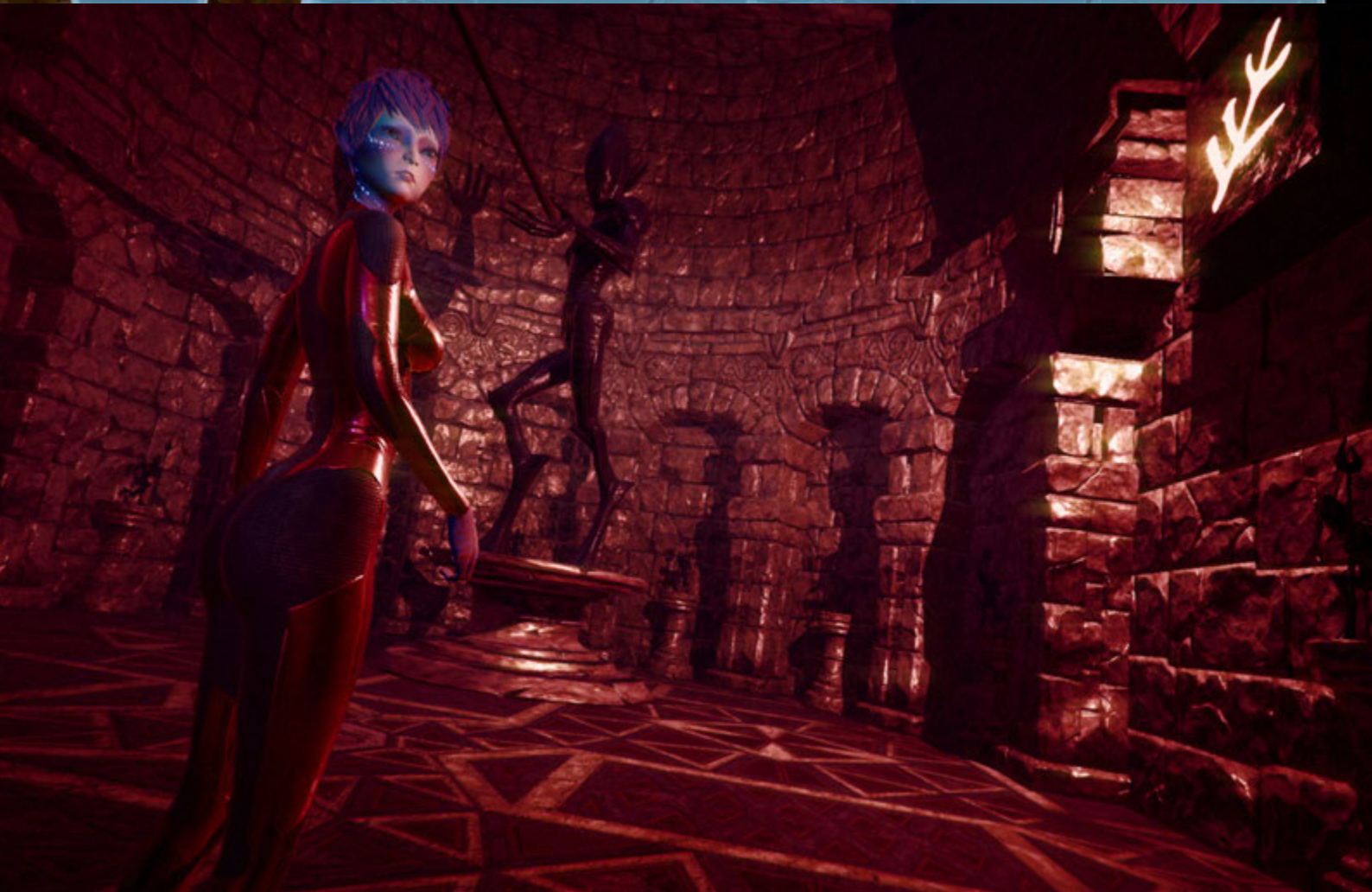


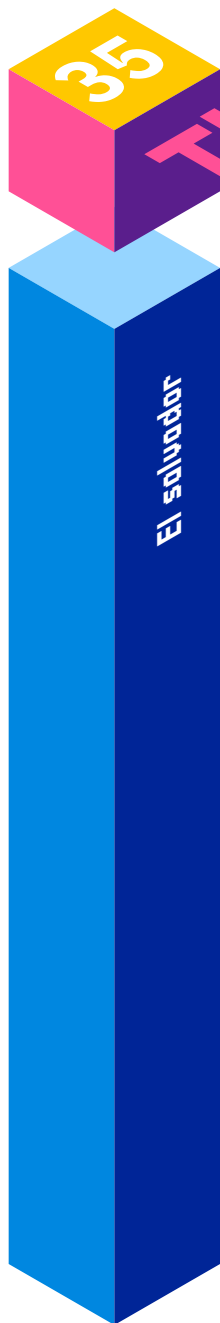
Best-known games
Enola, The Dreamlands:
Aisling's Quest

The Domaginarium is an independent video game development studio in El Salvador. Its video games focus on creating interactive entertainment experiences with intriguing stories and different or unconventional game mechanics. Based on the comments of their followers, the creation and presentation of their plots have been the highlights of their diverse roster. They have three products available on the market: The Dreamlands: Aisling's Quest, The Nightmare from Beyond, and Enola, which to date has been their most successful product—so much so that it was selected as the “game of the year” by Joel Couture, the editor of video games for different portals such as IndieGames.com, Siliconera and Gamasutra.

| Games | Launch Date | Platform | Publisher | Development Time |
|---------------------------------|-------------|---|-------------------|------------------|
| SteroidS | 2011 | Windows | The Domaginarium | 6 months |
| Enola | 2014 | Windows, Mac | Black Shell Media | 2 years |
| The Nightmare from Beyond | 2017 | Windows | The Domaginarium | 2 years |
| The Dreamlands: Aisling's Quest | 2018 | Windows, Mac, PlayStation 4, PlayStation Vita | The Domaginarium | 8 months |

The Domoginarium





The Stonebot Studio

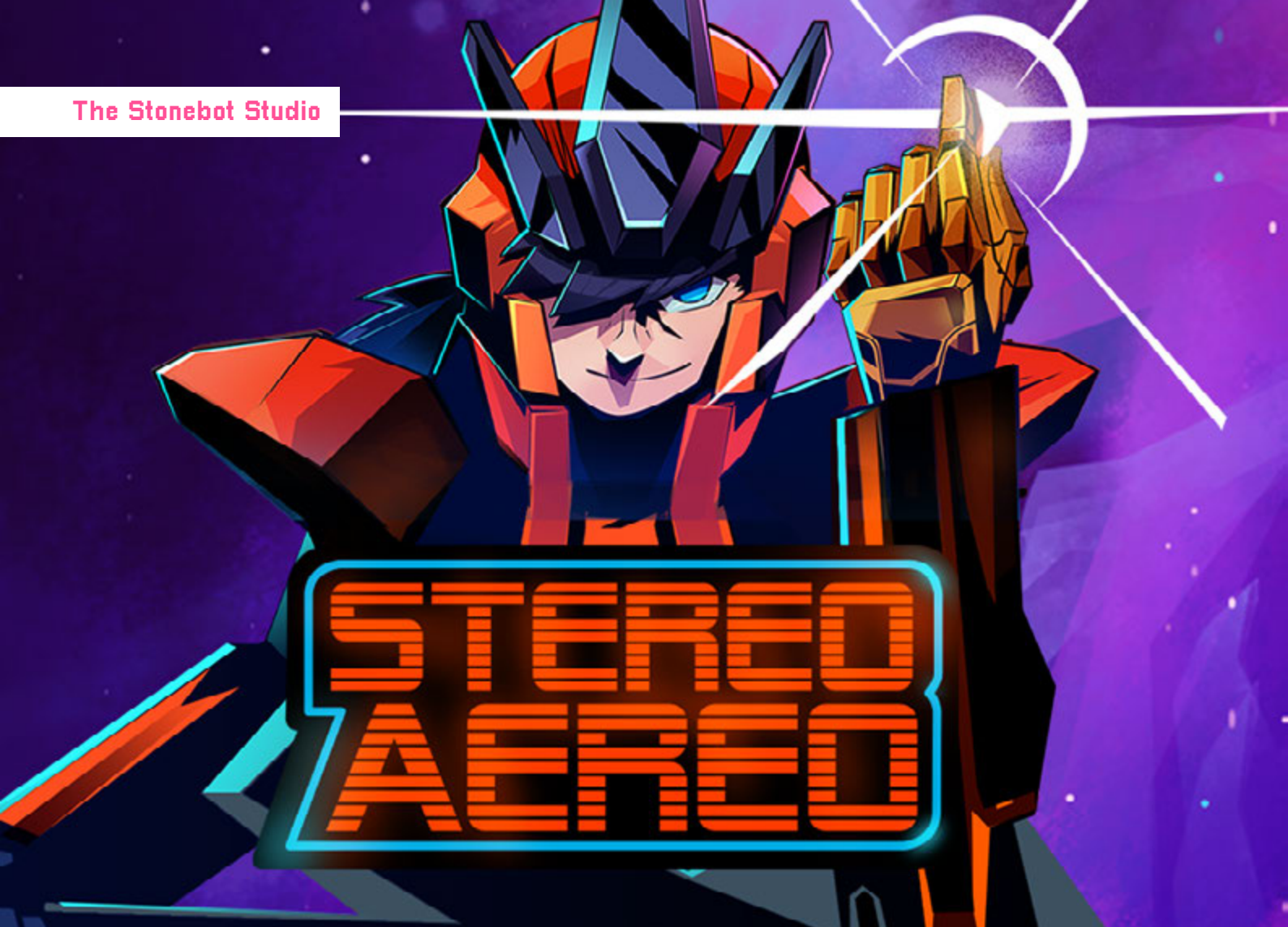


The Stonebot Studio is a digital workshop located in El Salvador that focuses on high quality projects, particularly in terms of visual development, motion graphics, 2D and video games. The studio has carried out projects for international firms in the US, Mexico, Russia and China. Although it operated for a time as a service provider, its main objective has been to create intellectual property such as video games and animated series. In El Salvador, it stands out for having launched the first PS4 and XboxOne console video game on the market. The studio received funding from the Pixel Award, which it has won three times in the category of Pro Video Games. This award is financed by the government of El Salvador through support from the Inter-American Development Bank. On an international level, they have been selected to participate in the GameOn Ventures of Canada and the Boston Festival of Independent Games. They are currently working on their second game, The Last Friend, which will be the first game developed in Central America to be launched on all platforms, and is already being featured on a Nintendo trailer.

-  **Founder**
Alessandro Biollo
-  **Studio Website**
Games.thestonebot.com
-  **Location**
San Salvador, El Salvador
-  **Date of Foundation**
2015
-  **First game release**
2015
-  **Team size**
10
-  **Best-known game**
Stereo Aereo

| Games | Launch Date | Platform | Publisher | Development Time |
|--------------|-------------|--------------------------------|-------------------------------|------------------|
| Agent D.O.G. | 2015 | Android | -- | 1 year |
| Stereo Aereo | 2016 | Steam, PlayStation 4, Xbox One | Indietropia Games/Ludus Games | 2 years |

The Stonebot Studio





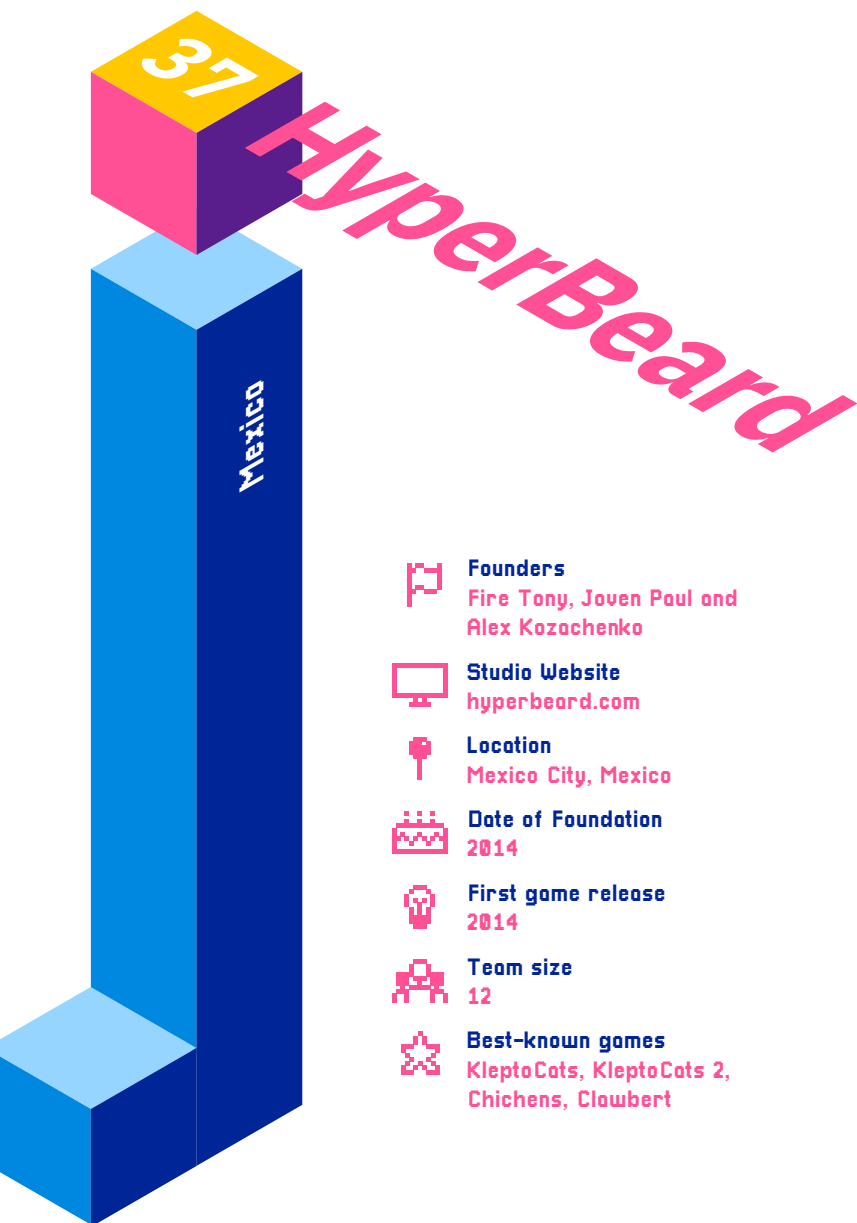
1 Simple Game was created to entertain gamers worldwide by developing incredible and enjoyable experiences for the players. As part of its expansion strategy, in mid-2013 it created an internal development unit to create casual games based on original intellectual property. In April 2014, it released Mugogy Jump, the first game produced from this new initiative, published on Android, iOS and PS Vita. In September 2015, it launched Mucho Taco for iOS and Android platforms, and reached over 1.7 million downloads the world over, after obtaining the award for the best App Store game in 2015. In October 2017, it released the web version of Mucho Taco, along with Deus Cult, a puzzle game set in the apocalypse. In 2018, 1 Simple Game has been established as a new company and currently the team is developing the Knights vs. Robots games for mobiles and Lullaby of Life for consoles.

-  **Founders**
Francisco Lara Sikorski
and Ovidio Escobedo
-  **Studio Website**
1simplegame.com
-  **Location**
Zapopan, Mexico
-  **Date of Foundation**
2013
-  **First game release**
2014
-  **Team size**
12
-  **Best-known game**
Mucho Taco





| Games | Launch Date | Platform | Publisher | Development Time |
|-------------|-------------|------------------------|---------------|------------------|
| Mugogy Jump | 2014 | -- | -- | -- |
| Mucho Taco | 2015 | Android, iOS, Facebook | Noodlecake | 16 months |
| Deus Cult | 2017 | Android, iOS | 1 Simple Game | 10 months |

1 Simple Game



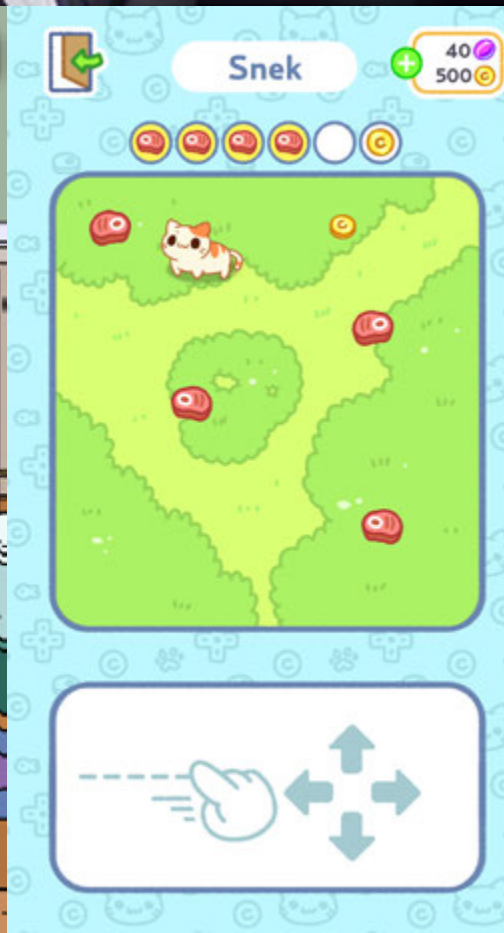


HyperBeard is an independent video game development studio that creates small and entertaining experiences for mobiles, suitable for all types of players and targeted at the casual market. The studio aims to offer an extensive catalog of titles, experiment with different game styles to innovate in international mobile media, and become a trend-setter, which has already happened with some of HyperBeard's releases. This record puts them among the top studios in Latin America and has given them the opportunity to participate in various festivals where Hyperbeard has won awards in more than one category. The studio began as a unit within the Apps-O-Rama company, but it became independent in mid 2017 and since then has remained autonomous.

-  **Founders**
Fire Tony, Joven Paul and Alex Kozachenko
-  **Studio Website**
hyperbeard.com
-  **Location**
Mexico City, Mexico
-  **Date of Foundation**
2014
-  **First game release**
2014
-  **Team size**
12
-  **Best-known games**
KleptoCats, KleptoCats 2, Chichens, Clawbert

| Games | Launch Date | Platform | Publisher | Development Time |
|-------------------|-------------|--------------|------------|------------------|
| Bouncing Dude | 2014 | iOS, Android | HyperBeard | 2 weeks |
| Palabraz | 2014 | iOS, Android | HyperBeard | 1 month |
| Muertitos | 2014 | iOS, Android | HyperBeard | 2 months |
| The Balloons | 2015 | iOS, Android | HyperBeard | 6 months |
| Alchademy | 2016 | iOS, Android | HyperBeard | 2 months |
| KleptoCats | 2016 | iOS, Android | HyperBeard | 1 month |
| Chichens | 2017 | iOS, Android | HyperBeard | 3 months |
| Clawbert | 2017 | iOS, Android | HyperBeard | 4 months |
| Clawbert Toy Town | 2018 | iOS, Android | HyperBeard | 6 months |
| KleptoCats 2 | 2018 | iOS, Android | HyperBeard | 5 months |

HyperBeard





Founder
Jorge Morales



Studio Website
larvaGamestudios.com



Location
Guadalajara, Mexico



Date of Foundation
2007



First game release
2010



Team size
19



Best-known games
Lucha Libre AAA: Héroes del Ring, Redbull Crashed Ice: Kinect, Backyard Monsters: Unleashed, Spirits of Spring, Night Vigilante and Street Gol Legion

Larva Game Studios is a premier video game company located in Guadalajara, Mexico, with 10 years of experience in platforms such as PC, consoles, VR/AR and mobiles. It has developed over 25 projects with international clients and has become one of the studios with the greatest commitment to the growth of the industry in Latin America. They are currently creating games with their own IP and plan to become a publisher for the region for their own creations as well as those from other studios. The team is made up of a total of 19 developers and artists from diverse areas. Some 53% of the development staff are women. Since 2011, the firm has been committed to gender equality and equal opportunity for all who collaborate in its projects.

| Games | Launch Date | Platform | Publisher | Development Time |
|----------------------------------|-------------|-------------------------|--|------------------|
| Lucha Libre AAA: Héroes del Ring | 2010 | PlayStation 3, Xbox 360 | Slang/Konami | 3 years |
| Atrévete a Soñar | 2012 | Wii | Sabarasa/Slang | 3 months |
| Redbull Crashed Ice: Kinect | 2012 | Xbox 360 | Bongfish Inc/Redbull Media House/Microsoft Studios | 1 year |
| Skyport | 2012 | iOS | Astrolol | 6 months |
| Backyard Monsters: Unleashed | 2014 | iOS | Kixeye | 4 months |
| Spirits of Spring | 2014 | iOS | Larva Game Studios/Minority Media Inc. | 2 years |
| Speedlane | 2015 | iOS | Astrolol | 4 months |
| Ghost Apocalypse | 2015 | iOS | RCK Games | 8 months |
| Night Vigilante | 2015 | iOS, Android | Larva Game Studios/Kedoo | 30 months |
| Street Gol Gold Edition | 2015 | iOS, Android | Larva Game Studios/Goal Interactive | 18 months |
| Pacific Rim Breach Wars | 2018 | iOS, Android | Kung Fu Factory | 2 months |
| Street Gol Legion | 2018 | iOS, Android | Larva Game Studios/Goal Interactive | 18 months |

Larva Game Studios



Larva Game Studios

"Street GO!" LEGION

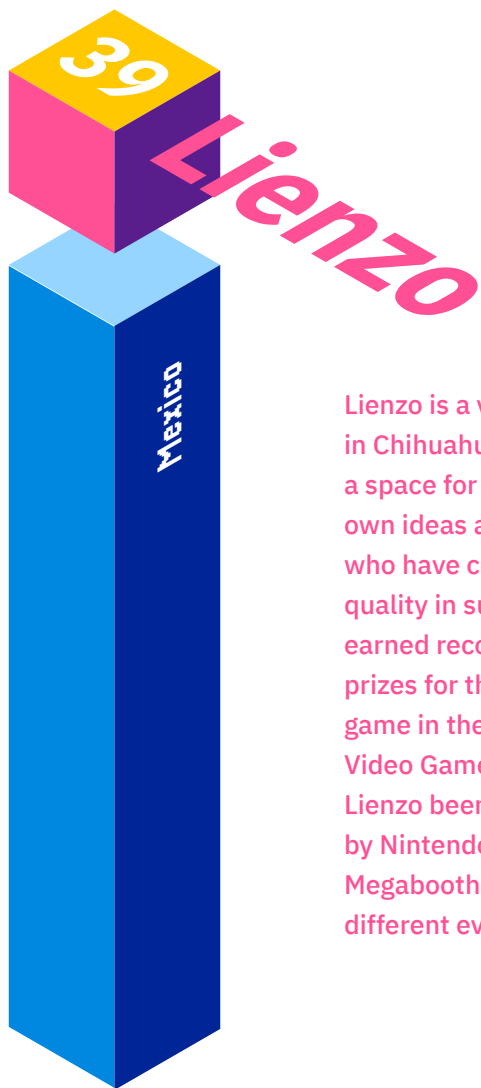
COMING
SOON

Available on the
App Store

GET IT ON
Google Play



NIGHT VIGILANTE



Lienzo is a video game development studio in Chihuahua, Mexico, established to provide a space for local creators to implement their own ideas and produce experiences for fans who have come to expect a high standard of quality in such a competitive market. It has earned recognition in the industry, including prizes for the best game and the best cultural game in the 2017 edition of the National Video Game Contest MX. Furthermore, Lienzo has been chosen on numerous occasions by Nintendo, Microsoft, Sony and Indie Megabooth to take part in their line-ups in different events.



Founders
Adolfo Rico and
Edgar Serrano



Studio Website
lienzo.mx



Location
Chihuahua, Mexico



Date of Foundation
2012



First game release
2016



Team size
8



Best-known games
Mulaka, Hunter's Legacy

| Games | Launch Date | Platform | Publisher | Development Time |
|-----------------|-------------|---|-----------|------------------|
| Hunter's Legacy | 2016 | Xbox One, PlayStation 4, Windows, Mac | Lienzo | 18 months |
| Los XV de Rubí | 2016 | Android | Lienzo | 1 week |
| Lataman | 2017 | iOS, Android | Negas | 1 year |
| Mulaka | 2018 | Nintendo Switch, Xbox One, PlayStation 4, Windows | Lienzo | 3 years |

Lienzo



Lienzo



We The Force

40

Mexico

WE THE FORCE STUDIOS

Founder
César Ramirez Molina

Studio Website
wetheforce.com

Location
Saltillo, Mexico

Date of Foundation
2011

First game release
2017

Team size
10

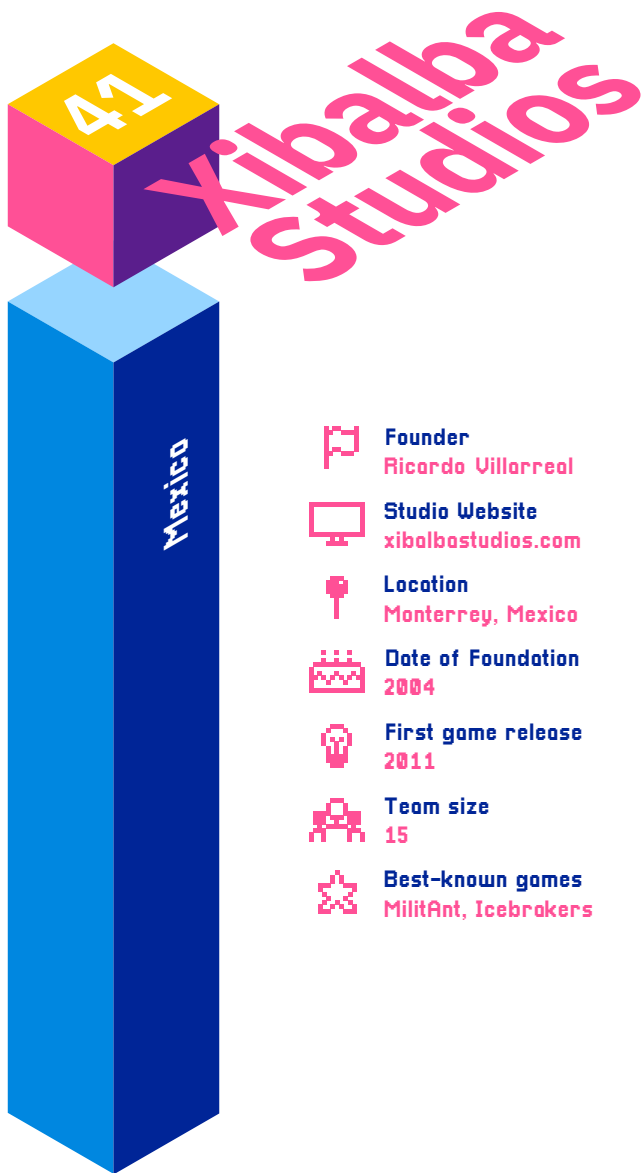
Best-known games
Randall and Kim The Avenger Cow

We The Force is one of the pioneers in the development of video games in Coahuila, and was founded in 2011 in the city of Saltillo, Mexico. The studio's mission is to create products that are entertaining but also contain great challenges and substantive messages. It has released four mobile games but its real strength lies in producing PC and PS4 video games, such as Randall, and Kim the Avenger Cow. Its projects have been presented internationally in various conventions such as Pax East, Pixelatl, EGS Electronic Game Show, Tokyo Game Show, IndieCade, Pax West, PlayStation Experience and E3. At Video Games MX, Kim the Avenger Cow received the prize for best graphic art.

| Games | Launch Date | Platform | Publisher | Development Time |
|---------------------|-------------|----------------------|----------------------|------------------|
| Gecky | 2010 | iOS | We The Force Studios | 6 months |
| Warrior | 2011 | iOS | We The Force Studios | 6 months |
| Boomerz | 2016 | iOS, Android | We The Force Studios | 3 months |
| Nutrionic | 2016 | iOS, Android | We The Force Studios | 3 months |
| Randall | 2017 | PlayStation 4, Steam | We The Force Studios | 4 years |
| Kim The Avenger Cow | 2018 | PlayStation 4, Steam | We The Force Studios | 2 years |

We The Force





-  **Founder**
Ricardo Villarreal
-  **Studio Website**
xibalbastudios.com
-  **Location**
Monterrey, Mexico
-  **Date of Foundation**
2004
-  **First game release**
2011
-  **Team size**
15
-  **Best-known games**
MilitAnt, Icebreakers



Xibalba Studios was founded more than a decade ago in Monterrey, Mexico. The studio has been a pioneer in the development of video games in Latin America and is dedicated to creating high-quality games for consoles, PC and Mac, and mobile games for the international market. From the outset, its objective has been to develop original, innovative and, above all, entertaining games. It launched its first original IP in 2010 with the Icebreakers game, which went on to win awards for the Best Original Character and second place as the Best Game for Laptops at Intel's Level Up Competition. MilitAnt, the other game it developed, won the prize for the Best Shooter in the same contest. Xibalba was also recognized in the ESA Video Game MX Contest in the professional category and for Selected Projects at Game Connection America.

| Games | Launch Date | Platform | Publisher | Development Time |
|-------------|-------------|----------------------|-------------------------------|------------------|
| Icebreakers | 2010 | Windows, OnLive | Xibalba Studios | 3 years |
| MilitAnt | 2016 | PlayStation 4, Steam | Xibalba Studios / DICO (Asia) | 5 years |



Xibalba Studios

MILITANT

AVAILABLE NOW

#MILITANTGAME

XIBALBA STUDIOS PS4



ICE BREAKERS



Single Player

Story Mode

Play with Friends

Street Cred

Learn to Play

Options

Player: Luis



Exit



Founders

Juan de Urza and
Gabriel Villalba Páez



Studio Website

posibillian.tech



Location

Asunción, Paraguay



Date of Foundation

2015



First game release

2017



Team size

12



Best-known game

Fhacktions

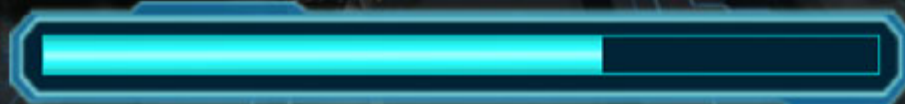
Posibillian Tech is the Paraguayan studio behind the development of Fhacktions, the first video game in the world that combined geolocalization with team battles in real time. The game is free for iOS and Android, and several successful esports tournaments have been held with Fhacktions. Posibillian Tech was a start-up at Level Up Accelerator in Finland and received private funding from Paraguay, which enabled the firm to fund a full-time team of 12 to carry out game development during three years. In the US Indie Prize competition in 2017, Fhacktions won the prize for best game audio, while in the Indie Prize Asia and in the Indie Prize Europe, both also in 2017, it was a finalist in the best multi-player category. Furthermore, the game was selected as one of the 15 best games launched in Latin America in the first edition of the Google Indie Games Festival Latam in 2018. To date, the game has been downloaded over 100,000 times.

| Games | Launch Date | Platform | Publisher | Development Time |
|------------|-------------|--------------|------------------|------------------|
| Fhacktions | 2017 | iOS, Android | Posibillian Tech | 3 years |

Posibillion Tech

FHACKTIONS

DESCARGANDO ASSETS... 66.81%





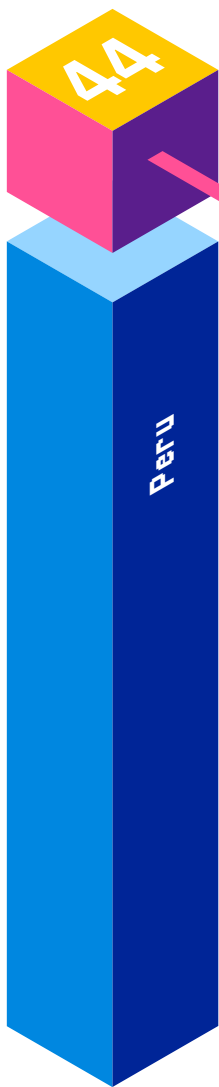
Bamtang Games is the largest and most successful video game studio in Peru, gaining its fame in the community by combining talent, creativity, modern production processes, a solid reputation and an outstanding work ethic. The team is comprised of veterans of famous IPs with over 200 games developed and published on budget, on time, and free of debt or outside investment.

In 2012, the developer received the Peru Exports Services prize granted by the Peru Export and Tourism Promotion Commission, a government agency which recognizes exporters who have internationalized their products through innovation and collaborative schemes. The Bamtang games team brings together over 40 professionals, including artists, programmers, producers, designers and sound engineers who develop all the games in-house. It is licensed for PlayStation, Xbox and Nintendo Switch and develops games that are compatible with PC/ Steam, iOS, Android and others, using SWIT and other engines.

| Games | Launch Date | Platform | Publisher |
|---|-------------|-----------------------------|------------------------|
| The Search for Amelia Earhart | 2009 | Windows, Mac | ValuSoft |
| Memory Wiz | 2009 | Windows, Mac, Web, Facebook | GameHouse (Real Games) |
| Honey Badger -Taking What he Wants | 2009 | Windows, Mac | MEDL Mobile |
| Soap Opera Dash | 2010 | iOS, Windows, Mac | PlayFirst |
| Kizi Adventures - The Way Home | 2014 | iOS, Android, Windows, Mac | Funtomic |
| Marvel: Thor Boss Battles | 2017 | Web | Marvel |
| Kilka Card Gods | 2014 | PlayStation Vita | Bamtang Games |
| Saban's Mighty Morphin Power Rangers: Mega Battle | 2017 | Xbox One, PlayStation 4 | Bandai Namco |

Bamtang Games





Leap Game Studios



-  **Founders**
Michael Barclay and Luis Wong
-  **Studio Website**
leapgs.com
-  **Location**
Lima, Peru
-  **Date of Foundation**
2012
-  **First game release**
2012
-  **Team size**
10
-  **Best-known games**
Squares, La Mordida, Tunche

Leap Game Studios stands out for focusing a great deal of attention on the polishing of game mechanics and the visual presentation of each of its titles. Its goal is to make unique games that can become benchmarks within their genres. Its most popular game to date has been La Mordida, which attracted more than a half million players in less than two weeks. The studio has received prizes, such as the People's Choice Awards in The Mix during E3 2015, and nominations for a number of international awards for Squares. It is currently preparing for the launch of Tunche for PC and consoles.

| Games | Launch Date | Platform | Publisher | Development Time |
|----------------|-------------|------------------|-------------------|------------------|
| La Mordida | 2014 | Web | Leap Game Studios | 1 week |
| Squares | 2015 | PlayStation Vita | Leap Game Studios | 2 years |
| Paralines | 2017 | iOS, Android | Leap Game Studios | -- |
| Slice and Rise | 2017 | iOS, Android | Leap Game Studios | 18 months |

Leap Game Studios





Ironhide

Uruguay



Founders

Alvaro Azofra, Gonzalo Sande and Pablo Realini



Studio Website

ironhideGames.com



Location

Montevideo, Uruguay



Date of Foundation

2010



First game release

2010



Team size

34



Best-known games

Kingdom Rush Saga, Iron Marines

Ironhide is a video game studio whose idea is to create stories and characters that are unique. The studio develops top quality mobile and PC games. Its vision is to create projects that will entice players to experience engaging stories, with graphics that submerge them into different worlds, providing hours of quality entertainment with plots fully developed from beginning to end. Furthermore, the studio strives daily to promote and strengthen the Uruguayan video game industry.

Ironhide's games have won a variety of prizes over time, including Game of the Year 2011, Best Strategy Game 2011 (Jayisgames), Best Business KCG 2012 (Korea), Best Strategy Game 2013 (Armorgames), Best Latam Game 2016, Android Excellence 2017, (Google Play), Gold Award 9/10 Pocket Gamer 2017, among others. Its games have been on the top of App Store's download lists.

| Games | Launch Date | Platform | Publisher | Development Time |
|------------------------|-------------|------------------------------------|----------------------|------------------|
| Clash of the Olympians | 2010 | iOS, Android | Ironhide Game Studio | 2 months |
| Kingdom Rush | 2011 | iOS, Android, Amazon, Mac, Windows | Ironhide Game Studio | 9 months |
| Kingdom Rush Frontiers | 2013 | iOS, Android, Amazon, Mac, Windows | Ironhide Game Studio | 14 months |
| Kingdom Rush Origins | 2014 | iOS, Android, Amazon | Ironhide Game Studio | 10 months |
| Iron Marines | 2017 | iOS, Android, Amazon | Ironhide Game Studio | 33 months |





Pomelo Games

Uruguay

Pomelo Games is an independent video game studio founded in 2013 in Montevideo, Uruguay. It specializes in developing video games for cell phones, with a high level of visual polish and originality. Up to now, their three games—Bullet Boy, Mars: Mars and Once Upon a Tower—have reached more than ten million downloads.



Founders

Federico Romero, Máximo Martínez "Max", Felipe Otamendi and Jonas Mora



Studio Website

pomeloGames.com



Location

Montevideo, Uruguay



Date of Foundation

2013



First game release

2015



Team size

14



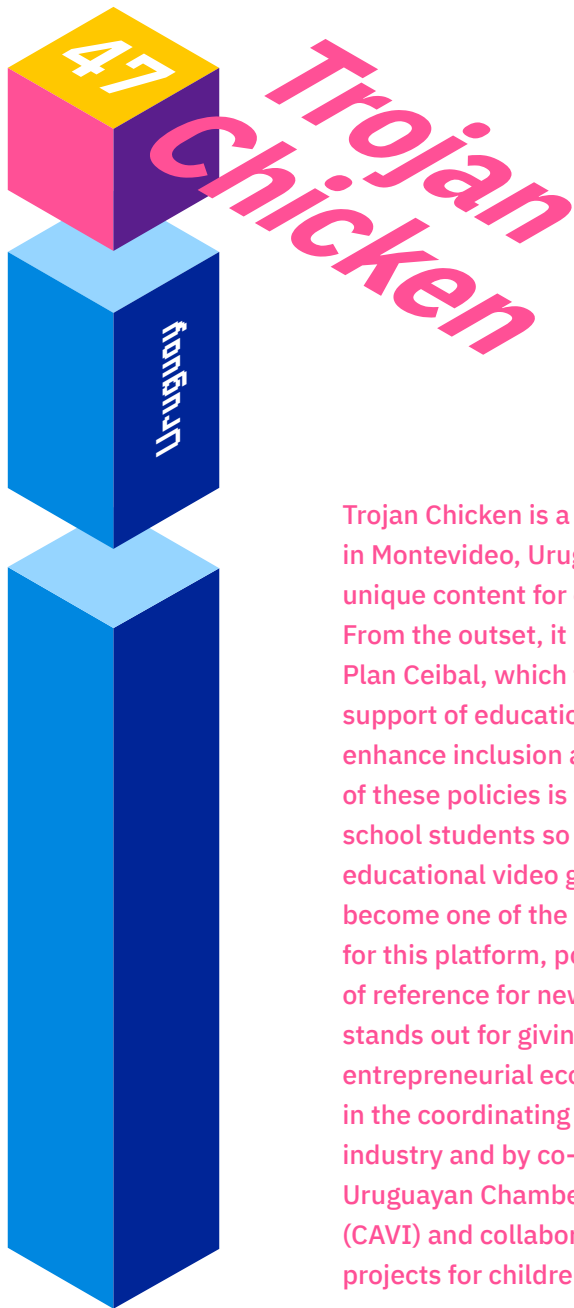
Best-known games

Bullet Boy, Mars: Mars, Once Upon a Tower

| Games | Launch Date | Platform | Publisher | Development Time |
|-------------------|-------------|--------------|--------------|------------------|
| Bullet Boy | 2015 | iOS, Android | Kongregate | 30 months |
| Mars: Mars | 2016 | iOS, Android | Pomelo Games | 7 months |
| Once Upon a Tower | 2017 | iOS, Android | Pomelo Games | 7 months |

Pomelo Games





Trojan Chicken is a video game studio located in Montevideo, Uruguay, created to generate unique content for children. From the outset, it has worked closely with Plan Ceibal, which focuses on technology in support of educational policy in Uruguay to enhance inclusion and equal opportunity. One of these policies is to give a laptop to all public school students so they can have access to educational video games. Trojan Chicken has become one of the most successful studios for this platform, positioning itself as a point of reference for new generations. The studio stands out for giving momentum to Uruguay's entrepreneurial ecosystem by participating in the coordinating board of the video game industry and by co-founding and promoting the Uruguayan Chamber of Video Game Developers (CAVI) and collaborating in a vast number of projects for children.

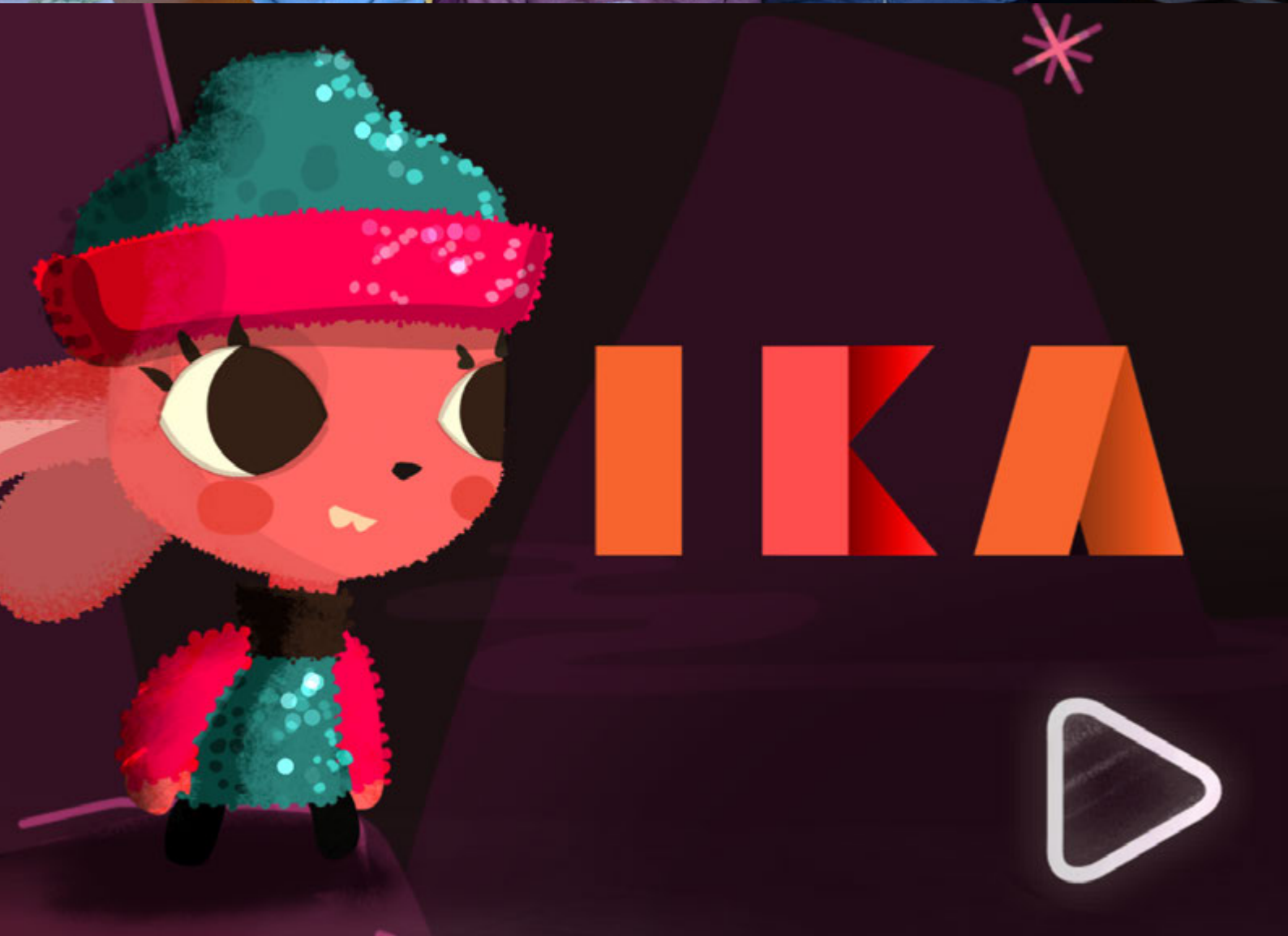


-  **Director**
Fabián Rodríguez
-  **Studio Website**
trojanchicken.com
-  **Location**
Montevideo, Uruguay
-  **Date of Foundation**
2009
-  **First game release**
2010
-  **Team size**
8
-  **Best-known games**
División Especial de Detectives, Cozaprobemas

Trojan Chicken

| Games | Launch Date | Platform | Publisher | Development Time |
|---|-------------|----------------|----------------|------------------|
| División Especial de Detectives | 2010 | Linux, Windows | Trojan Chicken | 18 months |
| 1811 | 2011 | Linux | Trojan Chicken | 16 months |
| Cazaproblemas 1 | 2011 | Linux, Windows | Trojan Chicken | 10 months |
| 1812 | 2012 | Linux | Trojan Chicken | 6 months |
| Cazaproblemas 2 | 2012 | Linux | Trojan Chicken | 9 months |
| Cazaproblemas Liga Verano | 2012 | Linux | Trojan Chicken | 3 months |
| Clink | 2012 | Linux | Trojan Chicken | 6 months |
| Cazaproblemas 3 | 2013 | Linux | Trojan Chicken | 8 months |
| Boo | 2013 | Linux | Trojan Chicken | 16 months |
| Cazaproblemas 4 | 2014 | Linux | Trojan Chicken | 9 months |
| Cazagemas | 2015 | Linux | Trojan Chicken | 6 months |
| División Especial de Detectives Olimpiada | 2015 | Linux | Trojan Chicken | 6 months |
| Letrapaluza | 2016 | Linux | Trojan Chicken | 9 months |
| Ika | 2017 | Android | Trojan Chicken | 9 months |
| Letrapaluza 2 | 2017 | Linux | Trojan Chicken | 8 months |
| A-Lin | 2018 | iOS, Android | IMM | 5 months |
| Letrapaluza 3 | 2018 | Linux | Trojan Chicken | 8 months |

Trojan Chicken



Trojan Chicken





Venezuela

The goal of Gasp is to be a factory of astonishment, striving to make its games provide those brief moments of marvel that make life richer. Founded by two artists originally based in Caracas, Venezuela, it is now located in Bogotá, Colombia. Gasp got its start in the industry by winning Microsoft's Dream Build Play contest in 2008 with its first prototype, Battle Tennis. In 2015, together with Electronic Arts, it published Power Ping Pong, attracting more than a million players to mobile online Ninja ping pong battles, obtaining the Editor's Choice in Apple Store.



***GASP!**

-  **Founder**
José Gómez
-  **Studio Website**
gaspGames.com
-  **Locations**
Bogotá, Colombia. Originally: Caracas, Venezuela
-  **Date of Foundation**
2009
-  **First game release**
2015
-  **Team size**
2
-  **Best-known game**
Power Ping Pong
- 

| Games | Launch Date | Platform | Publisher | Development Time |
|-----------------|-------------|--------------|---------------------------|------------------|
| Power Ping Pong | 2015 | iOS, Android | Electronic Arts/Chillingo | 3 years |





La Cosa Entertainment

Venezuela



Founders

Victor Velasco
and Ginaris Sarra



Studio Website

la-cosa.net



Locations

Los Angeles, United States.
Originalmente: Venezuela



Date of Foundation

2015



First game release

2016



Team size

4



Best-known game

Klaus

La Cosa Entertainment is an independent video game studio, founded in 2015, which created the video game Klaus for PlayStation 4. Inspired by other media, such as cinema, it attempts to offer a different type of experience, innovating in the mechanics while making the game enjoyable. To develop video games, it has received support from Execution Labs, a Canadian firm that invests in independent games that offer and promote new ideas. In 2012, they won the prize for excellence for Latin America from the Japanese firm, Square Enix. It currently boasts a rating of 4.5/5 in the store with over 20,000 downloads, and a score of 76/100 on Metacritic.

| Games | Launch Date | Platform | Publisher | Development Time |
|-------|-------------|--------------|------------|------------------|
| Klaus | 2015 | iOS, Android | Kongregate | 30 months |

Lo Coso Entertainment

-KLAUS-

WORLD 04



KLAUS

CONCEPT ART 01

50 Sukeban Games

Venezuela

Sukeban Games is an independent Venezuelan studio created by two fans of Japanese culture who were inspired by manga-style stories. Its game, VA-11 HALL-A (Valhalla), has sold over 500,000 copies worldwide and was recognized as the best Indie game at the Tokyo Game Show in 2017. Unlike most studios, Sukeban does not focus on fighting games, nor does it set out to save the world. Rather, it centers on the relationships between the characters, and creates a rich tapestry of emotions, intrigue and empathy set in a cyberpunk world. Unlike many games, where players focus on demolishing obstacles, the creators seek to “tear down the invisible walls in the narrative,” and this is what sets them apart from other studios.



Founders
Fernando Damas and
Christopher Ortiz



Studio Website
sukeban.moe



Ubicaciones
Aragua, Venezuela,
and Osaka, Japan



Date of Foundation
2014



First game release
2016

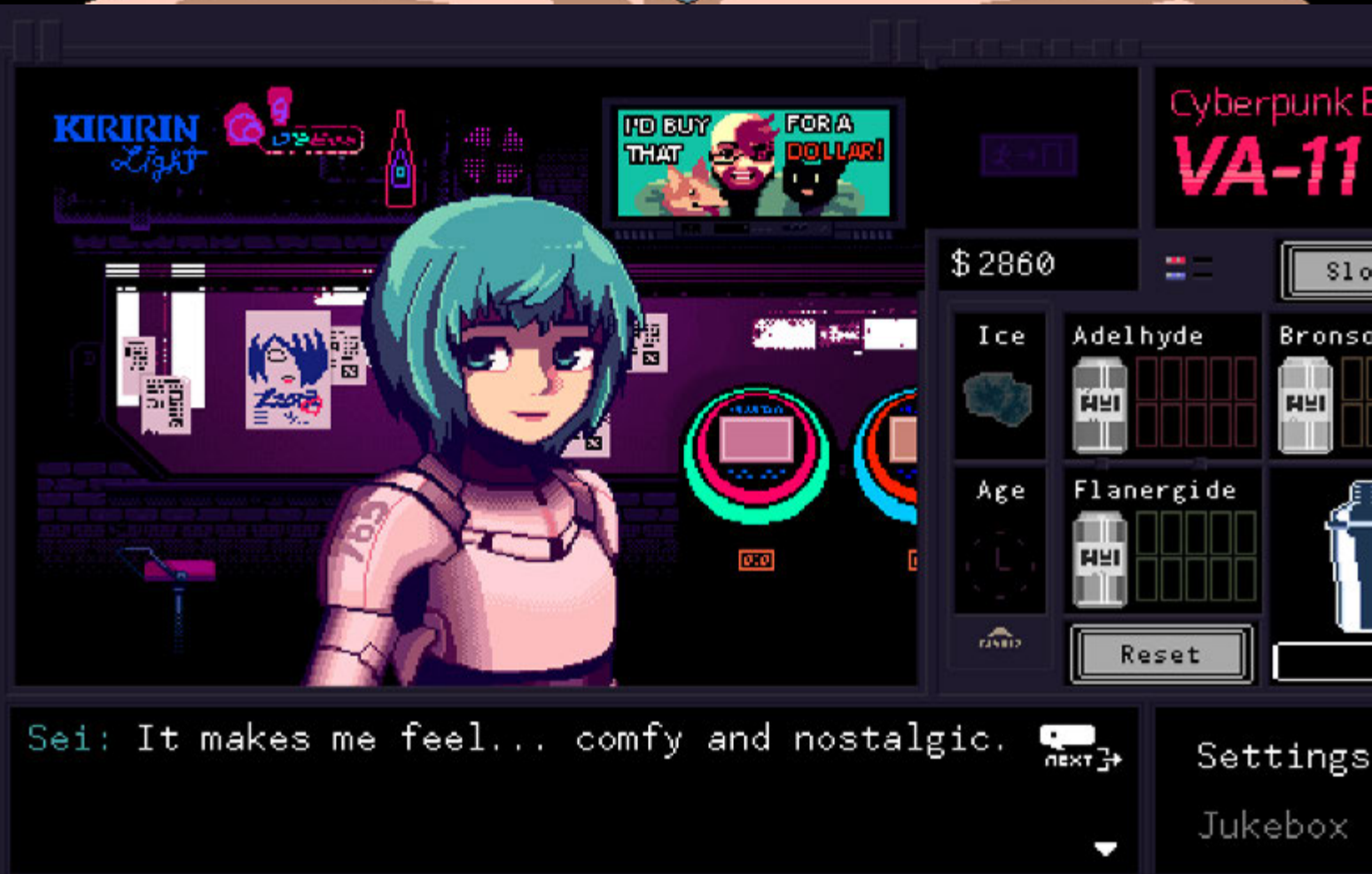


Team size
4

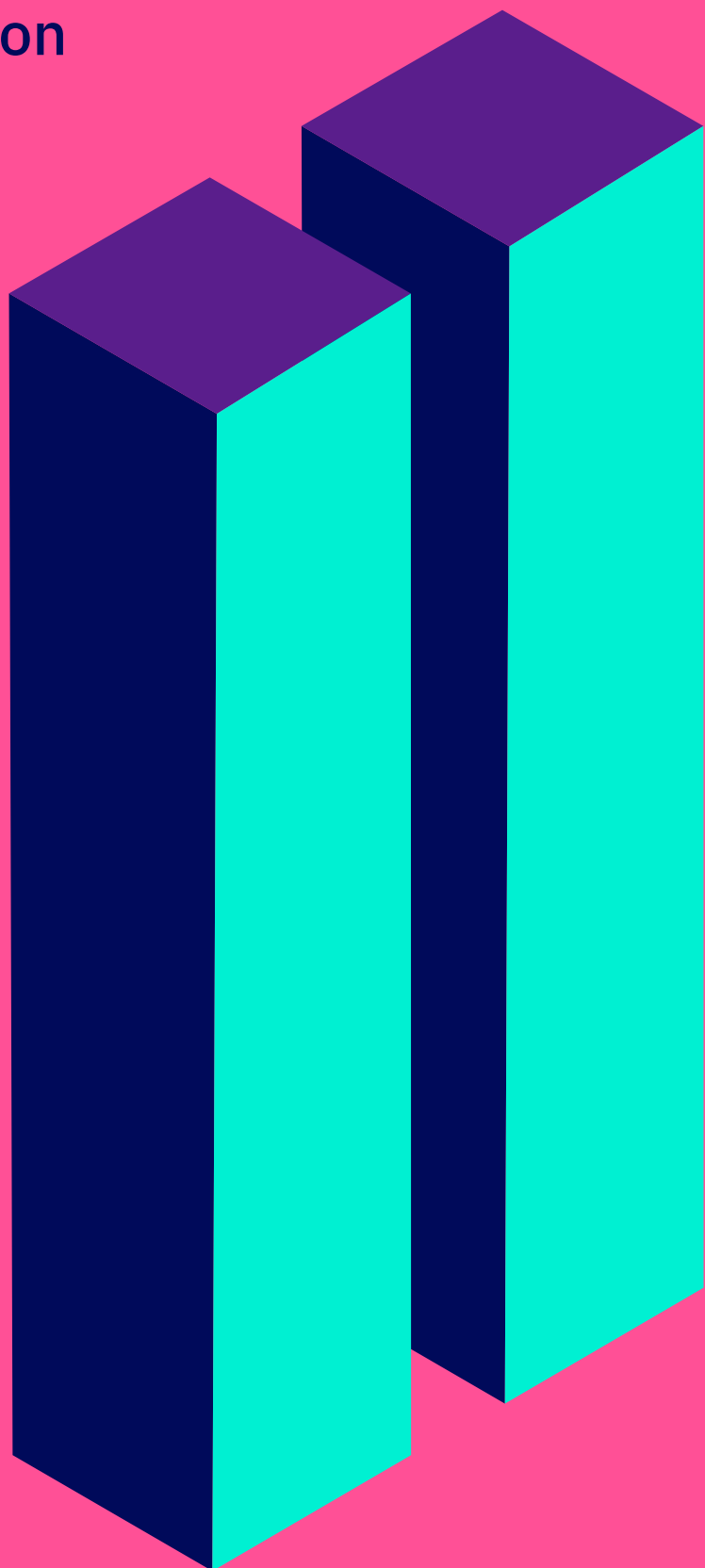


Best-known games
Cyberpunk Bartender Action
VA-11 Hall-A

| Games | Launch Date | Platform | Publisher | Development Time |
|--|-------------|--|--|------------------|
| Cyberpunk Bartender Action VA-11 Hall-A | 2015 | Steam, PlayStation Vita, PlayStation 4, Nintendo Switch | Ysbryd Games, Playism (Active Gaming Media) | 30 months |



Latin American
Talent in the
World and New
Collaboration
Models



Firms from outside the region have contributed to the development of video games in Latin America and the Caribbean but there are also Latin Americans and Caribbeans who contribute to the development of video games abroad and work in large game production centers in North America, Europe and Asia. Their presence is especially notable in the industry in North America, given its close geographic proximity. There you will find many Latin American and Caribbean programmers, designers, artists and other experts, who have taken their talent to the north to work in video game production centers in Silicon Valley, Los Angeles, New York, Toronto and Montreal.

The case of Vander Caballero is paradigmatic: Born in Colombia, Caballero moved to Montreal to work in the video game industry, and reached the position of design director at Electronic Arts (EA), Montreal where he worked on series such as Army of Two and Need for Speed. Tired of dedicating himself to such violent and conventional titles, he concentrated on founding his own studio, Minority Media, which he finally established in Montreal in 2010. Since then he has produced independent and original games that include his most passionate project, Papo & Yo, an ambitious game of platforms and puzzles that serve as an allegory for the developer's own childhood experiences with an abusive father. Another production, Time Machine VR is a submarine and time travel exploration game on virtual reality platforms.

Another case of a Latin American developer that moved up the platform of the independent industry is Augusto Cuxo Quijano, an illustrator from Mérida,

Mexico who lives in Toronto, where he works as Concept Lead in the award-winning Drinkbox Studios. While he was working at the studio as an illustrator on games such as Tales from Space: About a Blob, the team began to discuss their next project. Quijano suggested that they develop a game based on Mexican popular culture, particularly about the sport of *lucha libre*, and the *Día de los Muertos* with their themes and aesthetics-- but he felt that a video game could go beyond the conventions and stereotypes that usually abound on these topics. The result was the highly acclaimed and successful game Guacamelee!, in the platform genre of Brawler. Guacamelee! integrates the typical interrelation between life and death that predominates Mexican popular culture into the game mechanics, forcing the player to constantly go back and forth between the world of the dead and the world of the living.

Examples such as Caballero and Quijano clearly show how the

ingenuity and vision of Latin Americans and Caribbeans contribute to the development of video games at every level.

With all the diversification currently found in the video game industry, new models of collaboration are being forged among the global industry and producers in Latin America and the Caribbean. Projects include game co-development, custom-made or commissioned games development, outsourcing and peripheral servicing. All of these new types of collaboration and activity are helping to consolidate the sector. Furthermore, the opportunities for the incubation and acceleration of studios have also resulted in the identification of new talent, the exchange of knowledge, validation among peers, and sources of funding. Some examples of cross-border collaboration are Lucha Libre AAA: Héroes del Ring, a joint venture between the Japanese firm Konami and Immersion Software, who at the time had operations in Colombia and Mexico; and El Chavo Kart, developed by Efecto Studios in Bogotá and published by the Mexican media firm Televisa. (These last two were produced from collaborations with Slang Games of Mexico, which has since closed.) Another similar inter-regional collaboration is Attractio, a platform and puzzle game created by the Mexican studios GameCoder and Render Farm, and published by the Japanese firm Bandai Namco. It is notable that Asian markets have become increasingly more interested in developing video games with Latin American teams. For example, the Colombian studio Brainz recently closed a deal with ZQ Games from China and Gamevil from South Korea, who invested nearly a

million dollars in two original projects. As these examples demonstrate, the co-development of games holds great promise and in the best cases can work in the interests of both the multinational firms and the local producers.

The peripheral services carried out in collaborations include a vast number of tasks that are needed to make a video game and many studios have latched on to these types of services since they can provide some stability to the businesses. Some of these projects have been carried out on a customized development or commission basis for international firms and have come to have a global impact. A case in point is Fallout Shelter, a casual game developed by Behaviour Chile, the Santiago branch of a Canadian firm, and launched in parallel with the international hit, Fallout 4 by Bethesda Studios in the US. Other studios, such as Bamtang Games from Lima or Powerful Robot from Montevideo have worked on customized games or on a commission basis for media giants such as Disney and Cartoon Network. In the end, given that the process of producing a video game is primarily collective and multi-faceted, there are an infinite number of tasks that must be completed before a game reaches publication. Consequently, many large video game companies rely on outsourcing and contracting peripheral services, such as motion capture, digital distribution platforms, platform support services, cloud services, marketing and advertising, user acquisition, data processing and analysis, and localization.⁸⁹ Thus, custom-made or commissioned games development, outsourcing, and peripheral servicing are reconfiguring the map of the world video game industry and opening

⁸⁹ E. Marisca. (2014). Developing Game Worlds: Gaming, Technology and Innovation in Peru, Master's thesis, Massachusetts Institute of Technology, Cambridge, MA, June 2014, 62-63, accessed July 16, 2014. Available at: <http://marisca.pe/files/EM-DGW-Final.pdf> , 164.

important inroads for Latin American and Caribbean developers. At the same time local developers are finding more opportunities to create, promote and make their products known in a global market where the demand for new games is growing day by day. In 2018, casual games—those that are played on mobiles and social media—accounted for more than 50% of the US\$70 billion dollars of annual revenues in the global game market.⁹⁰ This explosion in the demographic diversity of gamers has created a demand for new games and in part explains the exponential expansion of the developments coming from small studios in regions that were previously unthought of. This demand has provided incentives for hundreds of creators to produce games that

can compete in global markets, even with inferior infrastructure in their home environments. In spite of the challenges in terms of connectivity and infrastructure, there are an abundance of opportunities for Latin American and Caribbean programmers, designers, animators, composers, actors, photographers, accountants, lawyers and visionaries to find ways to combine their passion for games with their professional talents and contribute to the creation of successful games for the world over. With the continuous development and strengthening of the connections among the different regions in the world of video games, we will continue to witness this massive expansion of collaboration among Latin Americans and Caribbeans in the global video game industry.

⁹⁰ Available at: <https://newzoo.com/insights/articles/global-games-market-reaches-137-9-billion-in-2018-mobile-games-take-half/>

Latin Americans Known Around the World

Latin American Talent
Abroad and New Models
of Collaboration

COLOMBIA



Vander Caballero was the design director at EA Montreal since

its opening in 2004. Although his main focus was to introduce innovation by changing the process of game design, he also worked on the development of Army of Two. Before joining Montreal Studio, he was art director for the FIFA Franchise at EA Vancouver. In 2010, he left EA Montreal to co-found, together with Rezolution Pictures, Minority Studios. At Minority, he gave life to the successful game Papo & Yo, an adventure, fantasy and puzzle video where Quico, a young mestizo boy, finds himself in a make-believe *favela* with a creature called Monster. Quico can interact with Monster, who is normally very mild and kind. The problem is that Monster is addicted to eating poisonous frogs and when that happens he behaves like a real monster. Caballero created the story based on his own past where he had to deal with an alcoholic and abusive father. He is currently at Minority, working on Time Machine, a VR adventure of traveling through time to classify dinosaurs.

URUGUAY



Gonzalo Frasca is a video game designer, consultant, and professor at

ORT University in Montevideo. Together with Sofía Battezzore, he founded one of the first development studios in the region: Powerful Robot. From there, he created games for world-famous production companies such as Disney, Pixar, Cartoon Network and Warner Bros. As time went on, he specialized in educational and communication games. He received the Lifetime Achievement Award from the Knight Foundation for his pioneering work in newsgaming video games, at www.newsgaming.com. Working with an international team of some twenty teachers, pedagogists and video game designers, he has created a system for teaching mathematics to primary school children. The system has already been tested in some schools in France, Norway and Finland and it is expected that it will soon be exported to Latin America. The game is called DragonBox School and it is a project that combines textbooks and fiction with video games.

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Twitter: @frascafrasca

ARGENTINA



Pablo Toscano had his first contact with video game production in

Argentina when he worked in the 3D department of the firm, Sitio.com. Affected by the crisis in his country in 2001, he emigrated to Canada and since 2003 he has been in charge of the 3D area of the then newly-created Frima Studio. During his time at Frima, he participated in the BBC television series, Let's Play, developed an online game for the website of the movie Harry Potter and the Prisoner of Azkaban, and a video game for the Cartoon Networks site, Mucha Lucha. One morning when Pablo went out of the studio to have a cup of coffee, he saw a crane that was lifting the trademark of Ubisoft onto the building in front. In this moment, without hesitation, he said to himself, "Now I know where I am going to apply for a job." After a few years of working at Ubisoft, he became the technical director of animation in Prince of Persia, Forgotten Sands. Since then he has performed this role and has worked in the franchise of Assassin's Creed in Assassin's Creed 3, Brotherhood, Black Flag, Syndicate, and on the final release of the saga: Odyssey, where for the first time in the history of the franchise, it used procedural facial animation.

ARGENTINA



Daniel Benmergui is co-president, together with Robin Hunicke, of

the Experimental Gameplay Workshop, which is a session that takes place every year at the Game Developers Conference in San Francisco, California. Benmergui is an independent game designer from Buenos Aires, Argentina, well-known for his creation of games such as, *Today I Die*, *I Wish I Were the Moon* and *Storyteller*. Prior to becoming an independent game developer, he was director of development at the French mobile game studio, Gameloft, eventually leaving the position in the AAA game studio to focus on independent games. *Today I Die* was chosen as a finalist for Premio Nuovo at the Independent Games Festival 2010. His multiple game package *Moon Stories* received the jury prize in Indiecade 2009 and was presented at the Sense of Wonder Night in Tokyo.

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Verónica Zammitto, who has a Masters in Interactive Arts and Technologies, is

the Research Director of the User Experience at Electronic Arts. Her passion is to understand what it is that make games work for players and how this data can be used to design better games. She is responsible for UX's research activities for all of EA's products, developing and carrying out the testing process. In her role as the head of research, she is responsible for defining the best scientific methods for teams to evaluate the user experience. Her objective is to better understand the user experience and provide designers with processable data to guarantee an effective decisions throughout the game development process.

CHILE



Tiburcio de la Cárcova and Esteban Sosnik. Behaviour Santiago (formerly Wanako Games, founded in 2002) was a Chilean video game company dedicated to the production of casual games for various platforms. It was considered the

major video game development studio in Latin America. The firm's founders were Argentinians, Esteban Sosnik, Tiburcio de la Cárcova, Santiago Bilinkis and Wenceslao Casares, and Chileans Benjamín Prieto, Juan Pablo Lastra and the brothers Andrés and Carlos Bordeaux. In 2008, the firm had an office in New York and the foremost Latin American video game development studio in the district of Providencia, in Santiago. In February of 2007 the studio was acquired by Vivendi Games for US\$10 million dollars. In 2008, the Canadian group, Behaviour Interactive bought the firm and since then it has been known as Behaviour Santiago. At the end of 2008, Sosnik and De la Cárcova resigned from the firm to found Atakama Labs, a new Chilean video game firm in 2009. Two years later, the success of the venture and the solid team of experts working together in Chile caught the attention of the Japanese giant, DeNA. The purchase of Atakama Labs (now DeNA Chile) is estimated to be worth US\$6 million. At the same time he founded Atakama Labs, De la Cárcova founded Idea.me, the first Latin American crowd funding platform, and STGO Makerspace, an open innovation space and product accelerator that combines workshops with shared workspace. In less than a year, STGO housed an active community of firms and inventors and became the center of the Maker movement in the region.

Video Games: Global Export Services



Over the past few years, one of the effects of the vast improvements in information technology has been a dramatic increase in outsourcing services, also known as global export services, which has out-paced the growth of other sectors of the economy. The global export services industry has experienced a growth of between 8% and 10% the world over, according to the data generated by Nasscom,⁹¹ one of the leading groups in the services industry. It is expected that business processes outsourcing (BPO) will grow at an annual rate of 6% until 2022,⁹² double the growth predicted for the global economy as a whole, with a value that is expected to reach some US\$262 billion dollars by 2020.⁹³

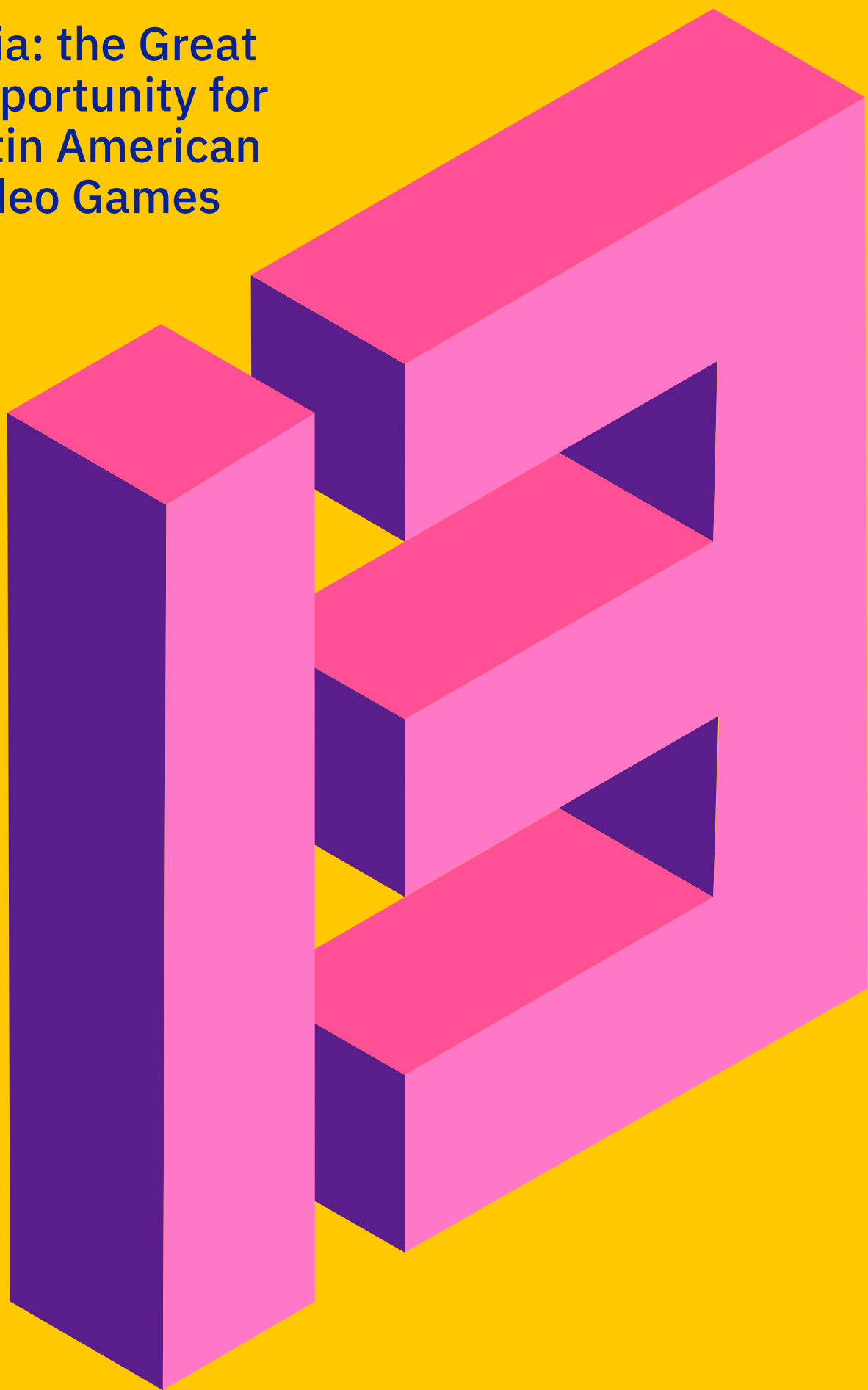
In the past decade, there has been a significant increase in services exports from Latin America and the Caribbean, earning it a prominent place on the world service export map. As pointed out earlier, India and China continue to place first and second, respectively, as the business processes outsourcing destinations (56%),⁹⁴ according to the 2016 Cushman & Wakefield consultancy report. Nonetheless, there are nine countries in the region that rank among the top twenty business services outsourcers industry: Argentina, Brazil, Colombia, and Mexico as mature markets and Chile, Costa Rica, El Salvador, Honduras, and Peru as pioneer markets. This is the result of their world-class quality and the early adoption of innovation and new technologies in the industry.⁹⁵

It is expected that the cost advantages in the majority of locations close to the border areas of their major clients, known as nearshore, will remain in place for at least another decade.

One of the industries that continue to experience double-digit growth rates is that of animation and video games—a subsector of business processes known as knowledge processing outsourcing (KPO). These processes involve the outsourcing of central functions that require specialized skills and knowledge, such as research and development, digital marketing, and legal services. The global industry of animation and video games alone in 2017 was valued at US\$254 billion dollars⁹⁶ while the rest of the outsourcing services came in at approximately US\$29 billion.⁹⁷

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- 91 Nearshore Americas. (2016). India's Outsourcing Industry Cuts Growth Forecast Due to "Transitional Phase". Available at: <http://www.nearshoreamericas.com/indias-outsourcing-industry-cuts-growth-forecast/>
 - 92 Cushman & Wakefield. (2016). Where in the World? Business Process Outsourcing and Shared Service Location Index 2016. Available at: <http://www.cushmanwakefield.com/en/research-and-insight/2016/business-process-outsourcing-location-index-2016/>
 - 93 Digneo. Available at: <https://biz30.timedocor.com/business-process-outsourcing-industry/>
 - 94 Cushman & Wakefield. (2016). Where in the World? Business Process Outsourcing and Shared Service Location Index 2016.
 - 95 D. Tucker. (2015). Conflicting Views on Latin America's IT Services Growth, But Cloud Still Seen as Key Driver. Nearshore Americas. Available at: <http://www.nearshoreamericas.com/strong-growth-forecast-latin-americas-services-market-region-quick-harness-cloud-technology/>
 - 96 Available at: <https://globenewswire.com/news-release/2018/05/01/1493712/0/en/Global-Animation-VFX-Games-Industry-Report-2018-2020.html>
 - 97 Available at: <https://www.grandviewresearch.com/industry-analysis/knowledge-process-outsourcing-kpo-market>

Asia: the Great Opportunity for Latin American Video Games



The fast development and proliferation of personal computers, tablets and mobiles has made animation and video games accessible to all types of public. The success of Latin America in the market and in particular, the increased demand for games on mobile platforms, has given the region an opportunity to become a great video game creation center. According to the research firm, Newzoo,⁹⁸ an inter-annual growth of video games of up to 60% has been seen in Latin American and the Caribbean, compared to 21% for the same period in Asia-Pacific. Furthermore, Latin America and the Caribbean rank fourth in the number of mobile video game players⁹⁹ but only accounts for 4% of global video game spending.¹⁰⁰

Exports from Latin America and the Caribbean have been destined primarily to the US (the second-largest market for video games after China) because of both its cultural proximity and lower entry barriers. In Asia, in spite of the cultural and language difficulties and protectionism in the region, there are also some remarkable successes between this region and Latin America and Caribbean developers.¹⁰¹ Commercial linkages between these two regions have entailed acquisitions, international publication agreements, outsourcing and collaborations. One of the notable collaborations has been Guerrilla Games, published by the Japanese multinational, Sony, that uses the Brazilian studio Kokku to construct 3D robot beast models for its PlayStation4 sales hit, Horizon Zero Dawn, making Kokku the first Brazilian studio to work on a last-generation video game.¹⁰²

The video game developer, Atakama Labs, located in Santiago, Chile, was acquired by Japanese video game firm, DeNA.¹⁰³ In Uruguay, the renowned Ironhide Game Studio developed King Rush, which has been downloaded more than one hundred million times in iOS in seven languages: English, French, German, Japanese, Korean, Portuguese and Russian.¹⁰⁴

Other collaboration models between Latin America and the Asian industry were seen when Tencent, the largest of all entertainment firms in China, developed the first person shooter WeFire. It was a sensation in South Korea and Taiwan and was adapted for it to become widely distributed in the Americas.¹⁰⁵⁻¹⁰⁶

Video game revenues in China in 2017 accounted for 41% (US\$32.54 billion dollars) of the global video game market (US\$78.61 billion

- 98 Newzoo. (2014). Applift and Newzoo Expect Latin America to be Highest-Growing Mobile Games Market with 50% CAGR, Global Market to Reach \$35.4bn by 2017. Available at: <https://newzoo.com/about/press/press-releases/applift-and-newzoo-expect-latin-america-to-be-highestgrowing-mobile-games-marketwith-5-cagr-global-market-to-reach-35-4bn-by-2017/>
- 99 An Overview (2017). Available at: <https://www.lai.com/en/latin-america-game-markets>
- 100 Available at: http://resources.newzoo.com/hubfs/Reports/Newzoo_2017_Global_Games_Market_Report_Light.pdf
- 101 E. Dussel Peters. (2015). China's Evolving Role in Latin America: Can It Be a Win-Win? Available at: <http://publications.atlanticcouncil.org/chinalatam/>
- 102 J. Johnson. (2017). Will Games Become Brazil's Next Big Export?. Available at: <https://iq.intel.com/will-games-becomebrazils-next-big-export/>
- 103 Available at: <https://www.nytimes.com/2013/02/22/world/americas/uruguays-video-game-start-ups-garner-attention.html>
- 104 Available at: <https://www.weforum.org/agenda/2016/06/the-importance-of-video-games-for-latin-americas-creative-economy/>
- 105 Available at: <https://www.japantimes.co.jp/life/2016/07/06/digital/videogames-may-become-chinas-bestcultural-export/#.Wv3pG4gvw2w>
- 106 Available at: <https://www.nytimes.com/2013/02/22/world/americas/uruguays-video-game-start-ups-garner-attention.html>

dollars).¹⁰⁷ The above figure signals that localization is a critical step for the global exportation of video games that require associations between Latin America and the Caribbean and Asia so that Latin American developers have access to the largest video game markets in the world. The US International Trade Association reports that access to the Japanese, Korean and Chinese markets continues to be a challenge because of protections in these markets. Nonetheless, business associations and joint ventures tend to be looked upon favorably.

Latin America: A Bridge Towards Asia

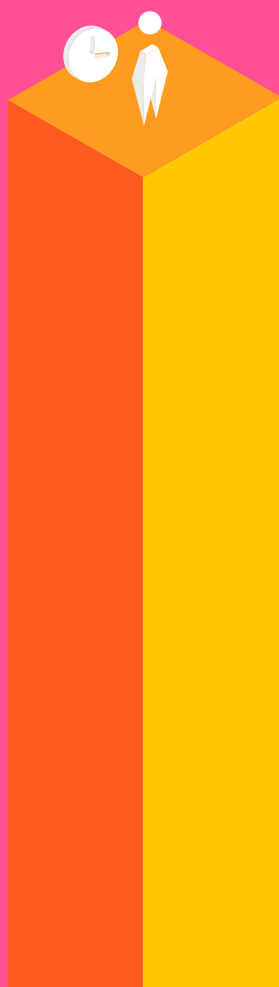
Video game producers from Asia are trying to break into other markets, such as the US, the largest video game market after China.¹⁰⁸ Latin America and the Caribbean could be a bridge and a connector because they offer geographical proximity, compatible time zones, cultural affinity and English and Spanish language skills. All these are advantages for the adaptation of video games, as well as the localization and support services required in the US market.

¹⁰⁷ Available at: <https://www.statista.com/statistics/308454/gaming-revenue-countries/>

¹⁰⁸ Available at: <https://www.statista.com/statistics/308454/gaming-revenue-countries/>

¹⁰⁹ Nearshore Americas. (2012). Nicaragua Labor: The Pressures and Potential of the Country's BPO Talent Pool., Aug. 13, 2012. Available at: <http://www.nearshoreamericas.com/nicaraguan-providers-bpo-outsourcing/>

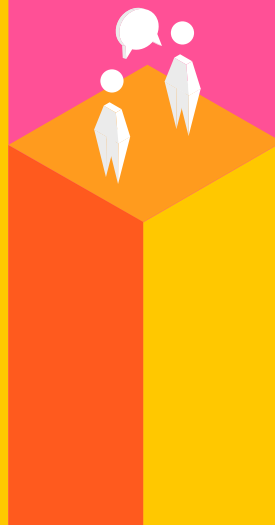
Why Latin America and the Caribbean is an Opportunity for Asia



Advantages in terms of time zones, bilingual services focused on sales and well-trained professionals to give technical support to the US.



Leaders in Business Process Outsourcing (BPO). Even in a small, scarcely-populated country like Nicaragua, there are more than four thousand workers in the sector.¹⁰⁹



Capacity for English fluency in various countries in the region. For example, English is the national language in several Caribbean countries and English is a mandatory subject in the countries of Brazil, Chile, Costa Rica, Ecuador, Mexico and Panama.

Why Spanish is Important for Future Video Games in the US Market

There are more than 41 million native Spanish speakers in the US and another 116 million are bilingual. Many of them are the children of immigrants from Spanish-speaking countries. This puts the US ahead of Colombia (48 million) and Spain (46 million), and only behind Mexico (121 million)¹¹⁰.

The US Census Office estimates that the country will have 138 million Spanish-speaking inhabitants by 2050. This will make the country the largest Spanish-speaking country on the planet, since Spanish will be the first language for nearly a third of its inhabitants¹¹¹.

The acquisition of services (BPO and KPO) offered by Latin America and the Caribbean could be an investment opportunity for Asia. Until now, Asia has only been interested in the region's raw materials but the region is now prepared to offer a large number of peripheral services in the area of animation and video games. For instance, of the US\$10.7 billion dollars of DFI coming in annually from China to Latin America and the Caribbean between 2010 and 2015, only 57% went towards the acquisition of raw materials.¹¹²

¹¹⁰ S. Burgen. (2015). US now has more Spanish speakers than Spain – only Mexico has more. The Guardian, Jun. 29, 2015. Available at: <https://www.theguardian.com/us-news/2015/jun/29/us-second-biggest-spanish-speaking-country>

¹¹¹ S. Burgen. (2015). US now has more Spanish speakers than Spain – only Mexico has more.

¹¹² E. Dussel Peters. (2015). China's Evolving Role in Latin America: Can It Be a Win-Win? Atlantic Council, Sept. 2015. Available at: <http://publications.atlanticcouncil.org/chinalatam/>

US
157 million

41 million native Spanish speakers
+ 116 million bilinguals

Mexico
121 million

Columbia

48 million

Spain

46 million



What Collaboration Models Could Work between Latin America and Asia?

1. The integration of value chains in goods and services, for example:

📦 International publications of co-developed or commissioned video games.

📦 Outsourcing of peripheral services at any part of the value chain: digital designs and illustrations, programming, 2D and 3D animation, character and story creation.

📦 Purchases and acquisitions of related services that include:

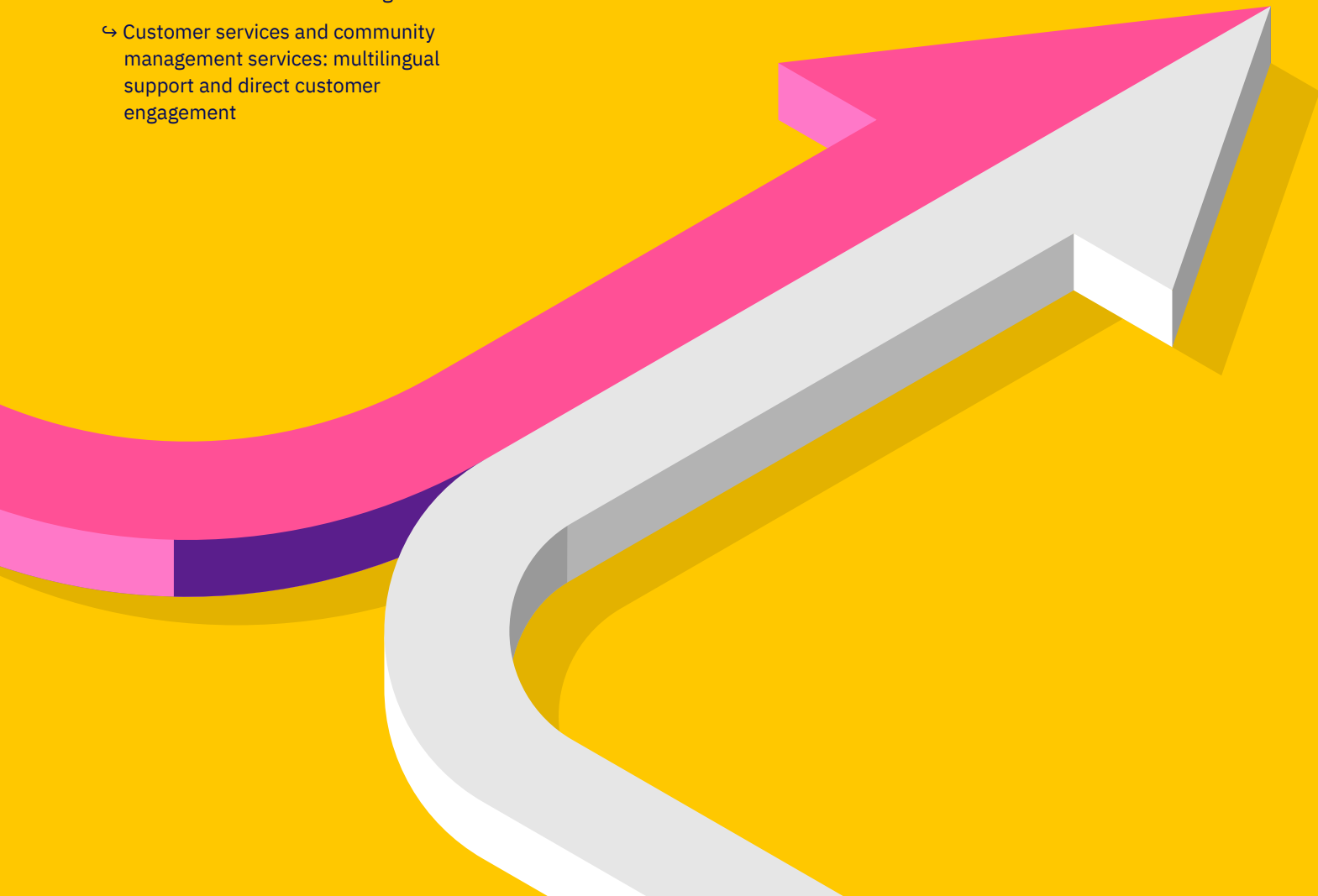
- ↪ Market access analysis
- ↪ Localization of video games
- ↪ International Marketing/Advertising, including market research, Search Engine Optimization (SEO), optimization of applications and social network strategies
- ↪ Monetization and sales strategies
- ↪ Customer services and community management services: multilingual support and direct customer engagement

2. Direct Foreign Investment

3. Mergers and Acquisitions

4. Joint operations or joint ventures

5. Dissemination of knowledge and dialog among countries



Learn by Playing: Video Games and Education in the Digital Age





“When we think of games, we think of fun. When we think of learning we think of work. Games show us this is wrong. They trigger deep learning that is itself part and parcel of the fun. It is what makes good games deep.”

James Poul Gee

The XXI century has been marked by accelerated transformations and changes, many of which are linked to technological disruption. Individuals are finding themselves in increasingly more dynamic environments that demand active and continuous learning. This includes

certain non-traditional skills that are necessary not only for work but also for life in general.

In the field of education, technology not only presents challenges but also new opportunities and prospects, not only for the teacher and the student, but also to extend relevant training to remote places and populations that have traditionally been excluded from these services. In this context, could video games be a tool for learning by playing?

The concept of gamification or the use of serious games as an effective means of facilitating learning started to gain more momentum in the eighties.¹¹³⁻¹¹⁴ Serious games are those that are not made merely for fun or entertainment but rather for education or instruction.¹¹⁵ This does not mean that serious games cannot be fun. It only means that they were designed to transmit or reinforce knowledge rather than to provide entertainment. The basic principle behind gamification is that the game should be fun. When games are used for the purpose of practicing a skill, the game itself is intrinsically motivating because it generates the expectation of fun and that makes the user deliberately select it.¹¹⁶

Given the high penetration of video games among young people in particular—although, not exclusively, as has been mentioned in other sections of this book—and their capacity to retain attention and interest, video games offer an opportunity to develop certain key skills for the XXI century. For this reason, some countries have already begun to include them in their educational curriculum. Video games are no longer

merely a pastime and have become a tool to foster employment for in various environments.

There is a growing debate in the literature about the effects of the more or less indiscriminate use of technology in the development of children and young people.¹¹⁷⁻¹¹⁸⁻¹¹⁹⁻¹²⁰ The debate has extended to the use of screens and digital devices in the home as well as in the classroom. That is, to learn by playing is not a new concept or approach to learning and there is a considerable consensus on the benefits of games, particularly for small children. What is more controversial is how they should best be played: With or without technology? Connected or disconnected?

There is still only a limited amount of evidence on the short and long term effects from exposure to screens. Beyond learning, to what extent do these types of apparatus, social networks and games cause additions in the user at a particularly sensitive stage of life when so much cognitive and socio-emotional development is taking place? While it is possible that these tools generate benefits in terms of learning, there might also be some damage that outweighs these benefits. Here we will offer some guidelines for taking the best advantage of games and technology. In all games, participants must learn something, at the very least the rules of the game that will allow them to advance and finish successfully. It is possible to focus this learning on the structured contents of the educational curriculum and develop new skills through gamification technology. The educational systems of Latin America could confront the challenges of low academic performance and the

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- 113 T.W. Malone. (1980). What makes things fun to learn? A study of intrinsically motivating computer games. Cognitive and instructional science series
- 114 Ritterfeld, M. Cody & P. Vorderer. (2009). Serious games: Mechanisms and effects. Routledge
- 115 D.R. Michael and S.L. Chen (2005) Serious games: Games that educate, train, and inform. Muska & Lipman Premier-Trade.
- 116 U. Ritterfeld, M. Cody & P.Vorderer. (2009). Serious games: Mechanisms and effects. Routledge.
- 117 E.L. Swing, D.A. Gentile, C.A. Anderson & D.A. Walsh. (2010). Television and video game exposure and the development of attention problems. Pediatrics, 214-221.
- 118 JP. Cristia, P. Ibarrarán, S. Cueto, A. Santiago & E.Severín. (2012). Tecnología y desarrollo en la niñez: evidencia del programa Una Laptop por Niño. IDB.
- 119 V. Carson, W. Pickett & I. Janssen. (2011). Screen time and risk behaviors in 10-to16-year-old Canadian youth. Preventive Medicine, 93-103.
- 120 I. Sharif & J.D. Sargent. (2006). Association between television, movie, and video game exposure and school performance. Pediatrics.

scant emphasis on the development of non-traditional skills by using technological gaming.

In this section we will explore the relationship between video games and the development of cognitive and socio-emotional skills and how these tools can be applied in the classroom. Furthermore, we will show several examples of how educational systems have taken advantage of gamification to work with school-age children. Finally we will analyze the different relationships that exist between exposure to video games and the development of players' skills and personality traits.

The Relation between Video Games and Skills and Behavior

Childhood and adolescence are critical stages for the development of socio-emotional, cognitive and motor skills. It is generally during these stages that video games come into the lives of the users, offering a variety of contents and modalities of playing individually or in groups. There are a series of factors regarding the use (intensity or exposure time) connectivity (online/offline), the purpose and content (purely for fun or educational), and the relationships made within the game (cooperative/competitive), that determine the types of effects on users, including their socio-emotional development.

In the chart on page seven, we highlighted the positive and the negative impacts of video games, based on the factors mentioned,

Although we know that video games are a powerful channel for transmitting information that can affect the education of the individual in the first stages of life, the evidence regarding their impact on the different types of skills and behavior is still incipient and mixed. Their use generates spaces for social interaction, so they can have a positive or negative effect on how users relate to their peers.

Today, video games are more open than ever. There are online platforms for playing with people

that we already know or don't yet know. Even traditional console games and computer games include online options. Multiplayer online video game users tend to spend more time playing, display higher levels of anxiety and report that the game interferes more in their lives than users of other platforms.¹²¹ This happens primarily because online games do not have pauses and even when players are offline, the game continues to go on.

We know that video games can have an effect on the social behavior of individuals because they offer guidelines on how one should act with others. Children and young people are not necessarily prepared to discern between what behavior should only be displayed during a game and what is appropriate in daily encounters with others. If the way to solve a problem in a video game is with violence, children can end up bringing these solutions into daily practice. Quite often video games have several characters that interact with each other as the game develops or they motivate players to become involved in competitive or cooperative environments. Through these interactions with other players, users can acquire, develop or improve skills such as teamwork, communication, solidarity, etc. While certain types of video games have been related to an increase in aggressive, antisocial or delinquent behavior, the emerging literature is showing that games can have a positive impact on social behavior if they are played in a cooperative manner. They can even reduce aggressive reactions.¹²²⁻¹²³⁻¹²⁴

For example, some studies suggest that violent video games can serve as an escape valve for real-life frustrations.¹²⁵

Let's take, for example, one of the more popular games on the market at the moment: Fortnite. This action game has two modes: one competitive where players battle with each other to become the last survivor on an island (Fortnite: Battle Royale) and the other is cooperative, where squads of up to four players battle against zombie-like creatures in order to

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- ¹²¹ D. Berle, V. Starcevic, G. Porter & P. Fenech. (2015). Are some video games associated with more life interference and psychopathology than others? Comparing massively multiplayer online role-playing games with other forms of video game. *Australian Journal of Psychology*, 105-114.
- ¹²² I. Granic, A. Lobel & R. Engels. (2014). The benefits of playing video games. *American Psychological Association*.
- ¹²³ C.J. Ferguson & A. Garza. (2011). Call of (civic) duty: Action games and civic behavior in a large sample of youth. *Computers in Human Behavior*, 770-775.
- ¹²⁴ M. Schmierzbach, (2010). "Killing spree": Exploring the connection between competitive game play and aggressive cognition. *Communication Research*, 256-274.
- ¹²⁵ R. Baquero, T., Bernart & F. Galbany. (2005). Influencia de los videojuegos en el desarrollo de la personalidad y el comportamiento juvenil.

survive. (Fortnite: Save the World). The idea of both games is to collect resources for survival and use them strategically for building forts and killing adversaries. On the one hand, the collaborative focus of the game could have a positive influence on the way in which users interact with others by stimulating their creativity, ability to solve problems and strategic skills, since they have to develop solutions if they are going to survive and win.¹²⁶ However, other studies point to a loss of sensitivity stemming from violent behavior and the overpowering of the individual over the group.¹²⁷

The video games that are most popular, and therefore the most sold, are action video games, which generally include violent content.¹²⁸ The evidence varies regarding the impact of exposure to this type of video games on delinquent and aggressive behavior. Some studies show an increase in aggression, antisocial conduct and violent behavior on the part of players.¹²⁹⁻¹³⁰⁻¹³

Other research finds a correlation between the use of violent video games and an increase in hostile

and aggressive attitudes, with long-term cumulative effects.¹³²⁻¹³³ Players transfer the ideas from the games towards their day-to-day activities; for example, if it is necessary to use violence in order to advance in a game, they could begin to use violent solutions for solving everyday problems since they seem to be plausible and effective alternatives.¹³⁴

What are the effects of exposure time?

The intensity and frequency of video game use are fundamental variables for evaluating the impact on the individual, because the evidence indicates that they can generate addiction. There are different patterns of use. As we indicated earlier, online players tend to spend more time hooked to a platform because the game never pauses. Eventually this could lead to different types of personality and behavioral disorders. In 2017, the World Health Organization included “video game disorder” as a mental health illness in the International Classification of Illnesses (ICD-11), describing it as a pattern which is “prevalent over

¹²⁶ S. Kelly & B. Nardi. (2014). Playing with sustainability: Using video games to simulate futures of scarcity. First Monday.

¹²⁷ N. Tampio. (2018, Octubre 12). The Conversation. Available at: <https://theconversation.com/fornite-teaches-the-wrong-lessons-104443>

¹²⁸ I. Granic, A. Lobel & R. Engels. (2014). The benefits of playing video games. American Psychological Association.

¹²⁹ C. A. Anderson, N. L. Carnagey, M. Flanagan, A. J. Benjamin, J. Eubanks, & J. C. Valentine. (2004). Violent video games: Specific effects of violent content on aggressive thoughts and behavior. Advances in experimental social psychology.

¹³⁰ T. Greitemeyer & D. Mügge. (2014). Video Games Do Affect Social Outcomes: A Meta-Analytic Review of the Effects of Violent and Prosocial Video Game Play. Personality and Social Psychology Bulletin, 578-589.

¹³¹ C. A. Anderson. (2009). Causal effects of violent sports video games on aggression: Is it competitiveness or violent content? Journal of Experimental Social Psychology.

¹³² Y Hasan, L. Bégue, M. Scharkow & B.J. Bushman. (2013). The more you play, the more aggressive you become: A long term experimental study of cumulative violent video game effects on hostile expectations and aggressive behavior. Journal of Experimental Social Psychology

¹³³ Y Wang, T. Hummer, W. Kronenberger, K. Mosier, & V. Mathews. (2011). Violent video games alter brain function in young men. Available at: <https://www.sciencedaily.com/releases/2011/11/111130095251.htm>

¹³⁴ T.L. Dietz. (1998). An examination of violence and gender role portrayals in video games: Implications for gender socialization and aggressive behavior. Sex Roles, 425-442.

¹³⁵ BBC (2018). Los 3 criterios para saber si eres adicto a los videojuegos, según la OMS. Available at: <https://www.bbc.com/mundo/noticias-42554655>

¹³⁶ T. Granic, A. Lobel & R. Engels. (2014). The benefits of playing video games. American Psychological Association.

¹³⁷ D. Gentile. (2009). Pathological video-game use among youth ages 8 to 18: a national study. Psychological Science, 594-602.

other vital interests.”¹³⁵ Different studies have documented video game addiction, arguing that that it can affect functionality in the social, scholastic, family or psychological life of the player¹³⁶⁻¹³⁷.

Can a fun video game help reinforce stereotypes?

Video games are charged with more or less explicit messages that boys and girls and young people can incorporate into their daily lives. The video game world is traditionally associated with masculinity. Although the video game gender gap has been narrowed in recent years, the role of women in the gamer environment does not appear to have experienced any substantial change.

Most of the protagonists are men, and women still tend to be portrayed in very traditional roles. Their characters are often passive, and in the position of needing rescue, for example, or when they are involved in more action, their figures tend to be hyper-sexualized. These images can reinforce sexist attitudes and reduce the value assigned to the contributions of women, compared to those of men.¹³⁸⁻¹³⁹⁻¹⁴⁰

(See the following section: “Is the gamer world a place of and for men?”)

It is also possible, however, to use video games to transmit content that generates the opposite effect, as can be seen in the example of Violeta Power (Poder Violeta) (page 200).

¹³⁸ J. Fox & W.Y. Tang. (2014). Sexism in online video games: The role of conformity to masculine norms and social dominance orientation. Computers in Human Behavior, 314-320.

¹³⁹ P. Stermer & M. Burley. (2012). SeX-Box: Exposure to Sexist Video Games Predicts. American Psychological Association.

¹⁴⁰ T.L. Dietz. (1998). An examination of violence and gender role portrayals in video games: Implications for gender socialization and aggressive behavior. Sex Roles, 425-442.

Is the Gamer World a Place of and for Men?

Very few games have women as protagonists but when they do play this role, their figures are often over-sexualized, showing voluptuous women, as in the case of Tomb Rider, which is the most well-known female protagonist. For women developers, the atmosphere also continues to be relatively hostile.

Even though the demographic profile of gamers is changing and women make up a considerable portion of the community, since they remain a minority in the online game population, they can still be the object of harassment, especially if they do not display the behavior that is expected in the atmosphere of the game.¹⁴¹ There are women that choose masculine user names so that they are treated equally and they avoid chat groups.¹⁴²

In 2014, the tension from gender topics reached new heights. The movement was called Gamergate (and received the same hashtag) and even though its mission was purported to be an effort to bring ethics back into the video game industry, in practice it was used to wage sexist attacks against

women in the industry and ended up becoming a movement to undermine the presence of both women video game developers and players.

A quick look at the highest-selling video games in 2018 shows that no leading game has a female protagonist. Of the 22 highest-selling video games, 80% of them have men as their leading character. The remaining 20% were led by invented creatures, such as the Inklings de Splatoon.¹⁴³ The games that have tried to include them, such as Battlefield, have not had as much success. Battlefield, developed by EA Digital Illusions CE (EA DICE) is an action game set in World War II and launched for the first time in 2002. For its fifth release in 2018, EA attempted to put a woman as the protagonist. The developers received millions of messages against this proposal, arguing that the game had been ruined because was trying to be “politically correct.” Nonetheless, with the passage of time, women have progressively increased their participation in the world of video games and in the US they represent nearly half of the country’s gamers.¹⁴⁴

¹⁴¹ J. Fox & W.Y. Tang. (2014). Sexism in online video games: The role of conformity to masculine norms and social dominance orientation. Computers in Human Behavior, 314-320.

¹⁴² S. Huh & D. Williams. (2010). Dude looks like a lady: Gender swapping in an online game. Springer, 161-174.

¹⁴³ M. Sauter. (2018). The Best-Selling Video Games of 2018. Available at: <https://247wallst.com/special-report/2018/12/04/the-best-selling-video-games-of-2018/>

¹⁴⁴ Entertainment Software Association. (2018). Essential facts about the computers and video game industry. ESA

Picture: Tomb Rider



Poder Violeta: Video Games for Confronting Gender Violence

On a positive note, some developers have decided to take advantage of video games to generate changes in attitudes and behaviors. Poder Violeta (Violeta Power) is a video game developed between the Pontificia Javeriana University and feminists organizations in Bogotá, Colombia. Its aim is to give visibility to the problem of sexual harassment of women on public transportation in the city. The game can be downloaded for free and is compatible with iOS and Android.

The video game simulates the problem. Violeta is a young woman from Bogotá who has to take public transportation to get around the city and she is running late for a job interview. As she travels through the city, she receives various types of harassment—from verbal to physical. Each time she is harassed, the game apparatus vibrates and the screen is tinted green. How to react? This is the decision that the

player must make and three options are available: (I) ignore the situation; (ii) react by screaming, or (iii) react physically with an action like elbowing the attacker. The video game emulates real-life situations and sometimes even when the player decides not to ignore the attack, there is no reaction from the public—which is what often happens in real life.

Poder Violeta is a video game with a social objective that invites the player to reflect on the situation. Through these simulations, men can empathize with these reoccurring difficulties faced by women. Even though sexual attacks on the public transportation system are under-reported—not all victims file a complaint—the Colombian Attorney General's office has registered more than 11,000 cases in the country since 2008. At the same time, Oxfam asserts that 90% of women in the world have faced this type of situation on public transport.

Source: Mayorga, 2018



Video Games Help Develop Cognitive, socio-emotional and Digital Skills?

Different video game content can have an effect not only on behavior but also on the development of skills. Individuals learn while they are having fun, increasing their commitment with the processes of formation.¹⁴⁵⁻¹⁴⁶ Thus the video game can be a powerful pedagogical tool not only for enhancing the learning of traditional contents but also for developing digital and socio-emotional skills, which are key for functioning in the XXI century.

Some studies have shown that video games have positive effects on attention and the potential for multi-tasking.¹⁴⁷ Likewise they can have a positive effect on reaction time, processing speed and stress reduction.¹⁴⁸ Furthermore, some video games—for example, shooters—can affect visual and spatial skills, which are related to improved results in science, technology and mathematics.¹⁴⁹ For example, video games expose the player to new technologies, which in practice can improve digital literacy.¹⁵⁰ Games that

elicit a physical response in order to advance, called exergames (combining the words exercise and game), such as the famous Wii consoles or the Kinect game controller, can improve some executive functions related to ease of changing tasks, flexibility or inhibitory controls, as well as the attention spans and visuospatial skills, even when the game is not high intensity.¹⁵¹

Video games are also associated with the enhancement of creativity¹⁵²⁻¹⁵³ or problem solving capabilities.¹⁵⁴⁻¹⁵⁵ The structure of video games often implies finding responses or maneuvering to advance throughout the game. The process of trial and error to get past obstacles can also affect the ability to solve problems. There is evidence linking these learning processes based on trial and error with improved academic results.¹⁵⁶ Perseverance and motivation can also be positively affected because in video games the player is rewarded for his or her efforts to resolve tests, advance to different levels, etc.¹⁵⁷⁻¹⁵⁸

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- ¹⁴⁵ C. López Raventós. (2016). El videojuego como herramienta educativa. Posibilidades y problemáticas acerca de los serious games. Revista de Innovación Educativa Apertura.
- ¹⁴⁶ L.A. Annetta, J. Minogue, S.Y. Holmes & M.-T. Cheng. (2009). Investigating the impact of video games on high school students' engagement and learning about genetics. Computers and Education, 74-85.
- ¹⁴⁷ C.S. Green & D. Bavelier. (2012). Learning, attentional control, and action video games. Current biology, 197-206.
- ¹⁴⁸ S. Chandra, G. Sharma, A.A. Salam, D. Jha & A.P. Mittal. (2016). Playing Action Video Games a Key to Cognitive Enhancement. Procedia Computer Science, 115-122.
- ¹⁴⁹ I. Granic, A. Lobel & R. Engels. (2014). The benefits of playing video games. American Psychological Association.
- ¹⁵⁰ C. Steinkuehler. (2010). Video Games and Digital Literacies. Journal of Adolescent & Adult Literacy, 61-63.
- ¹⁵¹ E. Stanmore, B. Stubbs, D. Vancampfort, E.D. de Bruin & J. Firth. (2017). The effect of active video games on cognitive functioning in clinical and non-clinical populations: a meta-analysis of randomized controlled trials. Neuroscience Biobehavioral Reviews, 34-43.
- ¹⁵² I. Granic, A. Lobel & R. Engels. (2014). The benefits of playing video games. American Psychological Association.
- ¹⁵³ D.R. Michael & S.L. Chen. (2005). Serious games: Games that educate, train, and inform. Muska & Lipman.
- ¹⁵⁴ F.C. Blumberg, S.F. Rosenthal, & J.D. Randall. (2008). Impasse-driven learning in the context of video games. Computers in Human Behavior.
- ¹⁵⁵ R.A. Rosas, V. Marianov, M. Correa, P. Flores, V. Grau, F. Lagos et al. (2003). Beyond Nintendo: design and assessment of educational videogames for first and second grade students. Computers & Education.
- ¹⁵⁶ I. Granic, A. Lobel & R. Engels. (2014). The benefits of playing video games. American Psychological Association.
- ¹⁵⁷ I. Granic, A. Lobel & R. Engels. (2014). The benefits of playing video games.
- ¹⁵⁸ M. Ventura, V. Shute & W. Zhao. (2013). The relationship between video game use and a performance-based measure of persistence. Computers and Education, 52-58.

Foldit: A Video Game that Solved a 15-year Old Scientific Enigma

Foldit is a computer video game that motivates players to use their skills to collaborate in scientific research, even if they have no professional training in science. The video game presents a puzzle that as it is solved, predicts the structure of proteins. It can be played cooperatively or competitively.

Foldit was developed to advance knowledge in sciences such as medicine and biochemistry. Proteins are fundamental for explaining the biological processes of living beings and their role in different illnesses. Nevertheless, there are still many things we do not know about their structure. For example, how does a protein transform into a three-dimensional structure or how does it “fold,” which therein lies the name of the game. These questions remain largely because there are as many ways to fold a protein as there are atoms in the universe.¹⁵⁹

This information is fundamental for the development of new medications such as antibiotics or even cancer treatments.

Therefore, researchers at the Biochemical Department and the Center for Game Science at the University of Washington developed this video game. But how would a video game for the general public solve a problem when not even scientists could find the answer? By taking advantage of gamers’ enthusiasm for video games and their skills for solving problems. The game uses a 3D image of a protein and offers the players tools to take it, fold it and

move around the amino acid chains in order to optimize its shape. The rules are based on physics: opposite charges attract, atomic bonds have limited rotation angles, and the parts of the molecule that adhere to water tend to point outwards. The closer the model resembles the properties based on these rules, the higher the score.¹⁶⁰

The game was very well-received and against all predictions, it has represented an advance in the understanding and prediction of the structure of proteins. So much so that in 2011, it took players only 10 days to solve a scientific enigma that had remained unresolved for 15 years. They found the encoding of the crystal structure of the Mason-Pfizer monkey virus, that causes the infection by the human immunodeficiency virus and AIDS. This was a breakthrough in the research for finding a cure for this disease.¹⁶¹⁻¹⁶²

Through gamification, Foldit created a unique environment with the potential for making a contribution to science. It has reached over 236,000 players since its release in 2008.

- 159 J. Bohannon. (2009). Gamers unravel the secret life of protein. Available at: <https://www.wired.com/2009/04/ff-protein/>
- 160 J. Bohannon. (2009). Gamers unravel the secret life of protein.
- 161 S. Cooper, F. Khatib, A. Treuille, J. Barbero, J. Lee, M. Beenen et al. (2010). Predicting protein structures with a multiplayer online game. *Nature*.
- 162 F. Khatib, F. DiMaio, S. Cooper, M. Kazmierczyk, M. Gilski, S. Krzywdka et al. (2011). Crystal structure of a monomeric retroviral protease solved by protein folding game players. *Nature Structural & Molecular Biology*.
- Picture: Juego y herramientas de Foldit (Cooper et al., 2010).



The Incorporation of Computational Thinking and Gamification into Educational Systems

Over the last few decades, schools in several countries of the world have been progressively incorporating new technological infrastructure: connectivity, laptops, tablets, or robots, while new courses, such as programming, have been added to school curricula. These processes have not only changed how teaching is done, but also how and what we learn. The traditional educational system is largely based on rules for learning different contents: language, mathematics, science, etc., where generally information must be memorized and the key tool for learning becomes repetition. Alternative theories of learning such as gamification focus on the intrinsic capacity of individuals to motivate themselves and choose a game that will allow them to practice and develop certain skills because they know that the experience will be enjoyable. In

this context, by combining games and technology along with other related tools such as virtual reality, video games are a promising option for generating positive impacts in education at a relatively low cost.

Computational Thinking as Part of the Curriculum

Australia, Korea, the US, Finland, England, Norway and Sweden are examples of successful cases outside the Latin American region where technology has brought about the possibility of exploring new content in the classroom, such as computational thinking, and new ways of learning, such as gamification, through the development and use of video games. Within the region, the more emblematic cases have been seen in Uruguay and Argentina, which in 2018 included digital literacy as part of their mandatory education. Recently, other countries such as Chile have also included computational thinking in the curriculum.


How Different Countries have Adopted Computational Thinking


| Country | Year introduced into the curriculum | Required | Extent of coverage | Starting Age | Independent subjects | Incorporated into other subjects |
|-----------|-------------------------------------|--------------------|-------------------------------|--------------|--|--|
| Argentina | 2018 | Yes | Universal | 4 years | Programming, computational thinking & Robotics | |
| Australia | 2015 | Yes | Universal | 5 years | No | Science, Technology, Engineering & Mathematics |
| Chile | 2018 | No | Public schools ¹⁶³ | 8 years | Programming | |
| Korea | 2015 | Yes ¹⁶⁴ | Universal | 5 years | Software Education | Only secondary education |
| US | 2015 | No | 40% | 5 years | Computer Science | |
| Finland | 2016 | Yes | Universal | 6 years | No | Mathematics |
| England | 2013 | Yes | Universal | 5 years | Computer Science | |
| Mexico | 2016 | No | 1.3% ¹⁶⁵ 165 | 6 years | No | Transversal throughout curriculum |
| Norway | 2020 | Yes | Universal | 6 years | Programming | Yes, through Computational Thinking |
| Peru | 2016 | Yes | Public schools | 6 years | No | Transversal throughout curriculum |
| Sweden | 2017 | Yes | Universal | 5 years | No | Technology, Mathematics & Social Sciences |
| Uruguay | 2017 | No | Public Schools | 5 years | Programming | Science, Technology, Engineering and Mathematics |


¹⁶³ The implementation of the plan began in the second semester of 2008 in 30 Bicentennial schools and in public schools and private schools that are subsidized in the municipalities of Estación Central, Melipilla, Huerchuraba and Lampa. Mineduc, 2018.


¹⁶⁴ Required for primary and secondary school. Optional course in high school that covers interdisciplinary thought for making algorithms and computer programs (Kwon & Schroderus, 2017).

¹⁶⁵ There is a pilot program within the Plan @prende 2.0 for approximately 3000 public schools (225.757 primary schools). Available at: https://www.inee.edu.mx/portalweb/informe2018/04_informe/capitulo_0201.html


 **Argentina.** The program “Learn Connected” (Aprender Conectados) was established as an integral educational innovation policy. Its main objective is to guarantee digital literacy to help learn the skills and knowledge that will be needed in the society and culture of the future. Within its structure, this program implements digital education, programming, and robotics at all levels of mandatory education. This program is designed to make children develop knowledge on computer language and logic, integrate the wisdom of computer science to solve problems, stimulate creativity, and develop ideas through programming and robotics.¹⁶⁶


 **Australia.** Programming and coding are included in the mandatory STEM (**Science Technology, Engineering and Mathematics**) curriculum. While these subjects had been optional since 2015, starting in 2019, primary school students will be required to take courses to develop computational thinking from Kindergarten through second grade; data types and information representation using programming in the third and fourth grades; and digital systems and computer game creation in the fifth and sixth grades. In the higher grades, students will continue to learn more advanced programming.¹⁶⁷

 **Korea.** The country’s educational reform of 2015 introduced a new curriculum in basic education. One of the major changes is the introduction of coding and programming as part of Software Education program, which will be part of the study plan for all primary and secondary school levels and will be incorporated into the high school curriculum by 2019. This new plan centers on the development of computational thinking, coding skills and creative expression through the use of software, in line with the objective to cultivate the individual competencies needed for future society.¹⁶⁸

 **USA.** US schools have opened their doors to the teaching of Computer Science. Gallup and Google polls in

2015 and 2016 showed an increase in the importance that schools give to this topic. While in the first poll, only 25% of school principals reported that their schools offered Computer Science, in the 2016 poll, this number increased to 40%. Although Computer Science is not a required subject, more and more parents, students and teachers are acknowledging their benefits. Fully 71% of the teachers report their belief that Computer Science is at least as important as Mathematics, Science or English. Some 60% of them believe that it should be a required subject.¹⁶⁹

 **Finland.** Starting in 2016, the Finnish national primary school curriculum established programming or coding as part of the mandatory education of students. To implement this policy, there is a transversal focus, so coding will not be a separate class. The Finnish system progressively incorporates technology, computational thinking and the digital world into the curriculum between the first and ninth grades. In particular, in the second, sixth and ninth grades, aspects of programming are incorporated into the mathematics curriculum. Finland understands that the teaching of programming impacts the development of other abilities such as creativity, problem solving, motivation and interest in STEM subjects and logical thinking.¹⁷⁰

 **England.** The objective of the national Computing study plan is for students to be able to understand and apply the basic principles and concepts of computer science, through logic, algorithms, and information representation. Its implementation takes place in four stages. In the first stage, for children between the ages of five and six, students learn to understand algorithms and use logical reasoning and technology safely. In the second stage, for children from seven to eleven, students learn to design, write and refine programs that meet specific objectives. The also learn to understand computer networks, including internet and its multiple services. In the third stage, for

¹⁶⁶ Ministerio de Educación de la Nación. (2017). Competencias de educación digital.


¹⁶⁷ J. Baker. (2018). Coding to be mandatory in primary, early high school. Available at: <https://www.smh.com.au/national/nsw/coding-to-be-mandatoryin-primary-early-high-school-20180817-p4zy5d.html>


¹⁶⁸ S. Kwon & K. Schroderus. (2017). Coding in schools: Comparing Integration of Programming into Basic Education Curricula of Finland and South Korea. Finnish Society on Media Education.

¹⁶⁹ Google Inc. & Gallup Inc. (2016). Trends in the State of Computer. <http://goo.gl/j291E0>


¹⁷⁰ T. Toikkanen. (2015).


children from 11 to 13, students take on computational thinking and binary language in order to undertake creative projects that involve the selection, use and combination of multiple applications. For students over 14, the plan focuses on developing and applying analytical skills, problem solving and the design of computational thinking.¹⁷¹

 **Mexico.** @prende 2.0 (Le@rn 2.0) is the digital strategy of the Secretariat for Public Education, which seeks to foster the use of information technology and communication to promote the development of digital skills and computational thinking in the national curriculum in a transversal manner. There are six fundamental components within this program: professional development for teaching information technology and communication, digital educational resources, strategic initiatives, equipping, connectivity and monitoring and evaluation. The strategy also emphasizes the development of skills such as (i) critical thinking, which implies that students analyze, compare, infer, synthesize, interpret and evaluate the knowledge acquired; (ii) creative thinking, where knowledge is applied to create new and original thoughts, ideas and solutions to real problems; (iii) information management, understood as the capacity to find, evaluate and apply it to solve problems; (iv) communication, considered as the ability to utilize digital media and environments that facilitate communication and collaborative activities; (v) collaboration, understood as the capacity to work in teams to fulfill a common objective, and finally; (vi) the use of technology, which consists of the capacity to use technological tools to complete tasks.

 **Norway.** This Nordic country has joined the group of countries who have included in their curriculum tools that enable children and young people to find solutions to the challenges of today and the future. Planned for 2020, the goal of the Norwegian study plan is to place greater emphasis on

comprehension, critical thinking and deep learning. The new curriculum needs to provide students with sufficient time to gradually develop their comprehension of concepts and contexts in a subject. Although programming will be an independent subject, the curriculum will incorporate Computational Thinking as a tool for learning other subjects.¹⁷²

 **Peru.** The national digital technology strategy for basic education 2016-2021 in the Peruvian educational system is managing a transition that goes from the use of information and communication technology as tools, to the progressive adoption of a more systemic approach that not only encompasses media but also competencies, experiences, practices, attitudes, values, and the emerging culture of the digital world. The main objective of this new vision is to empower students as citizens who are capable of using digital technologies to relate better to each other and transform their communities so that they can reach their full potential. This model is based on the following principles: (i) to focus on the needs of the person; (ii) to facilitate learning at any time and any place; (iii) to empower the teacher as a change agent; (iv) to design for different needs and potentials; (v) to adapt environments so that they facilitate experimentation; (vi) to use data to make informed management decisions; (vii) design consistent experiences through a diverse educational ecosystem; (viii) to implement user-friendly technology; (ix) to design open interventions by default; and (x) to gradually adjust the model through continuous learning. Finally, among its major milestones, it is expected that by 2020, basic education students will develop the capabilities that are appropriate for digital technology environments.¹⁷³

 **Sweden.** This country has included four basic principles into its mandatory curriculum: (i) to understand the digital transformation of society and how it

¹⁷¹ GOV.UK. (2013). National curriculum in England: computing programmes of study. Available at: <https://www.gov.uk/government/publications/national-curriculum-in-england-computing-programmes-of-study/national-curriculum-in-england-computing-programmes-of-study>

¹⁷² A. Balanskat, K., Engelhardt & A. Litcht. (2018). Strategies to include computational thinking in school curricula in Norway and Sweden. Brussels: European Schoolnet.

¹⁷³ MINEDU. (2016). Estrategia nacional de las tecnologías digitales en la educación básica: de las TIC a la inteligencia digital.

affects us; (ii) to use digital tools and media; (iii) to develop a responsible approach to digital technology; and (iv) to learn to put their own ideas into action and solve problems. In the Swedish curriculum, the teaching of programming is integrated mainly into three subjects: Technology, Mathematics and Social Science. Within the subject of Technology, students learn to control objects through programming (first to third years) to include their own creations (fourth to sixth years) and apply controls and rules (seventh to ninth years). Within the subject of Mathematics, students first learn how they can build, discover and follow step-by-step instructions as a basis for programming (first through third years). Between the fourth and sixth years, student learn how algorithms can be used in programming as well as their visual environments. Between the seventh and ninth year, students learn to program in different programming contexts where they can create, test, and improve the algorithms to solve mathematical problems.¹⁷⁴

 **Uruguay.** In 2017, the Computational Thinking project was launched in Uruguay, under the

leadership of the Initial Primary Educational Board (CIEP) and the Plan Ceibal, designed to help students boost logical mathematical thinking, creativity and problem solving in an innovative way through computational thinking. The plan also includes concept-based learning for the areas of Science, Technology, Engineering and Mathematics.¹⁷⁵ Initially they started with a pilot project in fifty schools with fifth and sixth grade students who attended classes via video conferences on the principles of programming, and regular classes to apply the concepts learned on the solution of concrete problems in other subjects. In both formats, the project provides the necessary theoretical tools and the methods to incorporate them into the classroom (Plan Ceibal, 2018). The idea behind the project is for computational thinking to be “transversal in the education and to make it so that any teacher can work under this logic.”¹⁷⁶ The Initial Primary Educational Board project was applied nationwide in 2018 for students in the fifth and sixth year (for students approximately 11 years old) in those schools who applied to participate in the program.¹⁷⁷

¹⁷⁴ A. Balanskat, K. Engelhardt & A. Litcht. (2018). Strategies to include computational thinking in school curricula in Norway and Sweden. Bruselas:European Schoolnet.

¹⁷⁵ CIEP. (2017). Pensamiento computacional: un proyecto para seguir generando curiosidad por la tecnología. Available at: <http://www.ceip.edu.uy/prensa/1799-pensamiento-computacional-un-proyecto-para-seguir-generando-curiosidad-por-la-tecnolog%C3%ADa>

¹⁷⁶ T Urwicz. (2018). The informatics classes will gradually change from one method to another. Retrieved from El País Uruguay: <https://www.elpais.com.uy/informacion/clases-informatica-borde-extincion.html>

¹⁷⁷ Plan Ceibal. (2018). Pensamiento computacional: un proyecto para seguir generando curiosidad por la tecnología. Available at: <http://www.ceip.edu.uy/prensa/1799-pensamiento-computacionalun-proyecto-para-seguirgenerando-curiosidad-por-latecnolog%C3%ADa>

Videogames that Incorporate Gamification into Education

Over the past few years in Latin America, there has been a steady growth of products that use gamification technology as a tool for learning.¹⁷⁸ Some of the best-known video games are Local Heroes (Mexico), Qranio (Brazil), Kokori

(Chile), Shamanimals Fantastic Tales (Colombia), DragonBox (Uruguay), Creápolis (Argentina) and they have fundamentally focused on three areas: school desertion, teaching of traditional content and development of non-traditional skills.

Local Heroes (Héroes Locales in Spanish) This is a multi-player online video game developed by Ncite, a Mexican digital transformation agency that specializes in education.¹⁷⁹ The game allows players to select their careers and educate themselves through the choices provided in the game, where they can meet prestigious persons in their occupation who act as mentors. Careers run from medicine to art or sports, where mentors are real persons with years of experience in the field chosen by the player as his or her career. The simulation and the guidance by experts help the student make informed decisions with a greater sense of self-assurance so that there is a decline in the number of dropouts. The video game also connects players with scholarship programs and educational institutions.¹⁸⁰



Source: Ncite, 2019

Qranio (Brazil). Qranio is a mobile learning platform that allows players to convert their knowledge into real prizes by accumulating Qi\$, the game's virtual currency. Within Qranio, it is possible to identify various educational categories, such as Basic Teaching, the National Middle School Teaching Exam in Portuguese (ENEM), Biology, Chemistry, Physics, Mathematics and others. There are also three different ways to play: individually, dueling, and by the question of the day, which allow players to interact with others on the platform.¹⁸¹⁻¹⁸²



Source: Qranio, 2019

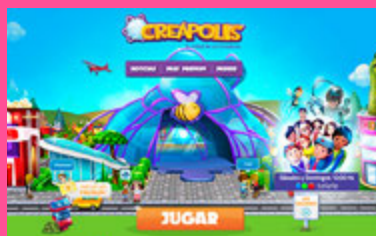
- ¹⁷⁸ A. Rivas y L.E. Delgado. (2016). Un mapa del futuro: Cincuenta innovaciones educativas en América Latina. Graduate XXI- Banco Interamericano de Desarrollo.
- ¹⁷⁹ Ncite. (2019). Available at: <http://blog.ncite.mx/>
- ¹⁸⁰ Ncite. (2019). Available at: <http://blog.ncite.mx/>
- ¹⁸¹ Qranio. (2019). Available at: www.qranio.com
- ¹⁸² M.J. Madarnás. (2018). Cuatro apuestas latinoamericanas por integrar el videojuego en las aulas. Available at: <http://blogs.deperu.com/espacio-infantil/4-apuestas-latinoamericanas-por-integrar-el-videojuego-en-las-aulas/>

FazGame (Brazil). This educational innovation says everything in its name. In Portuguese it combines the word “do” (faz) with game—and this is precisely the objective. Students use this software to build educational games under the supervision of their professors. The purpose behind Fazgame is to develop XXI century competencies by means of an interactive educational model where users not only play, they actually decide what to play and design their own video games.¹⁸³ Through their active participation in Fazgame, students develop the skills of planning, collaborating, perseverance, logical reasoning and problem solving.¹⁸⁴ Because of its disruptive character, Fazgame has won numerous awards in the regions and it has been translated into English and Spanish.¹⁸⁵⁻¹⁸⁶



Source: FazGame, 2018

Creópolis. Developed by the educational social network, Aula365,¹⁸⁷ Creapolis is a massively multi-player online game (MMOG), designed for children and for education. Directed towards young persons between the ages of 6 and 12, the game challenges them to share. Within the game it is possible to identify three levels or floors, each with its respective function: the first floor, known as the creation classroom, is where art, video games music and comics are created; the second level is called the multi-lingual class room, where it is possible to find movies with educational content in three different languages; at the third level, known as the creator's floor, there are exclusive contents such as weekly trivia and prizes for the players. Professors and students interact continually within the game, showing that it is possible to take the process of learning outside of the classroom and away from traditional pedagogical tools. This video game invites the users to live an experience where they themselves are the guardians of their own innovations. They can make their own characters, their own houses, their own city as well as create music, comics, games and drawing. The game is currently active in Argentina and Peru (first release countries) and Spain, Colombia and Mexico.



Source: Aula 365, s.f.

- 183 FazGame. (2018). Retrieved from FazGame: www.fazgame.com.br
- 184 Newsroom. (2016). Game to create games. Available at: <http://www.aredo.inf.br/game-para-criar-games/>
- 185 Newsroom. (2016). Game to create games. Available at: <http://www.aredo.inf.br/game-para-criar-games/>
- 186 BID. (2016). El BID celebra la tercera Noche de Emprendimiento con 12 startups de América Latina y el Caribe. Available at: <https://www.iadb.org/es/noticias/comunicados-de-prensa/2016-10-10/bid-celebra-noche-de-emprendimiento-en-idear-soluciones%2C11591.html>
- 187 Aula 365. (s.f.). De paseo por Creópolis. Available at: <http://www.aula365.com/creapolis-expectativa/>

Kokori (Chile). Born in Chile, Kokori arose in response to the need to create innovative pedagogical instruments. Implemented in more than one hundred municipalities in the country, Kokori aids in the teaching of Cellular Biology through the use of simple didactic concepts. Students must learn to manipulate different nano-robots to defend the cell against attacks from viruses and bacterias. In the meantime they meet the mitochondria, the Golgi apparatus, the nucleus and other parts of the cell.¹⁸⁸ Since it is distributed for free and there is no charge for its use, Kokori has been downloaded more than 60,000 times in 36 countries. It is available in Spanish, English, Italian, Catalan, Mapadungun and finally, Rapa Nui, the language where Kokori means “collective game. Kokori also provides complementary support tools, such as a cellular navigator, teaching guides, comics and a television series.”¹⁸⁹



Source: Educar y Motivar, 2017

Shamanimals Fantastic Tales (Red Mapache, Colombia).

In an effort to improve reading comprehension skills for children between the ages of 6 and 8, Red Mapache developed the application Shamanimals Fantastic Tales. Shamanimals is a series of interactive animated books that implement trivia and practical exercises that evaluate the reading comprehension levels of the user. This game also allows parents and teachers to closely follow the child's process, and it generates tools to reinforce those sections where the child might have difficulties or requires more practice. Red Mapache has also instituted a business model where for every interactive book or game sold, they will donate an additional one to a foundation equipped with the necessary infrastructure to extend the game to more vulnerable communities and generate a positive impact.¹⁹⁰⁻¹⁹¹



Source: Tecnósfera, 2014

¹⁸⁸ Educar y Motivar. (2017).

Kokori: Espectacular videojuego de Biología Celular en español y GRATIS. Available at: <https://educarymotivar.blogspot.com/2017/01/kokori-espectacular-videojuego-de.html>

¹⁸⁹ LOF. (2017). Kokori, aprendizaje en Biología Celular

¹⁹⁰ C.A. Ortega. (2014).

Shamanimals, una aplicación educativa para mejorar la lectura. Available at: <http://www.youngmarketing.co/aplicacion-convierte-clasicos-literarios-en-una-divertida-experiencia-educativa/>

¹⁹¹ Tecnósfera. (2014). Mejore

la comprensión de lectura de los niños con una aplicación móvil. Available at: <https://m.eltiempo.com/archivo/documento/CMS-14137835>

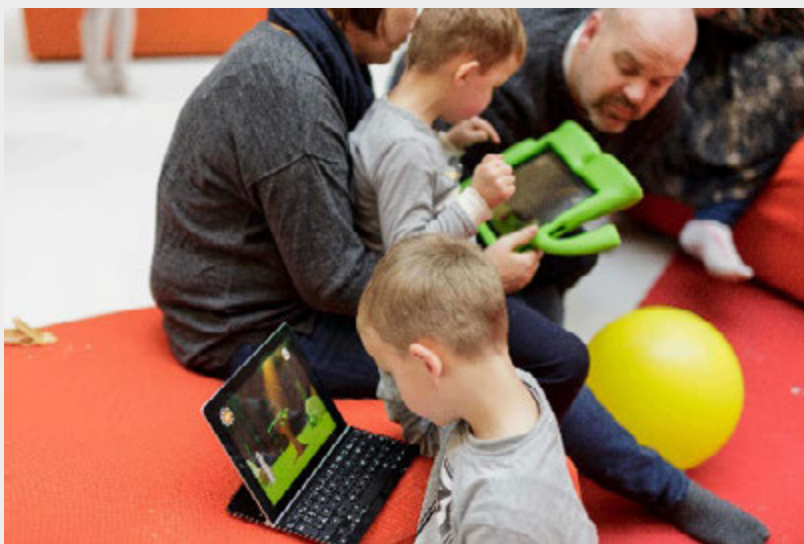
DragonBox: A Project that Combines Text and Fiction Books and Video Games

Learning Mathematics is not easy for everyone; neither is teaching it. Gamification has approached this problem and DragonBox is an innovative solution that surpasses the limitations of traditional pedagogy. In Mathematics classes, generally someone speaks to the students and they listen to what is being transmitted to them. For the Uruguayan, Gonzalo Frasca, the designer of WeWantToKnow, the studio that designed Dragon Box. With video games, students not only

receive information, they can also experiment to better understand the concepts being shown to them.

All through the game, which is personalized for different age groups, children can discover numbers and analyze them so that later it is easier to understand Mathematical operations such as adding and division. The game also makes the learning process more personalized in that it goes at the same pace as each student.

The video game contemplates a virtuous circle of commitment, exploration, understanding and application. Taking advantage of children's innate curiosity, DragonBox proposes that children play to learn and gives them an enriching educational experience. (WeWantToKnow, 2019).¹⁹²



¹⁹² WeWantToKnow. (2019).

DragonBox. Available at:
<https://dragonbox.com/about>

¹⁹⁴ L. Blasco. (2017). Gonzalo Frasca, el uruguayo que diseña videojuegos con los que enseñan matemáticas en Finlandia. Available at:
<https://www.bbc.com/mundo/noticias-42411821>

How Can Latin America take advantage of Technology to Increase Learning and the Development of Skills in the XXI Century?

When one thinks of the average school in Latin America and the Caribbean, conventional classrooms with limited infrastructure and resources comes to mind. It has a classic curriculum focused primarily on cognitive skills such as arithmetic and reading and a teacher that transmits knowledge by using a blackboard, paper and pencils. In the meantime, outside of the school, the world is being reconfigured as a result of digital transformation, automation, as well as demographic changes stemming from migratory processes and the aging of the population.

For decades, countries such as Finland, Estonia, Korea, among others, have been progressively investing in the adaptation of their educational systems. They have been incorporating technology, new pedagogical practices and curricular reforms which have allowed them not only to rank high in international tests of traditional subjects (Language, Mathematics and Science), but also to begin to train their students in other skills that are increasingly more important for creating prosperous

societies where they can flourish and deal successfully with challenges.

The educational systems of the Latin American and Caribbean region therefore have the compound challenge of improving the subjects they are already teaching along with incorporating the development of new abilities such as digital and socio-emotional skills that students will need as tools for life. Unlike the nations that initiated their reforms in the century just past, countries of this region will have to make these adjustments in a much shorter time.

On the bright side, technology can help. Since it facilitates the task of introducing new ways to teach and learn, it can impact more persons at a lower cost, including populations that have traditionally been excluded and would be difficult to reach otherwise. In this context, video games can be one of the innovative solutions that can support teaching activities¹⁹⁵ and improve the learning of traditional knowledge and the enhancement of skills such as creativity, strategic thinking, flexibility or empathy.

Can just any video game meet these objectives? As we have seen, the answer is no. On the following page, we will summarize some principles for boosting their impact on learning and skill development.¹⁹⁶⁻¹⁹⁷

¹⁹⁵ A.P. Ortiz, M.F. Carrera, H.L. Ruiz, M.J. López & J.J. García. (2017). El uso de los videojuegos como herramienta didáctica para mejorar la enseñanza aprendizaje: una revisión del estado del tema. Ingeniería, Investigación y Desarrollo: I2+D, 36-46.

¹⁹⁶ J.P. Gee. (2005). Learning by design: Good video games as learning machines. E-learning and Digital Media, 5-16.

¹⁹⁷ S.E. Kirkley & J.R. Kirkley. (2005). Creating next generation blended learning environments using mixed reality, video games and simulations. TechTrends, 42-53.

Decalogue of the Principles for Boosting the Impact of Video Games on Skill Development

01

From the outset: promote greater diversity among video game developers.

03

Promote games that are cooperative, as opposed to competitive.

04

Limit the exposure time.

02

Co-design the game with the users, who must feel like agents and not only consumers. To do so, if it is an educational game, it is important for the users to be aware of its purpose and the learning objective so that they can actively contribute to making it work.

05

Control the use of online video games to avoid player dependence and anxiety about continuing in games that are running constantly.

06

Exploit the entertainment side of serious games to maximize their learning potential.

In games for fun, always think of them as an instrument for doing good: gaming for good. Do not include content that may lead to behavior that is excluding, anti-social, aggressive or sexist.

07

Connect the learning activities to a more complex problem; The tasks must be real and the setting must reflect the complexity of the real environment that the student must function in once the learning cycle of the game has finished.

09

In both educational and fun games, try to include messages that allude to the challenges of today, for example, equity, climate change, poverty, disability, etc. These allusions can help raise awareness or induce positive changes, such as greater empathy, in user behavior.

08

Adapt the content and messages to the age of each user, expanding the windows of opportunity for the development of each type of skill.

10

In the last few years, the multiple applications of gamification—not only in the field of education but also in science and medicine—have demonstrated that they are not only effective, but can also be scaled up because of the potential reach made possible by technology. For example, Re-mission, a game for children and young cancer patients, managed to help them increase the adherence to treatment, self-sufficiency and knowledge about their illness.¹⁹⁸⁻¹⁹⁹⁻²⁰⁰⁻²⁰¹ Since its release in 2006, Re-mission has been distributed to more than 200,000 patients and in 2014, a study showed that the video game improved the physical and psychological health of the users.²⁰²

Other important advances in the field of education and technology, and directly connected to the development of video games, stem from the use of virtual reality (VR). There are numerous studies that show VR's potential for building empathy because it allows the user to literally experience any situation from any perspective.²⁰³⁻²⁰⁴ Other experiments prove significant increases in environmental knowledge and awareness regarding topics on climate change for participants of different age groups.²⁰⁵

Education for the XXI century required active and continuous education, with a special emphasis

on technological development. How individuals will be trained in this dynamic environment will depend on how well these changes are converted into opportunities that capitalize on effective measures to positively transform societies. In this context, video games can be a low-cost, high-impact tool as long as certain conditions are met. They provide a valuable opportunity to develop cognitive skills, incorporate less-traditional content, such as the enhancement of digital or socio-emotional capabilities and reduce socio-economic and learning gaps. Furthermore, through gamification, they could increase students' commitment to schooling and become part of the solution for improving low academic performance and high drop-out rates in the region.²⁰⁶ The industry plays a fundamental role and it is important for it to incorporate the knowledge it generates into games and not only make the player have fun. Games must also help players develop key competencies so that they can flourish with individual and group solvency. It is a fact that video games are part of the lives of boys and girls and adolescents. It is up to the educational system to take advantage of them to enhance those aspects that convert them into useful tools for creating XXI century individuals.

¹⁹⁸ C.J. Ferguson. (2007). The good, the bad and the ugly: A meta-analytic review of positive and negative effects of violent videogames. *Psychiatric Quarterly*, 309-316.

¹⁹⁹ Hopelab. (2012). Re-Mission: Where it all began. Available at: <https://www.hopelab.org/projects/re-mission/>

²⁰⁰ R. Tate. (2014). Can VideoGames Be Designed To Promote Health? Available at: www.hopelab.org/blog/can-video-games-be-designed-to-promote-health-re-mission/

²⁰¹ S.W. Cole, D.J. Yoo & B. Knutson. (2012). Interactivity and reward related neural activation during a serious videogame. *PLoS one*.

²⁰² P.M. Kato, S.W. Cole, A.S., Bradlyn & B.H. Pollock. (2008). A video game improves behavioral outcomes in adolescents and young adults with cancer: a randomized trial. *Pediatrics*, 305-317.

²⁰³ F. Herrera, J. Bailenson, E. Weisz, E. Ogle J. Zaki. (2018). Building longterm empathy: A large-scale comparison of traditional and virtual reality perspective taking. *PloS one*.

²⁰⁴ A. van Loon, J. Bailenson, J. Zaki, J. Bostick, R. Willer. (2018). Virtual reality perspective-taking increases cognitive empathy for specific others. *PloS one*.

²⁰⁵ D.M. Markowitz, R. Laha, B.P. Perone, R.D. Pea & J.N. Bailenson. (2018). Immersive Virtual Reality Field Trips Facilitate Learning About Climate Change. *Frontiers in Psychology*.

²⁰⁶ CIMA. (2016). América Latina en PISA 2015: ¿cómo se desempeñan las niñas y los niños? Washington: Inter-American Development Bank.

Video Games:
It's also a
Girl's Thing



Are all gamers only males? This question has taken on greater relevance over the last decade, given that gamer communities, made up of both sexes and all age groups have grown by leaps and bounds. The video game industry has stepped up its efforts to adequately represent females in video games and recognize women players as an essential part of the industry's public. Their visibility in this and other links in the value chain plays an equally important role; for example, as prominent women esports figures, as CEOs of video game firms, as artists, developers, designers, animators, publicists and as all the women that work in the specific communication channels of this industry. In the entire industry, we find women leaders that should be recognized, but acknowledgment alone will not be enough. **All of us are the ones who need to change to make way for new content and more inclusive stories,** full of heroines and strong female characters as both protagonists and antagonists. All this new narrative in games with heroines—such as Lightning, from the game Final Fantasy XIII; Kate Walker from the series Syberia, or Samus Aran from the series Metroid—has been inspiring and relevant for changing this perception. Although there is still a long way to go, the video game industry is beginning to incorporate all of these changes. It is now beginning to show its interest and concern for recognizing the creative and talented women that previously it didn't know existed.

Who are behind the video games?

Video games have been and continue to be, as Anna Anthropy relates, “created mainly by small and insular groups of people. When computers were first installed on university campuses, only engineers had the sufficient technical knowledge to program games on them. It is not surprising that the games they made looked like their own experiences: physics simulations, space adventures drawn from the science fiction stories they enjoyed, the Dungeons and Dragons tabletop role-playing games they played with their friends.”²⁰⁷ Nonetheless, even though the majority were men, women were also part of this academic environment. The first video game consoles were promoted to both boys and girls alike, and touted as entertainment for the entire family. Once they were in the homes, however, the computers and the consoles fell into the same division by sex as all the other electrical home appliances of those times: “The technologies outside of the house, such as the car, were the realm of men while the women were in charge of the technologies pertaining to the kitchen and the cleaning, so that others—the husbands— could have more free time which enabled them to take over the entertainment technologies.”²⁰⁸ By the mid-eighties, promotional strategies focused on the segment of the public who was most likely to purchase a product at that time. Advertisements were aimed at men and they lost all sight of the possibility of extending their audience to any other type of user. Today, the search for new market niches has changed this situation somewhat, but at that time, video games were increasingly meant for and promoted only to male adolescents because they were the ones that got computers. Likewise, these men, this audience “would be the ones who would later show interest in careers in the areas of science and technology, (and) some of these would take part in the creation of video games.”²⁰⁹

With the passing of time, technology made it possible to understand the market and the perceptions about it could be verified with real data. Analytical tools showed that the market was much larger and more diverse in genre and age than what anyone had previously thought. For example, a 2015 survey asserted that although 60% of adults thought that the majority of gamers were men, and this opinion was shared by 57% of women, the data in 2017 actually revealed that some 46% of gamers were women. The real gender gap turned out to be only minimal.²¹⁰ In some countries, women have even started to take the lead, such as in the US where women account for 66% of gamers,²¹¹ while in Brazil, 51 % of mobile gamers are women.²¹²

Cheaper personal computers and consoles, access to tablets and especially the greater penetration of mobile phones and the massification of access to internet, have not only resulted in the expansion of gender and age groups, but also in different player patterns. Some spend long hours playing at home, while others play short sessions lasting only minutes at work. Some players compete with the whole world while others play only with friends and family. With more affordable high-end computers, and cheaper professional development software (some can even be free, such as Unity or Unreal Engine), teams have sprung up in all corners of the planet and are beginning to develop new video games, private and public servers, and communication channels to discuss games and watch others play. Also included are a vast number of tutorials in video format that, for example, prepare gamers to advance to higher levels and thousands of communities have popped up to share information on the industry. Internet and new electronic payment methods have made digital distribution more agile and that is how the new voices of developers from all over the planet have joined the cloud to massify one of the industries with a major potential for growth.

²⁰⁷ A. Anthropy. (2012). *Rise of the Videogame Zinesters: How Freaks, Normals, Amateurs, Artists, Dreamers, Drop-outs, Queers, Housewives, and People Like You Are Taking Back an Art Form*. Seven Stories Press. Available at: <https://books.google.com/books?id=nc3GRXqgPZ8C&pgis=1>

²⁰⁸ D. Ortiz Niño. (2015). *De videojugadoras a desarrolladoras: el aprendizaje del desarrollo a través del prosumo*. Bogotá, Colombia: Universidad Nacional de Colombia, Facultad de Ciencias Humanas, Departamento de Sociología.

²⁰⁹ D. Ortiz Niño. (2015). *De videojugadoras a desarrolladoras: el aprendizaje del desarrollo a través del prosumo*. Bogotá, Colombia: Universidad Nacional de Colombia Facultad de Ciencias Humanas, Departamento de Sociología

²¹⁰ Available at: <https://newzoo.com/insights/articles/male-and-female-gamers-how-their-similarities-and-differences-shape-the-games-market/>

²¹¹ Available at: <https://newzoo.com/insights/articles/maleand-female-gamers-how-theirsimilarities-and-differences-shape-the-games-market/>

²¹² Available at: <https://newzoo.com/insights/infographics/brazil-games-market-2018/>

Women in Gamer Communities

Even though women make up half of all video game players, open communities have started a debate to define who should be called gamers. According to Jon Peterson the term originated with the board game, Wargames, that simulated the experience of being a war commander. In time, the meaning of the term began to change to refer to fans of role-playing, board games, collectible card games and video games.²¹³ Today, the term is used almost exclusively in reference to video games. The terminology in itself may seem insignificant but in the world of video games it is relevant since it can induce communities to be more inclusive in terms of gender, sexuality and race. A 2015 Pew Research study indicated that men are more than twice as likely as women to refer to themselves as gamers (15% versus 6%), and among those between the ages of 18 and 29, some 33% of the men said that the term gamers described them well. That is more than three times the number of young women, only 9%, who applied the term to themselves. Independently of the number of women players that exist, they do not necessarily feel that they are part of a community. Adrienne

Shaw studied how users whose gender, sexuality or race differed from the white adolescent heterosexual male, which is assumed to be the “typical gamer,” are insulted and questioned in video game communities. In the end, however, they come to terms with their gamer identity and more or less make their own definition of the term. The study also showed that women have more difficulty applying the word gamer to themselves and conciliate their gender identity as gamers.²¹⁴

We now live in a moment of change, and are more open to gamers communities. It is no longer only the adolescent male who plays video games on his PC or console, but also men and women of all ages and from all parts of the world. We can no longer accept the rhetoric from a minority of players who feel that their identity is threatened and insist that they are the “real gamers.” Neither should we become snobs and alienate, for example, all the women over 40 who connect to the video game world via simple repetitive puzzle games. There is no real reason for this and we should be welcoming players of all ages and sexes. Games have the capacity to unite people and bring them closer to technology. Video games are here to stay so we had best work to make them more inclusive in this society.

²¹³ C. Campbell. (2014). Where does the word “gamer” come from and does it have a future? Polygon, 6. Available at: <http://www.polygon.com/2014/10/24/6984975/wheredoes-the-word-gamer-come-from>

²¹⁴ A. Shaw. (2011). Do you identify as a gamer? Gender, race, sexuality, and gamer identity. *New Media & Society*, 14(1), 28-44. Available at: <http://doi.org/10.1177/1461444811410394>

Women in Small and Medium-Sized Video Game Studios

The most important positions within the video game industry, particularly in the larger firms, are still held by men, although there has been an improvement in the past few years for both women and minorities. The result of a 2017 survey of developers with high-end computers in 2017 showed that workers in the industry continue to be predominately men at some 74%, while only 21% identified themselves as women and 3% as transgender.²¹⁵

Small and medium-sized studios offer an opportunity to make women become enthusiastic about developing original content and team up with groups that have the same or a greater number of women. The diversity of viewpoints and the value that women bring to a team are key for continuing to innovate and produce games that are can meet market demand.

For many women, a model to follow is Amy Henning, who in 2003 was art director and script writer for the video game company Naughty Dog in its acclaimed series: *Uncharted*. Henning, at this time, wrote the script and directed a team of 150 persons who created the game which was acclaimed by the critics and the public. This made it possible to develop a series (*Uncharted* 2,3), which was the

recipient of more than fifty awards and considered to be one of the top games of all time. It was the highest-selling game for the month it was launched and has sold over 41.7 million copies all over the world.

Another well-known woman is Kim Swift, who designed *Portal*, a game that has been awarded many times over, winning the prize for the game of the year, best puzzle game, best villain and best song. The most impressive, however, is that it has become a classic and a benchmark for how far a puzzle game can go.

Video games can change the world and the persons who live in it. They are a powerful source of inspiration, with an ample capacity to attract and communicate and their reach was never as relevant as now. Therefore it is indispensable to bring more diverse profiles into the development teams so that games have greater richness and variation, reflecting their diverse market and reaching their full potential. In the following section we will highlight some Latin American women who are a sample of inspiring women who demonstrate the potential they bring to development teams that are made up primarily of men. In Latin America we have a group of women that lead this industry in their own countries and abroad—but this is only a sample. We are sure that there are many more that we do not have the pleasure of knowing yet.

²¹⁵ International Game Developers Association. (2018). Developer Satisfaction Survey 2017. GDA. Available at: https://cdn.ymaws.com/www.igda.org/resource/resmgr/2017_DSS_!/IGDA_DSS_2017_SummaryReport.pdf

Important Women in the Video Game Industry

ARGENTINA

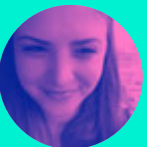


Mara Ares is the CEO of Ares Gaming Labs and Professor of Game Designing at the Universidad Argentina de la Empresa (UADE). At UADE, students use agile methodologies which enable them to plan, design and implement a successful gaming project. She is the author of Video Games: 10 Steps to Building your Firm (Videojuegos. Construye tu empresa en 10 pasos).

www.aresgaminglabs.com/



Alejandra Bruno is a narrative designer, script writer and game designer of educational video games—such as Mundo Gaturro, sponsored by Unicef—at QB9 Entertain.



Martina Santoro is CEO and co-founder of Okam Studio, developer of prize-winning video games—some of them in co-production with studio giants like Disney and Cartoon Network— and president of the Argentine Video Game Developers Association (ADVA). <https://okamgames.com>.

<https://okamgames.com/>

BARBADOS



Ariana Green is co-founder of Couple Six Inc., the first video game studio in Barbados, which focuses on producing content rooted in the history and folklore of the Caribbean. Ariana established the first Caribbean Chapter of the International Game Development Association which supports young talent and helps the industry grow at a local level.

<https://www.patreon.com/couplesix>

BRASIL



Eliana Russi currently heads Brazil Games, a program that supports video game studios and content creators who want to internationalize their activities. Eliana is also the content director of BIG Festival, the largest and most important Games B2B in Latam.



Mariana Boucault began her career as a game designer in the Brazilian firm Insolita Studios and later she went to live in Canada, first working in Tapps Games and currently in Behavior Interactive.

<http://www.maricroft.com/>



Thais Weiller, co-founded JoyMasher together with Danilo Dias, worked on Oniken, Odallus, and Finding Monsters and Rainy Day. She currently teaches Game Design at PUCPR and works at JoyMasher. She has published two books on game design, Game Start and Pense Pequeno.

<https://joymasher.com/>



Sabrina Carmona, originally created a studio for free games in her native Brazil. Sabrina has worked in over six countries around the world and is currently one of the leading producers of King, based in London and known for the development of the game Candy Crush. Her work focuses on producing high-quality games for mobile platforms.

<https://king.com/>



Ana Ribeiro is the founder and leading programmer at Pixel Ripped located in Santa Monica, California. In addition to being cosplayer, she has been recognized locally and internationally for her virtual reality games. She is considered a pioneer developer of virtual reality games in Brazil.

<http://www.pixelripped.com/>

CHILE



Maureen Berho is a sociologist at the University

of Chile and co-founder and producer at Niebla Games, a studio that concentrates on the development of board games and video games. She is currently Director of Communications for the Chilean Association of Video Game Developers.



Javiera Paz is a Chilean video game designer and an

expert in quality assurance (QA). She has worked independently in different Chilean and international firms based in Chile. She is co-founder of Women in VG, a non-profit association that aims to give greater visibility to the work of women in the industry.



Diana Pacheco, co-founder of Glitchy Pixel, is a 2D

animation artist who has specialized in Pixel Art to animate all types of characters. Glitchy Pixel is a small company which focuses on generating experiences, betting on very original graphics. Among their most important games is: Poltergeist: 16 Bit Horror, featured in the magazine Indie Game, which commented, "Horror is as addictive as it is challenging, simple but well designed and at the end of the day, an extremely fun and rewarding casual game."



Fernanda Contreras Stange is a well-known

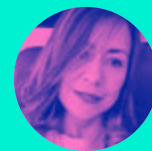
entrepreneur in the global video game industry. She joined the Chilean studio Gamaga in 2012 as COO. Under her leadership, Gamaga has gone from being a small start-up to becoming the number 1 independent video game studio in Chile.

COLOMBIA



Marge Torres, is a co-founder of Cocodrilo Dog

Games, a Latin American company that develops well-known musical video games for Venture Beat and GamesBeat. Among the best-known games are Audi Ninja, recognized by Apple, and Moana: Rythm Run, a co-production with Disney Interactive for the movie Moana and Beat Boy.



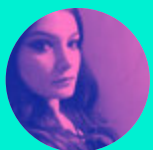
Sandra Roza, is director of the magazine Gamers-

On, the organizer of Global Game Jam Colombia, and creator of the EGDC Congress, formerly called Anigames-Expo, which seeks to consolidate the industry in Colombia and Latin America. She is an ardent promoter of digital entertainment and video games in her country.



Chriss Vásquez is partner and current director of

marketing and public relations at Nemoris Games, a firm with 12 years of a track record from Valdivia to the world. She has crossed the country giving talks at schools and events about the Chilean video game industry, motivating young people to enter the creative industries and make a living off what they are passionate about.



Eva Colasso, is co-founder and executive producer

at BWstudios, a studio specializing in casual mobile games, best known for their automobile competitions. Since 2006, she has performed in the digital world and at BWstudios, where she has directed and managed projects for several leading companies, including Discovery Kids, Cartoon Network, Charuca, TNT, HTV, and Space Channel.



COSTA RICA



Katherine Álvarez is part of the development team

of Neon Atom Pulse, the first console game from the Costa Rican studio Tayassu Games, a company dedicated to developing video games.



Isabel Vásquez Monroy is co-founder,

producer and director of the FockaGames Studio in Mexico. In 2017, she was the producer and participated in the dubbing and design of the VR video game, DMD Mars Mission, which won the National Video Game Competition MX 2017, as well as the prize for Innovation Talent Land 2018. Currently she directs the port team for PlayStation 4 VR.



Karla de la Loza (Goran Riddle) is the CTO of Boxies

Toys, a company which develops physical toys that interact with technology to combat the digital gap between parents and children. Within Boxie Toys, she created the studio Máquina Voladora, where she developed a large number of games for PCs and mobiles, as well as virtual, augmented, and mixed reality developments.

MEXICO



Stephanie Prodanovich is the App Store business

manager at Apple, Mexico. She made a name for herself for having placed the first Mexican video game at App Store and for her role at Square Enix Latin America which launched successful titles such as Final Fantasy and the new version of Tomb Raider.



Eurídice Cabañes, is the co-founder of Arsgames, and

serves as its president in Mexico and vice president in Spain. She has been the director of the Digital Factory El Rule in Mexico City and adviser in the Multimedia Center of the National Center of the Arts in Mexico. She has written over forty publications on topics that include art, technology and video games.

<https://arsgames.net/>



Dani Coyotzi Borja is a programmer at Hyperbeard, a studio

dedicated to the development and publication of mobile video games. Prior to entering Hyperbeard, together with an educational studio she published her own game. She teaches classes in programming and mathematics for students of art and video game development and programming at a university in Mexico City.



Naxla Mina is the public face for Xbox in Latin

America and a member of the management committee that positioned this firm as a high-performance platform and well-known brand in the territory. In addition to being responsible for all the digital channels, she organizes important key events for the Latam ecosystem that include the Brazil Game Show and Mexico Fan Fest.



Sofia Batteggazzore is the director of Payana Games and

was one of the pioneers in video game development in Uruguay. For 10 years she was at the helm of Powerful Robot Games, where she co-produced games for studios such as Pixar, Lucasfilm, Cartoon Network and Disney. Today she directs the applications for Guitarras Loog, Tiny Giant Leaps and the Paleo Detectives game.



Laia Bee is the co-founder of Pincer Game Studio and is

a member of the Board of Directors of Girls in Tech Uruguay. She is a DJ and is in charge of the sound and musical production of her video games. She gives classes on video game development exclusively for girls.



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Jobs for Today's
Students



The World Economic Forum, in its report on "The Future of Employment: Jobs, Skills, and Work Force Strategy for the Fourth Industrial Revolution," argues that the professions that are in the highest demand today did not exist a decade ago, or even five years ago, and that "65% of today's primary school children will work at jobs that do not yet exist." But might it be possible that video games could somehow provide skills that are needed for the future?

Video games are frequently seen as something addictive, and that provoke sedentary and violent behavior. The literature on the subject, however, does not always confirm this perception. When used in moderation, and, in the case of children, under supervision, video games can become valuable tools to develop skills that can be transferred to real life. They have also become a dynamic source of attractive jobs for today's youth and are playing an ever greater role in the workplace by motivating, uniting, teaching and evaluating employees.

In a context of labor markets subject to profound changes stemming from new digital technologies, automation, and increasing independent and remote working arrangements, video games can become a useful tool for facilitating these changes.

There are three complementary ways to look at the links between video games and future jobs: first as a future career; second as a tool for future jobs; and third as a source of future productivity.

Video Games as a Future Career

In addition to generating millions of dollars in the world, the video game industry is responsible for generating 220,000 direct and indirect jobs in the US and nearly 50,000 jobs in the UK.²¹⁶ In Argentina, it is estimated that the industry employs two thousand persons,²¹⁷ while in Brazil the number is close to four thousand.²¹⁸ In both Brazil and Argentina, the industry is highly oriented to foreign markets with a high

percentage of sales going to exports. According to Franco Gustin, from the Argentine Agency of Foreign Trade, 95% of the country's video game production is exported, meeting the high levels of quality demanded by the market.²¹⁹ Much like the software industry in general, these firms are highly linked to the rest of the world, participating in global development projects, often in association with the major international video game companies and working as part of multinational teams.

The perspectives for the industry are highly favorable. Newzoo, a consulting firm specialized in the video game market, estimates an annual sales growth rate of about 10% by 2021.²²⁰ More cautious projections by Digi-Capital²²¹ and QYReports²²² foresee an annual growth rate of above 6% until 2023. Latin America is one of the fastest-growing markets in the world.

These optimistic prospects would mean employment opportunities for a series of technical professions that include programmers, 2D and 3D animators, sound engineers, among others, but they also include the creative professions such as musicians, writers, illustrators, artists and producers. The impact of video games on jobs in the creative sector should not be underestimated. LinkedIn (2015) suggests that the abrupt surge in the employment of musical composers in the US, which had remained stagnated at approximately 9000 positions between 2002 and 2008 and then jumped to 25,000 in 2012, was largely the result of Apple's App Store launch and Facebook's applications which,

²¹⁶ Available at: <https://www.gamesindustry.biz/articles/2018-10-09-games-industry-contributes-2-87bn-to-uk-economy-supports-nearly-50-000-jobs>

²¹⁷ Available at: <http://cepia.artes.unc.edu.ar/2017/11/13/adva-y-los-videojuegos-en-argentina/>

²¹⁸ Available at: <https://www.icex.es/icex/es/navegacion-principal/todos-nuestros-servicios/informacion-de-mercados/paises/navegacion-principal/noticias/NEW2017705409.html?idPais=BR>

²¹⁹ Available at: <https://www.cronista.com/negocios/Empresas-de-videojuegos-ya-exportan-el-95-de-lo-que-fabrican-en-el-pais-20120924-0047.html>

²²⁰ Available at: <https://newzoo.com/insights/articles/global-games-market-reaches-137-9-billion-in-2018-mobile-games-take-half/>

²²¹ Available at: <https://www.digi-capital.com/news/2018/01/games-software-hardware-165bn-2018-230b-in-5-years-record-2b-investment-lastyear/#.W13ZHpOMjPA>

²²² Available at: <http://www.digitaljournal.com/pr/3915590>

between 2007 and 2008, opened the way for thousands of developers of games of all sizes, which multiplied the demand for composers of music for video games in the country.²²³

The multidisciplinary and technocreative profiles of video game development teams has brought about a surge of new specialized careers that encompass both technology, such as informatics, telecommunications, programming, artificial intelligence, etc., and creativity and entrepreneurship, including design, management, art, innovation and business. Currently in Brazil, at least 11 institutions offer technological associate degrees (2 to 3 years) in different parts of the country. In Argentina, at least seven academic institutions offer 3-year *tecnicaturas* (a combination of the words “tecni” for technical and “licenciatura”, the traditional four or five-year undergraduate university degree) degrees in video game development. There is even a five year undergraduate degree in Video Game Production and Digital Entertainment at the Universidad Nacional de Rafaela.²²⁴

Nicolas Borromeo is a technical expert and video game development instructor in the University *Tecnicatura* Program at the Universidad Argentina de la Empresa (Argentine University of the Firm). This degree program was launched six years ago, responding, according to Borromeo, “to the great potential of video games to open a diverse set of job opportunities in the future.” Borromeo himself stands out as a game designer in charge of creating the gaming structure and the conceptual development of video games, anchored on their contents (characters, script, motivations and challenges) and mechanics (gameplay). He is the one who elaborates the documents used as guides for the production, which actually makes him a type of video game director. To write a production guide, he must have a solid cultural base, and know something of psychology, history and communication to be able to transmit an engaging game experience. Although it is not

indispensable, it is an advantage to have both basic programming skills and artistic talent at the same time, to be able to interact with all the members of the team.

The profile of a successful video game designer can in fact be very similar to those of some of the leaders in the tech industry—a rare mixture of computer nerd, artist and communicator. Cases in point are Shigeru Miyamoto, creator of some of the world’s most famous video game franchises, including Mario, Donkey Kong and The Legend of Zelda, or Sid Meier, known mostly for the strategy video games, Civilization.

As in other technological industries, women have very little presence in the video game industry. In Argentina, for example, according to a survey by the Argentine Video Game Foundation (Fundación Argentina de Videojuegos, FUNDAV), only one in ten workers in the industry are women.²²⁵ In Mexico the percentage of women comes in at only 4%, according to the 2014 *Motor de Juegos* Report.²²⁶ One of the major challenges for the future of the video game industry will be to attract and facilitate the professional development of women. This is true, even though almost as many women, especially adult women, play video games as men.

The future of the video game industry is also linked to the development of new technologies, such as virtual and augmented reality, a technology which the video game industry has been betting on for decades. The massive success of PokemonGO introduced millions of persons to the potential of these two realities. According to Indeed.com, job searches in virtual or augmented reality increased by 400% between 2014 and 2017, while job searches for personnel experienced in virtual or augmented reality video games increased by 1,500%. Many of these jobs can be found in video game firms but some tech firms, such as Facebook, Microsoft and Sony, have now begun to experiment with virtual and augmented reality in a numerous amount of

²²³ LinkedIn. (2018). “Study:Video games causing spike in music composer employment”,LinkedIn, April 2018. Available at: www.geekwire.com/2013/study-video-games-causing-spike-music-composer-employment/

²²⁴ Información surgida de una búsqueda en: <https://www.buscouniversidad.com.ar/> and <https://www.cursosdefacultades.com.br/>

²²⁵ Available at: <http://www.telam.com.ar/notas/201612/174804-industria-videojuegos-argentina-desarrolladores.html>

²²⁶ Available at: <https://es.slideshare.net/gonzalophil/motor-de-juegosnet-reporte-2014>

applications both in and outside of entertainment.²²⁷

On the other hand there has been an increase in the video game industry's demand for data analysts and experts in artificial intelligence, both to improve game experience and diversify sources of income.²²⁸ At the same time, video games have become a very efficient way to train artificial intelligence software. For example, in autonomous vehicles, the use of virtual driving games may be a safe and effective way to train the artificial intelligence software for these types of automobiles.²²⁹

Playing games might even be a lucrative profession. Esports, or electronic sports have become on the fastest growing spectator sports in the world and it is a trend that promises to have the greatest impact on the industry in the coming years. According to estimates by Goldman Sachs, esports will reach a global audience of 300 million by 2022, a figure close to that of NFL Football in the US. In Asia, some esports stadiums have hosted some 50,000 persons and electronics sports stars compete for million dollar prizes.²³⁰

In this sense, video games offer an attractive and dynamic career opportunity that combines knowledge of programming, data analysis and new technologies with creative and artistic tasks. This makes it a versatile

profession to adapt to the expected changes in the labor market over the upcoming decades. It is also a profession that fits in perfectly with the key role of entrepreneurship in a regional market full of small and one-person video game companies.

Video Games as a Tool for Future Jobs

The second way that video games may relate to future jobs is their potential for forming knowledge and skills. Future workers as well as current college students need to be well-equipped and motivated to train for and specialize in occupations less threatened by automation. Video games can play a role in this necessity.

The use of video games as a teaching tool is not new. The Oregon Trail, developed in the 1970s taught generations of youth in the US about the difficulties of pioneer life. Math Blaster, launched for the first time in 1983, combined a type of arcade game with math exercises. The so-called "serious" or educational games can be very useful for transmitting new knowledge, from language, mathematics and science at school to foreign language for adults. They can also be safe and inexpensive training tools for medical students and airplane pilots.²³¹⁻²³²⁻²³³

²²⁷ Available at: <http://blog.indeed.com/2017/01/10/video-game-labor-snapshot/>

²²⁸ Rands. (2018). How big data is disrupting the gaming industry, CIO, January 2018. Available at: <https://www.cio.com/article/3251172/big-data/how-big-data-is-disruptingthe-gaming-industry.html>

²²⁹ ITU News. (2018). How video games can help Artificial Intelligence deliver real-world impact, ITU News, Emerging Trends, August 2018. Available at: <https://news.itu.int/video-games-artificial-intelligence>

²³⁰ Goldman Sachs. (2018). eSports: From Wild West to Mainstream, Goldman Sachs, Equity Research, October 2018. Available at: <https://www.goldmansachs.com/insights/pages/infographics/esports/report.pdf>

²³¹ National Research Council. (2011). Learning Science Through Computer Games and Simulations, Committee on Science Learning, The National Academies Press. Available at: <https://www.ics.uci.edu/~wscacchi/GameLab/Recommended%20Readings/Learning-Science-Games-2011.pdf>

²³² Thai, Lowenstein, Ching & Rejeski. (2009). Game Changer: Investing in Digital Play to Advance Children's Learning and Health, The Joan GanzCooney Center at Sesame Workshop. Available at: http://www.joanganzcooneycenter.org/wp-content/uploads/2010/03/game_changer_final_1_.pdf

²³³ Wong, Shen, Nocera, Carriazo, Tang, Bugga et al. (2007). Serious Video Game Effectiveness, Proceedings of the international conference on Advances in computer entertainment technology, pp.49-55. Available at: https://www.buffalo.edu/content/dam/cas/communication/files/Wang_ConferenceProceeding1_Wong_et al_Metalloman2009.pdf

Children and the generation which is now entering high school and college have grown up with digital technology, video games, animation and social networks. It therefore makes sense to use video games and simulations for skill training. They provide an effective and attractive way to teach by means of virtual and interactive environments²³⁴.

The more interesting aspect, however, is not only about games that are designed to acquire knowledge. Rather, psychologists and neuro-scientists are investigating the effects of a limited and prudent use of video games, even including hit commercial action games, on cognitive skills and improving information processing.

A team from the University of California, San Francisco demonstrated how a scientifically well-designed game, NeuroRacer, was able to increase the skill of multitasking in elderly persons, close to that of a 20 year old. The participants also experienced an improvement in operational memory and attention span, which lasted for at least six months after the first game.²³⁵

In a series of studies, Bavelier, from the University of Rochester, together with other scientists discovered extensive cognitive benefits associated with simple commercial games. For example, Bavelier and his team proved verified that the moderate

use, between five and fifteen hours per week of action video games boosted improvements both in vision and the ability to distinguish details in a cluttered setting. Furthermore, these players seem to be better at following multiple objects on computerized tests and on average are better at multitasking. This contradicts the generalized perception that video games decrease attention spans.²³⁶⁻²³⁷⁻²³⁸⁻²³⁹.

In another study, Green and Bavelier (2003) evaluated the capacity of a group of participants to mentally manipulate 3D figures.²⁴⁰ It is a difficult task that tests spatial cognition, an essential skill for many mathematics and engineering applications. After the participants played 10 hours of video games, in segments of 40 minutes each for a period of two weeks, the performance improved significantly and the improvement were still measurable five months later.

According to some researchers,²⁴¹ games could teach players to learn. Specifically, players do not necessarily perform better when confronting a new task, but they show an improved cognitive plasticity and a more pronounced learning curve in comparison to non-players, at least for certain motor and perception skills.

Beyond their potential for increasing cognitive and learning capabilities,

²³⁴ Proctor & Justice. (2014). Teaching Soft Skills with Games and Simulations, Conference Paper, AECT, Vol. 37 (2). Available at: https://members.aect.org/pdf/Proceedings/proceedings14/2014i/14_23.pdf

²³⁵ Anguera, Boccanfuso, Rintoul, Al-Hashimi, Faraji, Janowich et al. (2013). Video game training enhances cognitive control in older adults, *Nature*, vol. 501, pp. 97-101, September 2013. Available at: https://www.nmoggin.org/wp-content/uploads/2016/03/Nature_2013-Video-game-training-enhances-cognitive-control-in-older-adults.pdf

²³⁶ Green & Bavelier. (2015). Action video game training for cognitive enhancement. *Current Opinion in Behavioral Sciences*, vol. 4, August 2015, pp.103-108.

²³⁷ Glass, Maddox & Love. (2013). Real-Time Strategy Game Training: Emergence of Cognitive Flexibility Trait", *PLoS ONE* 8(8): e70350. Available at: <https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0070350&type=printable>

²³⁸ Stroud & Whitbourne. (2015). Casual Video Games as Training Tools for Attentional Processes in Everyday Life, *Cyberpsychology Behavior and Social Networking*, Nov. 18(11): 654-660.

²³⁹ Li, Polat, Makous & Bavelier. (2009). Enhancing the contrast sensitivity function through action video game training, *Nature Neuroscience*, vol. 12, pp. 549-551.

²⁴⁰ Green & Bavelier. (2003). Action video game modifies visual selective attention", *Nature*, vol 423, pp. 534-537.

²⁴¹ Bavelier, Green, Pouget & Schrater. (2012). Brain Plasticity Through the Life Span: Learning to Learn and Action Video Games. *Annual Review of Neuroscience*, 35(1), p.p.391-416.

video games have also shown themselves to be useful tools for developing soft skills, such as creativity, problem solving, social interaction, leadership and teamwork, all of which are skills that play important roles both in schools and the workplace,²⁴² and are increasingly more valued by employers. Since it is unlikely that these types of abilities will become automated, it is quite certain that these soft skills will become more and more relevant for the jobs of the future.²⁴³⁻²⁴⁴⁻²⁴⁵⁻²⁴⁶

In fact, other researchers assure us that “by 2030, workers will spend double the time resolving problems and 41% more time in tasks involving critical thinking and reasoning.²⁴⁷ They will use verbal communication and interpersonal skills 17% more frequently per week and will need to develop a stronger entrepreneurial mentality.” The growing demand for soft and entrepreneurial skills have already become more apparent in several surveys applied to firms.

²⁴² Kyllonen. (2013). Soft Skills for the Workplace. *Change: The Magazine of Higher Learning*, vol. 45 (6), pp. 16-23.

²⁴³ Humburg, Van der Velden & Verhagen. (2013). The Employability of Higher Education Graduates: The Employer’s Perspective, Comisión Europea, Jan. 2013. Available at: https://www.researchgate.net/publication/265086055_The_Employability_of_Higher_Education_Graduates_The_Employer’s_Perspective

²⁴⁴ Heckman & Kautz. (2013). Fostering and Measuring Skills: Interventions That Improve Character and Cognition, NBER Working Paper No. 19656, Nov. 2013. Available at: <https://www.nber.org/papers/w19656>

²⁴⁵ McKinsey. (2018). Skillshift: Automation and the future of the workforce, Discussion Paper, McKinsey Global Institute, mayo 2018. Available at: <https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Future%20of%20Organizations/Skill%20Shift%20Automation%20and%20the%20future%20of%20the%20workforce/MGI-Skill-Shift-Automation-and-future-of-the-workforce-May-2018.ashx>

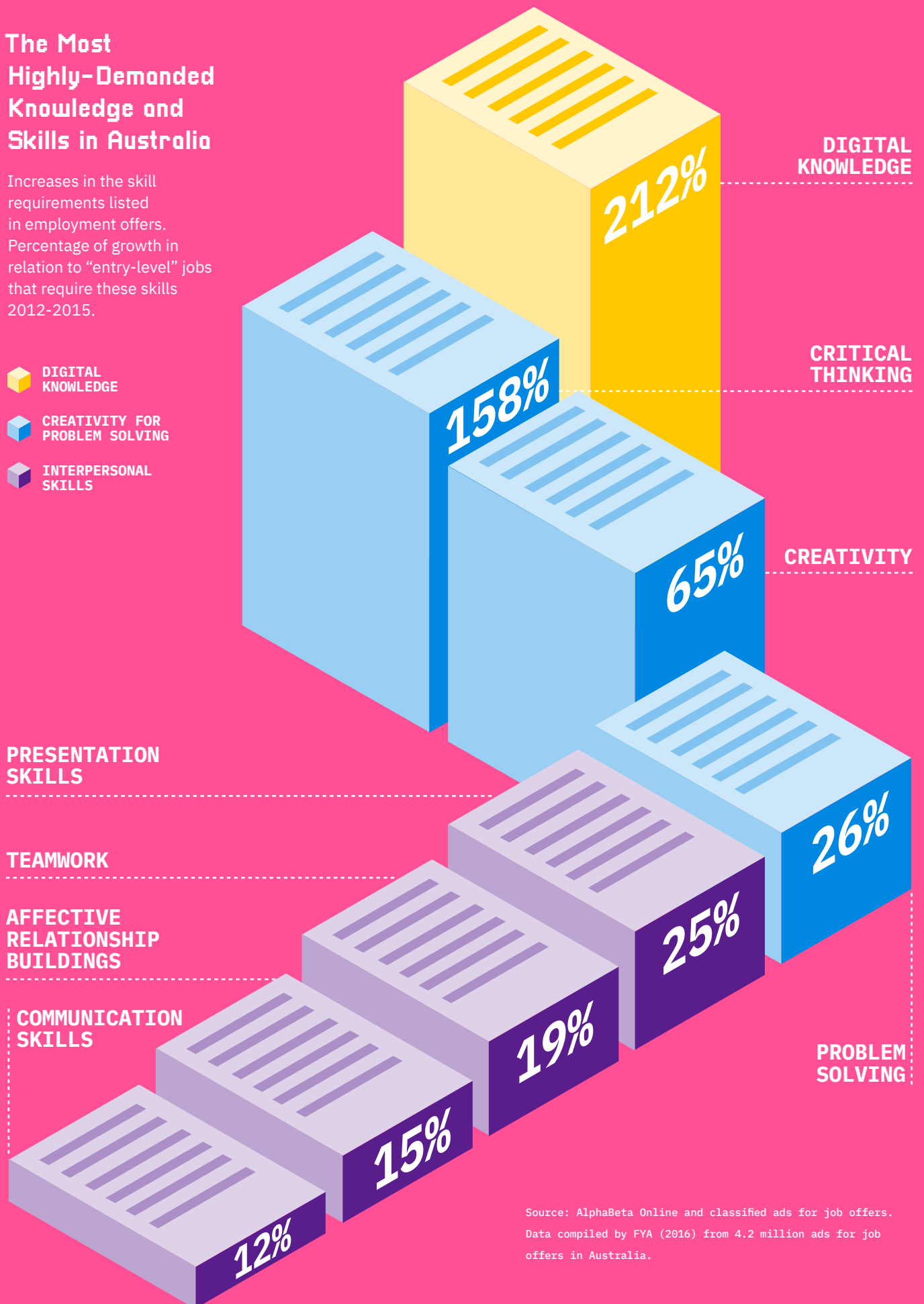
²⁴⁶ Microsoft. (2018). The class of 2030 and life-ready learning: The technology imperative. A summary report, Microsoft. Available at: https://education.minecraft.net/wp-content/uploads/13679_EDU_Thought_Leadership_Summary_revisions_5.10.18.pdf

²⁴⁷ Pounder y Liu. (2018). Nuevas ocupaciones. *Algoritmo: día: Inteligencia Artificial para una integración predictiva e inclusiva de América Latina*, INTAL-BID, Integración y Comercio, vol. 22 (44). Available at: <https://publications.iadb.org/handle/11319/9080?locale-attribute=es&>

The Most Highly-Demanded Knowledge and Skills in Australia

Increases in the skill requirements listed in employment offers. Percentage of growth in relation to "entry-level" jobs that require these skills 2012-2015.

-  **DIGITAL KNOWLEDGE**
-  **CREATIVITY FOR PROBLEM SOLVING**
-  **INTERPERSONAL SKILLS**

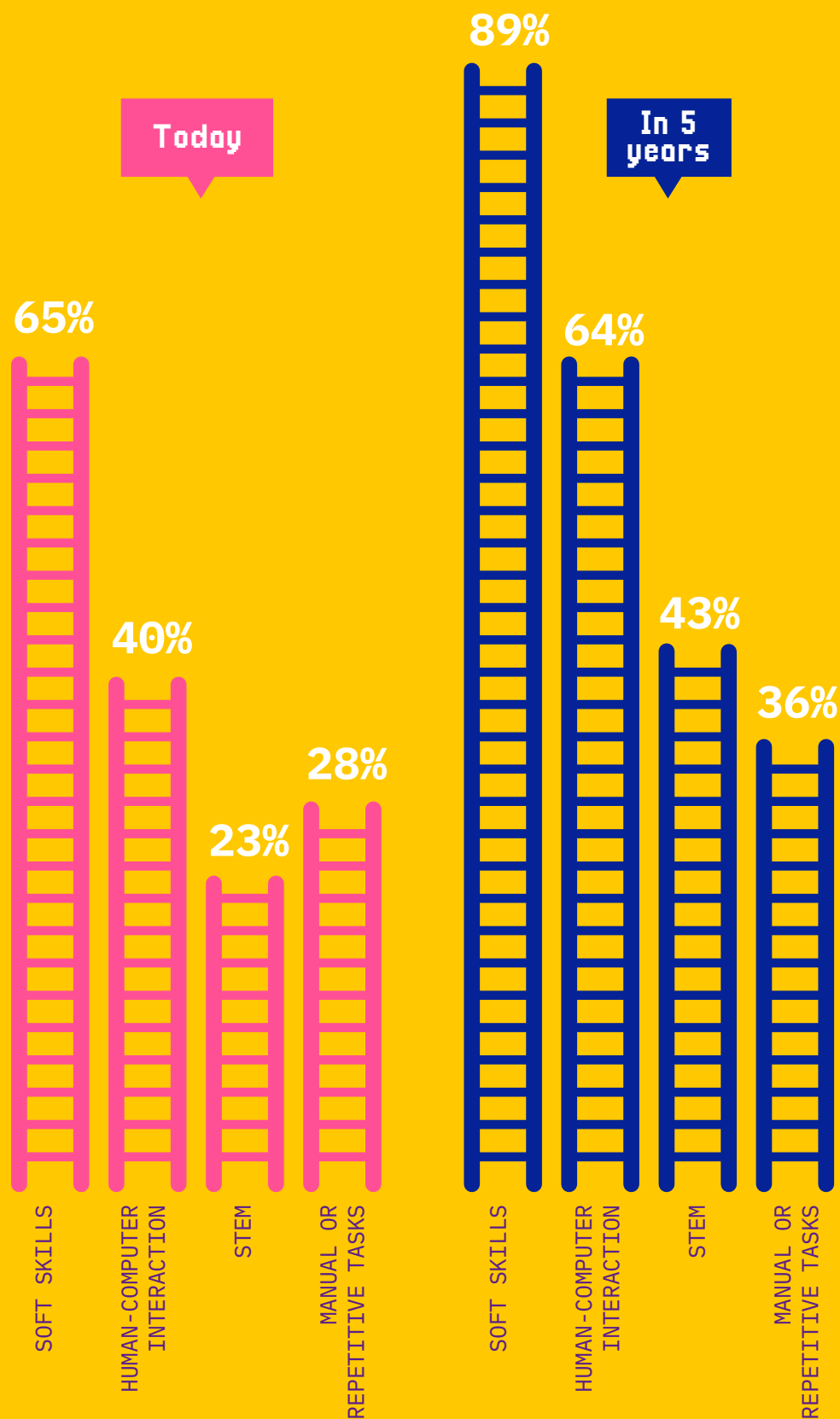


Source: AlphaBeta Online and classified ads for job offers.
Data compiled by FYA (2016) from 4.2 million ads for job offers in Australia.

Demand for Skills in Argentina

A survey carried out in 2018 in Argentine industrial firms. Percentage of companies that consider each skill as very important, or important for their employees, today and in 5 years.

Source: Encuesta CIPPEC-INTAL-UIA, 2018



In this context, some researchers²⁴⁸ found a correlation between a greater use of video games by 12 year olds and greater creativity in tasks such as drawing and story writing, irregardless of gender, ethnicity of type of game played. In contrast, the study showed that there was no correlation between creativity and the use of cell phones, internet, and computers (that weren't for video games).

Likewise, other researchers²⁴⁹ have pointed out that video game use is not only linked to greater intellectual capacity, but also to better interpersonal skills. In particular they noted fewer problems among peers and less propensity to prosocial deficits.

Contrary to general perceptions, video games are not a solitary activity and socially they are more interactive than ever before. More and more persons are playing online with friends, family members and strangers, crossing vast geographical distances, blurring not only cultural boundaries but also age and generational gaps, socio-economic differences and language barriers.²⁵⁰

A study undertaken in 2015 by the Pew Research Center, indicated that 83% of adolescents in the US play with others in person and 75% online. Nearly eight out of every ten adolescents who play online (78%) say that they feel the most connected to the friends who play video games with them. Furthermore, video games

have become a medium for making new friends: more than half have made new friends online, and a third of them (36%) say that they met new friends while playing video games. This is especially true for males: among those who have made friends online, 57% have done so when playing video games on line, (compared to only 13% of girls). At the same time, nearly a fourth (23%) of adolescents reported that they would give a new friend their gamer name as contact information.²⁵¹

Barr, in 2017, found significant positive effects of video games on soft skills, even among students of higher education.²⁵² The study registered a significant improvement in the average score on the communication, adaptability and inventiveness scales for a group of university students who used specific video games under controlled conditions for a period of eight weeks²⁵³. In line with this perception, in 2011, the White House launched the National STEM Video Game Challenge.²⁵⁴ This contest highlighted the role of video games in teaching school age children to learn skills in science, technology, engineering and mathematics in an independent and innovative way, while at the same time strengthening skills such as creativity, systemic reasoning, problem solving and teamwork.

Recognizing the potential of video games in education, there are schools all over the world that have begun to

²⁴⁸ Jackson, Witt, Games, Fitzgerald, Von Eye & Zhao. (2011). Information technology use and creativity: Findings from the Children and Technology Project, *Computers in Human Behavior*, vol. 28, pp. 370-376. Available at: <https://www.sciencedirect.com/science/article/pii/S0747563211002147?via%3Dihub>

²⁴⁹ Kovess-Masfety, Keyes, Hamilton et al. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children? *Social Psychiatry and Psychiatric Epidemiology*, vol.51 (3), pp. 349-357.

²⁵⁰ Granic, Lobel y Engels. (2014). The benefits of playing video games. *The American Psychologist*, vol. 69 (1), pp.66-78. Available at: <https://www.apa.org/pubs/journals/releases/amp-a0034857.pdf>

²⁵¹ Lenhart, Smith, Anderson, Duggan y Perrin. (2015). Chapter 3: Video Games Are Key Elements in Friendships for Many Boys. *Teens, Technology and Friendships*, Pew Research Center, August 2015. Available at: <https://www.pewinternet.org/2015/08/06/chapter-3-video-games-are-key-elements-in-friendships-for-many-boys/>

²⁵² Barr. (2017). Video games can develop graduate skills in higher education students: A randomised trial. *Computers & Education*, vol. 113, pp. 86-97.

²⁵³ Fabricatore & López. (2013). Fostering Creativity Through Educational Video Game Development Projects: A Study of Contextual and Task Characteristics. *Creativity Research Journal*, vol.25(4), pp.418-425.

²⁵⁴ Available at: <http://stemchallenge.org/about/why-games/>

incorporate them into their official curricular.²⁵⁵ In fact, large video game companies create specific content for this new growing market. This is the case of Minecraft Education Edition, by Microsoft,²⁵⁶ and Assassin's Creed: Discovery Tour of Ancient Egypt, by Ubisoft,²⁵⁷ based on hit commercial games, created especially for use in schools.

Finally, video games could even help reduce the gender gap in the development of skills in science, technology, engineering and mathematics. In Argentina, for example, only 33% of the persons

who study this type of key degrees for future jobs are women²⁵⁸ and only 30% of workers with these skills in the manufacturing industry are women.²⁵⁹ Hosein suggests a strong correlation between the use of video games by girls and the probability of choosing a career in science, technology, engineering or mathematics. This correlation does not hold among males.²⁶⁰ According to a recent study carried out in the UK, girls that spend more than nine hours a week playing video games were three times as likely to study a degree in the STEM areas, independently of the type of video game they preferred to play.

²⁵⁵ Takeuchi y Vaala. (2014). Level up learning: A national survey on teaching with digital games. New York: The Joan Ganz Cooney Center at Sesame Workshop. Available at: https://education.minecraft.net/wp-content/uploads/jgcc_leveluplearning_final.pdf

²⁵⁶ Available at: <https://education.minecraft.net/>

²⁵⁷ Available at: <https://www.nytimes.com/2018/05/16/arts/assassins-creed-origins-education.html>

²⁵⁸ Basco y Lavena. (2019). Mujeres en ciencia y tecnología: hacia una vivienda equitativa. Nota técnica, Banco Interamericano de Desarrollo (forthcoming).

²⁵⁹ Based on the survey CIPPEC-INTAL-UIA, 2018.

²⁶⁰ Hosein. (2019). Girls' video gaming behaviour and undergraduate degree selection: a secondary data analysis approach. Computers in Human Behavior, vol. 91, Feb. 2019, pp. 226-235.

Why Should Girls be Encouraged to Play Video Games?

► According to a new study published by the University of Surrey's Computers in Human Behavior Magazine, girls who play video games have a higher probability of obtaining a degree in the PSTEM areas (Physics, Science, Technology, Engineering and Mathematics).

► Girls between the ages of 13 and 14 years that identify themselves as avid gamers were three times more likely to obtain a PSTEM degree than girls who did not play video games.

► The intensity of girls' games (the time they spend playing) is positively correlated with the probability of obtaining a PSTEM degree.

► The study recommended that teachers and parents who detect that a girl shows an interest in video games can motivate them to explore careers in PSTEM by taking them to attend lectures by game experts.

Source: Anesa Hosein. Girls' video gaming behaviour and undergraduate degree selection: A secondary data analysis approach. Computers in Human Behavior, 2019; 91: 226 DOI: 10.1016/j.chb.2018.10.001

Even though video games take up a significant amount of time in the life of Latin American children and young people,²⁶¹⁻²⁶²⁻²⁶³ there is still little data in the region on how they are used and scarce scientific analysis regarding their impact. The small amount of existing literature focuses on the negative impacts related to addictive or violent behavior. Without ignoring the risks stemming from the inadequate use of video games, which are real and of great concern, there is growing evidence on a global level that they have potential for teaching relevant skills for future jobs. Although this does not mean that video games are necessarily more effective in improving cognition than other leisure activities such as reading, playing outdoors or socializing in other contexts, the reality is that video games are a part of life for a significant percentage of Latin Americans, especially among the youngest. It is therefore very important to carry out a deeper analysis in the region on how we can minimize the risks and maximize the educational features of video games.²⁶⁴

Video Games as a Source of Future Productivity

The third and final facet of how video games relate to future jobs deals with the use of video games in the workplace. Unfortunately, the image that comes to mind is that of youth who neither studies nor works who spends hours in front of a console instead of going out to look for a job. Aguiar and other researchers in 2017 found evidence that this image can be quite correct.²⁶⁵ The improvements in video games in the last decades, which have increased the marginal value of leisure, could explain at least half of the reduction in the employment rate among US young people in the US between 2000 and 2015.

This is not very encouraging, especially in a region with high indices of youth unemployment. Nevertheless, it is not video games that are to blame. Rather the real problem and challenge we face is that the labor market has failed to provide valuable opportunities that motivate young people to go to work.²⁶⁶ Currently,

²⁶¹ Basco y Carballo. (2017). Compás millennial: la generación Y en la era de la integración 4.0. Nota Técnica n. IDB-TN-1283, Instituto para la Integración de América Latina y el Caribe (INTAL), Sector de Integración y Comercio (INT), IDB. Available at: <https://webimages.iadb.org/publications/spanish/document/Comp%C3%A1s-Millennial-La-generaci%C3%B3n-Y-en-la-era-de-la-integraci%C3%B3n-40.pdf>

²⁶² SINCA. (2017). Encuesta Nacional de Consumos Culturales 2017. Sistema de Información Cultural de Argentina, Ministerio de Cultura de Argentina. Available at: <https://microscopias.com/contenidos/Encuesta-Consumos-Culturales2017.pdf>

²⁶³ OCDE. (2017). PISA 2015 Results: Students' Well-Being. Program for International Student Assessment, OECD.

²⁶⁴ Adkins. (2014). How Video Games and Digital Literacy Impacts Student Achievement and Development: An Analysis of Synergistic Integration. En Searson & Ochoa (Eds.), Proceedings of SITE 2014–Society for Information Technology & Teacher Education International Conference, AACE.

²⁶⁵ Aguiar, Bils, Kofi Charles & Men. (2017). Leisure Luxuries and the Labor Supply of Young Men. NBER Working Paper No. 23552. Available at: <https://www.nber.org/papers/w23552>

²⁶⁶ ILO. (2017). Labour Overview of Latin America and the Caribbean. ILO, December 2017. Available at: https://www.ilo.org/americas/publicaciones/WCMS_618120/lang--en/index.htm

video games, simulations and virtual reality instruments are increasingly being used in companies to generate positive impacts in employees and the workplace dynamics.

In the past few years, video games and digital simulations have found a place in businesses as both entertainment and as a means to evaluate employees. They capture attention and simulate professional environments at a very low cost.²⁶⁷⁻²⁶⁸ For example, eSmart was a tool developed for by Nintendo for McDonalds to enable them to half the training time for the half-time employees in their restaurants in Japan.²⁶⁹ Deloitte integrated video games into their Online Leadership Academy in 2016. According to this firm, in three months, the number of users that returned to the site on a daily basis increased by 46.6%.²⁷⁰ Even the US Army experimented with serious video games to train soldiers to better understand foreign cultures.²⁷¹

Even though video games “compete” with other forms of corporate entertainment, such as e-learning and traditional teaching, which are generally cheaper, as long as companies see the benefits of video games on users’ and employees’ levels of commitment, the quantity and variety of corporate learning

applications will continue to grow.²⁷²

It can also be seen that video games have a potential for evaluating work skills. The firm Pymetrics,²⁷³ for example, uses a series of 30-minute videos to estimate the probability that a candidate will be successful in a certain position. LinkedIn, Unilever, Accenture and Tesla are just some of the large companies that have explored this personnel selection tool which might end up replacing the more traditional method of selecting employees by examining their CVs. The L’Oreal Group is one of the employers with the greatest visibility in using video games as recruitment tools, with the Business game Reveal where candidates simulate being an employee that begins to work in a firm and accompanies his boss all over the world to develop a new product. My Marriott Hotel, developed by Marriott International, allows the firm to evaluate candidates for some positions, by confronting them with virtual challenges related to hospitality tasks. Another example is the big data firm, Umbel, which encourages its candidates for employment to play a video game called Umbelmanía, which tests their coding skills to advance both in the game and in their own interview process. Games in these cases not only make the selection process more efficient for the company,

²⁶⁷ Kenworthy y Wong. (2005). Developing managerial effectiveness: Assessing and comparing the impact of development programmes using a management simulation or a management game. *Developments in Business Simulations and Experiential Learning*, vol. 32, 2005. Available at: <https://journals.tdl.org/absel/index.php/absel/article/view/576/545>

²⁶⁸ Baldauf & Stair. (2010). *Succeeding with Technology: Computer concepts for your life*. [4ta ed.]. Course Technology, Cengage Learning.

²⁶⁹ Fortim, Cavaleiro, Grando & Sakuda. (2014). Relatório deapoio: Jogos digitais para formação profissional. Grupo de Estudos e Desenvolvimento da Indústria de Games, February 2014. Available at: <https://drive.google.com/file/d/0ByQwQiUajB3mUy1VVWdMaThrekJxbFVvVWJfVnJ1Wl3PREtR/view>

²⁷⁰ Available at: <https://www.techrepublic.com/blog/big-data-analytics/gamification-data-can-drive-roi/>

²⁷¹ Deloitte. (2016). *Gaming away the leadership gap: Linking gamification and behavioral science to transform leadership development*. Deloitte University Press. Available at: <https://www2.deloitte.com/us/en/insights/focus/behavioral-economics/gaming-away-leadership-gap-developing-leaders.html>

²⁷² Adkins. (2013). *The 2012-2017 Worldwide Game-based Learning and Simulation-based Markets: Key Findings from Recent Ambient Insight Research*. Serious Play Conference 2013, Ambient Insight. Available at: https://marketbrief.edweek.org/wp-content/uploads/2013/09/AmbientInsight_SeriousPlay2013_WW_GameBasedLearning_Market3.pdf

²⁷³ Available at: <https://www.inc.com/kevin-j-ryan/pymetrics-replacing-resumes-with-brain-games.html>

they also transform the evaluation process into a more entertaining activity for the candidates.²⁷⁴

But what about using games for entertainment in the workplace? In contrast to preconceived notions, a recent study showed that playing games for a brief time at work can reduce stress and restore capabilities in employees. Rupp and collaborators studied the effects of three different types of work breaks (a passive rest, a relaxation activity and an informal video game) on persons, in particular on their mood, stress levels, degrees of commitment to the job and their cognitive performance. The results showed that the participants who played video games displayed greater commitment and felt refreshed more quickly than those who engaged in a relaxation activity. Those who took a passive rest showed negative impacts.²⁷⁵

It is not surprising that companies like LinkedIn, Google and Facebook encourage their employees to balance work with games—and this trend not only applies to technological firms. Many companies understand that it is important to offer their employees a relaxed environment that is conducive to creativity. Video games are an excellent opportunity for bringing this about. Furthermore, these firms understand that like any other recreational group activity, video games can improve the relations among employees and reinforce positive business values such as team work and solidarity.²⁷⁶⁻²⁷⁷

These personnel practices are still rare, especially in Latin America, where the lack of knowledge about

the potential benefits of video games comes together with the traditional business culture, which is reluctant to change and distrusts employees and their capacity to independently and efficiently administer their work time.²⁷⁸

Although video games might not be the ideal solution for all business cultures and work environments, they are an added factor when considering developing modern work conditions that will be suitable for the era of digital technology and the expectations of future generations of workers.

To summarize, there are at least three ways that video games can facilitate the creation of future jobs in the region: by creating labor opportunities and techno-creative entrepreneurship; by assisting in the training of future employees; and by having an impact on the development of more stimulating labor practices. The first step is to overcome the idea that video games cause brains to atrophy. The world of video game development is a universe of new technologies, full of talent and entrepreneurial initiative. Video games can help make human beings more intelligent, creative, sociable, and prepared for the future jobs: of course, not just any video game, used not in just any manner, nor in just any type of context. The key lies in the responsible and didactic use that is oriented towards the needs of each society and person. For this to happen, we need to know where we stand and better understand how we can best utilize video games in the region. In other words, we have to start taking video games seriously.

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- ²⁷⁴ Available at: <https://www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/games-applicants-recruiting.aspx>
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- ²⁷⁸ Salazar Concha & Sanhueza Burgos. (2017). Análisis cualitativo sobre teletrabajo en Latinoamérica. *Colombia Digital*, September 2017. Available at: <https://colombiadigital.net/herramientas/nuestras-publicaciones/organizaciones-y-competitividad/item/9855-analisis-cualitativo-sobre-teletrabajo-en-latino-america.html>



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Acknowledgments

The Inter-American Development Bank would like to thank all the video game firms and the different participants who offered their stories and recommendations that made it possible to elaborate this report. We would especially like to thank Bárbara Aranda, who coordinated this project at the beginning, Micaela Mantenga, Adriana Pignolo, Federico Romero, Franco Ponzano, Franco Gustin, Lucía Castillo Prado, Fernando Balaguer, Agustín Kelly, Andro Miralrío, Carlos Arturo Reyes, Eduardo Rivera, José Manuel Muñiz Herrera, Caroline R. Levington, Laura López Castilla and Carlos Torre, for their specific knowledge on the sector. Ana Inés Basco and Carlos Decap, who gave their support during the production of the document.



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