



2022

BRAZIL:
GAMES INDUSTRY
REPORT

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Homo Ludens
Research and Consulting



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1



INTRODUCTION

1.1. About the Survey and structure of this Report

The Brazil: Game Industry Report 2022 was commissioned by the Brazil Games Export Program, a partnership between the Brazilian Game Companies Association (Abragames) and the Brazilian Trade and Investment Promotion Agency (ApexBrasil). This Survey was conducted by Homo Ludens Innovation and Knowledge. Its purpose is to prepare a comprehensive map showing the status of the games ecosystem in Brazil in 2020 and 2021, spotlighting its companies and the outlook for their development. Drawn up with mixed methods, it uses the following strategies: mapping, questionnaire, interviews, baseline data and literature review.

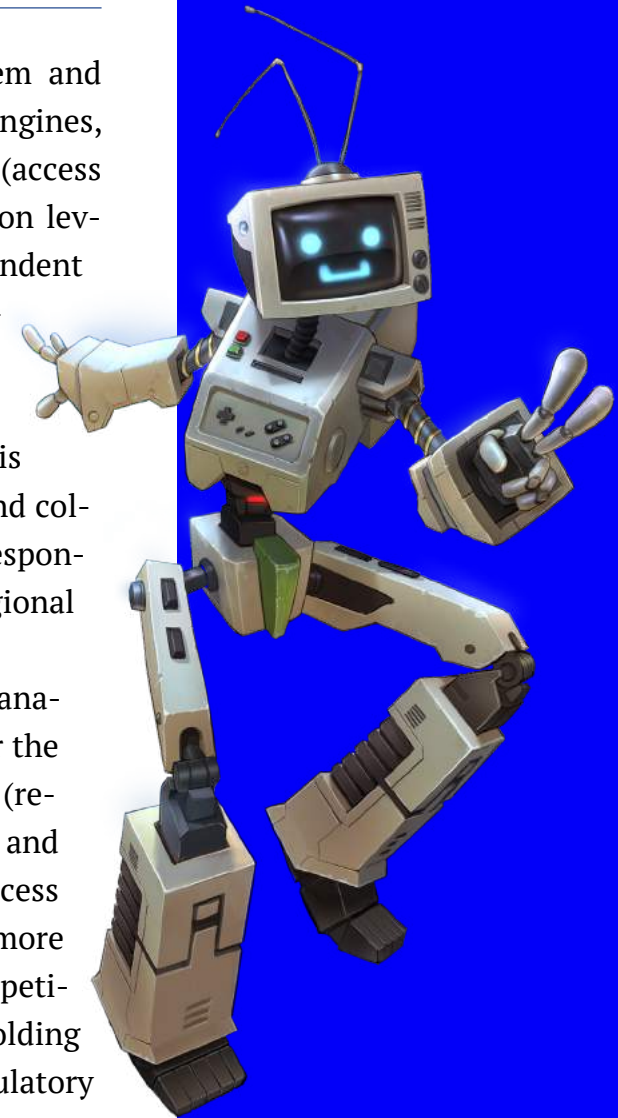
This Report is divided into five sections. The first section (Chapters 1 and 2) contextualizes Brazil as a local ecosystem, establishes its importance as a market, describes the presence of multinationals and outlines the history of Brazil's games industry.

The second section (Chapters 3 to 12) analyzes several aspects of developer profiles (structure, activities, services, years of operation and geographical distribution) and their output (games developed by type and platform, distribution, external development, and awards), together with aspects such

as staffing (work areas, employment system and diversity); technologies and services used (engines, software and services); internationalization (access to markets, maturity and internationalization levels); financial overviews (industry and respondent revenues, revenue by region, revenue sources and types of monetization and intellectual property); and funding (private funding, public funding and public policies). This section offers an overview of associations and collectives (mapped associations and survey respondents), and events (business, academic, regional and the general public).

The third section (Chapters 13 to 15) analyzes the current situation and prospects for the future: effects of the COVID-19 pandemic (remote work and other impacts); technology and market trends; and corporate challenges (access to funding, talent attraction and retention, more complex corporate structures, keener competition and the challenge of grabbing and holding attention; taxation, administrative and regulatory procedures).

The fourth section (Chapter 16) offers an over-





view of the other two groups of respondents: game development support firms and self-employed developers. The fifth section (Chapters 17 to 19) brings

the Report to an end, with closing remarks and a description of the survey method.

1. 2. The Game Industry

Games play important economic and social roles in today's society. Since the 1980s, their popularity has been rising steadily in a wide variety of age brackets, influencing behavior and grassroots culture: Cultural icons *Mario* and *Pokémon* have been worldwide favorites for generations, as examples of intellectual property assets launched in games and popularized through other media. In parallel to their entertainment value, the popularity of games has paved the way for their use in supporting education, healthcare, training and professional qualifications, as well as promoting well-being. Games have also become important vectors for socialization. An example is the metaverse. By expanding their use out to new frontiers, it turns games into interactive social platforms where gamers can engage with many other cultural elements, such as concerts, fashion shows, interactions with brands, etc. Innovations ushered in by recent blockchain technologies, non-

fungible tokens (NFTs) and the use of cryptocurrencies also promise to open up new forms of game monetization, such as Play-to-Earn (P2E) models whereby gamers are compensated for their performance.

The games industry now ranks second among different types of entertainment worldwide, behind only TV, and far outstripping movies and publishing (STATISTA, 2022). An example: the highest-grossing movie ever, *Avatar* has raked in USD 2.7 billion since its release; in contrast, *Grand Theft Auto V* is estimated to have earned USD 6 billion so far. Games have long progressed from being kids' stuff to part of everyone's daily life. Whether on cell phones, tablets or PCs, three out of four Brazilians (more precisely, 74.5% of the Brazilian population) play games regularly (PESQUISA GAME BRASIL 2022).

Game production is also distinguished by the ability to set up and expand companies, thus gener-



ating jobs and income. From major corporations like Nintendo, Sony and Sega (Japan), Microsoft, Electronic Arts and Roblox (USA), and Tencent (China), to established studios such as Ubisoft and Gameloft (France), Rovio and Supercell (Finland), to unicorns such as Dream Games (Turkiye) and Wildlife (Brazil), game production is creating new businesses and skilled jobs around the world. Furthermore, many technological developments, including hardware and software, graphic processors, wearables, Virtual Reality (VR), Augmented Reality (AR) and Extended Reality (XR) technologies, and the metaverses use games in their initial try-outs and test versions. Consequently, games are also fostering technological innovations that overflow into a wide variety of economic sectors.

Within this context of constant technological innovation, Brazilian studios have been noteworthy for their output of high-quality games that attract international attention. In 2017, Pernambuco-based Kokku began to provide artwork for AAA games, particularly *Horizon Zero Dawn*. In 2019, São Paulo-based Wildlife became the first Brazilian games unicorn, valued at USD 3 billion in 2020. Also working in São Paulo, ARVORE received the award for Best Immersive Experience at

the 2019 Venice Film Festival (a first for a Brazilian production), followed by the Primetime Emmy for Outstanding Innovation in 2020, awarded by the Academy of Television Arts & Sciences. In 2021, Brazil's first game distributed by Netflix (*Dominoes Café*) was developed by Gazeus in Rio de Janeiro. Starting off on a high note, 2022 saw Aquiris – based in Rio Grande do Sul State, that developed games like *Wonderbox* and *Horizon Chase* – absorbing an investment from Epic Games, the name behind *Fortnite* and the Unreal engine. In Paraná State, Oktagon (the developer of mobile games *Armies & Ants* and *Dungeon Battles*) was acquired by Fortis, a newly-created US company and publisher which also acquired another two international studios: Dopio Games and Metagame. In Pernambuco State, PUGA (which specializes in art production) was acquired by the Room 8 Group. Rogue Snail launched the first game exclusive to Netflix (*Relic Hunters: Rebels*). Another launch was Giga Gloob – Globo's new app with 800 hours of content, mainly videos and games for children).

According to the 2022 XDS Summit report, game developers and publishers have become increasingly aware, over the past two years, that Bra-





zil may be the most promising region for delivering this type of service. For US buyers ranking time

zones as important, Brazil's predominant time zone (GMT-3) may make it easier to do business.

1. 3. Brazil's Games Industry Ecosystem

The games industry may be seen as a global ecosystem, composed of several other overlapping ecosystems, which might be demarcated by a dominant company, geography, technology platform, etc. In this sense, the Brazilian ecosystem is part of the global ecosystem, with which it interacts in global value chains, sharing general attributes, but with local characteristics. It consists of: major studios (with or without an in-country presence); small and medium developers; self-employed developers;

studios for external development (third party services), specialized service providers (consultancy, game localization, testing and quality control firms, soundtrack producers, etc.); support companies (publishers, distributors, etc.); educational institutions providing professional training; investors; and business and professional associations. This survey strives to offer an overview of this ecosystem, with a particular focus on Brazilian game developers.



1. 4. Brazil as a Games Market

According to a Newzoo survey (2021), Brazil is the largest games market in Latin America, ranking twelfth worldwide by revenues. In 2021, the estimated revenues for this region reached USD 2.3 billion. The mobile market is the main segment, accounting for 47% of revenues, with PCs at 24%, and consoles

at 29%. With 94.7 million players, it ranks fifth by online population.

According to Pesquisa Game Brasil 2022, 51% of gamers over 16 years old are women and 49% are men. Split into major age brackets, 56.8% of this population is between 16 and 29 years old. The 30-



49 age bracket accounts for 36.6% of gamers. Finally, the over-50s total 6.5% of Brazilian gamers.

In terms of racial diversity among gamers, there are more self-declared White and mixed-race people in this community, accounting for 46.6% and 37.3%, respectively. Next, 12.1% of this community are Black, followed by self-declared Asian (2.1%), 0.8% indigenous and 0.3% other ethnicities (PESQUISA GAME BRASIL 2022).

Regarding the platforms they play on, smartphones represent up to 48.3% of their preferred platforms. Games and games consoles account for 20%, and computers 15.5%. Laptops follow PCs with 7.8%, while smart TVs (3.2%), tablets (2.0%), portable consoles (2.6%) and others (0.7%) are less significant (PESQUISA GAME BRASIL 2022).

On the three main games platforms, the fol-

lowing gamer profile aspects are noteworthy. For smartphones, gamers are mainly women (60.4%); casual gamers (70.7%) are between 20 and 24 years old (26.5%). Console gamers consist mainly of men (63.9%), with 53.9% of them self-rated as hardcore gamers; they are between 20 and 24 years old (22.8%).

PC gamers consist mainly of men (58.9%), and most (64.3%) self-rate as hardcore gamers; they are between 20 and 24 years old (27.8%) (PESQUISA GAME BRASIL 2022).



1.5. Multinationals in Brazil

Several multinational corporations in the games ecosystem are operating in Brazil, including Sony, Microsoft, Google, Tencent and Apple. Among game developers and publishers, Riot, Ubisoft, Garena, IGG and Blizzard, among others, have offices in

Brazil. At the moment, the country's only international development studio is Samsung.

Some multinationals run developer support programs in Brazil, including Meta (Facebook Gaming) and Google (Indie Games Accelerator, Change



the Game, among others). These partnerships are important for local developers, although their programs often have a broader scope, including software development and/or support for startups.

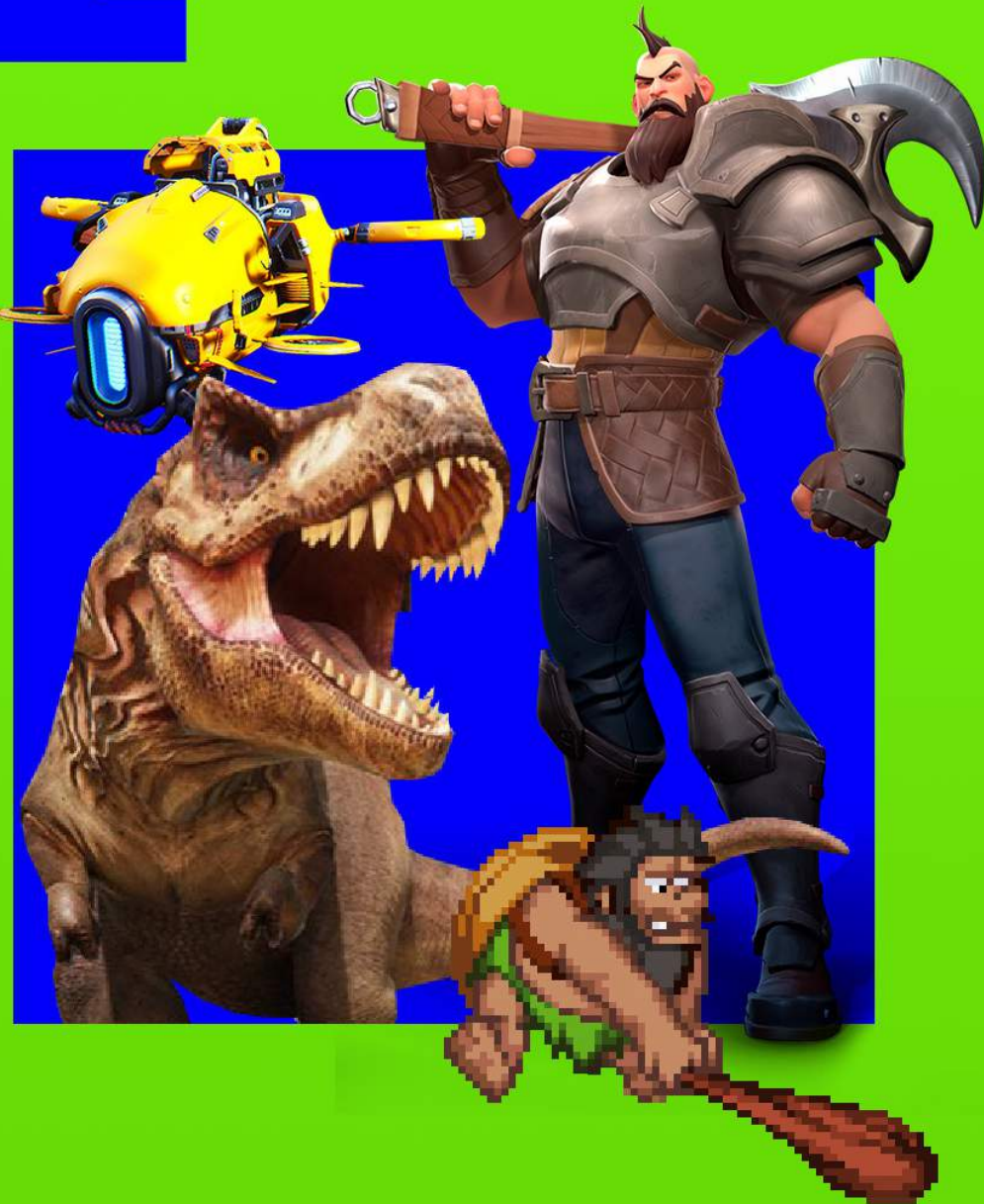
Another source of earnings is external development through rendering outsourced services, especially for international developers and publishers. According to the interviewed specialists, many firms are started up by former employees of major developers and publishers, with benefits for the local ecosystem. Despite not being full-time employees of these major corporations, external development allows Brazilian developers to learn the processes for running very complex projects, which would previously have been possible only through companies established in Brazil, like Kokku. It is clear that the participation of Brazilian companies in global value chains was boosted during the im-

plementation of the Brazil Games Export Program, with qualitative and quantitative improvements in the services rendered.

Finally, with the expansion of international remote work, many professionals began to work directly for companies in other countries. These professionals are thus experiencing two simultaneous realities: as employees of international companies, in decentralized remote teams; and as residents of Brazilian towns, connected to the local developer ecosystem.



2



HISTORY OF BRAZIL'S GAME INDUSTRY



The history of Brazil's games industry may be divided into five stages. They are based on technological advances and on industry maturity. The following overview is not intended to be exhaustive and is certainly not able to cover everything, but attempts to list some highlights of how Brazil's game production industry has firmed up over the years. It was adapted from Zambon (2022).

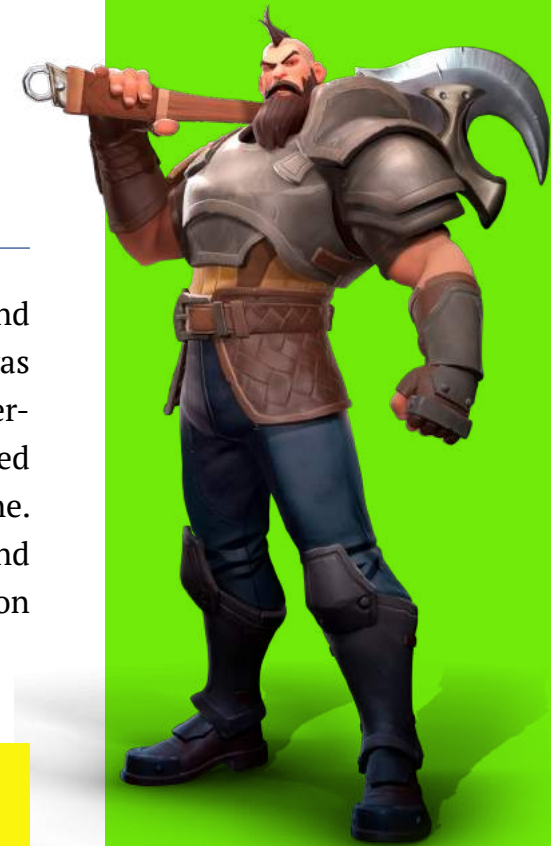


2.1. 1983 to 1992 – The Beginning: Brazilian Trail Blazers

The first known Brazilian commercial game was *Amazônia*, a text adventure created by Renato Degiovani and released in 1983. This game was distributed in the *MicroSistemas* magazine with the lines of code printed out for users to key in as they played. In this initial phase of the industry, individual developers and small groups were part of a rich community of game creators for MSX, ZX Spectrum and Apple II, and later for PCs with MS-DOS, distributed through magazines, cassette tapes and floppy disks. At that time, the market reserve policy imposed on Brazil by its military dictatorship (1964 to 1985) blocked legal imports of microcomputers and

games. This was an era of global console clones and officially sanctioned software piracy, as there was no way of importing or exporting games. Furthermore, game cartridges were smuggled in for cloned consoles fabricated in the Manaus Free Trade Zone. This first phase of the industry did not withstand the successive economic plans and hyperinflation of the 1980s and early 1990s.

■ **Notable Games:** *Amazônia* (TILT Online, 1983), *Aeroporto 83* (TILT Online, 1983).



2. 2. 1993 to 2001 – Professionalization: The CD-ROM Era

While the earliest games were developed largely by individual developers, cooperation began to emerge between development groups and companies targeting the still-embryonic CD-ROM game distribution market. In 1997, Southlogic's *Guimo* was Brazil's first documented game to be distributed internationally by Airsoft in Germany. *Outlive*, by Continuum, was the first Brazilian game distributed, in 2001, by a major publisher: Take-Two Interactive. The first Brazilian publisher was Brasoft, which began to license and distribute international games from LucasArts and Sierra Entertainment in Brazil

in 1990. Sold to the Pi Editora publishing house in 1998, it was known for releasing games based on TV Globo shows, such as *Big Brother Brazil* (2002) and *No Limite* (2002).

▲ **Notable Games:** *Enigma da Esfinge* (44 Bico Largo, 1996), *Guimo* (Southlogic Studios, 1997); *Incidente em Varginha* (Perceptum Informática, 1998); *Outlive* (Continuum Entertainment, 2000); *Show do Milhão* (SBT Multimídia, 2000).



2. 3. 2002 to 2010 – Coordination: Brazil's Game Industry Gears Up

This phase was characterized by efforts to coordinate Brazil's game industry. In 2002, GameNet – the Paraná State Entertainment Game Companies Network, organized the In2Game International Computer Games Technology and Innovation Conference, which was the first major get-together of businesses in its industry. That same year, the Brazil-

ian Computer Sciences Society (SBC) organized the Brazilian Workshop on Games and Entertainment (WJogos). This event was designed for researchers, programmers and game developers focused on computer science. In 2004, these merged into the I Brazilian Games and Entertainment Symposium (SBGames), which also launched the first Brazilian

Indie Games Festival. Finally, 2004 also saw the establishment of Atragames, whose initial mapping of this industry indicates that there were 55 games companies in Brazil that year.

Going back to 2003, this was the first time that games were specifically included on Brazil's political agenda, with this industry acknowledged by the Ministry of Culture, under then-Minister Gilberto Gil. In 2004, the first public tender announcement was issued specifically for the games industry, called *JogosBR*. Another tender was announced in 2005 and reissued in 2008 as *BRGames*. Among the games available at that time, *Trophy Hunter 2003* (released by Southlogic in 2002) was Brazil's first experience in creating a game on demand for the foreign market, commissioned by Infogames in the USA. As Internet access expanded steadily during the first decade of the XXI century, games on CD-ROMs remained expensive and hard to distribute. This led to a series of Brazilian games pursuing online multiplayer experiences. The first Brazilian MMO (Massively Multiplayer Online) on rEntendi. ecored was *Futsim*, released by Jynx Playware in 2003. The following year, a MMORPG (Massively Multiplayer Online Role-Playing Game) called *Erinia* was released by Ignis Games. Another outstanding Bra-

zilian game in this genre was *Taikodom*, released by Hoplon in 2008. 2009 saw the first acquisition of a Brazilian studio by an international publisher when Southlogic was acquired by Ubisoft. However, the Ubisoft Brazil studio was to close after less than two years in operation. During this decade, Brazil won a Bronze Lion at Cannes for *WeAther*, designed by gamedev Fabiano Onça for Greenpeace Brazil.

Brazil's first undergraduate courses in his field were set up around this time: a Bachelor's Degree in Game Design at Anhembí Morumbi (2003); a Higher Education Program in Games at Cruzeiro do Sul (2005); and two Higher Education Programs in Games Technology, one at the Pontifical Catholic University (PUC) in São Paulo (2006) and the other one at the Pontifical Catholic University (PUC) in Minas Gerais (2006), to name just a few.

There was a boom in Brazil's games devel-



opment for social (Orkut) and mobile platforms, spurred by the appearance of the AppStore business model, which made publishing games easier and more transparent, as well as the use of Flash, which was subsequently discontinued. Many small adver-games were developed around this time.

◆ **Notable Games:** *Trophy Hunter 2003* (Southlogic Studios, 2002); *Futsim* (Iynx Playware, 2003); *Erinia* (Ignis Games, 2004); *Taikodom* (Hoplon, 2008).



2. 4. 2011 to 2017 – The Rise of the Brazilian Gaming Ecosystem: Open Doors to a Global Industry

During this decade, industry revenues doubled in size. Together with the launch of smartphones, the popularization of game development engines (such as Unity), easier internet access for the population in general, the advent of game distribution and the arrival of the first waves of qualified professionals in this field generated a new business scenario in this industry. The indie upsurge paved the

way for the arrival of talented new game developers. On the other hand, many ventures failed to survive, either because their operations changed completely or simply because their feasibility dwindled, particularly in economic terms. However, during this renewal, Brazil's games industry finally saw the removal of some of the barriers that had stopped the domestic games industry from thriving at the global



level. Games such as *Knights of Pen and Paper* by Behold Studios, *Oniken* by Joymasher and *Momodora* by Bombservice piggybacked on the rise of indies and became international hits. Launched in 2007 with the iPhone, the App Store became a showcase for companies that would become market leaders, exploiting the growing and untapped mobile games market, including Tapps Games, TFG (which would later become Wildlife) and Fanatee. In 2011, the Instituto Socioambiental won third place in the Digital and Interactive category of the Ibero-American V comKids – Prix Jeunesse Festival with *Aldeia Virtual*, a virtual village MMORPG developed by 8D Games.

As the industry structured its relationship with the Brazilian Government, this decade also opened with a landmark event: the I Workshop for the Creation of Projects for the Development of a Games Industry in Brazil. Organized by the Ministry of Development, Industry, Foreign Trade and Services (MDIC), it brought together the main stakeholders in civil society, business, universities and public policy to discuss the steps needed to develop Brazil's games industry. This event led to a 2011 call for bids from the Games Project Structuring Fund (FEP), issued by Brazil's National Social and Economic Development Bank (BNDES), for the first

large-scale study mapping this industry worldwide and in Brazil, and proposing public policies for this sector. Their report was released in 2014, including the I Brazilian Digital Games Industry Census.

Also in 2012, the first Brazilian Independent Games (BIG) Festival was held, which became the main forum for business and for networking between the industry and the Brazilian Government, with Working Groups meeting regularly to discuss initiatives for this industry. In 2013, this sector gained its own Games Export Program with ApexBrasil. Since then, it has engaged in projects at several international events. The Brazilian Game Developers (BGD) Program, later renamed Brazil Games Export Program,



became the main gateway for local companies to export their products.

- **Notable Games:** *Knights of Pen and Paper +1 Edition* (Behold, 2013); *Dungeonland* (Critical Studio, 2013); *Oniken* (JoyMasher, 2014); *Toren* (Swordtales, 2015); *Starlit Adventures* (Rockhead, 2015); *Momodora: Reverie Under The Moonlight* (Bombservice, 2016); *Horizon Chase* (Aquiris, 2016).



2. 5. 2018 to today – Pandemic and Consolidation THE SKY'S THE LIMIT

In 2018 the Ministry of Culture conducted the II Brazilian Digital Games Industry Census, which indicated growth in this industry, with 375 companies responding to their survey. Moreover, Wildlife became a Brazilian unicorn, valued at USD 1.3 billion, after a 2019 investment of USD 60 million by Benchmark, a US venture capital fund. That year, the ARVORE virtual reality studio was awarded the first Lion for a Brazilian production at the Venice Film Festival. Two indie games – *Dandara* and *Celeste* – were among the top ten games of the year according

to the Time Magazine, with the latter developed in partnership with an international studio.

In 2020 and 2021, the COVID-19 pandemic forced many changes in the games industry and market, with game consumption soaring during this period. With this boost, Wildlife was valued at USD 3 billion by 2020. Another change is the widespread adoption of remote work, with some firms – such as Afterverse – already set up in 100% remote environments. A PlayKids spin-off (from the Movable Group), this company chart-



ed fifty million monthly active users within a year with *PK XD*, a game available in eleven languages and with a strong presence in Latin America, USA, Middle East and Eastern Europe. PlayKids, which also develops games, underpinned the Afterverse expansion. Also in 2020, developer ARVORE won a Primetime Emmy for Outstanding Innovation from the Academy of Television Arts & Sciences for an interactive short film. In 2021, Gazeus released the first Brazilian game distributed by Netflix.

The current year (2022) is seeing a string of major international acquisitions and partnerships. Aquiris absorbed an investment from Epic Games, signing an agreement to publish multiple multiplatform games that have yet not been announced. Based

in Londrina, Oktagon was acquired by Fortis, a multinational game developer recently established as part of the Las Vegas Sands Resort and Casino Group. In Pernambuco State, PUGA is in the process of being acquired by the Room 8 Group, a global leader in external game development and art production. An all-remote studio, Rogue Snail has *Relic Hunters: Rebels* distributed exclusively by Netflix.

■ **Notable Games:** *Dandara* (Long Hat House, 2018); *Celeste* (Extremely OK Games/MiniBoss, 2018); *Wonderbox* (Aquiris, 2021); *PK XD* (Afterverse, 2020); *Suspects* (Wildlife, 2020); *Relic Hunters: Rebels* (2021).

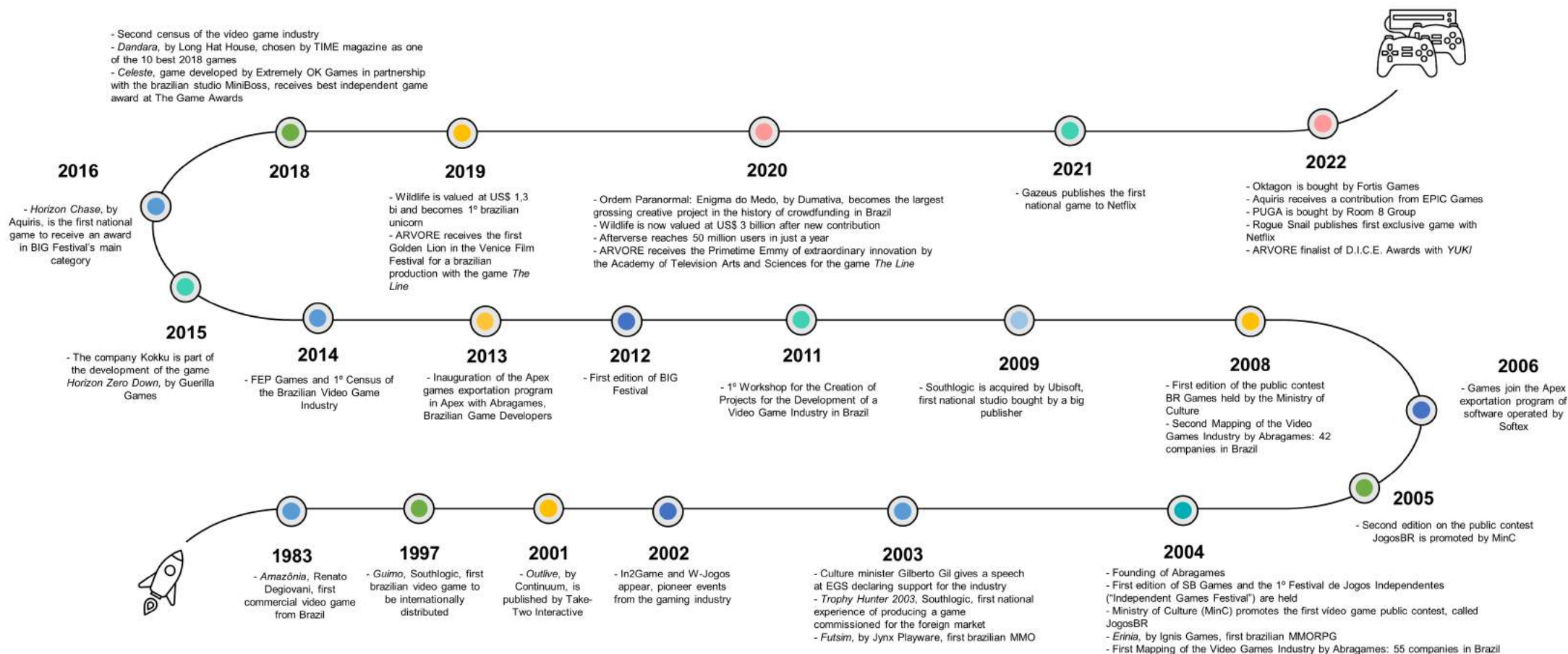


2. 6. Timeline with the main highlights of Brazil's Games Industry

The following figure presents a timeline with the main highlights of Brazil's Games Industry.



Figure 1: History of Brazil's Games Industry



Source: Brazil: Game Industry Report 2022

3



**STATE
OF THE
INDUSTRY**

3. 1. Number of Studios

The purpose of this study is to provide an accurate overview (as far as possible) of Brazil's games industry. For this purpose, a database of 2,200 contacts was built and checked to confirm their operations. However, ensuring flawless accuracy is practically impossible for several reasons. The main explanation is that Brazil does not have a specific Economic Activities Classification (CNAE) for game development. Although CNAE Category N° 3240-0/01 – “Manufacturing Games” addresses this field in broad terms, it is not exclusive to game development. Consequently, this segment gets mixed up with other activities, including building and renting arcades, selling and renting games, among others. When querying this CNAE, 47 firms were listed, of which only eleven were game developers. This CNAE is rarely used by developers, which often prefer CNAE N° 6201-5/01 – Custom Software Development; N° 6202-3/00 – Custom Software Development and Licensing; N° 6204-0/00 – Information Technology Consulting; N° 6209-1/00 – Technical Support, Maintenance and Other Information Technology Services; or other CNAE numbers covering Audiovisual Production.

Other problems encountered when measuring this sector include games that are still live and generate revenue even though its company no longer exists; individual developers who have registered companies with Corporate Tax (CNPJ) numbers; and studios that are not yet officially established, but produce games; etc.

A ‘Game Developer’ was defined as a company or business with one person or more performing one or more of the following procedures: a) developing games for smartphones, tablets and computers, the web, Virtual Reality (VR), Augmented Reality (AR), social networks or consoles, both for profit and not for profit, as a primary or secondary activity; b) developing entire games or rendering game development services to clients or partners. They may also engage in other activities. Individual developers were not included in these figures.

Developers complying with at least one of the following criteria were mapped as active: a) belonging to a specific regional games association/collective; b) completing the survey questionnaire;





c) having active corporate websites and/or social media channels in 2020/2021; d) releasing games in 2020/2021; e) having live games and revenue according to AppMagic; f) having an active Corporate Tax (CNPJ) number and a main CNAE number that's compatible with developing games; g) talking over the phone to confirm receipt of the survey; h) updating a game in 2020/2021; i) registering with Google and specifying the company's business hours. Based on these criteria, 1,009 games development studios were mapped in Brazil.

Figure 2: Estimated number of studios in Brazil's games industry

1,009

STUDIOS
IN THE BRAZILIAN GAME INDUSTRY

In this survey, 223 companies answered the questionnaire. These studios represent 22.1% of all studios mapped in Brazil. As this sample is rated as representative, one can estimate that the studios that completed the questionnaire represent this industry, with the exception of the two largest companies. Since not all companies answered all questions, the number of responses may vary for each question.

3. 2. Industry Growth

The I and II Brazilian Digital Games Industry Census (conducted in 2014 (FLEURY, NAKANO AND SAKUDA, 2014) and 2018 (SAKUDA AND FORTIM, 2018), respectively), were very important for mapping this sector. As the method used was census-based, it did not include data on developers that

didn't complete the survey. In this survey, the analysis of developers that were active in 2022 supplements responses from developers. It is thus possible to infer studio growth from the dataset of all three surveys. The data collected in each survey is shown in **boldface**, with the projected figures in *italics*:

Table 1: Growth in the Number of Developers (2014, 2018 and 2022)

GAME DEVELOPERS	2014	2018	2022
Formally-Established Developers	133	276	203
Not-Yet Formally-Established Developers	-	99	40
Responding Developers	133	375	243
Estimated % of Respondents	89%	94%	24%
Estimated Total Number of Developers	150	400	1,009
Growth Rate		167%	152%

Source: Brazil: Game Industry Report 2022

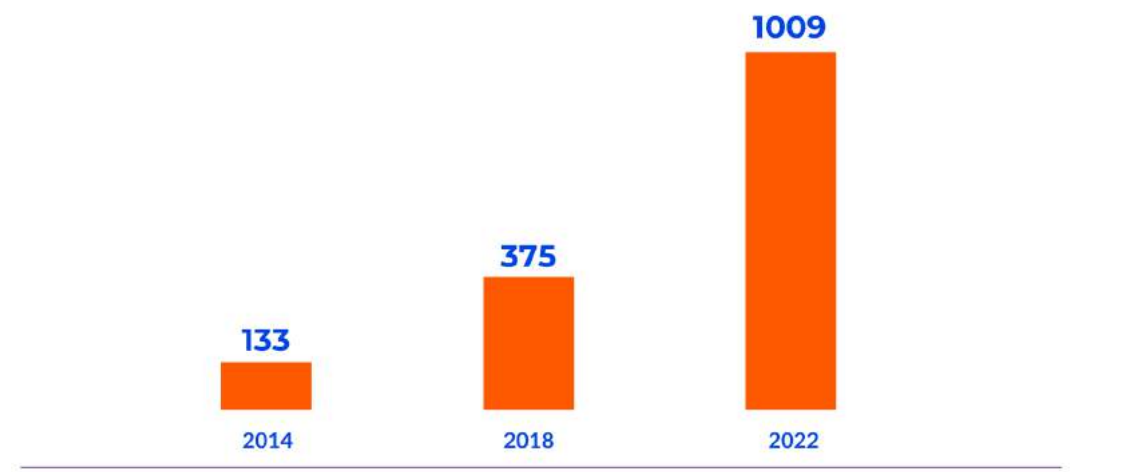




The estimate is that the number of developers grew by about 150% between 2014 and 2018, rising by about 102% between 2018 and 2022.



Figure 3: Growth in the Number of Developers (2014, 2018 and 2022)

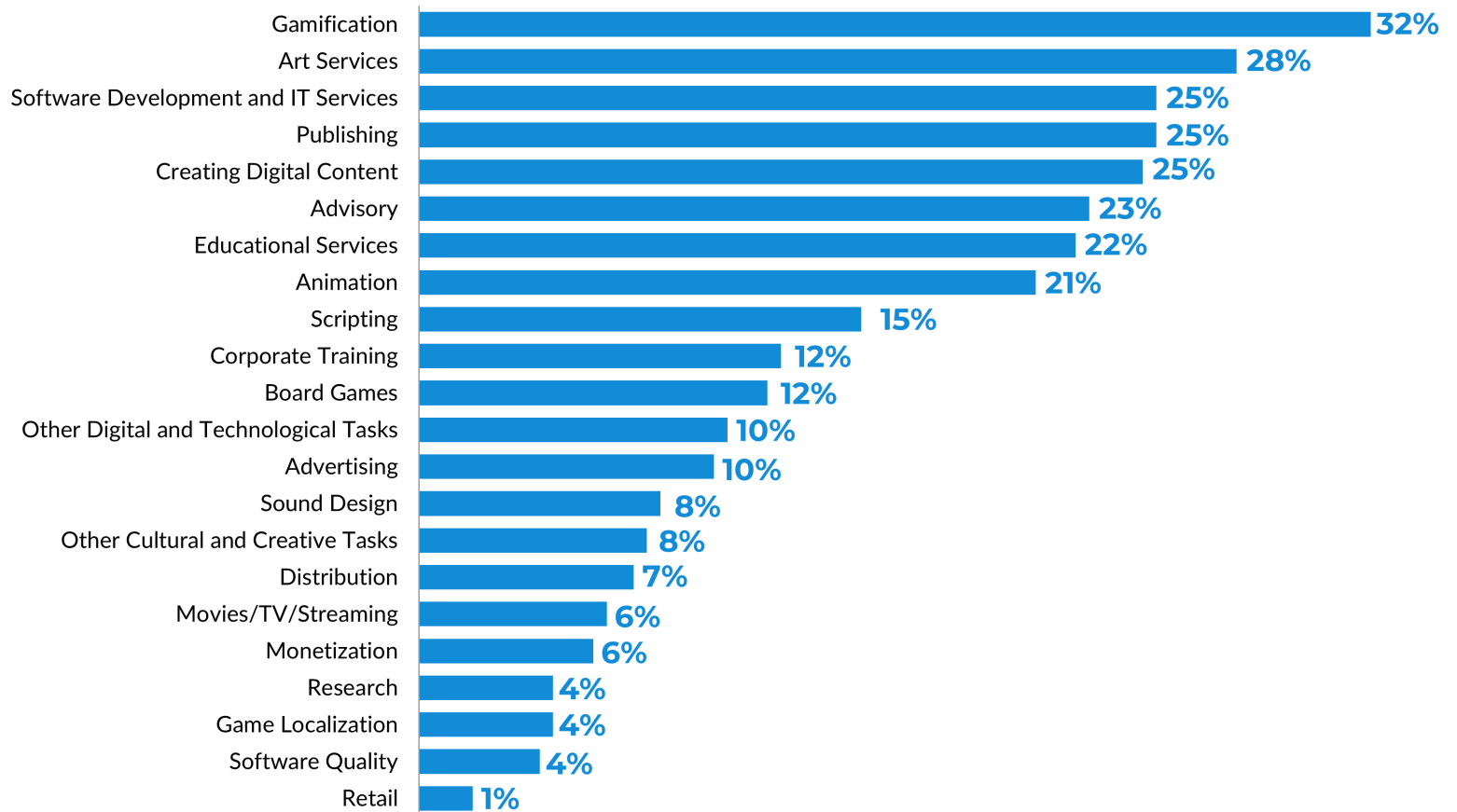


Source: Brazil: Game Industry Report 2022

3.3. Activities Performed

In addition to game development, companies engaged in other activities. From the 218 responses on the types of activities performed by developers, it was clear that the main task centers on gamification, with 32% of companies claiming to render this kind of service. The second type of activity is artwork services, reported by 28% of the companies. Finally, activities such as: software development

and information technology services, publishing and digital content production ranked third among developers, at 25% each. In contrast, retail projects are uncommon among developers, mentioned in only 1% of responses. Research, game localization and quality control are also less usual, with each accounting for 4% of the total responses.

**Figure 4: Types of Activities Performed by Developers**

Source: Brazil: Game Industry Report 2022

218 respondents (multiple choice)

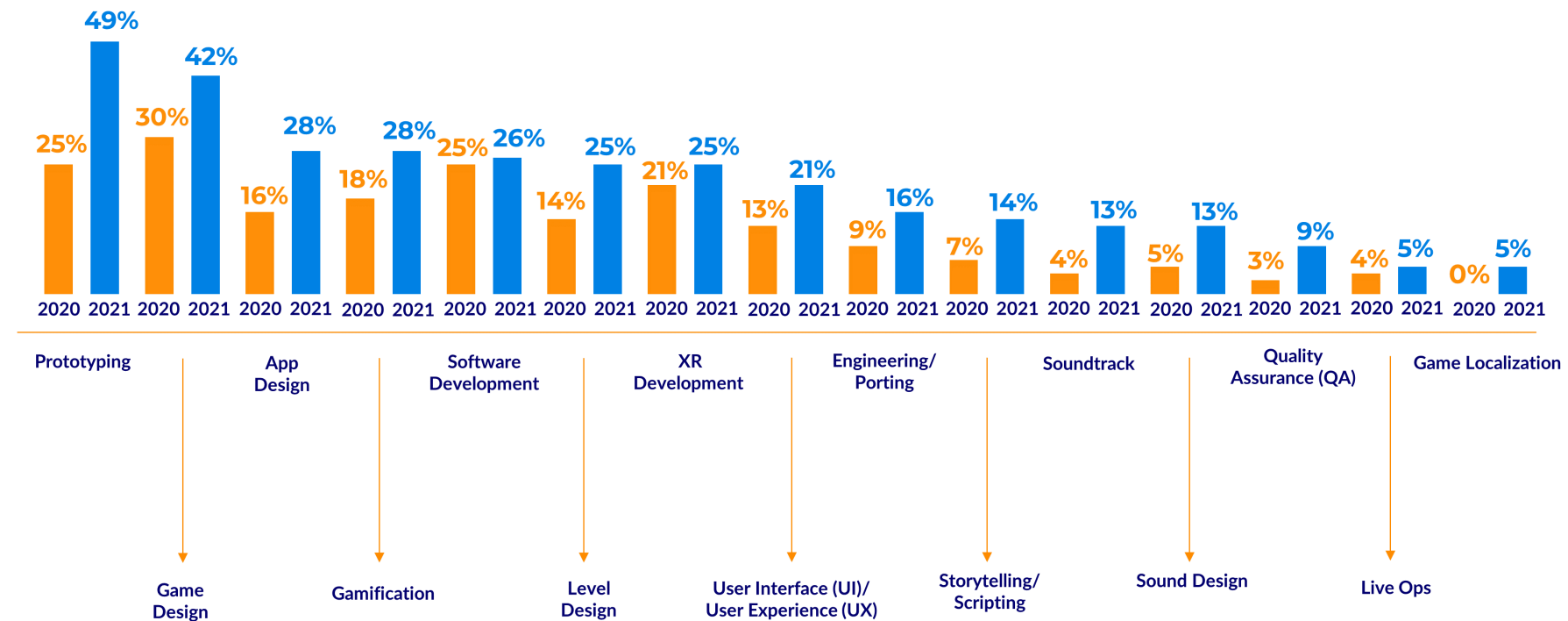


3. 4. Services Provided

Among the companies, 56% rendered services to third parties in 2020 and 2021. The volume of external development increased across all service types during these two years, as shown in the fol-

lowing Figure, which presents details of the types of services outsourced by companies and their changes during 2020 and 2021.

Figure 5: External Development: 2020 and 2021



Source: Brazil: Game Industry Report 2022

76 respondents (multiple choice)



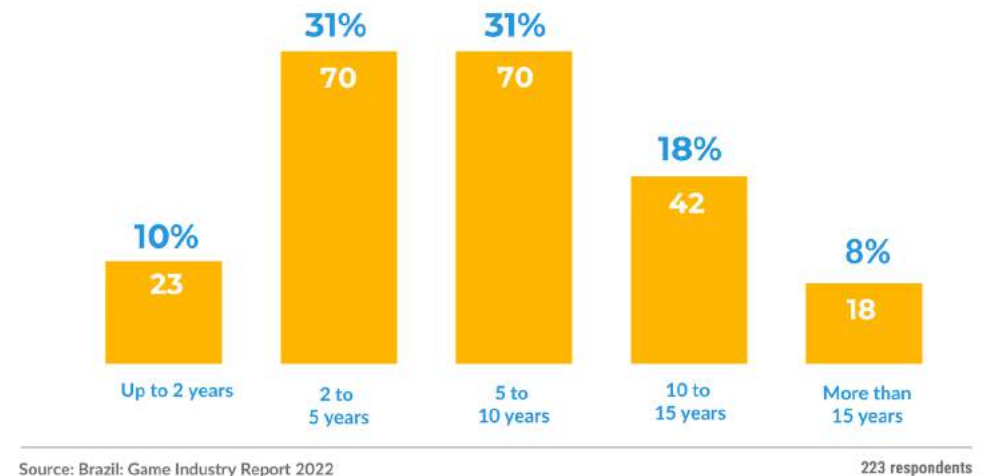
In 2020, the type of service that was most widely outsourced among developers was game design, with 30% of responses, followed by prototyping and software development services, with 25%. In 2021, the most outsourced service type was prototyping, with 49% of responses, followed by game design (42%) and app design and gamification (28%).

In contrast, the least outsourced type of service in 2020 was game localization, where no developer reported engagement, followed by quality assurance (3%) and soundtrack and live ops (4%). In 2021, the least performed activities were game localization and live ops, with only 5% of total responses, followed by quality control at 9%.

3.5. Time in Operation

Regarding duration of their operations, about a third have been in operation for two to five years, and another third between five and ten years. A small proportion (10%) of young companies set up less than two years previously was noted, well below the figure we see in the 2018 census, when they accounted for 37% of the respondents. This shows that firms are becoming longer-lived.

Figure 6: Developers' Time in Operation



Source: Brazil: Game Industry Report 2022

223 respondents

4



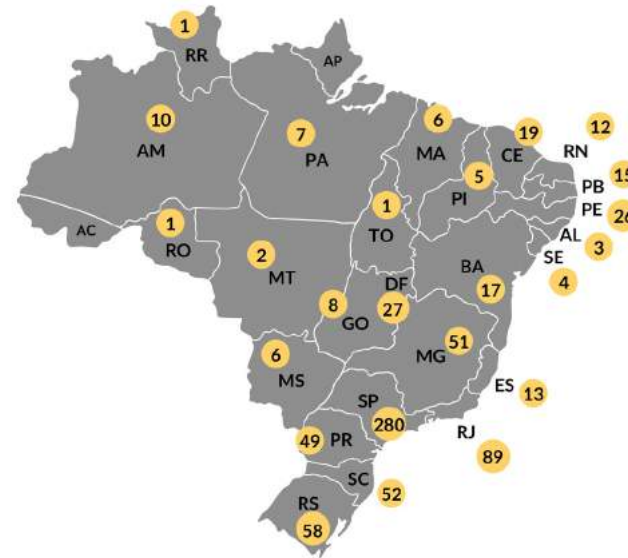
**STUDIOS
AND THEIR
LOCATION**

4.1. Map showing the distribution of studios in Brazil

The following Figure shows the distribution of 762 developers in Brazil. It is important to note that it was not possible to ascertain the location of 247 companies. The locations of the others were estimated from data available on company websites, social media channels and/or other sources.

The States with the highest concentration of developers are: São Paulo (280 companies); Rio de Janeiro (89); Rio Grande do Sul (58); Santa Catarina (52); Minas Gerais (51); and Paraná (49), showing a cluster of developers in South and Southeast Brazil. In contrast, the States with the lowest concentrations are: Acre and Amapá, both with no game developers; and Rondônia, Roraima and Tocantins, with only one company each.

Figure 7: Distribution of Developers in Brazil



Source: Brazil: Game Industry Report 2022

4.2. Map Showing Developer Distribution by Region

Among the developers whose locations were identified, most (85%) are formally established companies, with 58% in operation for more than five years.

This distribution reflects aspects that are im-

portant for the development of the games industry, such as courses in game development, computer sciences and the arts (and markets for these professionals); technological infrastructure; other players in this ecosystem; and the relationship between the





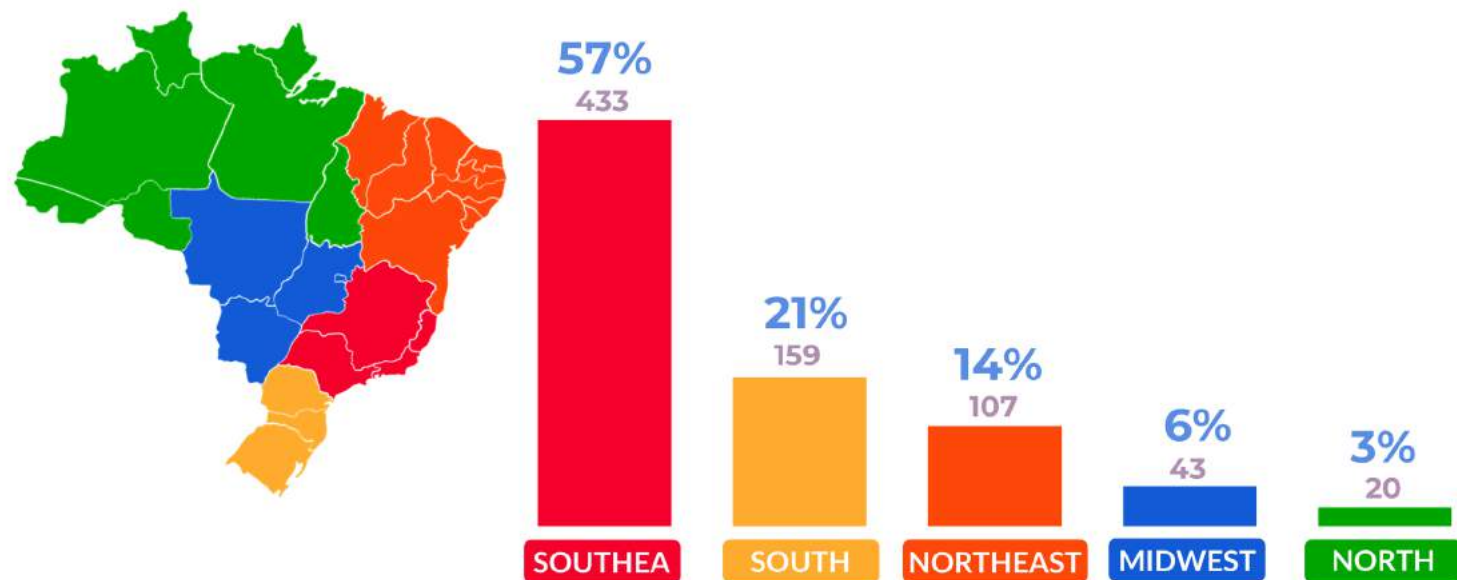
public sector and the games industry. Game developers face common challenges shared with other technology-dense and creativity-intensive businesses, especially in their early stages.

In 2022, of the 762 developers analyzed, 57% are clustered in Southeast Brazil, 21% in the South, 14% in the Northeast, 6% in the Midwest and 3% in the North. This analysis thus indicates that more than half of Brazil's developers are still clustered

only in the Southeast.

It is important to note that, although no direct comparisons may be drawn between the data (as these samples were not collected in the same way), developer distribution by region remains similar in 2018 and 2022. There is a heavy predominance of the Southeast, followed by the South, Northeast, Midwest, and finally, the North region, where the games industry presence is sparse.

Figure 8: Developer Clusters by Region – 2022

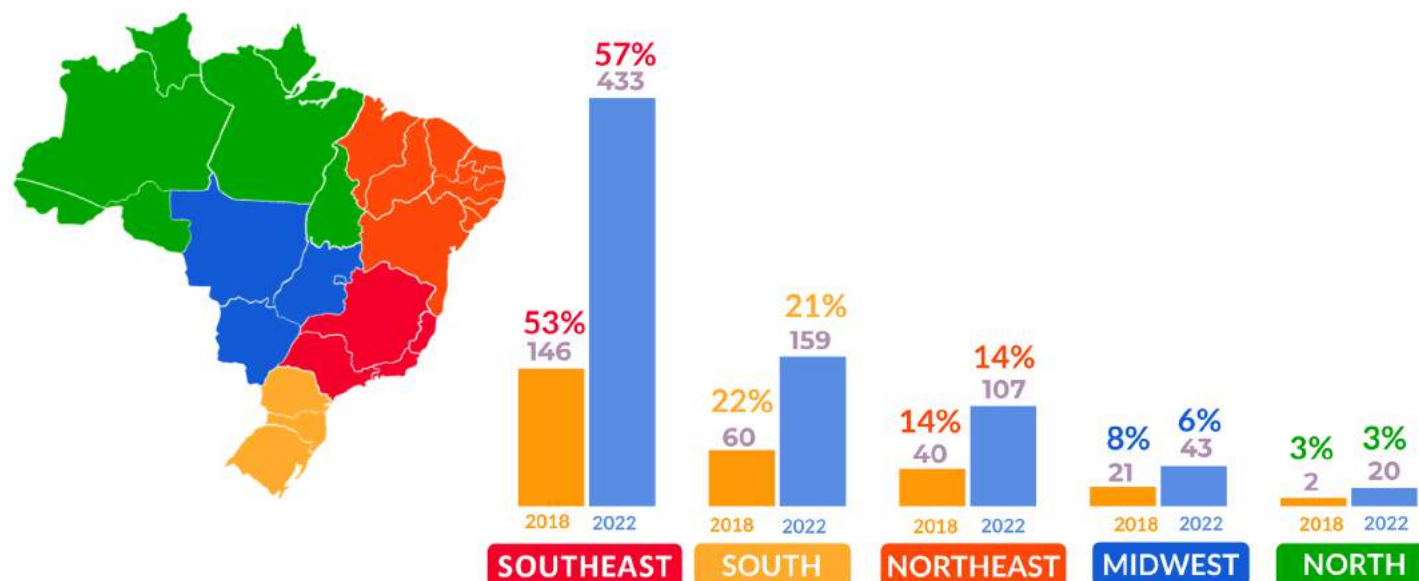


Source: Brazil: Game Industry Report 2022

762 developers
It was not possible to ascertain the location of 247 companies



Figure 9: Comparison of Developer Distribution by Region: 2018 and 2022



Source: Brazil: Game Industry Report 2022

762 developers in 2022 and
276 developers in 2018

4.3. Major Brazilian Developers

The criterion used to identify the ten largest Brazilian developers consisted of comparing their headcounts on their LinkedIn pages on May 21, 2022. Despite discrepancies between the number of people on this social network and the actual and/

or declared headcounts – as there are professionals not on LinkedIn and/or who do not post their affiliations, as well as outdated professional profiles – this is a source of information that is sufficiently representative.



Based on this approach, the largest developers are: Wildlife, Afterverse, Aquiris, Fanatee, PUGA, Sioux, Kokku, Gazeus. Pipa and Tapps. The diversity of these companies clearly illustrates the diversity of possible routes and approaches in Brazil's games industry.

4. 3. 1. **Wildlife**

Wildlife Studios was set up in 2011 as Top Free Games, developing games for the embryonic mobile market. It developed its first self-funded game – *Penguin Race* – which reached 100,000 downloads a day, ranking second worldwide at that time. In 2012, it launched *Bike Race*, which reached the 100 million player mark in twelve months and won the Best Game of the Year Award from Apple (2012) and Facebook (2013). Using mobile segment growth as a springboard, Wildlife launched a string of successful games and established its status as the leading studio in Brazil. Its portfolio includes games such as *Sniper3D* and *Color by Number* (2013), *Colorfy* (2015), *Castle Crush* and *War Machines* (2016), *War Heroes* (2017), *Zooba* and *Tennis Clash* (2019), and *Suspects* (2020). With revenue and bottom line growth of 70% a year since it was first established, 100 million active users a month and over two bil-

lion downloads, it gained ample visibility when absorbing a USD 60 million investment in 2019, headed up by Benchmark Capital and with stakes held by Bessemer Venture Partners (which has been investing in this studio since 2012). In the investment round, its market value was estimated at USD 1.3 billion. In 2020, it received another injection of USD 120 million from Vulcan Capital, with its value updated to USD 3 billion. It has over 1100 employees across five sites: São Paulo (Brazil), Palo Alto and Orange County (USA), Dublin (Ireland) and Buenos Aires (Argentina). In 2021, it started to open independent associate studios, with four locations: Never Forget Games (San Francisco, USA); SuperWOW Games (Austin, USA and Melbourne, Australia) and Foxbeat Games (Los Angeles, USA and Sweden).

4. 3. 2. **Afterverse**

Afterverse is a studio established in 2021 as part of the Movable Group, which grew out of its PlayKids children's content platform. In 2019, still as a PlayKids initiative, the *Crafty Lands* game was developed, whose rapid success encouraged the development of a second game in the metaverse, *PK XD*, designed for children and pre-teens. In 2020, the Afterverse brand was created; eager acceptance



of these two games prompted the Movable Group to endow the developer group with independent status as a separate company.

Fueled by social isolation requirements, Afterverse's game growth speeded up: by 2020 the number of monthly active users jumped from twenty million to fifty million in fourteen countries, making good use of PlayKids' international coverage. The company piggybacks on the success of its games in related businesses: in 2021, it announced a partnership with Tycoon 360, a brand licensing company, and in 2022, it launched an apparel collection with Brazil's Riachuelo retail chain, featuring the *PK XD* characters. The game will also be upgraded with character skins of the famous L.O.L. Surprise! dolls, in partnership with MGA Entertainment. In 2021, Movable absorbed a BRL 1 billion (about USD 200 million) investment from the Prosus Group, from The Netherlands, and will use some of this funding to drive Afterverse's growth.

4.3.3. Aquiris

Set up in 2007 Aquiris has developed great games for Cartoon Network, such as *CN Superstar Soccer* and *The Great Prank War*, as well as original titles like the FPS *Ballistic Overkill*. Its main games

are *Horizon Chase World Tour*, *Horizon Chase Turbo*, *Looney Tunes: World of Mayhem* and *Wonderbox*. In the course of its growth, it has also produced casual games, educational games and advergames.

The company was one of the pioneers in reaching commercial agreements with industry leaders. Unity used Aquiris as a case in a period when engines were consolidating in the world market which helped project the studio's quality internationally; Apple chose Aquiris as one of the companies to debut its Apple Arcade (2019); Scopely (USA) published *Looney Tunes: World of Mayhem*; and iDreamSky (with Tencent as a partner) licensed *Horizon Chase* for the Chinese market.

Aquiris was also a pioneer in several aspects of funding for Brazilian game companies: it was one of the first to accept a venture capital investment (from CRP, in 2014), it was also the first Brazilian game company to be allocated funding from the ProCult Culture Fund (BNDES, 2016) and an investment from Epic Games (2022), and it was listed by the Financial Times in 2020 as one of the 500 fastest growing companies in the Americas.

4.3.4. Fanatee

Fanatee was established in late 2013 with the





release of *The Missing Link*, which used social media contacts (Facebook) as the basis for this game. However, it was *Letter Zap* (or *Letroca* in some countries), released in 2015, that brought this studio success. With four word games in its portfolio – *Cody-Cross*, *Stop Categories*, *World Lanes* and *Letter Zap* – translated into eleven languages, Fanatee now has around 200 employees and over 150 million downloads of its games.

4. 3. 5. PUGA

Set up in 2013, PUGA Studios in Recife has been working with outside development since 2017. It has expanded greatly in the last two years, up from 30 to 140 employees. Its clients include international companies like Future Play, Gearbox, Jam City, Kwalee, Lion Castle, Socialpoint and Superplay, as well as Brazilian firms like Aquiris, Flux, Manifesto, Oktagon and Webcore. It is in the process of being acquired by Room 8, which specializes in external development and has over 1,340 people distributed across its locations in Canada, Japan, Poland, Romania, Spain, Ukraine, the UK and the USA with three brands: Room 8 Studio, Dragon's Lake and Massive Black.

4. 3. 6. Sioux

Sioux is a group of companies that started out as a digital agency set up in 2001. It was a pioneer in the advergaming segment. Its portfolio includes games like *EcoCity* (2011), *Brincando com Palavras* (2016) and *Overjump* (2017). Sioux won awards for best game (*EcoCity*, Brasil Game Show, 2011) and best advergame. It received the International Award in 2008 and 2010 from the Brincando na Rede educational portal. It digitized board games for the Grow and Estrela toy manufacturers and developed more than a hundred games for advertising and educational purposes in 2020 and 2021.

The Sioux Group also works with three other non-developers related to the games universe: Go Gamers, Ludos Pro and PGB. Go Gamers is a gamification consulting firm that runs trainings and workshops, conducts research and creates content. Ludos Pro offers a gamified platform that uses electronic and mechanical game techniques to engage, teach and boost productivity. Pesquisa Game Brasil is the benchmark of game consumer profiles and behaviors on major platforms including consoles, PCs and smartphones in Brazil.



4. 3. 7. Kokku

Set up in 2011, Kokku is a co-developer that specializes in providing services that include CoDev, FullDev and 3D Art Production for Mobile, Consoles, VR and PC. In 2018, it received investments from the Anjos do Brasil startup investor network and the Studies and Projects Funding Agency (FINEP).

Its recent clients include Activision and TreyArch, the companies behind *Call of Duty Black Ops: Cold War* (2020); Guerrilla Games, the Sony studio that created *Horizon Zero Dawn* (2017) and *Horizon Forbidden West* (2022); CI Games, which owns the *Sniper Ghost Warrior* franchise (*SGW 3*, 2017; *SGW Contracts*, 2019; *SGW Contracts 2*, 2021) and other well-known names in the entertainment industry, such as Warner Bros, working on the creation of *Wonder Woman: The Themyscira Experience* (2020); and Netflix, for which it developed *Stranger Things: Starcourt Mall* (2021).

The Kokku staff includes international industry veterans who have worked for major studios such as Microsoft, CAPCOM, Tencent, SEGA and THQ among others, with forty employees in Recife and its Metropolitan Region, and more than fifty staffers scattered throughout Brazil and in other countries.

4. 3. 8. Gazeus

Set up in 2006 in Rio de Janeiro, Gazeus Games is a developer and publisher of casual games. With the idea of creating a game in a social network, this producer launched the *Buraco Jogatina* card game for the web, followed by *Truco*, *Tranca* and *Domino*. In 2012, it began to develop versions for smartphones and tablets, and in 2014, it launched *Mahjong* – its first title with global distribution. In 2017, it was one of the first to be selected by Facebook to work with its new Instant Games platform.

In 2019, it opened an office in Montreal, Canada. It was acknowledged by Great Place To Work in 2020. In 2021, it recorded 19% growth and joined the Top 100 most downloaded global game apps. It was also invited to place *Dominoes Café* on Netflix.

In sixteen years, it has topped ten million users. Inspired by classic card, domino and dice games, it developed more than fifty games for Android and iOS, and seven for the internet. Furthermore, it owns *jogatina.com* and *thesocialpoker.com*, and has developed games for other platforms.

4. 3. 9. Pipa

Pipa Studios was set up in 2012 and launched its most successful game that year: *Praia Bingo*, ini-



tially on a social network (Facebook), and then for mobile on Android and iOS. Pipa offers three games: the long running *Praia Bingo*, *Bingo Bloon* (2018) and *Bingo Rex* (2020). *Praia Bingo* is a leader in its genre in Brazil, Mexico, Spain, Italy and France.

4. 3. 10. **Tapps**

Tapps was set up in 2010, initially as a software developer for tablets. The following year, it started developing mobile apps, including games. In 2012, Tapps released its first hit: *Number Link*, followed by *My Boo* the subsequent year. With these successes, this studio specialized in casual games, building up a portfolio of more than 400 games, with more than 840 million downloads: in addition to the above-mentioned, games in various genres – *Vlog-*

ger Go Viral, *Cow Evolution*, *Dino Quest*, etc. – are part of the Tapps portfolio. In 2017, it diversified its operations by setting up Tapps Ventures, a business incubation platform that has ‘hatched’ the following companies so far: Venturion (2017), for virtual reality projects; Hyperbox (2018), which operates virtual reality kiosks; Teamupp (2019), an organizational climate consulting firm; and SPSX (2020), a portal offering experiences in the city of São Paulo.



5



**GAMES
PROFILE**

This Chapter outlines the profile of game production based on respondents' data: number of games, types of games developed, games developed

by platform, distribution, external development, and awards.

5.1. Number of Games

Studios responding to this survey developed 509 proprietary games in 2020 and 643 in 2021, with a total of 1,152 titles. Of the total 223 companies in the sample, 58% produced a proprietary game

during this two-year period. Added to those developed for third parties, the number is 715 games in 2020 and 901 games in 2021, for a total output of 1,616 games in 2020 and 2021.

5.2. Types of Games Developed

Games may be categorized by purpose: entertainment, education, healthcare, training, advergames, simulators using specific hardware and others. The number of games in each category is not necessarily comparable to that of any other category, and even in the same category, a more complex game may require much heavier financial and time investments than several less complex games.

Taking this constraint into consideration, the

increase in the number of games produced in the same category by the same developers during a specific two-year period may indicate either an uptrend or downtrend in activities for that category, because it is unlikely that a developer radically changes its profile and performance from one year to the next. Regarding proprietary games, a 26.3% increase was noted in the total number of games developed.

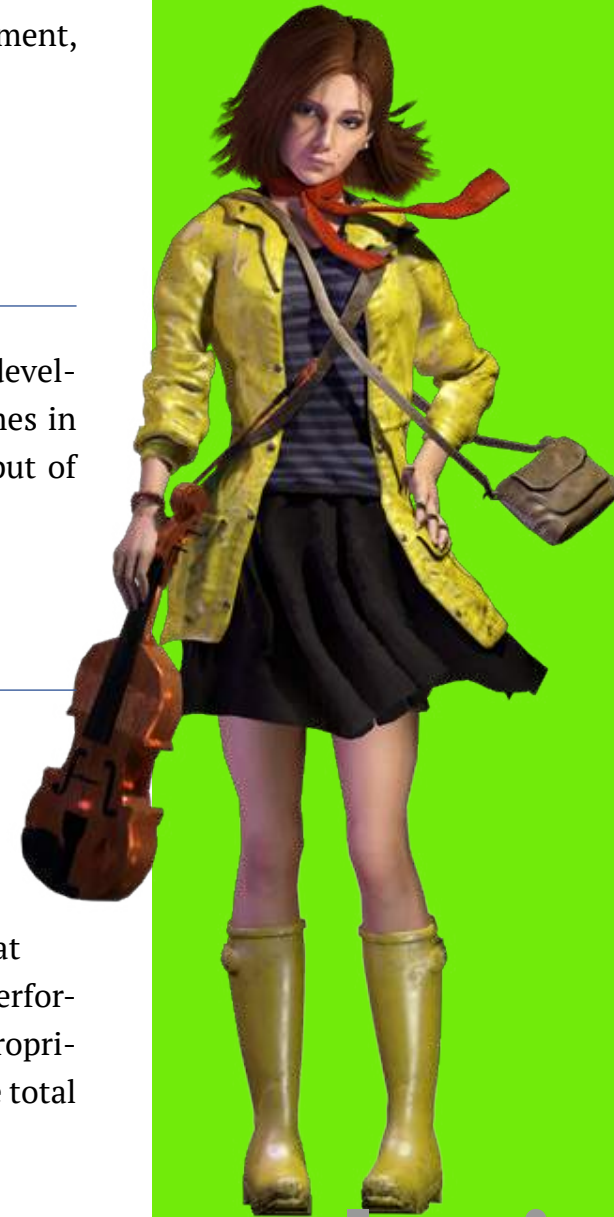



Table 2: Games Produced by Category: 2020 and 2021

GAMES PRODUCED BY CATEGORY	2020	2021
Entertainment Games	36%	44%
Educational Games	35%	26%
Corporate Training Games	15%	16%
Advergames	9%	6%
Other Types of Digital Games	3%	5%
Simulators Using Specific Hardware	2%	2%
Healthcare-Related Games	1%	0%
TOTAL NUMBER OF GAMES PER YEAR	509	643

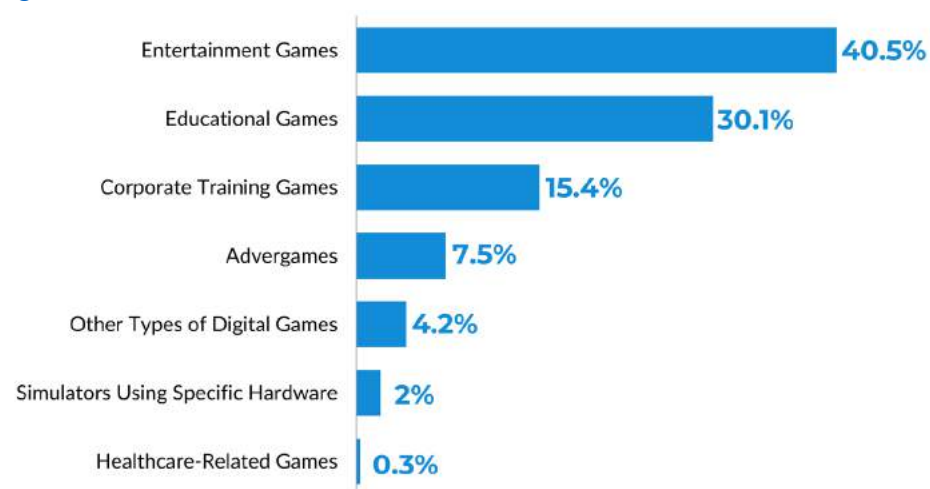
Source: Brazil: Game Industry Report 2022

In 2020, about 509 games were developed. Among them, the main categories were entertainment (about 36% of responses), followed by education (35%) and corporate training (15%).

In 2021, 643 proprietary games were developed. Although the categories remained the same, there were changes in the output distribution, with entertainment accounting for 44% of total responses (up 8% over the previous year); education (26%)

dropped 9% compared to 2020; and corporate training (16%) performed similarly to 2020.

Entertainment games were the most numerous (40.5%), followed by educational games (30.1%) and corporate training games (15.4%). Advergames (7.5%), simulators using specific hardware (2%) and healthcare-related games (0.3%) were mentioned the least.

Figure 10: Games Produced in 2020 and 2021


Source: Brazil: Game Industry Report 2022

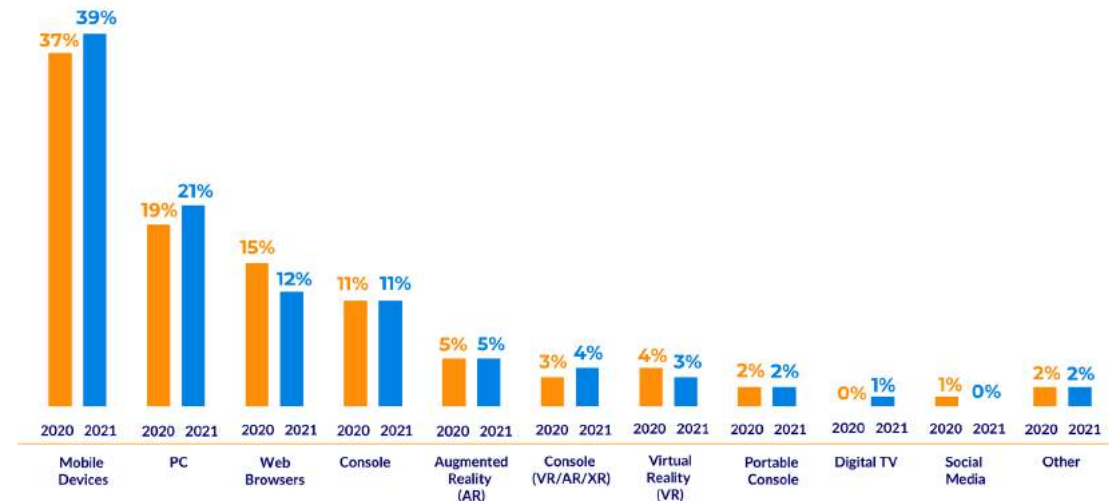


5.3. Game Development by Platform

Regarding the distribution of game development by platform, it is clear the data are very similar for 2020 and 2021. In both years, the main game development platform consisted of smartphones and tablets, accounting for 37% of responses in 2020 and 39% in 2021; followed by PCs, at 19% in 2020 and 21% in 2021; and, finally, games for internet browsers, with 15% of responses in 2020 and 12% in 2021. The platforms with the fewest responses are: Digital TV, with no responses in 2020 and only 1% in 2021; and social networks, with only 1% of responses in 2020 and none in 2021.

Brazil has been producing more games for smartphones and computers. Although these are the predominant platforms, the production of console games is noteworthy, increasing considerably (5% in 2018 to 17% in 2021). Two console games are particularly successful: *Dandara* (Long Hat House) and *Horizon Chase Turbo* (Aquiris). Cross-platform development is becoming increasingly common, with many studios developing a single game for several platforms.

Figure 11: Number of Games Developed by Platform: 2020 and 2021

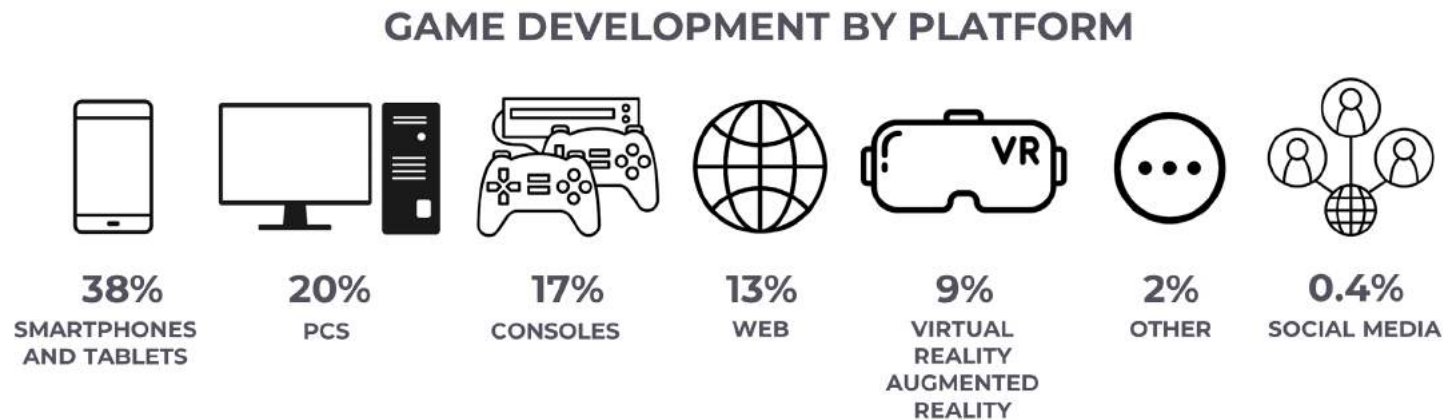


Source: Brazil: Game Industry Report 2022

This table summarizes game development by platform. Based on responses from 157 developers covering 2020 and 2021, it is clear that 38% of games are developed for smartphones and tablets, 20% for PCs, 17% for consoles, 13% for the internet, 9% for virtual reality/augmented reality, 2% for other platforms and 0.4% for social networks.



Figure 12: Table Summarizing Game Development by Platform



Source: Brazil: Game Industry Report 2022

157 respondents

5. 4. Distribution

Looking at entertainment, 193 developers listed the main forms of distribution for this category. It is important to note that developers were allowed to pick more than one option.

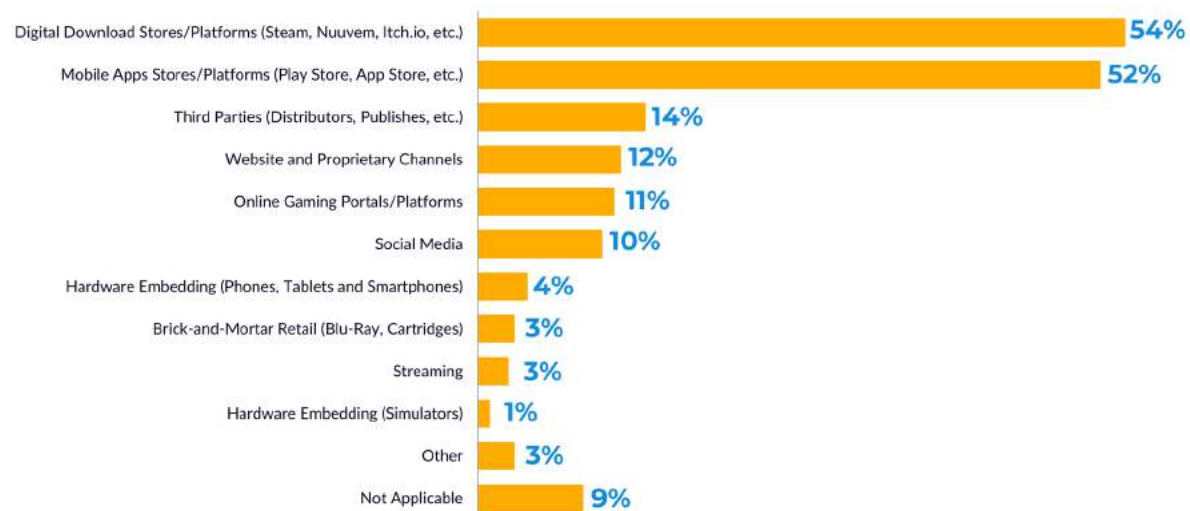
The main distribution routes for entertainment games were digital download platforms/stores (Steam, Nuuvem, itch.io and others), accounting for 54% of responses, and mobile app platforms/stores (Play Store, App Store, among others), at about 52%. The least common means of distribution are retail

– brick-and-mortar stores, streaming and other channels, with 3% each, and hardware embedding, accounting for 1% of responses.

The main distribution routes for social impact/serious games were distribution to private customers, accounting for 26% of responses, distribution to the government (12%) and distribution through their own channel (18%). The least common means of distribution is by subscription portals, with 1%.



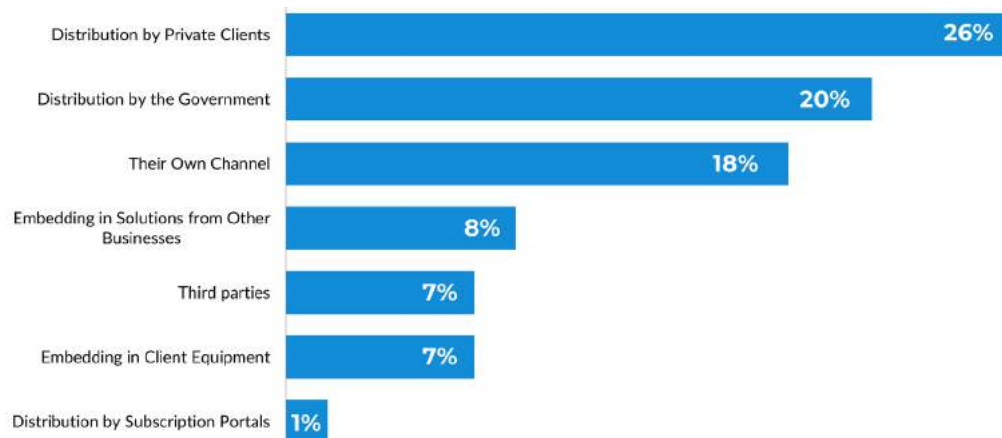
Figure 13: Distribution of Entertainment Games



Source: Brazil: Game Industry Report 2022

193 respondents (multiple choice)

Figure 14: Distribution of Social Impact/Serious Games



Source: Brazil: Game Industry Report 2022

137 respondents (multiple choice)



5.5. External Development

In 2020 and 2021, the total number of external development projects reported by the 76 respondents was 994 projects, with 337 in 2020 and 657 in 2021, up 95%.

The following table presents data on external development in 2020 and 2021. Of the 217 responding developers, about 96 companies (44% of the total), reported that they did not render services to third parties during this period, in contrast to responses from the other 121 companies (56%), which said they rendered this type of service.

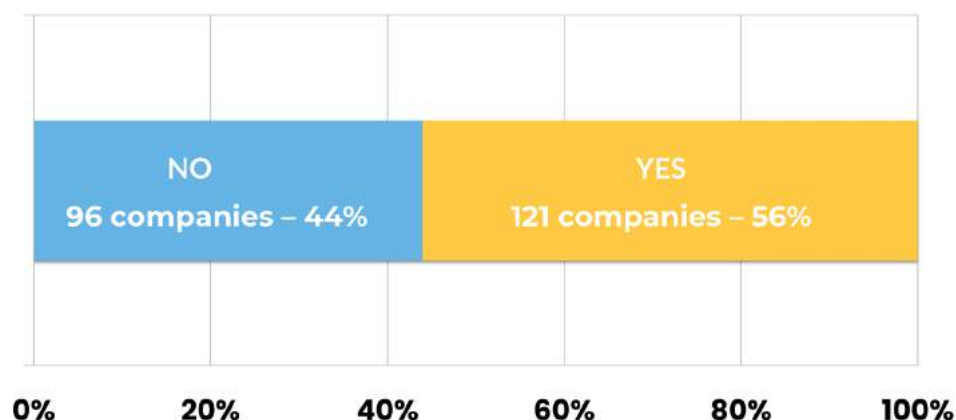
Some 72 developers responded for all types of external development performed by types of games developed (list presented in the following figure) in 2020 and 2021. A total of 364 games were developed during this period, in the following main categories: educational games (30% of the total development work); advergames (26%); and entertainment games (21%).

These categories also equate to the main types of external development performed: educational games (33% in 2020 and 28% in 2021 of all outsourced services); entire advergames (29% in 2020 and 23% in 2021); and entertainment games (18%

in 2020 and 23% in 2021).

Finally, the least outsourced services were entire healthcare-related games (1% of the totals in 2020 and 2021); and entire simulators using specific hardware (2% in 2020 and 3% in 2021).

Figure 15: External Development in 2020/2021



Source: Brazil: Game Industry Report 2022

217 respondents



Table 3: Types of External Development by Game Category

TYPES OF EXTERNAL DEVELOPMENT BY GAME CATEGORY	2020	2021	TOTAL NUMBER OF GAMES
Entertainment (International Clients)	18%	23%	21%
Entire Entertainment Games (Domestic Clients)	7%	12%	9%
Entire Advergames	29%	23%	26%
Entire Educational Games	33%	28%	30%
Corporate Training Games	10%	10%	10%
Entire Healthcare-Related Games	1%	1%	1%
Entire Simulators Using Specific Hardware	2%	3%	3%
TOTAL PER YEAR	206	258	364

Source: Brazil: Game Industry Report 2022

72 respondents (multiple choice)

Table 4: Types of External Development by Art Services

TYPES OF EXTERNAL DEVELOPMENT BY GAME CATEGORY	2020	2021	TOTAL NUMBER OF GAMES
Entertainment (International Clients)	18%	23%	21%
Entire Entertainment Games (Domestic Clients)	7%	12%	9%
Entire Advergames	29%	23%	26%
Entire Educational Games	33%	28%	30%
Corporate Training Games	10%	10%	10%
Entire Healthcare-Related Games	1%	1%	1%
Entire Simulators Using Specific Hardware	2%	3%	3%
TOTAL PER YEAR	206	258	364

Source: Brazil: Game Industry Report 2022

72 respondents (multiple choice)

In 2020 and 2021, developers outsourced about 848 art services. The top outsourced services in 2020 were: Art – Illustration (27% of the total), Art – Full project development (15%) and 3D Art (14%). In 2021, the main services were: 2D Art (20%), up

8% compared to the previous year; Art – Illustration (19%), down 8%; and 3D Art which continued at 14%. The least outsourced service type in both 2020 and 2021 is Technical Arts, at 4% and 5% respectively, of the total for each year.

5. 6. Awards

Among the responding companies, 34% have won Brazilian or international awards during their existence. Awards allow developers to accumulate prestige, attracting audiences and building up investor interest and renown among end consumers.

The main awards that developers mentioned as relevant are those from BIG Festival, Brasil Game Show, Sebrae Nacional and SBGames. Other non-specific honors are also mentioned, such as comKids, the ADVBRS/APEXBRASIL Export Award and Inovativa Brasil.

International awards include those received at the following events: Casual Connect, Game Connection America Global Top Round, PAX East and West, Square Enix Latin American Contest, Kidscreen Awards, EGW, GDC Play, Primetime Emmy for Outstanding Innovation, Google Play, Ibero-Ameri-

can comKids Prix Jeunesse Festival, Japan Media Arts Festival, Game Gathering Conference, Epic MegaGrants and Raindance Festival, among others.

Awards for game development marathons, such as Game Jam +, Indie Game Jam and Facebook Game Jam, are also mentioned.



6



HUMAN RESOURCES AND DIVERSITY

This Chapter estimates the number of people working at the developers and describes the workforce profile, based on the survey responses: ratio

between partners and employees, employment system, distribution by company area, and diversity.

6.1. Estimated Developer Headcounts and Growth

The estimated total number of studios and the headcount data for the studios responding to the I (FLEURY, SAKUDA AND CORDEIRO, 2014) and II

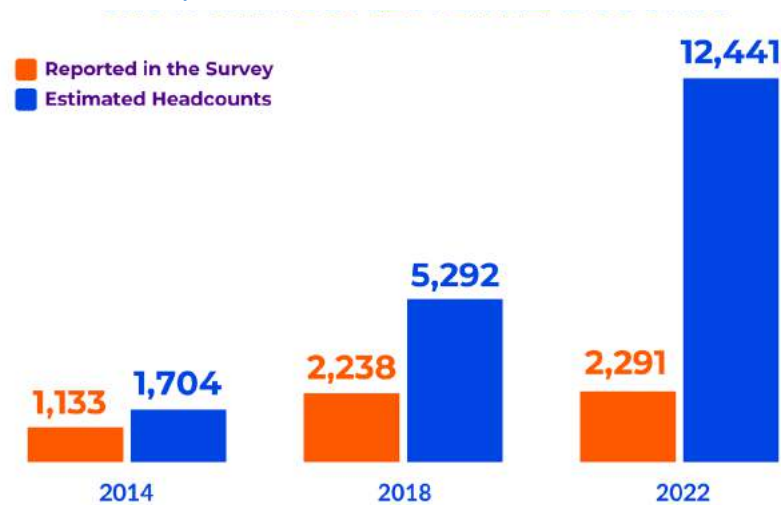
Brazilian Digital Games Industry Censuses (SAKUDA AND FORTIM, 2018) and this survey indicated the following:

Table 5: Headcounts and Developers

HEADCOUNTS	2014	2018	2022
Headcount: Formally-Established Developers	1,133	2,238	2,291
Headcount: Responding Not-Yet Formally-Established Developers	-	492	101
Responding Formally-Established Developers	133	201	164
Responding Not-Yet Formally-Established Developers	-	57	30
Estimated % of Respondents	89%	65%	19%
Average Headcount: Formally-Established Developers	8.5	11.1	14
Average Headcount: Responding Not-Yet Formally-Established Developers	-	8.6	3.4
Estimated Headcount	1,278	4,234	12,441
GROWTH RATE	-	231%	194%

Source: Brazil: Game Industry Report 2022



**Figure 16: Growth in Developer Headcounts: 2014, 2018 and 2022**

Source: Brazil: Game Industry Report 2022

Growth in developer headcounts outstrips growth in the number of developers, as the staff employed by formally established responding developers rose from 8.5 people at each developer in 2014 to 11.1 people in 2018 and 14.0 people at each developer in 2022. This upsurge reflects rising volumes and increased complexity in developer output. Moreover, the shrinking proportion of responding developers not yet formally set up also points to greater corporate maturity.

Figure 17: Estimated Number of Employees in Brazil's Games Industry



Although the major developers are far larger than average (the Wildlife LinkedIn profile had 1,122 active employees on May 18, 2022, with 817 living in Brazil), while some of the majors did not respond to the survey, this effect may be considered

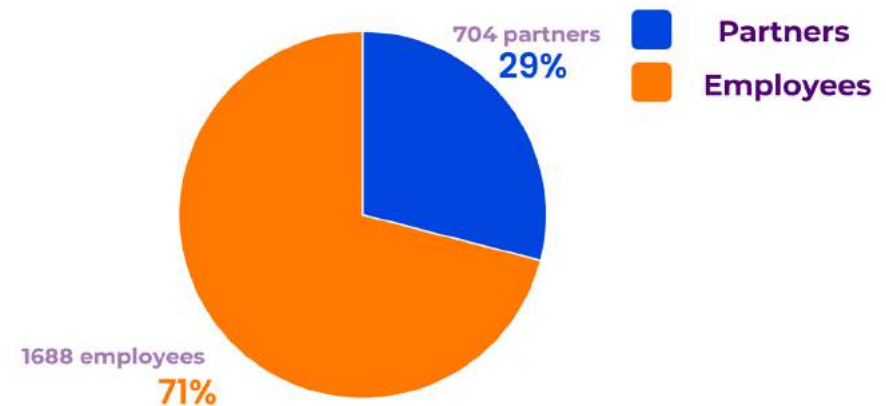
to be offset by the volume of small developers with fewer than average employees among the responding developers. Thus, 12,441 people are estimated to be working at Brazilian game developers.

6.2. Ratio between Partners and Employees

This question had 194 respondents. The total distribution between partners and employees is 29% partners and 71% employees. This figure indicates an uptick compared to the 2018 II Census, where partners accounted for 36.2% and 63.8% were employees. This ratio reflects an uptrend in the average firm size.

In the II Census, this question had 258 respondents. The total distribution between partners and employees was 36.2% partners and 63.8% employees. This drop in the partner/employee ratio reflects an increase in the average size of developers.

Figure 18: Ratio between the Number of Partners and Employees



Source: Brazil: Game Industry Report 2022

223 respondents (out of 2392 people)



Figure 19: Employee x Field Ratio – Partner x Employee Breakdown

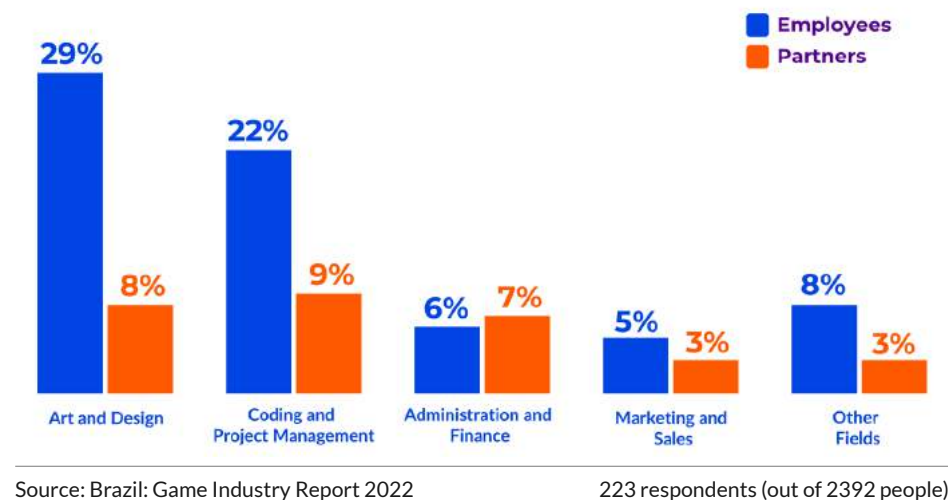


Table 6: Average Number of Partners and Employees by Developer (Formally Established and Not Yet Formally Established)

STATUS	FORMALLY ESTABLISHED	NOT YET FORMALLY ESTABLISHED	TOTAL
Developers	164	30	194
People	2,291	101	2,392
Employees	1,650	38	1,688
Partners	641	63	704
People by Developer	14	3.4	12.3
Employees by Developer	10.1	1.3	8.7
Partners by Developer	3.9	2.1	3.6

Source: Brazil: Game Industry Report 2022

198 respondents (multiple choice)

The average number of employees in responding formally established developers rose from 8.5 people per developer in 2014 to 11.1 people per developer in 2018 and 14.0 people per developer in

2022. It is noticeable that there are more partners than non-partners among developers that are not yet formally established, which is natural for new businesses.

6.3. Employment System

The main employment system is external development. In the 2018 Census, 35% of employees

were outsourced, 28% were hired in compliance with Brazil's Consolidated Labor Laws (CLT) and



18% had no formal links whatsoever. The number of developers not yet formally established dropped from 18% to 5%.

The transformations ushered in by the pandemic during 2020 and 2021 have clearly been maintained. It is striking that the main employment system is remote, especially among external development workers. Many professionals hired under CLT contracts are also working remotely (23%) or on hybrid schedules (46%). Although to a lesser extent than their employees, partners are also working remotely (16%). The number of workers hired under CLT contracts remained stable, but many are working remotely.

The type of employment system has changed considerably in terms of the presence of employees in the development studios. Companies are considered to have answered this question for 2022, as the pandemic constraints have already been lifted. It is possible that these transformations will be long-lasting, particularly as many developers were already working remotely before the pandemic, and many IT professionals prefer to work from home.

Table 7: Employment System at Developers

EMPLOYMENT SYSTEM AT DEVELOPERS			
EMPLOYMENT SYSTEM	ON-SITE	REMOTE	HYBRID
CLT	50 (26%)	378 (23%)	116 (46%)
Outsourced	60 (35%)	869 (53%)	70 (28%)
Researcher/Fellow	0 (0%)	13 (1%)	10 (4%)
Intern	7 (4%)	44 (3%)	14 (6%)
Young Apprentice	1 (1%)	5 (0%)	0 (0%)
Not Formally Hired	10 (5%)	61 (4%)	1 (0%)
Partner	57 (30%)	257 (16%)	40 (16%)

Source: Brazil: Game Industry Report 2022

223 respondents

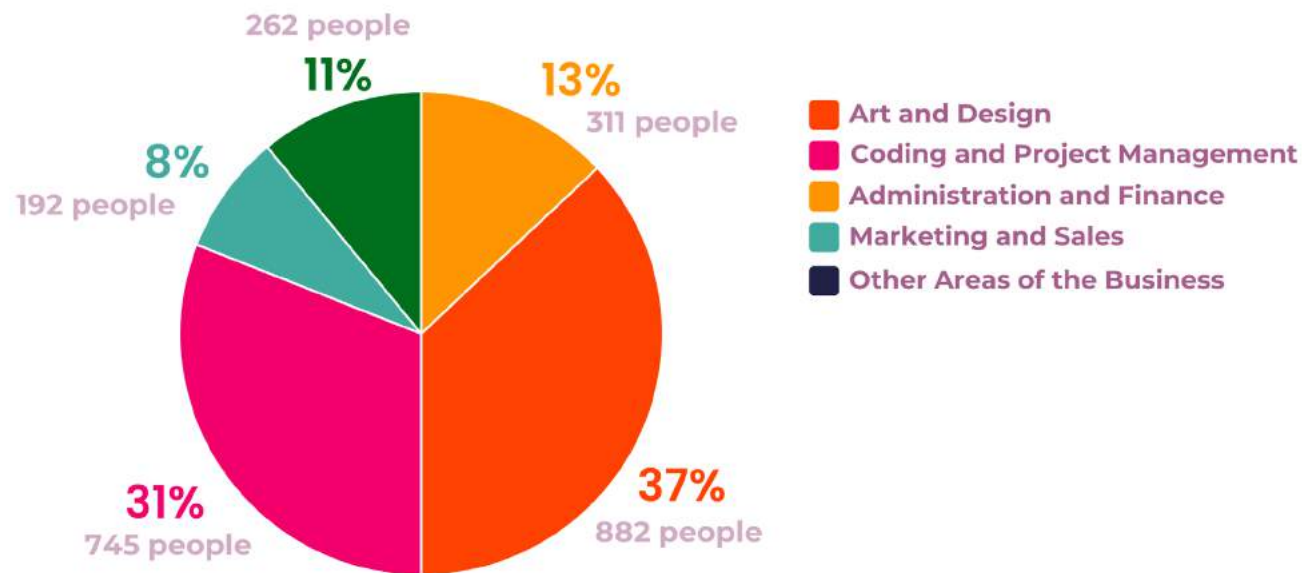


6. 4. Professional Distribution by Area

Looking at professional distribution at developers, 37% of respondents are clustered in art and design; 31% in coding and project management;

13% in administration and finance; 11% in other areas of the business; and 8% in marketing and sales.

Figure 20: Ratio of Professionals by Area



Source: Brazil: Game Industry Report 2022

223 respondents (out of 2392 people)



6. 5. Workforce Diversity

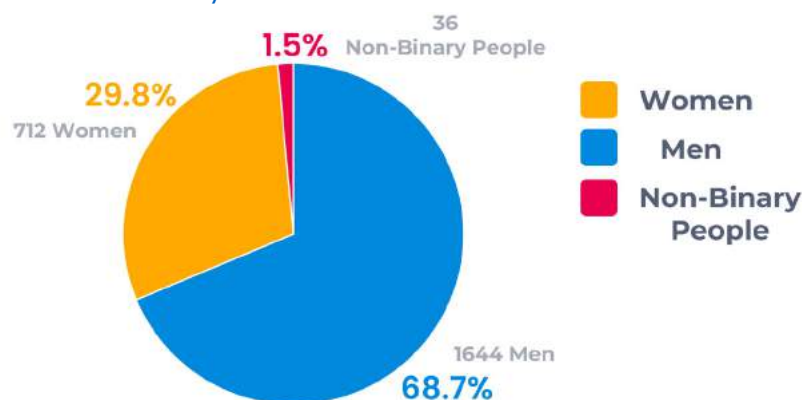
Figure 21: Employment of Black, Indigenous, PwD, Neurodiverse and Trans People, Foreigners, Refugees and/or People over 50 years old.



Source: Brazil: Game Industry Report 2022

196 respondents

Figure 22: Overall Ratio of Workers by Gender



Source: Brazil: Game Industry Report 2022

223 respondents

Regarding workforce diversity, 57% of companies report that they employ Black, Indigenous, PwD, neurodiverse and trans people, as well as foreigners, refugees and people over 50 years old.

6. 5. 1. Gender

According to the survey, men predominate at developers as both partners and employees, at about 68.7% of the respondents. Despite this, the number of women in the industry has been gradually growing: up from 15% in 2014 to 20% in 2018 and 29.8% in the 2022 survey. In the 2014 and 2018 surveys, no data were collected on non-binary employees; they currently reach 1.5%.

Along the same lines of the previous Figure, men still account for a majority (76.8%) of the partners in the responding companies; 22.7% are women; and 0.4% are non-binary.



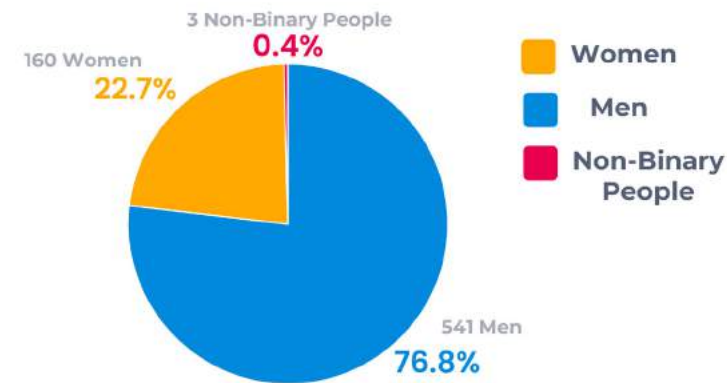
Looking only at employees, 65% of respondents self-identify as male, 33% as female and 2% as non-binary.

The gender ratio of partners by area shows that the number of men is not exceeded by the numbers of women and non-binary people in any of the areas. Moreover, the presence of men is higher in coding and project management (191 employees) and lower in marketing and sales (40 employees).

The area with the highest number of women and non-binary people is art and design (also with a higher number of partners), where 55 are women and two are non-binary, equivalent to 24.6% and 0.86% respectively of the total number of employees. The second area with the highest number of women is administration and finance, with 45 employees; for non-binary employees, coding and project management ranks second, with one employee.

The area with the lowest number of women is other areas and businesses, which comprises about 11 employees. Furthermore, there are no non-binary employees in administration and finance, nor marketing and sales or other areas of the business.

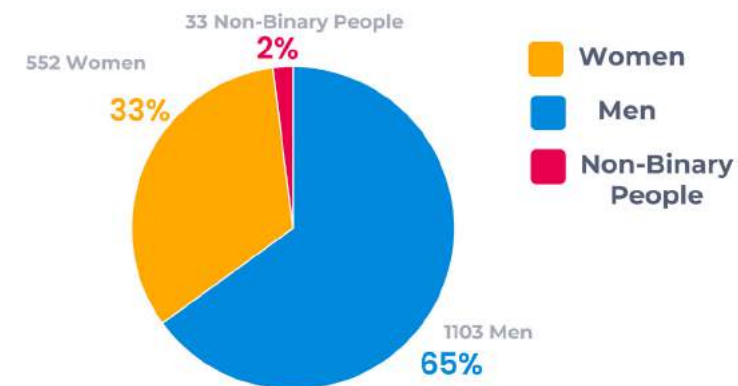
Figure 23: Ratio of Partners by Gender



Source: Brazil: Game Industry Report 2022

223 respondents (out of 2392 people)

Figure 24: Ratio of Employees by Gender



Source: Brazil: Game Industry Report 2022

223 respondents (out of 1688 people)



Regarding the gender ratios of employees by area, it may be noted that men outnumber women and non-binary people in most areas. Furthermore, most men are clustered in coding and project management (430 employees), and art and design (426 employees), in contrast to marketing and sales, which has the fewest men (69 employees).

Most (47%) female employees are clustered in art and design, as well as coding and project management (15%); they account for 14% in administration and finance. Marketing and sales has fewer women, with 11% of the employees.

Regarding the presence of non-binary employees at developers, it may be noted that all areas have representatives – in contrast with the non-binary partner ratio – but they are still very few. The highest concentration is in art and design, with 18 non-binary employees; however, in the other areas, this figure does not reach a full decimal point. The smallest number is in administration and finance, with only one representative, and two in marketing and sales.

Table 8: Ratio of Developer Partners by Gender

RATIO OF DEVELOPER PARTNERS BY GENDER					
AREA	MEN		WOMEN		NON-BINARY PEOPLE
Administration and Finance	113	21%	45	28%	0 0%
Art and Design	127	23%	52	33%	2 67%
Coding and Project Management	191	35%	31	19%	1 33%
Marketing and Sales	40	7%	21	13%	0 0%
Other Areas of the Business	70	13%	11	7%	0 0%
TOTAL NUMBER OF PEOPLE	541	100%	160	100%	3 100%

Source: Brazil: Game Industry Report 2022

223 respondents (out of 704 people)



6.5.2. Diversity

Diversity data were provided by 196 companies.

There are very few Black and even fewer Indigenous people employed at the developers. The Indigenous population is still a minority in these workplaces: the 196 responding companies reported only ten Indigenous professionals, with 209 Black people, reflecting the hurdles faced by Indigenous people in this field. Of these ten, three are male partners, five are male employees, one is a female

employee and one is a non-binary employee. Furthermore, there is no data on Indigenous female partners and non-binary partners.

Despite its increasing presence, the Black population still struggles to conquer more space in developers. There are currently 46 male partners, ten female partners, 104 male employees, 45 female employees and four non-binary employees at the 196 companies, with no data on non-binary partners. Based on this data, it is clear that the presence

Table 9: Ratio of Developer Employees by Gender

RATIO OF DEVELOPER EMPLOYEES BY GENDER					
AREA	MEN		WOMEN		NON-BINARY PEOPLE
Administration and Finance	76	7%	76	14%	1 3%
Art and Design	426	39%	257	47%	18 55%
Coding and Project Management	430	39%	85	15%	7 21%
Marketing and Sales	69	6%	60	11%	2 6%
Other Areas of the Business	102	9%	74	13%	5 15%
TOTAL NUMBER OF PEOPLE	1103	100%	552	100%	33 100%

Source: Brazil: Game Industry Report 2022

223 respondents (out of 1688 people)

Table 10: Diversity among Partners and Employees

DIVERSITY		
CATEGORIES	MEMBERS	PEOPLE
Foreigners	Partners	1
	Employees	6
Refugees	Partners	0
	Employees	1
People with Disabilities (PWD)	Partners	2
	Employees	8
Neurodiverse People	Partners	19
	Employees	18
Trans People	Partners	6
	Employees	28
People over 50 Years Old	Partners	12
	Employees	10
Black People	Partners	56
	Employees	153
Indigenous People	Partners	3
	Employees	7

Source: Brazil: Game Industry Report 2022

196 respondents and a total of 111 people



of Black people, even if minor, attains significance only for men, while women and black non-binary people are minorities at developers.

The presence of neurodiverse people and people with disabilities is sparse: in the 196 developers, there are about ten people living with disabilities and 37 neurodiverse people. Among the people with disabilities, two are male partners, five are male employees and three are female employees. There are no female partners, non-binary partners and non-binary employees. Regarding the data on neurodiverse people, twelve are male partners, seven are female partners, ten are male employees, seven are female employees and one is a non-binary employee. There are no data on non-binary partners. It may be noted that, besides the low numbers of neurodiverse people and people with disabilities, their presence becomes even lower among women and non-binary people. The presence of trans people and people over fifty years of age is also low: there are only 34 trans people and 22 people over fifty years old at the 196 developers.

Data on the presence of trans people show that four are female partners, two are non-binary partners, eight are male employees, seven are female employees and thirteen are non-binary em-

ployees, with no data on male trans partners. Unlike previous data about other minorities, the trans population at developers includes more women and non-binary people.

For employees over the age of 50, twelve are male partners, seven are male employees, three are female employees and there are no data on female partners, non-binary partners or non-binary employees. This shows that there is a predominance of men in this group.

For employees over the age of 50, twelve are male partners, seven are male employees, three are female employees, and there are no data on female partners, non-binary partners or non-binary employees. This shows that there is a predominance of men in this group.

Still on the subject of the diversity among employees, there are about seven foreigners at the 196 responding companies, of whom only one is a male partner, two are male employees and four are female employees. Furthermore, it may be noted from the data that there is only one refugee, who is a male employee. Among the categories presented so far, these were the least included among developers.

On the topic of diversity, developers were asked whether they have inclusion policies, and if

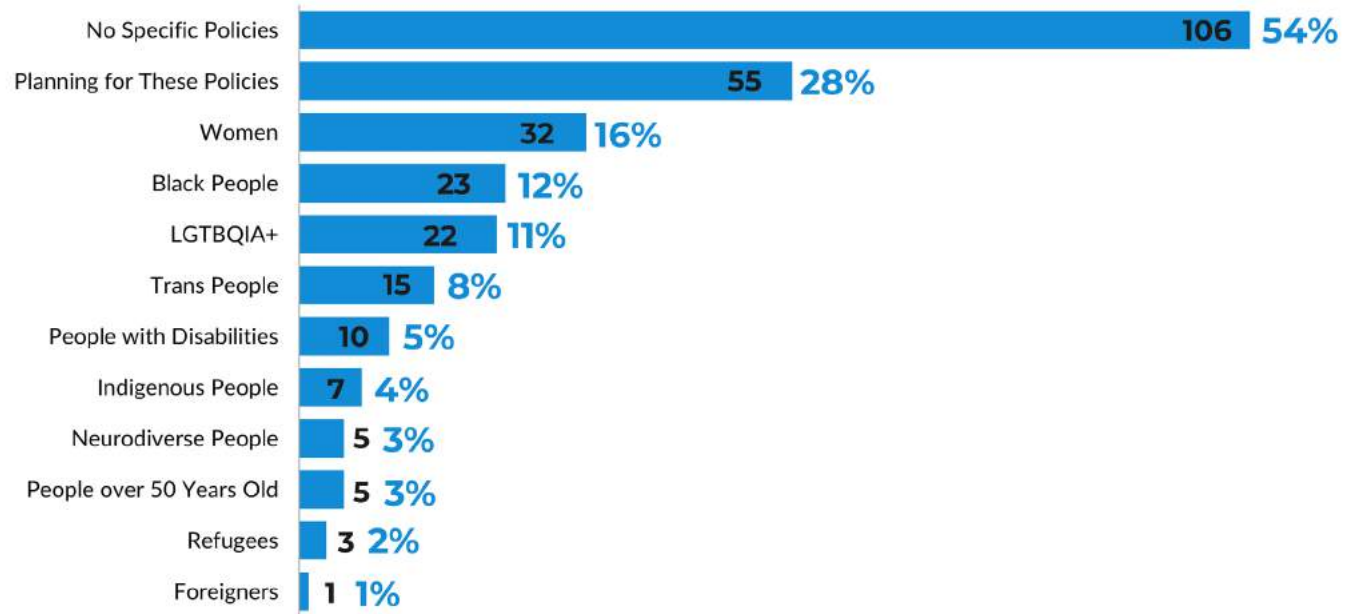


so, which groups they target. Among the 195 respondents, 54% reported they have no specific corporate policies, and 28% explained that policies are in the development stage. In other words, about 82% of the companies do not currently have inclusion policies, with a clear link between the low employee diversity rates and few public policies encouraging the inclusion of minorities in developers.

Among the inclusion policies implemented by the 195 companies, 16% are aimed at women, 12% at Black people, 11% at LGBTQI+ people, 8% at trans people, 5% at PwD, 4% at Indigenous people, 3% at the neurodiverse and people over 50, 2% at refugees and 1% at foreigners.

It may be noted that, although the inclusion

Figure 25: Inclusion Policies



Source: Brazil: Game Industry Report 2022

195 respondents (multiple choice)

policy percentages for women and Black people are close, about 712 women work at the responding developers, while there are only 209 Black people. Furthermore, 8% of the companies report implementing policies for trans people – the fourth-highest percentage among the actions taken – but there are only seven trans people at all 196 companies.



A comparison with data from the II Census is not possible for this item, due to differences in methods and questions.

Regarding inclusion policies, while 54% of the responding developers stated that they do not have specific policies, 28% stated that policies are in the planning stage. This figure shows that the management of a specific policy is already on the agenda of almost half the developers, with policies either implemented or being planned. Existing policies (multiple choice) are for women (16%), Black people (12%), LGTBQI+ people (11%), trans people (8%), PwD (5%), Indigenous people (4%), neurodiverse people (3%), people over 50 (3%), refugees (2%) and foreigners (1%).

It is worth mentioning that there are several actions to bring these types of people into this industry, in addition to in-house policies, in which companies and professionals participate, such as game jams (Women Game Jam, We Game Jam, Sampa Diversa, Game Jam das Minas) and the Atragames Diversity Council, which awards Diversity Seals (race, gender, LGBTQIA+ and PwD) to Atragames members with employees in these categories. There is also records of studios that were designed and are run by Black people (Sue The Real, Game e Arte) and trans people (SunBlack and Pixel Punk), in addition to games with diversity and inclusion themes.

7



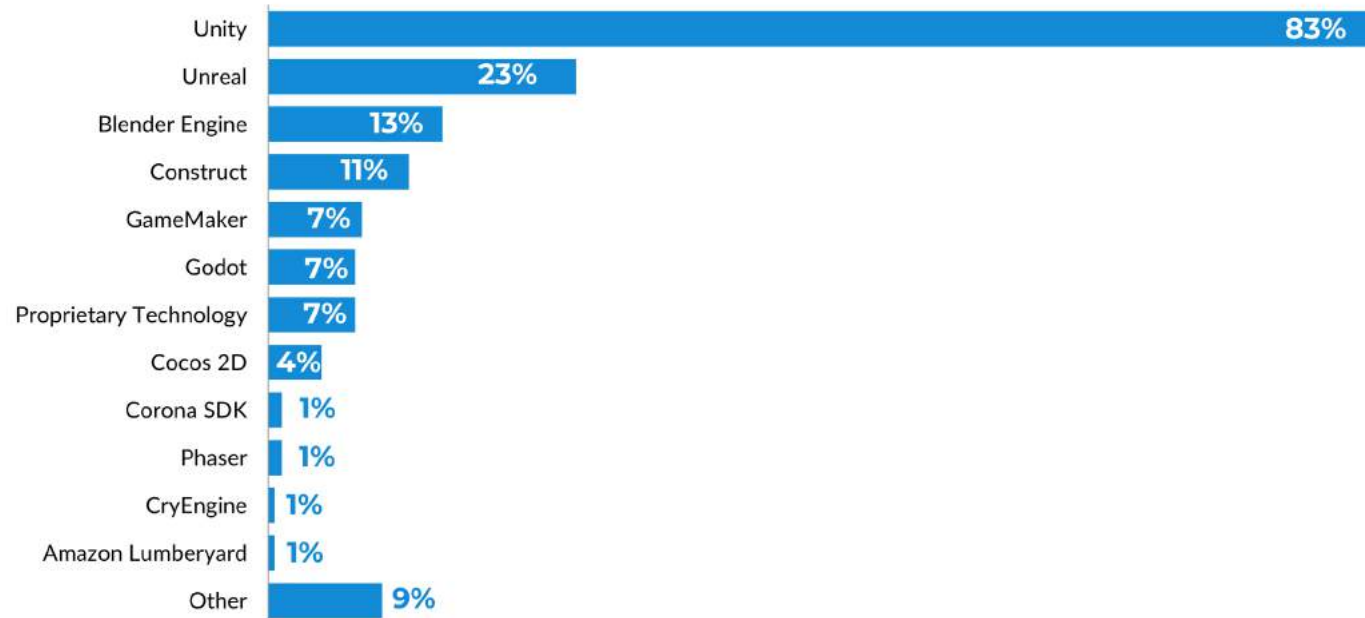
**TECHNOLOGIES
AND SERVICES**

7.1. Most Used Engines

The developers were asked to answer a multiple-choice question about which engines and specific game development programs are used the most. Of the 200 respondents, about 83% use the

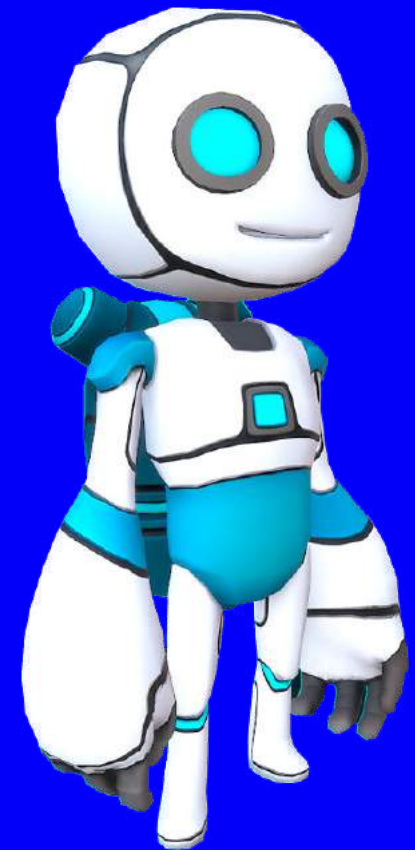
Unity engine, while 23% use Unreal, followed by Blender (13%) and Construct (11%). 7% of developers use proprietary technologies for development.

Figure 26: Most Used Engines



Source: Brazil: Game Industry Report 2022

200 respondents (multiple choice)



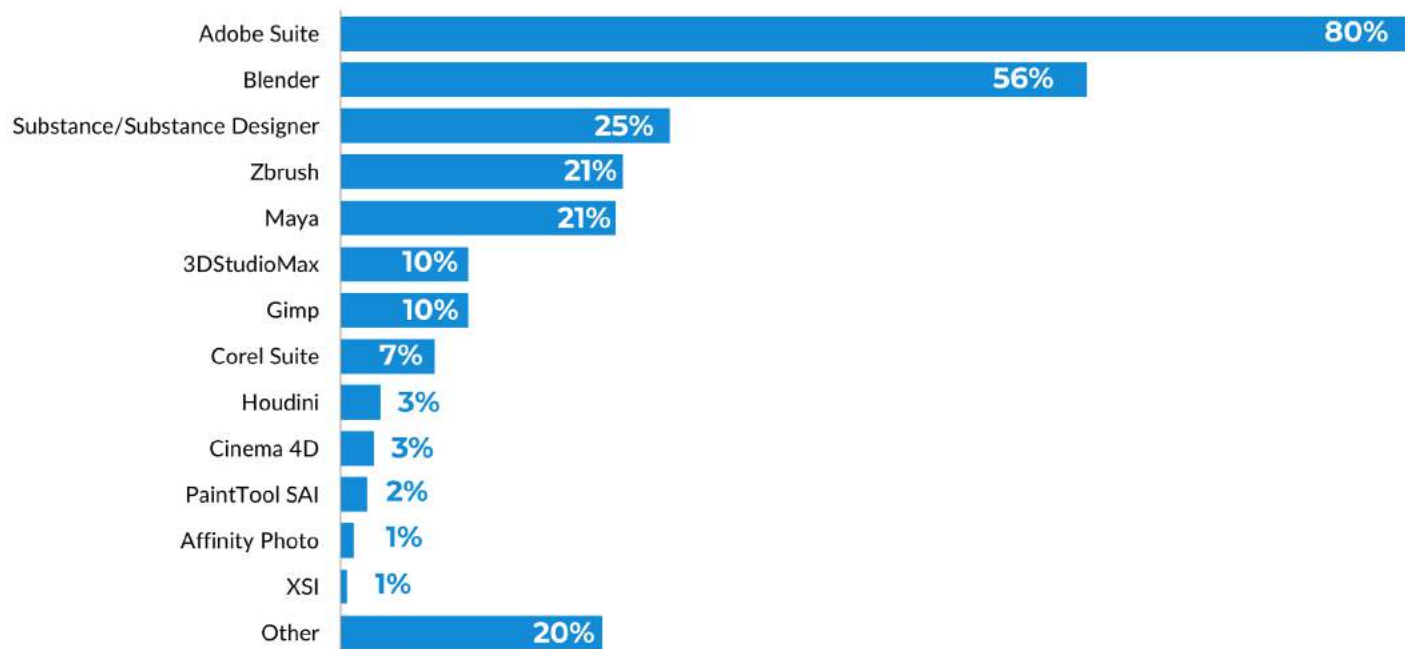


7.2. Software and Licenses

Several types of development software are used by the 200 developers, particularly the Adobe Creative package that offers applications for several purposes, and is used by 80% of the respondents. Blender is used by 56% for rendering, followed by

image processing and production tools (Substance, ZBrush and Maya). The least used software among developers is Affinity Photo and XSI, both with just 1% among respondents.

Figure 27: Most Used Software/Licenses



Source: Brazil: Game Industry Report 2022

200 respondents (multiple choice)

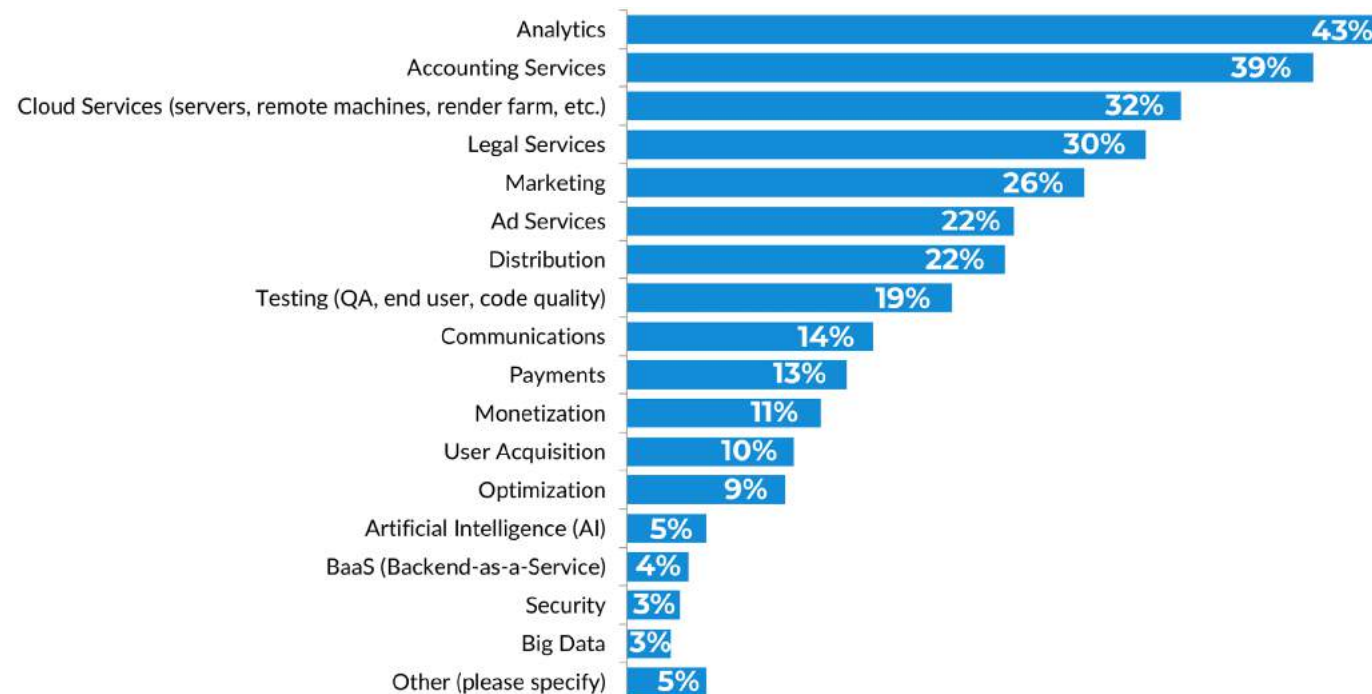


7.3. Services Used

Responding developers use a variety of services, with Analytics services outstanding at 43% of the respondents, followed by accounting advisory services (39%), Cloud Services (32%) and legal advisory

services (30%). In contrast, the least used services are Big Data and Security, each at 3% among the respondents.

Figure 28: Most Used Services



Source: Brazil: Game Industry Report 2022

200 respondents (multiple choice)

8



**CORPORATE
INTERNATIONALIZATION**

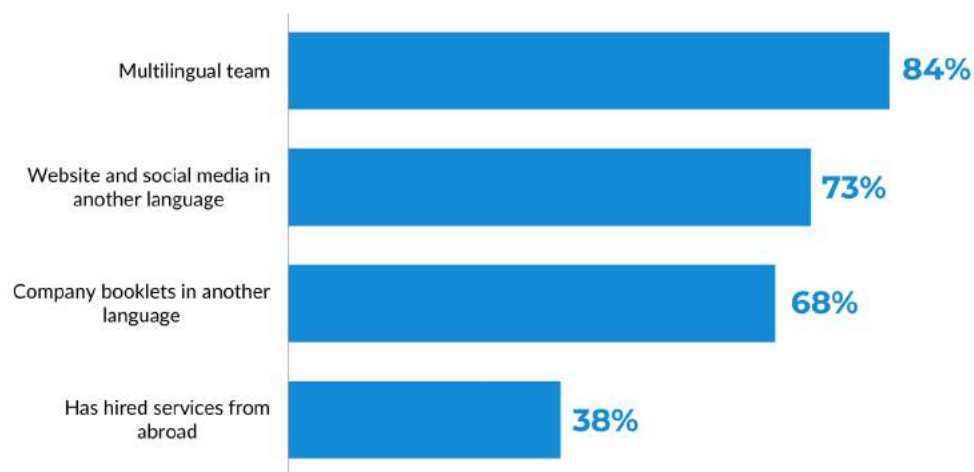
8.1. Conditions for Internationalization and International Exposure

Digital products like games may be offered and sold in different markets simultaneously, making good use of global distribution platforms. Even companies with few resources, such as micro, small and medium-sized enterprises (MSMEs), can take advantage of this because of their access to production technologies and the ease with which they can learn about the features of successful products for the international market. Moreover, small size, agility and

flexibility are innate traits of MSMEs, making it easier for them to adapt to other markets. These factors are apparent in the findings: although 18% of the respondents have no activities or contacts for internationalization, 57% have international users and 48% have already provided services to foreign clients.

Most respondents meet some basic conditions, such as multilingual staff (84%) and foreign language resources for internationalization (68%).

Figure 29: Basic Conditions for Internationalization



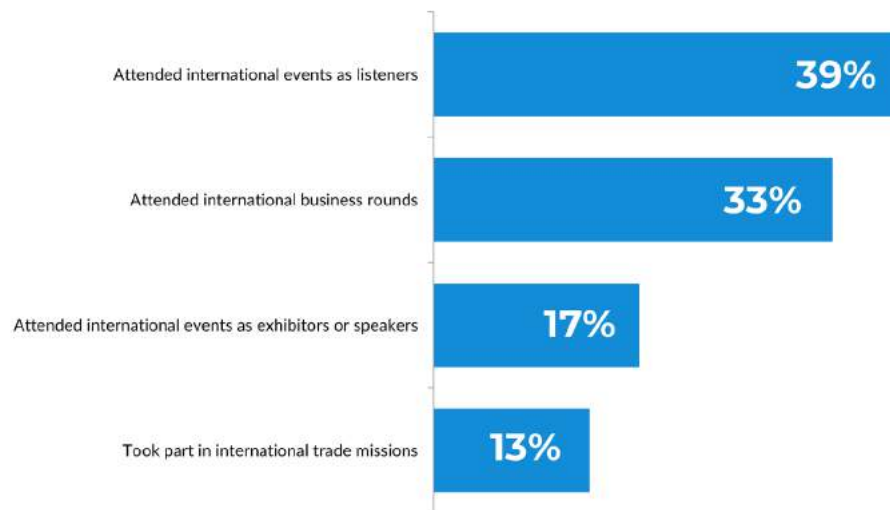
Source: Brazil: Game Industry Report 2022





However, international market exposure, such as attending international events and business rounds, is pursued by only half the companies, and only 22% were exhibitors. 39% of the developers attend international events as listeners, 33% take part in business rounds, 17% are exhibitors at international business events and 13% join trade missions abroad. The support of the Brazil Games Export Program has been an important facilitator for this exposure, offering access to events the size of GDC and making the BIG Festival the main business platform of its kind in Latin America.

Figure 30: Exposure to the International Market



Source: Brazil: Game Industry Report 2022

196 respondents (multiple choice)

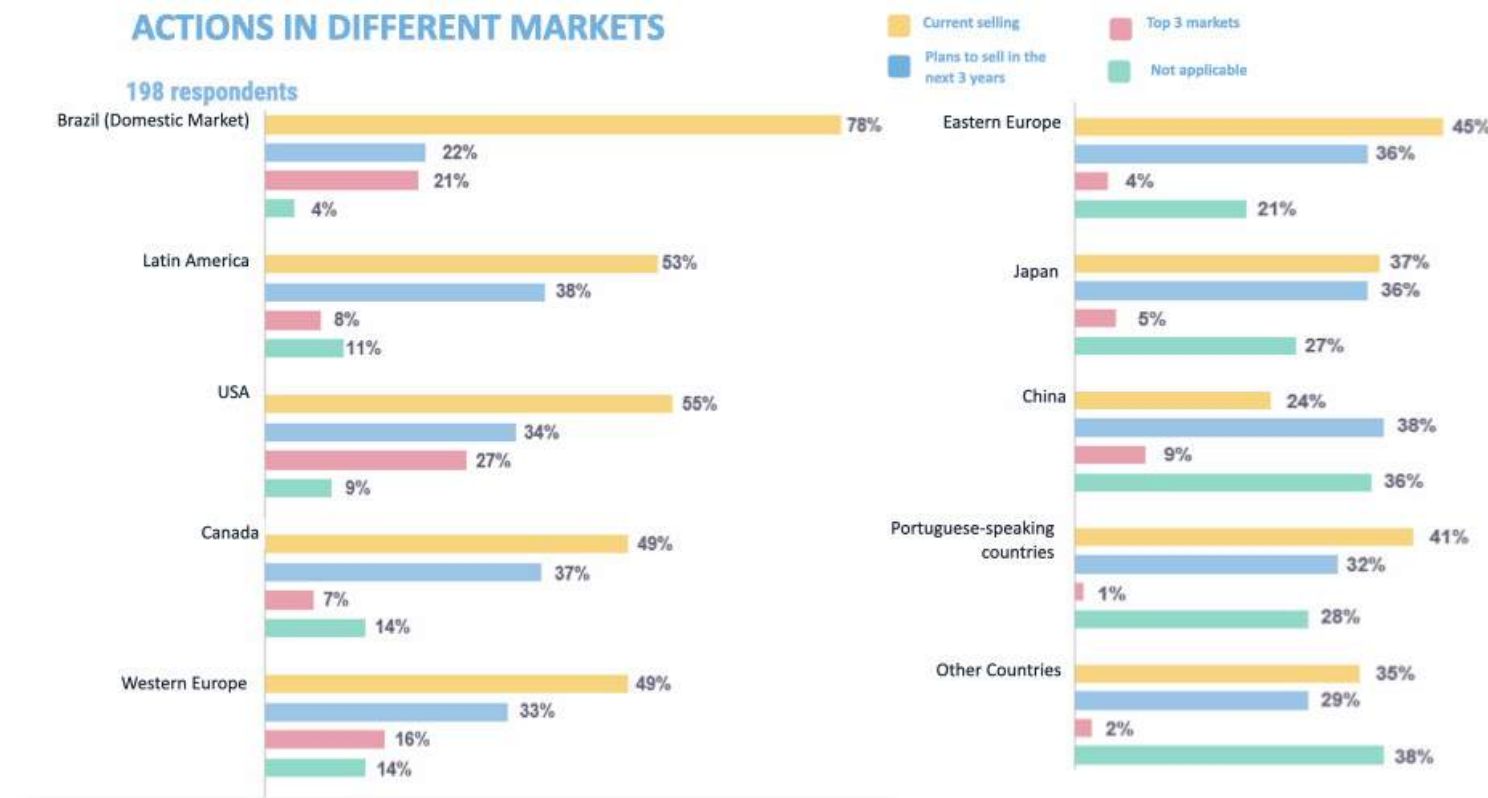
8. 2. Target Markets

Developers (198 respondents) were asked about their main performances, perceptions and strategies for the following markets: Brazil, Latin America, USA, Canada, Western Europe, Eastern Europe, Japan, China, Portuguese-speaking countries and other countries. Currently, most companies sell their products in Brazil (78%), the USA (55%) and Latin America (53%). Penetration in Asia, particu-

larly China, is the lowest among the markets, suggesting that adaptation is more complex and competition keener in more remote cultural contexts. For example, for a game to establish a solid foothold on the Chinese market, it needs to be published in about fifty different stores, as distribution is not as centralized as in the West.



Figure 31: Actions in Different Markets



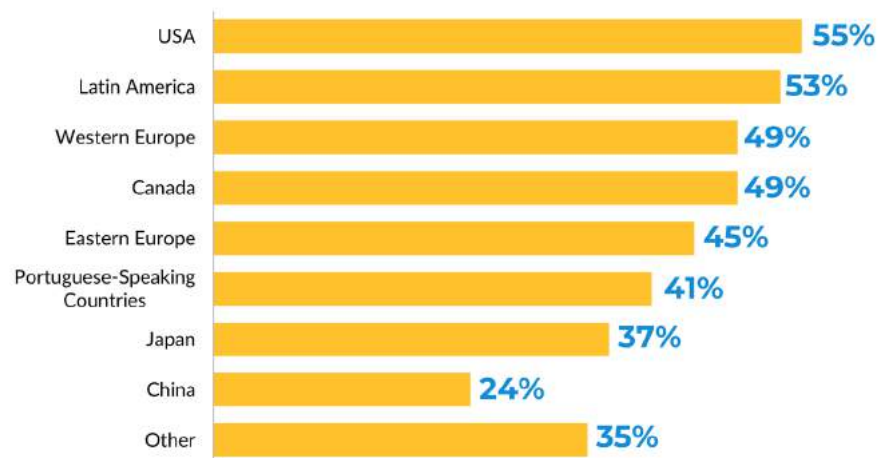
Source: Brazil: Game Industry Report 2022

Three questions complement each other: whether you operate in this market, whether this

market is a major one now and whether it is one of your intended markets for the next three years.



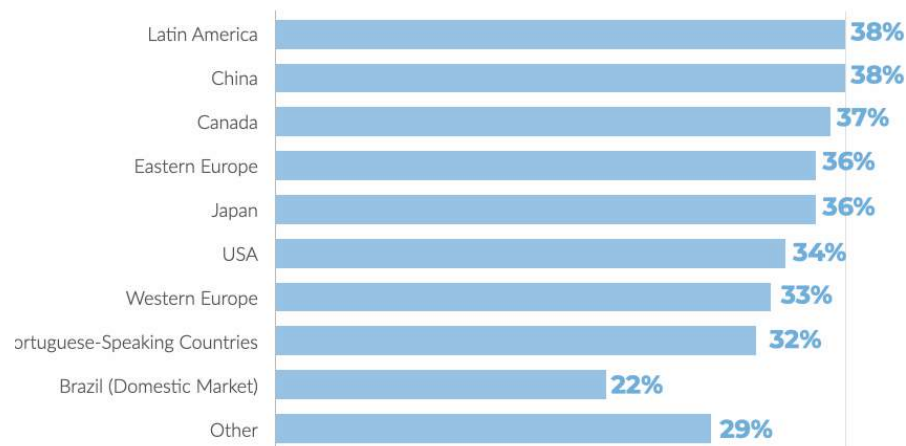
Figure 32: Current Major Markets



Source: Brazil: Game Industry Report 2022

198 respondents (multiple choice)

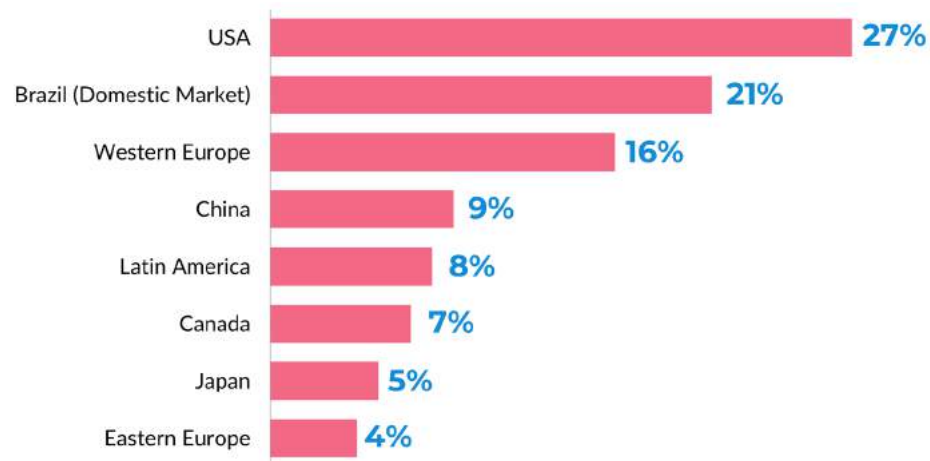
Figure 34: Sales Planning for the Next Three Years



Source: Brazil: Game Industry Report 2022

198 respondents (multiple choice)

Figure 33: Top Three Markets



Source: Brazil: Game Industry Report 2022

198 respondents (multiple choice)

According to the 198 developers, the main markets are currently: USA (55%), Latin America (53%), and Western Europe and Canada (49% each). In contrast, only 24% of companies rate China as a major market.

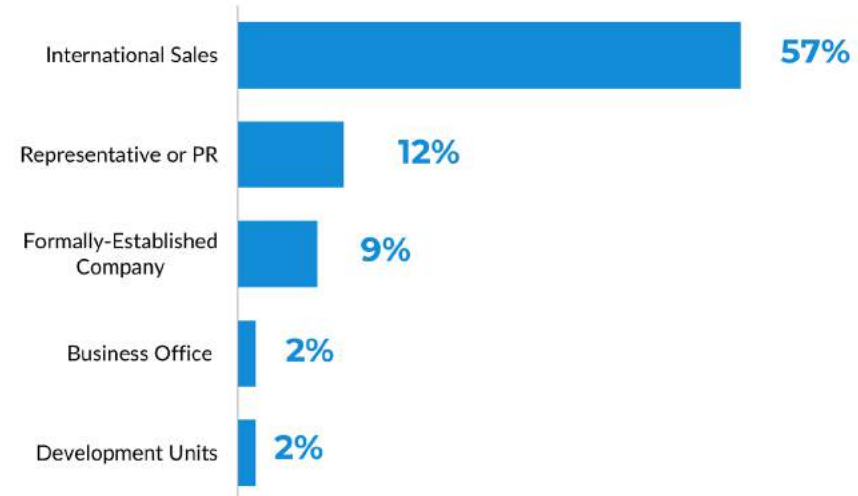
Among the most sought-after international markets for the next three years, China and Latin America stand out, both accounting for 38% of the respondents' interest.



8.3. Exporting Maturity

International deals were initially closed by major conglomerates, which sought out foreign funding and markets, following a learning and risk reduction route that began by selling products and services and then setting up units abroad. Since the 1990s, MSME internationalization (often right from the start) has become more frequent, through what are known as International New Ventures or Born Globals. As games may be sold through global platforms and development services can be delivered remotely, most respondents (57%) have foreign customers – either game users or contracting companies. If an international presence is considered in the traditional way, with full-time staff and resources, 12% have representatives and 9% have a properly established company abroad, while 2% have their own offices and another 2% have development facilities abroad.

Figure 35: International Business



Source: Brazil: Game Industry Report 2022



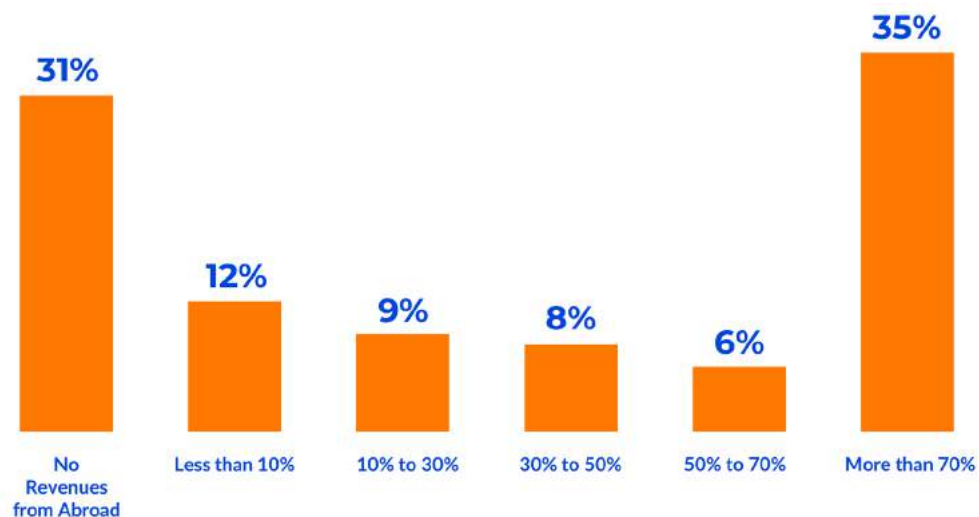


8. 4. Revenues from Abroad

Regarding the contribution of revenues from abroad, 31% of the developers had no foreign revenues, while accounting for more than 70% of their income for 35% of them. This split may be related to

the production of serious games, which are domestic for many customers, while entertainment games are distributed by global platforms and stores.

Figure 36: Revenues from Abroad



Source: Brazil: Game Industry Report 2022



9



FINANCIAL OVERVIEW

9.1. Overall Industry Revenue

The first step for estimating industry revenues was to survey the revenue of developers and publishers with games among the 500 most profitable apps provided by the AppMagic platform in 2015, 2018 and 2021 ([A] Revenue in USD of Brazilian developers with games among the top 500 apps).

For these years, the number of Brazilian companies in the ranking was 74, 78 and 77, respectively. As the estimated revenues for the respective year of the lowest-ranked company in all three cases were under USD 35, we decided to use the sum of the revenues of these companies as the revenue of the mobile games industry. Although there is a long-tail effect in app stores, this cut-off represents almost the entire revenue.

The revenues of the first two Brazilian developers in the ranking ([B] Top2 MobileBR) were separated from the revenues of the rest of the developers. The blockbuster effect is quite clear, disproportionately concentrating revenues among the top-ranked developers: the top two reached respectively 82.9%, 94.7% and 91.1% of the revenues of all ranking participants, especially the leader in all three years (Wildlife). Although there are import-

ant developers in other segments, there is a cluster of larger businesses in the smartphone and tablet games segment, as illustrated in the survey of major Brazilian developers by headcounts.

The revenues of other developers in the ranking were consequently added together ([C] Mobile revenues without Top2 MobileBR), so that $[A]=[B]+[C]$. This amount was used as a parameter to calculate revenues for other segments. As the industry is already very internationalized and its structure follows global trends, Newzoo's estimate of the share of smartphone and tablet game revenues over total game revenues was used to calculate [D] Revenues from other sectors.

[E] Total game revenues in USD were calculated from [A] Revenues in USD of Brazilian developers with games in the top 500 apps + [D] Revenues from other sectors.

A 30% discount in [E] Total game revenues in USD was used to calculate the overall revenues of Brazilian developers ([F] General revenues in USD), as app stores and game platforms withhold commissions on sales. Although this commission varies, depending on the game's revenues – the first





million dollars of revenue currently pays 15% commission in the Apple and Google stores – and some stores charge less than 30% (example: Epic, 18%), the standard commissions for Apple, Google, Steam and GOG remain at 30%. This model does not consider these differences and other emerging revenue models, such as subscriptions. For calculating [G] General revenue in BRL, the average daily commercial dollar foreign exchange rate was used for each year.

Consequently, growth for 2015 – 2021 was 336% (USD) and 604% (BRL). The Compound Annual Growth Rate for 2015 – 2021 was 27.8% in USD, and 38.5% in BRL.

Table 11: Developer Revenues in 2015, 2018 and 2021

DEVELOPER REVENUES IN 2015, 2018 AND 2021			
YEAR	2015	2018	2021
[A] Revenues in USD of Brazilian developers with games in the top 500 apps	36,059,159	203,777,817	189,301,338
[B] Top2 MobileBR	29,898,009	192,995,203	172,498,835
Number of Brazilian companies in the ranking	74	78	77
[C] Mobile Revenues without Top2 MobileBR	6,161,150	10,782,614	16,802,503
% Mobile/World	36%	51%	52%
[D] Revenues from Other Sectors	10,953,156	10,359,766	15,510,003
[E] Total Game Revenues in USD	47,012,315	214,137,583	204,811,341
Average USD per Year	3.34	3.66	5.4
Total Game Revenues in BRL	157,021,131	783,743,555	1,105,981,240
Average Commission for Platforms	30%	30%	30%
[F] General Revenue in USD	32,908,620	149,896,308	143,367,939
[G] General Revenue in BRL	109,914,791	548,620,489	774,186,868

Source: Brazil: Game Industry Report 2022

198 respondents (multiple choice)

9. 2. Revenues of Responding Companies

The first bracket is the MEI (individual micro-entrepreneur) revenue ceiling: Up to BRL 81,000. Next come brackets corresponding to company revenues established by Brazil's simplified micro-enterprise taxation system: BRL 81,001 – BRL 130,000; BRL 130,001 – BRL 180,000; BRL 180,001 – BRL 360,000; BRL 360,001 – BRL 720,000; BRL

720,001 – BRL 1.8 million; BRL 1.81 million – BRL 3.6 million; and BRL 3.61 million – BRL 4.8 million. The following revenue brackets were added: BRL 4.8 million – BRL 16 million; BRL 16 million – BRL 30 million; and above BRL 30 million.

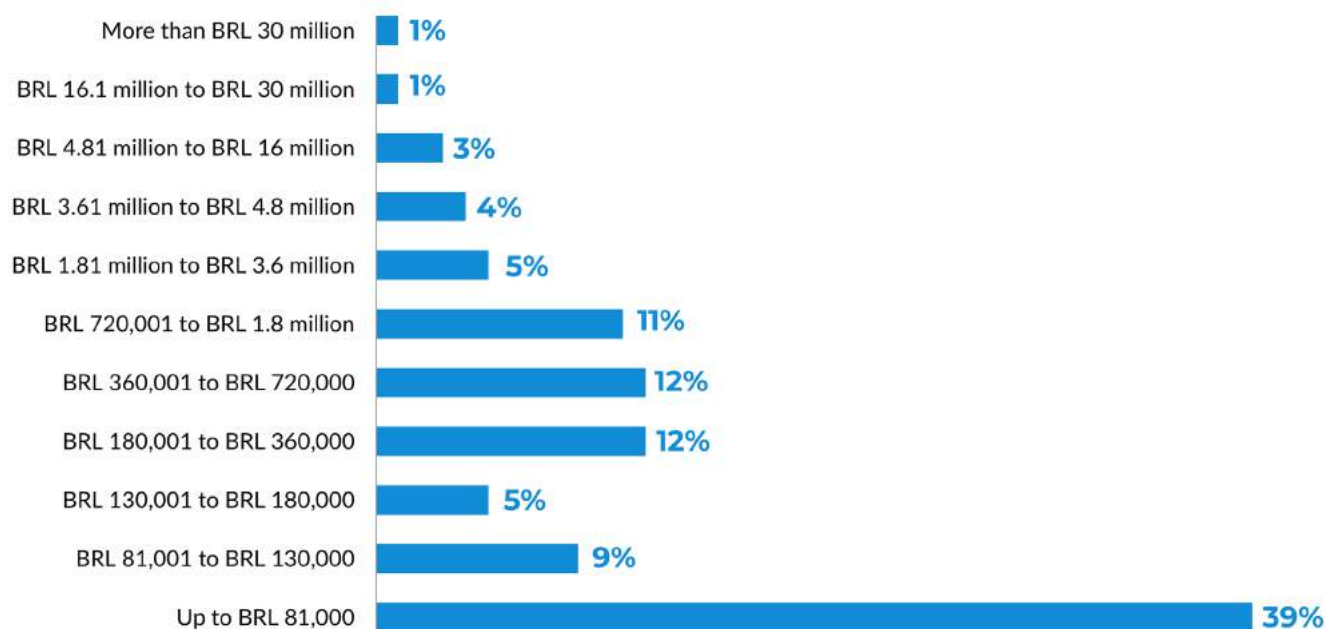


The 2022 profile is very similar to the 2014 and 2018 surveys, but growth may be noted in some brackets. In 2014, the lowest bracket (up to BRL 240,000) accounted for 74%. The 2018 survey showed 71% for up to BRL 360,000; with 62% for the BRL 81,001 – BRL 130,000 bracket; 9% for the BRL 130,001 – BRL 180,000 bracket; and 9.9% for the BRL 180,001 – BRL 360,000

bracket. The 2022 survey showed 53% for the up to BRL 360,000; 39% for the BRL 81,001 – BRL 130,000 bracket; 5% for the BRL 130,001 – BRL 180,000 bracket; and 12% for the BRL 180,001 – BRL 360,000 bracket.

Thus, although revenues remain below BRL 360,000 for most developers, this percentage dropped from 71% to 53% among the respondents. Although inflation was not negligible during this

Figure 37: Game Developer Revenues in 2022



Source: Brazil: Game Industry Report 2022

189 respondents

period, it is reasonable to assume that these variations are related more to developer maturation and high exposure to international markets, triggering revenue increases in BRL, as the value of the Brazilian Real fell against other currencies.

Revenue figures are rated as sensitive by many respondents, who do not always complete this question or answer it accurately. To understand the growth of more mature companies during this



period, we used data from the AppMagic platform, focused on games for mobile devices. In 2015, it identified twelve Brazilian developers with games among the top 500 apps with sales topping USD 100,000, three with sales over USD 1 million and one with sales above USD 5 million. In 2018, it identified fifteen Brazilian developers with games among the top 500 apps with sales topping USD 100,000, five with sales above USD 1 million and two with sales

above USD 5 million. In 2021, it identified seventeen Brazilian developers with games among the top 500 apps with sales topping USD 100,000, five with sales above USD 1 million and three with sales above USD 5 million.

These data show that more developers are achieving higher revenue levels, even in dollar terms, and that the industry is progressing in both quantitative and qualitative terms.

9.3. Revenues by Region

Regardless of size, there is a cluster of companies in the Southeast region. The Midwest region has only micro and small companies, while the South and Northeast regions have medium-sized companies. In addition to grouping the largest number of companies, the Southeast is also the region where the largest businesses are located.

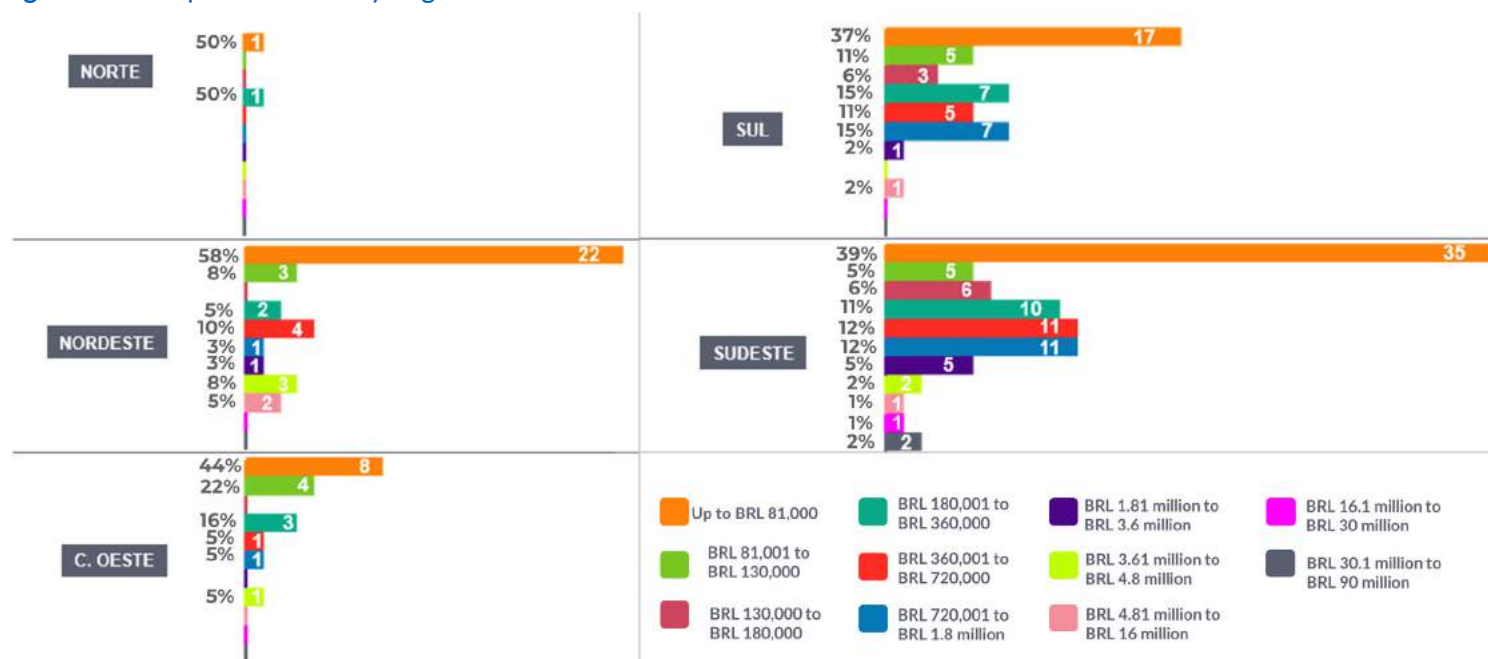
Detailed data on the location and size of the companies are presented below. The Southeast is the only region with large companies (three of them). One has revenues of BRL 16.1 million – BRL 30 million and two have revenues of BRL 30.1 million – BRL 90 million. Although most companies in

the Southeast are generally medium-sized and particularly small, this is also the region with the largest number of developers. In the North region, only two small developers responded to the survey. However, this region includes two major corporations: Samsung and DXWorks. The Midwest has only low-revenue developers, but with more companies than the North (eighteen in total).

In parallel to this general data, it is interesting to note the growth of developers in the South and Northeast. Despite having several small companies and no large ones, they have three medium-sized companies, two in the Northeast and one in the South.



Image 38: Developer Revenues by Region



Source: Brazil: Game Industry Report 2022

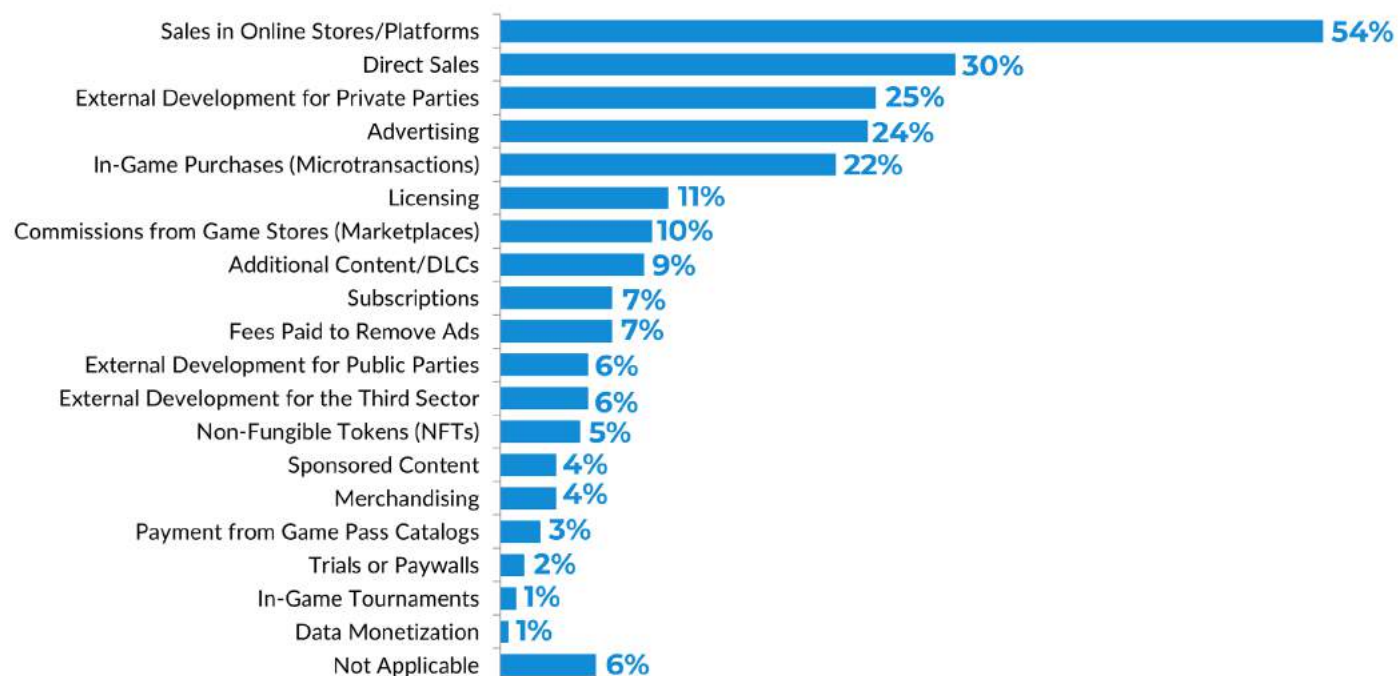
9. 4. Revenue and Monetization

Of the 190 companies developing entertainment games, 39% had only a single source of revenue in 2021. Revenues came mainly from game sales, both direct (30%) and through platforms (54%), as well as from private orders (25%) to public and private companies. Advertising and in-game purchases were each a source of revenue for near-

ly a quarter of the companies. Data monetization (1%), in-game tournaments (1%) and trial periods/paywalls (2%) were infrequent. Some emerging sources of revenues – such as NFTs (5%) and Game Pass (3%) – have already been mentioned, with their shares likely to increase.



Figure 39: Monetization of Entertainment Games



Source: Brazil: Game Industry Report 2022

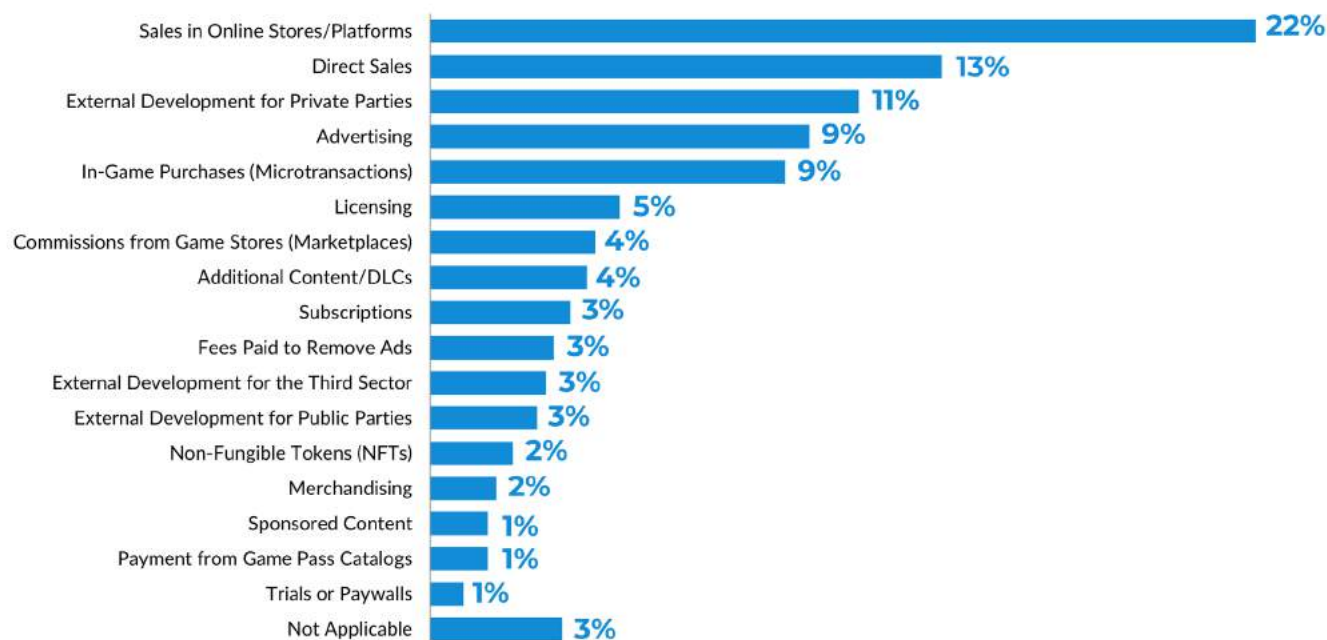
190 respondents (multiple choice)

Of the 208 responding companies, 22% report that most of their revenue sources for social impact/serious games consist of sales through online platforms/stores, followed by 13% from direct sales

and 11% from private purchases. The least frequent types of revenue sources are: sponsored content, Game Pass catalogs; and trials/paywalls, together accounting for only 1% of developer responses.



Figure 40: Monetization of Social Impact/Serious Games



Source: Brazil: Game Industry Report 2022

208 respondents (multiple choice)

9. 5. Main Revenue Source by Game Type

While developers commonly work with more than one type of game, indications of their main sources of revenue reflect the focus of their operations. Among the respondents, the main sources of

revenues are entertainment games (76%), followed by educational games (12%), advergames (6%), games for corporate training (4%) and simulators using specific hardware (1%).

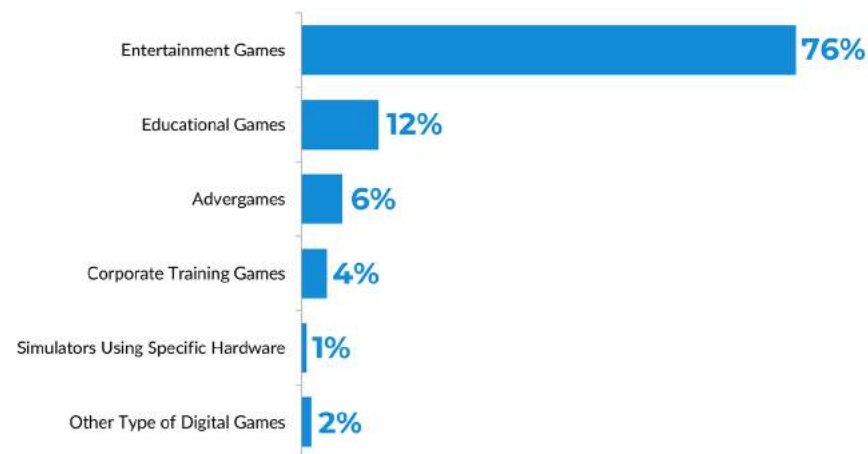


9. 6. Intellectual Property

Regarding intellectual property, among the 213 developers, 93% of respondents reported developing their own Intellectual Property (IP), 18% of respondents license IP from other companies and 17% take part in transmedia projects (books, comics, in-game concerts, movies, etc.).

More than half (59%) of the respondents use **only** their own IP, and 13% license it to third parties.

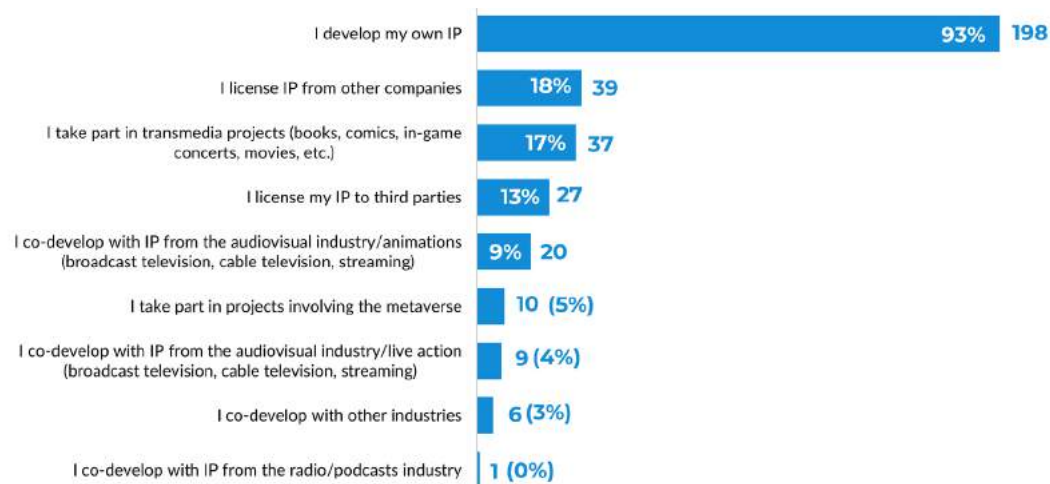
Figure 41: Main Revenue Source by Game Type



Source: Brazil: Game Industry Report 2022

127 respondents

Figure 42: Intellectual Property Data

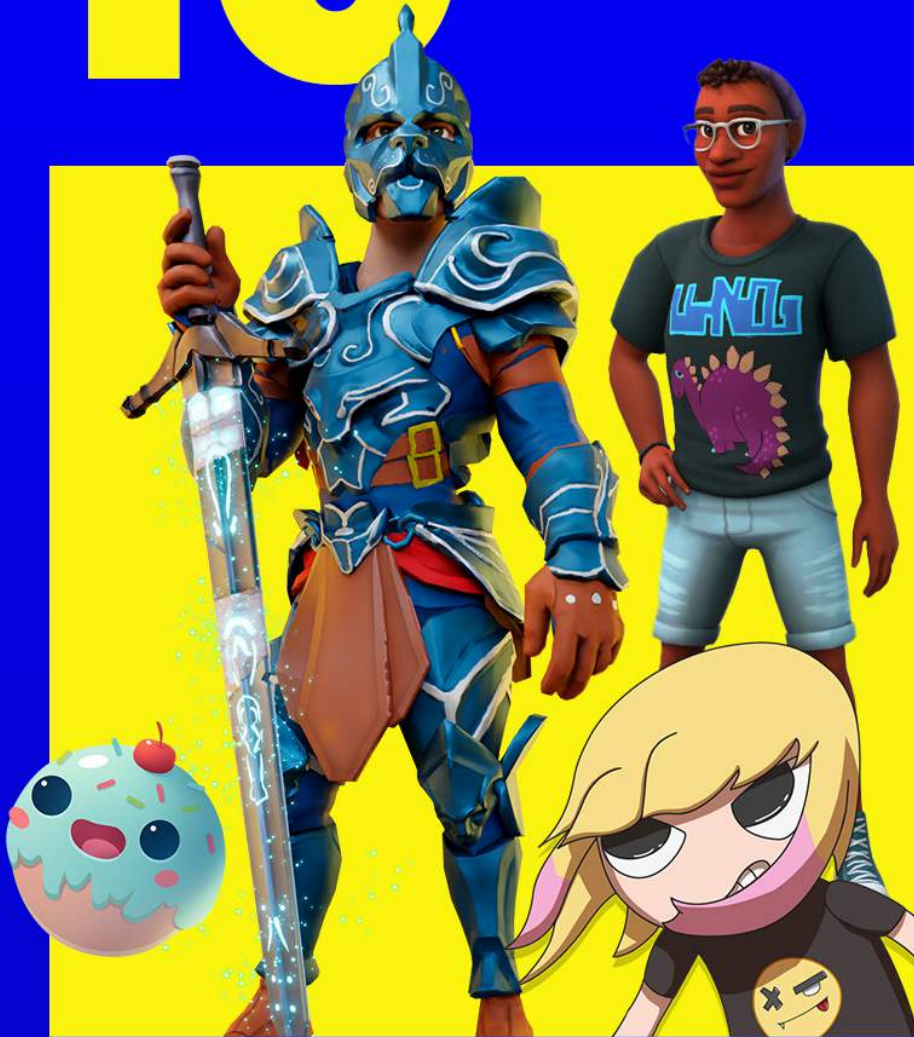


Source: Brazil: Game Industry Report 2022

213 respondents



10



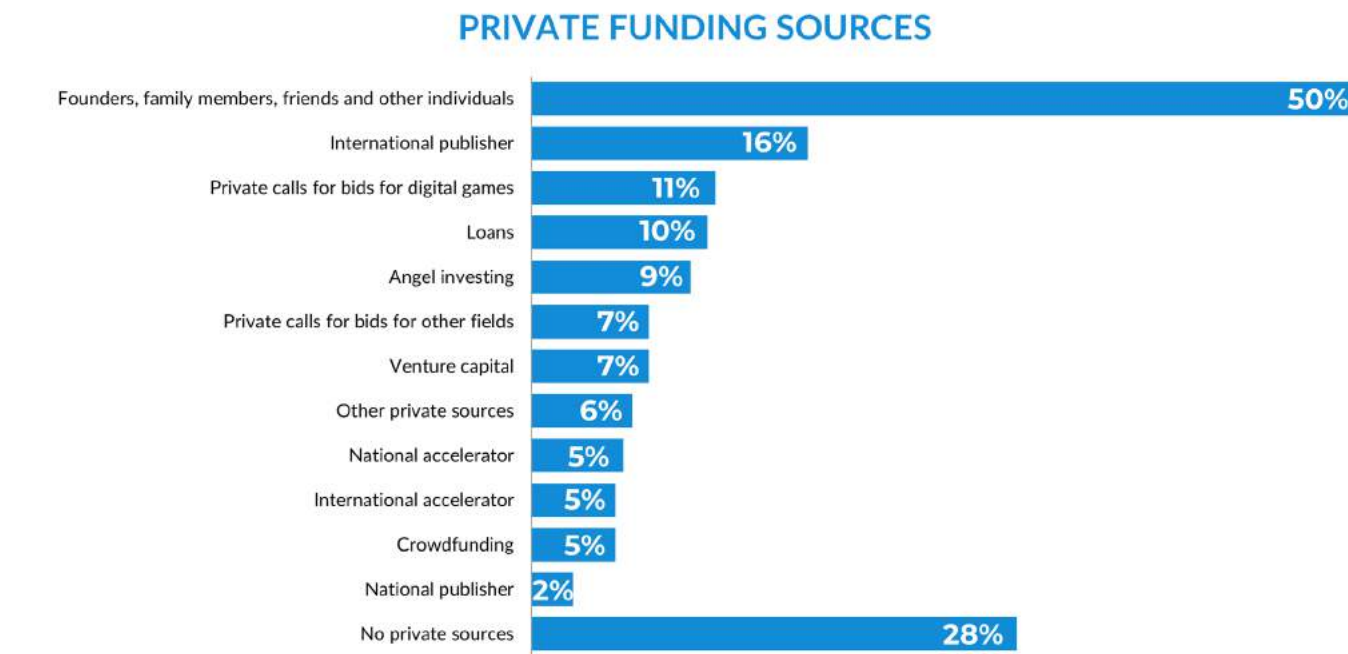
FUNDING

10.1. Private Funding

The primary private source of funding, reported by 208 respondents is from founders, family, friends and other individuals, with half of the developers stating that they use this type of funding,

followed by 16% using international publishers and 11% using private game announcements and calls for proposals. It is important to note that 28% of respondents reported not using any private sources.

Figure 43: Private Funding Sources



Source: Brazil: Game Industry Report 2022

208 respondents (multiple choice)



Mentioned private calls and announcements include: the Jogos Novos call issued by Magalu; the Rumos Itaú Cultural Program run by the Itaú bank; the Telefonica Foundation's Pense Grande Program; and the Unilever Women's Entrepreneurship Award – Diamonds.

The international accelerator most mentioned by Brazilian developers was Game Founders, followed by mentions of the Black Founders Fund, the Indie Games Accelerator (IGA) (Google), ELEVATE 2020: GDC Relief Fund Accelerator and Boost VC. The Brazilian accelerators mentioned were Inova Bossa Nova, AmazonCap and Samsung Ocean.

The developers used crowdfunding from Kickstarter, Catarse and juntos.com.vc.

Most of the angel investors come from São Paulo State, with mentions of other Brazilian States, as well as countries (USA) and continents (Europe). Among the Brazilian cities mentioned are São Paulo and Campinas (both in São Paulo State), Rio de Janeiro (Rio de Janeiro State), Natal (Rio Grande do Norte State), Salvador (Bahia State), Pelotas (Rio Grande do Sul State) and Timóteo (Minas Gerais State). Cities mentioned elsewhere in the world include Brisbane and Sydney (both in Australia) and Tallahassee (USA). Two examples that were men-

tioned are Garan Ventures and Raja Valley.

International publishers that have released Brazilian games include bitComposer (Germany), WhisperGames (China), Akupara Games (USA), Gamemill (USA), Humble Games (USA), Megacat Studios (USA), Modus Games/Maximum Games (USA), Scopely (USA) Skystone Games (USA), tiny-Build (USA), Plug In Digital (France), Bandai Namco (Japan), Dangen Entertainment (Japan), QubicGames (Poland), By Aliens (Portugal), 1C Publishing





(Russia), Paradox Interactive (Sweden), Raw Fury (Sweden) and Starbreeze (Sweden). Although not so numerous, Brazilian publishers that were mentioned include Bee Legacy, DX Gameworks and Magalu. Another mentioned source consisted of console platform exclusivity contracts.

Among venture capital sources, VCs based in the USA and The Netherlands were also mentioned as well as Brazil-based VC firms.

Benchmark Capital led a USD 60 million investment in Wildlife in December 2019, making this developer an official unicorn valued at USD 1.3 billion, joined by GE32 Capital, Human Capital, Bessemer Venture Partners and Base Partners. In August 2020, Vulcan Capital led a USD 120 million contribution

that upped its valuation to USD 3 billion, joined by Human Capital. Epic Games' CVC (Corporate Venture Capital arm) contributed to Aquiris (which had CRP as an investor).

Although developers are small, 8% of the respondents reported the completion of some kind of merger or acquisition procedure, when one company fully acquires the other or where two or more companies merge, in both cases resulting in a single larger company. Although qualitatively important, this type of event is always minor in quantitative terms. Highlights among the more notable transactions in 2022 are the acquisition by Fortis of Oktagon in Parana State (which had VC from Confrapar) and the ongoing acquisition of PUGA in Pernambuco State.

10. 2. Government Funding

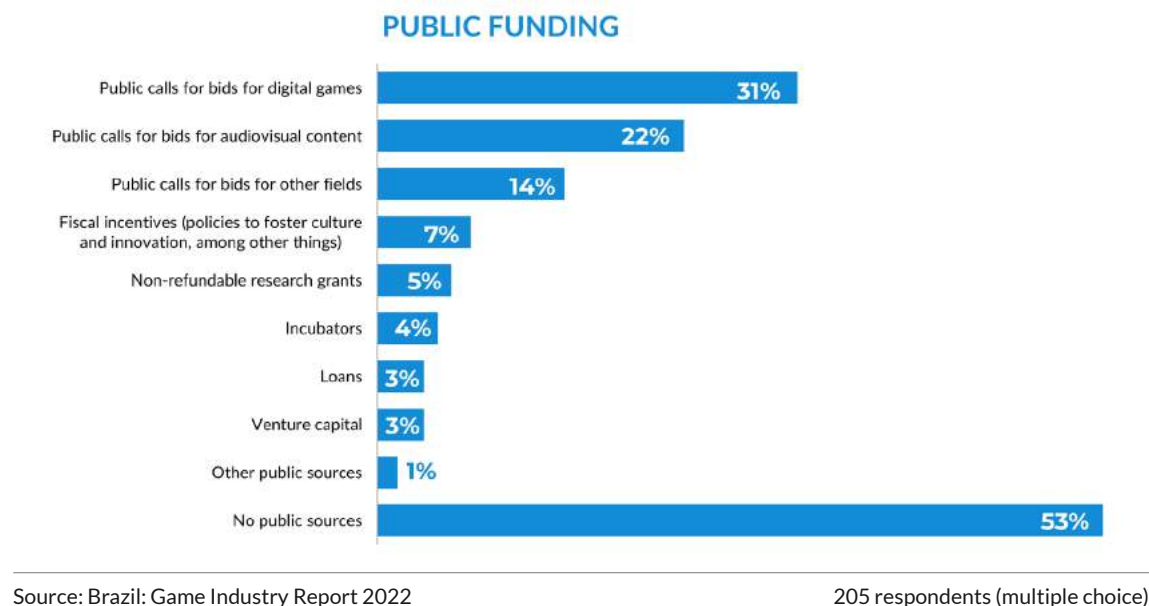
Public sources may be classified by area (specific to games or covering broader areas like culture, technology and others) and by government tier (federal, state or local). The survey of sources recalled by developers provides important complementary data on available sources and funds raised.

When asked about sources of public funding

already used by the 205 respondents, 31% said they used government calls for proposals for games, 22% used them for audiovisual materials and 14% used them in other areas. It is interesting to note that slightly more than half of the developers have not used any public sources.

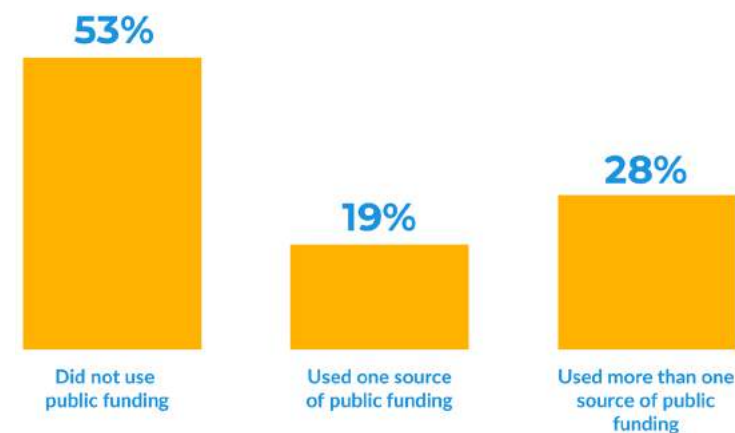


Figure 44: Public Funding Sources



While more than half of the respondents did not use public funding (53%), almost a third (28%) used more than one source.

Figure 45: Use of Public Funding Sources



Source: Brazil: Game Industry Report 2022

In relation to specific resources for games, the most mentioned (33 times) line of credit through calls for proposals is offered through the Brazilian Audiovisual Development Support Program (PRO-DAV), with funds from the Audiovisual Sector Fund (FSA), administered by Brazil's National Cinema Regulator (ANCINE) and the Far South Regional Development Bank (BRDE).

The Ministry of Culture was also mentioned in policies implemented at the time of its existence as a Ministry, such as BRGames (two) and JogosBR, as well as calls for proposals issued by the Audiovisu-



al Bureau (SAv). As a bureau under the Ministry of Tourism, the Aldir Blanc Cultural Incentive Act was mentioned by two companies. For tax incentives, the Audiovisual Act was mentioned.

Among the Science, Technology and Innovation agencies, mentions were noted of FINEP, as well as the State Research Foundations system: São Paulo State Research Support Foundation (FAPESP); Pernambuco State Research Support Foundation (FACEPE); Rio de Janeiro State Research Support Foundation (FAPERJ); and Espírito Santo State Research Support Foundation (FAPES). Mention was also made of a call for proposals issued by the Economic, Scientific, Technological and Innovation Development Fund (FUNDECI), administered by the Banco do Nordeste bank. The listed incubators were linked to the University of Brasília (UnB) with two mentions, the Software Excellence Center (Núcleo Softex) at Campinas, the Santa Maria Federal University (UFSM) and the Miditec incubator (ACATE-Sebrae in Santa Catarina State).

Managed by Bozano Investimentos, the Criatec II fund invested in a developer. Several Government banks are stakeholders – BNDES, Banco do Nordeste (BNB), Banco de Desenvolvimento de Minas Gerais (BDMG), Banco de Brasília (BRB) and

Badesul Desenvolvimento – and the administrator.

Two examples of funding channeled to serious games – INOVApps, from the then Ministry of Communications; and the Sebrae Game Contest run by the National Department of Brazil's Small Business Bureau (Sebrae Nacional) – were each mentioned twice.

At the State level, São Paulo stands out with eleven, especially its Cultural Action Program (ProAC), mentioned by ten developers. Other State Culture Bureau policies that were mentioned include: Federal District – twice; Rio Grande do Sul State – twice, one mentioning the Procultura initiative; Rio de Janeiro; Maranhão; Mato Grosso (MT Criativo); and Santa Catarina (Santa Catarina Cinema Call for Proposals). The Federal District Tourism Bureau was the only mention of a department outside the culture/technology fields.

At the municipal level, São Paulo stands out, with the Spcine development initiative mentioned by seven developers. Other Municipal Governments mentioned were Belo Horizonte with the BH nas Telas local cinema initiative (Minas Gerais State), Florianópolis (Santa Catarina State), Natal (Rio Grande do Norte State), Nova Hamburgo (Rio Grande do Sul State) and the Games Hub in São José dos Campos (São Paulo State).



10.3. Public Policies

Federal actions promoting the games sector in Brazil are at one of the lowest-ever levels since the first Government call for games proposals was issued in 2004. Among support programs for this industry, the only initiative that remains is the internationalization drive run by ApexBrasil, with the Brazil Games Export Program (run in partnership with Atragames) moving into its sixth two-year cycle.

In terms of directly promoting game production at the national level, ANCINE discontinued the PRODAV 14 line of credit launched in 2016 and 2017. Although funds were approved for a new call, ANCINE canceled this budget allocation from 2019 onwards, and has not issued any new announcements since then. After the last call for proposals in 2018, no new lines of funding were launched for this sector by the Ministry of Culture, which became a Special Bureau under the Ministry of Citizenship, and subsequently under the Ministry of Tourism.

Among the lines of credit offered by the BNDES, the ProCult line that underpinned the games sector shut down in 2017; the operations of its replacement – BNDES Direct 10 – were suspended in 2019.

No new BNDES programs have been announced for this sector, and no studios have been selected under the BNDES Garage startup development program.

The FINEP Startups Program that supported the games sector within the creative economy area since 2017 suppressed this category, starting in 2020. No other FINEP actions have been announced for this sector, and no games research and development projects were funded through to April 2022. This was when the 2022 3rd Edition of the FINEP Space Acceleration Program was launched, encompassing games in its Theme 9: Creative Industry (innovations in the fields of architecture, design, engineering, creation and distribution of online content, electronic media, games and digital/social platforms).

The National and Regional offices of Sebrae have several initiatives that support developers. In addition to services common to other micro and small enterprises, such as business training, it also shares programs with a technological and/or creative slant. In Rio Grande do Sul State, Sebrae-RS is the regional office with the longest history of





support for this sector, through the Sebrae Global Games Project, run in partnership with the Rio Grande do Sul State Game Developers Association (ADJogosRS). Other actions are related to more novice entrepreneurs, aligned with the situation of the local ecosystems, including Sebrae-MT (Level Up Program, 2021), Sebrae-CE (2021 Games Industry Development Training Program in Ceará, in partnership with the City of Fortaleza), Sebrae-MA (workshop cycle, seminar and mentoring, 2019) and Sebrae-AL (calls for proposals offering grants for the creative economy sector with FAPEAL in 2020 and a Games Overview in Alagoas State (FORTIM,-SAKUDA, SANTOS, 2021).

Since 2019, the main programs buttressing the games sector have been State-led. In Rio Grande do Sul State, the GameRS Program was launched in July

2020, coordinated by the Innovation, Science and Technology Bureau (SICT) and run in partnership with three Bureaus: Economic Development (SEDEC), Education (SEDUC) and Culture (SEDAC). In São Paulo, the ProAC Cultural Action Program has offered annual lines of credit to this sector since 2019, in addition to announcing the State GameSP investment program for this sector in 2021. During this period, several States – including Maranhão and the Federal District – added this sector to their in-place development programs.

At the municipal level, the actions of the Spcine initiative in São Paulo are particularly noteworthy, launching programs to promote this sector since 2016 and funding the first exclusive game development incubation program through the Seed Money 2020 Cfp.



11



ASSOCIATIONS AND COLLECTIVES

11. 1. Mapped Associations

This issue is relevant for examining the institutional organization of these companies in the ecosystem, highlighting entities that voice the demands of this sector in the public arena. Fifteen regional collectives and associations were mapped. Regional entities include formally established associations (ADJogosRS, GAMinG and Ascende) and developer collectives (other entities) that represent this sector.



Chart 1: Regional Associations and Collectives

ADJogosRS – Rio Grande do Sul	GAMEGO – Goiânia
AMAGames – Maranhão	Jogos SP – São Paulo
APGAMES – Paraíba	PiaulIndie – Piauí
ASCENDE – Ceará	PING – Paraíba
BIND – Bahia	Playnambuco – Pernambuco
BRING – Brasília	PONG – Rio Grande do Norte
GameDevs – Pará	RING – Rio de Janeiro
GAMinG – Minas Gerais	

Source: Brazil: Game Industry Report 2022

11. 2. Responding Associations

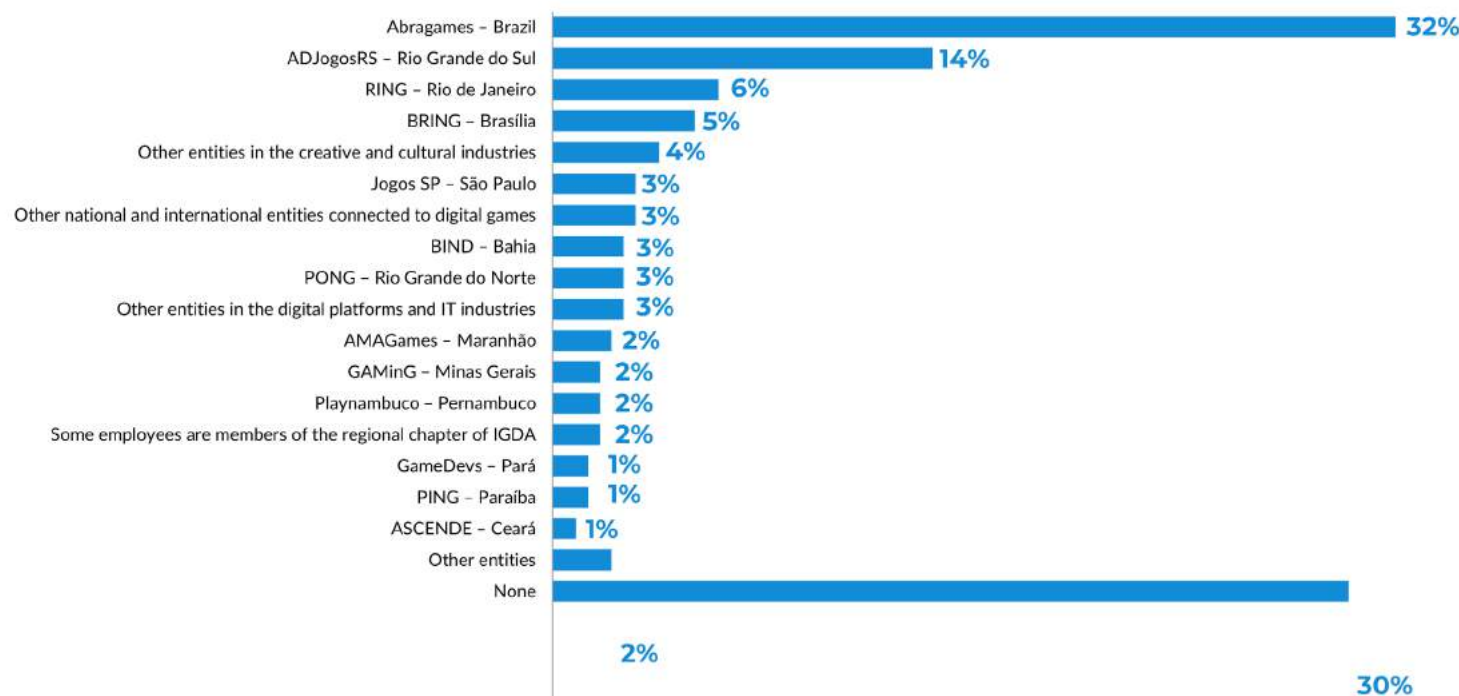
Among the collectives, Abragames stands out for the size of its membership, which is nationwide (with 32% of its members among the respondents), the ADJogosRS association in Rio Grande do Sul

State (14%) and the RING collective in Rio de Janeiro (6%). About 30% of the respondents are not members of any entity.





Figure 46: Associations/Collectives and Their Members



Source: Brazil: Game Industry Report 2022

198 respondents (multiple choice)

It is worth mentioning the presence of four new regional entities: APGames in Paraíba State; Índigo in Goiás State; Jogos SP in São Paulo State; and PiauIndie in Piauí State, all aimed exclusively at game developers and not mentioned in the II Census. In 2022, fourteen of Brazil's 27 States have regional entities.

Moreover, there are developers belonging to

the Brazilian Music and Arts Association (ABRAMUS); Brazilian Extended Reality Association (XRBR); Santacine; Xsolla Club; Brazil Audiovisual Independent (BRAVI); International Games Industry Platform (GDBay); Santa Catarina Technology Association (ACATE); and Science Fiction and Fantasy Writers of America (SFWA).



11. 3. Overview of Regional Associations

Brazilian regional associations and collectives were queried in Maranhão State, Goiás, Minas Gerais, Rio Grande do Sul and São Paulo States, as well as and the Federal District.

When assessing the local ecosystem, the leaders pointed out a moment of greater consolidation and maturity. This is the case in Brasília, which formally established its association, or Maranhão State, where a new collective is building up its membership and strengthening links with Government agencies. A slowdown in ecosystem activities has been noted in Goiás State during the past few years, with scattered initiatives. However, the situation is improving as actions resume with the return of in-person events. In Minas Gerais State, the ecosystem still clearly consists mainly of small companies with up to five employees; Rio Grande do Sul State has a more diverse ecosystem, with more experienced and consolidated companies coexisting with smaller start-up studios and engaging in cooperative actions. São Paulo showed that – despite the presence of several experienced companies at advanced levels of maturity – links with other creative sectors (such as cinema and music) are still incipient, particularly

with the public sector. However, the first steps have clearly been taken during the past few years, to set up a local association coordinating all these efforts.

Among the main difficulties identified as common to local ecosystems, the limited availability of investments and business expertise was particularly notable in Maranhão State, where few studios work full-time on developing games, far away from major hubs and with limited access to Brazilian and international events. In the Federal District, the issue of business management training was also pointed out, in addition to the lack of entry-level jobs for beginners. The Goiás State collective underscored the lack of community cohesion and weak support from government agencies. The Minas Gerais State Association mentioned the lack of possible investments in its own intellectual property products, with studios dependent on service agreements. The maturity and understanding of game developers as businesses and seeing games as a product by the younger companies is a difficulty pointed out by the Rio Grande do Sul State Association, in addition to a narrowing skilled labor bottleneck at the most experienced companies. The São Paulo State Asso-



ciation highlighted issues such as difficulties in importing devkits, specialized consulting services for receiving export royalties on sales of goods or services more efficiently, a heavy tax burden and Government incentives for start-ups striving to launch their first titles.

The main opportunities highlighted were exchanges of expertise and cooperation among companies, and possibilities of actions encouraging Government agencies to encourage output by developer start-ups. The rising demand for services in this field and coordinating these needs among stakeholders were mentioned as good opportunities for emerging entrepreneurs. The emergence of management and business training initiatives, in parallel to better access to business events, is pointed out as another important opportunity. Easy exports of products and services and a favorable exchange rate were also mentioned, together with the emergence of new technologies and business models.

Local leaders were generally upbeat about the outlook for the coming years. In Maranhão State, AMAGAMES spotlighted a growth spurt since the first local mapping (2019) to their most recent cam-

paign (2021), with several indicators rising over these two years. In Brasília, BRING pointed out that the trend is for the ecosystem to expand with the formal establishment of this association, as institutional representation efforts become more frequent and effective. However, it notes that construction is slow and coordinated efforts are needed by the local ecosystem. In Goiás State, GAMEGO was optimistic about the possibilities of consolidating this association and setting up new partnerships with Government agencies, Sebrae and universities. In Rio Grande do Sul State, ADJogos is moving into a new local investment cycle, firming up major Government support actions and strengthening major companies in the local ecosystem. It confidently envisions becoming Brazil's main game development hub. In São Paulo State, the outlook is also rosy, noting that a possible change of government at the federal level could well launch a new nationwide promotion cycle for this sector. At the local level, links between associations and municipal and state governments may underpin the consolidation of long-term sectoral development actions.

12



EVENTS



12.1. Events Focused on Game Development and Businesses

Held since 2012, the BIG Festival is the main forum for networking and doing business among agents in this sector. This event has firmed up its status as the largest independent games festival in Latin America. Its program includes talks, exhibitions and business rounds. The event is usually in-person, held in São Paulo. During the COVID-19 pandemic (2020-2021), the event went digital and was attended remotely. The exhibition is open to the general public, and business rounds are held for a B2B audience. Renamed the Best International Games Festival, in 2022 it is a hybrid event. Organized by Bits Productions in partnership with the Omelete Company, it includes in-person sessions with some presentations broadcast for remote attendance.

A collaborative movement that was launched in Brazil, Game Jam Plus is now held in sixty cities in 22 countries. Designed as a Games World Cup, this development marathon is followed by a competition that honors games from around the world, while conducting professionalization training and capacity-building sessions (especially in the business field) for emerging developers.

Held in Brazil since 2009, the Global Game Jam gathers together 680 Jam sites from all over the world. Although usually a hybrid event, it was fully online during the pandemic. It is considered the largest game development event in the world, with several countries participating in the 48-hour jam.

Another event is the Women Game Jam, held since 2017 in several countries. An in-person event until 2019, it went online during the pandemic and is currently organized in a hybrid format. This event is exclusive to women, as well as trans and non-binary people. In 2021, this event was held in parallel to the We Game Jam, which is aimed at diverse audiences.



12.2. Events for the General Public

Brasil Game Show (BGS) is an annual games fair held in São Paulo since 2010. Rated as the largest conference and trade fair of its kind in Latin America, it attracted more than 325,000 visitors in 2019. Its Indie Avenue displays Brazilian indie games, and it has also hosted a Game Jam.

Game XP is another major event aimed at gamers, but with an approach that differs from the Brasil Game Show. With a game park, this event covers 160,000 square meters with attractions, shows, eSports championships, cosplay and releases. An in-person event until 2019, it was held online in 2021. However, there are no plans for 2022.

There are three other events that, although not focused specifically on games, may contain game displays and sectors, such as Campus Party Brasil (a techfest with talks and a specific area for games);

Comic Con Experience (CCXP), a geek-culture event with a gamer arena; and Anime Friends (an event about anime and manga).



12.3. Academic Events

SBGames is the largest academic event in Latin America in the Games and Digital Entertainment field. Hosted by the Brazilian Computer Sciences

Society, this event gathers together researchers, students and entrepreneurs with games as a subject for research and product development. Launched as



an in-person event in 2002, it went online during the pandemic. A travelling event, it has already been held in several Brazilian States. In its current format, it focuses on Art & Design, Computer Science, Culture, Education, Industry and Healthcare, with each discussion track receiving articles submitted by researchers from all over Brazil and the rest of the world. It also offers other activities: an Arts Festival, a Games Festival, a Thesis and Dissertations Contest, Miscellaneous Games, Tutorials, a Game Teaching Forum and Careers in Games for Graduates.

The Games Research Association (DiGRA) event is international, with its first online edition held in Brazil in 2021. It welcomes game students striving to understand all the formats adopted by games in social, cultural and economic contexts etc.

The Academic Play Studies Forum (FAEL) is hosted each year by the Brazilian Play Studies Network (REBEL), an association that represents game and toy creators, as well as researchers engaged in play studies. This is a network of individuals, supported by partner companies.

12. 4. Regional Events

Fifty-eight regional events were mapped between 2019 and 2022, many of which were held online during the pandemic. Others were canceled and are returning in 2022. Regional events took place all

over Brazil, attracting fans (like eSports events and exhibitions) and developers (game jams, academic events focused on game development, conferences, presentations and talks).

13



EFFECTS OF THE COVID-19 PANDEMIC



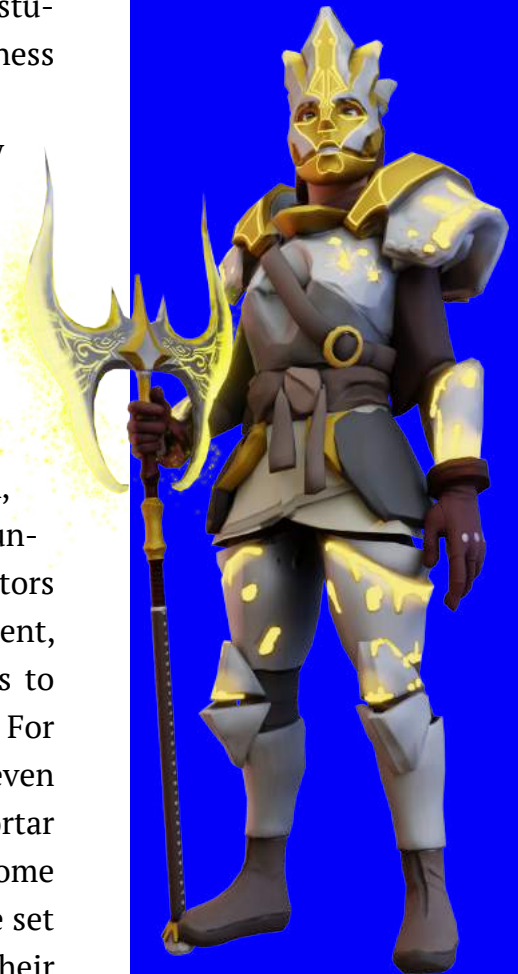
Social isolation imposed by public health precautions introduced to curb the COVID-19 pandemic fast-tracked the adoption of games as platforms for socializing and entertainment, enhancing the visibility of multiplayer and cross-platform games. Social experiences and connections with other players became key factors for successful and revenue-building games.

Pesquisa Game Brasil 2022 provided information on the social isolation period imposed by COVID-19 and its relationship to games. There was widespread agreement that people played more during this time: at least 75.8% of the population agreed partially or fully with this statement; 42.2% invested more in games during social isolation; and 19.8% reported no differences. It was agreed in 60.9% of the cases that there was more content about games during social isolation.

Brazil's games industry showed significant resilience to the economic effects of the pandemic, with lighter impacts than other cultural sectors in its transition to remote work. Many studios already had teams in place that were partially or totally remote, even before the constraints imposed

by social isolation. Many of the independent studios have lean staff structures and are often already working from home offices, as these emerging studios can rarely cover the costs of in-person business premises.

Although productivity was unaffected by shifts in production logic on the one hand, on the other, small businesses were more vulnerable to market swings at the beginning of the pandemic. Many of these studios survive on service agreements and publisher investment cycles, with demand shrinking during the first months of this public health crisis (KALEVA, 2020). Furthermore, due to initial economic uncertainty that reigned worldwide, many investors froze all transfers, delaying project development, particularly in studios reliant on these inflows to start new production cycles (KALEVA, 2020). For larger studios, the logistical challenges were even more severe, as businesses with brick-and-mortar offices had to adapt to fully remote formats. Some studios were initially remote, while others were set up during the pandemic, with few changes in their operation.





13. 1. Remote Work

The COVID-19 pandemic ushered in changes to the organizational setups of most developers. The main modification was the replacement of in-office work by working from home. Overall, 64 companies described the experience as positive, and 53 as negative; 24 believe that the pandemic did not affect them; 22 are unwilling to describe the events as positive or negative; and 47 companies did not answer the question. Among them, 63 had to switch from in-office to remote work and 24 were already working from home or went remote during the pandemic. The other companies did not answer this question.

Developers rating the shift to remote work as positive underscore factors such as easier hiring and flexible schedules. With most of the population isolating at home, the number of players increased,

consequently boosting game sales as well.

Developers rating the change to remote work as negative explain that this change altered the way employees communicate with each other and with other contacts, hindering dialogue and hampering the formation of external links.

Some developers reported no changes with the shift in workplaces, as many companies were set up during the pandemic, while others were already operating 100% remotely, particularly those with lean staffing structures.

Finally, many developers believe that switching from in-office to remote work during the pandemic is also fueling a trend towards this new configuration remaining in place, even after social isolation requirements are eased.

13. 2. Impacts on Studios

The pandemic affected Brazil in many ways, particularly with regard to the market. At the start of the pandemic, the resulting market instability ini-

tially affected developers through the suspension of projects and contracts. As a result, some companies tightened up on their spending in order to survive,



with less participation in events, more layoffs and poorer product quality.

As developers adapted to this context, a huge range of opportunities opened up in the games market, as demand soared for digital services and target audiences expanded. However, competition also became far keener. Fierce competition forced developers to innovate and become more creative. It even triggered a wage war – often unsustainable – that hindered talent retention.

Moreover, as the pandemic dragged on, companies also reported drops in productivity, correlated to a decline in mental health among employees trapped at home by social distancing. There are reports of deaths among employees and relatives caused by COVID-19, with negative impacts.

Access to events was highlighted by several developers. Small and medium-sized companies explain that the remote model allowed access to international events that became virtual, with better accessibility for smaller businesses and no expenses for transportation, meals and accommodation. On the other hand, larger companies complained about postponed and/or canceled events, reporting that networking at online events is less effective than in-person, with fewer new deals being closed. Furthermore, with the initial instability of global markets, many developers decided to lower their investments in events as part of cost-cutting drives, which hindered networking. After a period of adaptation, investments in online events started up again.

14



TRENDS AND PROSPECTS

14.1. Technological Trends

The developers listed some things as the most likely to grow into strong technological trends in the games world, with much importance placed on the development of games using the blockchain system; the development and growth of virtual (VR), augmented (AR) or mixed reality (MR); and the metaverse.

Notable among the main trends described are the ways that mixed reality (MR) technologies are tending to expand, in parallel to the implementation of 5G technology. This emerges as one of the most important infrastructure features for the future of the games industry. This trend involves harnessing the power of the 5G games network, with faster speeds, less latency and portable gameplay with no drop in quality. More bandwidth and shorter response times made possible by 5G mean faster and more efficient data processing. For virtual reality (VR), technical feasibility no longer depends on local hardware processing capacity, and it could be processed on external servers. One of the consequences would be to extend the battery life of devices, mitigating another classic limitation for smartphone games. This should also positively affect the

augmented reality (AR) games market, generating enhanced experiences even with heavier processing and optimization needs.

High-definition wireless virtual reality (VR) is also feasible with 5G, offering more opportunities for developers to innovate, including integration with wearable technologies. Despite all this potential, 5G is a topic that was rarely mentioned (about five answers) by the survey respondents, not providing specific answers. It was also not mentioned during interviews with industry players. Its immediate relevance is limited mainly by sluggish technology deployment and barriers related to the Huawei ban in the USA.

Mixed reality (MR) development has also been reported as a trend, in relation to both the development of new, more robust and cheaper virtual reality hardware, and easier development for these platforms. Noteworthy in terms of augmented reality are the same features for using the Arkit 5 and Arcore development kits, for example, as augmented reality development kits for iOS and Android.

It is worth mentioning that other trends are new engine technologies, such as Unreal Engine





5, with new portable but powerful consoles such as Steam Deck, increasing use of Artificial Intelligence (AI) and the application of all technologies described here in simulators, educational platforms and gamification.

These technological trends led to an understanding of how some of the responses indicated the expansion of what is known as Everywhere Gaming, a way of playing that involves virtual environments, new technologies and a mix of reality and virtual reality.

14.1.1. NFTs, Blockchain, Cryptocurrencies

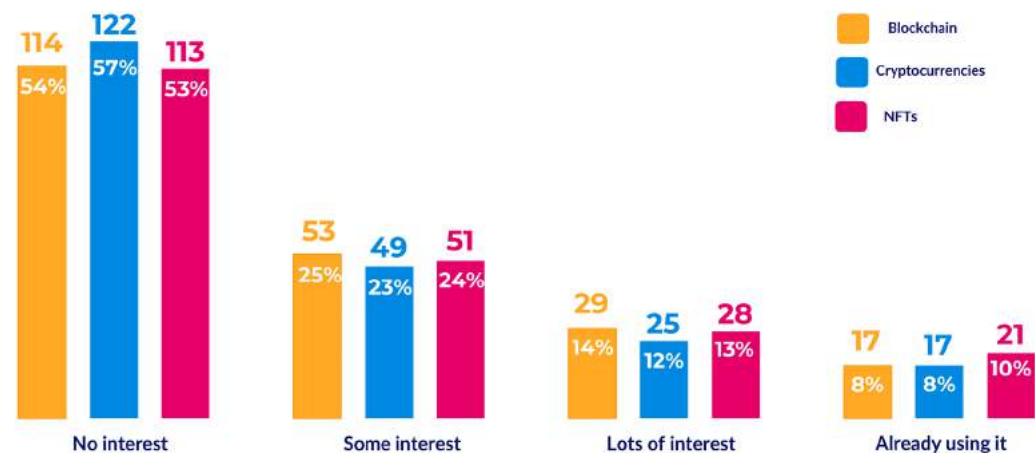
Although most Brazilian developers are not yet working with blockchain and NFT technologies, their adoption is one of the trends mentioned by survey respondents and market experts. Most respondents add that these technologies will tend to be used more widely over the long term. In interviews conducted for the survey, experts point out that new technologies can revolutionize how part of the games market will work.

According to the experts consulted, Brazil should make good use of this new wave of technological innovation. However, in the data obtained

through the questionnaires, most respondents have no interest in new technologies related to NFTs, blockchain and cryptocurrencies, as shown in the chart below, although many are aware that this is a major technological trend and could even impact their output.

This behavior is aligned with the international report on the State of the Game Industry 2022 (GDC, 2022), which contacted more than 2,700 developers.

Figure 47: Interest in Blockchain, Cryptocurrencies and NFTs



Source: Brazil: Game Industry Report 2022

213 respondents



It found that – despite rising attention on NFT and cryptocurrencies – 70% of companies still have no interest in these technologies. On the other hand, although the sample size is very different, Brazilian developers are more adept at using these technologies: while the GDC Report shows that 1% of studios use them, almost 10% of the Brazilian respondents in this survey are already using them.

However, in open questions, many developers specifically mention NFTs as one of the major trends in the games market. Although Play-to-Earn (P2E) and Play-and-Earn games are still viewed with suspicion and prejudice by many developers, NFTs are seen as a technology that could positively impact all types of games.

14. 2. Market Trends

14. 2. 1. Main Trends

Among the biggest market trends mentioned by respondents, cloud gaming, game subscriptions and greater acceptance and use of remote work as an everyday part of the industry are flagged the most frequently.

Cloud games are proving to be a promising market with an even steeper growth trend in the coming years, particularly in view of their compatibility with Smart TVs, less robust computers and smartphones, with no need for other sophisticated and expensive hardware. As described above, the growth of the subscription model is another trend that was mentioned: Game Pass, Apple Arcade, Sta-

dia, PS Plus and Netflix offer multiple games on their platforms, a business model that should be explored by developers. This would turn the B2C segment into a B2B market. Moreover, the recent agreement between Epic and Microsoft was also mentioned, allowing games to be published with no app store intermediation.

Other trends noted by the respondents include an increase in Wholesome Games (violence-free games with stronger narratives) and hyper-casual games that are faster and easily accessible to players. Another factor is increased social diversity in game production, with more games produced and consumed by lower-income communities and mi-

norities, often stressing social impacts.

A possible drop in console prices was also mentioned, prompted by the need to sell games as a service, with the possible popularization of different types of indie games, some of them simpler or at earlier stages, compared to indie games that were hits.

Another trend that is mentioned is the steadily narrowing gap between eSports and development. In Brazil, there are at least two electronic sports teams that have set up in-house studios for developing entertainment games and advergames. Professional players becoming beta-testers of new games has also been raised as a possibility.

14. 2. 2. International Competitiveness

International competitiveness is related to access to markets, training and macroeconomic conditions. Access to the international market, particularly for the most frequent types of games – on browsers, smartphones and PCs – is eased by the fact that many distribution platforms are international, confirmed by the fact that 73% of the survey respondents earn revenues outside Brazil. In short supply worldwide, this specialized workforce can



operate on the international market, with almost half (48%) of the companies rendering services to international clients. In terms of macroeconomic conditions, in spite of turbulence all over the world, the timing is favorable for foreign exchange rates, with the Brazilian Real low.

However, while this depreciation of the Brazilian Real is positive for foreign earnings, it makes investments more costly. Most respondents described difficulties in obtaining hardware and software that could endow this sector with a keener competitive edge in Brazil, mainly because the prices of these



goods are linked to the dollar. This difficulty is also highlighted for obtaining some development kits or negotiating with other companies.

Many respondents also mentioned difficulties in understanding foreign markets and hiring marketing teams for these markets, together with a lack of information and general clarity about conditions and laws in other countries (particularly in emerging economies). These conditions make it hard for Brazilian companies to compete internationally.

However, a significant number of respondents say that the publishers or platforms used in their internationalization processes (such as Steam, PS Store, Microsoft Store, etc.) can handle some of these procedures.

14. 2. 3. **The metaverse**

Definitions of the Metaverse tend to vary enormously among specialists, survey respondents and written references where information was sought. Popularized through the announcement that Facebook was changing its name to Meta (2021), this concept extends beyond games, although it uses many of the methods and technologies originally developed for this industry, such as virtual reality glasses.

The most commonly used definitions refer to a digital environment that might (or might not) use virtual reality devices; having a place for socialization and interaction, with its own economy based on blockchain technology; decentralizing ownership and decision-making on games and their design; owning items with NFT-based technology; interacting with reality by incorporating external elements (augmented reality); and finally, using games for non-gaming purposes (like concerts, parties, parades and many other activities) are appealing to users, who are swept into the game's setting. (NEWZOO, 2021).

These virtual and social spaces have existed for a long time in games such as Fortnite, Roblox, PK XD, Minecraft and GTA Online, among others. Settings such as these have explored new formats where users enjoy simulated activities and try out new experiences that outstrip the gameplay at the heart of game mechanics.

Among the survey respondents, there is widespread awareness of the metaverse as a trend that will grow over the medium term, particularly where it impacts the construction of virtual worlds. This lines up with comments on long-term growth for this trend, with the technological dissemination of



virtual realities and augmented reality.

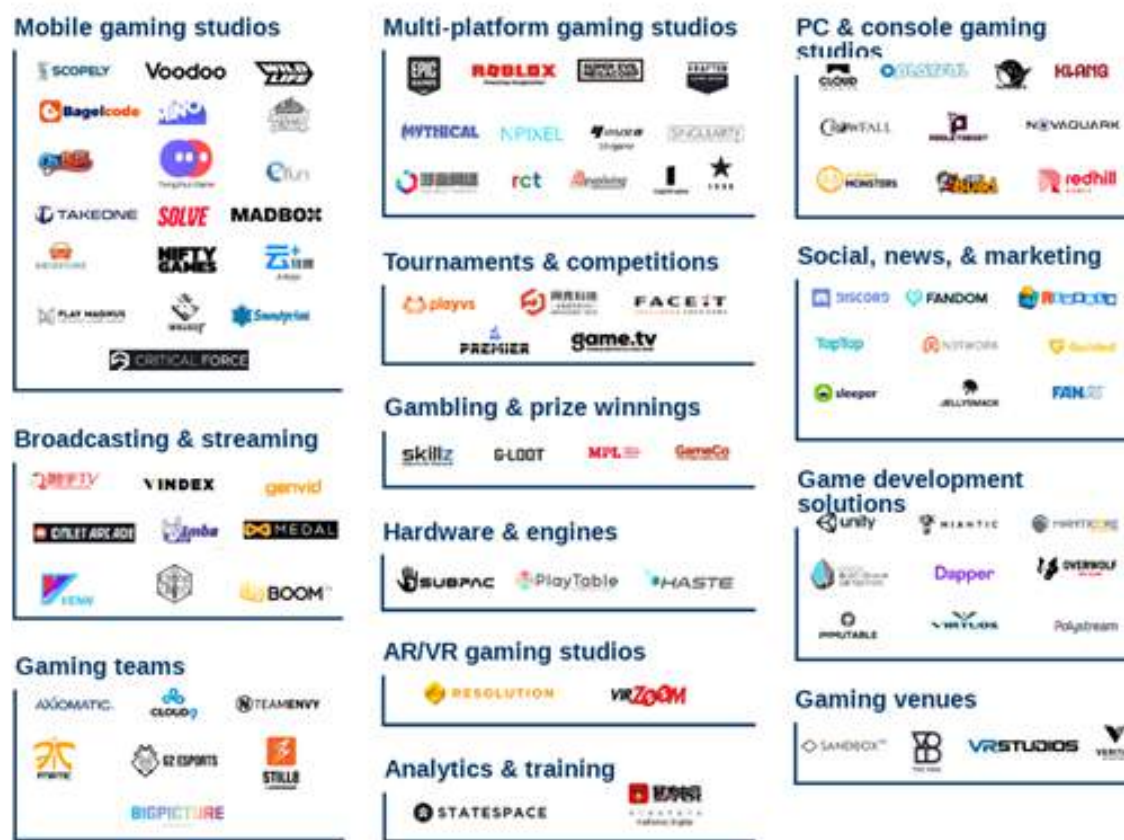
The metaverse is described not only as the next step for games, but also as a powerful entwining of technologies in everyday life and created virtual environments (such as games). It is also mentioned by the respondents as an important variable for the potential of cryptocurrencies and NFTs, often mentioned together.

14. 2. 4. More Dynamic Areas of Investment

One of the leading investment and technology information platforms, CB Insights (2022) mapped the most dynamic areas for investors and businesses seeking innovative solutions. Although not attempting to portray the ecosystem configuration, this initiative is very important for understanding industry and market trends. Among game studios, it is worth noting the presence of Wildlife (São Paulo), as well as the presence of two partners in Aquiris (Rio Grande do Sul State): Scopely and Epic Games.

This Report presents studio areas for all platforms (mobile, multiplatform, PC and console games, virtual reality and augmented reality); game development structure and tools (hardware and engines, development solutions, analytics

Figure 48: Games Companies by Segment



Source: CB Insights

and training); and segments related to the public (broadcasting and streaming, electronic sports organizations, tournaments and competitions, betting and prizes, marketing, news and socialization, and games venues).



14. 2. 5. Private Equity Investments

Investments in games companies rose from 2017 to 2021: up from USD 3.4 billion in 422 deals to USD 10.5 billion in 569 deals. By just before the end of the first third of the year (April 25, 2022), USD 5.4 billion was identified in 213 deals. The distribution of these investments is clustered mainly in the USA (34%), followed by China (15%), Great Britain (7%), India (4%) and South Korea (4%) (CB Insights, 2022).

The companies receiving the heaviest investments were: Epic Games (USD 6.476 billion); Scope-

ly (USD 998.5 million); Discord (USD 979.3 million); DouYu (USD 976 million); Unity (USD 973.5 million); Roblox (USD 919.74 million); Forte Labs (USD 910 million); Zynga (USD 848 million); Niantic (USD 770 million); and Improbable (USD 735.93 million) (CB Insights, 2022).

These data reflect rising investments in this sector, which should underpin the rapid pace of creation and implementation of technological and market innovations.



15



COMPANIE'S CHALLENGES

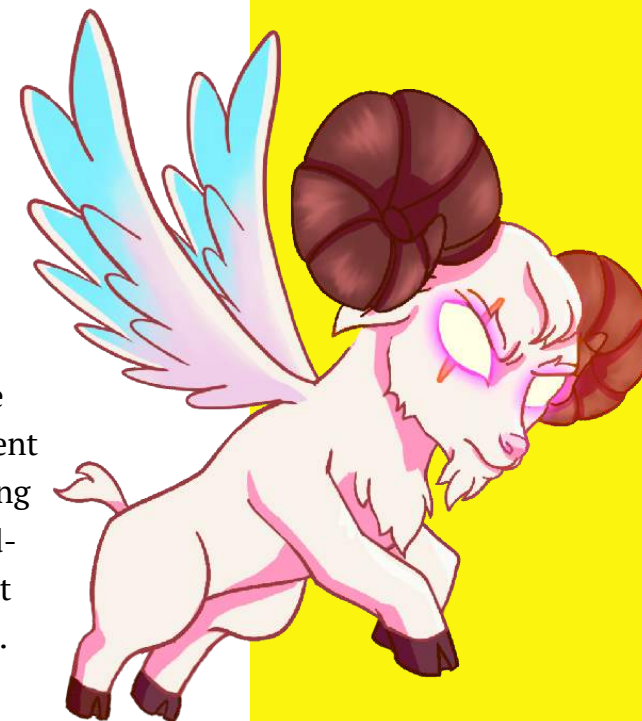


Developers ranked the main challenges faced by the games industry today, listing ways of surmounting these hurdles.

15.1. Access to Funding

The main complaint was related to project funding and fundraising, both directly linked to the perception that the games industry lacks financial backing and visibility nationwide. Some even noted a lack of public understanding of what the games market really is. As scored by the developers, possible solutions to this issue focus on the need to es-

tablish long-term public policies that categorize games as strategic for the nation's economy, tagged for government incentives and investments, including events, in addition to issuing more Federal and State calls for proposals that address real game project development.



15.2. Talent Attraction and Retention

During a time of widespread economic instability in Brazil, one of the main challenges faced by developers has been attracting and retaining talents.

One of these issues relates to developer training. In general, questionnaire respondents report that stand-alone (and sometimes unregistered) courses provide insufficient knowledge for working

in this industry. With regard to technical and higher education, they stress that there is a mismatch between industry needs and the type of training available, causing difficulties in hiring skilled workers.

The e-MEC platform run by the Ministry of Education currently lists 4,116 undergraduate courses in Games or Game Design (including university centers, colleges, federal institutes and universities).



Among these courses, 43.72% are clustered in the Southeast and 17.28% in the South. The private sector offers almost all (99.73%) of the undergraduate courses in Games and Game Design. Public sector participation remains virtually non-existent, with 0.27% of this supply. There are estimates that Brazil has some 3,965 games graduates a year (CARVALHO, 2021). In addition to these qualifications, technical schools also offer games courses.

Developers claim that most of these courses are generalist, failing to keep pace with constant technology industry changes. They feel that the way to solve this problem lies in investing in academic, technical and research activities. This would include hiring lecturers who work with digital development and restructuring syllabuses so they are constantly updated and aligned with current market needs. Moreover, investment in more specialized courses (such as coding) is also important.

According to the queried experts, it is hard to hire senior professionals in this industry. This is largely because professionals who are already known and acknowledged are sought after on the international market, at salaries with which Brazilian developers cannot compete. Among other problems, this results in weak mentoring for trainees

and junior professionals, who could then fill these vacancies. Games firms tend to look for professionals who already have experience in the industry. It is usually companies with larger headcounts that hire inexperienced professionals. There are thus few vacancies for early-career professionals (which is most of them), while senior talent is in short supply.

Because of competition among companies, many entrepreneurs feel that in-house talent development is an expense that may not have any pay-back, as qualified professionals tend to seek jobs in larger companies that can pay higher wages.

With the dollar on the rise, many developers find it hard to compete with international wages, particularly smaller firms with tighter budgets that also encounter difficulties in standing out in this industry. This makes it even harder for smaller enterprises to attract and retain employees.

So medium and smaller businesses are struggling to compete with larger companies, as they cannot offer the same wages and benefits. There are reports that many studios lost talents or even shut down when their partners were hired by large com-





panies or else opted to work for foreign companies. As an example, forty professionals who completed this questionnaire as self-employed in 2022 had answered the 2018 survey as companies. At least half of them currently render services abroad, having shut down studios that were active in 2018. In addition to providing remote services, many Brazilians are expats in foreign studios, which offer better conditions.

On the other hand, due to the virtualized relationships imposed during the COVID-19 pandemic, hiring became easier, with the possibility of more flexible hours in remote workplaces attracting new

talents, unconstrained by the location of business premises. Furthermore, it became easier to hire workers living abroad.

It is worth recalling that game professionals, particularly programmers, can work for other technological and creative industries in Brazil and elsewhere in the world, heating up the competition for talent even more.

Another factor mentioned is the difficulty of finding professionals who are reasonably fluent in English and thus able to communicate with customers and partners from abroad.

15. 3. Increased Complexity

The Brazilian industry has become more complex. In 2018, there were many micro and small enterprises, and a few medium and large businesses. In 2022, there are at least ten companies with more than 100 employees, which have absorbed a large chunk of Brazilian talents. These larger businesses have more complex structures. In addition to larger headcounts, they also develop projects for a variety of partners, not only in Brazil, but internationally as well.

Together with the use of new technologies, the rising sophistication of games, with frequent releases and updates, all lead to the need for larger teams or external development. Either way, developers must be big enough and sufficiently well-structured to perform their activities. Consequently, growth with the resulting increase in organizational complexity is spurring corporate expansion.

15. 4. Increased Competitiveness and the Challenge of Attention

With the games industry spreading to the general market, competition among developers is becoming keener. This competitiveness is forcing companies to become creative, in order to attract the public. As a result, they must invest more heavily in their own projects – through funding, new hires, innovative technologies and an understanding of the current interests of the target audience, among other factors.

Despite this pro, competition between small and large companies is a major problem in Brazil, with many developers explaining that it is very hard for smaller firms to slot into the current market. This is often caused by a lack of funding that developers need to invest in their projects, new talents and even marketing, in addition to the low paybacks.

The COVID-19 pandemic allowed small developers to flock to international events, meeting new people, signing contracts and, above all, showcasing Brazilian games at these events, enhancing the value of these efforts and establishing footholds on foreign markets. Nevertheless, developers report much difficulty in competing with international

companies, initially for retaining talents (due to beyond-competitive wages pumped up by high USD x BRL exchange rates). Another factor is the lack of local appreciation for Brazilian games, with expected ROI undermined by the public's preference for foreign wares.

Despite game lifecycles, with low storage and distribution costs, digital products are burdened by the infinite shelf effect: each new product must compete with all its predecessors. This causes ever-keener competition among products pursuing market visibility. Titles launched during less competitive times today enjoy brand and leadership perks, while newcomers need competence and resources to enter and remain in the market.

Financial and technological barriers vary by segment, together with access to distribution facilities. The development of AAA games for consoles requires investments and expertise that are not easily accessible, with distribution controlled by the equipment manufacturers. Although becoming more sophisticated, mobile games still require fewer resources and are easier to distribute through app





stores, thus lowering entry barriers. However, there is still the attention barrier: gaining visibility on a market with super-abundant wares. For PC games, technical complexity varies and distribution is affordable through platforms. However, the attention barrier persists.

Developers find it challenging to identify player profiles and target audiences, determine how to drive loyalty and decide what marketing strategies to use. However, they offered no suggestions on ways to surmount these hurdles.

15. 5. Taxation and Administrative Proceedings

The II Census indicated that the current taxation and dues system was among the most frequently mentioned points for Brazil's games industry. Developers reported that their heavy tax burdens gobbled up a significant share of the company's earnings and revenues at various levels. The most frequently mentioned charges are import taxes on imports of equipment, particularly hardware (such as computers and other devices); software (such as game development engines); and double taxation on foreign earnings.

The II Census also included many mentions of the complex paperwork needed to open and run a business in Brazil. Furthermore, vital management procedures (including legal, administrative and financial matters) were viewed as complex and tan-

gled in red tape.

Four years later, the current survey shows that taxation is still rated as one of the most common problems for Brazil's game development industry. In particular, two more serious recurrent problems are mentioned: double taxation when publishing games internationally; and heavy taxes on hardware, software and development kits, particularly when their prices are tied to the US dollar.

Double taxation: when publishing games on international platforms such as Steam or Google Play, they deduct a significant portion of the amounts payable to the developers. These amounts already include part of the taxes payable in these countries. Raising funds abroad also results in taxes being charged on drawdown amounts, narrowing



company margins even more and underscoring the absence of double taxation agreements.

The devkits import problem persists and is a frequent complaint among developers. One of the most frequently mentioned issues concerns taxation and dues charged on acquisitions of the equipment needed to develop and work on a game. Respondents report how laborious it can be to legalize purchased or donated equipment in Brazil, as well as software (such as game coding and production engines) or more powerful hardware whose high performance upgrades output. The paperwork required by these imports is complex, with information that is hard for developers to access, often needing to hire consulting firms to release equipment. It was stressed that they are still viewed as consoles or entertainment items, rather than capital goods. Mentions were also

made of heavy taxes on the expensive hardware and software needed for game development, whose inherently high costs rise even more as the Brazilian Real weakens against the US dollar. Although some companies (like Nintendo), have announced the official sale of development kits to Brazil, the procedures involved in their acquisition are complex.

Other taxation characteristics mentioned include: a lack of tax incentives (tax breaks, incentives to go international, etc.) that would allow small business to become more firmly established; difficulties in hiring employees under the CLT system; and even snags in clarifying and identifying which taxes are being paid and the best legal ways of avoiding them. Although born global, most developers find it hard to internationalize resources and optimize processes and expenditures.



15. 6. Regulatory Matters

The II Brazilian Digital Games Industry Census indicated a major problem related to legalization and fitting companies into official taxation and activity slots, either as individual microentrepreneurs (MEI) or microenterprises, and other profes-

sional categories. There is a clear difficulty in fitting into the economic activity slots listed as qualifiers in calls for proposals or defining tax issues for each type of company. The respondents believe that Brazil's taxation system should be restructured, as it



makes it hard to set up a company, for example.

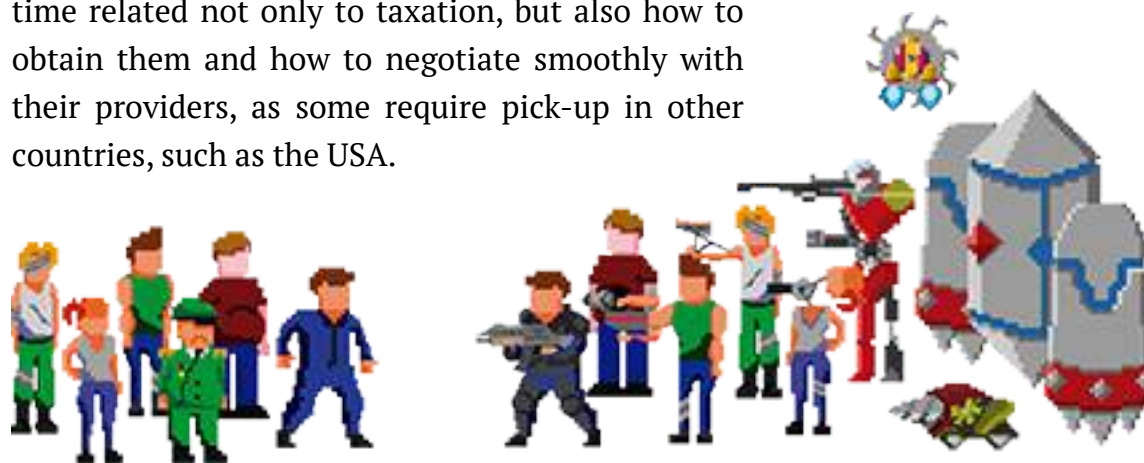
The II Census also highlighted the need for formalization support and incentives, together with the importance of drawing up specific regulations paving the way for the introduction of an appropriate category in the CNAE system. At that time, it was mentioned that introducing a CNAE registration number specifically for game development would make it easier to seek information previously available only through forms and interviews.

However, few changes have taken place in this field since the II Census. There is also a pressing need for a CNAE category for individual microentrepreneurs (MEI) and other companies. A new taxation system was suggested for startups related to the creative economy and technology, based on the rationale that the CLT system is a set of employment regulations designed for manual labor rather than technological work.

According to the queried experts, the lack of a specific CNAE category not only hampers any measurements of the real size of this sector (leading to the absence of public policies), but also hinders startups while blocking investments and reining back revenues in Brazil. This lack of regulation is perceived by many companies and investors as legal insecurity, as

it is always necessary to adapt practices from other sectors. Several Brazilian entrepreneurs decided to streamline this step by starting companies abroad. Business agreements are often reached with enterprises incorporated in other countries (but with the same partners as the counterpart Brazilian firms) or through joint ventures, instead of with companies established in Brazil. These international firms centralize contracts, investments and payments for individuals and legal entities.

A lack of clarity was mentioned for working through the paperwork needed to formally start a company. Furthermore, there are also reports about the need for legalization in obtaining devkits, this time related not only to taxation, but also how to obtain them and how to negotiate smoothly with their providers, as some require pick-up in other countries, such as the USA.



16



**OTHERS
STAKEHOLDERS**

16.1. Game Development Support Companies

A company or business with one or more people rendering services to the games industry has been defined as ‘an organization supporting games development and services’, including animation, consulting, localization, digital content development, research, media, film, TV, advertising, corporate training, software development, distribution, monetization, retail, publishing and e-sports, among other activities.

The 53 support companies that responded were mainly (92%) formally established, with more than half (27) set up less than five years ago. They are clustered mainly in the following States: São Paulo (26); Rio de Janeiro (10); and Rio Grande do Sul (6). Only four companies are located outside the South and Southeast regions. Of the fifty companies that responded on revenues, seventeen did not exceed the individual microentrepreneur (MEI) ceiling of up to BRL 81,000, while ten others earned less than BRL 360,000. At the other end, four companies reported revenues of more than BRL 16 million.

Among the activities performed by the 55 companies, the most common is consulting (36%), followed by educational services (25%),

gamification (22%), advertising (20%) and customized brand projects (20%). However, few respondents claim to work with data science (4%), specialized advocacy (5%) and investments (5%). Among these activities, those identified as major revenue sources were consulting (13%), animation (8%), software development (8%), educational services (8%), research (6%) and game distribution (6%).

Support companies were largely self-funded by founders, friends, family and other individuals (31%) or had no source of private funding (26%). Angel investments (5%) and venture capital (7%) are not yet common here. In terms of Government funding, most (65%) companies were not funded by any public sources, while calls for proposals for games (8%), tax incentives (8%) and calls for proposals in other areas (16%) were the main sources.





16.2. Overview of Self-Employed Developers

Although not the main focus of the survey, the questionnaire also encompassed the activities of self-employed developers. A ‘self-employed game professional’ was described as someone who a) develops games for mobile devices (smartphones, tablets), computers, the internet, virtual reality, augmented reality, social networks or consoles, on a for-profit or not-for-profit basis, as a primary or secondary activity; b) develops entire games or renders game development services to customers or partners; c) offers services to the games industry, including animation, consulting, localization, digital content development, research, media, film/TV, advertising, corporate training, software development, distribution, monetization, retail and publishing, among other activities.

Among these self-employed professionals, 168 answered the survey and 57% work under conditions that are not formally established. Respondents are from several States in Brazil, mostly in the Southeast, particularly São Paulo (29%), Rio de Janeiro (18%) and Minas Gerais (6.4%). No self-employed professionals were reported in Acre, Amazonas, Amapá, Rondônia and Mato Grosso do Sul States.

Less diversity was found among self-employed developers than in companies. Male developers account for 95% of the sample, with only seven women and one non-binary person responding to the survey. Monitoring the respondents, 73% self-identified as White, 16% Black, 4% Asian and 1% Indigenous. 10% self-identified as LGBTQIA+ and 1% as trans. PwDs accounted for 3% of the respondents, with 6% neurodiverse. For age, 2.3% of the sample reported being over 50 years of age.

Most work with game development, outsourcing art services (35%), animation (21%), scripts (31%) and software development (29%).

The main revenue sources for self-employed developers are art services and software development, as well as other activities unrelated to games. Their main revenue-generating platforms are the PC (44%), followed by smartphones and tablets (13%). Many professionals who responded earn no revenues from games, as they use them as a form of recreation or are still developing their first game (31%).

Regarding revenues, 45% of professionals report monthly earnings of up to BRL 1,100 from game development, with 11% reporting earnings between



BRL 1,100 and BRL 1,908, and 17% between BRL 1,908 and BRL 4,770.

Among professionals, 86% developed games in 2020 and 2021. Most (89%) self-employed developers plan to develop for PC, as well as Android (47%), Nintendo Switch (29%) and iOS (23%).

In 2020, self-employed professionals report-

ed producing 158 games, dropping to 111 complete games in 2021. Regarding external development, these professionals reported engagement in designing 229 projects: 97 in 2020 and 132 in 2021. The main services outsourced in 2021 were 2D (86 projects), conceptual art (76 projects), game design (53 projects) and 3D (52 projects).



17



FINAL REMARKS



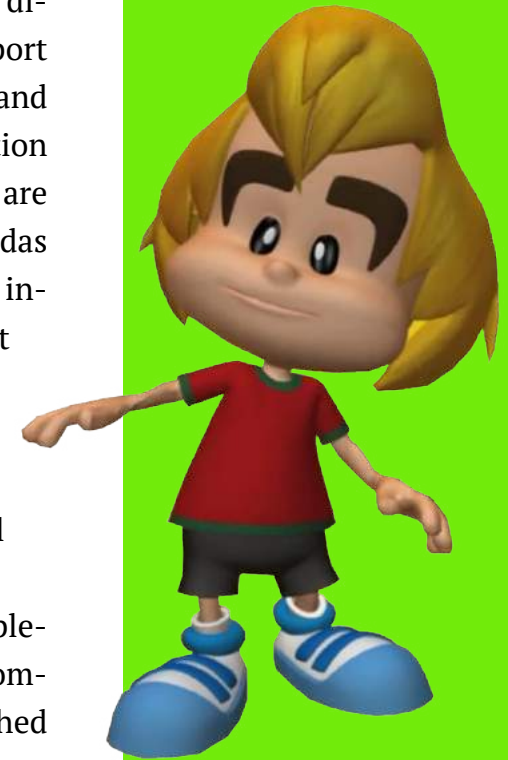
The history of Brazil's games industry has gone through five phases: start, professionalization, coordination, expansion and consolidation. This ecosystem has grown and developed a solid foundation, with representation of all Brazilian and international stakeholders in an innovative games industry that is economically and culturally relevant. The contours of the next phase are already appearing, with more developers and other support companies with global influence.

Hampering the leap into this new phase are several challenges to the three components of the triple helix of innovation: private sector, public sector and universities. However, looking at the achievements of the industry during the past ten years, its potential for construction and transformation is remarkable.

In the private sector, several developers – and not only the major companies mentioned above – are already embedded in global value chains, exploring the most innovative emerging market trends and attracting international recognition from the public and from experts. The BIG Festival has established its name as the main B2B event in Latin America on the international games industry calendar. Events for the public and multinationals

established in Brazil help spread a broader games culture, including electronic sports. Brazilian and international investors are increasingly interested and should become more involved in the industry, based on recent successful investments and the diversity of sizes and types of opportunities. Support companies are keeping pace with maturation, and remote work has further relaxed the organization of work. Regional associations and collectives are strengthening, and diversity and inclusion agendas are being implemented. In the next phase, more intensive international publishing and investment are expected with gains in scale for emerging opportunities that are being grasped, and an even greater increase in the relevance of Brazilian events in the international arena, as well as Brazilian attendance at international events.

In the public sector, many actions were implemented at various tiers of government after a common agenda was presented in the study published by the BNDES in 2014, drawn up by a working group of Government administrators and ABRAGAMES representatives that was set up during the BIG Festival. The ApexBrasil Export Program, calls for proposals from ANCINE, and other local initiatives such as Spcine proved instrumental for meeting the needs





of the many different developer profiles and stages. In the next phase, a quantitative and qualitative increase in actions is expected, with games companies receiving support regardless of their location, size and focus, as well as other stakeholders, strengthening the entire ecosystem.

Universities saw an upsurge in places in higher education games courses, and not only through dis-

tance learning. Research output increased in both scope and quantity, together with outreach activities. In the next phase, the academia is expected to strengthen ties with both public and private sectors through joint actions, with teaching, research and outreach activities becoming more synergistic and with stronger impacts on this industry.



18



METHOD

The method used for this survey was mixed, with mapping strategies, questionnaires, interviews, baseline data and references. The mapping stage measured the number of active companies, with their profiles explored through the questionnaire.

Respondents account for 22.3% of the devel-

opers mapped and validated as active. This sample may be considered as representative for both size and traits: the geographical distribution is similar to that of the mapped developers as a whole, with a wide range of revenues, headcounts and operations, consistent with the profiles of the I and II Brazilian Digital Games Industry Census.

18.1. Mapping Companies

The companies were mapped through the construction of a database with 2,700 contacts. The registration data fed into the database were: a) companies on the registry of the II Census conducted by the IBJD in 2018; b) companies belonging to Atragames in 2022; c) companies registered on the Games Industry website; d) companies registered on the Map of the Games Industry in Brazil website; e) companies compiled by the LinkedIn platform whose industry activities are self-described as 'Computer Games' and 'Mobile Games' in Brazil; f) companies belonging to the ADJogos, AMAGames, RING and BRING regional associations; g) companies announcing vacancies on the HitMarker Brasil website; h) Brazilian developers and publishers of

mobile games on a list provided by the AppMagic platform; i) list of Brazilian games on Steam; j) questionnaire conducted by the authors; and k) form for Indie Hero companies.

Developers complying with at least one of the following criteria were mapped as active: a) belonging to a specific regional games association/collective in 2022; b) completing the survey questionnaire; c) having active corporate websites and/or social media channels in 2021/2022; d) releasing games in 2020/2021/2022; e) having live games and revenue according to AppMagic; f) having an active Corporate Tax (CNPJ) number and a main CNAE number that's compatible with developing games; g) talking over the phone to confirm receipt of the



survey; h) updating a game in 2020/2021/2022; and i) registering with Google and specifying the company's business hours. Based on these crite-

ria, 1,009 active game development studios were mapped in Brazil.

18.2. Company Profile – Questionnaire

The questionnaire was used to establish the corporate profiles.

18.2.1. Data Collection Tool

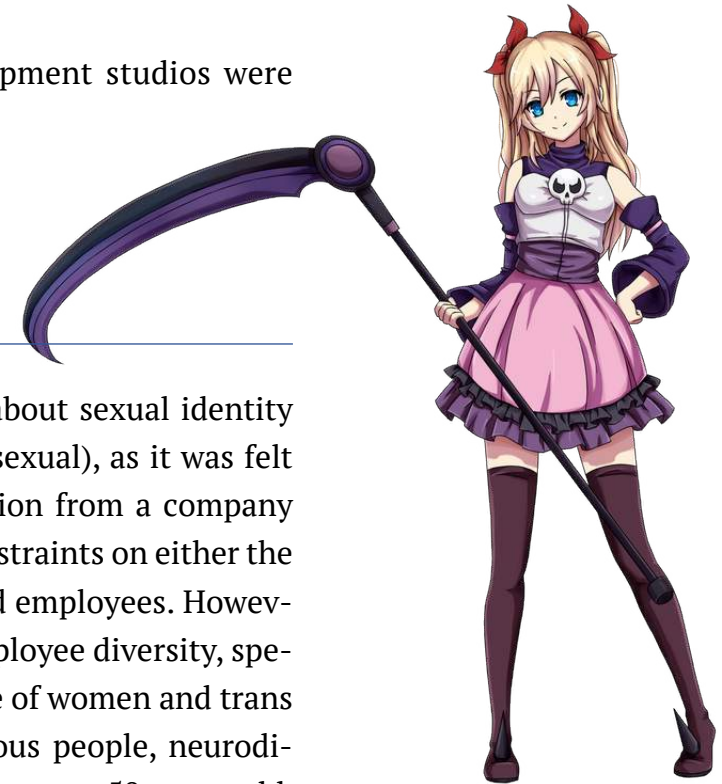
The data collection tool was a structured questionnaire, with closed questions and predefined answers (single or multiple choice), as well as open questions. Prepared by the team, the questionnaire was based on the II Census and public policy needs discussed at a meeting with Atragames, ApexBrasil and the Brazil Games Export Program.

For the construction of the economic profiles, the revenue intervals defined by Sebrae and BNDES were used. The economic profiles of individual developers were constructed from income tax and minimum wage brackets. The questions in the developer questionnaires were based on the II Census conducted by the Brazilian Games Industry, duly updated. The human resources item in the compa-

ny questionnaire did not ask about sexual identity (homosexual, heterosexual, bisexual), as it was felt that requesting such information from a company representative could cause constraints on either the respondent or the partners and employees. However, there was a question on employee diversity, specifically exploring the presence of women and trans people, Black people, Indigenous people, neurodiverse people, PwD and workers over 50 years old. However, individual developers could mark their choice for this item in the questionnaire.

Four types of audiences were expected: 1) formally established developers; 2) non-formally established developers; 3) development support organizations and services in formally established games; 4) self-employed professionals.

Formally established companies were registered with the Treasury Ministry on the National Corporate Tax-Payers' Roll under a CNPJ/MF num-





ber; and self-employed professionals were registered as individual microentrepreneurs (MEI) or self-employed professionals issuing Self-Employed Professional Receipt (RPA). Although game developers and programmers cannot yet register as individual microentrepreneurs (MEI), some self-employed professionals rendering services to the games industry may qualify for this category and issue MEI invoices in other categories.

The survey respondents were initially asked whether they were involved in game development, then about their business status (company or self-employed), and if whether formally established or not. Thus, three questionnaires were prepared: one for developers; one for games development support organizations and services; and one for self-employed professionals.

18. 2. 2. Confidentiality of Information

The findings were consolidated, and the secrecy of confidential information was guaranteed. The terms of Brazil's General Law for the Protection of Personal Data (LGPD) were presented, explaining that registration data would be disclosed individually only with the consent of the respondents.

18. 2. 3. Sampling Plan and Dissemination

An online questionnaire with public links was made available, with follow-up telephone calls to companies on the initial mailing list, asking them to complete the survey if they had not yet done so. The survey was available online between March 7, 2022 and April 10, 2022.

The questionnaire was published in the Abragames Newsletter and at the BIG Festival.

A list of 2,700 email addresses was drawn up, based on the company mapping, and individual emails were sent to contact persons. The questionnaire was also released by the survey team through social networks (Facebook and LinkedIn), and on WhatsApp. The questionnaire was published in the following groups: Facebook Communities: A Indústria do Cinema e do Audiovisual; Blender Brasil; Brazilian Game Professors; BRING – Desenvolvedores de Games de Brasília; Criação e Desenvolvimento de Jogos; Desenvolvedores de Jogos; Desenvolvimento de Games | Eventos; Desenvolvimento de Games; Desenvolvimento de Jogos – Brasil; Design de Games – Portfolios; Design Games Brasil Economia Criativa Digital; Game Audio Academy – Trilhas Sonoras e Sound Design para Games; Game Design

PUC-RIO; Game Development Brazil; GamesIndie; Gamification (Coursera); GAMinG– Associação Mineira de Jogos; Geração Gamer – Espaço da Cena Brasileira de Jogos; Grupo Rádio Geek; IGDA Brasil; IGDA São Paulo; Indie Developers Brasil; Indiegame Brasil; Indústria de Jogos; PING; PONG – Potiguar Indie Games; Práticas Profissionais em Games; Produção de Jogos; RING – Desenvolvedores de Jogos do Rio de Janeiro; Unity Brasil; Games Brasil. LinkedIn Communities: Brazilian Game Developers; Fórum de Ensino de Jogos Digitais da SBGames; Games Brasil and WhatsApp Groups: GDBR; Indies Brasil; and Atragames members.

18. 2. 4. **Final sample**

A set of 443 questionnaires was validated. When duplicate questionnaires were found, the

more complete or more recent questionnaires were kept in each case. The **final sample** consisted of **223 developers, 168 self-employed professionals** and **52 support organizations** working with games development and services.

18. 2. 5. **Interviews**

The following experts were interviewed:

Diego Martinez (Riot Games)

Bruna Soares (Ubisoft)

Alexandre Kikuchi (Unity)

Vanessa Gazel (Pipa Studios)

Marcio Medeiros (HitMarker Brazil)

Daniela Galvão (CQS Advogados)

Carlos Estigarribia (wappier)

Thiago Xisto (Vivo Keyd)

Eros Silva (ApexBrasil)



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BRAZIL GAMES EXPORT PROGRAM

The Brazil Games Export Program, is the export program created by the Brazilian Game Companies Association, ABRAGAMES, in partnership with ApexBrasil, the Brazilian Trade and Investment Promotion Agency. Our goal is to promote the Brazilian Game industry internationally, developing new business opportunities for our companies. The Brazil Games Program also promotes Brazil as the hub for business in Latin America and invites buyers, investors and publishers for BIG Festival, Brazil's Independent Games Festival, the most important international indie games festival and the hub for international business in Latin America.

ABRAGAMES BRAZILIAN GAME COMPANIES ASSOCIATION

Abragames, the Brazilian Game Companies Association, was founded in 2004 and represents Brazilian studios developing games in various platforms. Besides catalyzing the game production in the country by training and promoting expertise, Abragames aims at making Brazilian creativity and technology available to the main players of the international game industry.

APEXBRASIL

The Brazilian Trade and Investment Promotion Agency (ApexBrasil) works to promote Brazilian products and services abroad, and to attract foreign investment to strategic sectors of the Brazilian economy. The Agency supports more than 12,000 companies from 80 different industries, which in turn export to 200 markets. ApexBrasil also plays a key role in attracting foreign direct investment to Brazil, working to detect business opportunities, promoting strategic events and providing support to foreign.

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