II CENSUS
OF BRAZIL'S DIGITAL GAMES INDUSTRY

Editor

Homo Ludens

Sponsor

SECRETARIA DA ECONOMIA CRIATIVA

MINISTÉRIO DA CULTURA

GOVERNO FEDERAL

II CENSUS OF BRAZIL'S DIGITAL GAMES INDUSTRY

Executive Summary

Editor

Homo Ludens

Sponsor

SECRETARIA DA **ECONOMIA CRIATIVA**

MINISTÉRIO DA **CULTURA**

GOVERNO **FEDERAL**

MINISTRY OF CULTURE

President
Michel Temer

Minister of State for Culture
Sérgio Sá Leitão

Secretary of the Creative Economy
Douglas Capela

Diretor of the Department of Cultural Entrepreneurship
Érica Lewis

General Coordinator of studies and Monitoring
Luiz Rezende

Coordinator of Studies Support and Monitoring
Hanna Gledyz

Homo Ludens – Research Team

Coordination
Luiz Ojima Sakuda
Ivelise Fortim

Researchers
Luiz Ojima Sakuda
Ivelise Fortim
Pedro Santoro Zambon
Marcos Vinícius Cardoso
Amanda Rolim
Erica Janille Cruz
Eliane Alves Oliveira
Theo Azevedo
Roxane Pirro
Jonathan Harris

Graphic design and publishing
Guilhes Damian
Raquel Serafim

Technical Review
José Henrique Dell'Osso Cordeiro

Review
Cristine Akemi Sakô
Carmem Ligia Torres

How to cite this report

Technical Report of the II Census of the Digital Games Industry
Ministry of Culture, Brazil. Lic 4/2018-PJ/914BRZ4013

SAKUDA, Luiz Ojima.; FORTIM, Ivelise (Orgs.). **II Census of the Brazilian Digital Games Industry: Executive Summary**. Ministry of Culture: Brasília, 2018

Complete Report:

SAKUDA, Luiz Ojima; FORTIM, Ivelise (Orgs.). **II Census of the Brazilian Digital Games Industry – Executive Summary**. Ministério da Cultura: Brasília, 2018.

Report's chapters:

SAKUDA, Luiz Ojima.; FORTIM, Ivelise; ROLIM, Amanda, JANILLE, Erica. *Perfil da Indústria Brasileira de Jogos Digitais (IBJD)*. In: SAKUDA, Luiz Ojima; FORTIM, Ivelise (Orgs.). **II Censo da Indústria Brasileira de Jogos Digitais**. Ministério da Cultura: Brasília, 2018.

FORTIM, I; OLIVEIRA, Eliane Alves; ROLIM, Amanda; CARDOSO, Marcos Vinícius; SAKUDA, Luiz Ojima. *Considerações sobre semelhanças e diferenças entre desenvolvedoras, organizações de apoio e profissionais autônomos de jogos digitais*. In: SAKUDA, Luiz Ojima; FORTIM, Ivelise (Orgs.). **II Censo da Indústria Brasileira de Jogos Digitais**. Ministério da Cultura: Brasília, 2018.

CARDOSO, Marcos Vinícius. *Análise de grau de Internacionalização desenvolvedoras brasileiras – Comparativo com dados da pesquisa Apex-Brasil*. In: SAKUDA, Luiz Ojima; FORTIM, Ivelise (Orgs.). **II Censo da Indústria Brasileira de Jogos Digitais**. Ministério da Cultura: Brasília, 2018.

ZAMBON, Pedro Santoro; SAKUDA, Luiz Ojima. *Visão Geral das Políticas Públicas para Jogos Digitais no Brasil*. In: SAKUDA, Luiz Ojima; FORTIM, Ivelise (Orgs.). **II Censo da Indústria Brasileira de Jogos Digitais**. Ministério da Cultura: Brasília, 2018.

SAKUDA, Luiz Ojima; FORTIM, Ivelise; AZEVEDO, Theo; HARRIS, J. *Análise do Mercado Brasileiro de Jogos Digitais*. In: SAKUDA, Luiz Ojima; FORTIM, Ivelise (Orgs.). **II Censo da Indústria Brasileira de Jogos Digitais**. Ministério da Cultura: Brasília, 2018.

OLIVEIRA, Eliane Alves. *Vocabulário técnico*. In: SAKUDA, Luiz Ojima; FORTIM, Ivelise (Orgs.). **II Censo da Indústria Brasileira de Jogos Digitais**. Ministério da Cultura: Brasília, 2018.

PIRRO, Roxane. *Diretório das Desenvolvedoras e Associações Brasileiras de Jogos Digitais 2018*. In: SAKUDA, Luiz Ojima; FORTIM, Ivelise (Orgs.). **II Censo da Indústria Brasileira de Jogos Digitais**. Ministério da Cultura: Brasília, 2018.

Executive Summary in Portuguese:

SAKUDA, Luiz Ojima; FORTIM, Ivelise (Orgs.). **II Censo da Indústria Brasileira de Jogos Digitais: Sumário Executivo**. Ministério da Cultura: Brasília, 2018.

Presentation

Brazil is one of the fastest growing countries in the gaming industry, and this potential also applies to games development. It is an industry that is maturing and is gradually moving towards a more relevant role in the global scenario.

The II Census of the Brazilian Digital Games Industry (BDGI) is an initiative of the Secretary of the Creative Economy of the Ministry of Culture, via public grant (LIC 4/2018-PJ / 914BRZ4013). The research was conducted by the company Homo Ludens under the coordination of researchers Luiz Ojima Sakuda and Ivelise Fortim, also co-authors of the 1st Brazilian Census of Digital Games.

The I Census of Brazil's Digital Game Industry was one of the main results of the research realized from February 2013 to February 2014, by a multidisciplinary team, coordinated by NPGT - Politics and Technological Management Group from USP, as a response to the public call from Banco Nacional do Desenvolvimento Econômico e Social [The Brazilian Development Bank](BNDES) for a scientific research (FEP 02/2011) aiming to map and consolidate information about the global and national Digital Game Industry, besides contributing to create instruments and Industrial and Technological Policy Actions for the field. This research, known as FEPGames, contains a diversity of reports which were summarized in three documents: Brazil's and Global Digital Games Industry Map (FLEURY,NAKANO E CORDEIRO, 2014) Public Politics Propositon for Brazil's Digital Games Industry (FLEURY, NAKANO and SAKUDA, 2014) and the First Census of Brazil's Digital Game Industry, along with Technical Vocabulary about Brazil's Digital Game Industry (FLEURY, SAKUDA E CORDEIRO, 2014).

As stated in the public call, the study reports on the evolution of the digital gaming industry in Brazil. Its main objectives are: 1) to update the sector's statistical data, 2) to facilitate the design of public policies for the development of the gaming industry in Brazil, and 3) mapping the national digital gaming market, providing an overview of the current landscape.

The study mapped the profile of companies and organizations and also the perceptions, main difficulties and challenges for the actors of this industry in Brazil. In addition to the development companies (which were already mapped in the first Census), this new research also mapped other professionals that support the ecosystem of digital games, as well as the self-employed professionals working in the area. In addition, the census addresses new questions that will help the industry with data that can form the basis for future public policy directions.

To meet the objectives of the study, the report was developed in three sections:

A) BDGI Profile: An online questionnaire was conducted between 03/05/2018 and 06/13/2018. The purpose of this study was to map the game developers (formalized or not), support organizations and autonomous professionals. The survey aimed to identify 1) the profile of respondents (geographical distribution, activities, revenue sources, profile of games, development platforms, billing, etc.), perception, suggestions, problems and perspectives of the industry actors themselves (developers, support and autonomous professionals); 2) human resources; 3) profile of games developed; 4) internationalization of the company; 5) intellectual property; 6) ecosystem; 7) relationship with government agencies; and 8) industry perception. Companies and organizations from all over the country were included. The collected data were compared to the 2014 Census.

B) Public Policy: 18 semi-directed interviews were conducted with professionals who act directly or indirectly with the sector and who have experiences in the fields of public policy or sector development. The interviews were scheduled according to the availability of the professionals, and some were conducted in person while others remotely through videoconference. In addition, government actions for the period 2014-2018 were identified and contextualized according to the public policy proposals made in the report “Proposals for Public Policies for the Brazilian Industry of Digital Games” published in 2014.

C) Analysis of the Brazilian Market: An online questionnaire was conducted for various sectors including lawyers, accountants, distributors, eSports companies, events, payment providers, specialized media, peripherals, publishers, research companies, public relations agencies and retailers. The questionnaire asked about the perception that the company or professional has about the Brazilian market, issues related to piracy and the gray market, and the national scenario for game development. Sixteen responses were analyzed considering public data and research into the Brazilian digital gaming market and its context.

1. Profile of the Brazilian digital games industry

A total of 375 digital game developers (276 formalized companies and 99 informal studios), 235 self-employed professionals (75 formalized) and 85 support organizations (70 formalized) responded. Formalized companies are considered those that have a national registry of legal entity (CNPJ), and formalized autonomous professionals as those registered as an individual microentrepreneur (MEI) or as a self-employed professional (who issues an autonomous professional receipt - RPA).

1.1. Developing Companies

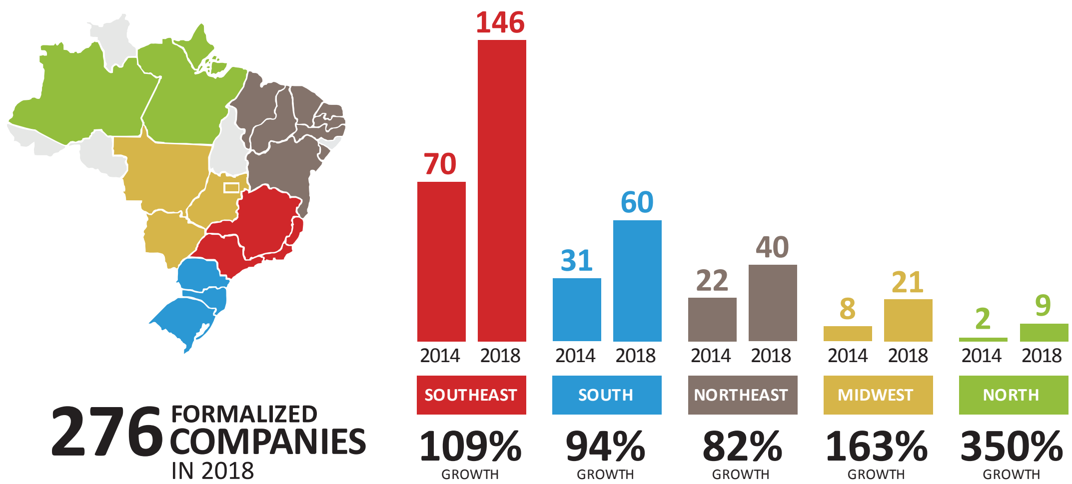
The characteristics of industry’s Human Resources, such as number of employers and employees, department allocated, working regime, gender, and diversity; the profile of the Games Developed in 2016/2017, including total amount, distribution and revenue sources; Public and private Funding Sources used by the studios; company internationalization and its relations with the international market; development and protection of intellectual property; Relations with the ecosystem - shared experience with other actors, types of realized in-fellowship activities and physical localization importance; Relations with the government - knowledge and support of the governmental actions, intentions of applying for public calls and attribution of Government’s importance for the industry development; Perception of the Brazil’s Digital Games Industry: the weak and strong points, importance of events and the associations, suggestions for the Government, related problems and expectations for the next 5 to 10 years.

1.1.1. Geographical Distribution

With regard to the development companies, the scenario in which the first study was developed in 2014 has changed over the four years that have passed. Since 2014, some aspects of the national scenario have changed, and there are signs of progress: the number of developers has grown in all regions of the country - especially in the North and Midwest; however, most of the development studios are concentrated in the Southeast region, especially in the State of São Paulo.

Regional discrepancies are similar to those of other technology-based industries; however, research shows that the digital gaming industry is growing outside of the South / Southeast regions.

Comparison of the number of formalized development companies by region in **2014 and 2018**



1.1.2. Human Resources

Regarding human resources, game developers have stated that 2731 people work in their organizations. The total number of people in the 276 developers was 2731, an increase of 141% in relation to the 1133 people in the 133 companies of the I Census. The average number of employees among the respondents increased from 8.5 people to 11.1 people among those formalized and 8.6 people among the non-formalized ones.

Regarding the work areas, there was little change compared to the first census: the area that occupies most people is that of programming and management if projects, followed by the area of art and design, then the administrative / financial area and the marketing area and sales. There is an increase in other areas, which can be explained by the increase in companies whose main area of business is not the development of games, but other activities.

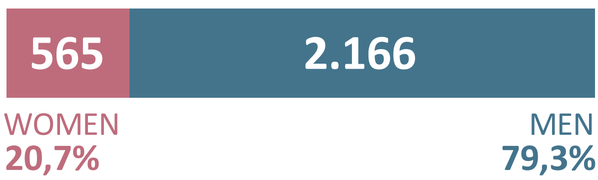
Comparative distribution of people
by area of activity of the I Census and II Census

AREA	2014	2018
Project Planning and Management	35,0%	31,1%
Art and Design	32,4%	27,2%
Financial and administrative	13,5%	13,2%
Marketing and Sales	10,3%	9,8%
Other areas	8,8%	18,7%
	100%	**100%**

Source: Comparison between the I Census (2014) and the II Census (2018)

The survey includes data on the diversity of the workforce. Regarding gender, the Game Brazil 2018 Survey states that women are already the majority among video game players, but the development of games is a predominantly male territory. The challenge of increasing female representation, however, is far from unique to Brazil. It's global: IGDA (International Game Developers Association) data show that 74% of game developers are men. In Brazil, women make up 20.7% of the workforce and that number is growing. Most of them are focused on activities such as marketing, sales, administration and finance, but there are many studios and companies that have women co-owners.

Distribution between **men** and **women**



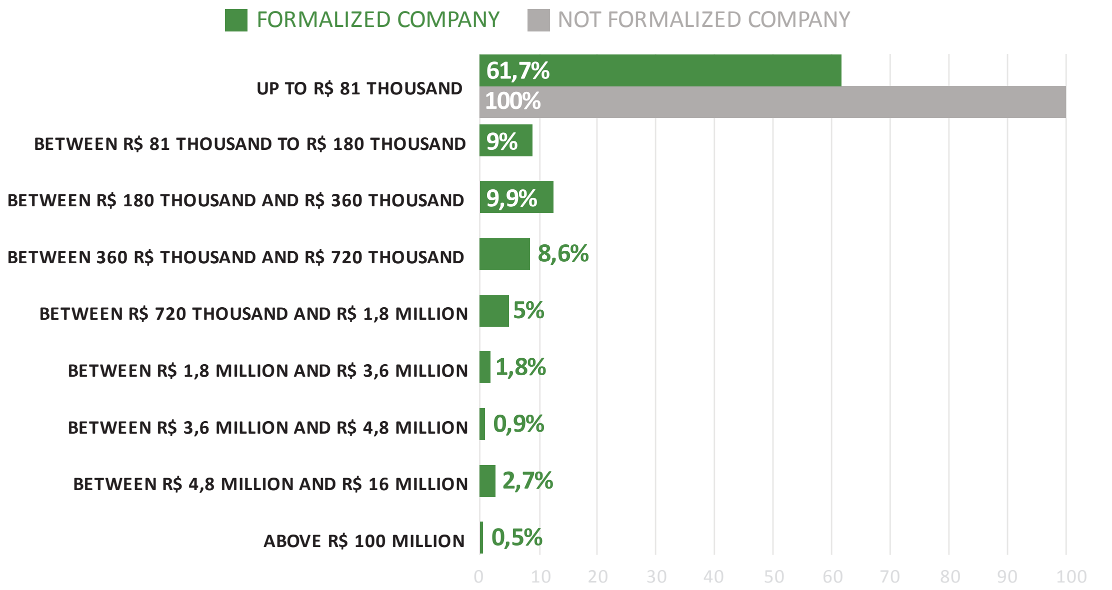
With respect to the companies that answered the question regarding diversity, 38% declared to have Afro-descendants, indigenous, trans or foreigners on their teams. Of these, 10% of the companies are made up of management and employees of African descent. As for the Trans population (the term used to include transgender, transsexual and transvestite people), they represent 0.4% of the sample's employees and management.

1.1.3. Revenues

Game companies can be considered, for the most part, micro or small, given their revenue.

The revenue of 80.6% of the formalized companies is R$ 360K or below. There are few that make more than R$ 1.8M: only 5.9% of the formalized companies.

Development companies revenue in 2017



Source: II Census (2018)

1.1.4. Types of Games Developed

Regarding the types of games developed, entertainment games predominated as the main source of revenue (64.9%) with the remainder distributed between serious games (25.8%) and other unidentified types (9.3%). Most of the companies obtain revenue from games developed for their own commercial exploitation (58.5%), while 41.5% generate their main revenue by developing custom games for third parties.

TABLE 1. Main source of revenue for game companies in 2017 based on the type of game produced.

Top revenue source for developers
formalized and not formalized by type of game

TYPE OF GAME	FORMALIZED	NON-FORMALIZED	TOTAL
Entertainment	**67,4%**	**87,2%**	**71,6%**
Own entertainment games	42,1%	74,5%	48,9%
Entertainment games for third parties (international clients)	7,9%	4,3%	7,1%
Entertainment games for third parties (domestic clients)	11,8%	6,4%	10,7%
Advergames	5,6%	2,1%	4,9%
Serious games	**32,6%**	**12,8%**	**28,4%**
Own educational games	10,1%	6,4%	9,3%
Educational games for third parties	8,4%	4,3%	7,6%
Corporate training games	5,1%	0,0%	4,0%
Corporate training games for third parties	3,9%	0,0%	3,1%
Own games for health	0,6%	2,1%	0,9%
Games for health for third parties	2,8%	0,0%	2,2%
Simulators using specific hardware	1,7%	0,0%	1,3%
Total	**100,0%**	**100,0%**	**100,0%**
Valid respondents	**178**	**47**	**225**
Not applicable	49	34	83
Other	18	5	23
Total of respondents	245	86	331

Source: II IBJD's Census (2018)

1.1.5. Development Platforms

Data show that, while the absolute number has grown, the percentual of companies that develop for mobile platforms has reduced significantly when compared to the I Census.

Developers by platform: comparative 2013 and 2017

	2013		2017	
PLATFORM	COMPANIES	%	COMPANIES	%
Mobile	113	85,0%	135	59,2%
Computer	84	63,2%	117	51,3%
Web (browsers)	84	63,2%	41	18,0%
VR/VA			41	18,0%
Console	9	6,8%	34	14,9%
Portable console	12	9,0%	9	3,9%
Others	26	19,5%	9	3,9%
Social networks	53	39,8%	3	1,3%
Respondents	133	100,0%	228	100%

I IBJD's Census (2014) and II IBJD' Census (2018)

With the ease of publishing games on digital stores such as Steam, Google Store and AppStore, coupled with the large user base of these marketplaces, smartphones and computers are the most popular platforms among developers. The number of companies creating for consoles increased from 14 to 36 over the period of 4 years. The number of games for Augmented Reality and Virtual Reality appears greater than the previous Census, which is probably Brazilian developers betting on new technologies.

1.1.6. Associations

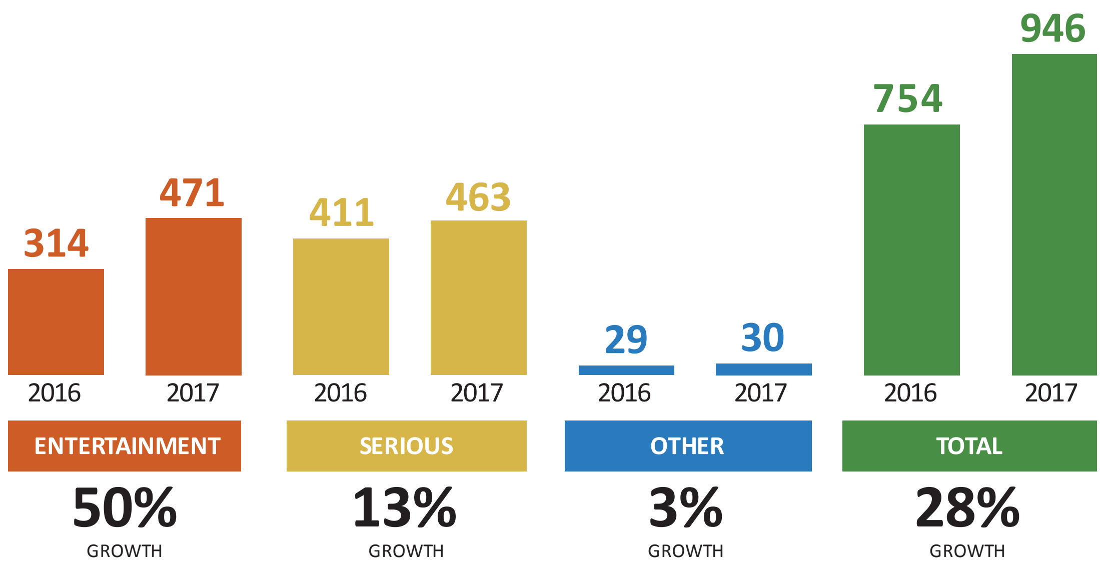
Abragames (Brazilian Association of Digital Game Developers) is the most mentioned by formalized developers, which may be related to the growth of the export project in partnership with Apex-Brasil (Brazilian Game Developers - BGD). The regional associations have grown in number, they were founded by seven new entities of the genre, which shows that more regions are beginning to create a critical mass for the development of the industry.

1.1.7. Intellectual property

In the digital gaming industry, intellectual property (so-called "IP") is a highly valued asset. Therefore, it is not surprising that the overwhelming majority of local developers (more than 90%) develop their own IPs, which increases the expectation of one or more successful nationally produced games in the next few years - only 9.7% of companies license third party IPs. 41.7% of the companies know and have contracts with collaborators and other business partners in order to protect their IP.

1.1.8. Games developed: quantity, awards, platforms

Production is prolific: 1718 games were developed between 2016 and 2017, growing 28% in one year. Of all games, most are not for entertainment, but are "serious" or impactful games such as education, health, or corporate training. This may be related to the complexity of production, which is much greater when it comes to developing entertainment games. The games produced in 2016 and 2017 were largely for mobile devices (43%).



The main awards won that the developers mentioned as relevant were from BIG Festival, the Brazilian Game Show, the National Sebrae and the SBGames (national and specific digital games awards), Campus Party, and NAVE Oi Futuro Digital; and awards at IGF, Casual Connect, Game Connection America Global Top Round, PAX East and West, Imagine Cup, Unity Awards and Square Enix Latin American Contest to name a few.

1.1.9. Internationalization

The level of internationalization of the longest established developers in the market is high, even more so by the standards of the Brazilian industry as a whole. In the digital games sector the competition is global, so the growth of the games industry in Brazil does not depend on the growth of the country's economy, but on increasing Brazil's competitiveness in the international scenario. The quantitative and qualitative growth of the industry in the last 4 years demonstrates that this is possible.

Among the reasons behind the progress are support activities such as government grants and BGD (Brazilian Game Developers), an exportation program that has increased the visibility of local development companies overseas - there are currently more than 100 participants in the program. As the domestic market doesn't guarantee the livelihood of companies, they are targeting potential markets such as the United States, Canada and Western Europe.

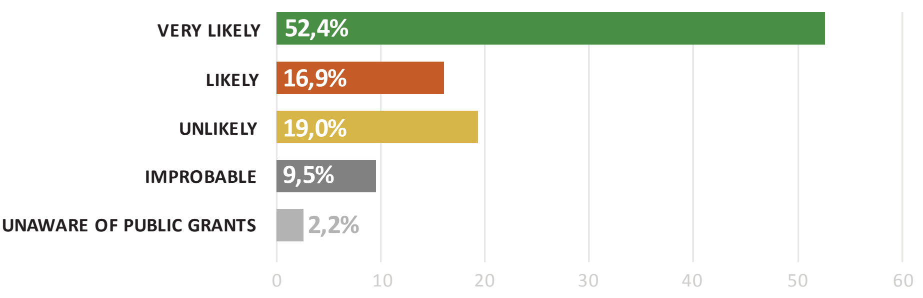
1.1.10. Ecosystem

Development companies rarely exchange experiences with other companies, revealing themselves to be quite isolated. While the culture of the digital gaming industry is perceived as cooperative, there is plenty of room to leverage synergies between developers and the ecosystem.

1.1.11. Relationship with government agencies

With the support of the government, the scenario for the coming years is positive. An indication of this is the number of companies that declared they intend to participate in the upcoming rounds of government funding for the industry.

Intention to participate in public grants in 2018 and 2019



Source: II IBJD's Census (2018)

1.1.12. Industry perception

It is possible to perceive some patterns about the perception of the developers about IBJD and about the challenges and perspectives for the next years.

1. **Taxation.** The developers point out the maintenance of the high tax burden on the digital games sector as one of the main challenges - an issue that is aggravated when observed that they are non-specific taxes or that do not consider the current configuration of the Brazilian industry to obtain a less expensive and more advantageous index for both parties.
2. **Bureaucracy.** The process of opening and maintaining the business requires the monitoring and compliance of many administrative routines, which may inhibit or even discourage to incorporate the business. The entrepreneurs often consider setting up the company abroad, such as the US, due to the business friendliness.
3. **Lack of academic focus on the sector.** The perception of lack of specialized courses is a factor raised enough as a challenge in the coming years.
4. **Find and retain well-trained professionals.** In large part, it happens because of the last challenge listed. If there are no more eligibility options, the trend is that it will be even more difficult to find the professionals who understand the technical and market challenges in the coming years.

5. **Hiring and working regime.** The formal contracting regime is important so that all workers' rights are ensured. The challenge is to be able to afford the high cost it entails, especially for those developers who are just starting out.
6. **Business management routines.** Issues of account maintenance, tax declaration, human resources or business activity on the market still seem difficult for Brazilian developers.
7. **Identify players' profile, target audience and how to make it loyal.** Routines of study and analysis of market and target audience are fundamental for when one wants to enter and produce well in the market.
8. **Profitability and high costs.** Profitability was a subject addressed in different ways in the answers. There are developers who say it is a challenge to keep the business profitable and self-sufficient. It is also difficult to keep up with the current high cost of good equipment for the developer's on-demand or own projects. The high cost of setting up the business and the frequent lack of start-up capital or working capital for maintenance in low-income cases damage to the operation of the business, and profitability becomes a challenge for the coming years.
9. **Attendance to events.** Developers in general say that the cost of trips to major events is a challenge, now or for years to come.
10. **Maintain development activities constant.** This seems difficult because most businesses are still unprofitable.
11. **Own projects and intellectual property.** Respondents report that it is very difficult to find information or professionals who know the law that the digital games industry uses, even the ones that regulates copyright and intellectual property within the industry.

Suggestions for government action from the developers were many, but some themes were prevalent. It should be remembered that some of these perceptions show some ignorance of what already happens in the sector, as well as ignorance of what the government can do as public policy.

1. **Taxation.** The suggestions involve ideas about taxation and how it is done. Some suggest full tax exemption modalities while others speak of a tax reduction on equipment, on workers' hiring, and the incorporation and maintenance of the company. Others say that tax incentives for developers would be enough.
2. **Investments.** Some of the answers mention that it is necessary to systematically invest in the sector, in order to enable more projects and to empower professionals and entrepreneurs. There are respondents who advocate a greater volume of non-reimbursable resources and venture investment without the same expectation of return of venture capital.
3. **MEI (Individual Microentrepreneur).** One of the suggestions concerned the framing of the digital game developer and the creative economy business like MEI - currently, programmers and software developers cannot formalize as MEI.
4. **Public calls.** Public calls was one of the categories most cited in this question, the answers mention the need for specific public calls for digital games and not only for animation or sounding separately. The respondents also mention the idea of regional public calls and redistribution of the budget of large public notices and a larger number of smaller public calls. Another suggestion asked for public calls for individuals, students, beginners and professionals who do not have CNPJ. Finally, there are demands for better disclosure and change of billing criteria and the initial portfolio to

favor more profiles. Public calls in partnership with universities were also suggested. These suggestions reflect challenges common to other public policies in other sectors, such as services to the non-formal and micro and small enterprises. The challenges of serving the digital and cultural/creative business, which are very different from traditional business, are added to.

5. **Bureaucracy.** Reduction of bureaucracy for the foundation and maintenance of the company, which includes formal hiring of workers, is also often suggested; some suggest simpler accountability systems.
6. **Public coworking spaces.** The developers also suggest public coworking spaces and maintained by some of the governmental instances. These places could become hubs for holding events, lectures, courses and other activities. Depending on the scope and location, it could approach other participants in the digital gaming ecosystem and other digital and/or creative industries. These coworking spaces could be installed in existing structures dedicated to culture, technology and/or startups, such as cultural institutions and public universities, incubators and technology parks, for example.
7. **Training for the sector.** Although there are digital gaming courses in all federative units, respondents say more courses and specialized training are needed to prepare the workforce for the national industry, including partnerships with the pioneer countries in the digital game production industry.
8. **Regulatory.** Finally, the developers say that adequate legislation for the sector is necessary, due to the great difficulty of framing the digital games projects in public calls of related areas. Equality with other cultural areas in the incentive mechanisms, like the Rouanet Law, is also demanded. The actions directed to the digital games sector need to be more continuous, the current public calls are still seen as sporadic.
9. **Events.** Cost support to attend the main events as well as the decentralization of them are mentioned. Some developers have already been helped by local entities to participate in the BIG Festival. The BGD program is geared towards international events; maybe a subprogram to participate in the main international event in Brazil (the BIG Festival) could be a first step for the resourceless developers.

1.2. Development support organizations

We have 85 organizations that support the gaming industry (70 formalized).

The geographical distribution of the supporting companies is still concentrated in the southeast region (45.9%), São Paulo with 28.2%, Rio de Janeiro with 11.8% and Minas Gerais with 5.9%. The southern region adds 28.3%, being Rio Grande do Sul with 15.3%, Paraná with 7.1% and Santa Catarina with 5.9. The Northeast has 13.9% of the support companies and is followed by the North with 7.1%. Finally, the Midwest is at 5.9%.

Support companies in the digital games industry can develop different activities at the same time.

Activities performed by **support organizations**

ACTIVITIES	COMPANIES	%
Consulting	22	26,8%
Development of digital content	20	24,4%
Educacional services	19	23,2%
Research	16	19,5%
Media	15	18,3%
Cinema / TV	15	18,3%
Advertising	15	18,3%
Corporate traning	14	17,1%
Development of software and information technology services	13	15,9%
Sound design	11	13,4%
Animation	9	11%
Localization	6	7,3%
Distribution	6	7,3%
Monetization	5	6,1%
Retail	5	6,1%
Publishing	4	4,9%
Other activities	19	23,2%
Other cultural and creative activities	12	14,6%
Other digital and technological activities	6	7,3%

Source: II Census (2018)

Like development companies, the vast majority make R$81k or less.

Regarding the workforce, we have 952 employees working in these companies. Most people are in other areas of the business (47.6%), almost 17% are working in the administrative and financial areas, 15% are in programming and project management, 12% in marketing and sales, and 9% in art and design. 63.8% of employees and management are men and 36.2% are women. The area in which the greatest balance between the number of men and women appears is in Other areas of the business, with 57.2% of the people in the area being men and 42.8% women, between management and employees. The administrative / financial and marketing and sales areas have a ratio of 1.5 and 1.8 men for each woman, respectively. The area with the biggest difference is programming and project management, with 82.3% men and 17.7% women, or 4.6 men for each woman in the area.

Regarding internationalization, most companies (60%) have no relation to the international market.

Regarding the services provided by government agencies, 61% said they did not seek assistance from public agencies. Among the most frequent reasons for not seeking contact with government entities, companies cite that they do not know whether this possibility exists or that they do not have sufficient information. There are still those who did not specify the reasons (they say just did not look for it) or "do not need" the subsidy generated by the possible partnership.

1.3. Autonomous professionals

In this research, 235 self-employed professionals (75 formalized - issue invoices as individual microentrepreneurs) answered the questionnaire. Many of these autonomous professionals are concentrated in the state of São Paulo, where 33.9% of the respondent professionals are based. The region with the second largest number of respondents is Rio Grande do Sul (22%), followed by Rio de Janeiro (9%).

The primary activity developed by the autonomous respondents is game design, with 76% of the answers; 68.7% of professionals carry out programming activities, another 51.9% work with art and 49.8% work with design. Activities in project management were mentioned by 41.6%; closely followed by script/story writing (41.2%) and animation (40.8%).

However, when asked about their main source of income, the picture changes drastically. 30% of respondents say programming was their main source of income in 2017. Game design is the main source of income for only 7.3% of respondents. Other activities (including cultural, digital and technological) were cited by 18% of the respondents, which shows that, although these professionals develop games, their livelihood comes from other activities.

About 82% have an average monthly income of up to R$ 1,908 with game development. Among these professionals there are those considered hobbyists (who develop for fun, but do not sell their games). Still among the professionals 71% have no relation with the international market. Just over half (55%) of these professionals have been working in this market for at least two years. Still, among these professionals, 91.8% are men and 8.2% are women. The majority are white (66.5%).

Almost all (99.4%) of these developers develop their own intellectual property. Only 14% of these developers are familiar with and have contracts to protect their intellectual property.

Of these professionals, only 12.6% are aware of government actions to support the digital games industry.

2. Public policy

Fifteen years ago, digital games were added to the agenda of the Ministry of Culture, allowing for various public entities to formulate policies for the development of the sector.

In the 2014 study, financed by BNDES, this trajectory was materialized in goals and objectives, fruits of the interinstitutional dialogue initiated in the 1st Workshop for Project Creation. Now, four years after this Public Policy Proposition document, the challenge is to determine what progress has been made in the five categories described.

With support of the documented survey, participant observations and qualitative interviews, we identified a promising scenario. In recent years we have seen the important entry of agencies such as Ancine and FINEP, contributing directly to filling the gap in industry development. BNDES and Apex reaffirmed their positive influences, leading a series of actions for the sector. The Ministry of Culture, a natural leader in this political alliance, resumed their leadership role after years without initiating a specific policy for games.

The Games GT(Work Group) , a result of the 2014 study, has become a fundamental public arena for the articulation of intersectoral strategies among formulators. We see the consolidation of a perspective that was still doubtful a few years ago - as a target of public policy, the digital game is recognized as a cultural artifact, product of the creative economy, symbolic expression and interactive audiovisual experience.

With complementary roles, BIG Festival and SB Games consolidate as the business and academic hubs of the industry.

As a trend, it is clear the resolution of the debate between BNDES, FINEP and Ancine to model a policy of acceleration by structuring the promotion of clusters, can be a way to leverage instruments that develop the local ecosystem.

A brief political history of games in Brasil

Ignored in the 1980s and 1990s digital games began their political path at the dawn of the 21st century

2003	Entering the game: Ministry of culture Gilberto Gil begins to articulate first actions for games in Brazil
2004	Foundation of Abragames Jogos BR is launched
2005	First strategic plan of industry realized by Abragames 2nd edition of Jogos BR
2006	Games included in Apex program operated by Softex Public call MCT/HNEP/MEC
2008	Second study realized by Abragames Public call BR Games is launched
2011	First workshop for Project Creation Ministry of culture includes games in Rouanet Law
2012	BNDES hires FEP Games Study First edition of BIG Festival / Startup Brasil Program (MCTI)
2013	Apex-BGD Project is launched Program APL Conteúdos (Ministry of Communications)
2014	INOVAapps publical call (Ministry of Communication) 1st Census of Brazilian Industry
2015	Ancine includes games on its regulatory agenda First edition of GT de Games / Program Usinas Digitais
2016	First edition of PRODAV 14 Procult from BNDES utilized for the first time for games
2017	Second edition of PRODAV 14 Public call App pra Cultura | FINEP Startups Program
2018	Audiovisual Gera Futuro public calls 2nd Census of Brazilian Industry

Source: ZAMBON, P. S.; CARVALHO, J. M. Origem e evolução das políticas culturais para jogos digitais no Brasil. Políticas Culturais em Revista, v. 10, n. 1, p. 237–260, 22 dez. 2017.

Four years after the publication of the last Census of the Brazilian Digital Games Industry, this study arises from the demand of public policy makers and entrepreneurs of the sector for accurate and updated information. As an emerging productive chain, the mutations that occur in four years are large, as we can see in the comparisons made in this first part of the study.

For this second edition we decided to modify the research instrument, leaving aside technical information, such as the use of tools and development methodologies, to privilege dimensions such as relationship with government and ecosystem. The previous edition focused only on Digital Game developers, and for this research we also consider development support organizations and autonomous professionals, both formal and informal. In this way, we seek to gather data about the profile of companies and organizations, profile of developed games, human resources (including issues related to the diversity of the workforce), the forms of financing used, the internationalization of companies, intellectual property, relationships with ecosystems, relationships with government agencies, and industry perceptions.

From this research we can attest to an emerging and rapidly growing sector. The industry doubled in size in four years, at a rate of 107% if we consider only the incorporated developers and 182% if non-incorporated are included. Of this total of 375 developers, many are still concentrated in the southeast region, with 42.2% being headquartered in São Paulo and Rio de Janeiro. Despite the boom in the emergence of companies, many of them are still young and with low revenues - 80.6% of them do not bill more than R$ 360,000 and 65% have less than 5 years of existence. They are also small organizations - of which 69.1% formalized have up to 10 employees, and among those not formalized, this number reaches 82.5%.

This young and permeated industry of small companies began to organize in regional associations: eight of them were founded in that period. The source of revenue continues to be mostly entertainment games with their own intellectual property, especially for mobile devices (59.2%) and computer (42.1%). The number of developers for consoles grew, demonstrating greater maturity in the industry - they were only 14 developers in 2014 versus 36 in 2018.

These numbers, among many others that were highlighted in the previous pages, show us the expansion of this industry, but highlight an emerging production scenario.

Among the limitations of this study is the absence of an annual historical series. With a distance of four years between existing mappings, and with methodological differences among them, it was not possible to abstract some detailed information about the evolutionary process of the industry. Likewise, if this survey is not updated in the following years, a great opportunity will be lost - especially in monitoring the effect of public policies implemented, whose impact will only be perceived as of next year.

Keeping a constant update of the study can overcome another limitation of this mapping. As the industry spent years without up-to-date research, the various demands for information focused on a single study, forcing a very lengthy question-form that made it difficult to capture answers. With annual surveys, some more specific informational dimensions can be distributed over the years, without overloading the respondent.

The creation of an own CNAE (National Classification of Economic Activities) for the development of electronic games or the consolidation of a Culture Satellite Account that would size the sector and its data in the Culture Economy would also facilitate the prospection of valuable information - until then only possible to be captured directly through forms and interviews.

Another point to emphasize in this research is the limits of the division between entertainment and serious games, although it is a traditional categorization in the industry. We did not incorporate in the questionnaire concepts like "edutainment" or "impact games", as they have yet to be assimilated into the vocabulary of the entire industry. Further specific research into this segment, and how it permeates both entertaining games and serious games would be important in building public policy.

It is worth highlighting some analyzes that cannot be made by the observation of the enterprises that develop digital games, central focus of this study. To extract some unsorted data in this survey it is necessary to go to the most micro level: of people and games. Thus, research on the professionals involved in the industry can be carried out, with a common part to the global research of the IGDA to have a global context and another specific part directed to the Brazilian challenges. With this research it would be possible, for example, to understand the way in which the employment contracts are established, the academic formation and origin of this individual and the motivation that made them choose this activity.

A research focused on the games produced would bring other complementary data, where the base formed by the GamesBR project (financed by the App for Culture program from the Ministry of Culture) would have a fundamental role both for collecting and for temporal monitoring of the evolution of games - and even the dynamics of professionals of the industry, to the extent that it was also able to aggregate the technical data and performance data of each title.

3. Analysis of the brazilian market

The largest gaming markets are located in China, the United States and Japan. Germany, the United Kingdom and France, for example, generate cumulative revenues of only about $ 11.5 billion. By comparison, Japan alone adds up to $ 12.6 billion in gaming revenue (CLAIRFIELD INTERNATIONAL, 2018).

In Brazil, the popularization of smartphones and tablets helped the growth of the market and decreased the games prices, as well as expanded access to them. According to the ICT Households 2016 survey of the Brazilian Internet Governance Committee, 93% of Brazilians have a cell phone; 18% have gaming console and 17% have tablets. In urban areas, 9% of the population accesses the internet through video game devices, and the subjects that do so are young men of class A. The ICT Households 2016 also indicates that 39% of the population played some game on the cell phone in the last three months. This number has remained stable between the years 2014, 2015 and 2016 (NÚCLEO DE INFORMAÇÃO E COORDENAÇÃO DO PONTO BR, 2017)."

The main Latin American gaming market according to PwC, Brazil has a large mass of players and the industry's key companies are locally present. The Brazilian market follows many of the same trends as the global market, but as an emerging market, the potential for growth is even greater. While the global market will grow at around 7% a year (2017 to 2021), the Brazilian market expects to grow 16% per year, accumulating a total growth of 80% in the period, reaching US$1.4 billion by 2021 (PWC, 2017b):

To use a very appropriate analogy, playing in the Brazilian gaming market is like playing permanently in Hard mode. The main bottleneck is the high tax burden, considering PIS / Cofins, ICMS, IPI and Importation Tax, which restricts public access to this form of entertainment, transforming games and consoles into luxury items and fomenting the grey market. It was very eye-opening when the PlayStation 4, launched for US$399 in the US, was released in Brazil for R$ 3,999 (HIGA, 2013), at a time when the US dollar quotation was R$2.20 for US$1.00, about 4.55 times the value in the American market. In updated amounts (US$1 = R$3.86 in June 2018), the amount would be R$7016.42.

Some problems related to taxation include:

- Installed base: most consoles on the market are old, and therefore are irrelevant to the international industry;
- Gray market: there is still a strong performance of game and console vendors in the parallel market; and
- Conversion: the average cost per user is low;
- Other problems in the Brazilian market include:
- Exchange rate: with the rise in the dollar, the conversion to the sales / transactions may negatively impact profit margins; and
- Popularity: independent games, which local developers produce, lose a lot of space to blockbusters.

Nintendo, an important global player, stopped operating in Brazil in early 2015, for the reasons explained above. Sony and Microsoft, makers of PlayStation and Xbox respectively, who in the past have manufactured their consoles locally, thus making consumer prices more affordable, today have returned to importation. Apparently, the gain in scale from production was not enough to sustain such operations - not to mention the political and economic crises which impacted the country starting in 2014.

If piracy, a traditional “villain” of the market, is no longer seen as an obstacle, the transition from physical to digital media presents a challenge for the retail channel, still largely based on the physical sales. Some say that physical copies of games will eventually cease to exist, a phenomenon that may happen in a more advanced market such as the U.S. However, limited access to broadband is an obstacle for downloading games in emerging markets, due to “heavy” data packets.

A phenomenon characteristic of Brazil, especially when compared to other countries, is the high penetration of so-called F2P games (Free to Play), that is, free games based on micro-transactions. This genre boosts eSports, which are professional gaming tournaments. But even eSports face their own challenges: regulations; maturing to become comparable to a traditional mainstream sport and reaching the general public; breaking barriers of prejudice towards video games; and showing to the market that the results are real and can be measured.

When it comes to the development of games in Brazil, it is unanimous that the local market is not sufficient to support companies, and it is fundamental to think of the product as global. Nonetheless, the expectation for the future is optimistic, a solid, regulated market with reliable information and strong professionals. With more reasonable prices for video game software and hardware, sales will grow, accompanied by industry development, including infrastructure, pre-and post-consumer services and diversification of supply.

4. References

CLAIRFIELD INTERNATIONAL. **Gaming Industry – Facts, Figures and Trends**. Clairfield International GmbH. Düsseldorf, p.82. 2018

FLEURY, A. C. C.; NAKANO, D. N.; CORDEIRO, J. H. D. O. **Mapeamento da Indústria Brasileira e Global de Jogos Digitais**. São Paulo, Rio de Janeiro: NPGT-USP, BNDES, 2014. Disponível em: <http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/produtos/download/aep_fep/chamada_publica_FEP0211_mapeamento_da_industria.pdf >.

FLEURY, A. C. C.; NAKANO, D. N.; SAKUDA, L. O. **Proposição de Políticas Públicas direcionadas à Indústria Brasileira de Jogos Digitais**. São Paulo, Rio de Janeiro: NPGT-USP, BNDES, 2014. Disponível em: <http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/produtos/download/aep_fep/chamada_publica_FEP0211_proposicao_de_politicas_publicas.pdf >.

FLEURY, A. C. C.; SAKUDA, L. O.; CORDEIRO, J. H. D. O. **I Censo da Indústria Brasileira de Jogos Digitais, com Vocabulário Técnico sobre a IBJD**. São Paulo, Rio de Janeiro: NPGT-USP, BNDES, 2014. Disponível em: <http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/produtos/download/aep_fep/chamada_publica_FEP0211_I_censo_da_IBJD_vocabulario.pdf >.

FLEURY, A. C. C. et al. Jogos Digitais no Brasil: mapeamento da indústria e proposição de políticas públicas. In: VALIATI, L. e FIALHO, A. L. D. N. (Ed.). **Atlas econômico da cultura brasileira: metodologia I**. Porto Alegre: Editora da UFRGS/CEGOV, v.1, 2017. p.149-164. ISBN 978-85-386-0342-9.

HIGA, P. Sony explica como chegou ao preço de R$ 4 mil do PS4. 2013. Disponível em: < https://tecnoblog.net/143238/sony-explica-preco-ps4/ >.

NÚCLEO DE INFORMAÇÃO E COORDENAÇÃO DO PONTO BR. **Pesquisa sobre o uso das tecnologias de informação e comunicação nos domicílios brasileiros : TIC domicílios 2016 = Survey on the use of information and communication technologies in brazilian households : ICT households 2016**. 2017

PWC. **Global Entertainment and Media Outlook: 2017-2021 Brazil**. PwC, 2017.

Editor

Homo Ludens

Sponsor

SECRETARIA DA ECONOMIA CRIATIVA MINISTÉRIO DA CULTURA GOVERNO FEDERAL