Hamburg Institute of International Economics

The Baltic Sea Region as a Hotspot for the Game Industry

Results of the analysis (Output 2.1 & 3.1)

Interreg Baltic Sea Region
EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

This document provides the results of analysis & assessment of BSR game business - strengths and weaknesses of current framework conditions and improvement potentials, actual trends in games and game technologies, current situation of game start-ups and urgent needs and overview on existing support models.

It presents the outputs 2.1 and 3.1 of the Interreg BSR project "Baltic Game Industry".

Editor

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Pages 11, 33, 35, 40, 45, 48, 50, 53, 57 maps: ©2018 Google Maps

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Berlin, September 2018

Introduction

Europe is undoubtedly a global player in the international games market, despite the complexity and challenges it meets with the diversity within its union, compared to the larger states such as the US that it competes with. Every initiative European states embark on together, requires an understanding of both their diversity and their common ground to be able to act "as one".

This is the chief objective of this analysis, to obtain the bigger picture of the status quo of the game industry in the Baltic Sea Region as a whole and in each of its parts. Based on the assessment, we can develop strategies how to enhance the appeal of the Baltic Game Industry beyond the BSR.

For the analysis, we combined data that informs on how well the game industry is established and prospering in each region, with input from game industry experts and local or regional authorities. The collection of data and other type of information was done through desk research and interviews. The desk research proved to be a challenging task, as in many of the BSR regions data on the regional game industry sector is not easily available. Several regions do have national game industry surveys but these hardly ever include regional figures. To better understand how the game industry is placed within a region, deductions from the national findings and interviews were conducted.

This analysis does not intend to be comprehensive or accurate in all details. Though it is put to public use, the purpose remains to create a basis for developing the key outputs of the "Baltic Game Industry" project: good practice incubator pilots and initiating a change in the framework to better accommodate the game industry in one's region, at the same time strengthening the BSR as a whole by developing a common brand.

Meeting the challenge of diversity for a common approach has the great advantage of a plenitude of different experiences to share and learn from.

Mood Barometer 2018

The unequal availability of documented indisputable and unambiguous facts and statistical figures for the BSR regions involved in the Baltic Game Industry project steered us to a different approach to depict the profile of the game industry in the BSR as a whole and in its regions.

The main objective of the analysis was to arrive at a SWOT of the current situation of the game industry and the level of accommodation of this industry within the BSR regions. To back up the various figures and statistics, we turned to top-ranking experts within the game sector and asked their well-informed opinion on the different areas of interest for the project goals.

Each region conducted a survey amongst their highest-ranking experts (such as national game associations). We chose the approach of a mood barometer and limited the number of experts involved per region to only a few, as seen fit by each region.

The survey

We asked them to give us an expert indication on:

<u>How would you assess your game developing industry?</u>

1. How strong would you judge the entrepreneurial spirit of game studios in your region?

E.g. in some countries there is in particular with start-ups and small mature studios a tendency to consider their work as primarily an artistic creation, and therefore neglect or reject acquiring entrepreneurial skills. Rate from 0 (non-existent) to 5 (very strong).

2. How easy can your regional game companies find young staff?

Does your region provide enough young talents (e.g. because of a local university offering game design studies or because the city attracts young people) or do you need to target and attract them? Rate from 0 (extremely low availability) to 5 (very satisfactory availability).

3. How easy can your regional game companies find experienced staff?

Do games companies in your region have difficulties in finding and hiring experienced staff in your region? Rate from 0 (extremely difficult to find senior talents) to 5 (the region is very attractive for senior talents).

4. Are your regional game studios successful on the international consumer market?

The games that are sold, are they mainly sold on the home market or on the international market?

Rate from 0 (only home market sales) to 5 (mainly international market).

5. How good do you think is your country's reputation as a good game producing industry?

This is meant to reflect on how aware are international publishers and investors of your country's game industry, in a positive sense? Rate from 0 (no international awareness) to 5 (highly reputed in the world).

6. Investment climate into games production

How would you judge the general investment climate towards games in your country? Are there reservations towards the game industry or is the industry considered a promising sector? Rate from 0 (no investment into the game industry) to 5 (very favourable investment climate).

7. How strong and influential is the game community in your region?

How well is the industry represented? Rate from 0 (hardly any community) to 5 (strong community).

How strong is the lobby towards the policy-makers in your region? Rate from 0 (no lobby support) to 5 (strong and influential lobby support).

<u>How appealing would you judge their region to be in terms of living, working and hiring?</u>

We are looking at this in terms of attracting talents and companies to settle down in your region. Is it expensive to live in your region? Do you earn well? Are work costs (employer's additional costs) high (this will be the same throughout your country, and possibly not regionally different)?

8. Would you say living costs are high (compared to the medial income)?

Rate 0 (yes, people tend to struggle to make ends meet) to 5 (no, in general people can afford a high living standard).

9. Would you say salary levels for game developers in your region are high or low (compared to similar types of jobs in other sectors)?

Rate 0 (yes, much lower than similar jobs) to 5 (no, much higher than similar jobs).

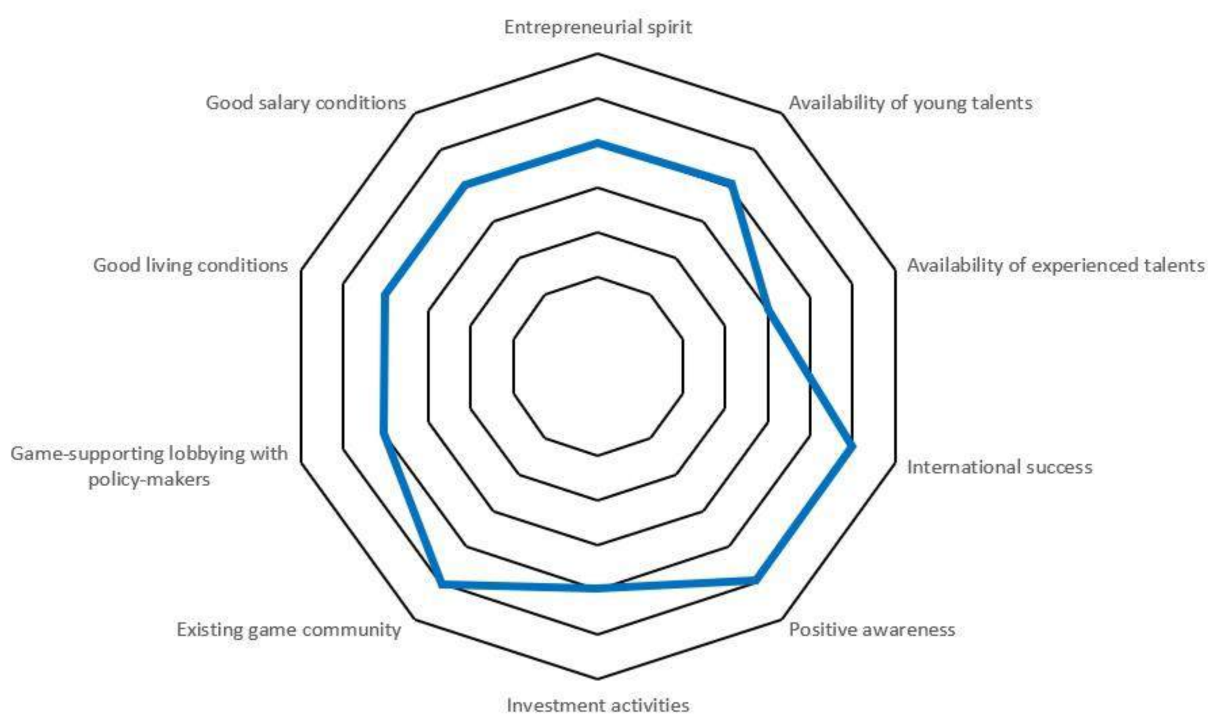
The results

We used the cutting data of all regional experts to express their opinion in a spider diagram per country or region, and the total of all expert opinions to draw a diagram for the whole BSR region.

Though these diagrams only reflect an informed, yet subjective assessment, they generally concur with the discussions the partners have had within their game communities and with their public authorities on areas to be targeted for improvement measures. The idea is that with these diagrams and their regular updates, we can track the development of the game industry within a region or the BSR, and also detect the impact of the measures taken over time.

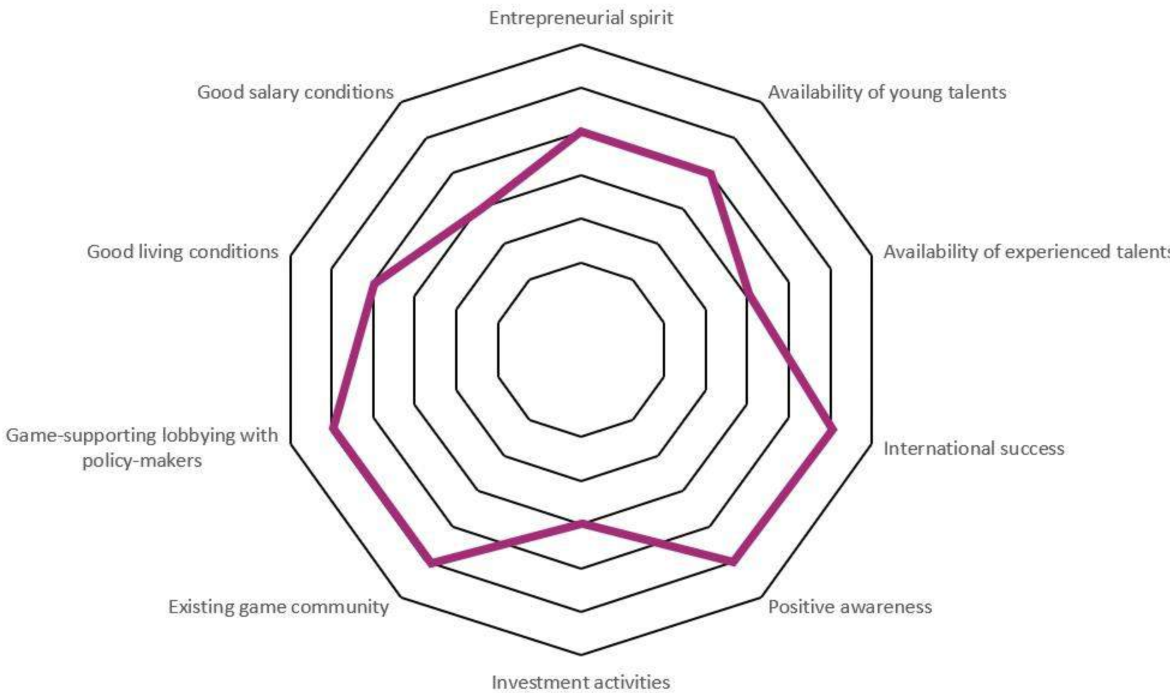
Below you will find the visualisations of the first survey, both for the BSR and each region/country.

Game Experts‘ Mood Barometers 2018



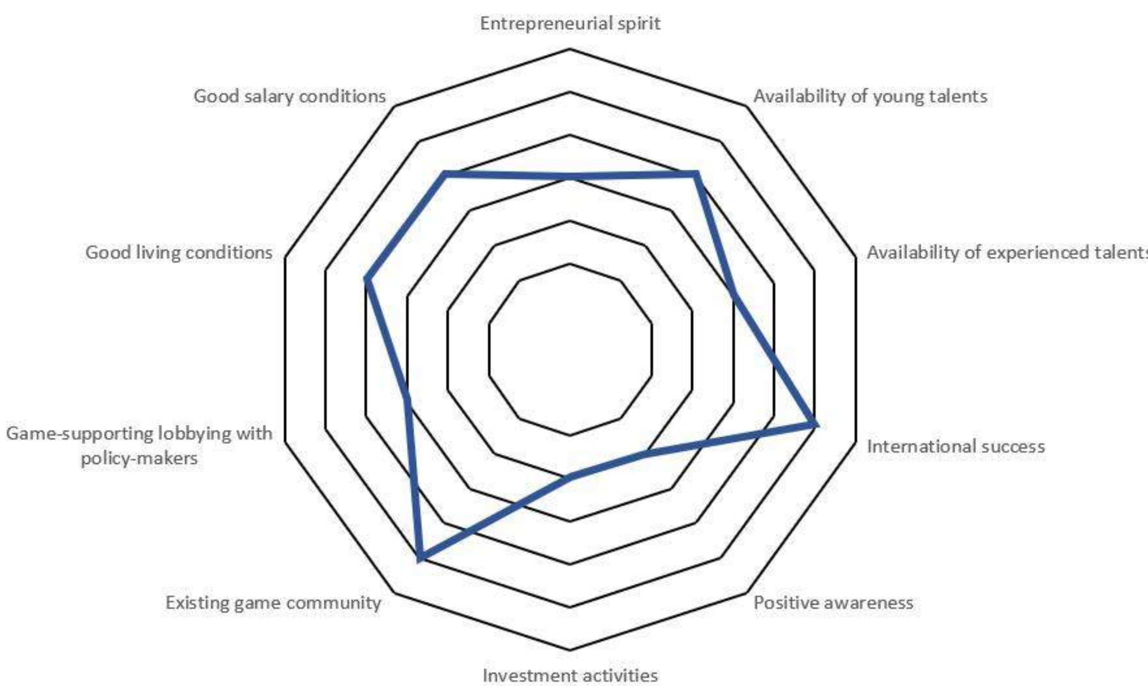
BSR

***cutting data from regional barometers**



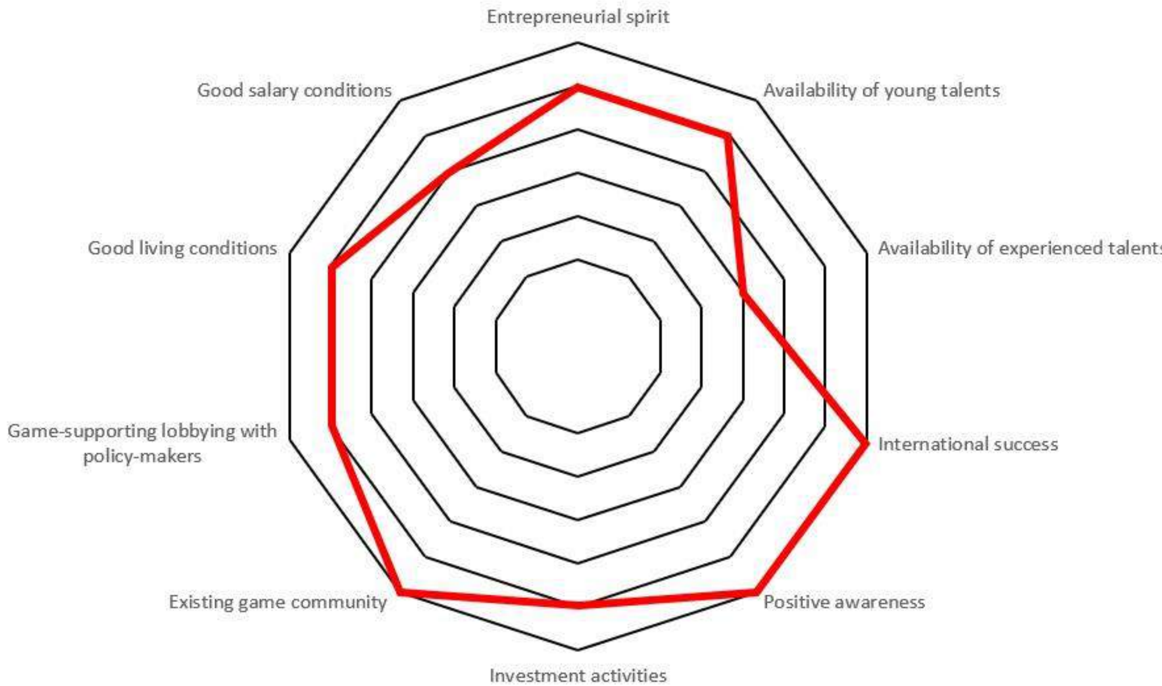
DENMARK

***Based on 3 expert opinions**



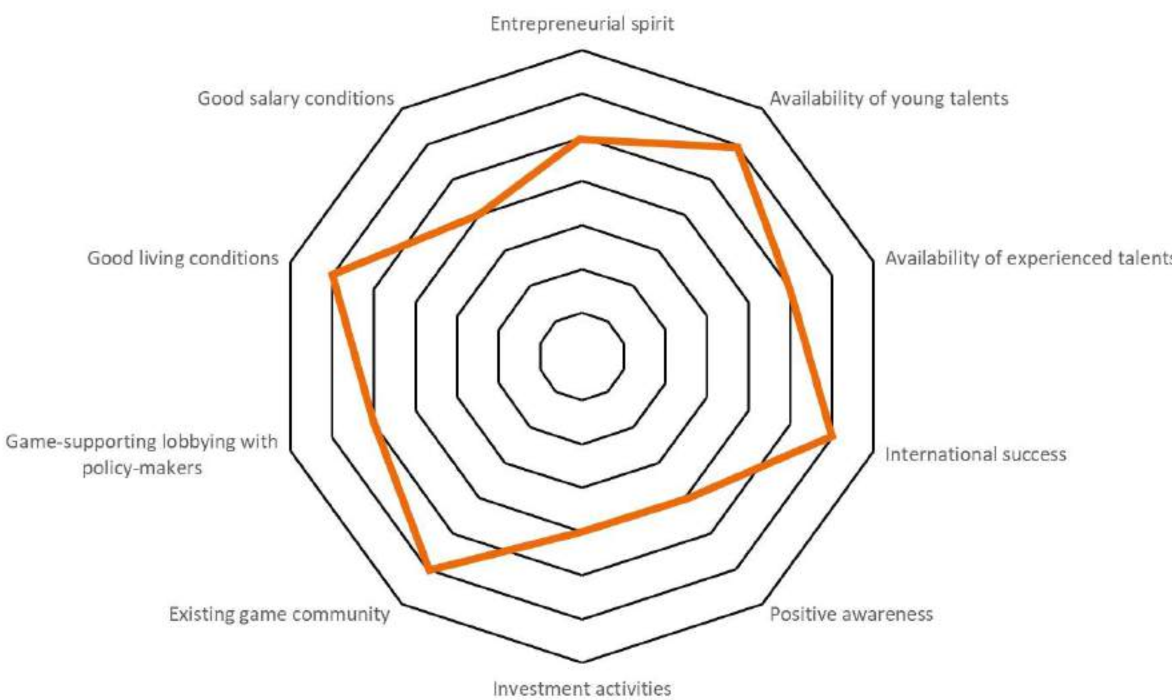
ESTONIA

***Based on 2 expert opinions**



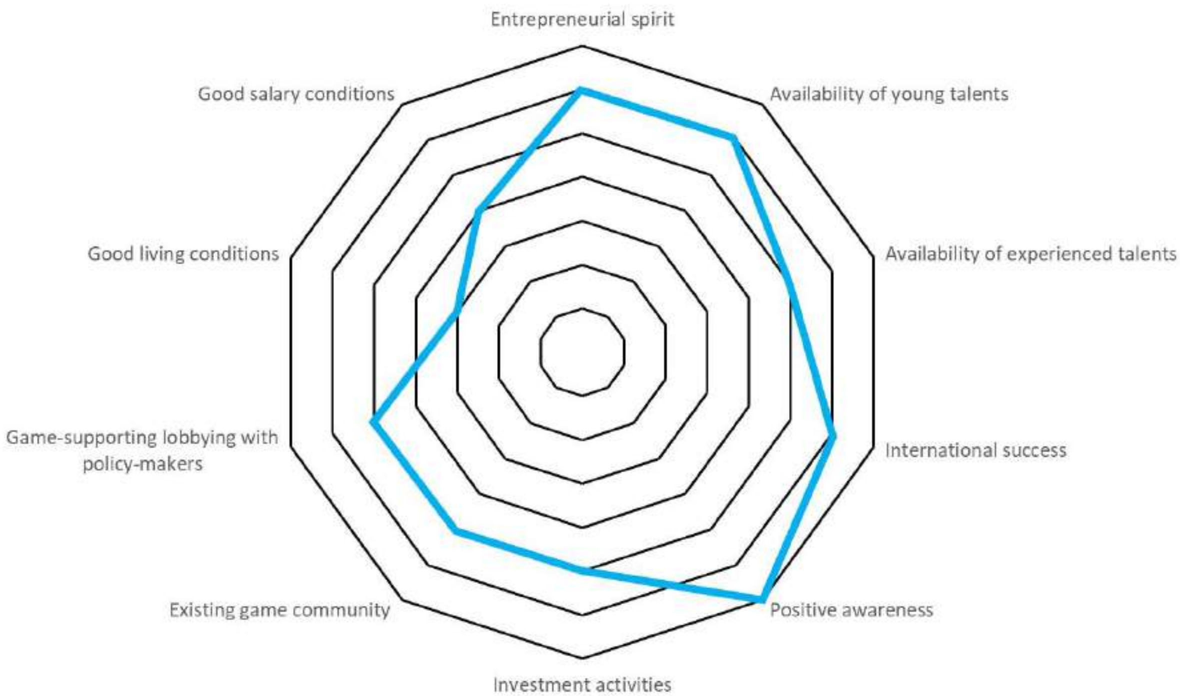
FINLAND

***Based on 2 expert opinions**



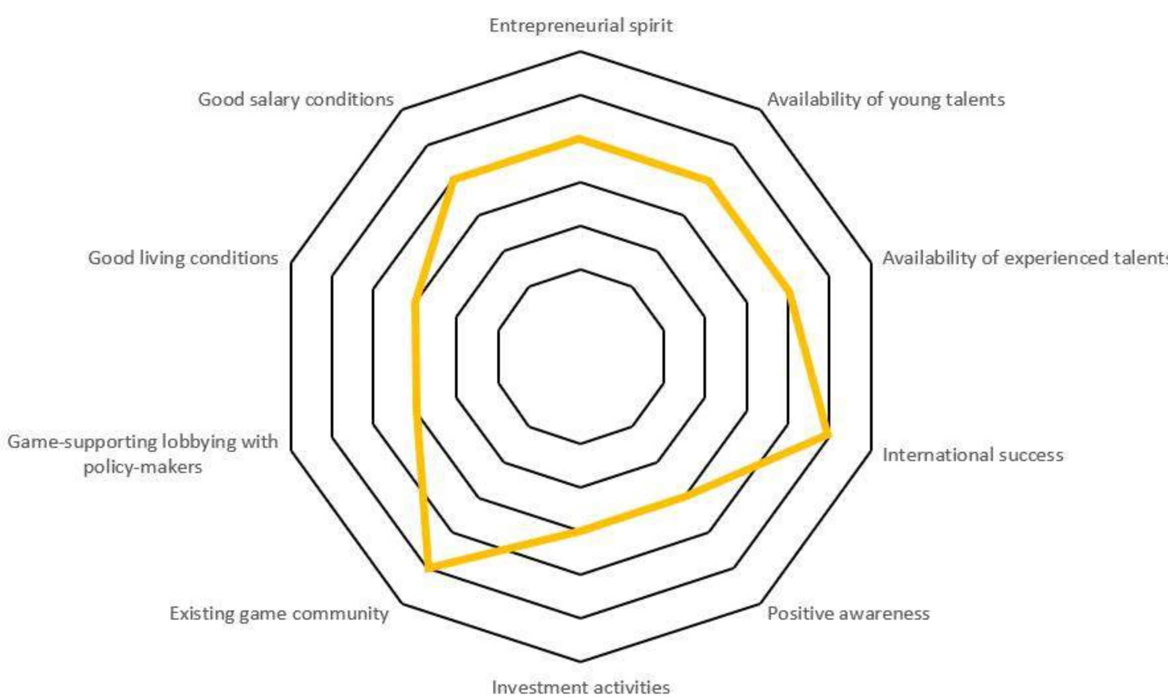
BERLIN

***Based on 3 expert opinions**



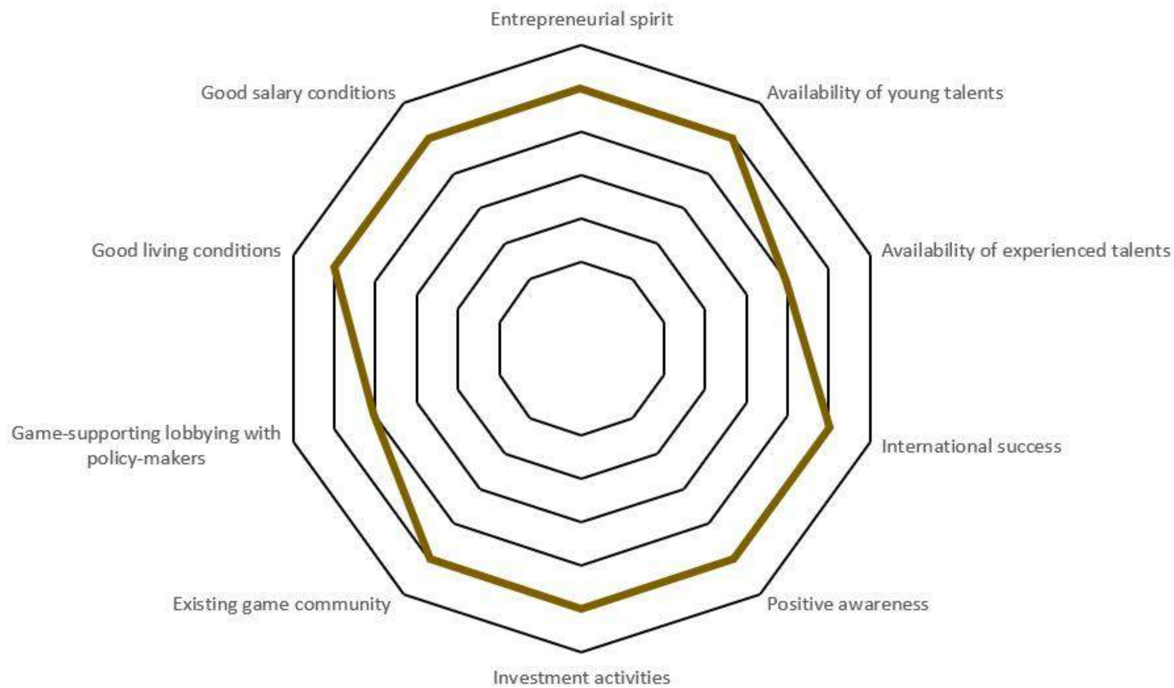
HAMBURG

***Based on 1 expert opinion**



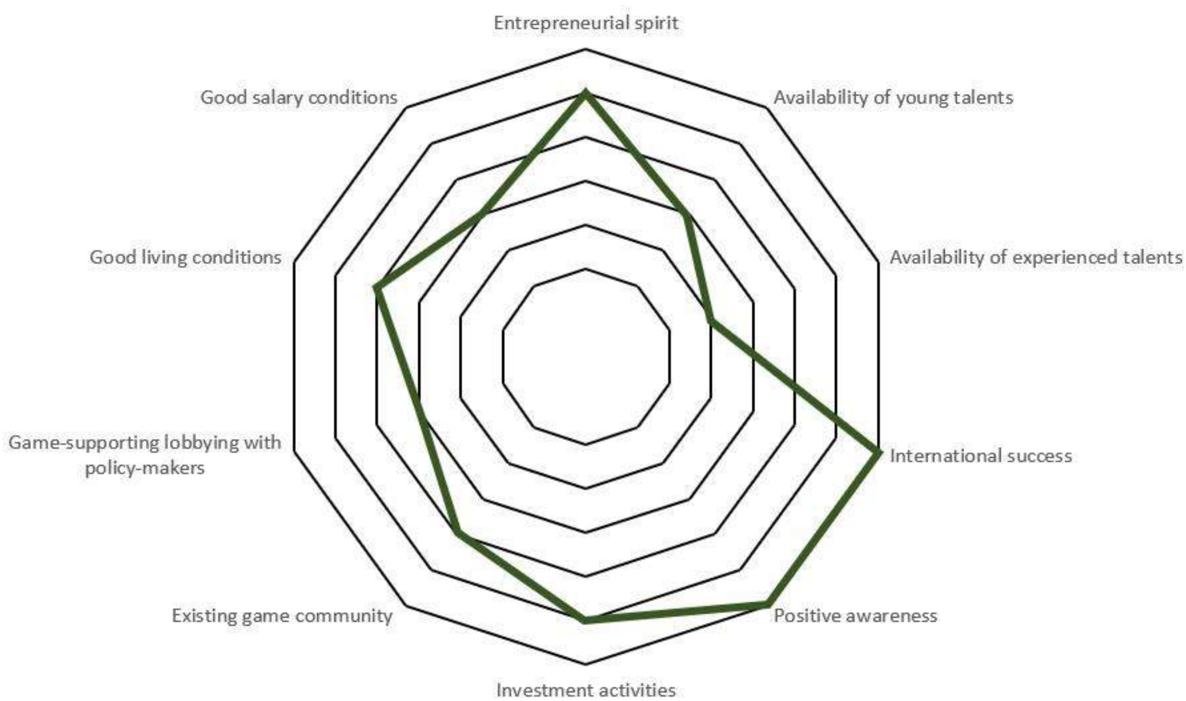
LATVIA

***Based on 2 expert opinions**



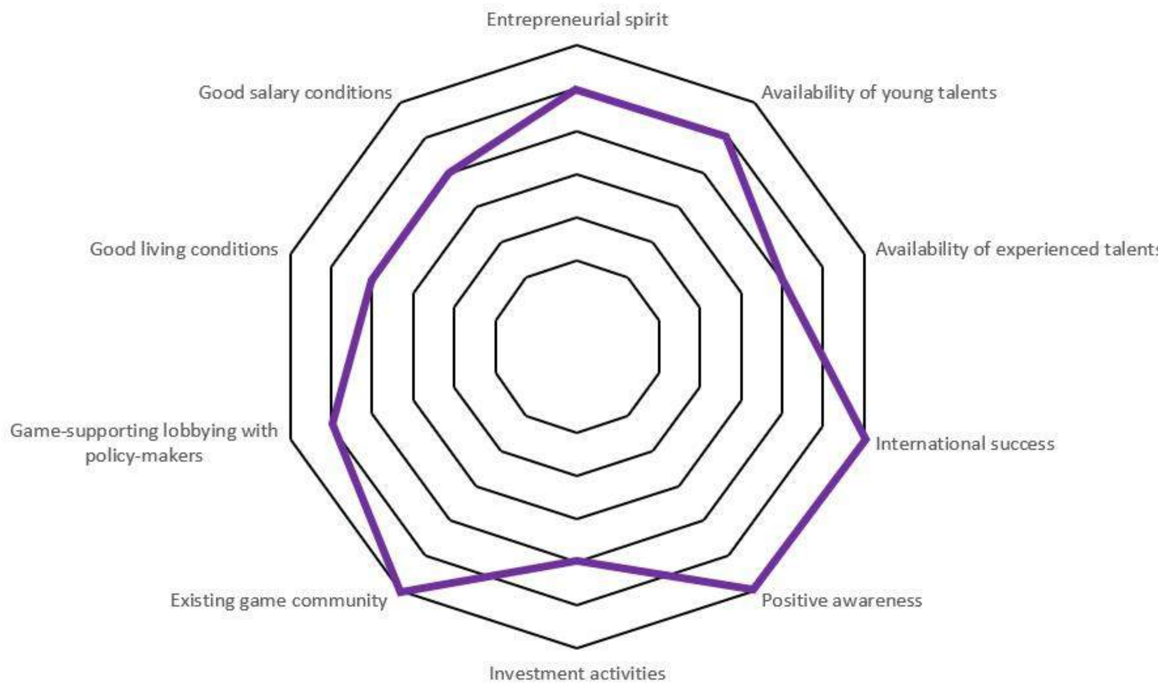
LITHUANIA

***Based on 2 expert opinions**



POLAND

***Based on 3 expert opinions**



SWEDEN

***Based on 4 expert opinions**

Content Table

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1. Regional Game Industry Profiles

The following profiles shall give a brief overview of the game industry in each of our focus regions. The size of an industry can be measured by different indicators like revenue, number of companies or employees. The number of interest/lobby associations and incubators provides at least an idea how the industry is represented and if targeted support is available. In several regions, dedicated game incubators have recently been established. However, these indicators do not allow for drawing conclusions on the success of the industry or political ambitions to promote the industry.

The analysis faced several challenges as the availability of data differs from country to country. Some countries collect relevant data at the national level only; while others provide this data for the regional level (NUTS 2[1]). For Germany, the survey refers exclusively to the regional level, illustrating the city states Berlin and Hamburg (NUTS 2).

An accurate quantification of the size of the game industry in the Baltic Sea Region is difficult due to varying practices of counting companies on the national level. According to the data provided by the BGI project partners, one can say roughly 1,500 game industry companies exist in the region which generate revenues of about 5 billion (bn) € altogether.[2] In comparison, the game industry of China, which is the largest one globally, generated 23 bn € in 2017 and the one of the US, which ranks second, around 21 bn €.[3]

In absolute terms Poland and Sweden have the highest amount of companies belonging to the game industry. When relatively viewed against country size (in terms of inhabitants), Denmark has the biggest game industry. Also, regional differences within the countries became apparent. Big cities attract more game enterprises than rural areas and harbour the majority of the larger companies. This is noticeable when comparing Stockholm and the rest of Sweden, or Helsinki and the rest of Finland.

The absolute number of employees working in the game industry is by far the highest in Poland. In relative terms (per inhabitant), the game industries in Estonia and Hamburg have the biggest employment shares.

The game industry in Finland is generating the highest revenue summing up to 2.5 bn € (which is almost half of the Baltic Sea Region's total), followed by Sweden with 1.3 bn €. The other regions only reach a few hundred million (m) €. Also, in Finland and Sweden more revenue is being generated per company and per employee than in other parts of the BSR. Both countries have established specialized incubators purely focusing on games.

The game industries of Poland and Denmark seem comparably successful, while the young game industry of the three Baltic States is still in their initial phase. Hamburg and Berlin form a special case, as they are metropolitan regions. The German game industry as a whole could be classified as rather well developed, but not as advanced as in Finland or Sweden.

[1] NUTS stands for "Nomenclature of Territorial Units for Statistics". The NUTS classification divides countries of the EU into smaller territorial units at different hierarchical levels. See: http://ec.europa.eu/eurostat/documents/3859598/6948381/KS-GQ-14-006-EN-N.pdf.

[2] For Germany, the estimation is based on the figures of Berlin and Hamburg only.

[3] https://newzoo.com/insights/rankings/.

Denmark

Support

Interest/lobby associations	2
Incubators with full focus on games	2
Technical incubators that could in principle harbour game start-ups	5

Source: Research by Dania University of Applied Sciences.

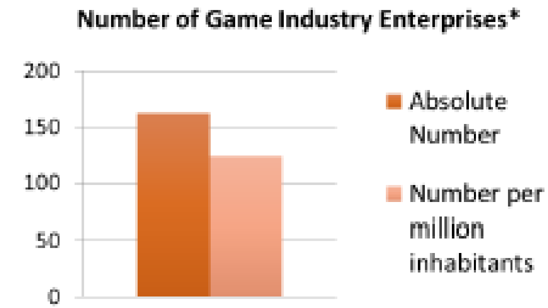
The Danish Game Industry* is still a rather small industry and most of its companies are concentrated around the Greater Copenhagen area. It comprises 162 companies which is a comparatively high number relative for Denmark's population size. With 124 companies per million inhabitants it has the highest density of companies with respect to people in the BSR. Yet, with only around 804 employees working in the industry this rank is not reached with regard to employees. The majority of Danish Game companies is very small. The average company size is 5 people, actually only few of the companies employ more than 10 people. Only one global player (top 100) is located in the country. The average revenue per firm is around one million which is one of the smallest numbers in the BSR. However, Denmark is one of the few regions with two incubators that focus purely on games.

Revenue

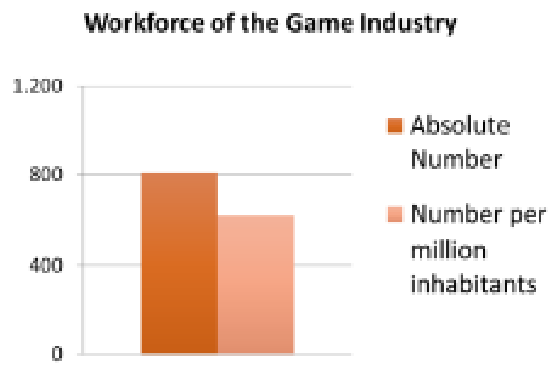
2014	149 m €
2015	155 m €
2016	138 m €

Source: Data from Interactive Denmark (2017).

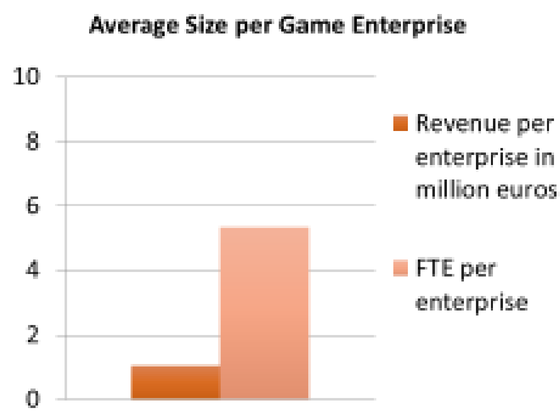
Size of the Industry



Source: Data from Danish Producers' Association (2017), own chart.



Source: Data from Danish Producers' Association (2017), own chart.



Source: Own deduction.

* In the case of Denmark the "Game Industry" captures only developers. The year covered is 2016. Please be aware that even though we make comparisons in the text, these are just vague ratings as we do not have directly comparable data.

Additional information

The Region of Norddjurs is located close to Aarhus, the second largest city in Denmark, and is a part of the "Eastern Jutland million city", where 12 municipalities have created the Business Region Aarhus in order to support business development and growth.

Norddjurs is located within Central Denmark Region, one of the 5 total regions in Denmark. This means that business development consists of both a national, regional and local level, as well as within municipal co-operations like Business Region Aarhus. The Danish government is working towards simplifying the system within a few years, which could lead to change on how the support for business development is done.

Gaming is usually located within the creative business development, often combined with the movie industry. It has not traditionally been part of the ICT or media businesses. Norddjurs is the central hub for game developer education and start-ups in Denmark.

Based on the latest studies for the Danish game sector (published Jan 2018), Denmark had **162 game companies in 2016**, with a combined **804 jobs and a turnover total of est. 1.0 bn DKK**.

Exports accounts for 650 m DKK, making gaming a highly globalised business area, compared with sectors like Movies, TV and Commercials.

Denmark does not have any major game companies, although a few companies like Kiloo in Aarhus has an estimated 90 employees and an estimated turnover of 123 m DKK, making it a big player in the local Danish gaming industry ecosystem. The gaming companies of Denmark has been split up into three groups, depending on their size:

- Businesses with a turnover below 1 m DKK yearly - **105**
- Businesses with a turnover between 1-7.5 m DKK yearly - **42**
- Businesses with a turnover above 7.5 m DKK yearly - **15**

Outside the few larger companies, a lot of the game companies in Denmark and thereby Norddjurs are small, independent start-ups with none or few employees. For Norddjurs, a portion of the game developers are combining gaming studies with creating their businesses.

This means that Denmark, with Norddjurs as the central hub, is bustling with small, innovative game developers, where the **supporting business structures** promote scale-up, globalisation and financing opportunities in order to create a stronger gaming sector in Denmark.

With Game Hub Denmark in Norddjurs, game start-ups receive training and education in business development, support for cooperation around the globe, as well as help finding the financial support needed to grow.

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The Baltic States - Estonia

Support

Interest/lobby associations	5
Incubators with full focus on games	1
Technical incubators that could in principle harbour game start-ups	2

Source: Data from IGDA Estonia and expert interviews.

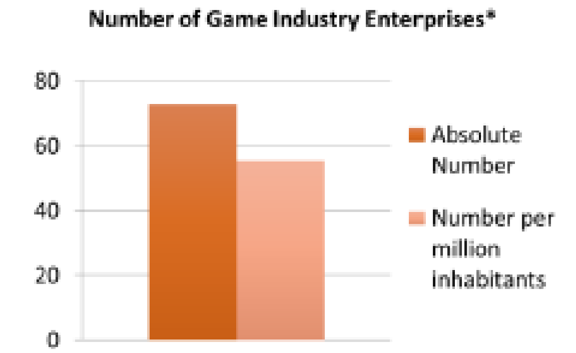
With 73 game industry enterprises, the Estonian Game Industry* is the largest of the Baltic States. Its density of 55 enterprises per million inhabitants is even higher than the one of Sweden or Finland. It has been growing fast, with 30 companies created 2015-2017. The community is led by IGDA Estonia, organising monthly events, yearly GDD conference (www.gamedev.ee) and company missions to sectoral fairs. With a total of 1300+ people involved in the industry, the number of employees per million inhabitants is at least 986, a comparably high number compared to the rest of the BSR. Yet, the largest pool of companies consists of small teams with up to 5 employees (62% of the whole sector). The total industry revenue of 92 m € seems medium, but with on average 1.26 € per firm the Estonian industry performs rather well. The main income of the sector is generated by larger companies providing services to game developers and developing casino game platforms.

Revenue

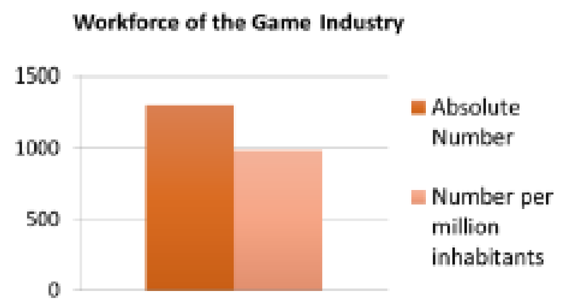
2016	92 m €
2017 (estimation)	120 m €

Source: Data from IGDA Estonia and Central Commercial Register of Estonia.

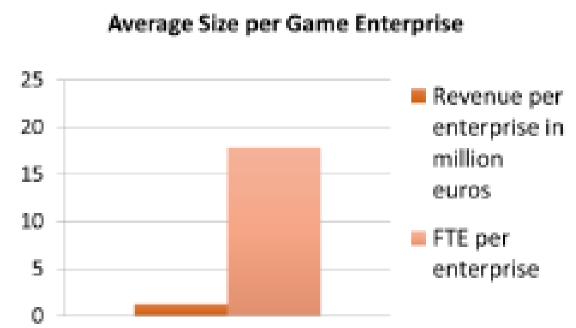
Size of the Industry



Source: Data from IGDA Estonia (2017), own chart.



Source: Data from IGDA Estonia (2017), own chart.



Source: Own deduction.

* In the case of Estonia the "Game Industry" captures also service providers (modelling, testing and monetization, etc.) and casino platform developers. The year covered is 2016. Please be aware that even though we make comparisons in the texts, these are just vague ratings as we do not have directly comparable data.

Additional information

Tartu is a city that promotes innovation via competitive enterprises, being attractive to investors and facilitating entrepreneurship and knowledge-based production and services.

Tartu is a city in motion, empowered by the changes that have taken place over the last decade. These changes have been radical with a substantial influence on citizens´ welfare and business growth.

The region´s infrastructure has been extensively updated and is ready for further expansion. A development strategy and detailed action plans have been prepared and put into force in most areas, to maximise the potential development. Recognising that the city and county are mutually dependent, the administrations of both are actively coordinating at every level to continue the rapid tempo of positive change.

Long traditions and high competence in electronics, information and biotechnology have made our enterprises internationally competitive.

Tartu has a strong network of business support organisations which work in close cooperation to develop the economic environment of the city. Those organisations also include incubators, technology parks, universities etc.

Tartu has been at the forefront of building the virtual infrastructure – the city had the world's first mobile-phone payment for car parking. By now the m-Tartu project extends to many other m-services, plus applications for mobile positioning system. The small population, tech-smart in a leading edge IT environment makes Tartu and Estonia a great test-bed for new and innovative technologies.

In the last four years, the number of game development businesses in Estonia has grown from 15 to 83 companies, showing that the country has the prerequisites for becoming a host for a vibrant gaming industry. These companies include also not only those who create games, but also those who provide related services, such as software solutions, designs, publishing, advertising etc.

The Estonian government has started to pay bigger attention to the industry. The state supports IGDA Estonia and its activities with the funds from the European Regional Development Fund. The gaming industry is not taken as entertainment, but more as a rapidly evolving field in the creative industries sector with high growth rate.

Execpt for the few larger companies, a lot of the game companies in Estonia are small, independent start-ups or hobby companies with none or few employees. Today, Tartu has a strong game community ran by a group of enthusiasts, however we are lacking a good framework to develop functioning and sustainble companies from them.

The Baltic States - Latvia

Support

Interest/lobby associations	2
Incubators with full focus on games	0
Technical incubators that could in principle harbour game start-ups	15

Source: Data from Latvian Game Industry Association.

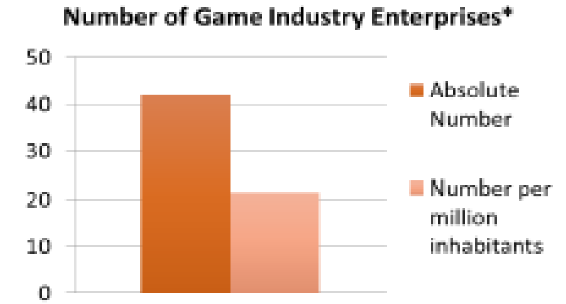
With a total of roughly 42 game enterprises, the Latvian Game Industry* is the smallest within the BSR. In relation to the population, the Latvian Game Industry has the second lowest amount of game enterprises per one million inhabitants, following Lithuania. Nonetheless, the Latvian Game Industry still marks the bottom position of the game industries in the BSR. This is also supported by a total amount of 207 employees in the Latvian game industry which sums up to 106 employees in the sector per one million inhabitants, representing the lowest amount of employees in the BSR. With an average of 5 employees per company, the Latvian Game Industry is dominated by small firms and represents the lowest average firm size in the BSR. All this leads to the by far lowest revenue present in the BSR. In contrary to the overall below-average performance of the Latvian Game Industry, Latvia has the largest amount of technical incubators that could in principle harbour game start-ups. With 15 technical game incubators and 2 interest/lobby associations the Latvian Game Industry shows a high potential to offer targeted incubation support for game start-ups in order to strengthen and further build up the Latvian Game Industry.

Revenue

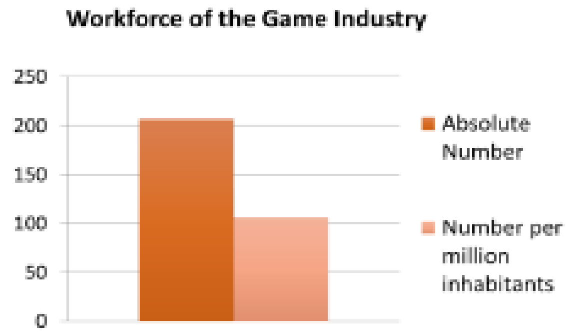
2017	16 m €

Source: Data from Latvian Game Industry Association.

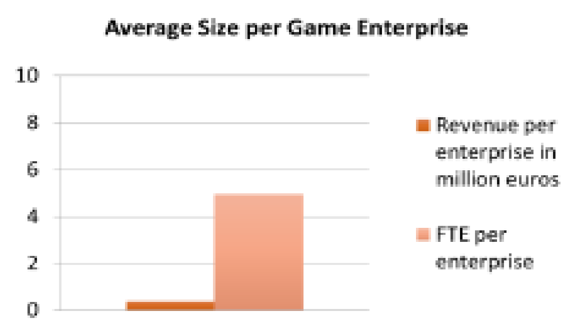
Size of the Industry



Source: Data from Latvian Game Industry Association, own chart.



Source: Data from Latvian Game Industry Association, own chart.



Source: Own deduction.

* In the case of Latvia the "Game Industry" captures only developers. The year covered is 2017. Please be aware that even though we make comparisons in the texts, these are just vague ratings as we do not have directly comparable data.

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The Baltic States - Lithuania

Support

Interest/lobby associations	1
Incubators with full focus on games	0
Technical incubators that could in principle harbour game start-ups	6

Source: Research by Kaunas Science and Technology Park.

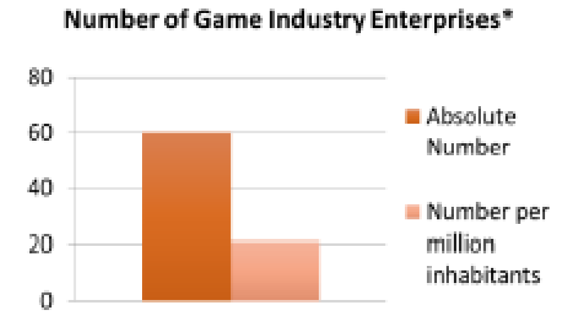
The Lithuanian Game Industry* is not yet well developed. With a total of 60 game developing companies in Lithuania, the amount of game industry enterprises per one million inhabitants sums up to 21, situating Lithuania in the bottom range within the BSR. The Lithuanian Game Industry is represented by a high amount of small companies. The average size is 8 employees per firm which is rather small compared to most of the BSR. This low average of employees results from the fact that 45 out of the 60 Lithuanian game companies only employ up to 4 employees. The absolute number of employees within the Lithuanian Game Industry sums up to more than 500. That means in respect to the Lithuanian population, at least 176 employees per one million inhabitants are working in the game developing and producing sector. The revenue of 100 m € is comparably high for the industry size, on average each firm generates 1.67 m €. The incubation support in Lithuania is represented by 1 interest/lobby association and 6 technical incubators that could in principle harbour game start-ups. But with no incubators specialized on game start-ups, there seems to be some room for improvement in terms of target-oriented support in order to strengthen the Lithuanian Game Industry.

Revenue

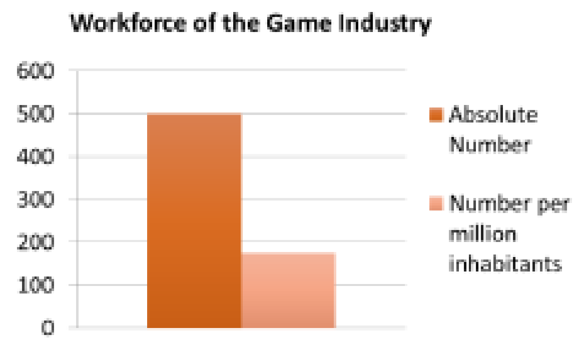
2017	100 m €

Source: Own calculations

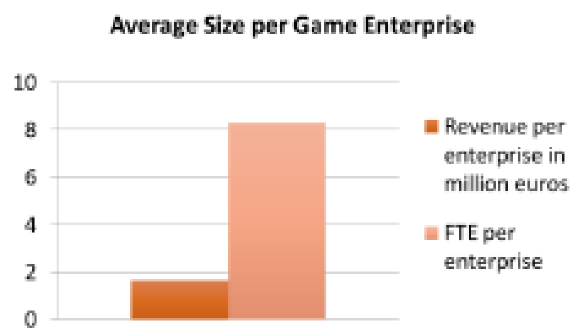
Size of the Industry



Source: Data from Lithuanian Game Developers Association, own chart.



Source: Data from Lithuanian Game Developers Association, own chart.



Source: Own deduction.

* In the case of Lithuania the "Game Industry" captures developers and publishers. The year covered is 2017.
Please be aware that even though we make comparisons in the texts, these are just vague ratings as we do not have directly comparable data.

Additional information

According to Doingbusiness.org, the UK, Lithuania and Estonia have the simplest **procedures for establishing a new business**. In Latvia and Lithuania, it only takes three days to start up a business. In Estonia administration costs are double those in Lithuania.

In terms of **office costs**, the Baltic countries have the most affordable rental prices in capital cities found in Tallinn and Vilnius. In both cities, office space is available for less than 16 € per square meter.

One of the most significant differences between the European hotspots is the **cost of hiring skilled IT** specialists, as data from Payscale.com shows. Vilnius is the leader in terms of the competitiveness of salaries for software engineers. The same employee in Berlin costs almost three times as much. Lithuania has 31,500 IT specialists in the market, and this number is growing as 6 universities and colleges have GameDev study courses. There are no huge triple A studios in the Baltic states and a lot of time will pass before one will surface.

Lithuania has more than 500 people working in game industry right now. Lithuanian Global Game Jams are second largest in the world (counting attendees per capita), it's the only country in the Baltics that had almost a dozen of dedicated video game magazines published in local language. Further, Lithuania is home of GameOn event started in 2014 which right now is the biggest annual gaming expo in the Baltics.

Lithuania also has its closely-knit **game industry community.** More than 10 studios from RU/UA/BY have relocated to LT over past 2 years, and they have built a supportive community that's there to provide help and advice for new companies looking to set up in Vilnius. With the fastest public WiFi in the world, and fast broadband speeds, Vilnius comes out top for infrastructure.

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Finland

Support

Interest/lobby associations	3
Incubators with full focus on games	2
Technical incubators that could in principle harbour game start-ups	1

Source: Data from Neogames Finland.

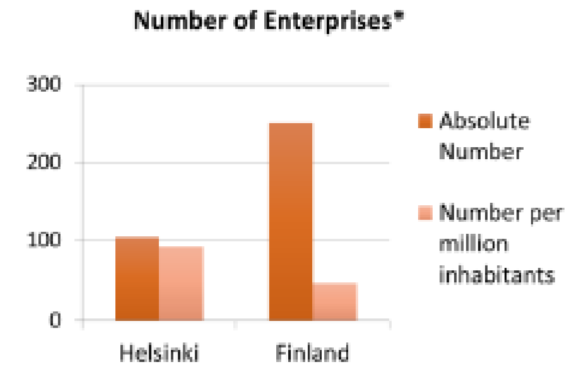
The Finnish Game Industry* is comparably well developed. There are 250 game developing companies in Finland, 104 of them are located in the Helsinki area. Remarkably, the number of employees in the industry is relatively high as well. In Helsinki almost two thousand employees come up per million inhabitants. This leads to an average company size of 21 employees per company, which is the second highest value in the BSR. 9 companies are larger than 50 employees, all of them located in Helsinki. Six companies even belong to top 100 global players. Most importantly, the Finnish Game Industry generates by far the highest revenue out of our focus regions, absolutely and relatively. On average, each Finnish company achieves revenues of almost 10 m €. However, there are only 30 companies that really lie above 1 m € revenues and therefore create most of it (Neogames, 2016). Indeed, 98% of the turnover is generated by firms located around Helsinki (Neogames, 2016). With 3 interest and lobby associations and 2 incubators with a special focus on games, the Finnish Game Industry is rather well supported.

Revenue

2014	1,800 m €
2015	2,400 m €
2016	2,500 m €

Source: Data from Neogames (2016).

Size of the Industry



Source: Data from Neogames (2016), own figure.

Source: Data from Neogames (2016), own figure.

Source: Own deduction.

* In the case of Finland the "Game Industry" only captures developers. The year covered is 2016. Please be aware that even though we make comparisons in the texts, these are just vague ratings as we do not have directly comparable data.

Additional information

Rapid growth has been one of the main characteristics of the Finnish game industry during the last decade. However, the latest data reveals that the time of hyper growth is over. This is especially clear when looking at the number of studios established in 2016 (16). In the previous years (2012–2015) the number of new studios per year has been 30–55. According to Neogames' statistics, 2016 was also the first year when the number of active Finnish game studios decreased (270 studios in 2015, 250 studios in 2016). At the same time, the number of studios making an over 1m € annual turnover has increased (30),

Some of the studios established during the start-up boom (2011–2015) haven't been able to stay in business. Some merged, while some others switched trade to more traditional ICT industry. The main reasons for the slowdown in 2016 were the intense competition, especially in mobile platforms, and the global struggle to find employees. The availability of experienced professionals is still one of the biggest obstacles for future growth. Finnish game studios had 280 new open positions in 2017.

Even if the number of studios is smaller than 2015, **the number of employees in the Finnish game industry remained nearly unchanged** (2017: 2,750; 2015: 2,700) and the number of studios employing more than 50 employees has increased (10).

Overall, the Finnish game industry is doing well. **Hyper growth of previous years has turned into a more mature development** and quest for stability. The annual growth rate from 2015 to 2016 was 4 %, compared to 33 % from 2014 to 2015. The turnover of the industry in 2016 was slightly higher (+100 m €) than in 2015.

Read the whole study: Finnish Game Industry Report 2016

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Germany [1]

[1] As Germany is a federation composed of 16 states, the situation and framework defining the game industry differ from state to state. Which is why we have split the analysis between the two major hotspots in the region of Germany that borders the Baltic Sea.

Berlin

Support

Interest/lobby associations	3
Incubators with full focus on games	1
Technical incubators that could in principle harbour game start-ups	5

Source: Data from Research by BGZ Berlin International Cooperation Agency.

According to the recent guide to the German game industry, issued by the German Game Association in 2018, the city of Berlin hosts the largest game industry in Germany in terms of number of game studios and publishing, thus positioning Berlin in the mid-range of the BSR. The number of enterprises is 169 (in 2017: 175, see Game (2018)). With 1,900 people working in game development, Berlin has a share of 15% in the German industry. 73% of these are employees of which roughly 1,300 people are full time equivalents (FTE). This constitutes an average of 11 people per company. The number of game industry enterprises per one million inhabitants in Berlin amounts to round 49. Taking a closer focus on the size of the game enterprises only four percent have more than 50 people working for them, indicating that the Berlin Game Sector is dominated by small companies. The average revenue of the Berlin Game developing companies is 1.51 m €, positioning Berlin in the mid-range of the BSR countries. However, the availability of game-specific incubation support in Berlin shows some room for improvement. The companies are as of today supported by 3 interest and lobby associations and 5 general technical incubators and a recent addition of a university incubator dedicated to games pre-seed and seed companies.

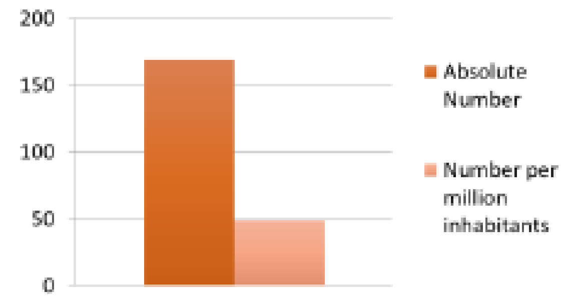
Revenue

2015	255 m €

Source: Data from Hamburg Media School (2017).

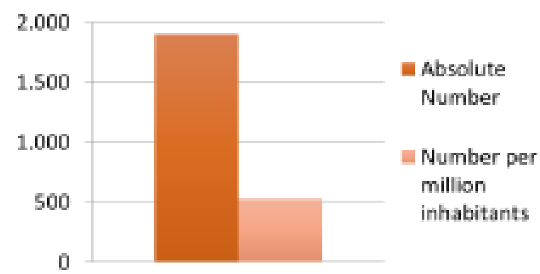
Size of the Industry

Number of Game Industry Enterprises*



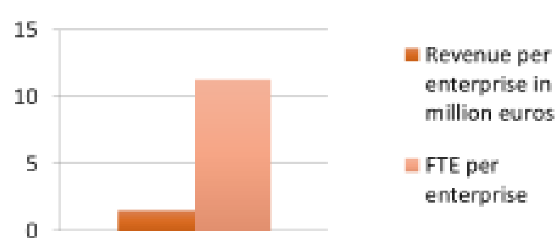
Source: Data from BIU (2017), own chart.

Workforce of the Game Industry



Source: Data from Berlin Projektzukunft (2018), own chart.

Average Size per Game Enterprise



Source: Own deduction.

*In the case of Berlin the "Game Industry" captures developers and publishers.

Additional information

Berlin is not only the capital of Germany, but also a federal state with its own government, the State of Berlin with a House of Representatives and the Senate. While on the level of the federal government, there is no ministry for culture, only a state secretary in charge of coordinating common issues for the whole of German culture, each state has a minister or senator for cultural matters.

Game is usually part of one or several clusters: media, ICT, creative industries, or digital businesses. Berlin has been named one of the most important hotspots for the game industry.

Based on the studies on the German game sector (published Nov 2017), on the Berlin game industry (published March 2018), and on the latest publication (in English), the Guide to the German Games Industry 2018 published by the German Game Industry Association (Game e.V.), Berlin has the highest amount of Game studios and publishers:

Depending on which publication one looks at, the figures vary between **100** (for both developers and publishers) in the Berlin study, and **118 developers** with **57 publishers** (however, perhaps companies representing both have been counted twice, once for each role) in the 2018 guide. Berlin is followed by Bavaria (including Munich) with 73 developers and 35 publishers.

However, the studies show that Berlin is in particular a hotspot for young talents and indie studios. There are few larger companies: Yager, Wooga, GameDuell, King - and the newly settled (third German) office of Ubisoft/Bluebyte.

In the last years, Berlin has seen an increase of game companies opening subsidiary offices with a focus on publishing and marketing Epic Games, Gamevil, Smilegate, Riot Games, Wargaming, or Six Foot.

And Berlin also offers more localisation services than any other German game hotspot region.

The comparative **average revenue** (in 2015) per game company also reflect the fact that the high number of game studios/publishers in Berlin comprises a fair amount of small companies: the average is about 40% of what the average of the overall German revenue per company is. The figures are vague, as we neither consistent figures for revenue and for amounts of companies. But it is fair to say that the average for Berlin is definitely much lower than the German average, with a majority of small companies and start-ups showing annual revenues below 1 m €. While the region of Hessen with less than half the amount of companies but the highest revenue in Germany, show an average revenue per company of over 10 m €.

The figure of persons working for/with games studios and publishers was 1,900 persons, of which approx. 1,400 were **employees**, 92% on a full-time basis.

The figures with the larger companies in Berlin (source: gameswirtschaft) that these 4 companies already represent already one third of people working in the development/publishing segment: Wooga: 300 (2016) 250 (2017), GameDuell: 160 (2016+17), Yager: 100 (2016) 110 (2017), King: 70 (2016) 65 (2017).

The lack of headquarters from larger companies and anchor companies is indicative of the Berlin game industry situation. Perhaps the strong presence of start-ups and small studios, explains the stronger involvement of game developers in other digital content services (VR, AR, data analytics, social marketing etc.) than in other German cities. Which explains also why only 77% of the game companies' revenue is based on games sales. 23% are "other" type of revenue.

Most companies (90%) are independent, i.e. not part of a corporate group, and constitute the traditional civil-law entity. The favourite legal forms are "GmbH" (capital min. 25,000 €) and "UG"(minimum capital 1 €), the latter being close to the British format Ltd, and has only been introduced in 2008.

Only 7 % of the Berlin companies have headquarters or parent trust outside Germany.

Not surprisingly, Berlin shows the lowest average company age with 4.2 years.

In support of a favourable economic climate, there are a lot of events and **network** activities and lobbyists in Berlin. Most notable is the *media.net* organisation with its large and very active network, including the network *game:net* and their project *BerlinBalticNordic.net.*

The *Senate Department for Economics, Energy and Public Enterprises* is in charge of the public support of business and organises this support in clusters. Games is part of the ICT cluster with a staff dedicated to this sector of the cluster. The Senate Chancellery is in charge of the media support, which includes the Games sector. Together they define the “games politics and support strategies”.

Berlin Partner for Business and Technology is a PPP with the state of Berlin also has a person in charge of games businesses.

Berlin also hosts in a bi-annual rota the renowned German Computer Game Award and the annual International Gamesweek, the umbrella event for a whole range of successful formats such as *Quo Vadis, Amaze, Womenize, Media Award for Games.*

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Hamburg

Support

Interest/lobby associations	1
Incubators with full focus on games	0
Technical incubators that could in principle harbour game start-ups	5

Source: Research by Hamburg Institute of International Economics.

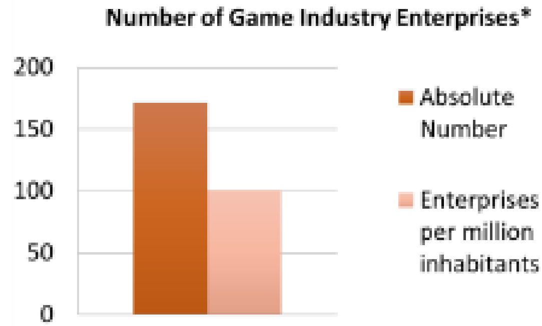
Hamburg is one of Germany's biggest game industry clusters behind Berlin.* The total number of game industry enterprises in Hamburg sums up to 171. Out of these, around 83 companies focus on game development and publishing. In relation to the population of the focus area, the Hamburg Game Industry has the second largest amount of game related companies in the BSR, following Denmark as the leading nation. However, Hamburg might count more types of companies as belonging to the industry than most other partner regions. It can be estimated that 4,300 people work in the game businesses or related companies in Hamburg (Source: gameCity:Hamburg). This represents the second highest number of Game Industry employees in the BSR. With an average of 25 employees per firm Hamburg has the biggest game enterprises within the BSR, indicating that some large players are located here. Looking at the available support schemes for Game Industry companies in Hamburg, there are five technical incubators which could harbour game start-ups as well as one interest/lobby association. Remarkably, the targeted incubation support for game start-ups is capable of improvement in order to further strengthen Hamburg's Game Industry.

Revenue**

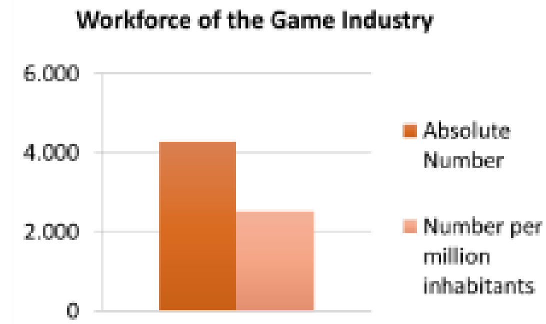
2015	500 - 750 m €

Source: Data from Hamburg Media School.

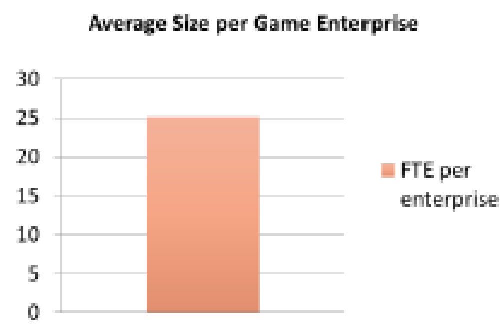
Size of the Industry



Source: Data from gamecity:Hamburg, own chart.



Source: Data from gamecity:Hamburg, own chart.



Source: Own deduction.

* In the case of Hamburg the "Game Industry" captures developers/publishers and service provider, agencies, media houses, consultants and others (categorisation of gamecity:Hamburg). The year covered is 2016.

**Developers, Publishers and Distributors.

Please be aware that even though we make comparisons in the texts, these are just vague ratings as we do not have directly comparable data.

Additional information

Hamburg is presumed to be one of the leading business locations for games in Germany. Since Hamburg is a media city as well as a city state all relevant services are present and different locations are easily accessible within short distance and time. 171 game companies, operating in all game relevant fields are existing in Hamburg (2016), whereof **83 are developers and publishers**.[4] Most of the game companies in Hamburg are small (less than 10 employees in 2016) (128), but there are also a few big players with more than 100 employees (e.g. Big Point, Daedalic, Gamigo, InnoGames, Goodgame Studios).

A strong games culture has been developed in the Hamburg region. As part of the creative industry and IT & media cluster, **games are well integrated in the Hamburg cluster strategy** consisting of eight clusters. To further strengthen the game sector in Hamburg, specific events and workshops for game companies take place, e.g. the Hamburg Games Conference, Gamecity-Treff or Indie Pitch Battle. Recently, cross-cluster collaboration gets into the focus, especially related to the competences of gamification.

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[4] To clarify the bandwidth of companies counted into the game sector in Hamburg, services providers, PR and advertising agencies, media houses and consultants are also included (Source gamecity:Hamburg).

Poland

Support

Interest/lobby associations	3
Incubators with full focus on games	1
Technical incubators that could in principle harbour game start-ups**	23

Source: Research by Krakow Technology Park.

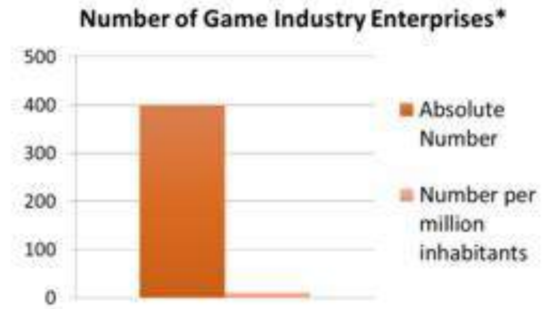
The Polish Game Industry is characterized by relatively few, but some comparably large and successful companies. With almost 400 game enterprises the Polish Game Industry* marks the top of the BSR. However, compared to the population size of Poland, the Polish Game Industry still offers some potential to grow as 400 enterprises yield only about 10 companies per million inhabitants. This is the lowest density in the BSR. At least 50 of the game enterprises are located in our focus region Małopolska (Lesser Poland). As in most other countries, much of the industry is based around the capital, hence around Warsaw. Other important locations are the region of Upper Silesia, Wrocław and Poznań. Despite that the number of Polish game producers may seem low compared to the whole country's population, the existing companies are some of the world's most renowned (CD-Action (2018)). In absolute terms, the number of employees in the game industry is quite high, yet again compared to the number of inhabitants only few people work in the industry. However, the average firm size with regard to employees is comparably large, on average each enterprise employs 13 people. However, the majority of firms are small ones. With regard to revenues, Poland has the third largest game industry out of our focus regions, yet only in absolute terms.

Revenue

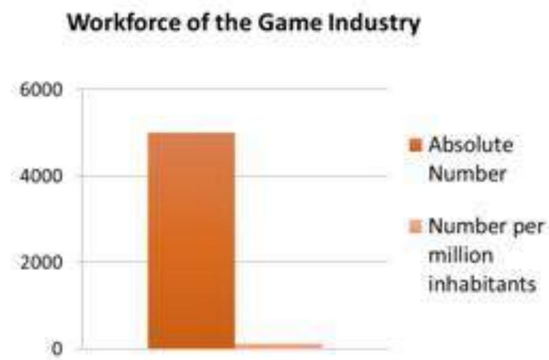
2016	300 m €

Source: Data from Data from Krakow Technology Park (2017) referring to the European Games Developer Federation.

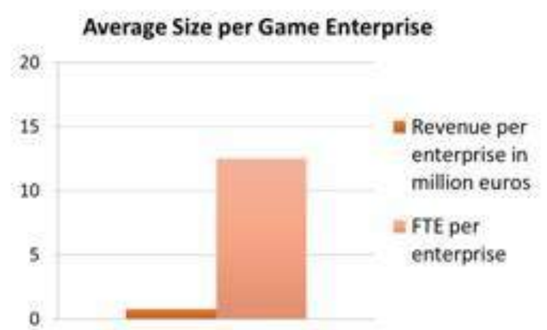
Size of the Industry



Source: Data from Krakow Technology Park (2017), own chart.



Source: Data from Krakow Technology Park (2017), own chart.



Source: Own calculations for 2016 based on the assumption that in 2016 there were 400 enterprises.

* In the case of Poland the "Game Industry" captures developers and publishers. The year covered is 2017. Please be aware that even though we make comparisons in the texts, these are just vague ratings as we do not have directly comparable data.

** 2011

Additional information

Video games industry in Poland is currently experiencing fast growth. It is commonly acknowledged that the global success of The Witcher series gave the national industry a boost. Currently, games produced in Poland, both from the AAA and indie categories, are highly appreciated by players from around the world. They are distinguished primarily for originality (Darkwood, Ruiner), skillful combination of genres (Dying Light) and tackle ambitious difficult topics (This War of Mine, Frostpunk). Polish games have begun to be associated with high quality, which means that gamers have higher expectations towards these games and that more and more indie studios are being established in order to try to repeat these success stories.

The general economic and social climate towards creating games is positive. The Polish government nowadays considers game industry to be one of the possible competitive national strengths and an important driving force for general technological and R&D progress. It's the reason behind a number of grant schemes (such as GameINN) and initiatives aimed to subsidize game studios whose work does not serve creating purely entertaining content but also brings innovation and additionally -increases focus on serious games.

The value of the Polish video games market in 2016 was USD 1.85 bn. The approximate number of game studios in the country (as of 2017) was almost 400, while majority of them is planning to recruit more employees. One of the main issues for the industry is the lack of qualified staff caused by, among other factors, a huge competition with the general IT industry and the fact that the industry is developing so fast and new studios are being created that the educational system does not keep up with the education and training of skilled future employees. Even though there is a number of specialized courses at universities, part of them tend to be not run by industry specialists.

These days a few Polish main game companies are among the highest positioned firms listed on the Warsaw Stock Exchange. The high expectations for games being currently in development, such as CD Projekt RED's Cyberpunk 2077 as well as good reception of majority of games produced by Polish studios in recent times contribute to the good position of game companies on the stock market. More and more smaller companies start to be also listed on Polish alternative stock exchange – NewConnect.

What is more, Poland hosts some of the biggest game industry events in Central Europe. Those worth mentioning are Poznan Game Arena – the biggest Business-to-Customers expo – with its twin event Game Industry Conference for industry specialists and developers as well as the Digital Dragons taking place in Krakow, the capital city of BGI project's focus region of Małopolska.

As for the players' side, the newest Polish Gamers Research 2018 has examined that 79% of Internet users are gamers. The most popular gaming platform is mobile – almost 60% of declared gamers in Poland plays mobile games. Share of users playing games installed on PC and browser based games is similar: 34% and 33 respectively.

<u>Małopolska Region</u>

Małopolska should be considered as one of the vital hotspots in Poland, apart from the country's capital – Warsaw. The region hosts headquarters of a number of local companies such as Bloober Team, GameDesire as well as branches of CD Projekt Red and Huuuge as well as a number of initiatives aiming to empower the industry within the region. One of them is the biggest edition of Global Game Jam in Poland – KrakJam, where participants have 48 hours to create a video game on a given topic. The others are e.g.

the Digital Dragons Academy – a series of monthly lectures and workshops mainly aimed for students and industry beginners to have a taste of the work in the game development.

The most important initiative of Małopolska Region and Krakow Technology Park (to be exact), is Digital Dragons conference held in May each year since 2012. It is a game conference dedicated to industry professionals and attracting experts from leading companies from the industry around the world. Digital Dragons is also conjoined with recruiting opportunities, indie games contest, opportunities for students and beginner level employees. The event attracts growing interest from both national and foreign audiences. The Digital Dragons emerges as one of the leading game industry events in Europe that consists of industry confrence and an expo space with over 100 exhibitors from CEE region.

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Sweden

Support

Interest/lobby associations	1
Incubators with full focus on games	7 **
Technical incubators that could in principle harbour game start-ups	30+ **

Source: Data from Swedish Incubators & Science Parks and Dataspelsbranschen.

The Swedish Game Industry* has been growing strongly over the last 10 years. Currently, there are 282 game companies in Sweden, 168 of them in Stockholm Business Alliance. Together with Poland this marks the highest absolute number out of our focus regions. Yet, per inhabitant it only reaches an average value. Almost half of the companies are start-ups founded within the last five years (132 in Sweden, 80 in Stockholm Business Alliance). Numbers on employees are high in absolute terms. Out of the 4,291 employees 3,260 work for companies in Stockholm Business Alliance, indicating that usually only smaller companies are located outside of the capital. Indeed, 11 of the 13 companies with more than 50 employees are based in Stockholm. So, on average enterprises in Stockholm Business Alliance employ 19 employees while for whole Sweden the value is 15. Total revenues are the second highest in the BSR behind Finland that is way ahead of the others. Remarkably, Sweden has the highest number of incubators that fully focus on games. There are 7 in whole Sweden, yet only one of them is based in Stockholm.** These early founded incubators partly explain the high number of start-ups founded in recent years (Swedish Game Developer Index 2017-2018).

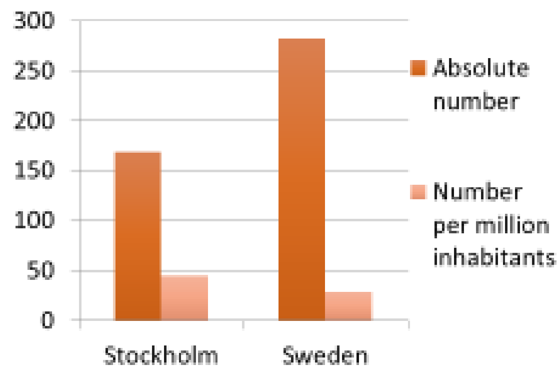
Revenue

2014	988 m €
2015	1,233 m €
2016	1,325 m €

Source: Data from Swedish Game Developer Index 2017-2018.

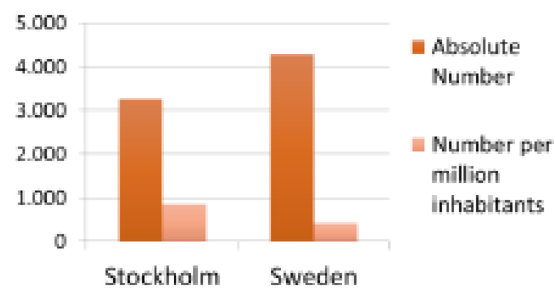
Size of the Industry

Number of Enterprises*



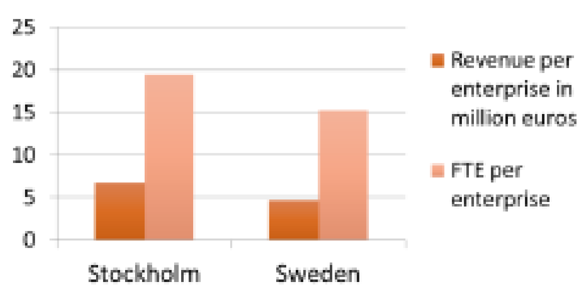
Source: Data from Swedish Game Developer Index 2017-2018, own chart.

Workforce of the Game Industry



Source: Data from Swedish Game Developer Index 2017-2018, own chart.

Average Size per Enterprise



Source: Own calculations.

* In the case of Sweden the "Game Industry" captures only developers and publishers. The year covered is 2016. Please be aware that even though we make comparisons in the texts, these are just vague ratings as we do not have directly comparable data. ** Year 2017.

Additional information

The Swedish game industry has been growing rapidly during the recent years. It has developed from a hobby for enthusiasts into a global industry with cultural and economic significance over just a few decades. There are almost 300 game companies in Sweden and more than a half of them are located in the Stockholm region. Game development is a growth industry with over half of the Swedish companies established after 2010. In 2016 the total revenue of the Swedish game companies was EUR 1.33 bn (this number has doubled in the space of just three years).

The number of employees also increases every year. Between 2015 and 2016 the number increased by 15%, or 558 full time positions. In total there is 4291 employees working in the Swedish game industry. However, this number is only counting full time employees, so it does not include freelance consultants. Taking these freelancers into account would increase the number by 5-15% to around 5,000 people working in the game industry in Sweden.

One of the strengths of the Swedish game industry is a broad range of the focus of the companies in terms of platforms. There are global leading companies creating mobile games (King, Rovio Stockholm...), PC and console games (DICE, Avalanche Studios…) and VR games (Resolution Games, Starbreeze.). Swedish game developers are quick to adapt new technologies, such as VR (nearly 10% of the Swedish game companies are developing VR games, and there have been a few cases of high-profile foreign investments in Swedish companies).

There are only 10 m people living in Sweden so there is relatively a small domestic market in Sweden, therefore the Swedish game developers make games directly for the global market. There is a good ecosystem in Sweden to foster new game developers. Some of the world's best game development schools are located in Sweden and there is a number of incubators that are dedicated solely to games. There are also events for independent game developers which contribute to the creativity of the Swedish game developers (e.g. No More Sweden, Stugan, Castle Game Jam).

Full report: Game Developer Index 2017

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2. Funding and investment

Denmark

General funding climate for gaming business in Denmark is incomplete, with a lack of public funding schemes and possibilities. Gaming has not been a prolific upcoming industry in the national Danish business development strategies and programs. As such, funding for Danish gaming businesses and developers has been lumped together with creative businesses such as Danish movie production. This has also set forth a series of requirements in order to receive funding, such as the need for applicants to have a cultural and learning aspect within their games. Furthermore, one of the main investors in the Danish game industry until now, the regionally based Capnova (detailed description below), will be shut down by the end of 2018. Instead, a new centralized public investment scheme will be set up. Whether this will continue to invest in game start-ups remains to be seen later in the BGI project’s life time.

The gaming industry also has possibilities of receiving general business development support that the local and regional level is required by law to support the business community with. This is primarily in the form of services (consultant help and guidance), and rarely direct funding.

Aonther challenge is the lack of private investors willing to invest in the game industry, mainly due to a lack of knowledge about the game scene. There are, however, signs that this issue will be improved in the coming years, as a few successful game studios are starting to invest back into the community. But the willingness from ‘traditional’ investors such as business angels and venture funds is still low. However, the private investment climate for gaming businesses has developed in recent years, with private equity funds starting to support the gaming business development in Denmark. The equity funds have been looking at the Swedish and Finnish examples.

Public funding:

SPILORDNINGEN (Danish Film Institute)

Link: https://www.dfi.dk/en/english/funding/games-and-cross-media

- Who: applicants must be anchored in a Danish production company
- What: different stages in the development of a video game: development, production, launch aimed at a Danish audience, game promotion (wages for the production team, fees for external consultants/subcontractors, hard-/software to carry out the production)
- Nature: Grant
- Size & conditions: Support for development, with support amounts up to 100,000 DKK for prototype, or more than DKK 100,000 with a demo. A demo is understood as a fully playable part of the game in the expected final quality and technological solution (a vertical slice).
- Geographical scope: National (DK)
- Time scales: 3 calls per year, 2-4 weeks for decision making, 1-2 months from approval to start of support period

Private equity funds with interest in video games:

SUNSTONE

Link: http://sunstone.eu

Sunstone Technology Ventures is a European early stage technology investor based in Copenhagen. Recently Sunstone has primarily been investing in Finnish games.

- Who: start-ups originating in Northern and Eastern Europe.
- What: investment sectors: video games, interactive media, life science; investment stage: early stage (seed or series-A rounds)
- Nature: private equity fund
- Size & conditions: Investment size: from 100,000 € to more than 1 m € - Investment conditions: In most cases, Sunstone is represented on the board of directors and works closely with the management team and the board members to develop the company
- Geographical scope: investment area: Denmark, Finland, Norway and Sweden
- Time scales: n/a
- Other: Supported games companies: Futureplay, Everywear Games, Ministry of Games, Traplight Games, GameAnalytics

CAPNOVA

The Danish firm investment Cap'nova, which has invested 67 m DKK (8.93 m €) in 27 different game developers since 2008, is going to invest 150 m DKK in the development of games for the next 3 years (2015-2018). Cap'nova's intention is to develop the industry and invest more, by following the example of the Finnish and Swedish industries.

Link: http://capnova.dk/uk/about-capnova/

- Who: Only game developers?
- What: Investment sectors: video games, interactive media, food technology; Investment stage: early-stage companies with high growth potential
- Nature: private equity fund
- Size & conditions: Investment size: up to 800,000 €; Investments are typically made in the form of capital injections by buying an ownership share of the business while contributing subordinate loan capital which is to be repaid when the business can handle it.
- Geographical scope: Investment area: Denmark- Investment
- Time scales: n/a
- Other: Supported projects: Subway Surfers, Limbo, Kittypocalypse

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Finland

General investment climate towards games is good. Games are seen as a competitive global industry largely due to some success stories. In investment community there still is lack of understanding of game business, but the situation is getting better. Tekes (Business Finland) funding has been very effective in developing the game industry. There is very little cultural funding and majority of the VC funding comes from abroad, mainly from UK, USA and China. Availability of seed funding has been seen as a problem.

Public funding instruments for games (and other sectors):

TEKES - THE FINNISH FUNDING AGENCY FOR TECHNOLOGY AND INNOVATION (Ministry of Employment and Economic Affairs) – from 1.1.2018 onwards **BUSINESS FINLAND**

Link: https://www.businessfinland.fi/en/for-finnish-customers/services/funding/in-brief/

- Who: companies (start-ups, SMEs), research organisations and public sector service providers
- What: early stage for start-ups and development stage for SMEs, joint programmes and comprehensive services package that support innovation, growth and internationalisation as a whole, impact-boosting funding services for developing businesses' competences and capabilities and support their growth into international markets, eligible costs: one salary and purchased professional services in accordance with the project plan, indirect personnel costs, purchased services, other costs will be accepted up to 20% of the sum of salary paid and purchased services
- Nature: grants / loans
- Size & conditions: Normal cost estimate: if Tekes' share of funding is more than 100,000 €, Simple cost model: If Tekes' share of financing is less than 100,000 €
- Geographical scope: national (FI)
- Time scales: 2 months for decision making
- Other: most important public funding agency for research funding in Finland, Every year, Tekes finances some 1,500 business research and development projects, and almost 600 public researches projects at universities, research institutes and universities of applied sciences, supported projects: Frozenbyte, Small Giant Games, Everywear Games, Cuckoo Workout, Rival Games, Mindfield Games, Tunnel Ground

If the share of public funding is more than 50% and the project includes acquisitions, the initiator of the project must read the instructions on compliance with the Act on Public Contracts.

Games platforms: mobile, PlayStation 4, Nintendo Wii U, PC

Example: Thanks to Tekes Tempo funding a company can test the functionality of the business concept, obtain feedback from potential customers, explore demand in a new international market and rapidly implement the first demos or prototypes.

The maximum amount of Tekes Tempo funding is 50,000 €. This funding covers 75% of the overall budget for the project. The company must have sufficient assets of its own for the project's completion. Conditions : The Tempo funding service is intended for startups that have been operating for under 5 years and are registered in Finland.

FUNDING FOR RESEARCH AND PRODUCT DEVELOPMENT

Business Finland funds research and product development activities that enhance companies competitive advantages, services and business models, while speeding up the commercialisation of innovations. Business Finland funding also allows companies to gather information about target markets, to get feedback from potential clients and to ensure the demand for new solutions. The amount of funding depends on targets and resources. Business Finland funding is project-specific, and it evaluate how a project affects the attainment of growth objectives. Funding is not aimed to any specific industry but to all growth industries. However Business Finland has some varying programs targeted to selected industries. The last game industry specific program was Skene 2012 - 2015. At the moment there is no game industry specific program going on.

FOCUS ON SMALL AND MEDIUM-SIZED COMPANIES

A major part of Business Finland funding is directed at small and medium-sized companies. For larger companies, Business Finland funding is a great way to develop new business openings and to evolve together with smaller companies and research organisations. Business Finland offers funding for R&D work of research organisations and public operators, when it creates opportunities for new business and economic growth. Funding is available for companies operating in Finland.

Before a company submits a funding application and at the different stages of its growth path, Business Finland helps to identify the major bottlenecks for growth, and advise which Business Finland funding opportunities are most helpful in solving these issues.

At the beginning of a project, Business Finland offers coaching to help company to reach the objectives set for the internationalisation process. In this phase, Business Finland typically connects company to international network of professionals and private experts, which accelerates companies' market activities.

Read more about Business Finland services for different stages in export growth

- Build your Network
- Discover Opportunities
- Innovate
- Go-To-Market
- Scale your Business

THE MEDIATONIC GAME AND MEDIA BRAND INVESTMENT FUND

Short description: Mediatonic Management is a project co-financing fund and management company. It focuses on Intellectual Property Rights (IPRs) of commercial games, multimedia products, TV formats, media brands from Finland and the Nordic region.

Link: http://mediatonic.fi/briefly-english.html

- Who: Investments are targeted to projects creating new IP
- What: Intellectual Property Rights (IPRs) of commercial games, multimedia products, TV formats, media brands, development stage
- Nature: grant
- Size & conditions: up to 500,000 €, partial funding. No fixed share of the budget, financing depends on the project size; Investment in the IPRs of the product instead of investment in the targeted company's equity capital; Eligible criteria: the project is pre-commercialized and market-driven, with multi-channel opportunities and long term-revenue potential.
- Geographical scope: Finland and the EU region
- Time scales: 1-3 years

STEPDEMO (Finnish Ministry of Education and Culture/AVEK)

- Who: Companies and associations (not individuals) under 29 years of age. Support is aimed to both music and games.
- What: Small scale content support to demos and concepts
- Nature: grant
- Size & conditions: Demos max. 15,000 €, concepts max. 5,000 €; main criteria: participation / act of becoming employed of young people (less than 29 years), no other conditions
- Geographical scope: national (FI)
- Time scales: 1 call per year, about 2 months for decision making
- Other: grant scheme was launched in 2017 as a test - but will possibly become permanent

DIGIDEMO (Finnish Ministry of Education and Culture/AVEK)

Link: http://www.kopiosto.fi/avek/en_GB/

- Who: companies and individuals working on innovative digital content including games demonstration and pilot support can only be granted to legally qualified companies that are registered before the expiration of the application deadline. Concept support can also be granted to a private individual, company or workgroup. The applicant is the person responsible for the task force.
- What: Content development: demos and pilots for companies; concept support for individuals
- Nature: grant
- Size & conditions: Demos/pilots max. 30,000 €, concept support max. 5,000 €, max 60% of the mentioned costs can be supported. The support is de minimis support
- Geographical scope: national (FI)
- Time scales: 2 calls per year, about 2 months for decision making
- Other: in contrast to STEPDEMO, scheme is a permanent structure

PLAYA GAME INDUSTRY HUB (as an example for regional schemes, usually organized by regional development agencies)

Link: https://www.visitkotkahamina.fi/en/playahub

- Who: companies, local / regional game industry ecosystems. Structural support and support e.g. to Trade missions
- What: Business development, event participation, education of individuals working in companies, acceleration: coaching, development, finance, consulting; local community gatherings, investor relations & events
- Nature: non-monetary support
- Size & conditions: initiatives should look after business growth in the region and the development of local game ecosystem
- Geographical scope: National/regional (FI)
- Time scales: on demand basis, usually 1-3 months for decision making

Private equity funds with interest in video games:

REAKTOR VENTURES

Reaktor Ventures helps seed stage companies become global leaders. The company founded in 2012 invests in the best seed stage companies and helps them create new markets and become global leaders in their industry.

Link: https://reaktorventures.com/

- Who: seed stage companies
- What: Investment sectors: video games, mobile apps, online music, videos and books platform; Investment stage: seed stage; Games platforms: free games app for iPhone and iPad, PlayStation
- Nature: private equity fund
- Size & conditions: Investment size: from 500,000 € to 1 m €
- Geogr. scope: Global
- Time scales: n/a
- Other: Supported games: Shark Punch, Two Men and a Dog, Sólfar Studios

IPR.VC

IPR.VC is a private venture capital fund whose capital commitments at the start of operation have a total value of about 13 m €. Investors in the fund include pension institutions, family-owned investment companies, industrial investors, the Finnish government-owned Business Finland and the fund managers.

Link: http://ipr.vc/

- Who: early stage startups and SMEs
- What: Investment sectors: TV formats and series, movies, animations, Internet contents and services, digital publications, games, music, design; Investment stage: early stage
- Nature: private venture capital fund / loan
- Size & conditions: Investment size: from 500,000 € to 1 m €; Investment conditions/tools:
    - Development loan: A small loan or equity investment to the target company for the development of a media content concept, manuscript and/or business model, developing the IP and building commercial deals and co-funding structure. If the target company lives up to the expectations, the fund can make a bigger investment. This kind of early-phase financing has not been available for content developers before.
    - GAP: GAP is mezzanine-type loan for ensuring the cash-flow of the production phase.
    - Equity-Stake: Most of the fund's capital is invested with an equity-stake instrument.
    - Equity is investment in a target company's equity and a stake is loan-based arrangement that gives the fund a share of the commercial rights of the target company's project. Stake investment will bring royalty income for the fund
- Geographical scope: Investment area: 85% of the Fund capital is invested in Finnish companies
- Time scales: n/a
- Other: Supported games: Tunnel Ground, Rival Games

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Germany [1]

[1] As Germany is a federation composed of 16 states, the situation and framework defining the game industry differ from state to state. Which is why we have split the analysis between the two major hotspots in the region of Germany that borders the Baltic Sea.

Germany - national level

A public funding scheme specially focusing on the game industry is not yet available on the national level in Germany. Currently, specific public funding schemes for the game industry only exist on the regional level (Bundesländer). The national government is aware of the necessity of strengthening the financial support for the game industry and has initiated the "German Games Fond" in the coalition contract. The association of the German Game industry contributed to the design of this fund. The aim is to foster the game industry development in Germany and catch up to the game industry of other countries.

DEUTSCHER GAME FONDS (DGF)

- Who: Companies who are responsible for the development of a game can apply, headquarter or branch has to be in Germany.
- What: development of prototypes / production / further development of existing games
- Nature: not refundable grant
- Size & conditions:
- Size: 50 m € in the first year
- General conditions: Culture test has to be passed / no violation of law by the game / game has to be developed for public consumers / no start of the project before application / minimum of 60% of the approved development costs has to be spend in Germany / grant can be cumulated with other grants / co-developments are eligible
- Conditions for prototypes: Complete development costs has to exceed 30,000 € / grant amounts for 50% of approved development costs / maximum grant of 400,000 € / 80% will be paid at the beginning and 20% at the end of the prototype development / 12 months to complete the prototype / without game development references SDS has to approve the professional knowledge
- Condition for production: Total costs has to exceed 100,000 € / costs between 100,000 € - 2 m € receive a grant of 50% / costs of more than 8 m € receive a 25% grant / costs between 2 m € - 8 m € receive 25% – 50% grants (linear correlation) / grant will be divided into 4 payments (one at the beginning, two during production, one at the end)
- Geographical Scope: Germany
- Time scales: 12 months to complete prototype / decision latest 3 month after application
- Other: fixed extension of 10 m € each year in the next five years

German Computer Game Award

This Award is supported bi-annually by the State of Berlin (alternating with Munich/Bavaria). It covers 14 categories with a total sum of 450,000 €, for games developed to minimum 80%.

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Berlin

In Germany in general, private investment in games is low. The banks still have a very limited understanding of "games", or think of it as "gambling" and the like, therefore loans are not readily granted. For VC capital investment it is generally too "hit"-driven and project-based (though the latter would constitute a good basis for an exit). Mostly, investment seems to be done for lower sums either through accelerator programmes, business angels or larger game studios, or on higher sums which do not benefit the broader German games industry that is largely SME-driven.

<u>Private investment</u>

The prevalent form of private financing in the Berlin game sector is through own capital (42% of the companies). The traditional and in other countries more common type of private third-party investment is "publishing" (only 2% of the companies). However, this is mostly done for finished product or a vertical slice or a prototype. The most spread type of investment is however, personal/own capital.

There are some investors and business angels in/around Berlin who invest in games. Still, equity investment is also very low with 7% of the companies. Half as much as the share from the public funding. London Venture Partners have recently opened an office in Berlin. They focus on investing in European companies in the digital games sector at seed stage with investment sizes ranging from 50,000 € to 500,000 €.

Berlin and Brandenburg also have a business angel association, the Business Angels Club Berlin-Brandenburg e.V. with their independent venture capital organisation **BBAF Berliner Business Angel Fondsgesellschaft mbH:**

The fact that only 1% of the companies receive bank loans, supports the above made statement of the banks' reservations towards the game sector.

Examples for investors:

EARLY BIRD

Link: https://earlybird.com/

- Who: an international venture capital firm that invests across multiple stages, but in particular seed and early stage
- What: medical technology, messaging apps, technology -
- Nature: equity investment
- Size & conditions: from 250,000 € to 10 m €, with an average of 2.5 m €
- Geographical scope: no specific area. The company head office is in Berlin, and they have offices in Munich, Istanbul and Palo Alto.
- Time scales: continuous support, decisions every 6-8 weeks
- Other: Founded in 1997, they have invested in more than 90 companies with a focus on European companies with global ambition. Supported project: Peak Games.

London Venture Partners

Link: http://www.londonvp.com

- What: dedicated to the digital games sector, seed stage
- Nature: equity investment
- Size & conditions: from 50,000 € to 500,000 €
- Geographical scope: European companies
- Time scales: start-up phase
- Other: They have recently opened an office in Berlin. The company's approach applies deep, sector specific knowledge and operational experience to analyse and benchmark, allowing a fast, focused, direct and objective view to be formed.

Public funding

Fundraising in Berlin through regional public agencies (where the public authorities are in part or fully the owners) is potentially possible for both, the "project" (a game) and the "business" (the studio). However, the schema that would work "in principle" for games rely heavily on the notion of "technology innovation" and on university degrees, again with the notion that universities are the ones to bring innovative in put into the business/industry section. It also seems that those types of businesses that are better understood by actors with no expertise in evaluating a game, have more of a chance of being funded, e.g. publishers, distributors, e-sports, serious games, games with a sport content, and tool developers (engines etc.). It is not clear whether this reflects a lack of applications from classic games studios, or a lack of appreciation of the IP of a game, or non-technological innovative character of a game.

Game as a cultural product/project:

The "Medienboard Berlin-Brandenburg", a joint venture between the two states of Berlin and of Brandenburg, originally aimed to promote film productions and the regions as "film and media locations", now also includes "innovative audio-visual productions", which includes games. In this respect, the funding is the promotion and support for a cultural product. It supports a game project with up to 50% of the development and production costs as a performance-based interest-free loan. The loan is typically between 25,000 € and 80,000 €, but officially there is not limitation (other than the state aid rule). It can be combined with other funds. In case of full repayment, the amount can be re-used for the next production.

Medienboard

Link: https://www.medienboard.de/en/

- What: main film funding board, covers games to a smaller extent for the whole production phase (project related).3x applications per year.
- Nature: performance-based repayable interest-free loan on the basis of revenue incurred through the project, repayment obligation expires after 5 years
- Size & conditions: average loans per game project 50,000 - 80,000 € up to 50% of the total project costs can be funded
- Geographical scope: Berlin and Brandenburg
- Time scales: 5 years
- Other: if repaid, the sum can be re-invested on the same terms for a new project (success funding) - renewed application within 3 years of repayment.

Game as a technical R&D project/product:

There is no specific game funding in this area, however, in principle if technological innovation is part of the project, a game studio could well apply for the ProFIT project up to 400,000 € for R&D projects, ranging from 25-80% of co-sharing. There have been vivid discussions on how the IBB application rules define "innovation". The Berlin Investment Bank (IBB) is an independent organisation of the State of Berlin.

ProFIT project financing (IBB)

Link: https://www.ibb.de/en/fundingprograms/profit-project-financing.html

- What: technological R&D projects by companies & research institutions (as cooperation), or SME on their own
- Nature: non-repayable grants
- Size & conditions: up to 400,000 €, max. funding rate in innovation phase industrial research 80% and in experimental development 40% (research institutions in associations) or 25% (large companies in associations)
- Geographical scope: Berlin
- Time scales: not mentioned
- Other: application anytime.

Game as a business company:

There is no specific public support dedicated to SME or start-ups from the games sector. However, business-related funding through the Berlin Investment Bank (IBB) and affiliated organisations (BBB and IBB-Bet) show a range of possibilities that in principle also are valid for games studios. The schemes range from grants, to loans, to VC and

Grants (co-financing, or full, non-repayable):

As for the other German states, there is regional funding (GRW) in support of the regional economy and its businesses. In general, GRW-support is given for investments (into assets or new staff). There is also support for R&D projects with the scheme ProFIT as grant (see R&D above). For technology start-ups, the only grant-based support is the German-wide EXIST scheme, which fosters start-ups by university graduates.

None of them have been widely applied for by game start-ups or SME for fundraising, nor has there been a notable amount of game SME being granted the support.

GRW (regional economy support) (IBB)

Link: https://www.ibb.de/de/foerderprogramme/gemeinschaftsaufgabe-verbesserung-der-regionalen-wirtschaftsstruktur.html

- Who: existing companies as well as start-ups in the commercial sector with mostly transregional revenue.
- What: settlement/extension investment, change of production processes, diversification, to create and secure permanent jobs
- Nature: non-refundable, performance-based grant
- Size & conditions: min. 10,000 €. For businesses in Sectors C: 10% for large, 20% for medium, 30% for small enterprises. For business in Sectors D: up to 200,000 € for large, 10% for medium, 20% for small enterprises. Increase in staff by 10%. Staff and assets to be kept for 5 years at least.
- Geographical scope: Berlin - Sector D and Sector C

- Time scales: 3 years
- Other: application anytime.

ProFIT early phase financing (IBB)

Link: https://www.ibb.de/de/foerderprogramme/pro-fit-fruehphasenfinanzierung.html

- Who: newly founded, technology-oriented companies strive for implementation of innovation project, not older than 12 months
- What: early phase 1 = development of company in-house structure and preparations for innovation project ("anchor project")
- Nature: grant (can be combined with interest-free loan)
- Size & conditions: 50% of the expenditure is covered by non-repayable grant, the remaining 50% can be covered by an interest-free loan. A mentor has to be involved with 5% equity.
- Geographical scope: Berlin
- Time scales: up to 1 year
- Other: application anytime, no combination with GWR scheme.

Internationalisation programme (IBB)

Link: https://www.ibb.de/de/foerderprogramme/programm-fuer-internationalisierung-kmu-projekte.html

- Who: SMEs in defined clusters that are of outstanding importance for structural change for Berlin.
- What: Participation in trade shows, exhibitions, conferences, exchanges, fashion shows and showrooms abroad of a mostly international and professional/technical nature unless such events primarily serve as direct sales events.
- Nature: Non-redeemable, earmarked grant in the form of partial financing for up to 50% of the expenditure eligible for support
- Size & conditions: From 3,000 € to 12,000 € max. as support for each individual measure
- Geographical scope: Berlin
- Time scales: within 1 year up to 3 events
- Other: no combination with other schemes

Coaching BONUS (IBB)

Link: https://www.ibb.de/de/foerderprogramme/coaching-bonus.html

- Who: young and established SMEs as well as start-ups
- What: consulting/coaching fees
- Nature: not-repayable grants
- Size & conditions: partial funding with co-payment (up to 50%), max. of 8 coaching days per project, limited daily rate for a coach of a max. 1,000 € funding, limited to a max. of 20 coaching days per company
- Geographical scope: Berlin
- Time scales: n/a
- Other: application anytime

Innovation Assistant (IBB)

Link: https://www.ibb.de/de/foerderprogramme/innovationsassistent-in.html

- Who: mainly technology-orientated, legally independent, profit-orientated small and medium-sized enterprises (SMEs)
- What: project-based employment of graduates from universities/universities of applied science as innovation assistants
- Nature: non-redeemable grant
- Size & conditions: up to 50% of the innovation assistant's gross taxable salary, maximum salary costs 40,000 € (means: support limited to 20,000 €). No more than two innovation assistants can be supported at the same time.
- Geographical scope: Berlin
- Time scales: 1 year
- Other: application anytime, six to eight weeks processing time, cannot be combined with other staff-cost support schemes.

Loans (low-interest, or with loans guarantees)

There are schemes for commercialising R&D products (ProFIT), for start-ups and young companies (Start or Innovativ), for seed phases (ProFIT Early Phase), and for internal activities.

ProFIT project financing (IBB)

Link: https://www.ibb.de/de/foerderprogramme/pro-fit-projektfinanzierung.html

- Who: Cooperations of companies (large/SME) with a research institute, or SME on their own.
- What: technical innovation phases experimental/production development, market preparation and market launch
- Nature: low-interest loans, interest rate usually 3% - 7%
- Size & conditions: up to 1 m €, max. funding rate 80% of costs
- Geographical scope: Berlin
- Time scales: up to 8 years
- Other: application anytime.

Berlin Start (IBB)

Link: https://www.ibb.de/de/foerderprogramme/berlin-start.html

- Who: for start-ups, SMEs and freelancers (< 5 yrs in business)
- What: founding or take-over of a company and related costs (equipment, running assets etc.)
- Nature: low-interest loans in conjunction with an up to 80% bank guarantee by BBB Bürgschaftsbank zu Berlin-Brandenburg GmbH
- Size & conditions: up to 500,000 € (min. 5,000 €). Application is made via the applicant’s house bank, loan goes via housebank - Financing share of up 100%.
- Geographical scope: Berlin
- Time scales: 5 years
- Other: application anytime. Fairly recent scheme

Berlin Innovativ (IBB)

Link: https://www.ibb.de/de/foerderprogramme/berlin-innovativ.html

- Who: for start-ups, SMEs and freelancers who meet one of the specified innovation criteria
- What: investment (real estate, equipment etc.), internationalisation, pre-financing of commissions, running assets
- Nature: Loan in conjunction with an up to 70% liability exemption.
- Size & conditions: 100,000 € to 2 m €. Application is made via the applicant's house bank, loan goes via housebank - Financing share of up 100%. Quarterly amortisation.
- Geographical scope: Berlin
- Time scales: 3 to 10 years
- Other: application anytime.

Equity investment

The activities of the State Berlin enclose venture capital for creative industry through their venture organisation IBB Beteiligunggesellschaft.

VC Fonds Kreativwirtschaft

- Who: for start-ups, SMEs and freelancers that propose technological Innovation or innovative business models, showing a high potential of scalable innovation or increase in value. Belonging to one of those branches: creative industries, life science, industrial technologies, ICT
- What: investment (real estate, equipment etc.), internationalisation, pre-financing of commissions, running assets
- Nature: Equity investment
- Size & conditions: First investments typically 250,000 € to 1 m € and follow-up investments up to 4 m € in return of minority equity holding. Sound medium-term exit possibility, at least another investor for the same amount requested
- Time scales: not specified (short/medium-term)
- Other: supporting on average 3-4 creative industry business per year. Supported projects: Hardscore Games, Softgames

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Hamburg

INNORAMPUP (IFB Hamburg)

Link: https://www.ifbhh.de/wirtschaft/gruendung/inno-ramp-up/

- Who: innovative start-ups in general (in seed or pre-seed phase)
- What: development of market studies / implementation of feasibility analyses, development of strategies / business plan, market opening and growth strategies, search for partners / founding teams / employees / personnel recruiting, qualification training, development of prototypes and tests / implementation incl. production facilities, securement of rights /

patent developments / patents, measures on marketability incl. building up of distribution structures; eligible costs: expenses on personnel, material (investment), expenses for qualification measures, marketing, external services, patents, travel, infrastructure and bureaus

- Nature: grant
- Size & conditions: up to 150,000 € per project, partial or full funding in certain cases more detailed numbers regarding co-financing?
- Geographical scope: City of Hamburg
- Time scales: continuous support, decisions every 6-8 weeks
- Other: around 10% of all applications are successful

GAMECITY:HAMBURG

Link: https://www.gamecity-hamburg.de/about

- Who: game start-ups as a specific part of the creative industry
- What: Non-monetary support: gamecity meetings and night events, games conferences in Hamburg, office spaces for game startups, marketing and lobbying, networking platforms for regional startups, joint stands at important fairs
- Nature: Non-monetary support
- Size & conditions: not provided
- Geographical scope: City of Hamburg
- Time scales: continuous support
- Other: Network of about 2,000 participants, part of the "Hamburg Kreativ Gesellschaft", an institution of the city of Hamburg; was launched in 2008

STARTUP-GRÜNDUNGSSTIPENDIUM (IFB Hamburg, Hamburg Innovation GmbH (HI))

- Who: innovative and new digital start-ups; their innovative products and services; single founders or founders team - start-up has to be in the Pre-Seed or Seed phase
- What: personnel, material (investment), patents, pre-tests and diverse fees: support for material costs, pre-tests, fees, development of business ideas / business plans / business strategies that are competitive, development of prototypes for market launch, development of co-operations with universities and research institutions (especially with the Hamburg Innovation GmbH HI), in addition continuous support through coaches of the IFB
- Nature: grant
- Size & conditions: 2,500 € per month and per person for max. period of 18 months, for a founders team max. support of 75,000 € for the max. period of 18 months, there has to be significantly different from competitors and there has to be an enormous risk during the conception and market launch period caused by the novelty; 2018: 1.6 m €, 2019: 2.6 m €, 2020-2022: 3.2 m € granted for applying start-ups.
- Geographical scope: City of Hamburg
- Time scales: support scheme is planned to be set up on 01. April 2018
- Other: The scheme is dedicated to start-ups that have an innovative digital product or service. The focus lays on grants for media or content-oriented start-ups. The idea is to foster start-ups that does not fit into the existing schemes of the regional or national level. Especially concerning the

InnoRampUp many start-ups has problems to receive a grant, because InnoRampUp is mostly for high-tech start-ups

Private equity funds with interest in video games:

IVENTURECAPITAL GMBH

Link: https://www.iventuregroup.com

- Who: young, aspiring online companies: information technology, Web, games, and media companies; potential portfolio companies should exist for at least 1 to 2 years and show first achievements, which do not necessarily have to be profit
- What: Investment sectors: digital production of online portals, mobile apps, online games, online marketing services, search engine optimization; Investment stage: early stage and later stage; Provided services: online Marketing, KPI analysis and benchmark, advice on how to select and use billing and payment providers, joint press and trade fair activities, utilization of the investor's resources such as bookkeeping, HR, office space, assistance in the set-up of user support
- Nature: private equity fund
- Size & conditions: Investment size: up to 1.5 m €
- Geographical scope: global, but mainly Germany and USA
- Time scales: n/a
- Other: founded 2011 in Hamburg, supported projects: Kamicat, Games.de, farblut, MobileBits

Public equity funds with interest in video games:

INNOVATIONSSTARTER FONDS

Link: https://www.ifbhh.de/innovation/finanzielle-foerderung/innovationsstarter-fonds/

- Who: small (not listed, less than 50 employees, annual turnover below 10 m €), innovative and young (not older than 5 years) companies
- What: support of implementation and advancement of innovative business models
- Nature: public equity fund
- Size & conditions: Up to 0.6 m € can be invested in every financing round (0.15% share in the business, whereby the fund will hold a maximum of 50% of the supported company), whereby the overall sum per start-up cannot exceed 1 m €; fund absorbs open participations, in some circumstances complemented by subordinated loans, an intensive coaching complements the financial support
- Geographical scope: City of Hamburg
- Time scales: continuous support, several months for the complete procedure
- Other: Volume of 12 m. € which is to be invested in five years, around 10% of all applications are successful, particularly hard for game start-ups since the programme is focused on innovation and complete novelties

General remarks concerning funding programs:

Compared to other federal states in Germany, there is a lack of financing options (public or private) for game start-ups in Hamburg. There is no specific funding opportunity especially for game start-ups existing in Hamburg, nor is there a special game incubator providing targeted support. VCs usually do not invest into risk markets such as game production, banks do not go into content financing due to insufficient knowledge of that particular business. Therefore, in many cases game start-ups in Hamburg are funded by family and friends.

However, some support programmes (in particular from the Hamburg investment bank IFB) offer game start-ups the possibility to apply for financial support. Difficulties of these grant schemes (e.g. InnoRampUp) occur - caused by a lack of innovation and technology-orientation that decision makers often see in game start-ups. Game start-ups often face high financing requirements, long development periods, challenging market assessment (because of producing a product that will be launched in the future when markets might have changed). More targeted support is on the way with a new founders grant scheme expected to start in late 2018, which concentrates on media and content-based start-ups.

Hamburg used to be the first German federal state to provide a decidedly prototype sponsorship that comprised a fixed budget within a fixed period. Meanwhile, this program has expired and does not suit the current market structures of game industry any longer.

According to game experts production funding would be most desirable. Such a program should include: concept development, product production as well as marketing & sales. Especially marketing & sales is an essential asset for game companies and therefore must be systematically supported. During the last years, companies' expenses per additional user have sharply increased. In order to achieve economic success companies need to have a large marketing budget to gain strong visibility with a corresponding number of users. However, many marketing budgets are too small to enhance visibility and in addition, many companies even lack corresponding marketing skills.

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The Baltic States - Estonia

Estonia has made a name for itself for the innovative application of communications technology, where state-of-the-art technologies are a way of life. Tartu has always been a trendsetter when it comes to ICT developments – talented minds and ambitious entrepreneurs have led to a rapidly growing ICT ecosystem which has attracted the attention of venture capitalists as well as foreign ICT companies. For example, in 2016, the city hosted more than 60 startup events (from hackathons to Mobile Monday to sTARTUp Day etc), with more than 5000 people from the tech industry getting involved.

Beside the Gaming focused Gamefounders, the game startups can also apply for other grants meant for startups.

In order to help Estonian start-up companies and well-established and fast-growing companies expand and finance their growth here, KredEx provides venture capital through funds of funds. The activity is aimed at providing sufficient local capital and the comprehensive development of the venture and private equity market. This requires contributing to the development of fund managers and raising interest among investors towards investing in local funds. Only fund managers with a proven track record are capable of involving a sufficient amount of capital from private investors. For investors, in turn, it is important to have constant investment opportunities of a suitable risk level and size.

Within the framework of defined investment strategies, the provider of public capital will choose the fund managers, who, in addition to public funding, involve on the same grounds their own money and that of private investors, and who are responsible for the investment decisions and results of their established funds. KredEx does not interfere directly with the activity and decisions of fund managers.

KredEx does not make direct venture capital investments into companies; therefore, any companies interested in including investments should contact the fund managers directly. KredEx cooperates closely with market participants and international institutions, including the Estonian Private Equity and Venture Capital Association (EstVCA), Estonian Business Angels Network (EstBAN) and their members, the European Investment Fund (EIF) and the European Venture Fund Investors Network (EVFIN).

As for prizes, Ajujaht is the largest competition of business ideas in Estonia that was initiated by Enterprise Estonia in 2007. It is an opportunity for people to challenge themselves in trying to start a business in a highly supportive environment. The prize fund of the competition is 60 000 €. The success stories of Ajujaht include: Click & Grow, Minukleeps, Bikeep, Timbeter, GoWorkaBit, Taxify, Huntloc and SprayPrinter. Equity financing is an alternative to debt financing and is basically an acquisition of funds by selling common or preferred stock to individual or institutional investors. In return for the money paid, shareholders receive ownership interests in the corporation.

A company can finance equity through:

- **Private equity companies** financed by institutional investors (such as investment banks, funds etc) and private investors**.** There is a wide array of private equity types and styles and the term ‘private equity' has varying connotations in different countries. Among them are:
- **Venture Capital** (also known as VC or Venture) is a type of private equity capital typically provided to early-stage, high-potential growth companies. Generally, VC fund investors accept a higher risk of failure than is normally the case for other more conservative investments. The most known VCs in Estonia are: **Karma Ventures**, **Mobi Solutions**, **Astrec Invest**, **Tera Ventures**, **Spring Capital**. Also there is **EstVCA**, which is the representative body of Private Equity & Venture Capital Industry in Estonia. Their goal is to develop a sustainable and attractive ecosystem for the benefit of innovative, ambitious and high-growth potential enterprises, as well as fund managers and institutional investors. Today EstVCA represents 16 member firms and 22 associate members.
- **Initial Public Offering (IPO)** also referred to as a "public offering" or "flotation," is when a company issues common stock or shares to the public for the first time. The money paid for the new shares to the company will be used for new investments, lessening the loan burden etc. The initial public offering is usually followed by listing the company's shares on the stock exchange: http://www.nasdaqbaltic.com/market/?&lang=en
- **First North Baltic** is an alternative marketplace for small growth companies, providing a wealth of opportunities on the Baltic financial markets. First North is a part of NASDAQ OMX Nordic Exchange.

START-UP KIIRENDI I+II (Start-Up Estonia program via Enterprise Estonia)

Link: www.gamefounders.com

- Who: Game start-ups (teams of at least two people with game in development that is at least at the playable stage)
- What: Start-up accelerator Gamefounders, 3 month programme with financial support along with non-monetary support (coaching, access to a mentor network, weekly pitch practice, playtesting, field trips to successful game studio, demo days)
- Nature: Accelerator
- Size & conditions: Overall budget 501,000 € (in 2012) +700,000 € (2013), up to 15,000 € per chosen start-up (10 companies) at 9% share of their company
- Geographical scope: Global
- Time scales: 3 month programme

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The Baltic States - Latvia

VENTSPILS MUNICIPALITY ICT PILOT PROJECT PROGRAMME
(Ventspils Municipality authority “Ventspils Digital centre”)

Link: http://www.ventspils.lv/lat/ikt_pilotprojektu_programma/

- Who: new and evolving businesses and service providers in the field of ICT
- What: Support in infrastructure, equipment management, software development and testing, eligible costs: personnel salaries, tools, machines and equipment required to implement activities; costs of outer services, value-added tax
- Nature: grant
- Size & conditions: The minimum amount of aid for a single pilot project is 2,000 €, while the maximum is 15,000 €. An applicant’s value of the received funds is determined in a scope of 50% to 80%, based on several criteria: 50% - if the applicant employs one person that has (or will be at the moment of the aid) declared himself in Ventspils city; 60% - if the applicant employs two persons that have (or will be) declared in Ventspils city; 70% - if the applicant employs three persons that have (or will be) declared in Ventspils city; 80% - if the applicant employs four or more persons that have (or will be) declared in Ventspils city); the first part (20% of the sum) is received after the signing of the contract; the second part (the remainder of the sum) is received after the applicant has successfully presented the final report in front of the commission
- Geographical scope: City of Ventspils
- Time scales: at least once per year, calls are open for 2 months, then applications are evaluated and all legal procedures are done within 3 month period.
- Other: Approximately 80% of applications receive a grant

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The Baltic States - Lithuania

Lithuanian start-up ecosystem is in a very early stage, it’s a first generation of companies which are created by enthusiastic people, majority of whom don’t have much experience in fast-growing tech companies. However, the situation is changing every year and right now situation is much better than 5 year ago, it was just Skype in Estonia, and Lithuania haven’t got any success stories. Now we have functioning start-up ecosystem.

Speaking of business environment, the ease of doing business in Lithuania is ranked 16th in the world by Doing Business 2018 report. Apparently, it takes only 3 days to start a new business in Lithuania, which reflects a relatively marginal bureaucratic approach.

Furthermore, Lithuania offers the lowest corporate profit tax compared to such countries as Latvia, Estonia, Poland, UK, Germany. Thriving start-up culture attracted a world-leader mobile game publisher Game Insight which moved their HQ from Moscow to Vilnius. Likewise, 15 other gaming companies from

Russia and CIS have chosen Vilnius as their base. Planner 5D, Devtodev, Kula Tech, 4Talk were among those who relocated and consider Lithuania a great medium country between Eastern and Western markets and due to its convenient geographic location and the overall business environment is a perfect spot to start and speed up new companies in order to scale to the global markets. There are 2 private venture capital funds - Nextury Ventures and Ltk Capital, as well as 2 start-up accelerators - Startup.lt run by Practica Capital and StartupHighway - one of the biggest start-up accelerators in the Eastern Europe.

There are several meaningful local funds and accelerators that provide funding and mentorship to startups. Lithuania has the Practica Capital fund BaltCap, LitCapital and Business Angels Fund which could be backed by the European Investment Fund. So far, these funds have invested in a lot of early stage companies. According to the data from the local venture capital association LT VCA, there are 422 start-ups in the country, employing over 2,400 people. In ten years from 2006 to 2015, Lithuanian start-ups had raised a total of €165.3 million. The local government is also doing a decent job supporting the founders and investors, especially at the seed stage. There are public grants which aim to foster entrepreneurship and companies development at a seed stage. However, the public investment is directed at strengthening the priority areas of Smart Specialization, therefore companies should develop their products in the framework of Smart Specialization.

There are few obstacles which occurs when game studios try to get or attract a financial investment. First of all, gaming industry is not a subject in Lithuanian Smart Specialization strategy and it appears to be kind a big obstacle for companies which are willing to get public funding. Gaming industry projects could be indirectly related with other Smart Specialization priority areas: gamification could contribute to improved treatment of various type of diseases, also education is one of the priority area where game developers could solve a lot of problems related to traditional learning.

Furthermore, private investors are always very cautious when thinking about the possibility to invest in one of the gaming industry company. The gaming industry is a small community that creates a large added value - with five hundred workers generates about 100 m € revenue, however these figures do not ensure that companies will continue to create successful products, as they should always adapt to very dynamic market. Also, the limits of Lithuanian labour market increase the uncertainty about the potentiality of Lithuanian gaming companies. The Lithuanian market will additionally need almost 13,500 IT professionals in the next three years. Therefore, companies which are planning to grow in the near future will face a great competition for IT specialists, especially there is big lack of employees who are experienced in game development or game designing areas.

CULTURAL AND CREATIVE INDUSTRIES - GRANTS FOR THE ARTS (Lithuanian Council of Culture)

Link: https://www.ltkt.lt/en/grants-for-the-arts

- Who: legal entities registered in one of the Member States of the EU or the European Economic Area, recipient must have registered place in the Republic of Lithuania.
- What: export volumes and economic value of Lithuanian cultural and creative industries, incl. the activities of development and promotion of video games and multimedia projects in Lithuania and abroad, incl. preparation of marketing materials for promotion and participation of professionals in international cross-sectoral events promoting their excellence and international networking
- Nature: Grant
- Size & conditions: Total budget for the programme: 600,000 €, partial funding: 75% of project costs, min. – 2,250 € max. - there is no maximum sum for one project.
- Geographical scope: national (LT)
- Time scales: 2 calls per year, from call to deadline: not less than 20 days, decision making within 4-5 months, from approval to actual start of the support period 1 month

- Other: Currently 30% of the grants went to game studios or game networking events, success rate: 23/89=0.26

INTELEKTAS. BENDRI MOKSLO-VERSLO PROJEKTAI (Ministry of Economy, EU Structural funds)

Link: http://lvpa.lt/en/rd-measures

- Who: Private legal entities (excluding academic and study institutions); Public institutions carrying out R&D activities (except for science and studies institutions); all sectors which are included in national Smart Specialization areas
- What: R&D activities, support is determined for business and science collaboration, eligible costs: R&D execution (e.g. salaries, secondments, consultations, raw materials etc.), R&D infrastructure (e.g. equipment, tools, furniture etc.), certification (e.g. patent, license etc.)
- Nature: Grant
- Size & conditions: total budget: 100 m €, max. grant: 3 m €, partial grant: 30-70% of total costs
- Geographical scope: national (LT)
- Time scales: 1 call per year, from call to deadline: 3 months, decision making within 6 months, 3 year projects with quarterly reports
- Other: Game industry fits into one of priorities: Inclusive and creative industry, success rate: 6/7=0.86

INOKLASTER (Ministry of Economy, EU Structural funds)

Link: http://lvpa.lt/en/rd-measures

- Who: Legal persons representing forming, developing and mature clusters and international clusters operating in Lithuania.
- What: Investment in the cluster's R&D infrastructure. Mainly these are the main objectives of this scheme: 1 to promote the creation and development of clusters (operating aid for cluster operation, i.e. attracting new members, training, marketing, conducting strategies, research, etc.), 2 To increase the cluster's innovative potential; 3 To promote cluster integration into international networks (clusters), eligible costs: construction, reconstruction, repair costs (not more than 30% of all costs), Equipment and other assets (gadgets, furniture, patents, licences)
- Nature: Grant
- Size & conditions: Total budget - 24 m €, max. grant 2.5 €, partial funding: 65% of costs
- Geographical scope: National (LT)
- Time scales: call every 2 years, 3 year projects
- Other: Game industry fits into one of priorities: Inclusive and creative industry, Therefore, game industry could be fostered to create network with other companies and research institutions from gaming industry. 3 of 6 clusters which have received the funding during the final call of Inoklaster scheme were from audio-visual industry. These clusters are not directly related with gaming industry, but it involves couple of enterprises which creates video games, success rate: 6/7=0.86

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Poland

The climate toward subsidizing and supporting game studios in Poland is positive in recent years, with the special focus on innovation, R&D, internationalization and supporting start-ups. The most important locations in Polish game developments are Warsaw, Cracow, cities of the Upper Silesian agglomeration and the capital of the Lower Silesia – Wrocław. Poland is a significant market for gaming with over 15 M of gamers (according to the State of the Polish Video Game Industry 2017 report) and approximately 400 companies currently operating in the whole country.

There are number of ministries, governmental agencies and other state-owned entities that provide support for the gamedev industry in Poland. The most important players include: Ministry of Science and Higher Education, Ministry of Culture and National Heritage, Ministry of Entrepreneurship and Technology, the National Centre for Research and Development (governmental executive agency) as well as some institutions grouped within the Polish Development Fund (PFR) - the Polish Agency for Enterprise Development (governmental executive agency) and the Industrial Development Agency JSC (ARP S.A., state-owned joint-stock company).

The high priority of the video game industry in public policies has been reflected by the fact that Intelligent Creative Technologies have been selected to be one of the National Smart Specialisations (NSS) in Poland. The Intelligent Creative Technologies section (no 16 of NSS) comprise inter alia of following thematic priority fields: *development and design in the field of video games, platforms and engines as well as processing techniques, application of artificial intelligence, new tools and interaction mechanisms, digital distribution and multiplayer online games, tools and knowledge supporting the game development, application of video games in other areas*. The priorities of NSS have been implemented into objectives of the Smart Growth Operational Programme for the years 2014-2020, co-funded by the European Union, one of the biggest sources of funding for innovative companies in Poland.

Opportunities for game development studios on a countrywide level in the years 2016-2018 include inter alia grants from the Ministry of Culture and National Heritage (Development of Creative Sectors Programme) and grants for R&D works in gaming financed by the National Centre for Research and Development (executive agency of the Ministry of Science and Higher Education, which finances the industrial research and development works) under the Sectoral Programme “GameINN”. In the years 2016-2017 two “GameINN” calls have been launched and the NCRD managed to allocate more than 200 M PLN for R&D works conducted in over 70 gaming companies. For example the Polish flagship game development studio, the CD Project Red, has been granted money to carr out four R&D projects worth 55 M PLN under the “GameINN” programme with the financial support from the NCRD exceeding 22 M PLN.

The other NCRD programmes such as “Fast Track” or “Bridge Alfa” can be also sources of significant support for gamedev studios. The “Bridge Alfa” programme’s aim is to support the creation of dedicated investment vehicles for R&D works and to allow the private investors get public funding that can be later in R&D projects conducted by promising startup companies (at early stages of development). Thanks to the programme a few investment funds were established that declare aiming in financing innovative enterprises from the video game industry. The “Fast Track” programme finances R&D works in micro- and SMEs and can be described as programme that puts emphasis on reducing formalities to a minimum and on a short decision-making time.

The industry is also supported by projects and programmes of another governmental agency, the Polish Agency for Enterprise Development (PAED). The PAED is an executive governmental agency and member of the Polish Development Fund group - which takes part in the creation and implementation of the state policy in the fields of entrepreneurship and innovation, thus implementing various state- and European-funded projects and programmes. Among them programme “Go to Brand” should be noted as a source of potential support for video game industry in exporting products and services and promoting themselves worldwide on the most promising markets.

Apart from that, a state-owned and Warsaw-based company, the Industrial Development Agency JSC, part, has launched a dedicated game incubator within the company ARP Games located in the southern Silesian city of Cieszyn. The ARP Games organise also calls for industry start-ups, offering educational as well as financial and merit support for young entrepreneurs and development teams.

Not only national, but also regional initiatives are significant and worth noting. In the Małopolska region these initiatives are led mainly by the state-owned Krakow Technology Park LLC (KTP) in cooperation with regional authorities (e.g. Małopolska Marshall Office, the city of Cracow). Also included are the international Digital Dragons conference, the support for promoting local enterprises abroad under the Creative Małoposla programme, educational initiatives in cooperation with the Game Academy and other projects aiming towards establishing incubation support for gaming companies. The KTP thus helps creating a robust ecosystem for the game industry in the region.

EXAMPLES OF SUPPORTING INSTRUMENTS ON A NATIONAL LEVEL

1. DEVELOPMENT OF CREATIVE SECTORS / Rozwój Sektorów Kreatywnych (Ministry of Culture and National Heritage)

Links:

http://www.mkidn.gov.pl/pages/strona-glowna/finansowanie-i-mecenat/programy-ministra/programy-mkidn-2017/rozwoj-sektorow-kreatywnych.php (2017)

http://www.mkidn.gov.pl/pages/strona-glowna/finansowanie-i-mecenat/programy-ministra/programy-mkidn-2018/rozwoj-sektorow-kreatywnych.php (2018)

- Who: Enterprises/non-governmental organisations/local governments' culture units
- What: Supporting the creative sectors in the fields of: education (e.g. support for scenario writing workshops), networking, research (e.g. research on game users), export activities, product development (incl. preparation of prototypes – area that was most interesting for game companies). Selected examples of eligible costs: remuneration, transport costs, promotion and advertising costs, printing/publishing, production costs of prototypes / demo version of creative products, exhibition spaces, financial prizes for artists participating in competitions.
- Nature: (small) Grants
- Size & conditions: most of grants under 100,000 PLN, most of the projects not exceeding 1 year
- Geographical scope: National (PL)
- Time scales: 1 call per year, decision making within 4-5 months
- Other: Approx. 1/3 of applicants receive grants, scheme has been dedicated to the creative sector in general, with a significant number of grants aiming at smaller or independent game developers

2. GameINN - R&D FUNDING FOR THE GAME INDUSTRY (National Centre for Research and Development)

Two calls of this type have been already implemented, projects are currently executed by companies, grant scheme is not active at the moment.

Link: http://www.ncbr.gov.pl/en/news/art,4200,playing-the-innovation-game-millions-for-key-economy-sectors.html

- Who: Companies or consortia of companies
- What: Implementation of R&D projects that include industrial research and experimental development works; projects that will contribute to the global competitiveness of domestic video

game developments. Selected examples of eligible costs: salaries, subcontracting, R&D equipment and intangible and/or legal assets.

- Nature: Grant
- Size & conditions: Projects with eligibility costs between 400,000 PLN (2nd call) or 500,000 PLN (1st call) and 20 M PLN, max. duration of the project is 3 years
- Geographical scope: National (PL)
- Time scales: 1 call per year, from call to deadline: 3 months, decision making within 3 months - 230 days from the call's announcement to publication of the ranking lists
- Other: Fairly recent scheme - started in 2016, 1st call (2016) - 40 (out of 72) projects, 114.65 M PLN granted, 2nd call (2017) - 38 (out of 90) projects, 92.76 M PLN granted

3. BRIDGE ALFA (Grant scheme of the National Centre for Research and Development)

Link: http://bridge.gov.pl/ (Polish) / http://www.ncbr.gov.pl/en/news/art,4151,bridge-alfa-new-competition-with-pln-450-million-up-for-grabs.html (English)

- Who: Innovative entities operating in Poland (micro and small enterprises), whose projects are included in the National Intelligent Specializations. Therefore, the Bridge Alfa scheme can be a source of indirect albeit potentially quite significant support for start-up companies in the gaming industry.
- What: National Centre for Research and Development (NCRD) grant scheme financing and setting up investment vehicles (Bridge Alfa funds) created in order to commercialise the most innovative ideas of SMEs.
- At least three of numerous Bridge Alfa funds are already selected by the NCRD and are directly targeting R&D projects in the game industry: Satus Partners LLC: "Alfa Games - B+R+Games", BLITE FUND LLC: "Blite Fund - Fund supporting financially and essentially innovative research and development projects in the area of intelligent technologies: creative video games and multimedia" and Leonardo Fund LLC: "Leonardo Fund - support for innovative R&D projects".
- Nature: financing innovative projects in the proof of principle and proof of concept phases through above-mentioned investment vehicles.
- Size & conditions: The value of the project (budget of the investment fund): min. 10 m PLN - max. 30 m PLN (for Bridge Alfa 2016 call). Share of the public support in a grant – ca. 80%.
- Geographical scope: National (PL)
- Time scales: Max. 5 years (disbursement of the received subsidy).

4. ARP GAMES LLC (operates on a countrywide scale, located in southern part of Poland)

The company provides supports to the video games industry in Poland. The company runs inter alia an acceleration programmes for game developers. ARP Games conducts also activities dedicated towards promoting Polish video games industry.

ARP ACCELERATOR'S SUPPORT

(STAGE I)

Link: https://arpgames.pl/en/specials/submissions-are-open/

- Who: Young game developers (teams with at least 2 members of any nationality) and start-ups
- What: Video game accelerating: Support of conceptual phase of a project. Each team can receive a grant for finishing a project, access to necessary hardware and software, personalized workshops,

legal and organizational advice, meetings with investors, marketing and promotional help and other actions suited for their personal needs.

- Nature: Grant, scholarship
- Size & conditions: Grants up to 100,000 PLN, a scholarship for up to 20,000 PLN per team
- Time scales: 2 calls per year - every 6 months, approx. 10 teams get support, 3 months acceleration phase, decision making within 4-5 months, from approval to actual start of the support period 1 month
- Other: Scheme is fairly recent\ started in Jan. 2017

(STAGE II)

- Who: Young game developers (teams with at least 2 members of any nationality) and start-ups, chosen from teams having passed stage I
- What: Support for a commercial business/creation of commercially viable companies
- Size & conditions: Throughout the second stage teams will start companies in which ARP Games will be a minor shareholder, 50,000 PLN as well as help in promoting their game and gaining new investors
- Time scales: 2 calls per year - every 6 months, 10 teams get support (number may be lower in the 2nd stage of the competition, if the team fails to achieve the assumed goals)

EXAMPLES OF SUPPORTING INITIATIVES ON A REGIONAL LEVEL

CREATIVE MAŁOPOLSKA (Kreatywna Małopolska) (Project implemented by the Krakow Technology Park (funded by the regional operation programme for the Małopolska Region 2014-2020)

Links: http://www.kpt.krakow.pl/branza-gier-wideo/kreatywna-malopolska and http://www.kpt.krakow.pl/en/support-for-the-games-sector

- Who: Small and medium-sized enterprises (SMEs) from the video gaming and film industry located in the Małopolska Region.
- What: Organization of business study trips for SMEs to main conferences and industry fairs abroad (e.g. Game Developers Conference, Game Connection Paris, Casual Connect, China Joy, DevGamm (Minsk), White Nights (Moscow)). Main goal of the project is the economic promotion of the Małopolska region by increasing the international activity of gaming and film SMEs, facilitating the establishment of business contacts and B2B meetings with foreign partners.
- Nature: Organization and financing of business trips to main conferences and industry fairs (transport, accommodation, fees).
- Size & conditions: Total amount of the project – 3 m PLN (EU financing – 2.6 m). Support for individual company varies and depends on the cost of a particular business trip, support provided for SMEs according to the EU law on the de minimis basis.
- Geographical scope: Small and medium-sized enterprises operating in the film and/or gaming industry, which have their headquarters (or a branch) in the province of Lesser Poland (Małopolska).
- Time scales: Project duration – 36 months (2016-2019).

GAME ACADEMY

Note that currently the academy is facing changes, when it comes to KTP's cooperation with other companies and program's structures. The name of this educational project will be changed.

- Who: Dedicated to people interested in pursuing a career in the video game industry, mostly to those with no knowledge or with just basic understanding of the topic.
- What: Game Academy is an educational project dedicated to the people interested in starting a career in the video games sector. Organised jointly by the Krakow Technology Park (Digital Dragons team) and Game Desire Company, Game Academy is a monthly lecture series run by the leading specialists from Polish gamedev studios. Game Academy occasionally provides educational workshops and so far over 800 people have taken part in the lectures.
- Nature: Workshops and speeches with experts from top Polish game companies and experts from abroad.
- Size & conditions: Cycle of twelve workshops (one workshop lasting two days during the weekends). Cost of participation in one session - 30 PLN (ca. 7 €).
- Geographical scope: Workshops conducted at the Krakow Technology Park are dedicated to people interested in pursuing a career in the gaming industry or simply interested in the creation of games. People from all over the country are invited.
- Time scales: Full cycle of workshops (meaning twelve different topics) lasts ca. 1 year.
- Other: Main topics i.a.: game design, project management, graphics in games and game art, publishing and business models, technologies in video games, basics of marketing and PR, user acquisition and analytics. The goal of Game Academy is not to give a complex training, but to give participants a sample of what game industry consists of and increase their interest of game development in order to encourage them to learn more on their own and to apply for work in established game companies or establish their own.

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Sweden

The general start-up scene in Stockholm is strong, there are many success examples and unicorns (Spotify, Skype, Mojang, King) and there are many VCs but game companies have a more difficult position because in general it is harder to invest in games. Games are so hit driven and VCs are still rather cautions to invest in game start-ups. However, there have been many success stories within the game industry. Several people have become rich and some of these people have become angel investors and are interested in investing in game companies. There have also recently been a number of senior people leaving their jobs at big companies and starting their own game studio. These start-ups are in a better position when looking for funding, because they have an experienced team, people who have already 'made it' before.

Intellectual property is what has been driving investments in Swedish game companies. There were 53 known business transactions during 2015-2017, and out of these, 68% happened due to the buyer's interest in the seller's IP.

It is rather difficult for game companies to search public funding in Sweden. There are virtually no public funds focusing fully on game companies. However, a game start-up can fit in some public funding that are supporting start-ups in general. These funds often assess companies based on the level of innovation, which is something rather complex when it comes to games, so the game start-ups often need something extra (e.g. diverse team, focus on education/health, etc).

Source: Game Developer Index 2017, Faith report (in Swedish only)

CREATIVE EUROPE - Kreativa Europa

Link: http://www.kreativaeuropa.eu / https://ec.europa.eu/programmes/creative-europe/

- Who: cultural and creative European production companies - for games studios: having produced a commercially distributed video game in the past two years
- What: eligible costs: the cost of personnel working under an employment contract, subsistence allowances, costs of travel, depreciation cost of equipment, cost of consumables and supplies, costs entailed by other contracts awarded by the beneficiary, costs arising directly from requirements linked to the performance of the action, costs relating to pre-financing guarantee lodged by the beneficiary of the grant, costs relating to external audits, non-deductible value added tax ("VAT")
- Nature: Grant
- Size & conditions: estimated 3.78 m € is available for co-financing (up to 50%); between 10,000 € and 150,000 € per project; 50% of the grant is transferred within the first 30 days; regarding video games:
    - support for video game production companies with proven experience and interested in developing a narrative storytelling video game, regardless of platform or expected distribution method
    - video game companies that are original, innovative, creative, and culturally diverse
    - are substantially interactive with a narrative component
    - are ambitious in terms of gameplay, user experience, and artistic expression
    - the works should also have decent commercial prospects, as well as the potential to access European and international market
- Geographical scope: EU Member States as well as non-EU countries (Albania, Bosnia and Herzegovina, The former Yugoslav, Republic of Macedonia, Georgia, Iceland, Norway, Moldova, Montenegro, Serbia, Ukraine)
- Time scales: 1 call per year, from call to deadline: 3 months, decision making within 4-5 months, 30 month projects

ALMI BUSINESS LOAN - Almi Företagslån

Link: https://www.almi.se

- Who: companies with up to 250 employees in all industries
- What: companies with a new phase of development, new companies with a validated business idea, companies that are on their way to expand internationally, companies that want to buy other companies, brand new companies, innovation projects
- Nature: Loan
- Size & conditions: micro loan - can finance the entire capital requirement; corporate loans - Almi usually enters with 30%, a bank 30% and the entrepreneur 30%; innovation loan - up to 300,000 SEK, Almi can co-finance up to a maximum of 50% of the total capital requirement, where co-financing

can be done with estimated projected time in the project at a value of SEK 250 per hour; loans amounting to 300,000 SEK- at least half of the co-financing must be in the form of capital, either equity, bank or other external financier; Amortization of the loan is adjusted to the company's development and financial situation. In order to compensate for the higher risk and not to compete with the banks, Almi takes an interest rate above average bank interest rates.

- Geographical scope: national (SE)
- Time scales: continuously
- Other: During 2016, 4,681 companies were granted a loan worth in total 3.324 m SEK

Private equity funds with interest in video games:

ALMI INVEST

Link: https://www.almi.se

- Who: Driven entrepreneurs with business ideas that can build future growth companies, across a broad range of industries. The company has to be new (up to 6 years old) or in an early expansion phase; the business idea should be scalable, innovative and meet a large customer demand regionally or nationally. It is also an advantage if the company's innovation has an international growth potential and can be Sweden's promising export company.
- What: support includes an access to experienced investment managers, a capital and a network.
- Nature: private equity fund
- Size & conditions: Managed capital: 3 billion SEK, first investment round in a company is between 300,000 SEK- 2 m SEK, Almi always goes in as an active minority owner (a representation in a board and/or advice), in order to provide the best possible value growth in the company; together with their investment partners Almi can participate in a number of follow-up investments, where Almi Invest invests a total of up to 10 m SEK per company
- Geographical scope: national (SE)
- Time scales: n/n
- Other: Appr. 70 new investments every year, which is around 7% of all the companies that apply; there have been a few game companies who have received an investment from Almi; has invested approximately 1.2 bn in approximately 400 growth companies in various industries

SPINTOP VENTURES

Spintop Ventures is an investment firm founded in 2009 and owned by accomplished tech entrepreneurs, industrialists and seasoned investors.

Link: https://spintopventures.com/

- Who: Companies in what is usually labelled the ICT or TIME sector, Information and Communications Technology and Digital Media.
- What: Investment stage: seed, early and later stage, Investment sector: technology
- Nature: private equity fund
- Size & conditions: Investment size: one investment of 3.1 m € realized in 2014
- Geographical scope: Nordic countries
- Time scales: n/a
- Other: Supported game company: Small Giant Game

CREANDUM

Link: https://www.creandum.com/

- Who: “Companies of tomorrow”, powering innovation in different sectors
- What: Investment stage: seed, early and later stage, Investment sectors: consumer services, software, games, financial technology, hardware
- Nature: private equity fund
- Size & conditions: Investment split: 48% seed, 39%, 13% later. From 400,000 € to more than 50 m €, Investment conditions: initial investment can be as small as a couple of hundred thousand euros and can go up to 10 m € over the life cycle of a company.
- Geographical scope: Offices in Stockholm, Berlin and San Francisco
- Time scales: n/a
- Other: The Creandum funds have invested in companies before they incorporated as well as in companies with tens of millions of euros in revenue. Once the Creandum funds invest in a company, Creandum takes an active role as advisor and all of Creandum team contributes with time, expertise, and extensive networks to help the company succeed, is based in Stockholm, Berlin and Palo Alto. The Creandum funds have invested in over 50 companies including being first institutional investor in companies such as Spotify, Vivino, Cint, Edgeware, IPtronics, iZettle, Videoplaza, Xeneta and many more.

GOODBYE KANSAS GAME INVEST

Link: http://goodbyekansasgameinvest.com

- Who: Independent game studios
- What: The team consists of experienced game producers alongside business executives from the industry so the support includes business development and market intelligence, but also the actual game development progress.
- Nature: Private equity fund
- Size & conditions
- Geographical scope: Nordics
- Time scales: The ambition is to make four to six investments per year

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3. Incubation and start-ups

Interviews with Incubation and game experts

25 interviews with incubation experts have been conducted in order to shed light on the current incubation

Incubation expert interviews conducted per region

Region	Game Incubators offering a targeted support	Tech/ Media Incubators	Business Associations	Business Networks	Other Experts
Poland	1	1			1
Denmark	1	2			
Sweden	1				
Estonia	1		1		1
Finland	2				1
Lithuania		4			1
Latvia	1	1			
Germany- Berlin					3
Germany- Hamburg		1		1	

Source: Own evaluation

Most of the interview partners came from tech or media incubators. Only 9 out of 20 incubators offer targeted support especially for game start-ups. These specific game incubators are located in Denmark, Estonia, Finland, Germany, Poland and Sweden. The majority of the examined incubators has been founded within the past 6 years, meaning there is only few long-term experience on incubation support existing. Most of the incubators in the investigation sample are publicly funded. In general, they are of rather small size with up to 10 employees.

The most common support offered by the incubators is the organization of events. If specific game start-up support exists it usually includes co-working spaces, mentoring programmes as well as financing and specialised pitches. Interestingly, many incubation experts stated that the amount of game start-ups making use of the support schemes has increased during the past five years, indicating a growing interest in incubation support by the game industry.

According to the experts key problems of game start-ups are related to funding and to a lack of business and marketing knowledge (perspective of incubation experts). Experts from Denmark, Germany and Latvia mentioned a need for improving the economic climate for game start-ups in order to facilitate their access to financing.

Key areas of improvement are the availability and access to funding or business angels. Thereby specific characteristics of the game industry, e.g. long development phases, have to be taken into account.

The incubation experts named the Game Incubator Sweden, Game Hub Denmark, Game Insight Estonia and the Finnish Oulu Lab as good practice cases for specialized game incubation within the BSR.

Interviews with Start-ups

In total 34 game start-ups founded were interviewed in the partner regions. The interviews were supposed to cover start-ups at the age of 5 years or younger (founded from 2012 on). However, due to availability problems in five cases the interviewed start-ups were older (6-8 years). The majority of the considered start-ups were founded in 2015. Most of the interview partners are currently in their start-up phase, which means about to finalize the development of a marketable product.

Game startup interviews conducted per region

Region	Startups founded in an incubator and still there	Startups founded outside an incubator	Startups, who already left the incubator	Not categorized
Poland	3	1	1	
Denmark	2	1		
Sweden	2			
Estonia		3		2
Finland	2	1		
Lithuania	4			
Latvia		4		
Germany-Berlin		4		
Germany-Hamburg		4		

Source: Own evaluation

The size of the start-ups within the sample shows a large variation, ranging from 0 to 420 employees. Finland is the region with most of the recent foundations.

The majority of start-ups was founded in teams (at least two people). The majority of founders holds a university degree (IT or related field). Around 50 % of the founders has had previous founding experiences.

Most of the start-ups mentioned the supply of qualified employees as most important selection criteria for choosing their current location, followed by networks and an existing video game culture.

The interviewed start-up focus on different types of games (mobile games, virtual or augmented reality and different genres of games like adventure, educational or multiplayer).

The predominant financial source when starting-up was own money, followed by public subsidies and bootstrapping. Some start-ups stated that the complexity of grants and bureaucratic obstacles prevented them from applying for public funding.

The interviewed game start-ups are facing major problems related to marketing issues, such as specific market knowledge (how to sell a game) and general market issues (referring to problems in gathering market visibility, building up a recognizable brand).

Regarding incubation support, the start-ups were especially benefiting from networking possibilities and the organization of targeted events.

Start-ups in Estonia, Germany, Lithuania and Poland criticised a low availability of specific support measures.

The ideal incubation support for start-ups would include mentoring, financial advice and support in general business aspects like marketing, sales, strategic planning.

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Denmark

Business Region Aarhus:

Business Region Aarhus covers 12 municipalities in and surrounding Aarhus, with more than 1 million citizens, combining the specific gaming educations and incubator as well as animation and university educations in programming

Game Hub Denmark

Grenaa-based national leading gaming incubator, who teach, develop and support game start-ups, with the purpose of helping founders to build sustainable and successful game companies. Game Hub Denmark works as a non-profit organization, without investment or ownership of the games they support, they work directly with publishers, investors or other partners.

Game Hub Denmark is a part of the gaming cluster in Grenaa, which has the entire eco-system necessary for creating a successful gaming cluster. The game educations in Grenaa are the foundation on which Game Hub Denmark is based. With a 3 year youth educations in Game College, students can specialize in game tech, game arts or e-sports. More than 400 students from all over the country are currently enrolled. Furthermore, the students have the opportunity to continue their education as game developers at Dania Games, which offers 2 educations at higher level in Grenaa – specializing in Computer Science or Game Design. This 2-2,5 year education gives an entrepreneurial approach and inspires graduates to apply for an office in the Game Hub Denmark incubator after graduation.

Game Hub Denmark has international focus, with partners all over Europa, as well as a long-lasting relation with contacts in China, the biggest game market in the world.

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Finland

Digitalents Helsinki is a modern and creative youth community, in which young people learn coding, game development and new media by doing. It is funded by City of Helsinki and the incubator's funding is for a fixed period and is fixed only for one year ahead.

Helsinki Games Factory, Jose Jacobe, founded in 2017. So far Helsinki Games Factory has only given access to pitching and showroom. One of their main business is to rent spaces. They don´t have much experience or systematic methods in mentoring.

Games Factory will open in June 2018 to set a new standard for ecosystem development in the Finnish gaming industry. The 3000 m² building will become the home for 15-20 game studios and 200 gaming professionals. In addition, it will host an event space and a showroom, where you can experience the latest and greatest of Finnish gaming.

Members will benefit from events, shared infrastructure, in-house services and day-to-day interactions with the community.

NordiskVR, Harri Manninen, founded 2017. NordiskVR Finland is a part of a company. The incubator is financed by private investors. “Our mission is to contribute and improve the competitiveness of the Nordic VR/AR ecosystem and accelerate the growth of our accepted portfolio companies.”

Even though it was only established in 2017 they have world-class mentors, ranging from entrepreneurs to investors, VR/AR technical specialists, platform holders and legal mentors. The focus is on VR and AR, so it is not purely game incubator. The founding partners are Japanese Gumi, 2017 and Nordisk film, which was originally founded in 1906.

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Germany [1]

[1] As Germany is a federation composed of 16 states, the situation and framework defining the game industry differ from state to state. Which is why we have split the analysis between the two major hotspots in the region of Germany that borders the Baltic Sea.

Berlin

Berlin is one of Germany's start-up hotspots. Due to its fairly low living and renting conditions, it naturally attracts young professionals and new business. Within the game sector, there are also a fair amount of start-ups (intent to grow quickly, often with an exit strategy in place), but also indie studios (small teams with no particular policy of quick growth). The study on the Berlin Game Industry (published March 2018) mentions 138 games business, the 2018 report by the German Game Industry Association (game e.V.) states 175 game developers and publishers (though companies being both might have been counted twice).

There is currently only one specific game incubator under construction which is connected to the University of Applied Sciences and their game design study programme. The incubator is called DE:Hive.

There are two specific co-working spaces for games and related business that are based on giving each other mutual support and advice: Saftladen, a games collective Otherwise, there are many co-working opportunities, and several technical incubators (most driven by specific companies such as Telekom, Axel Springer, Microsoft,). There is a business incubator without dedicated fields of expertise: Factory Works with 1000 members at 2 large locations (they also hosted the Google start-up campus): https://en.wikipedia.org/wiki/Factory_Berlin

Universities and tertiary schools offer several start-up centres. E.g. Berlin School Economics and Law in Berlin with their start-up incubator: http://www.startup-incubator.berlin/angebot/

In terms of games accelerator, there is Target Games with a contract with Global Top Round (GTR).

There is a growing awareness of the need to support start-ups in general, in particular in the "Digital Business" sector. The state of Berlin offers a range of information and networking sources, but also the opportunity for promotion.

Information on the latest start-ups on the city page: https://www.berlin.de/wirtschaft/startups/

The online platform providing information on Berlin: https://startup-berlin.com/

The print magazines The Hundert and Berlin Valley.

The PPP Berlin Partner and their business location centre (in 11 languages):

http://www.businesslocationcenter.de/en/business-location/business-location/start-up-capital

and their "Start Alliance Berlin" programme (networking different cities)

The State of Berlin also published a "Start-up Agenda" (available only in German) in 2016 with the results of an analysis of the start-up status quo and the plans for optimisation of the start-up environment.

https://www.berlin-partner.de/fileadmin/user_upload/01_chefredaktion/02_pdf/02_navi/21/2016-04-11_Berliner-Startup-Agenda.pdf

Then there is the initiative of the non-profit organisation media.net dedicated to bring investors, businesses, lobbyists, politicians, universities and start-ups together, with investors dinner, start:up club: https://www.medianet-bb.de/de/startup-net-berlinbrandenburg/

In particular for game start-up, this organisation brings together investors with game start-ups through their EU funded project Berlin.Baltic.Nordic.net (https://www.berlinbalticnordic.net/en/homepage/) through matchmaking events at different games conventions or through travel tours to incubators and AAA studios in other countries.

There are also several financial support schemes which apply to start-ups. The Partner of Berlin site lists 13 VC organisations (including the business angel club), and mentions several accelerators and incubators of different provenance

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Hamburg

Basically, the regional support measures for game companies in Hamburg show a broad variety, and incubation support is being offered by various players. Among those are business development agencies (HIW, Hamburg Marketing), the Hamburg Kreativ Gesellschaft, gamecity:Hamburg and technology incubators which could host game start-ups.

Hamburg Kreativ Gesellschaft

Founded in 2010, the Hamburg Kreativ Gesellschaft supports creative people through organising sector-specific workshops and events, but also through financial and business advice. The Hamburg Kreativ Gesellschaft is one of the initiators of nextMedia.Hamburg, an initiative aiming at enhancing the overall conditions for the games sector in Hamburg.

gamecity:Hamburg

Launched in 2003, gamecity:Hamburg is a network of meanwhile 2,000 participants supporting businesses from Hamburg's game industry. The network was founded with the intention of developing Hamburg as an attractive location for the game industry. It is publically funded by the Free and Hanseatic City of Hamburg. gamecity:Hamburg is part of the Hamburg Kreativ Gesellschaft. Among the projects and collaborations of gamecity:Hamburg are the gamecity:Port offering short-term / flexible office rentals to game start-ups as well as the gamecity:Lab. a platform to integrate small game businesses in the regional network (Source: gamecity:Hamburg).

Innohub

Since 2014 Innohub, as part of the InnoGames GmbH, supports start-ups and young entrepreneurs with their creative business ideas with the aim of strengthen overall growth. Innohub offers fair rental conditions for their nine fully equipped offices. Additionally, a mentoring program consisting of experts from the industry and investors advice start-ups during their work. The proximity to contacts of industry, investors and city authorities enables start-ups to build a strong network and usage of synergy effects.

Betahaus 2.0

This 2010 founded support program especially for start-ups and companies of the digital and creative sector arose from a private initiative. 2,100 qm² can be used for offices, conference rooms and events. A Pop-up store is also included. Working space can be rent on a daily or flat rate basis up to one year rental contracts. Beneath this, weekly events organized by the landlord or tenants take place and an "Education-Program" serves as platform for networking and exchange activities.

Founding-Service of the HAW Hamburg

The University for Applied Sciences Hamburg offers their students a special founding service for start-ups. The support of the HAW focuses on the three parts qualifying, advices for start-ups and founder's workspaces. While the qualifying aspects concentrates on workshops, events or a special founder's day, includes the advice part a special contact person. The third aspect provides own workspaces, individual support and networking to relevant contacts. Conditions for this stage of HAW support is previous consultations and a twelve months project plan. Because the HAW is offering a master degree in games, this founding service is relevant for games start-ups. A successful example is the THREAKS GmbH i.G (Source: Haw-Hamburg).

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Sweden

Stockholm Business Alliance:

Stockholm Business Alliance covers an area of 55 municipalities around Stockholm. More than half of the Swedish game companies are located in this region.

Sting (Sting Game): Stockholm based Sting is a traditional business incubator. It was founded in 2002 and since then has provided business development support to over 200 innovative start-ups in different verticals. In 2017 Sting launched a new initiative, Sting Game, which provides support to game start-ups and game-related-technology start-ups. The game companies which are accepted into the incubate program get access to a game business coach and a network of expert mentors. Additionally, Sting Game runs a small co-working space for independent game developers and organizes monthly meetups for the community of game developers in Stockholm. www.sting.co

East Sweden Game: A hub for game developers in Linköping. East Sweden Game offers a free co-working space for students and early stage game companies and an office space for established game companies. Members of the community get access to business coaching and advisory from the associated partners. East Sweden game organizes regular meetups for the local game developers and in May 2018 they opened an accelerator or game companies. http://eastswedengame.se/

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4. Talents, labour market and quality of work

Denmark

As Denmark consists of 5 different regions, the situation and framework differs between the regions, as not all regions have a gaming industry to support. Therefore, the analysis is centered around Norddjurs Municipality and Central Region Denmark, where the Game Hub Denmark is located and actively engaging in developing the gaming industry.

Working conditions

Norddjurs Municipality's salary level is comparatively low compared to both regional and national average. This is matched by an equally lower rent and living conditions, especially compared to the bigger Danish regional city Aarhus, and national capital Copenhagen. Denmark has a fixed working hour of 37 per week, and additional working hours is negotiable.

The average age of the working force in Central Denmark Region is 40.8 years, with a total of 1,308,253 total population in the region.

Labour Market

Labour costs in Denmark are expensive. With the highest labour costs in the EU with roughly 43.50 € per hour, hiring talents is a big cost for the business community, this is compromised by an easy to hire and fire law in Denmark, called the Flex-security model. The average income level as per 2016 for Central Denmark Region was 5,146 €.

The status of the labour market can be expressed through a number of different indicators:

- Unemployment rate in 2016 for Central Denmark Region was 3.9%, being very close to "Full employment". This has put on a pressure for businesses to find the needed talent, throughout all sectors.
- Central Denmark Region had 7,031 job vacancies (2016 numbers), of which 277 were within technology professions.
- The self-employment rate in Denmark is 7.5%, which is the lowest number in the EU according to Eurostat - https://www.dst.dk/da/Statistik/nyt/NytHtml?cid=25563 (Danish public statistics)
- In Denmark, the games sector shows a much larger percentage of self-employment, up towards 20%, more than double the average of the national average of self-employment across business sectors.

Due to the high total employment, Norddjurs Municipality and the country in general, has difficulties getting the proper talents and professionals in IT and programming.

Internationalisation of labour market

In total, 39,814 out of the workforce of 483,829 are foreign Europeans, totalling to 8.3%. Combined with the 18,930 non-European foreigners, the total foreign work force in Central Denmark Region is 12.1%.

In 2016, 31,200 applied for work permits in Denmark, and 15,028 were granted citizenship. In 2017, 10,627 work visas and 12,785 study visas were granted.

Research and development

There are no figures for research and development on a local or regional level. The national level for public expenditure amounts to 3.0 bn € in 2016, and as such Denmark is among the countries with the highest amount of public-funded R&D. The average R&D funding per citizen in the EU was 186.1 € in 2016. The Danish number was 448.9 €.

The private sector R&D amounted to 5.7 bn € in 2016, almost twice the number of the public funded R&D.

The combined public and private R&D expenses in 2016 amounted to 3.2 of the national BNP.

Educational levels

Total students in higher education in 2017: 26,842, of which 2,913 (10%) were foreign students. The median age of bachelor graduates in Central Denmark Region was 24.1 years old in 2017, and of masters graduates 27.0 years old.

The average annual cost of university education in Denmark is 0 €, as the education is free, except for expenses for books. This free education is also for all European citizens.

English as a secondary language is mandatory in Danish primary school, and throughout secondary educational levels.

Unemployment rate

- NUTS 2 region: 2016: 3.9%; 2015: 3.6%

Job vacancies numbers

- NUTS 2 region: 2016: 7,031 (share of technology professions in job vacancies 2016: 277); 2015: 5,480; 2014: 3,928

Self-employment rate

- national level: 9.1%

Average income level (gross employee salary/wage)

- NUTS 2: 2016: 5,146 €

Labour cost: average % to invest on top of gross salary per employee

- NUTS 2: 2016: 43 per hour, 2015: 42.5 per hour

Gender gap pay

- NUTS 2: 2016: 766, 2015: 772, 2014: 790

R&D expenditure public

- national: 2016: 3.0 bn €

R&D expenditure private

- national: 5,7bn €

Population: demography

- number: NUTS 2: 2016: 1,308,253
- average population age: 40.8

Population: education

- average annual cost of university education (tertiary education): NUTS 2: 0€
- aged 20-29 educational attainment: rate of university qualifications of total of age group: NUTS 2: 25-26%
- number of tertiary education organisations: NUTS 2: 2015: 41
- number of total university students (tertiary education): NUTS 2: 2016: 26,842 - http://www.au.dk/en/about/profile/history/historiske-noegletal/arkiv-for-au-i-tal/key-figues-2017/students/
- share of foreign students (tertiary education): NUTS 2: 2016: 3,070
- share of total public household for expenditure on education schemes: 2016: 0
- Tertiary graduates in science and technology per 1,000 inhabitants aged 20-29 years (or close age group): NUTS 2: 2016: 5,127
- share of secondary education level students learning English language: national 2016: 100%

Internationalisation

- number of European foreigners working in the region: NUTS 2: 39,814; national: 189,294
- number of non-European foreigners working in the region: NUTS 2: 18,930; national: 111,239
- number of applications for work permits: national: 2016: 31,200; 2015: 29,800
- average of granted citizenships per year: national: 2016: 15,028; 2015: 4,498
- numbers of visa granted (for work or education, not tourist visa): 2017: work: 10,627; study 12,785

Quality of employment

- working hours (average per week): 37 (2016, 2015, 2014)

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Finland

Unemployment rate & number

Helsinki metropolitan area (HMA) - 2016: 12.0% (number: 70,588); 2015: 11.7% (68,243); 2014: 10.5% (60,008)

National level - 2016: 13.2% (number: 348,620)

Job vacancies & share of technology professions

ICT/creative industries – 2.1 (2015)

HMA - 2016: 1.5 (8% technology professions); 2015: 1.3; 2014: 1.4

National level - 2015: 1.3

Average income level (gross employee salary/wage)

HMA - 2015: 35,913 €; national level -2015: 29,166 €

Gender gap pay

National level 2016: 17.6%

R&D expenditure public

HMA - 2016: 340,000,000 €; 2015: 347,000,000 €; 2014: 398,300,000 €

National level - 2016: 534,600,000 €

R&D expenditure private

HMA - 2016: 1,965,100,000 €; 2015: 1,898,300,000 €; 2014: 1,966,800,000 €

National level - 2016: 3,901,700,000

Games education

number of specialised university courses including or focusing on games development: 2 games education degree programmes in the HMA area and 2 ICT degree programmes with games focus in the HMA

number of students (per year) enrolling for games specific university courses: 146 (games sector); 255 (ICT/creative industries)

number of non-university courses or training involving or focusing on games: 3 games education programmes and 3 other ICT/creative industries programmes

Population: demography (HMA)

number - 2016: 1,138,778, 2015: 1,122,149, 2014: 1,106,418

average population age: 40.2 (2016)

number of European foreigners living in the region: 56,830 (2016)

number of non-European foreigners living in the region: 74,133 (2016)

Population: education (HMA)

aged 20-29 educational attainment: rate of university qualifications of total of age group: 21.9% (2015)

young people (aged 16-20) neither in employment nor in education/training: rate of total age group: 8.6 % (aged 15-19, 2015)

number of tertiary education organisations: 10 (2016)

number of total university students (tertiary education): 93,159 (2016)

share of foreign students (tertiary education): 8.7% (2016)

Number of technological universities: 1

Tertiary graduates in science and technology per 1,000 inhabitants aged 20-29 years (or close age group): 59.6% (2015)

share of secondary education level students learning English language: 98.8% (HMA, 2015)

Internationalisation

number of European foreigners working in the region: 27,543 (HMA, 2016)

number of non-European foreigners working in the region: 39,145 (HMA, 2016)

number of applications for citizenship: 11,130 (national, 2016)

average of granted citizenships per year: 9,202 (2011-2016)

Quality of employment

working hours (average per week): 39 (national)

share of labour contracts with flexible time arrangement (flexible hours or working from home): flexible time arrangements 15% (HMA, 2016); Working from home 1 %, working occasionally 38 % (national, 2016)

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Germany [1]

[1] As Germany is a federation composed of 16 states, the situation and framework defining the game industry differ from state to state. Which is why we have split the analysis between the two major hotspots in the region of Germany that borders the Baltic Sea.

Berlin

When discussing “talents”, we think it makes sense to distinguish between young talents and experienced talents. Berlin being a hotspot for young professionals and new business (see section above on incubators) naturally harbours a lot of young talents, from Germany and the world, with a strong influx from East European countries. The excellent game education landscape adds to that pool of young talented game developers.

Working conditions

Berlin’s salary levels are comparatively low, thus matching the low rent and living conditions. The Berlin Game Study (published March 2018), states that the average salary for a full-time employed junior game designer lies between the minimum wage (around 1,500 €/month) and 2,000 € / month, for a backend programmer between 2,000 and 2,700 €. With a professional experience of more than 4 years one can reach salary levels up to 4,400 €/month. Of course, this needs to be seen against the backdrop of living costs which are comparatively low (though rents are increasing rapidly and housing availability is low).

According to the Germany salary Atlas (https://www.gehalt.de) of 2018, the highest wages are earned in the states of Hesse, Baden-Württemberg and Bavaria. Berlin is 9th in the ranking of the 16 German Lands. Thus, a newly graduated person can expect to earn around 43,000 € per annum, while those with a completed vocational training can only expect to earn around 28,000 € per annum. In average, salaries are 14.7% below the German median.

The gender pay gap is approx. 22% in Germany, the gap being smaller in the new states and larger in the old states.

Labour laws are federal laws, so there is no specific Berlin situation to be distinguished from the rest. Most German companies still have a fixed office space/workplace policy, with a full-time week of 40 hours with a minimum of 4 weeks (though more usually in service areas 5-6 weeks) contractual leave. Berlin has the least of national holidays (6 days less than Bavaria for example).

Labour market

Labour costs Labour costs consist of gross earnings and non-wage costs. According to Eurostat, German labour costs rank 7 within the EU in 2016, with an average of 33.40 € (compared to rank 1 - Denmark with 43.40 €). For the non-wage costs, Germany ranked 14 within the EU, with 28 € on top of every salary/wage of 100 € (compared to rank 1 - Sweden with 49 € on top of 100 € salary).

The status of a labour market from a game production view can be expressed through different indicators. For example:

- Unemployment rate in 2017 in Berlin was 9%, reflecting a continuous decrease since 2009 (rate 14 %). However, unemployment rates are far above the German average of 5.7%. Of all unemployed people in Berlin, 8% are aged 15-25.
- In Germany, freelance and self-employed labour is rather common. In 2017, Berlin had 11% freelance/self-employed people (a bit higher than the average in Germany with 10%).
- In Germany, the games sector (e.g. compared to the film sector) shows a high % of contractual employments (as opposed to freelance employment), with 17% owners, 67% full-time employees, and 10% freelancers, the remainder being trainees and part-time employees.

- Compared to most other German states, Berlin has no lack of available professionals in IT and programming.
- share of total public expenditure for labour market policy (supporting measure for improving the labour market): 13.86%

Internationalisation of the labour market:

In total, 13% of the contractual employees are foreigners, 8% of the total are European foreigners, 2% each are from Asia and Turkey respectively, and only 1% are from the US and AUS, or from Africa.

17% of the Berlin population are foreigners.

Game development education and R&D

The education landscape is a useful indicator for the availability of young talents, while the R&D climate could indicate the appeal for senior staff to settle in Berlin.

Game design and game programming are on the upswing in all of Germany, but Berlin has a wide range of courses and study programmes on offer.

According to the Berlin Game Study (published March 2018), 80% of all people working in the games industry have either an academic degree or are professionally trained, most of them within a relevant field for the industry.

Berlin offers 25 training or study programmes with a focus on games at 11 universities or private colleges. This includes both full games studies such as game design or programming as courses on digital games development within study programmes such as media informatics. In Berlin, the highest academic degree to be earned is a B.A. in Games design at the HTW (University of Applied Sciences) which is a public institution. They are planning for an M.A. course in 2019.

There are 500-600 enrolments per year for games specific university courses, and around 250 for games specific training.

As overall in Germany, technological innovation is highly supported. The fact that R&D is not Europe-aid relevant is possibly a supporting factor. Therefore, research is highly supported. Public expenditure in 2017 has been slightly over 300 m €, which constitutes 1.14% of the total budget for Berlin and expresses support of a range of research associations and institutions. Compared to this, as far as figures exist for this category, private investment was comparatively low (also in comparison to the rest of Germany) with 1.628 m €.

Educational levels

Total students in higher education in 2017: 177,170 of which 33,743 (= 19%) were foreign students. Higher education students constitute 5% of the Berlin population. Median age of Bachelor graduates in Germany was 23.7 years old in 2016, and of Master graduates 25.9 years old.

35,367 started their studies in 2017, and 31,827 graduated (all grades, B.A., M.A., PhD etc.) in 2017 of which approx. 22,000 graduated in mathematics, engineering and natural sciences. Of the 49 higher education institutions (public and private) in Berlin, 12 have strong focus on technology.

The average cost for studying at public universities is around 600 €. In 2017, the state spent 18.93% of its total household on education schemes.

In Germany, English language is a mandatory course throughout secondary education levels.

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Hamburg

Hamburg is the second largest city of Germany. In 2016 around 1,693,140 people were living in the Free and Hanseatic city. 193,812 of them were European foreigners and 94,526 were from non-European countries. Each year, around 5,891 citizenships are granted on average. The average age of a Hamburg citizen was 42.3 years in 2016.

Working conditions and the labour market

The general working conditions in Hamburg are convenient. The unemployment rate was 7.1% in 2016 which is above the German average, but below the rate of some other large German cities like e.g. Berlin. The total amount of unemployed people was 73,291 while the number of job vacancies was 17,479. The average income level in 2016 was 4,111€ (gross), yet with a gender pay gap of about 753€. According to the Germany salary Atlas (https://www.gehalt.de) of 2018, Hamburg is the land with the fourth highest salaries in Germany. Around 117,000 people were self-employed in 2016.

On the market for technology professions, which covers most game industry related professions, the number of unemployed people was around 7,000 while 1,596 job vacancies existed. According to the EURES labour market information, there is currently an oversupply of qualified unemployed people in the fields of IT as well as software development and programming in Hamburg.[5]

Education

As a rather large city attracting many people from its surroundings, Hamburg offers a broad variety of educational possibilities. Next to 173 public and private vocational schools, 22 universities are located in Hamburg. The total number of students was 98,286 in 2014/2015. Around 10,706 of them came from abroad. The number of young people (aged 16-20) which are neither in employment nor involved in some form of education program or training amounts to 5,372.

There are at least 9 educational institutions which provide courses or programs related to game development in Hamburg. Some of them even offer specialised “Games Programming” (Bachelor degree, SAE Institute) or “Games Master” (Masters degree “Time-based Media / Sound – Vision – Games”, Hamburg University of Applied Sciences) programs. Moreover, several initiatives which aim to educate people and/or pupils in games exist.

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The Baltic States - Estonia

Working conditions

General working time in Estonia is 8 hours a day, 5 days per week. According to the Working and Rest Time Act, the duration of the lunch break should be between 30 minutes and an hour. A person raising a child younger than 1.5 years shall be granted additional breaks for rest and meals. More information can be found on the Work in Estonia website: https://www.workinestonia.com/working-in-estonia/

The legislation is liberal and offers a lot of flexibility in agreeing on terms and conditions of employment. Regulations regarding employment and labour contracts are regulated by the Employment Contracts Act.

A list of sample contracts in English can be found on the Work in Estonia webpage.

[5] https://ec.europa.eu/eures/main.jsp?catId=360&lmi=Y&acro=lmi&lang=en&recordLang=en&parentId=&countryId=DE&regionId=DE6&nuts2Code=null&nuts3Code=null&mode=surpluses&regionName=Hamburg

Population: demography

- national: 2016: 1,316,869
- number of European foreigners living in the region 1.84%
- number of non-European foreigners living in the region: national: 9.89%

Labour market

According to Human Capital Report Estonia is a success story with regard to successful human capital potential maximization, ranking 15th globally.

The Estonian labour market can be described by:

- highly skilled workforce
- 86% of adults speaking at least one foreign language
- low unionisation
- simple and straightforward labour legislation
- easy hiring and job contract termination processes

Potential sources for finding suitable staff:

- Estonian Unemployment Insurance Fund (services are free of charge)
- private recruitment companies
- online job listings
- advertising in national and local papers
- career services of the main universities
- Work in Estonia (for hiring from abroad; services are free of charge)

Work in Estonia has also listed a number of useful services that can be help when hiring either from Estonia or abroad, finding short-term employees, relocating employees, etc.

Wages must be paid at least once a month and it is the employer's obligation to calculate and withhold all payroll taxes.

When hiring, the general standard is a 4-month probation period with one-day notice period. Long-term employees have usually a 1 month notice period. If the working hours are at night (from 10:00 pm to 6:00 am), employers shall pay wages exceeding the normal wages by 1.25 times, unless it has been agreed that the wages include remuneration for working at night.

Work during public holidays may be compensated either by offering time off or by paying 2 times the wages for the work.

Payment for overtime – additional remuneration per hour of overtime is at least 50% of the rate of the hourly wage.

Quality of employment

The status of a labour market from a game production view can be expressed through different indicators. For example in 2016:

- Working hours (average per week): 40

- High-wage earners as a proportion of all employees (excluding apprentices): 2016: 13.9%;

- Unemployment rate on national level in 2016 was 6.8% , with over 5000 job vacancies

- Self-employment rate on national level was 9.4% whereas the average income level (gross employee salary/wage) was 1,146€. The labour cost: average % to invest on top of gross salary per employee is 33.8%.

- Total public expenditure for R&D was 131 million € and private 139 million €

Game development education and R&D

A recent study by Praxis Centre for Policy Studies indicated that the organization of teaching digital skills in Estonian general education schools is uneven and varies to a large extent. 20% of schools start teaching digital skills as a separate subject already in the first stage of study and approximately 50% of schools teach digital skills as a separate subject in the second and third stages of study.

On the other hand, there is a large group of general education schools that do not offer any separate digital study courses in any stages of study. Similarly, there is wide variation in the role and proportion of digital skills in school syllabi: majority of syllabi, across all stages of study, contain the development of digital skills related to information queries, whereas the relative importance of critical assessment of data is more pronounced only in the syllabi of the third stage of study. Development of content creation skills is represented in school syllabi to a considerably lesser degree and there are practically no references to the development of skills related to technology education (programming, robotics etc.) in any syllabi across all stages of study. Almost a third of general education schools do not offer their pupils any ICT hobby groups for the development of digital skills.

Furthermore, the results reveal that access to digital tools (devices, environments and software) and digital study materials, as well as their quality, is one of the central challenges in teaching digital skills both in schools and hobby groups. In Estonia, various state initiatives have generously supported schools in the acquisition of digital devices as well as providing training opportunities for teachers. However, the results of this study demonstrate that access to digital tools is still a major bottleneck – teachers use existing digital materials rather modestly and indicated access to quality materials and general scarcity of digital tools as the main challenge. In terms of ICT hobby groups at schools and kindergartens, the main challenge seems to be the need for new and/or additional devices as well as digital study materials and instruction manuals. Although the remarkable lack of such digital tools as tablets and smart phones was reported only by a small portion of teachers, it still constitutes a considerable amount of teachers who have indicated problems in this area, considering the requirements of digital era and objectives of modern study approach.

Despite the positive attitude towards using digital tools in the learning process among teachers and pupils, it has not yet demonstrated the anticipated impact on the development of digital skills and as a means for supporting the implementation of modern study approach. Teachers consider their own poor skill level to be a critical obstacle in the teaching process. Teachers rated their skills related to internet communication rather high while at the same time digital skills related to problem-solving and creative processes (e.g. web pages, games, apps) received a rather modest rating in the self-assessment. Despite the active participation in various digital skills related in-service trainings during the past two years and overwhelmingly positive attitude towards using digital tools, there are shortcomings in using the digital skills in the study process. In certain areas teachers rate their abilities even lower as compared to that of pupils (e.g. taking photos, making videos and audio recordings). At the same time, with some instruction from teachers, pupils could contribute to improvement of study process using their digital skills and experiences, thereby mitigating existing problems outlined in this study (e.g. lack of time, skills). More than 50% of teachers indicated they have included pupils as experts in the planning and organizing of course work. However, it seems that the full potential for engaging students contributing to the planning and organization of course work related to digital skills has not yet been fully realized. This kind of collaboration between teachers and pupils presumes relevant professional know-how for engaging students, and students´ readiness to contribute by sharing relevant skills and responsibilities. Therefore, in order to apply these strengths in the process of teaching digital skills, more systematic support to facilitate the collaboration between teachers and pupils is necessary.

The number of specialised university courses including or focusing on games development is currently 5, with share of ICT staff of total employees 5,12%.

Educational levels

Estonia is a top performer in terms of its education system, according to the OECD. In Estonia, high school graduation levels are significantly higher than the OECD averages. Estonian students are also consistently far above the curve in areas of literacy, math and science on the PISA tests. In science, Estonia is tied for first place in Europe with Finland.

The Estonian Ministry of Education and Research oversees education in the country. However, each local government (e.g. Tartu) is technically responsible for managing its schools and guaranteeing slots for the area's registered children.

Total students in higher education in 2016 were 47800, of which 8.2% were foreign students. There are nearly 15,000 students in Tartu studying in 11 tertiary education organisations (24 in total in Estonia). Tertiary graduates in science and technology per 1,000 inhabitants aged 20-29 years was in 2016 12.8 persons. It has dropped from 13.5 and 14.2 persons in 2015 and 2014 respectively.

The educational attainment rate of university qualifications of total of age group of 20-24 years was 14.6 in 2016. The rate for young people (aged 16-20) neither in employment nor in education/training was 4.1%.

Although higher education is free in Estonia, the share of total public household for expenditure on education schemes was estimated to be 1.67% of GDP in 2014.

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The Baltic States - Latvia

Unemployment rate & number

National level - 2016: 9.6% (number: 95,000); 2015: 9.9% (98,000); 2014: 10.8% (108,000)

Job vacancies numbers

National level - 2016: 15,700, 2015: 14,400, 2014: 13,800

Self-employment rate

National level - 2016: 115,000, 2015: 113,000, 2014: 102,200

Average income level (gross employee salary/wage)

ICT/creative industries - 2016: 1,364 €, 2015: 1,316 €, 2014: 1,221 €

labour cost: average % to invest on top of gross salary per employee

2016: 132, 2015: 127, 2014: 119

Gender gap pay

2015: 17.0%

share of total public expenditure for labour market POLICY

2011: 0.69% of GDP

R&D expenditure public

National level - 2016: 0.33%, 2015: 0.47%, 2014: 0.44%

Population: demography (national level)

number - 2016: 1,968,957, 2015: 1,986,096, 2014: 2,001,468

average population age: 43.6 (2016)

number of European foreigners living in the region: 288,946 (2016), 298,433 (2015), 304,835 (2014)

number of non-European foreigners living in the region: 288,946 (2016), 298,433 (2015), 304,835 (2014)

Population: education (national level)

young people (aged 16-20) neither in employment nor in education/training: rate of total age group: 3.53% (2016), 3.1% (2015), 3.75% (2014)

number of tertiary education organisations: 58 (2016/17), 58 (2015/16), 60 (2014/15)

number of total university students (tertiary education): 82,900 (2016/17), 84,282 (2015/16), 85,881 (2014/15)

share of foreign students (tertiary education): numbers: 82,914 (2016/17), 84,282 (2015/16), 85,881 (2014/15)

share of total public household for expenditure on education schemes: 1.12 % of GDP (2014)

Number of technological universities: 1

Tertiary graduates in science and technology per 1,000 inhabitants aged 20-29 years (or close age group): 0.705 (2015)

share of secondary education level students learning English language: 98.3% (2015)

Internationalisation (national level)

number of European foreigners working in the region: 4,750 (2016)

number of non-European foreigners working in the region: 3,875 (2016)

average of granted citizenships per year: 1,900 (2015), 2,100 (2014), 3,100 (2013)

Quality of employment (national level)

working hours (average per week): 38.4 (2016), 38.3 (2015), 38.6 (2014)

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The Baltic States - Lithuania

All statements are on national level

Unemployment rate & number

Labour costs consist of gross earnings and non-wage costs. According to Eurostat, Lithuania is among 3 countries which had the lowest labour costs in the EU in 2016, with an average of 8.20 € (compared to rank 1 - Denmark with 43.40 €). For the non-wage costs, Lithuania ranked 3 within the EU, with 28.3 € on top of every salary/wage of 100 €.

The status of a labour market from a game production view can be expressed through different indicators. For example:

- Unemployment rate in 2016 was 7.9%, reflecting a continuous decrease since 2014 (rate 10.7%). The share of technology professions unemployment of total unemployment is just 5%.
- In Lithuania, freelance and self-employed labour is under-developed and not very popular, yet. In 2016, Lithuania had 7.6% freelance/self-employed people.
- Lithuania in the labour market lacks of IT professionals, as foreign investment has increased the demand of IT specialists, meanwhile education institutions cannot satisfy the whole demand with their educated students. The share of ICT staff of total employees is just 2.1%.

Games education

Total students in higher education in 2016: 93,524 of which just 6.6% were foreign students. Higher education students constitute 3% of the Lithuania population.

30,500 started their studies in 2017, and 27,600 graduated (all grades, B.A., M.A., PhD etc.) in 2017 of which approx. 2,359 were ICT/creative industries students. Of the 45 higher education institutions (public and private) in Lithuania, only 3 have strong focus on technology. But the number of specialized university courses including or focusing on games development is higher - 15 universities and colleges have ICT courses, 6 of them have special games development courses.

The average annual cost for studying at public universities is around 1,000 - 5,000 €. In 2017, the state spent 17% of its total household on education schemes.

In Lithuania, English language is a mandatory course throughout secondary education levels, there are 87% of students in secondary schools who are learning English language.

Population: education

Lithuania offers 6 universities or private colleges which have study programmes focused on games development. In Lithuania, the highest academic degree to be earned is a M.A. in Games design at the KTU (Kaunas University of Technology) which is a public institution. The other public university – Mykolas Romeris University offers a game development programme which are made and implemented in a collaboration with Finland university.

There are around 250 enrolments per year for games specific university courses.

In Lithuania support for R&D activities is below the average EU figure. Public expenditure in 2017 has been slightly over 55 m €, which constitutes 0.95% of the total spending of Lithuanian government and expresses support of a range of research associations and institutions. Compared to this, private investment was almost twice as public expenditure - 103 m €. Therefore, government should pay more attention to innovations and investment into R&D activities as this might reduce the risk for innovative enterprises.

Internationalisation

In total, 14 472 non-European foreigners work in Lithuania. The vast majority of them are from European union, only 4% of them are non-European foreigners. Lithuania has granted 17,161 visas to work in Lithuania in 2016.

Quality of employment

Lithuania's salary levels are comparatively low, thus matching the low rent and living conditions, however the situation in Vilnius is lightly different as there is a hotspot of high-tech companies, therefore salaries are relatively higher. The Lithuanian game industry report (2017), states that the average salary for a full-time employed game developer is around 1,500 €/month. It is a quite big salary comparing to less than 900 €/month average salary in Lithuania. In Lithuania there are 16.3% high-wage earners who have an income of at least 150% of average income.

The gender pay gap is approx. 18% in Lithuania.

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Poland

Poland has had 38,434 million inhabitants in 2018 (as of 31.12.2017). The Małopolska region's population in 2017 was 3,391 million, 2016 was 3,386 million, in 2015 – 3,373 million, in 2014 – 3,368 million people. The average population age was 40.2 in 2016.

Working conditions

A work week in Poland consists on average of 40 hours. The national average monthly gross wages and salary in 2018 was 4 521,08 PLN (1 053,6 €), while on a regional level the average salary in the enterprise sector was: 4 669,66 PLN (2018, 1088,19 €) (and rising from 4 047.21 PLN (2016), 3 899.78 PLN (2015), 3 783,46 PLN (2014)) and for the city of Kraków it numbered 5 213,46 PLN (2018, 1 219,92 €).

The cost of labour for the employers is over 20% of gross salary per employee, including 9.76% - pension insurance, 6.50% - disability insurance, 1.80% - accident insurance, 2.45% - employee fund, 0.1% - fund for guaranteed employee benefits. For the employees the costs is over 27% including 9.76% - pension insurance, 6.50% - disability insurance, 2.45% health insurance, 9% - medical insurance.

Labour market

The rate of unemployment on a regional level (Małopolska) in 2018 was 4.8% (71 thousand unemployed), while on the national – 8.2% (1,335,200 people) – the trend fortunately is decreasing, meaning that less people stay unemployed each year (9.7% in 2015, 11.5% in 2014). The estimation is that in the Małopolska Region there are about 10,870 vacancies in IT-related fields.

In Poland only the minority of people is self-employed (18% in 2016). Meanwhile an average income level in ICT industries in 2016 was 2,600 €, and in games sector – 1,733 €. The gender gap pay is situated on 7.7% on a national level. The share of ICT staff among the total number of employed people in the region was 3.2%.

Internationalisation of the labour market

In Poland less than 10% of people working in the games sector are foreigners both of European and non-European origin. The number of applications for work permits nationwide was 74,149 (65,786 granted) in 2015. The average number of granted Polish citizenships in 2015 was 3,974.

The general number of non-European foreigners living in Małopolska in 2016 was 7,600, while in Poland the numbers were 80,600 (2017), 73,100 (2016), 65,200 (2015). When it comes to European foreigners, the number for Małopolska in 2016 was 13,500 and for Poland: 221,6000 (2017), 138,700 (2016), 109,900 (2015).

Game development education and R&D

The State of the Polish Video Game Industry (2017) report identifies over 40 various university courses in video games creation in Poland (mainly located in Warszawa, Kraków, Łódź, Poznań and Silesia). These courses cover wide array of thematic areas and fields of studies, for example: *video game production*, *modern computer graphics*, *computer graphics* and *game design or designing games and virtual spaces*. The types of the courses included full-time, part-time studies as well as post-graduate studies, with some of them conducted regularly and some being launched depending on the needs. It is worth to mention that, though apparently numerous available educational options, the quality of particular courses can be a subject of discussions and not always corresponds with the industry's desire of skills and knowledge.

The size of public expenditure on R&D on the regional level was 397.7 mln PLN (93 mln €), while on the national level it was 18,061 mln PLN (4,215 mln € in 2015, of which 41.8% came from the government) – the number has grown substantially, since the year before it was 6,168 mln PLN (1,439 mln €, 45.2% from the government). The share of private expenditure on R&D in both 2014 and 2015 was 39%. Above mentioned GameINN programme was launched as a dedicated source for financing R&D in the video games industry.

Educational levels

When it comes to education issues, most universities are free for full-time students (for extramural studies, depending on university and major, the price may vary between 1,000 and 5,000 €). Nationwide there are 390 tertiary education organisations (both public and private), in the region there are about 30

(2016). The number of total university students was 176,700 (2015/16, among them 7,300 students came from abroad), 183,400 (2014/15), 189,600 (2013/14). In the Małopolska region 2 universities are technological (they are also well-known for their high quality), on the national level the number is 18. When talking about specialised university courses including or focusing on game development, regionally there are 9 existing courses and 48 nationwide.

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Sweden

Unemployment rate

National level - 5.8% (2017), 6.9% (2016), 7.4% (2015), 7.9% (2014)

Job vacancies

National: 100,000 - 130,000 (2017), 80,000 - 130,000 (2016, 70,000 - 110,000 (2015), 60,000 - 90,000 (2014)

Share of ICT staff of total employees

National: 6.1%

Games education

number of specialised university courses including or focusing on games development: 46

number of students (per year) enrolling for games specific university courses: 1,156

number of non-university courses or training involving or focusing on games: 18

number of persons (per year) enrolling for games specific training: 194

Population: demography

national: 10 m (2017)

regional: 3,782,815 (2016)

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5. Quality of location and living conditions

Denmark

Denmark is an attractive destination for talents from entire Europe, particularly the Baltic Sea area and Eastern European countries. The work force that moves is across all sectors and educational levels, from manual labour to highly specialized professionals.

Living conditions

The average rent in Central Denmark region is around 13 € per m^2, which is very slightly above the national average. However, this number is skewed due to the vastly higher rent costs in Aarhus, the central city of the region. The rent cost in Norddjurs Municipality is considerably lower. 92% of all households in the region has access to broadband, with the speed and stability continuously being improved.

Quality of life

The Danish model for childcare is based on entitlement to 50 hours of weekly formal care, with the necessary number of daycare and kindergarden spots available. Similarly, 0.63 doctors are available per 1,000 citizens, with hospitals, health centres and clinics scattered across the region.

Central Denmark region has 2 airports, which connects to both Europe and the rest of the world with close to 3,4 million passengers through the airports every year. With the expansion of the light rail within Aarhus and to cities Randers and Grenaa, as well as the expansion of the E-45 highway, the infrastructure in the region is being vastly upgraded to accommodate the expanding traffic situation. The ferries connecting Denmark to Sweden via Grenaa, Norddjurs, are being upgraded in terms of quality and number of connections, strengthening the travel opportunities to and from Norddjurs Municipality.

Demographics

Number of Central Denmark Region is 1,308,256 people. The median age is 40.8 years, and roughly 12 % of the population in 2016 were foreigners.

Cultural climate

Central Denmark Region has via Aarhus been the cultural capital of Europe in 2017, sparking a massive interest in the cultural climate with more than 10,000 events across the entire region.

The total spending on culture in Central Denmark Region was 230 m € in 2016.

Households with access to broadband (rate)

- NUTS 2, regional: 92%

Cultural climate

- share in regional/national public expenditure on culture: NUTS 2, 2016: 230 m €

Quality of life

- average housing rent incl. heating and service costs per m^2: NUTS 2: 2016: 97.5 DKK per m^2, 2015: 95.5 DKK per m^2
- share of available formal childcare places per 1,000 children: NUTS 2, 2016: 1,983 places for 1,974 children

- childcare arrangements (average number of weekly hours of formal care): NUTS 2: 50 hours per week
- number of medical doctors per 1,000 citizens: 0.63

Transport

- Number of commercial airports for passenger flights: NUTS 2: 2 (2016, 2015, 2014)

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Finland

Households with access to broadband (rate)

HMA - 2017: 76%; National level - 2017: 54%

Cultural climate

share in regional/national public expenditure on culture: 458,856,000 € (national, 2016)

Public safety - crime records

488,201 + traffic offences 335,288 (national, 2016)

Quality of life

average housing rent incl. heating and service costs per m^2: 15.47 (HMA, 2016); 11.18 (national)

share of available formal childcare places per 1,000 children: 1,000 full time or part time places (both HMA and national)

childcare arrangements (average number of weekly hours of formal care): 72.9% (HMA, 2016); 68% (national, 2016)

number of medical doctors per 1,000 citizens: 4.5 (HMA, 2016); 3.8 (national, 2016)

distribution of income in the population per quantile: 26.5 % of income earners belong to highest quintile (HMA, 2015); 20.0 % of income earners belong to highest quintile (national, 2015)

Transport

Number of commercial airports for passenger flights: 5

Number of direct passenger flights (to other cities): 17.2 m passengers (Helsinki-Vantaa, 2016) 250 flights / day to destinations outside Finland

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Germany [1]

[1] As Germany is a federation composed of 16 states, the situation and framework defining the game industry differ from state to state. Which is why we have split the analysis between the two major hotspots in the region of Germany that borders the Baltic Sea.

Berlin

Berlin attracts talents from the Baltic Sea area and Eastern European countries, amongst them also the keenly sought experienced talents.

Living conditions

This needs to be assessed on the backdrop of living costs: the average rent in Berlin per m² is around 10 €, with approx. 3.50 € services, tax and insurance. Though it must be added, that living space is becoming rare in Berlin which will soon lead to a significant increase in rents. 75-95% of all households have an access to broadband up to 50MBits/s.

Several “expat” online advisor sites state living costs from 800 to 1,000 € per month for one person (obviously with a low to average spending level).

Quality of life

In Germany, childcare is a strong point. On average, parents are entitled to 30-48 hours weekly formal care. This obviously depends on many factors. However, some care centres are fully booked and application waiting list are full for the next years, while others advertise “free places” - which reflects both the density of children in some areas and the different quality levels of childcare centres.

With regards to health care, Berlin has 2.3 medical doctors per 1,000 citizens. Berlin has 81 hospitals with approx. 20,000 beds.

In terms of safety, of the 520,437 crimes and offences, 0.8% were life-threatening or sexual attacks. Most are financially motivated crimes (over 60%), and roughly 10% are (physical) crimes against people.

Berlin has 2 airports with an average of 52 direct passenger flights to other cities on a daily basis. There is an international airport in construction that was to replace the two existing airports. It is said that already it will prove to be too small. Infrastructure for international movement is not a strong point of Berlin. The loss of AirBerlin has disconnected Berlin from many cities, in particular in the BSR and East European cities. Within Germany, fast trains to Frankfurt and Munich, with approx. a 4 hours’ journey to each, Berlin is easily reachable.

Within the cities, public transport covers the city well, with busses, trams, underground (U-Bahn) and regional subway (S-Bahn). Busses, however, are felt to circulate not often enough, in particular in the outskirts of Berlin, where more people need to move to. Also the regional subway and underground have been repeatedly disrupted in the past years, which hampers gentrification of areas surrounding the center.

Demographics

Number of Berlin population is 3,601,131 people. The median age is 42.7 years. 17% of the population in 2017 were foreigners. In 2016 8% of the population earned over 5,000 € gross salary, 13% below 1,300 € gross salary, 20% between 2,600 and 3,600 € gross.

Cultural climate

It is difficult to determine the cultural activities per year, as the question remains, what to include. From movies, to concerts, talks, opera, theatre, festivals etc. we have researched an amount of 571,500 events in 2017.

The total revenue per cultural sector is 15.6 bn €. And the share of the total public expenditure on culture (without monument protection, religious group support, memorials, and national archive) constituted in 2017 with 484 m € 11% of the overall budget of the state of Berlin.

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Hamburg

Living conditions

In Hamburg, almost every household has access to broadband internet. With 98.1% nearly every area of Hamburg is covered by fast internet. An attractive culture climate is a key factor to convince people of Hamburg's qualities. Therefore, it is no surprise that a share of 2.99% of the regional public expenditures are spent for culture.

Quality of life

As many other major cities across Germany and Europe, Hamburg faces high rental costs belonging to the highest in Germany. The current average housing rent, which includes also heating and service costs, reaches 12.71 € per m². In the last year the density of doctors climbed to a climax of 2.61 doctors per 1,000 inhabitants. Due to its rising population that is also getting younger, childcare has a higher importance the number of kindergarden increased to more than 1,060 in 2017 (Statistik Nord 2018).

Taking a look on the crime statistics, 224,947 crimes were committed in 2017. From this decreasing number just 3.5% were violent crimes. In addition, out of this 3.5% just 3.2% were life-threatening or sexual-attack crimes (Kriminalitätslage Hamburg 2017).

Demographics

At the end of 2016, in total 1,810,438 people lived in Hamburg. The average age in the same year was 42.1. Foreign population contributes with a share of 15.6% to the total population (Statistik Nord 2018).

Transport

The Hamburg Fuhlsbüttel Airport is the only international airport of the city. With nearly 160,000 arrivals and departures customers can travel to 130 destinations, of course also in the Baltic Sea Region. Including one stop, more than 1,000 destinations can be easily reached from Hamburg (Hamburg Airport 2018).

In addition to these airport destinations, direct connections from the Hamburg Central Station to several cities in the Baltic Sea Region are available like for example Aarhus or Copenhagen.

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The Baltic States - Estonia

Tartu is a true student town and home to Estonia's oldest university. Its academic atmosphere and high concentration of bright minds makes it a center for innovation and entrepreneurship. With safe and tolerant environment, the city takes pride in its urban greenery, easy transit and excellent healthcare, all contributing to a high quality of life at a reasonable cost.

Living conditions

The cost of life in Estonia is relatively low, especially when compared with neighbouring Finland and Sweden. Rent for a 45m^2 apartment are approximately 400 €. The utilities for that apartment (electricity, heating, water, garbage) are around 100-120 € per month.

More information can be found at https://www.expatistan.com/cost-of-living/tartu and https://teleport.org/cities/tartu/

Quality of life

Pre-school education in Estonia is for children aged between 18 months and 7 years, through a variety of local authorities and private establishments. If you choose, your child can stay at home until compulsory education begins at age 7. There are two types of kindergartens in Estonia – municipal

(93%) and private (7%). In municipal kindergartens, you'll pay a small tuition fee and the cost of meals. In private kindergartens, the fee is much higher and additional admission conditions can apply.

As a parent, you are free to choose a suitable kindergarten for your child. In most kindergartens, Estonian is the language of instruction, but there are also Russian kindergartens where Estonian is taught. In addition, there are three international kindergartens and pre-schools in Tallinn and one in Tartu, all of them privately owned. On average, parents are entitled to 35 hours weekly formal care.

With regards to health care, Tartu or Estonia in general has 2.31 medical doctors per 1,000 citizens.

In terms of safety, of the 5920 crimes and offences, 0.8% were life-threatening or sexual attacks. Most are financially motivated crimes (over 60%), and roughly 10% are (physical) crimes against people.

According to Statistics Estonia, in 2017, the average monthly gross income per employee was 1,155 €. The gross income increased 7.6% compared to 2016; growth was the fastest (8.6%) in the age group of young people (aged under 25).

Estonia has 2 airports in Tallinn and Tartu with an average of 25 direct passenger flights to other cities on a daily basis.

Trains in Estonia are run by Elron (domestic services) and GoRail (services to destinations in Russia). The tickets can be bought online, at relevant train stations or through an agent. Tickets can also often be bought on the train (sometimes only with bank cards). Train within Tallinn is free to Tallinn residents. An express train from Tallinn to Tartu takes just over two hours and costs around 10 euros. Brand new Swiss-built trains with free Wi-Fi make your travel a pleasant one.

In Estonia, each municipal area has their own bus service. There is no standard or regulated meter rate in Estonia for taxis. You need to order a taxi or choose one from a rank, rather than hail it from the street. You can choose any available taxi from the rank, and don't have to pick the first one from the line. You can also use an app like Taxify to find taxis in the vicinity.

Demographics

Estonia has an estimated population of 1.31 million in 2018, down slightly from the 2011 census figure of 1.29 million. Estonia is very sparsely populated with 29 people per square kilometer (75/square mile), which ranks 181st in the world.

Tallinn is the largest city and capital with almost 395,000 people. The next largest city is Tartu with 97,000 people.

Estonians are Finnic people who speak Estonian, which is closely related to Finnish. The ethnic breakdown is currently 69% Estonian, 25% Russian, 2% Ukranian, 1% Belarusians, 0.8% Finns and 1.6% other. Estonia's population growth is stagnant and expected to continue a decline. Its population today is about 1.28 million, which is expected to drop to 1.1 million by 2030 and 860,000 by 2060. Estonia was recently ranked as the 23rd fastest-shrinking country in the world with a 2050 population forecast at 1.22 million, a decline of more than 8%.

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The Baltic States - Latvia

Households with access to broadband (rate)

National level - 2016: 75.08%, 2015: 74.38%, 2014: 73.09%

Cultural climate

share in regional/national public expenditure on culture: 1.6% of GDP (national, 2015)

Public safety - crime records 49,329 (national, 2014)

Quality of life

number of medical doctors per 1,000 citizens: 3.2 (national, 2015); 3.22 (national, 2014)

Transport

Number of commercial airports for passenger flights: 3 (national, 2017)

Number of direct passenger flights (to other cities): 3.5 m (national, 2016, 3.2 m (national, 2015), 3 m (national, 2014) here, flights are asked, not passengers

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The Baltic States - Lithuania

Lithuania could be divided into two regions - Vilnius city area and the rest Lithuania, as the gross domestic product (GDP) created in Vilnius County last year, accounted for more than 40 percent of all Lithuania's GDP. Vilnius area has the biggest concentration of education institutions, as a consequence there is a vast majority of high-skilled and well payed workforce. However, Kaunas and Klaipeda also manage to attract young and motivated students and workforce into main universities and business companies. The living conditions in these cities are above the average.

Living conditions

The average rent in Berlin per m² is around 6-9 €, depends on the city, the most expensive rent is in Vilnius, also the prices are quite high in Kaunas and Klaipeda. It must be mentioned, that Lithuania right now is facing a big urbanization trend, when many young adults are going to bigger cities especially to Vilnius. As a consequence, the price of rent is getting higher, but there are a lot of new construction projects of economic class flats, therefore the prices might stabilize in the future. 71% of all households have an access to broadband up to 1GBits/s.

Cultural climate

The share of the total public expenditure on culture constituted in 2016 is 4% of the overall budget of the Lithuania. The share of total revenue from the cultural sector is 0.06%. We have researched an amount of 51,737 events in 2016.

Public safety - crime records

(national, 2016)

Quality of life, safety and transportation

Parents are entitled to 60 hours weekly formal care. However, there is a lack of public care centers in capital city, as most of them are fully booked and application waiting list are full for the next years. In Vilnius the density of children is growing, because a lot of young families are coming there for a living. But the municipality is not able to establish so many new public care centers, therefore parents should search for alternatives – private care centers or hire a nanny. The average share of available formal childcare places per 1000 children is 13.8.

With regards to health care, Berlin has 2.87 medical doctors per 1,000 citizens. Lithuania has 149 hospitals.

In terms of safety, of the 55,184 crimes and offences in 2016, there were 1923 criminal offenses per 100,000 inhabitants. 2% were life-threatening or sexual attacks. The significant part of crimes were thefts (39%), and about 15% of crimes were physical crimes against people.

Lithuania has 3 airports with an average of 57 direct passenger flights to other cities on a daily basis. The vast majority of those flights are from Vilnius, and from there within 3 hours journey passengers could reach every city in Lithuania. However, there is a problem with air transportation, that a lot of direct flights to important European cities like Paris, London or Amsterdam are operated by cheap airlines. People who have a lot of business trip during a year, are not very willing to fly with these airlines as they hope to have a quick and comfortable trip.

Within the cities, public transport covers the city well, with busses and trolleys. As the main Lithuanian cities are quite small only a small minority of population in cities (9.1%) have a difficulty in accessing the public transport. Also, in Lithuanian the taxi services are one of the cheapest in whole Europe while the quality is quite the same as in other countries, in Vilnius, Kaunas and Klaipeda operates well known riding companies like Uber or Taxify.

Demographics

Number of Lithuania population is 2,872,100 people. The median age is 43.7 years. In 2016 22% of the population earned less than 450€ gross salary, 75% of the population earn up to 943 € gross salary, just 6% of the population had more than 1,600 € gross salary.

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Poland

Living conditions

On a regional level, 76.1% of the households have access to broadband. On the national level the rate was 80.1% in 2016 and shows an increasing trend in comparison with the previous year (77.9%).

The distribution of income in the population per quantile was 4,9 in 2014, 4,9 in 2015 and 4,8 in 2016, nationwide.

Cultural climate

Krakow is considered to be one of the pearls of Polish culture and national heritage. It used to be the capital of Poland and the home of kings. To this day the city has a rich cultural offer varying from cinemas, theatres, through philharmonic and opera to stand-up and street art. It is difficult to count the exact number of cultural activities per year. Nationwide there are about 6,500 mass events (gathering more than 300 people at the same venue at the same time), region-wide: 614.

The share in national public expenditure on culture was 8,87 bn PLN in 2016 (0,48% of the countries' GDP) – the number has increased in relation to 2015, yet the share has not (8,56 bn PLN, 0.48% of GDP). On a regional level the public expenditure on culture was 556,98 mln PLN in 2015.

Public safety

The crime detectability rate on a regional level was 67.1%, while the number of crimes was 69,300 – nationwide.

Quality of life

First and foremost, one must highlight that the cost of living in Poland varies depending on exact location. A house or flat in Krakow will be significantly more expensive than in smaller cities and towns of the Małopolska region. The average housing rent including heating and service costs per square meter on a regional level is 1,877 PLN (renting flat in Krakow, 38-60 m²) + 620 PLN (utilities) + 45 PLN (Internet), monthly.

There are many childcare places – kindergartens or nurseries. On the regional level the share of available formal childcare places per 1,000 children in 2016 was 0.99 for children aged 3-5 and 3.15 for infants.

When it comes to health care, nationwide 2.3 medical doctors take care of 1,000 citizens.

Transport

In Poland there are 15 commercial airports. One of the liveliest ones is the airport in Krakow-Balice. In 2017 it handled 529,473 passengers and 4,205 flights. On a national level, all commercial airports in 2016 have handled 4,983,645 passengers and 41,902 flights. In both cases the numbers are growing, as traveling by plane becomes more popular and cheaper.

The entirety of Poland is connected by a net of roads and highways, as well as railroads. Both old-fashioned and modern trains are in use. It takes about 5 hours to travel from Krakow to Gdansk (seaside town) by a high-speed railway. All major cities have both buses and trams to move around.

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Sweden

Households with access to broadband (rate)

National: 100%

Cultural climate

share of total revenue from the cultural sector: 3.08% (national, 2015)

Transport

Number of commercial airports for passenger flights: 2 (regional)

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THE PROJECT

The project 'Baltic Game Industry' (BGI) aims to foster the game industry in the Baltic Sea region - turning an ambitious game developer scene into a competitive and attractive business sector with sound innovation potential and thus making the region a game hotspot with worldwide competitiveness.

The partnership works together on framework condition improvements, on making business support services fit for the special needs of game start-ups and finally on new business opportunities for game developers in other industry sectors, such as health care. The core element is the installation of durable game incubators, programmes and schemes for game start-ups across the region.

BGI effectively combines policy and business development. Tailor-made game business support fosters a durable economic growth of this innovative industry in the whole region. The introduction of VR technologies in non-game industries contributes to boosting innovation beyond games. The common branding of the Baltic Sea region as game innovation hotspot will attract international clients, investors, creative entrepreneurs and qualified workforce.

Read more at www.baltic-games.eu

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The project "Baltic Game Industry" has been funded with support from the European Regional Development Fund. This publication reflects the views only of the author, and the ERDF cannot be held responsible for any use which may be made of the information contained therein.