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Action Plan to Strengthen Tartu's Games Industry

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Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

This “Action Plan to Strengthen Tartu’s Games Industry” is part of the Baltic Game Industry Project, aimed at strengthening the regional games industry and fostering a balanced and sustainable ecosystem.

This action plan is the result of the innovation dialogues that we carried out throughout 2018 which are documented here and where you can also find an English summary of the action plan.

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Berlin, March 2019

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1.1. GENERAL OVERVIEW OF THE GAMING SECTOR IN ESTONIA

Gaming Sector on State level

In Estonia, the gaming industry is part of the 'creative industries sector' and is therefore curated by Ministry of Culture. Overview of the sector is compiled every 4 years. The last thorough report of the creative industries in Estonia was conducted by Estonian Institute of Economic Research (EKI) in 2018 and it analyses the data from years 2011-2015. The quantitative summary of the companies and their financial results are in the table below. Please note that 'gaming sector' is under the title 'interactive leisure software'. For the consistency purposes, we continue using 'gaming sector' in this document.

Table 1. Economic indicators of the Estonian Creative Industries in 2015[1]

Economic Indicators of the Estonian Creative Industries 2015

Sub-sector	The number of enterprises and institutions	The number of employees	Total income (million euros)	Exports (million euros)
ARCHITECTURE	1 403	3 430	152	14
Audio-visual: FILM and VIDEO	635	1 196	76	11
Audio-visual: BROADCASTING	86	1 776	161	1
DESIGN	677	1 060	42	15
PERFORMING ARTS	419	3 004	69	1
PUBLISHING	769	5 000	324	92
Cultural Heritage: CRAFTS	320	1 045	14	2
Cultural Heritage: MUSEUMS	256	1 733	89	-
Cultural Heritage: LIBRARIES	946	2 670	42	-
ARTS	210	1 215	12	0,3
INTERACTIVE LEISURE SOFTWARE	48	989	100	97
MUSIC	2 169	4 940	141	9
ADVERTISING	1 160	2 623	259	50
TOTAL	**9 098**	**30 681**	**1 481**	**293**
The proportion of the whole economy (%)	11,6	4,8	2,8	5,6*

* the proportion of the exports of services

It is important to notice in the table above that while the number of enterprises and institutions as well as the number of employees in the gaming industry is the lowest by a landslide, the sector boasts the highest number of exports with 97 million euros. In fact, 97% of the turnover of the gaming sector is export, making it arguably the most potent part of the creative industries to develop the sector and increase its exporting capabilities.

[1] Source: https://www.kul.ee/sites/kulminn/files/luhikokkuvote-summary.pdf

Gaming sector companies and related parties and their role in Estonia

Table 2. Gaming sector companies and related parties

Institutions	Description
Gaming companies	According to International Game Developers Association (IGDA) Estonia[2] there are currently more than 80 gaming Industry companies in Estonia. 31 of them have 5 or more employees.
Industry associations	**IGDA Estonia** - operates mainly in Tallinn, organising industry meetups once per month, organising Game Dev Days conference and publishing digital magazine "Estonian GameDev". Game Dev Days conference has been growing each year and is now truly international with almost 200 foreign participants participating in 2018. **APT Game Generator** is an NGO that operates in Tartu, organising meetups, game jams and workshops for game developers.
Investors	Most of the active investors in video games industry in Estonia are industry insiders (for example with Creative Mobile, Hypester, GameFounders background). Although there is a very active business angel scene in Estonia, many of the angels do not consider investing in games for the lack of overall knowledge of the sector.
Incubators, accelerators	**GameFounders**[3] was the first startup accelerator in Europe that focused solely on games. GameFounders operated active batches in Tallinn between 2012 - 2014 (and later in Kuala Lumpur, Malaysia) and most of the game studios that participated are still active and running. **Digix**[4] is a start-up incubator for creative companies (incl. games) in Tallinn and Narva. In addition to the office space Digix offers mentors, trainings, seminars and field trips.
Educational institutions	**Estonian Entrepreneurship University of Applied Sciences** (Mainor) - has a masters curriculum on Game Design and Development[5].

[2] http://www.igdaestonia.org/industry-database/
[3] http://www.gamefounders.com/
[4] http://digix.eu/
[5] https://www.euas.eu/study%20programs/program/game_design_and_development

	Tallinn University has a masters curriculum of Digital Learning Games[6]. While there is no specific games related curriculum in **University of Tartu**, there is a module "Conputer Game Development and Design" that consists of several courses aimed to teach different aspects of games development[7]. Estonian Business School has a module "Game Management"[8] that has the objective of giving an overview of the nature of game design in theory and practice.

Support schemas available to game industry

Table 3. Support schemas in Estonia available to game industry

Support schema	Financier	Description
Start-up grant[9] (Starditoetus)	Ministry of Economic Affairs and Communication (via Enterprise Estonia)	The start-up grant aims to support the creation of enterprises that have a lot of development potential, and thereby expand regional entrepreneurship and number of exporters. Main terms: - maximum grant size €15'000; - maximum grant % of the total costs of the project is 80% (i.e. own contribution at least 20%); - supported activities: aquisition of fixed material assets, marketing, acquisition or development of application software, personnel costs; - the company has to be less than 24 months old.
Export grant for creative industries[10] (Loomemajanduse	Ministry of Culture (via Enterprise	Export grant for creative industries in order to provide support to enterprises who are just getting started in export or want to invigorate their exporting activities.

[6] https://www.tlu.ee/en/dlg
[7] https://cgvr.cs.ut.ee/wp/index.php/courses/
[8] https://ebs.ee/en/game-management
[9] https://www.eas.ee/teenus/starditoetus-eng-2/?lang=en
[10] https://www.eas.ee/teenus/loomemajanduse-eksporditoetus-eng/?lang=en

eksporditoetus)	Estonia)	Main terms: - The SME applying for the grant must have a yearly turnover of creative activities at least €50'000; - maximum grant €50'000; - maximum grant percentage 70% (i.e. own contribution at least 30%); - Grants will be given to projects in which entrepreneurs who are active in creative industries increase their export capacity by: • exchanging information and contacts, • conducting seminars, courses and study trips for entrepreneurs, • organising networking events, development programmes, counselling and mentoring, • developing new products and services, • supporting the placement of new products and services on the market, participating at fairs, • conducting research that is necessary to enter new markets.
Innovation Voucher[11] (Innovatsiooniosak)	Ministry of Economic Affairs and Communication (via Enterprise Estonia)	The innovation voucher enables a small and medium-sized entrepreneur (SME) who is cooperating with a higher education institute, test laboratory, or intellectual property experts, to develop innovative solutions for development obstacles, carry out tests with new materials, gather knowledge on technologies, conduct studies in intellectual property databases etc. Main terms: - maximum grant size €4'000; - maximum grant % of the total costs of the project is 80% (i.e. own contribution at least 20%); - supported activities: development and implementation of technological solutions, consulting regarding product or service

[11] https://www.eas.ee/teenus/innovation-voucher/?lang=en

		development, production or technology,

1.2. SUMMARY OF THE CONCLUSIONS OF THE CONDUCTED INTERVIEWS

The summary and conclusions of the conducted interviews is described in Table 4 below.

Table 4. Summary of the conducted interviews

#	INTERVIEWEE	Summary / main ideas
1.	**Raul Kübarsepp**, APT Game Generator, Founder, Cybersmithy, CEO	APT Game Generator[12] is a NGO that is dedicated to nurturing video game creation in Tartu Region by organizing game jams and providing aspiring game studios with digital and physical environment for realizing their goals. All of its members are volunteers, no one is paid for their work in APTGG. APTGG organizes 3-4 game jams each year, workshops and meetups each month. * They have good partners (Tartu Art College, University of Tartu's Institute of Computer Science) that enable to use rooms for Ludum Dare's. All the workers are volunteers, so the main cost of the jams is food. * The costs (mainly food) has to be covered by sponsors. Unfortunately the sponsor money in Tartu is scarce and therefore APTGG has to limit the number of participants in each jam. The limit has been 60, but will be decreased to 40 now. (bigger event's budgets are around €3500, smaller around €2000).
2.	**Kadri Ugand**, GameFounders, Co-Founder	GameFounders was the first accelerator in Europe for game industry startups. It ran active batches in Tallinn in years 2012-2014 and in Kuala Lumpur Malaysia after that. The main points from Kadri were: * Accelerators for game startups (GameFounders, Yetizen, Execution Labs, Vision+) are mostly closed/finished/reoriented. The main reason being that since gaming studios are different in nature they are usually hard to exit and therefore do not represent a clear way out for the investors * These days there are many gaming incubators facilitated/supported on state/city/university level -

[12] https://aptgg.ee/

		Metropolitan, Oulu Games Lab, Birmingham etc. * In Estonia games are not state level priority at the moment. That is a huge loss of potential since the 'interactive leisure software' has the largest export quantity of all the creative industries.
3.	**PhD Martin Sillaots**, Tallinn University, Professor of Serious Gaming	Digital Learning Games (DLG) is a two-year international Master's programme in the School of Digital Technologies at Tallinn University. Martin is associate professor of serious games there. Main points from Martin were: * In Estonia one can still meet negative attitude towards games. There are still people who see games only as a "waste of time" without realising the learning/teaching power (both formal and informal) the games might have * On state level, games are not a priority, probably because the lack of knowledge/understanding of the industry's potential * State should consider funding at least the serious games' education. STEM (science, technology, engineering, mathematics) based curriculums are incresingly important in the world and Estonia should 'step on the wagon' in realising the games' part in STEM education.
4.	**Edvin Aedma**, Co-Founder and CEO of Interactive Fate, Producer and bizdev in several gaming studios	Edvin is probably the most experienced (in terms of # of games) producer and bizdev in Estonia for PC games to be published on Steam. Edvin's main points about Estonian games industry's developments and potential: * The main roadblock for most studios is the lack of funding that would help to cover for most basic needs (i.e. food) of the team mebers. While many of the young developers live with their parents and have all the motivation in the world, the lack of basic funding does not let them quit their daily jobs to start developing their own games. * There is also a problem of a lack of physical co-working space - if motivated young people work in the same premises, good things could start to happen. * There should be a funding schema to help aspiring game industry entrepreneurs to visit international conferences/exhibitions. This would help them to learn

		from the best and create vital contacts. * On state level, a great way to help gaming industry would be to have computer game development clubs in high-schools. This would also help to lure young people into IT, therefore should be win-win with state's priorities.
5.	**Marianna Krjakvina**, IGDA Estonia manager	IGDA Estonia is the local chapter of International Games Developer's Association. IGDA Estonia operates in Tallinn and it's main activities are: - Organising Game Dev Days conference (https://gamedev.ee/). Game Dev Days is the largest video games developers conference in the Baltics. Last year there were 650 visitors (more than 180 coming from other countries). - Organising monthly gatherings for the local community of game developers. - Publishing "Estonian GameDev" magazine. - Organising occasional other events such as workshops and visits to international game conferences (GDC Europe, Gamescom/Devcom, White Nights Game Conference etc). IGDA Estonia currently employs 1,5 persons and is being funded by Enterprise Estonia. However, the funding runs out in August 2019 and it is unclear how IGDA Estonia can continue running. Current budget for the organisation is around €150k/y, the "minimum" program that includes continuing monthly events, Game Dev Days and the magazine would amount to around half that sum (€50k/year).
6.	**Vladimir Funtikov**, Creative Mobile co-founder and CEO.	Creative Mobile (CM) is the most successful video games company in Estonia. In 2018 the company made €8,5m of revenue with their games. The company employs around 90 employees in Tallinn and 40 in St. Petersburg, Russia. Even though CM is growing quickly, there are some obvious hindrances, most important of being the lack of highly skilled specialists in Estonia. This is also the main reason why the size of the Estonian office has been relatively stable and new people have been employed in Russia. The main shortage is of the following workforce: - User Acquisition (UA) specialists. CM spent approx. €2,5m (around 30% of the revenue) on UA in 2018 and

		plans to spend at least 3 times (at least €7,5m) more this year to facilitate growth in the following years. Obviously it is essential to have highly skilled specialists to spend that amount of money. As of now, it is impossible to find UA specialists in Estonia and there are no schools teaching the basics of UA. - Programmers. CM uses Unity engine to develop their games and in the near future they plan to start also developing in Unreal engine for the new upcoming platform. While these days the Unity-community in Estonia is starting to grow, it is still difficult to fill the positions in Estonia. The situation is even worse with Unreal engine developers - there are almost none in Estonia. This is the sole reason why CM does not have Unreal engine team yet and why the team will probably created outside Estonia. - Analysts/Data Scientists. While there are skilled analysts in the market, it takes time to onboard them and make them acquainted with the logic of games, retentions, user segmention, LTV's etc.
7.	**Anu-Maaja Pallok**, Estonian Ministry of Culture, Adviser for Creative Industries.	As mentioned before, 'interactive leisure software' (i.e. games) have been classified under 'creative industries' and is in the administrative field of Ministry of Culture. * Ministry of Culture has divided Creative Industries in the subcategories and has set the following target indicators (KPI-s): number of exporting companies, the total amount of export, the additional value of the companies, revenue per employee. * While games fit the above KPI's perectly, the emphasis is on 'fine arts' and the ministry sees games as a 'nice to have' but in no terms a priority * So far the Ministry of Culture has supported IGDA Estonia (and through that, the gaming industry) through European structural funds. However, the current project finishes in August 2019 and since the measure is out of money there will be a gap of a few years before IGDA can apply to the same fund again. * Getting a direct support from the State's (Ministry's) budget would be a hard sell for games industry as this is not a priority. However, this could and perhaps should be tried by providing a very clear plan with targeted measurable results that would the very least show how much export euros would an euro of support bring in.

		* Anu-Maaja also admitted that in the ministry, games have a 'pastime/light' vibe to them and the overall awareness of industry's potential should be increased
8.	**Marge Robam**, Estonian Entrepreneurship University of Applied Sciences (Mainor), Head of Curriculum for Game Design and Development	Mainor has overall around 50 game design students. * Around half of the students come from abroad, thus showing the curriculums international importance. * Mainor has good relationships with industry. Many of the lecturers come from the industry (Creative Mobile and other firms). Also, industry provides students with practise base. * Game Dev Days has been very useful for Mainor and the contacts they have made with foreign experts there have advanced the curriculum and helped to find additional lecturers.
9.	**Marko Korbun**, APTGG CEO	Marko is currently the CEO of APTGG and mainly in charge of organising the events and raising funds for it. In addition to the information received from Raul, Marko brought out the following points: * There's a constant struggle to create budget to run jams. They've managed to organize smaller-sized james for around €1500 (with unpaid work and free premises) per jam. Monetary supporters have included companies, IGDA Estonia and Tartu Science Park. * There are more than 100 games prototypes created in the jams organised by APTGG. Usually the games 'die' after the jam, but there are some success stories. For example a game called Tribocalypse is even available on Steam platorform. * In the 'to-be-incubator' it would be vital to offer (iun addition to physical space) also good mentor program and workshops. * Game jams have facilitated international cooperation - many of the participants come now from Latvia. These contacts were created thanks to GameCamps project.
10.	**Heikki Tunkkari,** Key Account Director, Business Oulu	In Finland, game studios are funded both on state as well as on local level. On state level the main financier is Business Finland (previously known as Tekes). While in the beginning Tekes funding was not suitable to game studios, around 10 years ago they changed their rules so that the gaming

		startups also qualify. Business Finland has three funding schemas suitable for game studios. On local level the exact funding depends on the region and its funding policies. In Oulu region the Centre of Economic Development, Transport and the Environment[13] gives out support of up to €200'000 (45% of financing rate). In addition to those two, there's also a small €5000 funding for conceptual planning of a game available through AVEK Kopiosto[14]. Local level support organisations such as Business Oulu also organise events and run projects to help local studios. There are two main games industry organisations in Finland: IGDA Finland and Neogames. IGDA Finland is a subsidiary of the International Game Developers Association and its main focus in Finland is to organise events for the community and outsiders (students, gamers) who are interested in games and games industry. Neogames is an industry association that is focused on industry's development: if collects data about the companies, conducts strategic planning and execution and lobbies for the industry. Neogames consists of three types on members: game studios, support organisations (such as Business Oulu), educational institutions. Its membership fees run from hundreds of euros to thousands of euros, depending on the organisation type and size.
11.	**Anton Albiin,** Project Manager at the Association of Swedish Game Developers (Dataspelsbranschen)	Sweden has just one industry association - Association of Swedish Game Developers (Dataspelsbranschen). The association handles the developer relations, education, HR, Incubation, Acceleration and collects and systemises data for the industry. It also organises events such as Nordic Parties at GDC and Gamescom. Dataspelsbranschen is privately funded by its members. There have been several reasons behind success of Sweden in the last decade. Perhaps the most important of them being excellent educational system - there are many universities and other educational instututions

[13] http://www.ely-keskus.fi/en/web/ely-en/
[14] https://www.kopiosto.fi/en/AVEK/funding/avek-grants/

		offering degrees important for game development. While the industry itself has seen a lot of development (creation of new platforms such as iOs and Android and widening of player profiles such as women and elderly people), the educated specialists have been available to build on these developments and create the success stories we know Sweden today for. The public opinion of games has also gotten much better in the last couple of decades. While 20 years ago most of the games were about 'shooting and killing', these days most of the games kids play foster social skills, creative thinking and analysis skills. While there are no national-level support schemas available for gaming industry, there are various support schemas on municipal level. On (inter)national level there used to be Nordic Game program (run by Nordic Council of Ministers), but this program is finished by now.

1.3. SWOT AND TOWS

Table 5. SWOT matrix

STRENGHTS	**WEAKNESSES**
S1. Supporting organisations in Tallinn (IGDA Estonia) and Tartu (APT Game Generator) with motivated and competent people S2. Top-level universities and vocational schools. S3. Several successful gaming companies S4. Established brand in Game Dev Days Conference. S5. Many people in the community have wide international cooperating network S6. Strong startup mentality in Estonia.	W1. Lack of strategy/action plan for communication and lobby outside the game developers community W2. Low knowledge of gaming sector in the VC/business angel community. W3. Lack of support measures (elementary financing, co-working space) for gaming startups. W4. Lack of skilled specialists in some technical areas (UA, Unity/Unreal development etc).
OPPORTUNITIES	**THREATS**
O1. Building a “bridge program” for winners of the hackathons/ludum dare’s	T1. Still existing negative bias towards games and gaming in Estonia

O2. Establishing industry lobby group and creating strategy for outside communication O3. Raising money from European funds, investors, public sources. O4. Building stronger links to the neighboring gaming powerhouses Finland and Sweden.	T2. Lack of financing would prove fatal to support organisations (IGDA Estonia, APTGG)

Table 6. TOWS Strategies

	Strengths	**Weaknesses**
Opportunities	**S1,S2,S3,S4,S5,S6/O1 ("Incubator")**: Using all the strengths, establishing an incubator programme for young game studios **S1/O2 ("Communication & Strategy")**: With the help of the support organisations develop a strategy and establish a communications strategy to stengthen industry's positions in the society and helps to raise awareness of games' positive influence on people. **S1,S6/O3 ("Fundraising assistance")**: Helping studios in fundraising. **S1, S2, S3, S4, S5 / O4 ("Communication: International cooperation facilitation")**: Using all the strengths to facilitate closer relations to the successful Nordic countries in order to help the members of our community to learn and benefit.	**O2/W1, W2 ("Communication and Strategy")**: Establishing strategy and communication plan to mitigate the weaknesses. **O1,O3,O4/W3 ("Incubator")**: A well-run games incubator would help eliminate the weakness. **O2,O4/W4 ("Education")**: One of the goals of the communication would have to be raising overall awareness of the gaming industry. This would also include working with educational institutions to add relevant topics into their curriculums.
Threats	**S1,S3,S4,S6/T1 ("Communication)**: Conducting outside communication to raise people's awareness of games as viable business and educational	All the above strategies need to be executed to eliminate weaknesses and mitigate threats. The main activities to conduct

	tool **S1,S3,S5,S6/T2 ("Communication/Incubator"):** By utilizing the strengths, developing and exercising the strategy, building the means for support organisations to continue their existance.	are: - creating (and later executing) the strategy to continue the development of the gaming industry in Estonia and Tartu Region - establishing and executing the communication plan to achieve desired results in eliminating weaknesses and mitigating threats - establishing an incubator for gaming studios, creating a mentoring program and helping the studios to raise necessary financing

1.4. FUTURE OUTLOOK OF THE GAMING SECTOR

While the future developments of the gaming sector are in no way guaranteed, there are many signs that give reasons to have positive outlook:

- As of beginning of 2019 there are several successful gaming studios with millions of euros of revenues and healthy profits. While Estonian numbers fall way short of those of most successful Nordic countries (see table in 2. Gaming industry models in top performing countries), the fact that the industry has emerged in spite of not having virtually no state support whatsoever, is remarkable. This emergence of successful companies such as Creative Mobile, Fox3D Entertainment, MobiGrow, Hypester, Snowcat Games and others shows that even if there are still some negative preconceptions towards games, there is also a lot of intrinsic professional interest in the subject.
- There is also a noticeable interest in games and games development. While conducting interviews for this report, most interviewees mentioned different publicly unknown studios that have just been created (or are in creation) that have a lot of potential in them.
- Both the locally founded companies as well as subsidiaries of successful foreign companies (such as Derivco and Playtech) employ and train hundreds of specialists in various aspects of game design, development and publishing. According to the interview with the Vladimir Funtikov, the CEO of Creative Mobile, they alone are looking to hire X specialists (xxxx) in 2019. All of these people will get the best training in the various aspects of the games development.

This base of skilled professionals creates basis for future success and creation of new and successful game industry businesses.

This success, while likely, does not come for granted. State's role in facilitating these developments will be very crucial. Yet taking the current situation and learning from the experiences of Finland and Sweden (described below), it would not be difficult to understand that with well thought and executed financing it would be only matter of time while these investments by the state would reap returns in tens of times on the money invested (as calculated by increased tax revenues, increased value added by the companies etc).

2. Gaming industry models in top performing countries

Spearheaded by Sweden and Finland, the Nordic has developed into one of the world's foremost game making regions. The revenues of the gaming companies in Nordic region are as follows:

Table 7. Game Industry revenues in Nordic countries.

Country	Revenues
Finland (2017)	EUR 2.38 billion
Norway (2016)	EUR 39 million
Denmark (2017)	EUR 123 million
Iceland	EUR 65 million
Sweden (2017)	EUR 1.53 billion

Source: Dataspelsbranschen.

Since the two successful outliers are Finland and Sweden, we bring out a short description of the industries in these two countries below.

2.1. FINLAND

Finland is one of the most successful countries in the world in terms of games industry. The most successful companies include Supercell, Rovio, Remedy Entertainment, Sulake, RedLynx, Frozenbyte and Housemarque. The most important games developed in Finland include Max Payne, Rally Trophy, Stardust and Angry Birds. Every year several new gaming studios pop-up in different regions of the country.

According to Invest in Finland[15]:

The Finnish gaming industry has grown faster than the global gaming market with a compound average growth rate of 45% during 2004–2015. Industry revenues have been the world's highest in relation to population. Globally, mobile games generated turnover of around 35 billion euros in 2016. The share of Finnish mobile game development was roughly 7% of the revenue generated.

In 2016, the Finnish gaming industry set a record-high turnover of 2.5 billion euros. The annual turnover growth rate was 4% from 2015 to 2016. The number of people employed in the gaming industry has been growing steadily and companies have positive expectations. About 20% of people employed in the gaming industry in Finland are foreigners.

[15] https://www.investinfinland.fi/gaming

Key factors behind the growth in Finland include a vibrant and robust gaming community, a globally connected hub of game developers that has arisen in the country, and the technologically creative brains behind it. New gaming technologies and platforms increase the rate of growth. Over 20 universities offer gaming educational programs attracting students from countries such as Germany, Japan, and Russia.

The annual turnover of the gaming industry in Finland reached €2,5 billion in 2016[16]:

Source: Neogames

This growth has been achieved through strong government support of the industry as well as private sector investments. Business Finland (formerly Tekes) has run support schemas for game industry for years. These support schemas have been developed thoroughly to assist the game industry startup in every stage of its growth cycle. In addition to Business Finland, there are local support schemas for local companies (including games industry).

Table 8. Public financing schemas in Finland

Financier	Description
Business Finland	Three phases[17]:

[16] https://www.neogames.fi/fgir2016/

	1) "Tempo" - grant up to €50'000 2) "R&D" - unsecured loan €100'000+ 3) "Young Innovative Company" - grant+loan total €1'250'000
Local institutions	On local level the exact funding depends on the region and its funding policies. In Oulu region the Centre of Economic Development, Transport and the Environment[18] gives out support of up to €200'000 (45% of financing rate).
Kopiosto AVEK	Just €5'000 for concept development.

There are two industry associations that facilitate the cooperation and development of the gaming sector in Finland: IGDA Finland and Neogames.

Table 9. Industry associations in Finland

IGDA Finland	Neogames
IGDA Finland is a subsidiary of the International Game Developers Association and its main focus in Finland is to organise events for the community and outsiders (students, gamers) who are interested in games and games industry.	Neogames is an industry association that is focused on industry's development: if collects data about the companies, conducts strategic planning and execution and lobbies for the industry. Neogames consists of three types on members: game studios, support organisations (such as Business Oulu), educational institutions. Its membership fees run from hundreds of euros to thousands of euros, depending on the organisation type and size.

2.2. SWEDEN

Sweden is another powerhouse in the video games market. As in Finland, Sweden has experienced explosive growth in the creation and expansion of the companies in current decade. According to Dataspelsbranschen's report[19], around ten companies have been around since the 90's and over half of all the companies in the industry were established in the last five years.

[17] https://www.businessfinland.fi/en/for-finnish-customers/services/build-your-network/creative-industries-and-new-value-creation/game-business-funding/#gameindustry

[18] http://www.ely-keskus.fi/en/web/ely-en/

[19] https://static1.squarespace.com/static/5a61edb7a803bb7a65252b2d/t/5bc097ec104c7bc0b225a67d/1539348506035/GDI_2018_ENG.pdf

The key figures of the gaming industry in Sweden according to Dataspelsbranschen are:

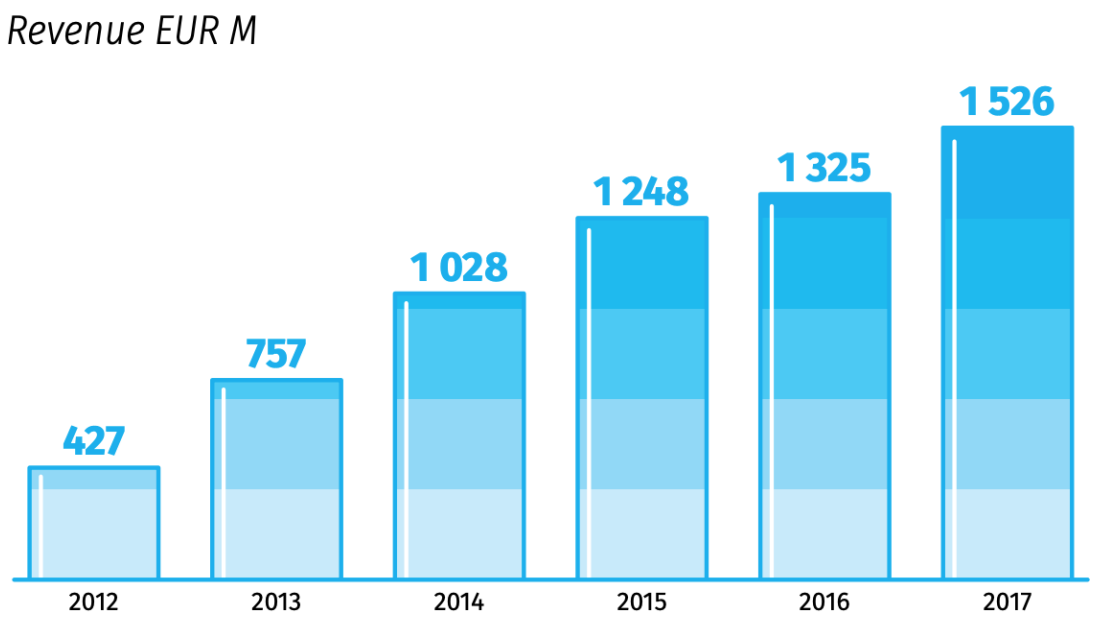
Table 10. Key figures of Game Industry in Sweden.

Key Figures	2017	2016	2015	2014	2013	2012
No. of Companies	343 (+22%)	282 (+19%)	236 (+11%)	213 (+25%)	170 (+17%)	145 (+24%)
Revenue M EUR	1526 (+15%)	1325 (+6%)	1248 (+21%)	1028 (+36%)	757 (+77%)	427 (+66%)
Profit M EUR	445 (-49%)	872 (+65%)	525 (+43%)	369 (+29%)	287 (+639%)	39 (+174%)
Employees	5338 (+24%)	4291 (+16%)	3709 (+19%)	3117 (+23%)	2534 (+29%)	1967 (+30%)
Men	4297 (80%)	3491 (81%)	3060 (82%)	2601 (83%)	2128 (84%)	1674 (85%)
Women	1041 (20%)	800 (19%)	651 (18%)	516 (17%)	405 (16%)	293 (15%)

Source: Dataspelsbranschen

It can be seen from the table above that the revenues of the gaming companies have more than tripled between 2012 and 2017 and the profits have gone up 11 times during the same period of time. The current (2017) profitability of the sector is healthy 29% while a year before it was staggering 66%.

The revenue growth between 2012-2017 visualised:



Source: Dataspelsbranschen

The largest gaming studios in Sweden in terms of revenue are Mojang (creator of Minecraft), King (Candy Crush Saga), EA Digital Illusions CE, G5 Entertainment and Paradox Interactive. The largest employers are EA Digital Illusions CE, followed by King and Ubisoft Massive.

Swedes account much of their success to regional support and engagement in developing game industry. The largest gaming industry event in Europe, Nordic Game, has been organized for 15 years already. In addition to this flagship event, there are many initiatives in the regions that have helped to facilitate the development of the industry. While there are no public funding schemas as in Finland, these regional clusters are important in developing the industry.

Table 11. Game Industry clusters in Sweden

Region	Game Development Cluster(s)
Norrbotten	Arctic Game Lab is an initiative seeking to unite the games industry in Norrbotten county under one roof and create a cluster of successful game developers in northern Sweden. The project was launched in Skellefteå in 2014 and can now also be found in the municipalities of Boden, Piteå, Umeå and Luleå.
Eastern Sweden	East Sweden Game was inaugurated in August 2017 as a co-working space for game developers in the eastern region of Sweden and has since gathered 48 people in the building that comprises co-working spaces and an accelerator program. The initiative is led by the games industry veteran Tomas Ahlström and is situated in Ebbepark in Linköping. East Sweden Games has become a hub for game development in Östergötland with open work spaces and lectures. Linköping also hosts the annual LiU Game Conference and LiU Game Awards at the end of November.
Stockholm region	Stockholm received its first game incubator in 2017, when Sting, Stockholm Innovation and Growth, introduced Sting Game, which now has four startups in the incubator. As a complement to Sting Game, there is now a co-working space at Embassy House and regular meet-ups. Partners of Sting are: Goodbye Kansas, Resolution Games and Paradox.
Göthenburg area	The Game Incubator has run a successful incubator program for game developers in Skövde since 2004, and since 2016 it can also be found Gothenburg. The incubator has produced over 100 companies and is a strong contributing factor to the western parts of Sweden becoming fertile ground for game companies. The project Sweden Game Arena, based in Skövde,

	focuses on driving exports via game fairs and international conventions. In Skövde, the Sweden Game Conference is also held in October every year, with speakers from all over the world.
South of Sweden	In Karlshamn in the south of Sweden, Gameport has for many years run a successful incubator as part of the Blekinge Business Incubator, and in 2017 MINC ran a games business program within the framework of an incubator in Malmö. The interest group Game Habitat (formerly Game City) work together with the region and the municipality and the local games industry community, to become the leading region in Europe for game development. In September 2018, Game Habitat opened a co-working space called Game Habitat Dev Hub, hoping to make it a nerve center for the local business and invite smaller companies and individual developers into the community.
Gotland	On the island of Gotland, Science Park Gotland is pursuing the project Game Camp together with partners in the Baltic countries. Some ten companies and 240 aspiring game developers have taken part in the project, now in its last year.
Falun area	In Falun, municipal seat of the county Dalarna, the game development education Playgroundsquad has long been a motor for activities. In 2017, the region launched the project Gamification of Dalarna with the company Tension, with the aim of enabling the tourist industry and game developers to collaborate. A handful of game developers in various stages of the incubator process can also be found in the county of Dalarna and in the city of Borlänge, Science Center 2047 is investing in games to attract young people to technical professions. Outside Falun, the game accelerator program Stugan took place in the Summer of 2018.

Source: Dataspelsbranschen

Sweden has just one industry association - Association of Swedish Game Developers (Dataspelsbranschen). The association handles the developer relations, education, HR, Incubation, Acceleration and collects and systemises data for the industry. It also

organises events such as Nordic Parties at GDC and Gamescom. Dataspelsbranschen is privately funded by its members.

There have been several reasons behind success of Sweden in the last decade. Perhaps the most important of them being excellent educational system - there are many universities and other educational instututions offering degrees important for game development. While the industry itself has seen a lot of development (creation of new platforms such as iOs and Android and widening of player profiles such as women and elderly people), the educated specialists have been available to build on these developments and create the success stories we know Sweden today for.

The public opinion of games has also gotten much better in the last couple of decades. While 20 years ago most of the games were about 'shooting and killing', these days most of the games kids play foster social skills, creative thinking and analysis skills.

While there are no national-level support schemas available for gaming industry, there are various support schemas on municipal level. On (inter)national level there used to be Nordic Game program (run by Nordic Council of Ministers), but this program is finished by now.

3. Action plan for the Baltic Game Industry project

3.1. BACKGROUND

In order to compile the action plan for the Baltic Game Industry project, the analysis above was conducted. During the analysis, 11 people were interviewed, including industry insiders, people from ministry and experts from outside countries (such as Finland and Sweden). In addition to that, the relevant documentation and strategy papers were analysed and the industry development situation in Finland and Sweden mapped.

One of the outcomes of the forementioned analysis was the SWOT-matrix of the Estonian gaming industry in Table 12.

Table 12. SWOT matrix

STRENGHTS	**WEAKNESSES**
S1. Supporting organisations in Tallinn (IGDA Estonia) and Tartu (APT Game Generator) with motivated and competent people S2. Top-level universities and vocational schools. S3. Several successful gaming companies S4. Established brand in Game Dev Days Conference. S5. Many people in the community have wide international cooperating network S6. Strong startup mentality in Estonia.	W1. Lack of strategy/action plan for communication and lobby outside the game developers community W2. Low knowledge of gaming sector in the VC/business angel community. W3. Lack of support measures (elementary financing, co-working space) for gaming startups. W4. Lack of skilled specialists in some technical areas (UA, Unity/Unreal development etc).
OPPORTUNITIES	**THREATS**
O1. Building a "bridge program" for winners of the hackathons/ludum dare's O2. Establishing industry lobby group and creating strategy for outside communication O3. Raising money from European funds, investors, public sources. O4. Building stronger links to the neighboring gaming powerhouses Finland	T1. Still existing negative bias towards games and gaming in Estonia T2. Lack of financing would prove fatal to support organisations (IGDA Estonia, APTGG)

and Sweden.	

SWOT analysis above gives an understanding of the strengths and weaknesses of the current situation in the Estonian gaming industry and outlines the opportunities and threats that the industry faces. Based on this knowledge the TOWS-strategies in table 13 were defined.

Table 13. TOWS Strategies

	Strengths	**Weaknesses**
Opportunities	**S1,S2,S3,S4,S5,S6/O1 ("Incubator")**: Using all the strengths, establishing an incubator programme for young game studios **S1/O2 ("Communication & Strategy")**: With the help of the support organisations develop a strategy and establish a communications strategy to stengthen industry's positions in the society and helps to raise awareness of games' positive influence on people. **S1,S6/O3 ("Fundraising assistance")**: Helping studios in fundraising. **S1, S2, S3, S4, S5 / O4 ("Communication: International cooperation facilitation")**: Using all the strengths to facilitate closer relations to the successful Nordic countries in order to help the members of our community to learn and benefit.	**O2/W1, W2 ("Communication and Strategy")**: Establishing strategy and communication plan to mitigate the weaknesses. **O1,O3,O4/W3 ("Incubator")**: A well-run games incubator would help eliminate the weakness. **O2,O4/W4 ("Education")**: One of the goals of the communication would have to be raising overall awareness of the gaming industry. This would also include working with educational institutions to add relevant topics into their curriculums.
Threats	**S1,S3,S4,S6/T1 ("Communication)**: Conducting outside communication to raise people's awareness of games as viable business and educational tool **S1,S3,S5,S6/T2 ("Communication/Incubator"):** By utilizing the strengths,	All the above strategies need to be executed to eliminate weaknesses and mitigate threats. The main activities to conduct are: - creating (and later executing) the strategy to continue the development of the gaming

	developing and exercising the strategy, building the means for support organisations to continue their existance.	industry in Estonia and Tartu Region - establishing and executing the communication plan to achieve desired results in eliminating weaknesses and mitigating threats - establishing an incubator for gaming studios, creating a mentoring program and helping the studios to raise necessary financing

The actions in the action plan are defined to execute the TOWS-strategies outlined above.

3.2. LIST OF ACTIONS WITH TARGETED OUTCOMES

#	Action	Targeted outcome
1.	Establishing the incubator for gaming industry startups	- Established incubator and office space for startups - Launched mentoring and assistance program
2.	Enhancing the game development education in Estonia	- pilot program in game development clubs in highschools - more curriculums and courses that help to prepare specialists in different fields of game development.
3.	Communication and dissimination	- Raised awareness of the game industry potential among decision makers in ministries and government; - raised awareness of games' potential and role

3.3. DETAILED ACTIONS

3.3.2. Action 1 - Establishing the incubator for gaming industry startups

Action objective

The action targets to eliminate one of the major weaknesses for aspiring game developers in Tartu region - the lack of physical coworking space and mentoring/assistance available for young and inexperienced founders in the industry.

Action description and timeline

Activity	Description	Indicative Timeframe

Establishing the incubator	The incubator would serve as a hub for aspiring game studios and entrepreneurs. As of now there is no physical location the people interested in game development could regularly meet and work together. With this action, the co-location is created and communicated to the members of the community.	04.2019 - 10.2020
Running mentoring and assistance programme	Game development is most interesting to relatively young entrepreneurs in their 20-s or even in their late teens. At that age, people are seldom knowledgeable in different aspects of running a business and therefore the assistance is vital. The assistance that the incubator provides should be in two broad categories: - general aspects of running a business. This involves help with everyday nuances of running a business, paying taxes etc; - games business related aspects. These include business models in games, designing retention and monetization, helping with acquisition and other relevant topics. Ideally there should be a person who could mentor the team throughout the incubation programme and then there should be guest lectures/mentoring for specific relevant topics.	10.2019 - 10.2020

Both of these sub-activities should be done in collaboration with APT Game Generator. APTGG is the *de facto* facilitator of the indie game development scene in Tartu region and has the best understanding of what the needs of the local community are and how to get as many aspiring gaming entrepreneurs involved in the programme as possible. The design of the programme should take input from APTGG and it should also be considered to include APTGG people in various stages of running the incubator.

The incubation programme should be built up so that it suits the APTGG-s Game Jams (Ludum Dare's) so that the programme would be a suitable follow-up to the jam.

<u>Action resources</u>

Resources	**Description**
Human resources	Human resources are necessary to design, launch and run a quality incubation programme. In minimum these should include: - Incubator manager.

	This person will be running the incubator full time, organising everything necessary for the teams and the programme. - 2 * 0,5 consultants. One of these consultants will help the companies with everyday minutiae of running a business and assisting them in setting up a company, organising accounting, recruiting and perhaps even helping them in applying for outside funding. The other consultant should have game industry background and should be able to help the teams with different aspects of designing their games, especially the core loop, retention and monetization parts.
Financial resources	The financial resources will be necessary to pay for the incubator space, the events, the workforce and other costs involved. The exact amount of the financial resources necessary to run the incubator will be determined in designing the incubator programme.
Partners - APT Game Generator and other partners	As described above, APTGG's know-how, connection and status as local *indie* development centre is vital to the successful launch of the incubation programme. Other partners (Tartu Science Park, Creative Incubator etc) might be necessary for launching the incubator; these partners will be determined in designing the incubation programme.

Expected outcomes of the action

Expected outcomes	**Expected impacts' measures**
Launched incubator. Conducted incubation programme.	# of gaming companies that have participated in the incubation programme; # of founders and/or employees in these companies; # of people that have participated in the events organised by the incubator; # of games launched on commercial platforms by

	the companies in the incubator.

3.3.2. Action 2 - Enhancing the game development education in Estonia

Action objective

The objective of this action is to work in unison with educational institutions and industry in creating the courses and curriculums that would help the local industry to grow and florish.

Action description and timeline

Activity	**Description**	**Indicative Timeframe**
Mapping the most relevant topics.	In this sub-activity, the most relevant topics for the local gaming industry will be identified. The gaming industry companies will be interviewed to understand their needs and where they feel the most 'burning' demand for specialists. In addition to mapping the current demand for the specialists, it is also important to identify trends in gaming industry to understand what kind of specialists will be needed in years to come.	04.2019 - 10.2019
Meeting educational institutions and facilitating co-operation between educational institutions and industry	This sub-activity is mostly about meeting the educational institutions all over Estonia to acquaint them with the potential of the gaming industry and the demand for the specialists in the area. The facilitation part of the activity is about to create connections between educational institutions and industry. This is necessary to ensure the educational institutions that there is indeed a demand in the job market and the companies are also into providing practice bases for the students.	11.2019 - 10.2020

While the project is focused in Tartu region, the small size of Estonia prescribes that in this activity both the industry and educational institutions involved should be targeted all around the country.

Action resources

Resources	Description
Human resources	There should be at least one person who facilitates the whole activity. In theory, it could be the same person who manages the incubator in Activity 1; depending on the intensity and design of the incubation programme.
Financial resources	The activity does not need additional financial resources.
Partners	Industry members Educational Institutions

Expected impacts of the action

Expected outcomes	Expected impacts' measures
Facilitated cooperation between industry and educational institutions. Educational institutions' response to market demand for game industry specialists.	# of course launched # of curriculums launched # of contacts between educational institutions and industry

3.3.3. Action 3 - Communication and dissemination

Action objective

The objective of the action is to raise the overall awareness of games and game development and a viable and attractive business and career opportunity and to create positive perception of games and gaming in the society.

Action description and timeline

Activity	Description	Indicative Timeframe
Communication and dissemination	As a first step, a communication plan is created. The overall communication plan should have the following intentions: - improve the public perception of games and gaming as a pastime among general public;	04.2019 - 10.2020

	- educate lawmakers and officials in the potential of games as industry; - communicate games and game development as a viable and attractive career option; - promote establishing game development clubs in high-schools.	

Communication and dissemination are essential to create 'fertile soil' for successful gaming studios to emerge and grow.

The public perception is important since negative bias towards games would hinder the whole industry in various aspects. Yet, as the experience of Finland and Sweden shows, games are extremely potent as a business, creating thousands of high-paid jobs and billions of euros in revenue and exports. It is important to communicate this potential to the lawmakers and officials so that they could understand what could Estonia miss out if we fail to produce similar kinds of support to the gaming industry.

Another idea to promote is about creating game development clubs in highschools. These clubs would be useful not only to the gaming industry, but they would also be an excellent way to lure highschoolers into IT - a defined priority of the state. While the creation of these clubs would be outside of the scope of this action plan, one of the aims of the communication and dissemination activity should be promoting that concept among the law-makers, educational institutions an general public.

This communication and dissemination activity includes meetings with law-makers and representatives of educational institutions, but also about writing articles in newspapers, giving public talks in events, schools and other venues. While planning and conducting the activity, it would be useful to work together with IGDA Estonia where possible and necessary. This cooperation and IGDA 'flag' could provide useful in certain circumstances where it would be necessary to have more 'credibility' in terms of official industry background.

Action resources

Resources	**Description**
Human Resources	One person responsible for creating and conducting the communication plan.
Financial Resources	Salary + costs of organised events.
Partners	• IGDA Estonia and APTGG • Industry members

	• Educational Institutions • Other organisations

Expected impacts of the action

Expected outcomes	**Expected impacts' measures**
Public perception of games as a pastime and of games as a career opportunity has improved.	The objective is to see statistically significant difference in measures at the beginning of the Action Plan execution (2Q19) and at the end (4Q20).
Lawmakers' understanding of game industry's potential has improved and game industry is considered an important contributor in the success of creative industries.	# of creative industry roundtables with game industry represented; # of policy documents mentioning and addressing game industry and its needs.
Game Development Clubs established in high-schools.	# of game development clubs launched or to be launched.