Game Developer Index **2020**

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Key figures

Key Figures	2019	2018	2017	2016	2015	2014
Number of companies	435 (13%)	382 (+11%)	343 (+22%)	282 (+19%)	236 (+11%)	213 (+25%)
Revenue MEUR	2 318 (+24%)	1 872 (+33%)	1 403 (+6%)	1 325 (+6%)	1 248 (+21%)	1 028 (+36%)
Income in addition to net revenue MEUR	1 592	-	-	-	-	-
Revenue per employee	261 (+10%)	236 (-10%)	263 (-15%)	309 (-8%)	337 (+8%)	312 (+4%)
Result, MEUR	493 (+47%)	335 (-25%)	446 (-49%)	872 (+65%)	527 (+43%)	369 (+29%)
Result including income in addition to net revenue MEUR	2 149	-	-	-	-	-
Number of employees	9178 (+16%)	7921 (+48%)	5338 (+24%)	4291 (+16%)	3709 (+19%)	3117 (+23%)
Number of employees (Sweden)	5925 (+11%)	5317 (+14%)	4670 (+25%)	3750	-	-
Men	7099 (77%)	6221 (79%)	4297 (80%)	3491 (81%)	3060 (82%)	2601 (83%)
Women	2079 (23%)	1699 (21%)	1041 (20%)	800 (19%)	651 (18%)	516 (17%)

Index

Preface

Can games save the Earth?

Game Development Index 2020 presents new record numbers, with revenue increasing for the eleventh consecutive year. Back in 2009, the sum total of company revenue was 91 million EUR. A decade later, this figure is EUR 2 318 million, a 25-fold increase. There are several factors behind this result, not least the creativity of Swedish game developers, the quality of the games themselves and the skills of the entrepreneurs and marketers, but also a growing global games market, of course. This, in turn, is driven by access to new geographical areas, through digital distribution, and ever more people finding joy in games.

How much is EUR 2 293 645 471? A large and abstract number. It may be useful to compare with a few other well-known export industries. According to the figures from Statistics Sweden; who track export figures: exports of paper pulp amounted to EUR 2.4 billion in 2019. For iron ore, the corresponding figure was EUR 2.3 billion. This is just one part of a whole, the total exports of the forestry sector is worth significantly more (EUR 11.3 billion, according to the trade organization) and refined steel in various forms is exported at a value of over EUR 6.6 billion. With these numbers in mind, how much influence does economic growth have in each respective industry?

Let us carry out a thought experiment. Video game exports have doubled in three years from 2016-2019. Big earnings for the companies, value for the company owners, public tax income, many job opportunities etc (not to mention the enjoyment of the players!). How much has this boost affected the environment? The energy consumption of data centers and digital communications has increased. Larger office spaces. More travel. But in total, this increase in value has had a rather small environmental impact, in the form of emissions, use of resources, carbon footprint, etc.

What would be necessary for the value of iron ore exports to double? No doubt, there are productivity measures, foreign currency effects, global market prices and other variables that can maximize value without increasing the use of resources, but one would assume the most important factor would be to mine more ore. Perhaps twice as much ore than at present. Ore is also a finite resource, a whole city – Kiruna - is being relocated to enable the continued extraction from the large mine belonging to LKAB.

The same line of reasoning applies to paper pulp. Positive factors such as rationalization, improved production methods, global demand among others, can be identified. But it is difficult to imagine how the value could be doubled without felling more trees. Luckily, the forest is a renewable resource, new trees will grow, but there is a limited amount of forest. One strategy that has been suggested is to produce more finished products and thereby increase the added value.

I am not writing this to position games against pulp or ore. Of course those are important industries for Sweden. My point is that the immaterial value creation that video games represent is a kind of sustainable growth that differs from more traditional industries. In the debate about environment and growth, the service sector and circular value chains have been held up as good examples. Video games show that immaterial value creation can be added to that list.

Lastly, the growth detailed in this reports is NOT due to the corona virus pandemic. With one minor exception (see the chapter on Methodology), these figures concern the year 2019, i.e. the year before the virus. There are several signs that the corona pandemic has meant increased earnings for some companies, as large parts of the population has been more or less voluntarily confined to their homes during much of 2020. This, however, will not be clear until next year's report.

Stockholm, October 2020

Per Strömbäck
Spokesperson, Swedish Games Industry

It Takes Two, Hazelight

Summary

The Game Developer Index charts, presents and analyzes the operations of Swedish game companies as well as international industry trends in the past year, by compiling the companies' annual accounts. Swedish game development is an export industry in a highly globalized market. In just a few decades, the video game business has grown from a hobby for enthusiasts to a global industry with cultural and economic significance. The Game Developer Index 2020 summarizes the Swedish companies' last reported business year (2019).

Game development is a growth industry. Around ten companies have been in business since the 90's, but over half of all the companies in the industry were established during the last five years. Games developed in Sweden are released on a global market from the start and new employees are often recruited globally as well. Some factors for continued growth are: more local and regional clusters with incubators, accelerators and education, more serial entrepreneurs starting new companies, and the implications and effects of the last couple of years' frequent and large investments and acquisitions.

Swedish game developers are characterized by their range and quality. Sweden has world leading developers within AAA/console, PC, mobile, VR, digital distribution and specialized subcontractors. The biggest challenges of the sector are indirect such as access to skills and funding, particularly in the early stages, as well as laws and regulations around digital markets that are out of step with developments. The biggest future issue is in regards diversity, both among game designers and players. Although major advances have been made in the last few years, a lot of work remains to be done. Long-term, video games have every opportunity to increase diversity and inclusivity; games offer a possibility to leave the everyday behind and step into worlds where the only limit is the imagination.

The number of "second generation companies" is growing, e.g. where experienced game developers have gone on to create their own projects, or where the management has created a second company,

Also growing, is the number of investments and acquisitions with Swedish companies as purchasers. In the aggregate, 29 Swedish companies were lead investor in 36 of 46 games-related business deals in 2019. Of these, eleven were investments and acquisitions on the Swedish market.

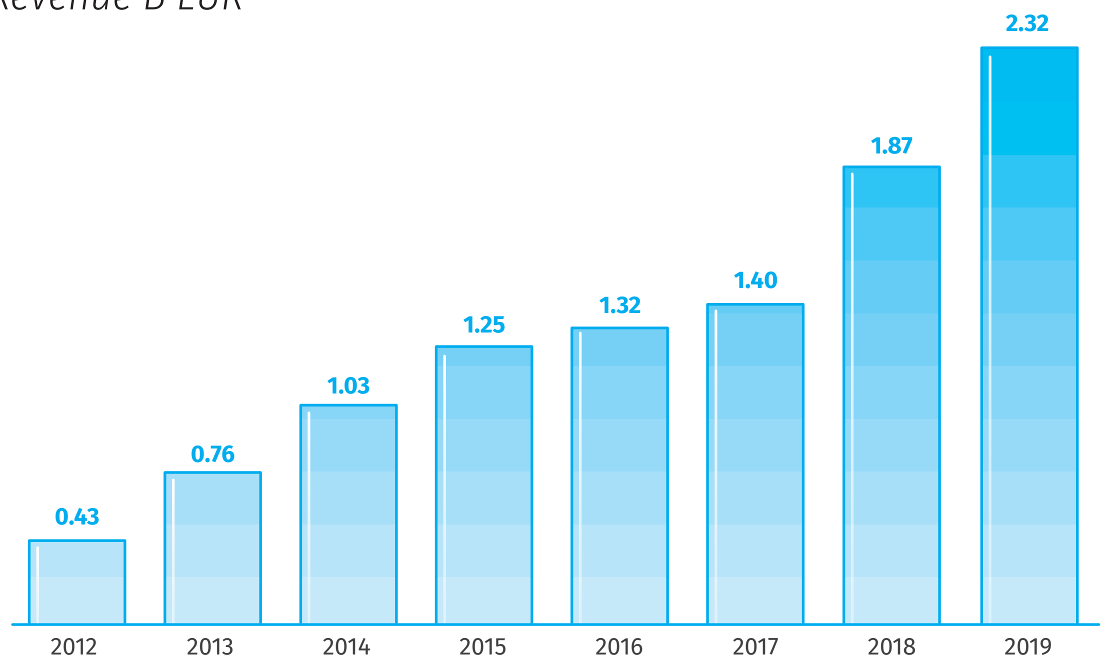
Successful companies increasingly re-invest in the industry, often in the Swedish market.

The report in brief:

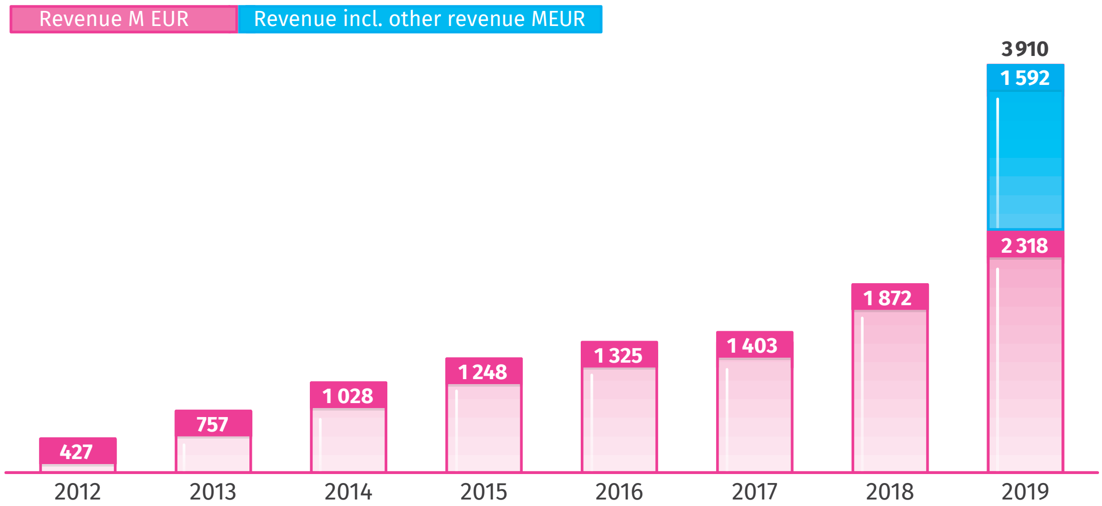
- Swedish games industry revenues grew to EUR 2.3 billion in 2019, an increase of 24%.
- Almost every fifth employee in game development in Sweden is a woman, 1,226 in total. Overall, the game companies employ 2,079 women, representing 23% - an increase of 22% compared to last year.
- A majority of companies are profitable and the sector in total is profitable for the eleventh year in a row.
- Swedish game companies are growing and employing a total of 9,178 persons, of which 5,925 are employed nationally. The difficulty in recruiting Swedish staff remains and many companies are expanding through acquisition of foreign development studios. In Sweden, the number of employees increased by 605, an increase of 11%.
- There are 51 new companies, making the total 435 active companies, an increase of 13%.
- 46 new mergers and acquisitions, with a known total value of EUR 425 million, were reported in 2019. Swedish companies were the purchaser in 36 of the deals and in 21 cases the seller.
- Between January and November 2020, 38 investments and acquisitions with a total approximate value of EUR 1.3 billion were reported. Thirty-five of the deals included a Swedish company as purchaser and in only 9 cases a Swedish company was the seller.
- The 15 largest companies paid a total of EUR 578 million in tax on profit.
- The 15 largest companies that have reported social security contributions in their accounts have paid wage taxes of over 100 million EUR in total.

Revenues

Revenue B EUR



Revenue incl. Other Revenue MEUR



Revenues & Results

Swedish game companies have continued to expand during 2019 and increased revenue by 25% to EUR 2.3 billion.

In the global arena they have successfully gained market shares, attracted talent and not least created gaming experiences for hundreds of millions of players the world over.

With 51 new companies, the industry is showing stable growth and has increased revenue from 0,91 to an incredible EUR 2.3 billion over a ten-year period.

The industry as a whole continues to be profitable, for the eleventh consecutive year.

What stands out this year is that the overall result show such an incredible increase. This increase can be attributed to a number of extraordinary events, therefore income in addition to net income and profit are reported separately while attributed to those events.

The income in addition to net income can have various origins, such as exchange rate gains, rental income, sale of intangible assets, or dividends from subsidiaries. The revenues detailed in the report are revenues that are directly linked to a game or a brand and can therefore be seen as part of turnover.

Income which in the annual accounts is reported as rental income or exchange rate gains is not included in the report because these cannot be derived directly from a company's brand or product. In this year's report, this income is included for the first time and will therefore show a large difference compared to the previous year. Revenues of this kind vary from year to year and will have different effects on both sales and earnings, hence they are reported separately.

Throughout the year many there have been many investments as well as write-downs and depreciation on development projects. Both of these events have affected the reported results in this report.

As in the previous year, seven companies have a turnover of over EUR 100 million. The 15 largest companies account for 90% of total revenue and have collectively paid more than EUR 578 million in tax on earnings. In addition, payments of social security contributions on salaries have increased as the number of employees in Sweden increases, and the companies have paid over EUR 100 million in total social security contributions.

Embracer Group had revenues of EUR 496 million this year, which means that the Karlstad company along with Mojang are the two largest companies in the industry in Sweden with the combined revenues of over EUR 1 billion.

The games industry is an export industry and, like all Swedish exports, has benefited from the favorable SEK exchange rate versus the rest of the world. This is particularly noticeable in the buoyant revenue figures. Despite the weak Krona, several companies have made large investments, which of course influences the result. A more detailed review of investments in the Swedish industry can be found in the chapter Investments.

The number of Swedish-developed games that are released varies from year to year, but these days the industry is broad enough for individual titles not to have a significant impact on the overall outcome. Here are some examples of major events in 2019:

Embracer Group continued to grow by acquiring a number of companies in Sweden, the Czech Republic and New Zealand. In the summer of 2020, Embracer Group announced no fewer than eight acquisitions made directly by the parent company or through various subsidiaries. More information on this can be found in the Investments chapter.

King has shown good growth and reported the highest revenue in four years.

Mojang has grown considerably over the past year and now tops the list as the largest game company in Sweden. In addition to net income of over EUR 500 million, Mojang has other income which can be attributed to the sale of intangible income of EUR 1.6 billion in total. This income also led to the company paying taxes of EUR 387 million. The developers of Minecraft have also launched new services within the game and initiated several collaborations with toy and clothing manufacturers, contributing to the increased revenue. In May 2020, the new game Minecraft Dungeons was released.

Stillfront has seen good growth and acquired the Canadian company Kixeye in 2019. Through eRepublik Lab, the company has released Game of Trenches WW1, a MMO mobile game set in the First World War, and has soft-launched EMPIRE: Age of Knights through Goodgame Studios , the game is also available on all mobile platforms.

For Paradox, 2019 has been the best year in the company's history, in terms of both revenue and returns. In the course of the year, Paradox has released three brand new games; Imperator: Rome, Age of Wonders: Planetfall and Surviving the Aftermath, and has also had great success with the expansions released for existing games.

The Uppsala company Quixel was acquired by Epic Games in 2019. The company will continue its operations and there are plans for future developments. Like Mojang, Quixel also has additional income related to the sale of intangible assets that has increased profit.

Raw Fury has continued to grow steadily during the year and its success can be attributed to the five new games released over the year but also the launch of previously released new format titles.

Avalanche Studios Group had more launches in 2019 than in any previous year, with Rage 2 and three expansions for Just Cause 4, add-ons to The Hunter: Call of the Wild from Expansive World and the debut game Generation Zero from Systemic Reaction. Expansive World, Systemic Reaction and Avalanche Studios together form Avalanche Studios Group.

Ubisoft Entertainment increased revenus by almost 70% and had 720 employees in 2019, of which 628 worked at Ubisoft Massive in Malmö and 92 at Ubisoft Stockholm. Despite increased sales, the company finished with net negative income due to write-downs of almost EUR 9 million. They released the game Tom Clancy's the Division 2 during the year and continue to work on the upcoming Avatar games together with Lightstorm Entertainment and FoxNext Games.

EG7 (formerly Toadman) showed positive growth in 2019. The company extended the EG7 group during the year, and through acquisitions of Petrol, Sold Out and the game studio Antimatter Games boosted revenues and increased the number of employees to 178 at the end of the accounting period.

Several Swedish game companies have been presented with prizes in various awards ceremonies. Simogo's game Sayonara Wild Hearts was awarded a BAFTA for Best Artistic Achievement and as if that was not enough they also won two prizes at the Nordic Games Awards for GOTY Small Screen and Best Art.

Deadtoast's My friend Pedro won the category Best Debut at the Nordic Game Awards, where Zoink Games also won Best VR/XR for their game Ghost Giant.

The above list is not exhaustive; there are many other examples of Swedish game development success in the past year.

Wraith The Oblivion - Afterlife, Fast Travel Games

Fight Corp., Erik Skog

Employees

The numbers are based on the reported average number of full-time employees over the entire accounting period. This means that the actual number employed in the industry is often higher and many companies that have expanded in 2019 ended the year with considerably more employees than at the beginning of the year. Where possible, the number of employees in December 2019 has been used as a reference to better reflect the actual number. To calculate the number of employees abroad, we have selected studios outside Sweden with over 10 employees. The corresponding numbers in 2018 were adjusted for reference. Not included are smaller companies, PR companies or other forms of business offices, as these have only a marginal influence on the total number of employees. Also not included are foreign marketing companies based in Sweden.

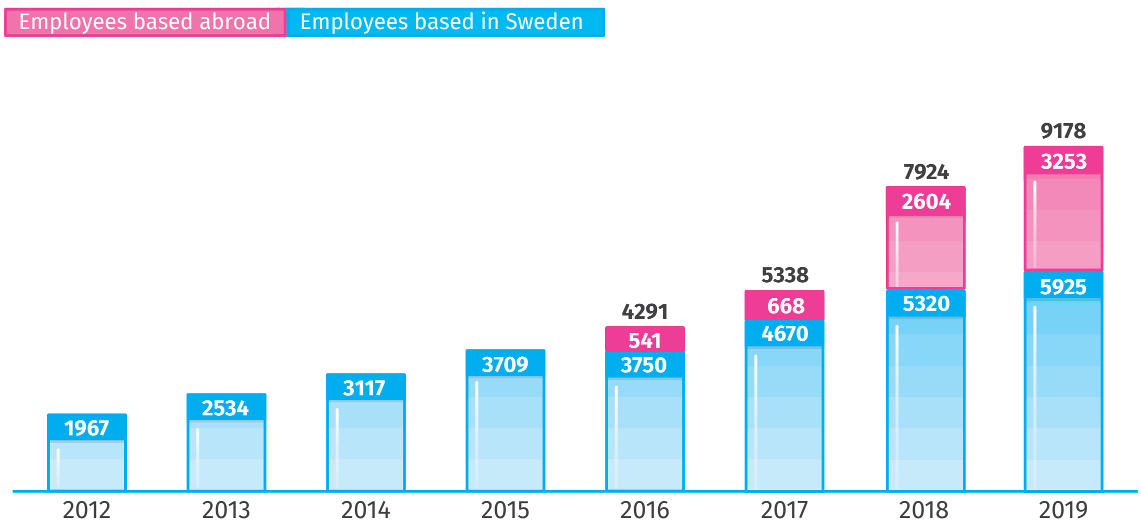
In addition to the reported numbers, there are people in different company structures, people in companies that have not yet published their accounts, freelancers and subcontractors that are not shown as employees in the annual accounts. Taking these hidden numbers into account, the total is estimated to be higher.

The number of employees in Swedish games companies increased by 16% in 2019. A big change compared to the previous year, when the increase was 48%. The difference can be explained by the major acquisitions in the previous year, examples being the acquisition of Koch Media by Embracer Group and Stillfront purchasing Goodgame. Another reason was Starbreeze undergoing restructuring and having to let almost 400 employees go.

The increase translates to 605 new full-time positions having been created in Sweden and 649 full-time positions abroad. This gives a total of 1,254 new full-time employees in Swedish game companies. In other words, the tendency to recruit more abroad than in Sweden also continued in 2019.

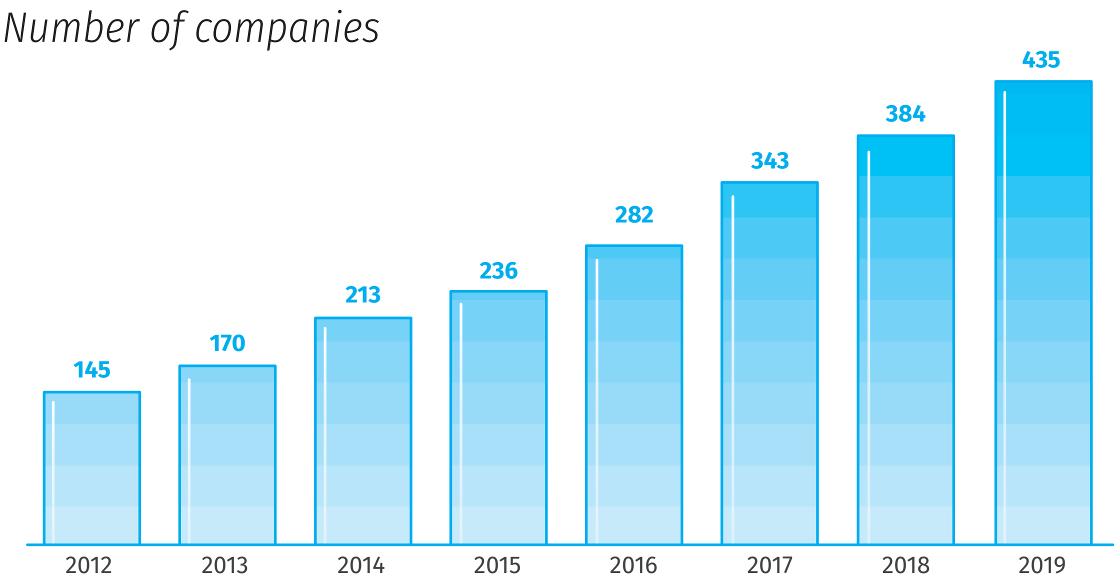
There is high demand for employees in all work categories, which hampers the full development of the companies, not least when it comes to recruiting within the Swedish borders. In 2020, several larger companies have announced expansion plans; Paradox and Avalanche aim to employ several hundred people over the course of the year. Embracer Group announced a number of large buyouts through its subsidiaries Amplifier Games and Saber Interactive. Stillfront and Paradox have also purchased more studios, which will lead a big increase in overall employee numbers in 2020. Late this year, Sharkmob announced that they are opening a studio in London. In 2020 Avalanche also opened a studio in Liverpool in 2020.

Employees



Jump King, Nexile

Number of companies



The number of start-ups also increased in 2019, 51 new companies have been added to the report, an increase of 13% . Many of these were registered during the year and have not yet published their first annual accounts. Others were founded in previous years but have not yet been included in the underlying statistics

During the year, some companies have been removed from the index because they have been bought up by larger companies and turnover and profit added to that of the group. In these cases, individual studios are separated to better show the number of employees in respective geographic location. This year, 18 companies have been declared bankrupt. Certain types of companies are not included, such as app developers or media agencies whose involvement in game development varies from year to year.

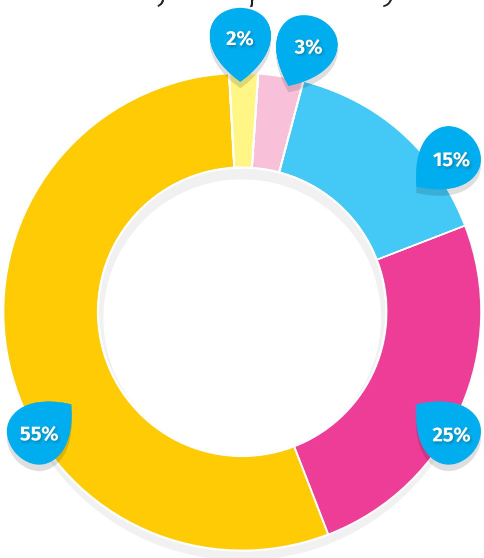
Companies that move into gambling or develop online casinos are also omitted from the report. One company has been removed as it has completely changed direction and is no longer connected to games.

Some companies are excluded because they are not registered as game developers. There is also a growing number of companies that are partnerships or private companies; these are important for the business but cannot be included on accounting grounds. Those known to us are included on the game developer map.

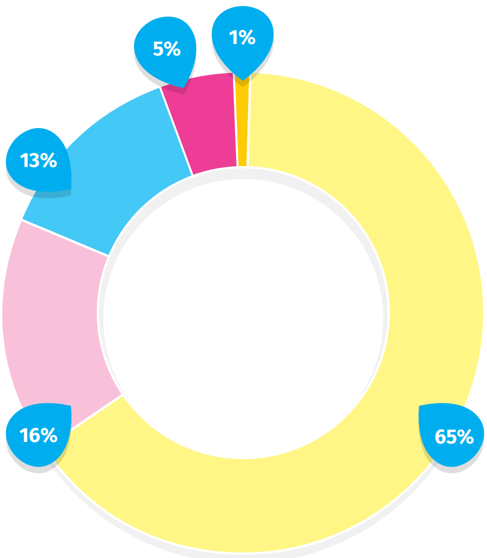
D-corp, Frogsong Studios

Number of employees & Revenues per Company Type

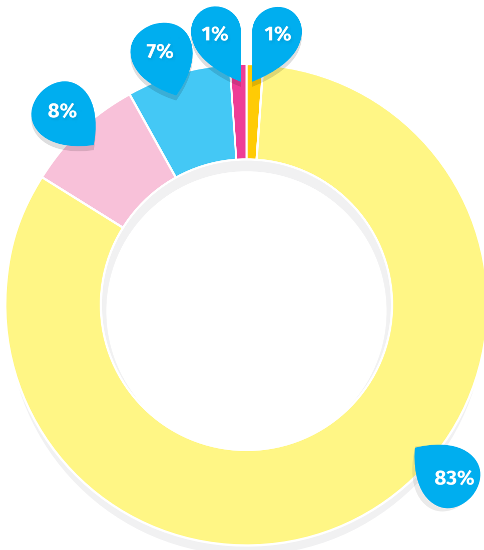
Number of Companies by Size



Employees per Company



Revenue per Company



The report is made using EU definitions of small and medium-sized companies.

Sole proprietorship

Companies run by one individual, that otherwise do not meet the standards for small or larger companies.

Micro companies

Fewer than 10 employees or maximum revenues of EUR 2 million.

Small companies

Between 10 and 49 employees and revenues not exceeding EUR 10 million.

Medium-sized companies

Between 50 and 249 employees and revenues not exceeding EUR 50 million.

Large companies

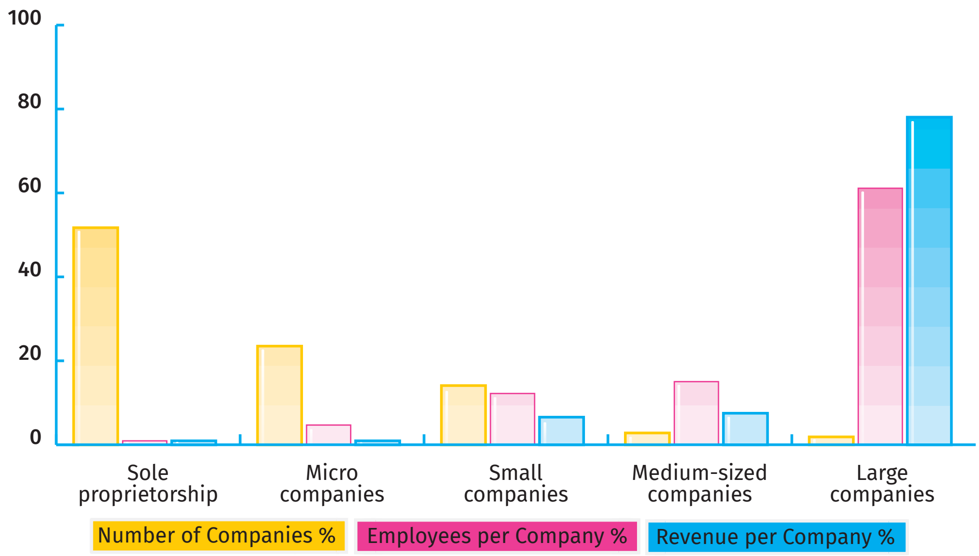
Companies that have greater revenues or number of employees than a medium-sized company.

To qualify as a certain type of company it is sufficient to fulfill just one of the criteria. Mojang, for example, is defined as a large company because of its revenues, despite having fewer than 250 employees. A broad entrepreneurship also contributes many micro companies with initially small earnings but vital for the industry in the long term. See the games map for a geographical distribution of the companies.

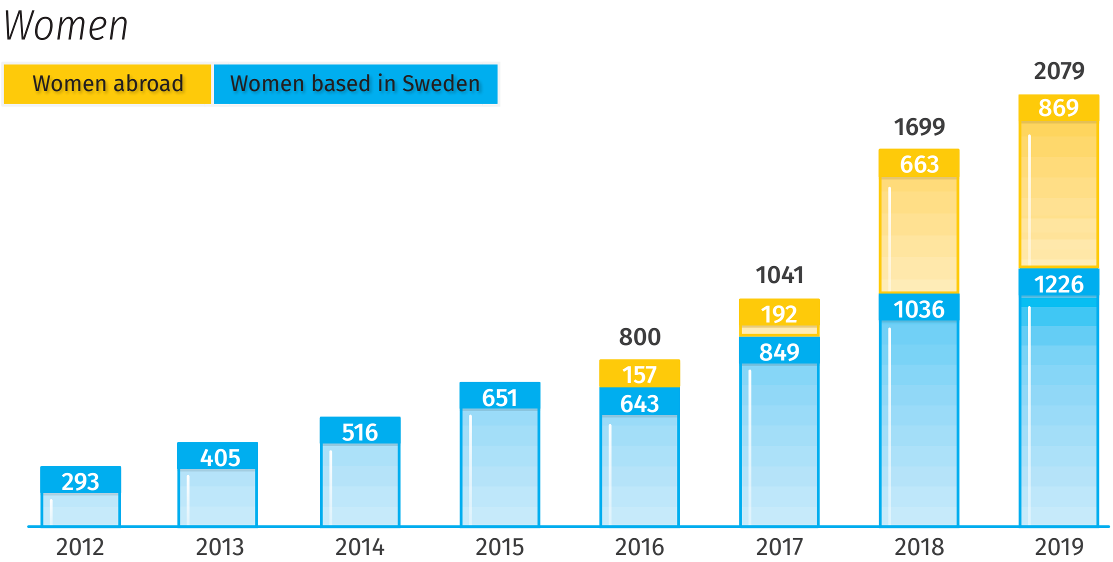
Compared to previous years, the number of sole proprietorships have increased from 46% to 55%. The number of employees has decreased in percentage and number. The revenues of large companies have increased in absolute numbers, but remain the same percentage of the whole as last year.

Likewise, medium-sized and small companies have increased in size and absolute numbers but remain at the same proportion as last year.

Overview



Women & Gender distribution



* The reporting method changed in the 2019 report and now shows the number of women employed in Sweden and abroad separately.

In 2019, both the number and the percentage of female employees in the game industry increased. In total, 23%, or 2,079 employees at Swedish video game companies are female. 1,226 of these women are based in Sweden, representing 21% of the national game industry employees, an increase of 190 positions compared to last year.

In previous years, Swedish companies have had a tendency to employ more women abroad than in Sweden, and this trend continues as 206 women were employed outside of the Swedish borders this year. The proportion of women employed abroad is still higher (26%) than that of women employed within Sweden (21%). The majority of these are working for Embracer Group, Stillfront, G5 Entertainment and Paradox.

In 2019 we found only one company with exclusively female employees – Valiant Game Studio.

What impedes analysis of this subject is the difficulty in obtaining data on gender distribution in many companies. The listed companies have an obligation to report this in their annual accounts but the majority of small, medium-sized and even large companies are not making this information available in neither accounts nor home pages. In order for the industry to grasp the existing challenges and actively work towards equality in for example recruitment processes, it would be helpful if more companies made this information public.

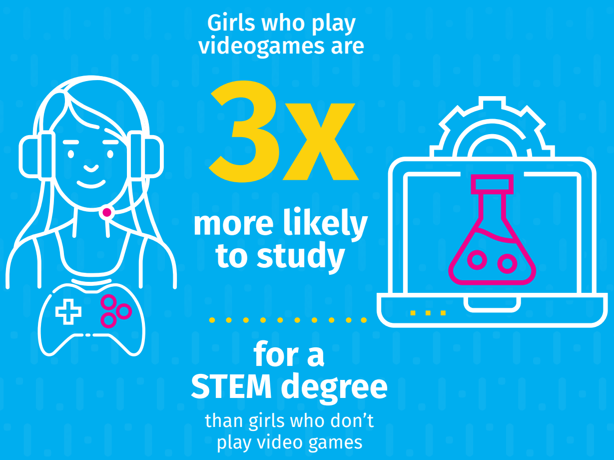
The challenges lie in attracting more women to the industry and to retain them, but also to make more women start companies. Women in the game industry are mainly found in medium-sized and large companies. The most equal distribution can be found in companies working on mobile platforms and VR.

To the extent that data has been available, gender distribution has been reported based on gender identity according to how the respective company has reported this information.

Summary

- 1 company has exclusively female employees
- 10 companies consist of at least 55% women, compared to 17 last year
- 64 companies have at least 20% female employees, in total they have revenues of EUR 1.8 billion
- 260 companies with more than one employee consist of only men, the largest of these companies has 17 employees

In order to attract more women to the industry, more girls must be allowed to keep their interest in video games and the joy of gaming when they grow up. A European study shows that young women gamers are three times as likely to choose a technical education, compared to those who do not play video games.



Infographic from www.isfe.eu/isfe-key-facts

There are several initiatives to attract more women to the games industry run by both large and independent organizations.

Paradox is offering a game developer course in 2020, intended for women and people identifying as women or non-binary under the name **Games by Her**. The goal is to help improve diversity in the game industry and particularly within programming.

Leveling The Playing Field is a funding initiative from Coffee Stain, focusing on smaller studios that employ at least the same number of women as men, to promote equality in game development.

The Internet Foundation is creating **Tidsvåg** in 2020 – a virtual celebration of games and women's achievements in the industry.

Wings was founded in 2018 and invests in indie games by teams in which women and people of marginalized genders hold key company positions.

Many other initiatives exist, such as for example: Game Dev Force, Diversi, Girls code (not just games) Donna, and Valkyrie Jam.

Forge and Fight!, Flamebait Games

Largest companies

This years list of largest companies includes ten companies in each category for the fourth consecutive time. More companies are expanding. Seven companies have revenues in the billions range and 13 companies had over 100 employees. Around half of the companies report profit, 26 companies have profits of over EUR 1 million and 81 companies have more than ten employees.

Revenue MEUR 2019

1	Mojang	528
2	Embracer Group	496
3	King	262
4	Stillfront Group	186
5	EA DICE	130
6	Paradox Interactive	122
7	G5 Entertainment	116
8	Ubisoft Sweden	59
9	Avalanche	55
10	Starbreeze	26

Wolfstride, Raw Fury

Employees 2019

1	Embracer group	1856
2	EA DICE	794
3	Ubisoft Sweden	720
4	King	718
5	Stillfront Group	700
6	G5 Entertainment	628
7	Paradox	479
8	Avalanche	316
9	GoodBye Kansas	202
10	Enad Global 7	178

Listed companies

Of the 435 Swedish game companies that are included in the report, 13 are listed on the stock exchange, 10 of these had IPOs in the last five years, four of the companies had revenues of over EUR 100 million in 2019. Thunderful Group made their IPO in December 2020.

Company	Year of IPO	Revenue 2019
AdventureBox	2019	3 K EUR
Zordix	2018	1 M EUR
Beyond Frames	2018	60 K EUR
MAG Interactive	2017	19 M EUR
EG7	2017	14 M EUR
Three Gates	2016	331 K EUR (2018)
Paradox Interactive	2016	122 M EUR
Gold town games	2016	944 K EUR
EmbracerGroup	2016	495 M EUR
Stillfront	2015	186 M EUR
StarVault	2007	113 K EUR
G5 Entertainment	2006	116 M EUR
Starbreeze	2000	26 M EUR

Second Extinction, Avalanche Studios

Vampire: The Masquerade - Bloodlines 2, Paradox Interactive

Selected listed companies

Equity Analyst Lars-Ola Hellström at Pareto Securities has analyzed a selection of game companies listed on the Swedish Stock Exchange.

The global video games industry is showing continued strong growth which,when combined with more stable business models, has made the companies increasingly popular with both institutional investors and private individuals. A trend that has continued in the last few year, as the sector has provided very good returns for those with exposure. In 2020, video games have shown defensive qualities since the sector as a whole has benefitted from the ongoing Covid-19 pandemic, with a record number of players, given that people spend more time at home and gaming also provides a social element, increasing acceptance for games as entertainment.

2020 looks like it will be another very strong year for video game shares, with the 11 largest game companies having unweighted average yields of 36% and only a small number of all listed companies show negative annual yields. From a Swedish/Nordic perspective, video game shares have performed even better, with unweighted average returns of 140% for the three large companies Embracer, Stillfront and Paradox. The two former companies are growing quickly, organically and through acquisitions, and Paradox is showing exceptional organic growth. Medium-sized companies such as G5, Remedy, Enad Global 7, Rovio and Mag Interactive are also showing good progress, even if the latter two shares are still trading at issuing prices.

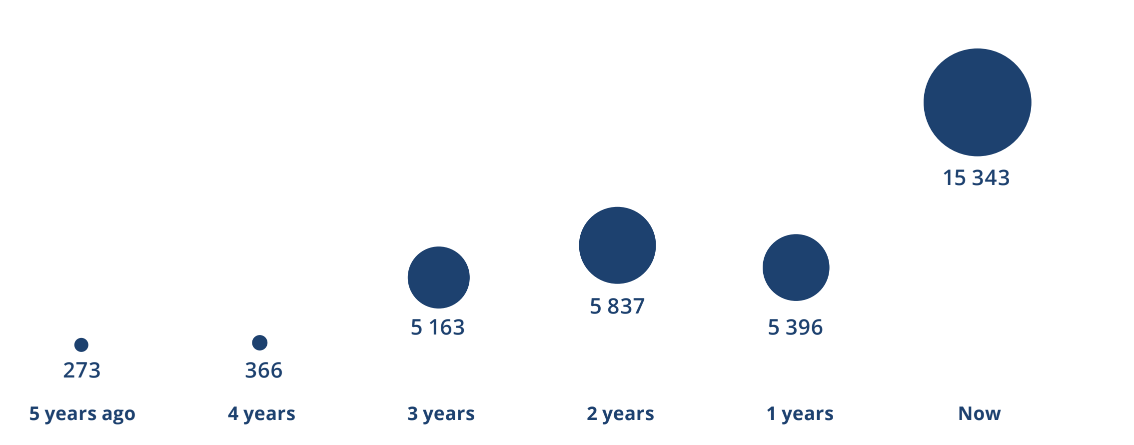
In October we also welcomed the German company Media and Games Invest on the Stockholm Stock Exchange and several Swedish and international game companies are indeed knocking on the door, as the Stockholm stock exchange has become a natural hub for game companies in the last few years. Stillfront's IPO in December 2015 should be seen as the starting signal for the growth of companies that we have seen in the Nordic countries of late. Not least, yields have been very good for the majority of companies, Stillfront's some 2,600% in less than five years, only beaten by Embracer, who have reached similar yields but in only four years.

The combined value of the video games sector on the Stockholm Stock Exchange is close to EUR 15 billion, which has resulted in an increased interest among investors and there is now a relatively knowledgeable collective of investors who are prepared to support the future growth of the listed companies – a big difference compared to the situation less than five years ago. Given company specific problems, combined with a very high initial valuation, Next Games, Rovio and Mag Interactive have unfortunately not shown positive yields since their public offerings.

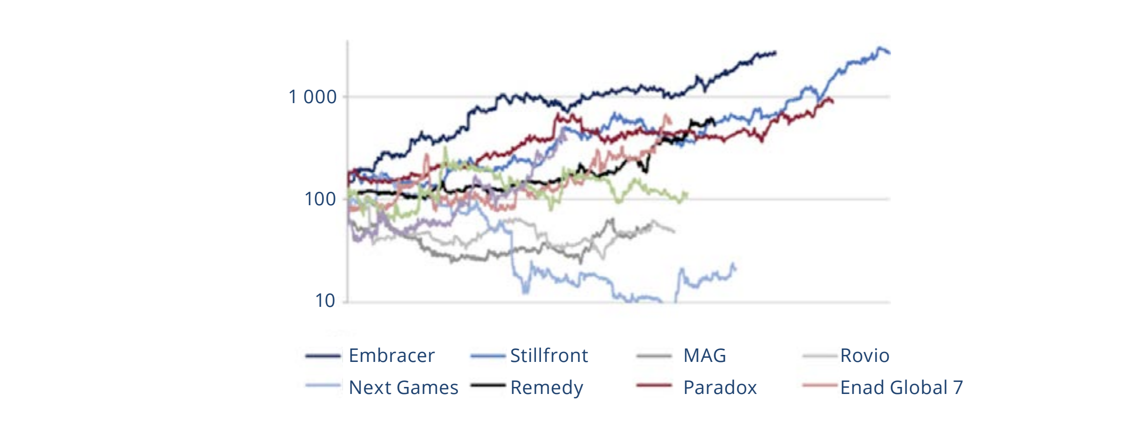
It is not just ongoing growth that drives the share prices for the largest Swedish companies, profits are being increasingly valued and currently Embracer and Stillfront are trading at a value premium compared to international peer companies. These shares were at a discount less than a year ago. However, a premium can be justified by a higher expected growth rate and increased confidence in the business models among Swedish and international investors. Of course, the valuation span is wide and company specific, but on average the global video games sector is valued at an unweighted EV/EBIT 2021 multiple of 16x, which seems relatively modest in relation to other growth sectors, particularly since the game companies are expected to grow earnings by 18% per year in the period 2019-2022, with good opportunities of higher margins following digital sales and increasing competition among digital distribution platforms.

Pareto Securities

Total market value of listed game companies in the Nordics, M EUR



Share price development during the last 5 years (index 100)



Data as of 27 October 2020

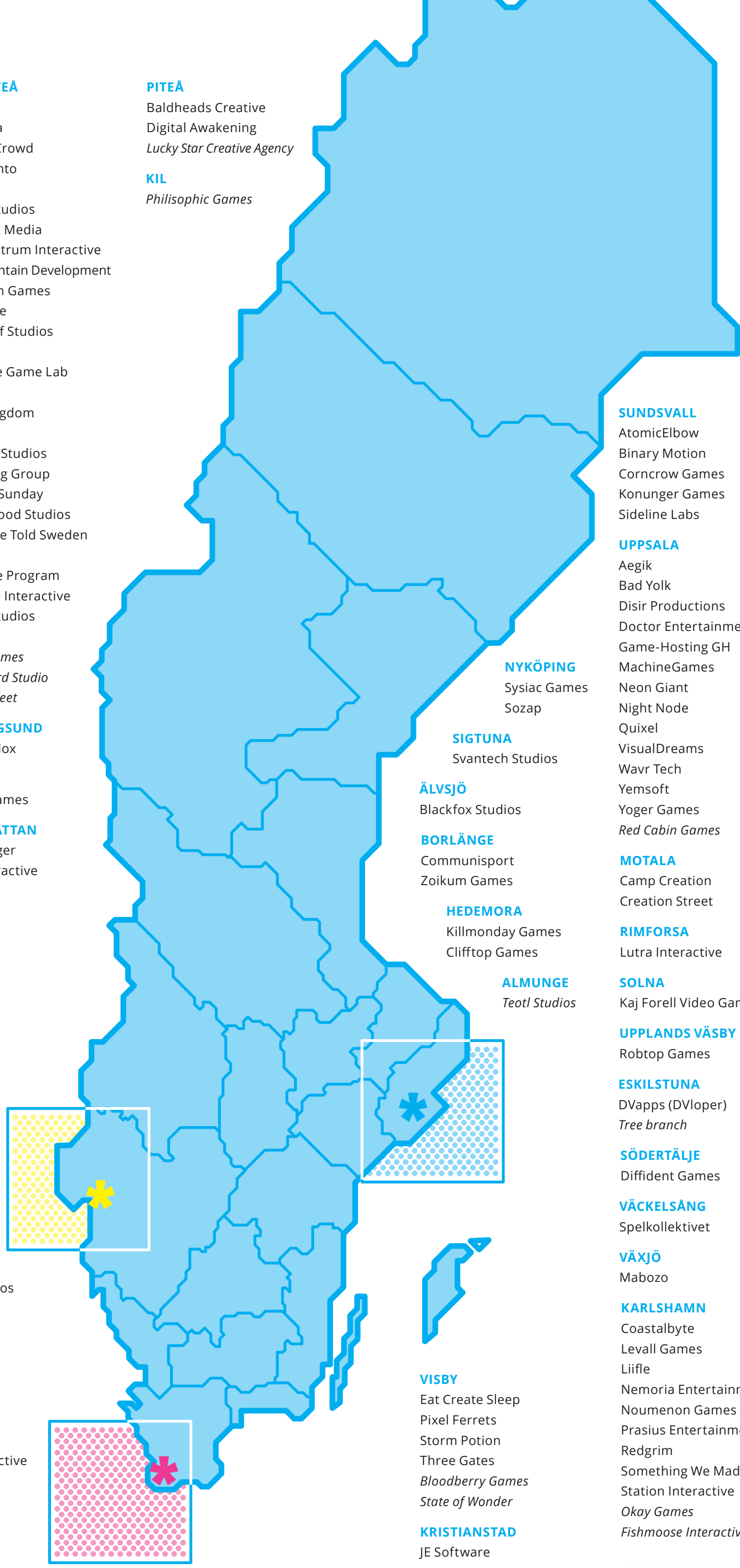
Game developer map - Sweden

The table below shows the largest regions ranked by number of employees and number of companies. Although the majority of the employees are based in the capital, there are a higher number of companies outside the capital. Some Stockholm companies, for example King, Avalanche, Paradox Interactive and DICE, have offices in more than one part of the country. Malmoe-based Massive also has offices in Stockholm and Karlstad-based Embracer Group own several studios around the country. Worth noting is that only employees of limited companies are included, and that it is the number of full-time employees stated in the annual reports. The actual number of people working in games development in the respective regions is therefore significantly higher.

REGION	**Number of companies**	**Number of employees**
CAPITAL	160	3,493
WEST	75	526
SOUTH	73	939
NORTH	44	236

CAPITAL includes Stockholm, Uppsala and Södermanland. WEST includes Västra Götaland and Halland, SOUTH is comprised of Skåne and Blekinge and NORTH includes Västerbotten, Norrbotten and Västernorrlands county. As far as possible, employees at local offices are reported under respective location.

Companies in italics are either not limited companies or too young to be included in the reporting. Is your company missing on the map? Do contact us with a description.



JUKKASJÄRVI
Art in Heart

ÅRE
Hindelid Development

KÖPING
LS Entertainment

KARLSTAD
Mirage Game Studios
Nuttery Entertainment
Embracer Group
Agera Games
Insanto Studios

FALUN
Adit Studios
Create Institute
Deadghost Interactive
Flarie
Kolesterol Cät Interactive
Megafront
Tension Technology
The New Branch

TANUM
Tenstar

ALINGSÅS
Alega & Qiiwi Learning

MELLERUD
Vovoid Media Technologies

SKÖVDE
Angry Demon Studio
Babloon Studios
Brimstone Games
Coffee Stain Studios
Coilworks
Designlayout
DoubleMoose Games
Erik Skog
Flamebait
Guru Games
I C YOU
Iron Gate
Knackelibang Productions
Ludosity
Nattland Interactive
Nördlight Games
Palindrome Interactive
Pieces Interactive
Piktiv
PocApp Studios
Redbeet Interactive
Sector3 Studios
Solutions Skövde
Sonigon
Stunlock Studios
Sunscale Studios
Whirlybird Games

ONSALA
Snojken

ALVESTA
Wadonk

HELSINGBORG
Localize Direct
Monsuta
Odd Comet
Pixelbite

LUND
Illwinter Game Design
Pastille
Spiddekauga Games

SKELLEFTEÅ
Boxplay
Cubetopia
Creative Crowd
Daniel Lehto
Eloso
Flat Tail Studios
Frigol IT & Media
Frostspektrum Interactive
Goat Mountain Development
Gold Town Games
Grand Pike
Lazer Wolf Studios
Mentex
Mindforce Game Lab
Nordsken
North Kingdom
Nuiteq
Orch Star Studios
PD Gaming Group
Sound of Sunday
Strangewood Studios
Tales To Be Told Sweden
Tarvalley
Technique Program
Time Stop Interactive
Twoorb Studios
Yalts
Triolith Games
Arctic Beard Studio
Tap Your Feet

STENUNGSUND
Ace Maddox

HOVÅS
Humla Games

TROLLHÄTTAN
Easy Trigger
Trilo Interactive

BOLLEBYGD
Rockheart Studios

BORÅS
Gigantic Duck

FALKÖPING
VaragtP Studios

RONNEBY
Activout
Nodbrim Interactive

PITEÅ
Baldheads Creative
Digital Awakening
Lucky Star Creative Agency

KIL
Philisophic Games

NYKÖPING
Sysiac Games
Sozap

SIGTUNA
Svantech Studios

ÄLVSJÖ
Blackfox Studios

BORLÄNGE
Communisport
Zoikum Games

HEDEMORA
Killmonday Games
Clifftop Games

ALMUNGE
Teotl Studios

VISBY
Eat Create Sleep
Pixel Ferrets
Storm Potion
Three Gates
Bloodberry Games
State of Wonder

KRISTIANSTAD
JE Software

KARLSKRONA
Attractive Interactive
Suffocated
Svavelstickan
Viking Fabian

BORRBY
Jonnil

SUNDSVALL
AtomicElbow
Binary Motion
Corncrow Games
Konunger Games
Sideline Labs

UPPSALA
Aegik
Bad Yolk
Disir Productions
Doctor Entertainment
Game-Hosting GH
MachineGames
Neon Giant
Night Node
Quixel
VisualDreams
Wavr Tech
Yemsoft
Yoger Games
Red Cabin Games

MOTALA
Camp Creation
Creation Street

RIMFORSA
Lutra Interactive

SOLNA
Kaj Forell Video Game

UPPLANDS VÄSBY
Robtop Games

ESKILSTUNA
DVapps (DVloper)
Tree branch

SÖDERTÄLJE
Diffident Games

VÄCKELSÅNG
Spelkollektivet

VÄXJÖ
Mabozo

KARLSHAMN
Coastalbyte
Levall Games
Liife
Nemoria Entertainment
Noumenon Games
Prasius Entertainment
Redgrim
Something We Made
Station Interactive
Okay Games
Fishmoose Interactive

BODEN
921 Studios
Glorious Games
House of How Games
Nethash
White Lines Black Spaces
WanderWord
Frozen Waffle
Cafiend

LULEÅ
Bazooka Game Studios
Blamorama Productions
October8
Qbeats Sweden
Virtual Light VR
Marada
Pixadome

UMEÅ
Bruno Janvier Software
Cassius Creative
Coldwood Interactive
David Marquardt
Level Eight
Morningdew Media
Musikmedel Future Vision
Paradox Artic
Skytoms
The Fine Arc Nordic
Turborilla
Zordix
Marklund Games
Nifflas Games

NORRKÖPING
AmberWing
Correcture Games
Dimfrost Studio
FeWes
Goes International
Skyfox Interactive
Sutur
Caspian Interactive
Sven Thole
Silkworm
Vizelligence MediaLabs

LINKÖPING
Aftnareld
Beartwigs
Catalope Games
Chillbro Studios
Donya labs (Simplygon)
Flashe Gaming Group
Friendly Fire
Graewolv
Incredible Concepts of Sweden
Ioneo
Laxbeam
Lifee
Lurkware
Martin Magni
Miltonic Games
Overflow
Pixleon
Power Challenge
Pugstorm
Therese Kristoffer Publishing
Worldshapers
Zero Index
WaveBots
Solid Core
Avokodo Studios
Lutra Interactive
Setshape Studio
Holmcom

***Stockholm**
***Gothenburg**
***Malmö**

Stockholm

2Play Studios
A Small Game
A Sweet Studio
Acegikmo
Adventure Box Technology
Antler Interactive
Apprope
Aptitide (Blastronaut)
Arcticmill (Arcmill)
Arrowhead Game Studios
Avalanche Studios
Axolot Games
Bambino Games
Beadhead Games
Beyond Frames Entertainment
Bitzum
Blackbeard (Svartskägg)
Bodbacka:Boom

Bridgeside
Bublar
Casual Games FK
Coffee Stain North
Cold Pixel
Collecting Smiles
Cortopia Studios
Crackshell
Defold
DevM Games
DorDor
EA DICE
Ekvall Games
Eldring Games
Elias Software
Embark Studios
Enad Global 7
Enterspace
Epic Games Sweden
Experiment 101
Fablebit AB
Fall Damage
Fast Travel Games
Fatshark
Filimundus
Foxglove Studios
Freshly Squeezed
Frojo Apps
Frosty Elk
Fula fisken
Funrock Development
G5 Entertainment
Gamersgate

Gleechi
Glorious Games
Go Fight Fantastic
Good Learning
Good Night Brave Warrior
GoodBye Kansas
Grindstone Interactive
Gro Play Digital
Happi Studios
Hatrabbit
Hazelight Studios
iGotcha
IMGNRY International
Interactive Productline
Jaramba
Kavalri Games
KEP Games
King
LandFall Games
LeadTurn Gaming
Light & Dark Arts
Like a Boss Games
Lionbite
Liquid Media
Loot Spawn
MAG Interactive
Mibi Games
Midjiwan
Might and Delight
Mimerse
Mojang
Moon Mode
Mutate

NAG
Neat Corporation
Neuston
Nialbe
Nordic Forest Games
Odd Raven Studios
Oxeye Game Studio
P Studios
Paradox Interactive
Peppy Pals
Photon Forge
Pikkotekk
Pixel Tales
Pixeldiet Entertainment
Polarbit
Poppermost Productions
Pronoia
Pusselbit Games
Quel Solaar
Quizye
Raketspel
Raw Fury
Razzleberries
Really Interactive
Resolution Games
Ride & Crash
Right Nice Games
Rigid-Soft Studios
Rovio Sweden
Rymdfall
SimWay
Skeleton Crew
Snowprint Studios

Spelagon
Spelkraft Sthlm
Spelkultur i Sverige
Star Stable Entertainment
Starbreeze
Stillfront Group
Stringent Ljud
Sunhammer (Outsiders)
Talawa Games
Tealbit
Tiger & Kiwi
Toca Boca
Tomorroworld
Troisdim Aktiebolag
TwifySoft
Ubisoft Stockholm
Unity Technologies Sweden
Valiant Game Studio
Villa Gorilla
Vinternatt Studio
Visiontrick media
Warpzone Studios
Wild Games
Xpert Eleven
Zenz VR
10 Chambers Collective
Stumpysquid
Acegikmo
Hörberg Productions

Gothenburg

1337 Game Design
8 Dudes in a Garage
Atvis
Bulbsort
Carry Castle
Craft Animations
Creative AI Nordic
Creative Vault
Devkittens
Dreamon Studios
EA Ghost

Erik Svedäng
Friendbase
Hello There
Hiber
Image & Form
Insert coin
Int3 Software
Itatake
IUS Innovation
Lavapotion
Legendo Entertainment

MindArk
Nornware
Pathos Interactive
Pax6 Games
Playcentric Studios
Random State
Retroid Interactive
Räven
Sleeper Cell
Steelraven7
Thunderful

Wishful Whale
YCJY
Zchooly
Zoink
Elden Pixels
Faravid Interactive
Skygoblin
Warcry Interactive

Malmö

Apoapsis Studios
Attribite
Avalanche
Ayeware (Bearded Ladies)
Binary Peak
Blast Door Interactive
Coherence
Cross Reality International
DeadToast Entertainment
Divine Robot
ExtraLives
Frictional Games
Frogsong Studios
Haunted House
Illusion Labs
Impact Unified
IO Interactive
King

Learning Loop Sweden
Leripa
Locamotive
Longhand Electric
Luau
Mediocre
Midnight Hub
Multiscription
Nopalito Studios
Nordic Game Resources
Nordic Game Ventures
Not My Jeans
Outbreak Studios
Paradox
Pixilated Production
Plausible Concept
Polyregular Studios
ProCloud Media Invest

Redikod
Senri
Sharkmob
Simogo
Star Vault
Swedish Game Development
Tales & Dice
Tarsier Studios
The Sleeping Machine
Ubisoft Massive
Visedu
VisionPunk
Webbfarbror (Grapefrukt)
Cross Reality International
Pixelshade
Trancenders

Game developer map – Global

Several games companies have expanded internationally. Below is a map of Swedish-owned games studios in 2019 with ten or more employees outside Sweden. In 2019 Starbreeze sold the Indian graphics studio Dhruva to Rockstar.

We have identified a total of 39 Swedish-owned studios, together employing 2,979 persons.

AVALANCHE
New York

G5 ENTERTAINMENT
Kaliningrad
Kharkov
Lviv
Moskva

MAG INTERACTIVE
Brighton

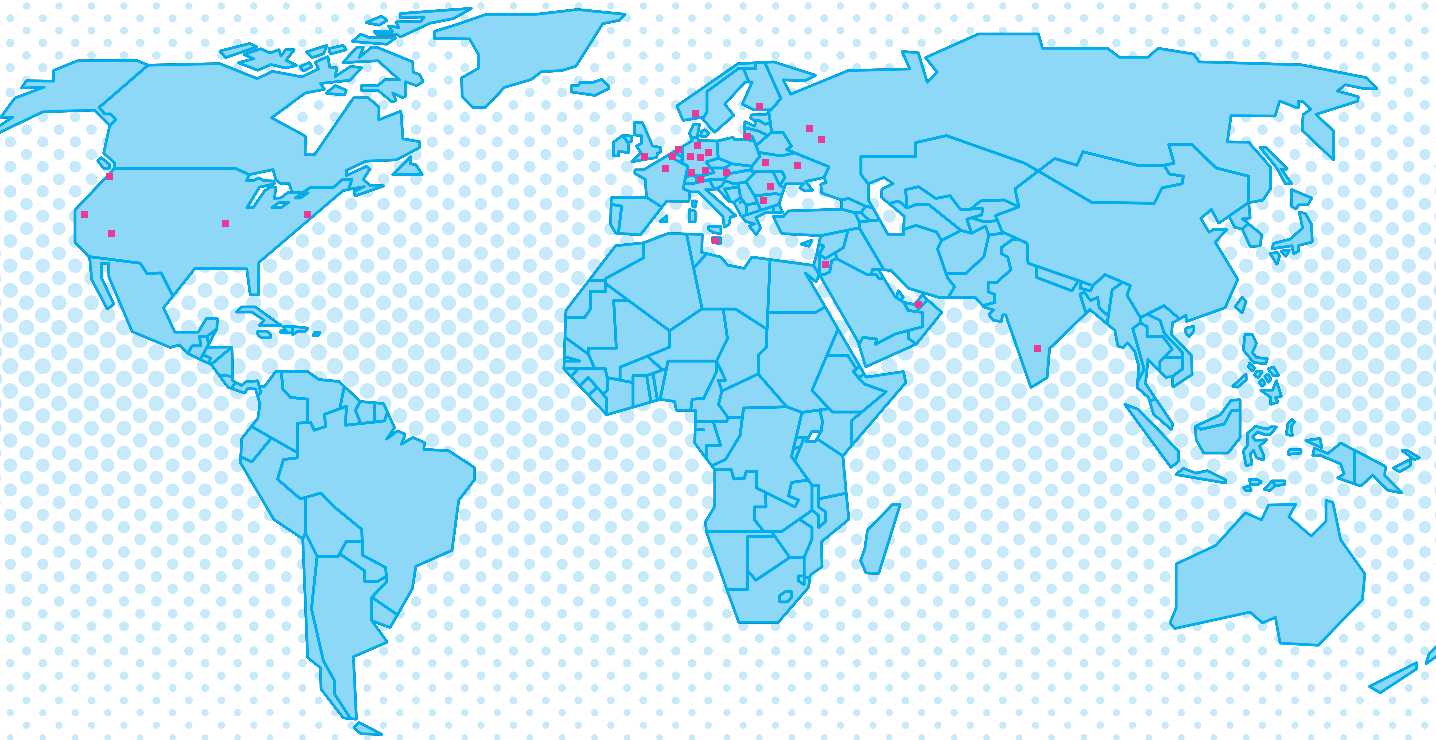
PARADOX
Berkeley
Delft
Seattle

STARBREEZE
Bangalore
Bryssel
Paris

STILLFRONT
Amman
Bukarest
Dubai
Hamburg
Malta
Sofia
St. Louis

Embracer Group
Essen
Giebelstadt
Helsingfors
Höfen
München
Offenburg
Phoenix
Wien

TOADMAN
Berlin
Oslo
Tver



Investments


Main Assembly, Bad Yolk Games

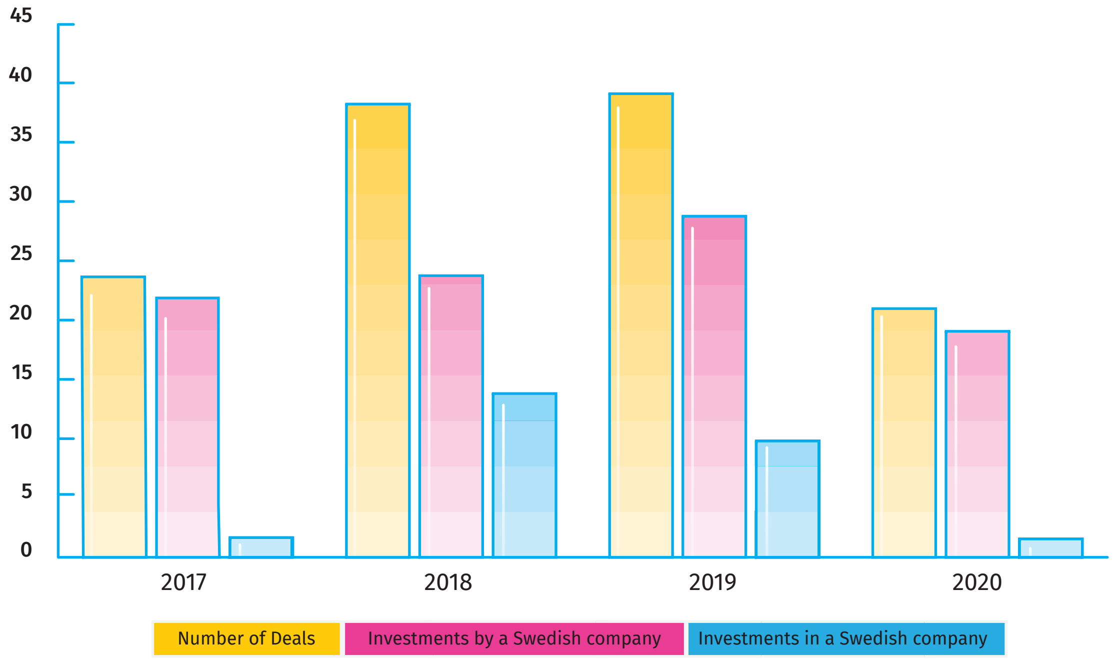
Investments and acquisitions have come to play an increasingly greater role in the Swedish games market in the last few years. Although no single deal has topped the EUR 5.9 billion price tag of mobile games developer King, purchased by Activision Blizzard in 2016. In fact, there have been several transactions valued at over a billion. In 2017, Stillfront acquired German Altigi GmbH – better known as Goodgames Studios – at a price of EUR 270 million.

The biggest known deal in 2019 is Stillfront acquiring Canadian Kixeye at a total value of EUR 111 million. Close at the heels is Nexon from South Korea, initially investing almost EUR 90 million in Embark Studios only to invest another EUR 9 million with an option of buying the remaining shares within five years.

During 2019, a total of 39 known deals that included Swedish companies took place, compared with 38 transactions in 2018. The total value is estimated at just under EUR 400 million, similar to the deals in 2019. Of these, 16 were acquisitions and two trademark investments. Despite the weak currency exchange, in the majority of the game deals in 2019 it was Swedish companies involved in buying or investing.

Embracer Group, MTG VC Fund, EG7 (Toadman) were behind most of the deals where a Swedish company was purchaser and in the majority of these mergers or acquisitions, the seller was a foreign company. Chinese Tencent continued to invest in Swedish companies by investing in Fatshark, Sharkmob studios

Number of business transactions



and Stunlock studio. A much talked-about deal was Epic Games buying the Uppsala company Quixel.

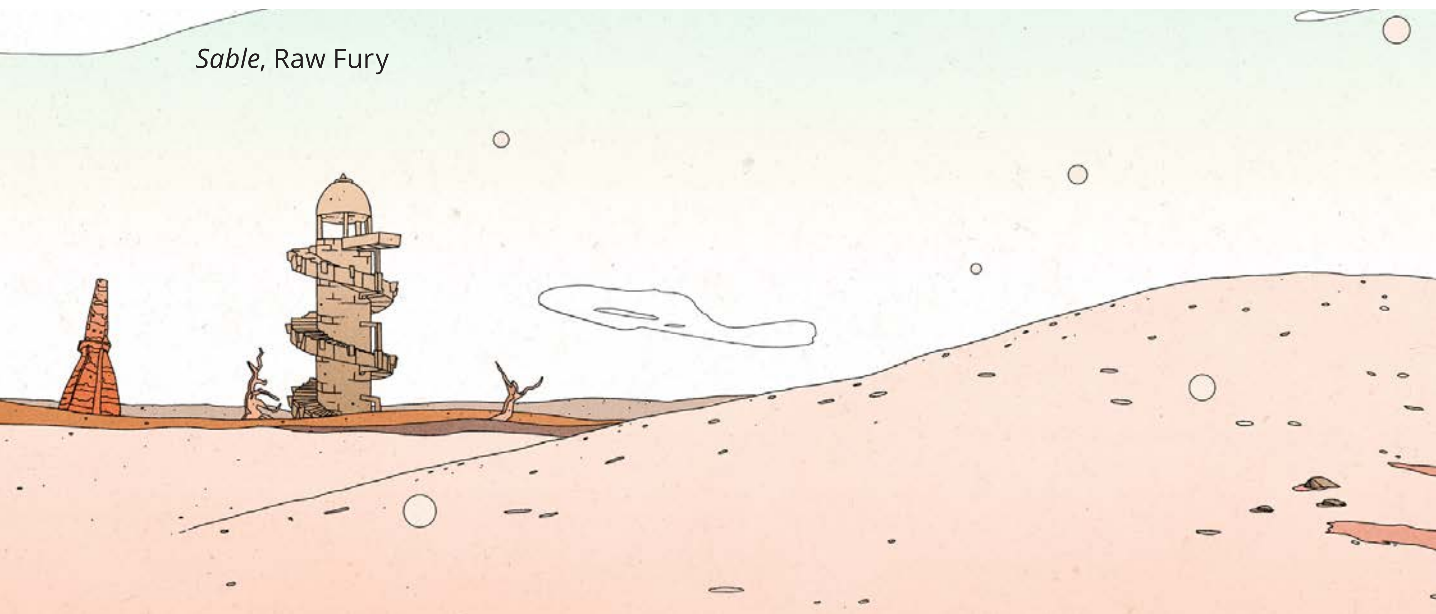
A few game industry veterans have also been spotted in funding rounds and as independent investors. Stefan Lindeborg, KM Troedsson and Susana Meza Graham are among those making it possible for a new generation of games developers to grow.

In recent years, a number of new investment initiatives have also been announced. Nordic Game Ventures is a new fund for games investments, managed by Erik Robertson, who has many years' experience within the Nordic Game Conference and previously ran the support program that existed within Nordic Game. Another new fund and publisher is Wings, with Swedish founders focusing on teams with diverse backgrounds and companies run by women.

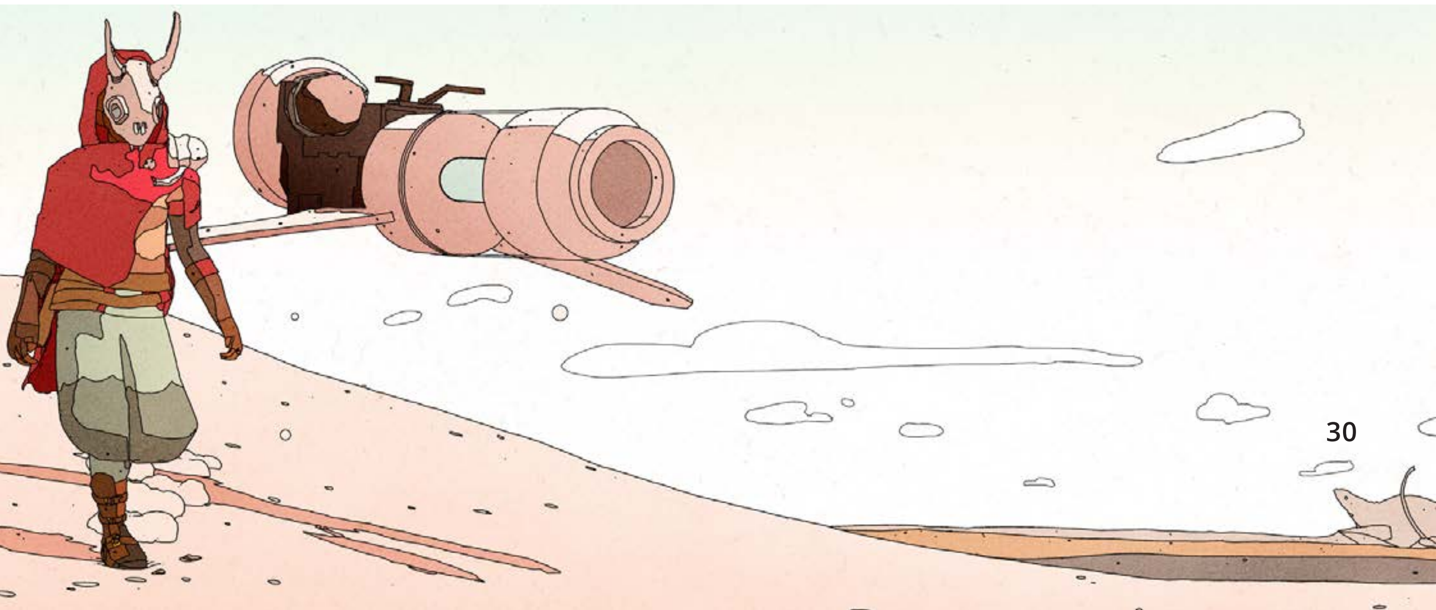
The total value of the 39 deals carried out in 2019 is estimated at just under EUR 400 million. In 2020, the billion mark has already been passed. The list is not complete, in that it only includes the investments and acquisitions that were reported in the media and have come to our attention.

Investments & acquisitions in 2019

Seller	Country of seller	Buyer/Investor	Country of buyer	Type of deal
18point2	New Zealand	Embracer	Sweden	Acquisition
8 Dudes in a Garage/ IGDB	Sweden	Twitch	USA	Acquisition
Adventure Box	Sweden	Blasieholmen Investment Group	Sweden	
Antimatter Games	UK	Toadman (EG7)	Sweden	Acquisition
Antler Interactive	Sweden	Chromaway	Sweden	Acquisition
Bitkraft E-sport Ventures	USA	MTG VC Fund	Sweden	Investment
Chief Rebel AB	Sweden	KM Troedsson/ Loot Spawn	Sweden	Investment
Coherence	Sweden	Firstminute Capital mfl	UK	Investment
Dimfrost	Sweden	Zordix	Sweden	Acquisition
Dorian	USA	MTG VC Fund	Sweden	Investment
Embark Studios	Sweden	Nexon	South Korea/Japan	Investment
Embark Studios	Sweden	Nexon	South Korea/Japan	Acquisition
Fatshark	Sweden	Tencent	China	Investment
Framebunker	Denmark	Goodbye Kansas Game Invest (Amplifier Game Invest)	Sweden	Investment
Framebunker	Denmark	KM Troedsson/ Loot Spawn	Sweden	Investment
Game Outlet Europé	Sweden	Embracer	Sweden	Acquisition
Gaya Entertainment	Germany	Embracer	Sweden	Acquisition
GoMeta	USA	MTG VC Fund	Sweden	Investment
Goodbye Kansas Game Invest (Amplifier Game Invest)	Sweden	Embracer	Sweden	Acquisition
Gunfire Games	USA	Embracer	Sweden	Acquisition
Hatrabbit	Sweden	King	Sweden	Acquisition
Hiber	Sweden	Lumniar Ventures/ Matthew Wilson		Investment
Kingdom	Germany	Raw Fury	Sweden	Trademark purchase


Sable, Raw Fury

Seller	Country of seller	Buyer/Investor	Country of buyer	Type of deal
Kixeye	Canada	Stillfront	Sweden	Acquisition
KSM	Germany	Embracer	Sweden	Acquisition
Leyou Technologies	USA	EG7 (Toadman)	Sweden	Trademark purchase
Luau Games	Sweden	Supercell	Finland	Investment
Milestone	Italy	Embracer	Sweden	Acquisition
Misc Games	Norway	Goodbye Kansas Game Invest	Sweden	Investment
Nomadic	USA	MTG VC Fund	Sweden	Investment
Odd Raven Studios	Sweden	Beyond Frames	Sweden	Investment
Outcast	Belgium	Embracer	Sweden	Trademark purchase
Petrol Advertising	USA	Toadman (EG7)	Sweden	Acquisition
Piranha Bytes	Germany	Embracer	Sweden	Acquisition
Playfull	USA	MTG VC Fund	Sweden	Investment
Quixel	Sweden	Epic	USA	Acquisition
Sayduck	Finland	Bublar Group	Sweden	Acquisition
Sharkmob Studios	Sweden	Tencent	China	Acquisition
Sideline Labs	Sweden	Almi Invest	Sweden	Investment
Stunlock Studios	Sweden	Tencent	China	Investment
Sviper	Germany	MTG VC Fund	Sweden	Investment
Tarsier Studios	Sweden	Embracer	Sweden	Acquisition
Tivola Games	Germany	Three Gates	Sweden	Acquisition
Tonk Tonk Games	USA	MTG VC Fund	Sweden	Investment
Valiant	Sweden	Susana Meza Graham	Sweden	Investment
Warhorse Studios	Czech Republic	Embracer	Sweden	Acquisition



Investments & acquisitions in 2020

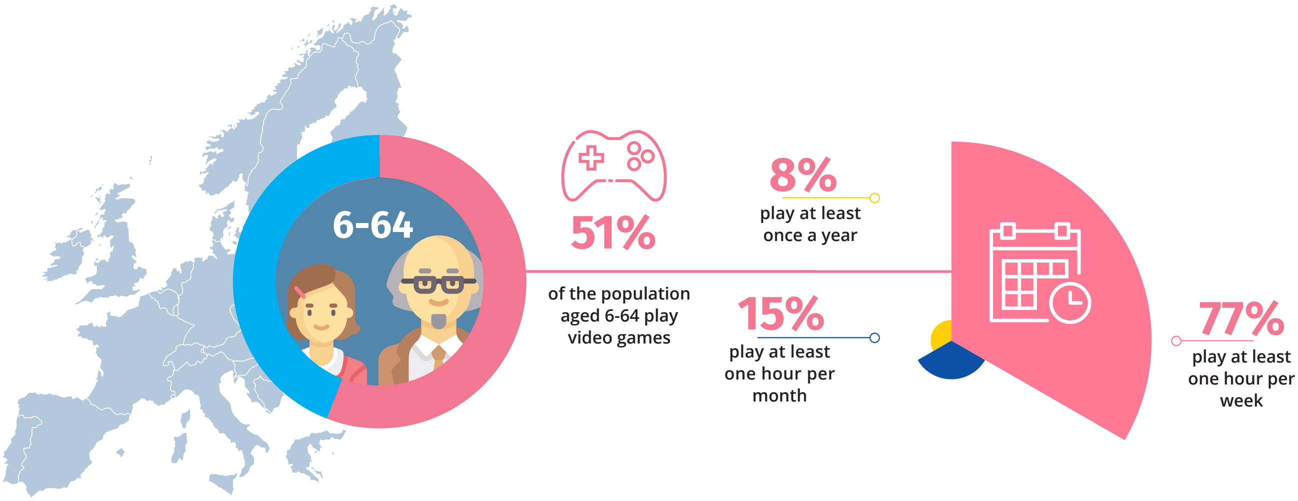
Seller	Country of seller	Buyer/Investor	Country of buyer	Type of deal
10 chambers collective	Sweden	Tencent	China	Investment
34 Big Things	Italy	Embracer Group (Saber interactive)	Sweden	Acquisition
4A games	Malta	Embracer Group (Saber interactive)	Sweden	Acquisition
A Thinking Ape	Canada	Embracer Group (DECA Games)	Sweden	Acquisition
Bergsala	Sweden	Thunderful	Sweden	Merger
Candywriter	USA	Stillfront	Sweden	Acquisition
Coatsink Software	England	Thunderful Group	Sweden	Acquisition
Coffee Stain North	Sweden	Embracer Group (Coffee Stain Holding)	Sweden	Acquisition
DECA Games	Germany	Embracer Group	Sweden	Acquisition
DestinyBit	Italy	Amplifier Game Invest	Sweden	Acquisition
Everguild Limited	Spain	Stillfront	Sweden	Acquisition
Flying Wild Hog	Poland	Embracer Group (Koch Media)	Sweden	Acquisition
Goodbye Kansas	Sweden	Bublar Group	Sweden	Acquisition
Guru Games	Sweden	Thunderful	Sweden	Acquisition
Ice Flake studios	Finland	Paradox Interactive	Sweden	Acquisition
Invictus	Hungary	Zordix	Sweden	Acquisition
IUGO Mobile Entertainment	Canada	Embracer Group (DECA Games)	Sweden	Acquisition
MachineGames/ Zenimax	Sweden/USA	Microsoft	USA	Acquisition
Mad Head Games	Serbia	Embracer Group (Saber interactive)	Sweden	Acquisition
Nanobit	Croatia	Stillfront	Sweden	Acquisition
New world interactive	USA/Canada	Embracer Group (Saber interactive)	Sweden	Acquisition
Nimble Giant	Argentina	Embracer Group (Saber interactive)	Sweden	Acquisition
Palindrome Interactive	Sweden	Embracer Group (AmplifierGame Invest)	Sweden	Investment/Acquisition
Playrion Game Studio	France	Paradox Interactive	Sweden	Acquisition
Pow wow entertainment	Austria	Embracer Group (THQ Nordic)	Sweden	Acquisition
Purple Lamp Studios	Austria	Embracer Group (THQ Nordic)	Sweden	Acquisition
Quantic Lab	Romania	Embracer Group	Sweden	Acquisition
Rare Earth Games	Austria	Embracer Group (AmplifierGame Invest)	Sweden	Acquisition
Saber Interactive	USA	Embracer	Sweden	Acquisition
Sandbox Strategies	USA	Embracer Group (Saber interactive)	Sweden	Acquisition
Silent Games	UK	Embracer Group (AmplifierGame Invest)	Sweden	Acquisition
Snapshot Games	Bulgaria	Embracer Group (Saber interactive)	Sweden	Acquisition
Sola Media	Germany	Embracer Group (Koch Media)	Sweden	Acquisition
Storm8	USA	Stillfront	Sweden	Acquisition
The Station Interactive	Sweden	Thunderful Group	Sweden	Acquisition
Vermila	Spain	Embracer Group (AmplifierGame Invest)	Sweden	Acquisition
Wild Games	Sweden	Supercell	Finland	Investment
Zen Studios	Hungary	Embracer Group (Saber interactive)	Sweden	Acquisition

Amnesia: Rebirth, Frictional Games

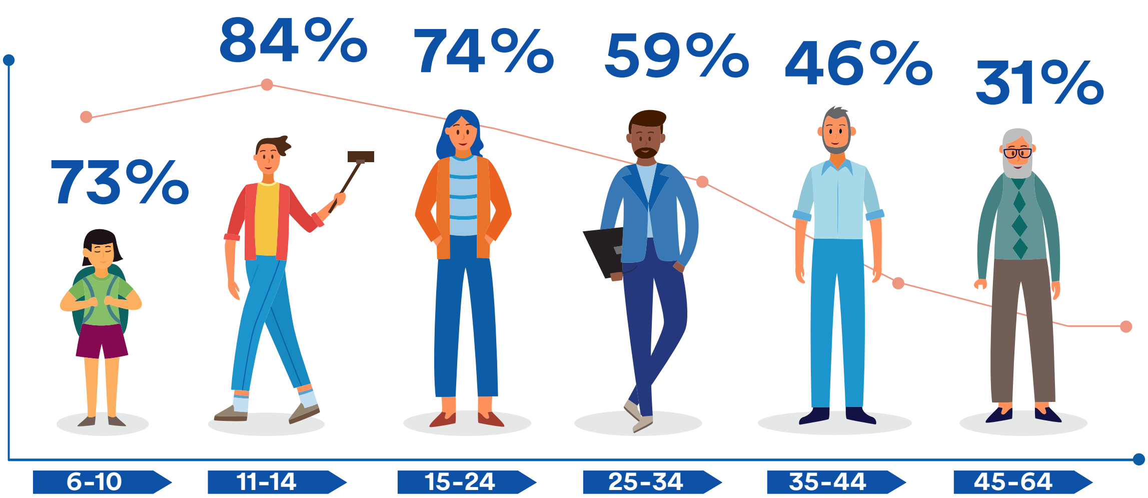
Gamers

In August 2020, the European trade organization ISFE, Interactive Software Federation of Europe, published the results of a survey of the European games market, based on data from the major countries France, Great Britain, Spain and Germany. Here is a selection from the report.

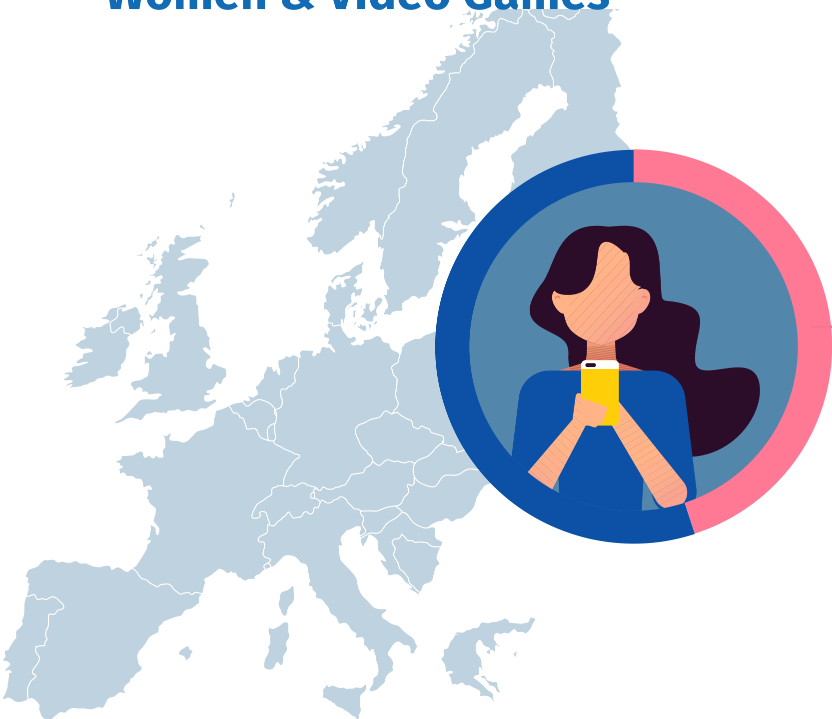
See the full report www.isfe.eu/isfe-key-facts



Proportion of gamers per age category



Women & Video Games



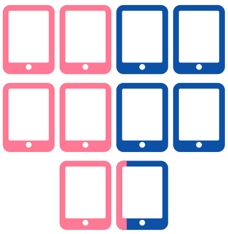
46%

of EU gamers are women

Women represent

51%

of all mobile and tablet video games players



Entrepreneurship and national collaborations

In a growing industry, the need for regional support and engagement as well as cooperation with higher education and the local economy are clear. In the last few years, several regions have focused on game development and local enterprise, often thanks to local enthusiasts. These drives new companies and contribute to employment in the country as a whole.

Arctic Game Lab is one of Sweden's fastest growing game clusters. With a common platform for development of new studios, start-ups, education, meet-ups and investments in the counties Norrbotten and Västerbotten, the cluster has become a center of successful game development in the north. According to Arctic Game Lab, 2019 was a record year for the region; the number of established companies increased by almost 30% and the number of employees doubled. Almost 400 people are employed by over 70 companies. The annual cultural event Nordsken and the affiliated game event Arctic Game Week unfortunately had to be cancelled in 2020, due to Covid-19.

East Sweden Game has since its inauguration in August 2017 built an ambitious community in Östergötland county. With some 60 active members, almost 30 game projects in progress and the third batch of accelerator programs in the fall of 2019, ESG works to elevate hobby developers to entrepreneurs. East Sweden Game offers employment at Ebbe Park, regular lectures and close cooperation with other local initiatives such as Linköping AI and NärCon. In Linköping, the LiU Game Conference and LiU Game Awards are also arranged at the end of November each year, attracting international speakers and visitors from both academia and the developer community.

In Visby, Science Park Gotland has run the project Game Camps, an international collaborative project giving developers from Sweden, Finland, Estonia and Lithuania an opportunity to learn about the game industry. The main aim of the project is to give the participants game industry know-how and the possibility of collaborating within the central Baltic region. Game Camps have engaged close to 300 participants and ten new cross-border companies have been formed in the course of two years. Alumni from the game education program Uppsala University Campus Gotland can be found in the game companies Nexile, Neat Corp, Toadman Interactive, Enad Global 7, Redbeet Interactive.

In Karlstad, The Great Journey is offering local meet-ups, indie game education and a game lab in collaboration with Innovation Park Karlstad, Futuregames and Molkom College, with support from Embracer Group (THQ Nordic).

In Falun, the game development education PlaygroundSquad is celebrating its 20th anniversary and more than 500 pupils have qualified in games graphics, programming and design. Here the game industry works closely with more traditional Swedish industries such as paper, steel and tourism to establish how digitalization, gamification and games-related skills can be utilized to promote development; and to become more attractive for a future workforce. The same methods are used in connection with the launch of 5G-telephony. Just one example of how the game industry is one of the most significant in Sweden.

Stockholm got its first game incubator in 2017, when Sting introduced Sting Game, which has three startups in its incubator program. As a complement to Sting Game there is a co-working space at Embassy House and regular meet-ups. Partners of Sting are: Goodbye Kansas, Resolution Games and Paradox.

The Game Incubator has run a successful incubator program for game developers in Skövde since 2004 and since 2016 they can also be found in 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. In the business park, companies such as PocApp, Coffeestain Studios, Stunlock Studios, Flamebait, Pieces Interactive, Redbeet Interactive and Ludosity can be found, with titles such as Goat Simulator, Satisfactory, Battlerite, Castle Cats, Passparteut, Raft and Slap City. Based in Skövde, the project Sweden Game Arena focuses on export drives at game fairs and international conventions. Also, in Skövde, the Sweden Game Conference is held in October every year, with speakers from all over the world. This year the first industry-employed PhD student has joined the University of Skövde and another is expected to take up a position at Malmö University.

For many years in the south of Sweden, Gameport has run a successful incubator in Karlshamn, which is part of the Blekinge Business Incubator. In Malmö, the interest group Game Habitat works with the region and the municipality to grow the local game community. Proof that the work is successful can be found in the number of new companies and the number of employees in the region. In September 2018, Game Habitat opened a co-working space called Game Habitat DevHub, housing everything from smaller game developer studios, to satellite offices for companies like Raw Fury and Coffee Stain. In January 2019, IO Interactive, the Danish developers of Hitman, opened their first Swedish office and now has some 20 employees working from DevHub in Malmö.

Valkyrie Game Jam was arranged for the second time in July 2019. It's a ten-day summer program allowing 12 women and non-binary individuals to focus on getting deeper into game development. Valkyrie Game Jam is supported by the non-profit organization GameDev Force in collaboration with local actors and sponsored by established games companies such as Valve and Nordisk Film Games. In 2019, around 100 women applied for a place. Unfortunately, due to the ongoing pandemic, Valkyrie Game Jam could not take place in 2020.

Game jams:

There are several other initiatives around the country arranging game jams or other kinds of collaborations. Collaborative is an innovation lab promoting diversity and inclusivity and running annual game jams and meet-ups primarily in Gothenburg and Stockholm. In Väckelsång outside Tingsryd, Spelkollektivet is situated – a building where game developers from all over the world rent spaces to work short- or long-term on personal game projects. In the last year, some unexpected actors have arranged game jams: Stockholm City Museum was one of the hosts of Global Game Jam in 2019. Castle Game Jam took place during over a week in summer 2019, game fans from all over the world congregated in Örebro Castle to develop video games together.

The Stockholm Museum of Technology has a permanent exhibition focusing on video games, allowing visitors to play, create their own characters and learn more about game development.

In addition to these initiatives and collaborations, the number of game development courses on offer has increased. Education programs can be found throughout the country at universities such as Chalmers, Blekinge Institute of Technology and Luleå University, but also at vocational universities, community colleges and high schools. *

The Nordic game industry

Country	Number of companies	Revenue M EUR	Number of employees
Sweden (2019)	435	2 318	5925
Finland (2018)	230	2 200	3200
Denmark (2018)	159	123	1009
Norway (2018)	388	37	285
Iceland (2016)	18	53	450

Please note: Because of the different methods of measuring the size of the companies, the figures above are not immediately comparable. In Sweden, only limited companies are included in the official count.

Spearheaded by Sweden and Finland, Scandinavia has developed into one of the world's foremost games producing regions. Competition between the countries and between the companies in the region is limited. On the contrary, a growing labor market and an increasing number of companies attracting international talent is beneficial for everybody. Good synergies can be found in workplaces and in education, where individuals from other Nordic countries can apply in Sweden. Finland has a dominant position in terms of native revenues, primarily driven by the good fortunes of Supercell. The Swedish games industry has greater breadth when it comes to companies, success and trademarks for all platforms. Synergies between the countries are also noticeable in the public listings of the companies and co-operation on for example Nasdaq.

Amnesia: Rebirth, Frictional Games

Intellectual property rights drive investments

To enable investment in companies where the intellectual property rights are the biggest asset, it must be possible to maintain the core principle, the exclusive rights. If anybody can sell or distribute the product, the exclusive rights are void, the earnings restricted and the prerequisites for investment null. Unlawful competition in the form of illegal distribution, copyright infringement, clones or data theft is therefore substantially hindering investment.

A big advantage, compared to other creative industries, is that the content of games is interactive. This creates some means of avoiding illegal use and distributing the games for free in order to earn money from the content as a next step. Some game developers choose frequent updates to tire out those who infringe or spread pirated versions of the games. It is clear, however, that the piracy market is active and innovative. The developments can almost be described as a race between those who create the content and those who want to take advantage of, or unlawfully distribute it.

In addition to conventional consumer piracy, such as for example illegal downloads and file sharing, this race has led to new forms of infringement. It cannot always be described as intellectual property infringement; often it is hacking or fraud. Two examples of this are clone apps and non-authorized keys.

App clones are popular games copied and published by somebody else. Title, brand, content and code are much the same as the original but the clone is often of bad quality and of course profits from the investment in developing the original. Sometimes the clone is an identical copy of the game. In these cases, the developers have to enlist the middle-men - the internet platforms or the digital marketplaces where the app clones are distributed - in order to limit the spread, since it is normally very difficult to reach the actual cloner.

Non-authorized keys are used as many games are distributed via several different channels. A" key" – a complex series of numbers and characters – renders the unlocking of the game possible. The key is accessible after payment but there are also free keys, handed out by media and distributors. Through hacking or breach of contract, criminals can lay their hands on the keys and sell them, often through particular market places whose official business idea is to allow gamers to re-sell used games.

Recently, the problem of unlawful trading in game content has been flagged. In market places run by third party actors against the interests of the rights owners, gamers can trade in content from games and sometimes take part in betting. The games companies are trying to counteract the practice, sometimes with the help of technical protection and by banning players who violate the terms of use, but it's difficult for the individual company to take measures against these black markets often managed from countries where sanctions are not effective. This is not strictly trademark infringement, but is very similar in practice to previous problems with pirate sites: actors that gain unauthorized access to the rights owner's content in order to use it for profit.

The scope of the infringements is difficult to measure. There are other methods than those mentioned here, but the conclusion is that, unfortunately, video games are not spared from illegal competition and the problem cannot be solved entirely by the business alone. Interventions are required in the form of legal action, international co-operation between law enforcement services and internet agents such as telecom firms and digital marketplaces, and through consumer information as well as technical protection measures. Large companies are better at protecting themselves through technical solutions than small companies, and they also have better legal resources. The smaller the company, the more dependent it is on society's institutions to protect its intellectual property and, in the long run, its investments.

There has been some significant legal progress in Sweden in recent times. Partly, this concerns decisions in the Patent and Market Court of Appeal which clarify the responsibility of intermediaries - telecom operators - to act against infringement. Furthermore, new legislation, Serious Intellectual Property Crime, has been in place since September 1, 2020, aiming to give the legal system better tools to act against infringement on a commercial scale. These are steps in the right direction, but it is unclear how effective they will be against organized crime often operating out of other countries.

Covid-19

The year 2020 has affected Sweden and the rest of the world in several ways. Many industries were hit hard by the pandemic and people have lost their jobs. Conversely, the video game industry and other home entertainment industries have done well or even better than expected during this period. As the world locked down, with many working from home and children staying home from school, it has been widely reported that video game companies have benefited, both in Sweden and internationally.

Many followed the public health authority's advice to work from home as far as possible and this has led to challenges for everybody, both in finding new ways to work and communicate but also when it comes to planning. According to the quarterly and interim accounts of the listed companies, this has in some cases affected projection regarding games and some delays have been reported.

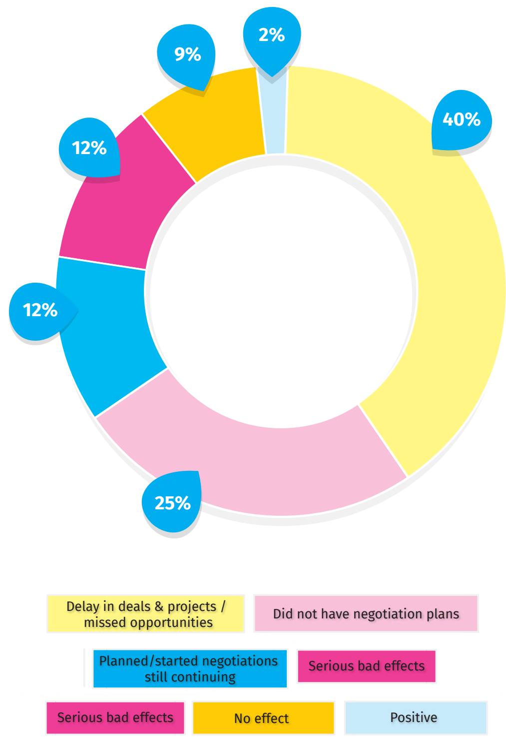
Judging by the quarterly and interim reports from several of the largest companies, revenues have been positively affected by the pandemic and the subsequent lockdowns in large parts of the world.

Although it can be assumed that the global situation has had positive effects on sales, the companies themselves are more careful in reporting just how much is due to the Covid-19 pandemic. Paradox, for example, mention that, at the end of the first half of 2020, they witnessed the previous positive trend of increased gaming slowing down.

King states that in Q2 2020 they saw more games played than in any previous quarter. Most of the large companies have created or advertised hundreds of jobs during the year.

Just as the global situation has had positive effects on already established companies, games and brands, with an influx of new players, more activity among existing players and more paying players, it has affected others negatively. Many of the major events planned during the year have been canceled, among them the Game Developers Conference in San Francisco and various e-sports events.

Although many acquisitions and investments have taken place during the year, the situation may have affected investments in smaller companies. The EGDF conducted a survey (**http://www.egdf.eu/egdf-covid-19-survey/**) among game developers in the EU and concluded that there had indeed been an impact:



There seems to be a discrepancy between different regions in Europe, which could be due to differing containment strategies between countries.

The long-term effects on the Covid-19 pandemic on the game industry are difficult to anticipate.

Threats and challenges

In the course of the year, Swedish game developers have increased both revenues and number of employees, but there are many threats to the positive developments and these need to be dealt with to enable growth to continue and in order to prevent the Swedish industry from falling behind the rest of the world.

Recruitment

2019 saw 605 new employees in Sweden, but there continues to be a huge demand for competence and it is clear that recruiting within Sweden is not enough to secure growth. Every year, significantly fewer game developers graduate than are employed. The industry is recruiting abroad to a high degree and it is difficult for new arrivals to find accommodation and receive a work permit. Several game developers have been affected by so-called competence deportations, i.e. withdrawn work permits due to for example administrative errors by previous employers. Long processing times for both issue and renewal of work permits lead to insecurities in the job market and to employees rejecting Swedish employers in favor of countries where the process is simpler and more predictable. Other practical obstacles, such as employees not being able to travel whilst waiting for permits is another hindrance. The work within industry towards diversity and equality has meant that more women have been employed and has created an increased recruitment base, but this work needs to continue. Further training of existing staff is also important in order for the industry to thrive.

Financing

The access to capital has improved but looking at the investments in the Swedish market, just like in previous years, a clear majority are by established companies. The flow of new capital is limited, and not least in early stages, it is remarkably difficult to find funding. This particularly punishes smaller companies without a strong, existing network and it is threatening to hinder innovation and diversity long-term. In competing countries such as the United States, Canada, United Kingdom and Finland, there are long established financing structures, tax relief and other forms of support to give start-ups a boost in the international competition. For Swedish companies, the absence of such measures means a restriction on trade in practice. Within the industry, there is a need for further increased business competency, especially in small and newly formed companies.

Digital Market

The European Community is working extensively to simplify the digital market, and essentially it is an ambitious project, also benefiting the Swedish companies selling games to consumers all over the world. But there is a lack of understanding of how games work, and many times the game developers are impacted by rules made for tackling problems in other industries, or where specific large companies have abused their position. The proposal of a digital tax is one such example, potentially having a devastating impact on smaller developers. The game companies are often also squeezed between the dominating platforms, trademark infringement and licensing abuse. The copyright reform leaves a lot to be desired in these areas, some of them could possibly be addressed in the domestic implementation of EU directives.

Sustainability

A majority of the population of Europe are gamers of some description, and with that comes a responsibility for how games and game development affect the environment and climate. The shift to digital distribution leaves a smaller climate footprint than physical games, but running servers and hardware still has an impact. Online games on servers, where the game is run on local software, is more energy efficient than for example video streaming, but the cloud gaming of the future requires more access to renewable energy to be sustainable long-term.

Methodology

This report is a summary of annual reports from the industry register of the Swedish Companies Registration Office, from companies with game development or specialized subcontracting as a major part of their operations. Examples of subcontractors: Elias Software (adaptive audio engine), Quixel (texture solutions) and Localize Direct (localization/ translation of games). Game companies focusing on poker, gambling or casino games are not included in the selection.

Companies that have changed focus from game development or publishing, or who can not show that a large part of their operations has a significant function for other game developers are omitted from the report. An example from this year is Oryx Simulations, who in their annual report show that they work with heavy vehicles.

Retailers and pure distributors (such as the Swedish offices of Bandai Namco, Activision and Electronic Arts) are also not included, despite their importance in the industry. The method has several flaws: corporate forms other than limited companies fall outside the scope of the data, as do companies active in Sweden but registered in other countries. This results in a grey zone, and key figures such as revenue and employment can in reality be slightly higher than those stated in this report. The strength of the method is that the data is audited and published by the financial authorities.

The method used in reporting numbers of employees remains the same as in previous years, a complete description of this methodology can be found in the chapter Employees.

In some cases, the annual accounts have been filed late in the year, often a repeating pattern. In these cases, the result for the previous year is reported. The same applies when companies use different fiscal periods. Where possible, we have used the latest report for a full 12-month period.

Non-game related parent companies also pose a problem. More precisely the problem occurs when a company's game development operation is reported in the parent company, which means it cannot correctly be identified for the Game Developer Index. A problem shared by the majority of industry organizations. In those instances where 2019 annual accounts have been unavailable, the previous year's figures for profit/ loss, revenues and number of employees have been used. Some companies continually file their accounts too late to be included when this report goes to print. This year, an unusually large number of companies had no accounts available in time for printing, mostly due to long processing times at the Swedish Company Registration Office. This led to a delay in data collating and, for this reason, the publication of the report was postponed, in order to present a more complete and factual report. In the case of listed companies, we have used the reports the companies themselves have published, e.g. for Embracer Group, whose fiscal year ends 03/31/2020, we have used the 2020 accounts, which could be influenced by the Covid-19 pandemic, although probably not significantly, as the effect was not noticeable until in Q2 2020.

In total there are 30 companies whose annual accounts had not yet been registered at the time of this report's publication. This means the 2018 figures are reported for these companies. The total revenues of these companies are less than 1% of overall revenues, in other words the impact on the report as a whole is very small. The largest of these companies is Glorious Games.

In this year's report, a new category has been added under revenue, income in addition to net revenue. These income can be of different origins , e.g. exchange rate gains, rental income, sale of intangible assets, or dividends from subsidiaries. The revenues presented in the report are revenues that are directly linked to a game or a brand and therefore can be seen as part of revenue.

Income that is listed as rental income or exchange rate gains in the annual accounts has not been included in the report, as this form of earnings is not derived directly from a company's brand or product. This income is reported for the first time in this year's report, and will therefore show a large difference compared to the previous year.

Revenues of this kind vary from year to year and will have differing effects on both revenue and result, therefore they are reported separately.

The companies' group accounts have been used, as far as such have been issued and as far as the main group activities relate to game development.

Tom Clancy's The Division 2: Warlords of New York, Massive Entertainment

Glossary

AAA: A popular term for elaborate games with big budgets and many staff, usually released by the biggest publishers in the industry, primarily through physical distribution.

AI: Artificial Intelligence - in simple forms it controls characters in a game with path finding and flow charts. More modern AI with methods such as machine learning in neural networks is a growing area within video games.

Alpha: Signifies the phase in software development when the product is ready for software testing.

AR/Augmented Reality: Direct or indirect viewing of a physical environment, whose elements are augmented (or complimented) by computer generated sensory input (audio, video, graphics or GPS data).

Beta: The phase following alpha. It is often during this phase, that the software is available for consumer testing for people outside the development team. These external testers are called beta testers.

Casual games: Games of the simpler kind. They often have minimal storylines, shorter learning curves and are designed to played in short bursts.

Cloud gaming: Also known as gaming on demand, a type of online game that allows streaming of a game hosted by the servers of the operator or developer. This means a game can be played without the need for a console or optimal computer performance, as all calculations are carried out elsewhere.

Core: A term used to describe games made for more self-aware players or "gamers".

CPM: Cost per mille, cost per thousand advertisement impressions.

Crossplay: Enabling a game to be played simultaneously on different platforms.

Crowdfunding: Financing of a project through crowdsourcing. In recent years this has been expressed through various web platforms that collect their financial support for various projects from interested private individuals or companies.

Streaming: Direct playback of digital material simultaneously transmitted via the internet.

Crowdsourcing: Outsourcing to an undefined group of people, rather than paid employees.

DAU: Daily Active Users; the number of unique users per day.

Digital distribution: Sales of digital software through digital channels.

DLC: Downloadable content; downloadable add-ons for video games, often on a smaller scale than classic expansions.

Early Access: Games released for sale in an early development phase before the official launch.

Freemium: Collective term for a business model where a product or service is offered for free, but where the player has the possibility to unlock advanced functions and virtual objects or bypass waiting times, by means of micro transactions.

Free-to-play/free2play: Games that offer the user to play the game free of charge in its basic version, but where the income is instead generated through for example adverts, or the option to unlock the full version for a fee.

Game jam: Brief event where developers meet and create games together during a limited time, often with a particular aim or theme.

In-app purchase: A purchase made in an app or game, rather than externally or through a linked payment system. The goods purchased usually consist of new runs, equipment, experience points or subscription services.

Indie: from independent. A prefix characterizing games from independent. developers, usually of the smaller kind, with few involved in the development. process. Lately, indie represents the stream of developers that have reached a wider audience thanks to digital distribution, which has made them financially viable.

IP: Intellectual Property, the immaterial rights of the company, often used in the video game industry to describe a concept, trademark or anything within the framework.

MARPPU: Monthly Average Revenue Per Paying User

MARPU: Monthly Average Revenue Per User

MAU: Monthly Active Users; the number of unique users over 30 days.

Middleware: Software used to develop games. Middleware acts as a glue between two existing software components.

Micro payments: A transaction involving smaller sums, carried out online. There are different definitions of the amount of money they can consist of, but in the games business the term is used to describe payment of for example DLC and in-app purchases.

Off-shoring: Outsourcing internationally.

On-shoring: Outsourcing within the country's borders.

Outsourcing: To hire external personnel and specific competence from other companies. Production tasks for other companies.

Retail: Games sold in a retail store.

Serious games: Games with a principal purpose other than entertainment. It can refer to simulators, exercise games, learning games, rehabilitation games or commercial games, so called advergames.

Smartphone: Collective term for cellphones with a large computing capacity, with graphical screens and internet connection. Popular operating systems are Android and iOS.

Social games: Collective term for social network games, for example Mobage and Facebook.

Soft launch: To launch a game in certain markets to evaluate engagement.

Virtual goods/items: Term referring to virtual objects, such as those existing in video games in the form of puzzle pieces, weapons or other items.

VR/Virtual Reality: A way of being visually enclosed in a gaming experience, often with the help of a goggle-like accessory.

Little Nightmares II, Tarsier Studios

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