Game Developer Index **2019**

DATASPELSBRANSCHEN
SWEDISH GAMES INDUSTRY

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Key Figures

KEY FIGURES	2018	2017	2016	2015	2014	2013
Number of companies	384 (+12%)	343 (+22%)	282 (+19%)	236 (+11%)	213 (25+%)	170 (+17%)
Revenue EUR M	1 872 (+33%)	1 403 (+6%)	1 325 (+6%)	1 248 (+21%)	1 028 (+36%)	757 (+77%)
Profit EUR M	335 (-25%)	446 (-49%)	872 (+65%)	525 (+43%)	369 (29+%)	287 (+639%)
Employees	7 924 (+48%)	5 338 (+24%)	4 291 (+16%)	3 709 (+19%)	3 117 (+23%)	2 534 (+29%)
Employees based in Sweden	5 320 (+14%)	4 670 (+25%)	3 750	No data	No data	No data
Men	6 224 (79%)	4 297 (80%)	3 491 (81%)	3 060 (82%)	2 601 (83%)	2 128 (84%)
Women	1 699 (21%)	1 041 (20%)	800 (19%)	651 (18%)	516 (17%)	405 (16%)

Tom Clancy's The Division 2, Ubisoft Massive Entertainment

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Preface

Art and social impact – the next level for Swedish digital games

The game developers just keep breaking records. What once was a sensation making news headlines – "Swedish video games succeed internationally" – is now the established order and every year new records are expected from the Game Developer Index. It's therefore both a joy and a relief to be able to report that Sweden's game developers continue to surpass expectations.

Since the last report was published, two new trends have become apparent: First, several Asian actors have invested in Swedish game development, most notably Chinese Tencent investing in Fatshark and acquiring Sharkmob, and Japanese-Korean Nexon's investment in Embark Studios. The majority of the major western business actors have long been established in Sweden, and now Asia is joining in. It remains to be seen if this move proves as influential.

Second, the Swedish companies have increased their acquisitions abroad. In other words, moving in the opposite direction. This has been made possible not least because more Swedish games companies are now listed on the stock market and can use their own share capital. It's not a brand-new trend, but it has certainly strengthened in the last couple of years. For this reason, the report now also details how many people the companies employ abroad.

But the biggest changes lie partly outside the companies' own operations; the 2019 Game Developer Index notes that the games companies pay over EUR 200 million in tax (corporate tax, wage tax and employer contributions). That pays for approximately 5,000 nurses, which also happens to be roughly the number of people working in game development in Sweden today. In short, every employee equals a nurse. That's a concrete example of the kind of benefit to society that's inherent in the success of these companies.

Yoku's Island Express, Villa Gorilla

The figures presented in the 2019 Game Developer Index mainly describe the financial side of the companies. The financials, however, reflect the enthusiasm of gamers. Real individuals are buying games and content with their own money. A functioning digital economy. Gamer enthusiasm is created by the quality of the games and the creativity of their developers. This is an aspect that is often overlooked, despite it being central: without the player, no game. The words of a book are printed in the same order regardless of who's reading. A track always has the same notes and chords, and a movie always shows the images in the same order. But a game is given life by the players; without their interaction, nothing happens.

There can be more or less scope for individual player creativity in a game, but the player is always in control. Many games offer a possibility to shape the content, create new runs or build anything you want. This might not also be a new phenomenon, but the world outside games is starting to take note. Fine art institutions all over the world are embracing digital games as a form of creative expression: MoMA in New York, Smithsonian in Washington, The Barbican and Victoria & Albert Museum in London, NTT Intercommunication Center in Tokyo and many others. In Sweden, this summer ArkDes in Stockholm presented an exhibition looking at visual design in five contemporary Swedish games. The Market Art Fair covered video games in its program. The Technical Museum in Stockholm opened and extended the exhibition Play Beyond Play about the virtual worlds of the games. Also worthy of a mention are numerous popular concerts in which a symphony orchestra performs video game soundtracks and scores.

Many Swedish towns and cities have added game development to the curriculum in arts and cultural education. In addition to learning the recorder and contemporary dance, children and young people can now learn how to develop games. I'd like to think that this increases creativity as well as making them more discerning consumers. Perhaps some of them will find work in the companies included in future editions of this report? One thing is for sure, if the industry is going to keep producing record figures, creativity will be a vital component.

Stockholm, September 2nd, 2019

Per Strömbäck
Spokesperson Dataspelsbranschen

Summary

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 launch 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 entrepreneurs starting new companies, and the implications and effects of the last couple of years' larger investments and acquisitions.

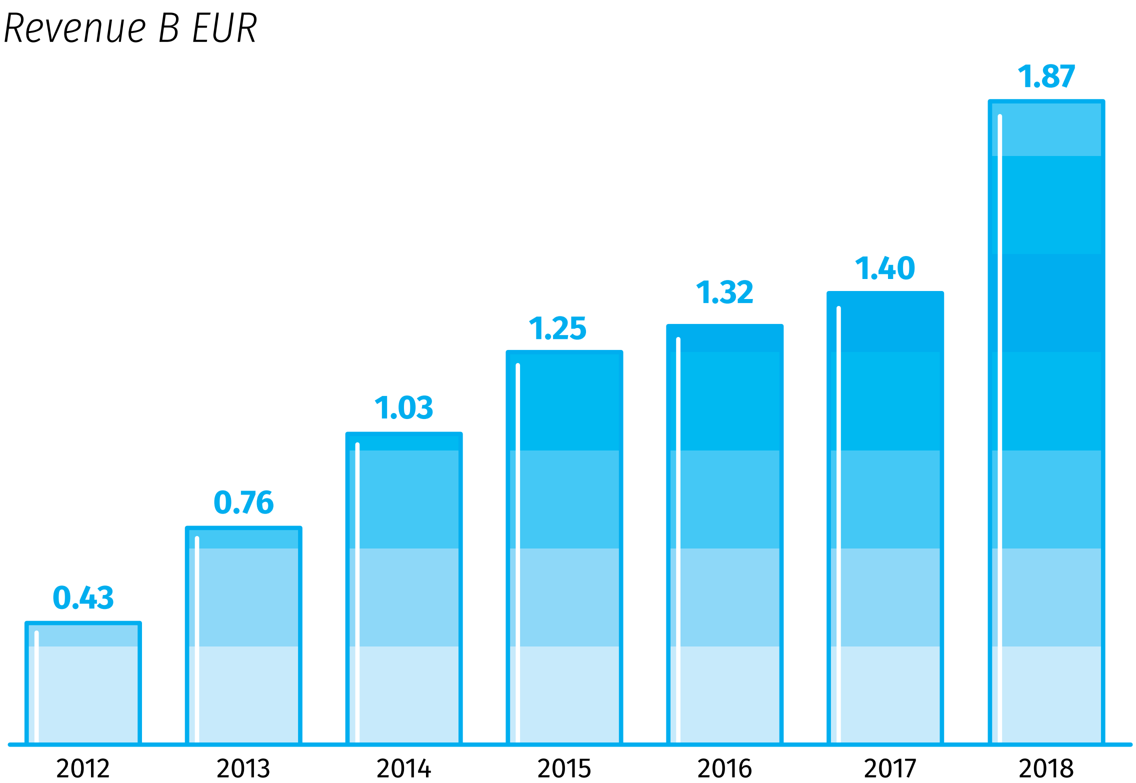
Swedish game developers are characterized by their range and quality. Sweden has world leading developers within AAA/console, PC, mobile, VR, digital distribution and specialized subcontractors. The biggest challenges of the sector are indirect such as access to skills, as well as laws and regulations around digital markets. The future is bright, but the industry needs to increase its diversity to gain more developers and players, and make the best games in the world.

The Game Developer Index analyzes Swedish Game Developers' operations and international sector trends over a period of a year, by compiling the companies' annual accounts. Swedish game development is an export business 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 2019 Game Developer Index summarizes the Swedish companies last reported business year (2018).

Main Findings

- Revenue increased to **EUR 1.87 billion** in 2018, which is an **increase of 33%** compared to 2017, and an almost three-fold increase in the space of five years. This is higher than the global average of 12%.
- Jobs increased by 48 percent, over 2,586 new full-time positions to 7,924 employees at Swedish registered companies. Of these 5,320 people are based in Sweden, this is an increase of 650 people compared with 2017.
- A fifth of the industry in Sweden is female. More precisely: 1,036 women are based in the country and in total 1,699 women are employed by a Swedish company, a share of **21%**.
- Most companies are profitable and the sector reports total profits for the tenth year in a row.
- 41 new companies bring the total to 384 active companies, an increase of 12 percent.
- During 2018 there were 38 reported investments and acquisitions worth over **EUR 400 million** on the Swedish market. In 28 of these transactions, a Swedish company was the buyer.
- From January to September 2019 there were 29 reported investments and acquisitions on the Swedish market worth in total EUR 240 million.
- The 25 largest companies contributed EUR 114 million in tax on company profit.
- The 15 largest companies that declared social security fees in their annual report contributed **just over EUR 100 million in additional taxes**.

Revenue



Currency conversions from SEK to EUR is based on the yearly average reported by the Swedish Central Bank, Riksbanken

Hammerting, Warpzone Studios

Revenue & Profit

With growth of 33% and a value of EUR 1.87 billion, 2018 proved another strong year for Swedish games companies. In the global competition, they have successfully gained market shares, attracted competence and not least created gaming experiences for several hundred million players worldwide. Counting 41 new companies and over 600 new employees in Sweden, the sector is showing stable growth. In a world where games developed in Sweden reach over a billion players*, Swedish game developers are carefully maintaining and honing the relationship with the users. With total profits of over EUR 335 million, the industry is profitable for the tenth year running. In a decade, the enterprise has grown from around a hundred companies with combined revenues of just EUR 100 million, to an established, countrywide industry.

*Based on sales and download figures for games developed in Sweden.

The video game industry is profit-driven. The 25 largest companies paid EUR 114 million in tax on their profits. In addition, the companies also pay national contributions to the public purse; the 15 largest companies have contributed over EUR 100 million in wage taxes, this sum does not include pension contributions.

2018 is signified by big changes on a corporate level in the Swedish games industry.

Previously, Mojang and King have clearly dominated and created a large proportion of the combined Swedish company revenue, but now seven companies have revenues of over EUR 100 million and the Karlstad company Embracer Group is the biggest games company in Sweden, after acquiring Koch Media. Both King and Mojang report big profits and stable revenues of approximately EUR 200 million and EUR 300 million respectively. However, the results of these two companies are somewhat lower than in previous record years.

The games industry is an export trade and like all Swedish export it has benefitted from a weak Swedish currency, which can be seen primarily in the positive revenue numbers. Despite the weak Swedish Krona, several companies have made big investments, something which obviously influences the net profit. A more detailed analysis of the investments in the native market will follow later in this report.

The number of games released that are developed in Sweden varies from year-to-year. Nowadays, however, the industry has sufficient breadth and individual titles and therefore have less impact on the total result. Here are a few examples of big events in 2018:

Embracer Group, previously THQ Nordic, has grown significantly due to the acquisition of Koch Media. In 2018, it became the largest games company in Sweden. With revenues of over EUR 400 million and over with 1,300 employees internationally, the group makes an impact, not just in Sweden but all around the globe. Embracer Group also bought Swedish Coffee Stain Studios and which includes the home-grown Pieces Interactive, Experiment 101, Foxglove Studios and Mirage Game Studios.

Mojang reports slightly lower revenue and profit but remains stable at almost EUR 300 million and is the most profitable company in the industry. Minecraft continues to top sales charts and the development of the brand continued during the year; in summer 2019 the AR game Minecraft Earth was secretly tested in a closed beta version and the cave explorer Minecraft Dungeons is scheduled for spring 2020.

An example of fast growth through acquisition is Stillfront Group, which bought German Goodgames Studio in 2017. This increased revenues almost tenfold to EUR 130 million in 2018. Both the head office and the games studio Coldwood Interactive are located in Umeå and the latter released the critically acclaimed Unravel 2 this year.

King (Midasplayer) is owned by American Activision Blizzard since 2016 and reported approximately EUR 200 million in revenues in 2018 and EUR 66 million profit in Sweden. The company have development offices in Stockholm and Malmö and is one of the largest game developer employers in the country. The iconic game series Candy Crush is still one of the most popular mobile games and King has 258 million active users per month.

EA DICE steadily increases revenue, profit and number of employees. 2018 saw the release of Battlefield V, the 14th title in the in-house developed series. In 2018, the company had 737 employees, around a hundred of them employed in the Gothenburg studio Ghost. In the car manufacturing city, the Need For Speed series has had a loyal base since 2013 and a new installment was announced in summer 2019. The graphics engine Frostbite is still used frequently by the Electronic Arts Group and can be found in games such as Anthem and Fifa

Avalanche Studios was bought by Danish Nordisk Film Games in 2018 at an acquisition price of EUR 117 million, opened a new development office in Malmö and released Just Cause 4, the fourth installment in the series with Rico Rodriguez and open world gameplay. This year, the company has released two games, Rage 2 in collaboration with Bethesda and iD Software, and the in-house developed Generation Zero which takes place in the Swedish archipelago.

Malmö-based Ubisoft Massive has had continued success over the year and expanded further. In December 2018, the company had 632 employees, 48 of these in the studio in Stockholm. The Division 2 was released in spring 2019 and was well received by both critics and users. Meanwhile, the company is continuing work on the upcoming Avatar game, in connection with James Cameron. Massive's own graphics engine Snowdrop has been used in several successful Ubisoft games around the world.

Paradox Interactive hit revenues of over EUR 100 million in 2018 and has also increased its number of employees by 35% compared to 2017. The company garnered success with games such as Stellaris, Battletech, Prison Architect, Surviving Mars and Cities: Skylines. In 2019, the company released Age of Wonders: Planetfall, developed by Dutch, fully-owned, Triumph Studios. Paradox has also announced a collaboration with the games veterans behind Romero Games and is working on Vampire: The Masquerade - Bloodlines 2.

The saddest piece of industry news was when stock market listed Starbreeze filed for reconstruction in December 2018, after a turbulent year with several setbacks, and ended the year by reporting big losses. The company has since sold the rights to Psychonauts and System Shock, sold the Indian graphic studio Dhruva and made considerable restructuring efforts. At the time of publication, the company is still in reconstruction.

Vampire the Masquerade Bloodlines 2, Paradox Interactive

Goodbye Kansas has been busy during the year, acquiring European Minds, the company behind Arctic Game Lab, at the end of 2018. The company has also provided performance capture for games such as Blood & Truth, Wolfenstein: Youngblood and Battlefield V, and created the demo film Troll for Unreal and the E3 trailer for Cyberpunk 2077. During 2019 the investment part was sold off to Embracer Group and the company now focuses on the core activities games and VFX.

Hazelight had great success with acclaimed A Way Out in 2018, and grew as a company, both in terms of revenue and number of employees. Embark Studios are working on a new game concept and has already secured significant funding. Toca Boca increased revenues and H&M launched a collection of Toca Life-themed children's wear for fall 2019.

In Malmö, Sharkmob has grown during the year and built a studio that's making waves in the local games scene, the Danish creators of Hitman, IO Interactive, have opened an office in town and Tarsier announced the follow-up to Little Nightmares 2 during Gamescom 2019.

In Gothenburg, Thunderful, the collaboration between companies Image & Form and Zoink, has further invested in publishing and games such as Lonely Mountains, The Curious Expedition and Steamworld Quest. Regionally, Redbeet Interactive in Skövde has had great success with the ocean survivor game Raft.

In the north of the country, Umeå companies Level Eight and Zordix also expanded in 2018. Zordix was listed on the stock exchange in November and, in addition to its own moto games, launched a separate publishing division with a focus on indie titles.
Level Eight announced the release of the mobile multiplayer game Edge of Combat.

Swedish-developed games were presented with numerous accolades at various awards ceremonies. Two Swedish games were awarded a BAFTA in 2019: best newcomer was Villa Gorilla's Yoku's Island Express, and Hazelight's A Way Out was named best multiplayer game. Swedish game development was also praised at the annual NAVGTR (National Academy of Video Game Trade Reviewers) Award, where Yoku's Island Express was given the award for best Original Family, A Way Out won in the Original Action category, and Mutant Year Zero was named best Strategy game.

The above list is by no means exhaustive; there are many other examples of Swedish game development success in the past year.

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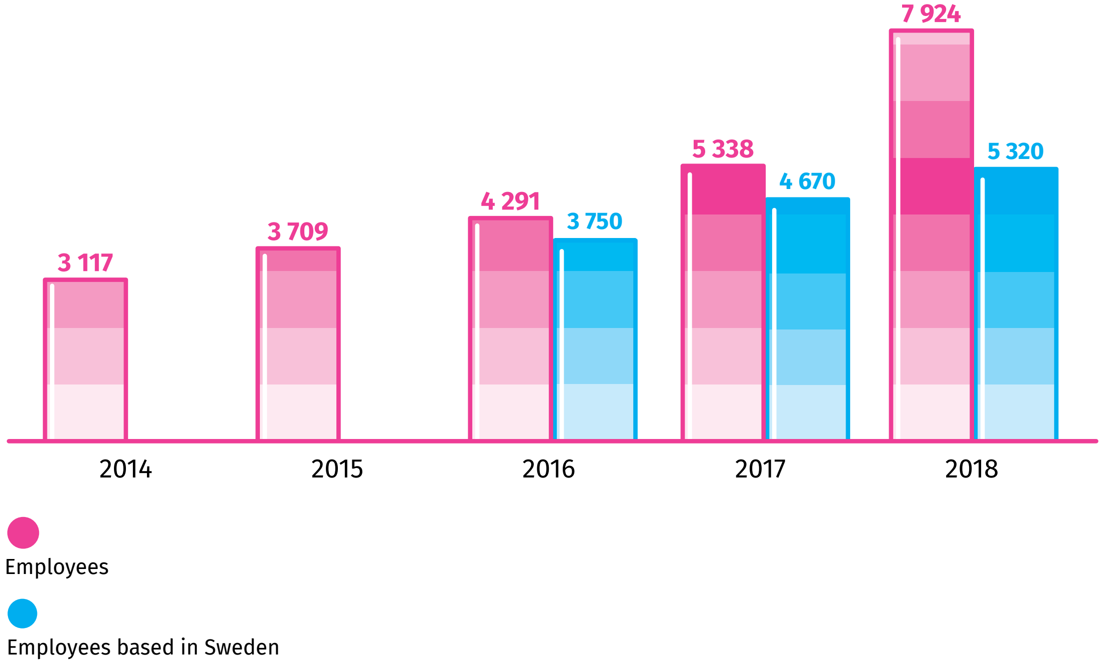
Employees

Employees



Swedish Companies at Home and Abroad

The number of employees in Swedish video game companies increased by over 48 per cent in 2018 with 2,586 full-time positions. That gives a total of 7,924 persons employed by a Swedish games company. A large part of this increase is due to the acquisition of Koch Media by Embracer Group and Stillfront incorporating Goodgames. The difficulties in recruiting staff in Sweden and growth within the existing studios has also been a reason for many smaller companies starting to develop offices in locations abroad. On page 24 of the report there is a world map showing the locations of these offices.

5 320
full-time positions in Sweden 2018

As an increasing number of employees of Swedish company groups are located abroad, we have included the number of domestic employees in this report. In 2018, this number was 5,320, an increase of 650 employees, or 14 per cent compared to last year's proportion. Many are recruited abroad, as there are not enough skilled game developers in Sweden. The companies tell of the lack of competence and recruitment obstacles, as well as legal and practical difficulties when it comes to immigration.

The number of employment persons is based on the annual accounts average over the entire period. This means that the actual number employed in the industry is often higher and that many companies that have expanded in 2018 and ended the year with considerably more employees than at the beginning of the year. Where possible, the number of employees in December 2018 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 2017 were adjusted for comparison. Not included are smaller companies, PR companies or other forms of business offices. These have only marginal influence on the total number of employees and we also don't include foreign marketing companies based in Sweden.

In addition to the reported number, 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 documentation. Taking these hidden numbers into account, the total is estimated to be a lot higher.

There is a continued high demand for employees in all work categories, which prevents the companies from fully developing. Reports from the companies indicate that the increase in both employment and demand will not lessen in 2019.

Number of Companies

Tom Clancy's The Division 2, Ubisoft Massive Entertainment

Just like the growing number of employees, the number of newly founded companies proves that the industry is continuing to expand. In the statistics for 2018, 41 new companies have been added, an increase by 12 per cent.

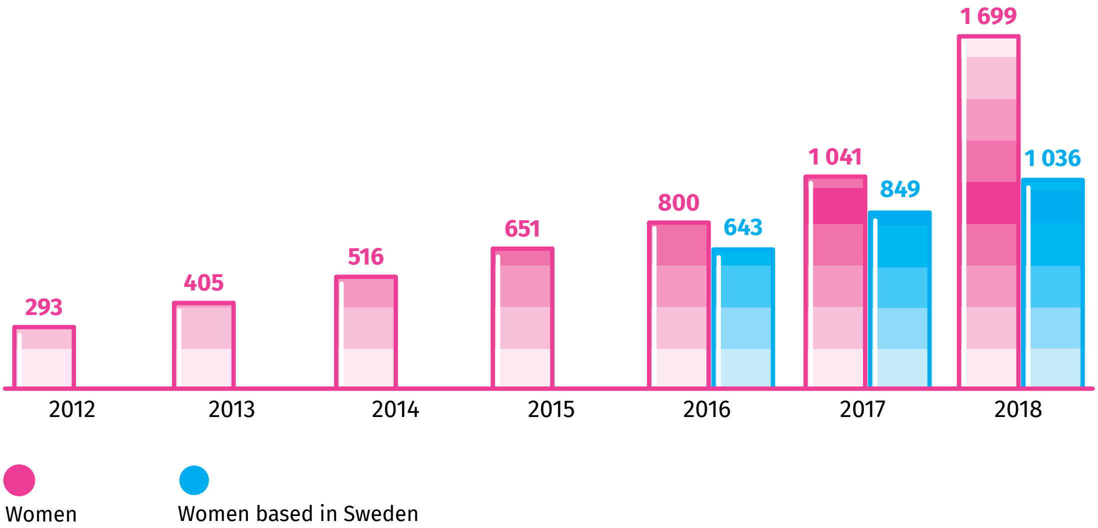
Several new companies were founded in 2018 but are yet to file their first annual report. Local clusters and incubators are having a greater role in establishing new companies. The incubator program in Skövde has been running for over a decade, with an additional branch in Gothenburg. In the last few years, initiatives have been centered in cities such as Linköping, Skellefteå, Malmö and Stockholm. In Falun, there have been similar activities for many years.

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 have been isolated when reporting the number of employees in respective locations. A handful of companies have gone bankrupt and some have wound up their operations in practice but continue as companies to maintain existing games. Some companies are not included in the report, e. g. app developers or media companies where the involvement in video games activities varies from year to year. One company has dropped out as it has moved focus to gambling and developing online casinos. Other companies are excluded because they are not registered as game developers. There are 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. Some examples of non-limited companies are Nifflas, which has developed Uurnog Uurlimited, Pixadome from Luleå with Hayfever and Transcenders in Malmö, making headlines this year with acclaimed Knife Sisters.

Skeletal Dance Party, Catalope Games

Gender Distribution

Women



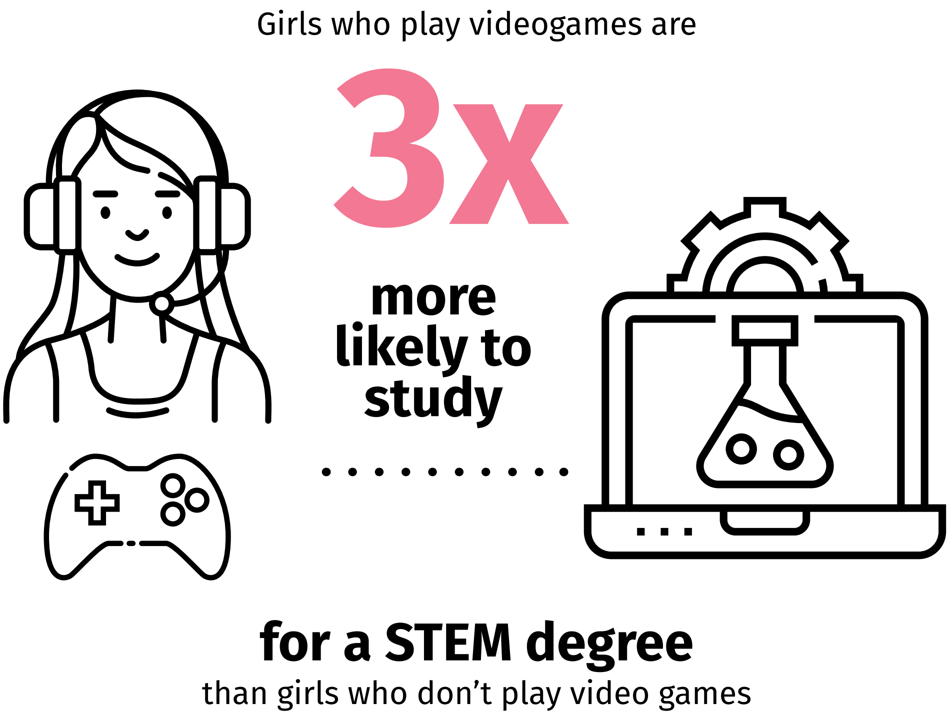
- Three companies have exclusively female employees
- In 17 companies, the workforce is at least 50% female
- 67 companies employ at least 20% women. Together, these companies have revenues of EUR 1.35 billion
- 84 companies with more than one employee are made up of only men, the biggest of these companies has 17 employees
- 73 companies have two or more female employees, in total there are 195 companies with two or more employees.

In 2018, both the number and the percentage of female employees in the games industry increased. In total, 21 per cent, or 1,699 employees at Swedish video game companies are female. 1,036 of these women are located in Sweden, an increase of 187 positions compared to last year.

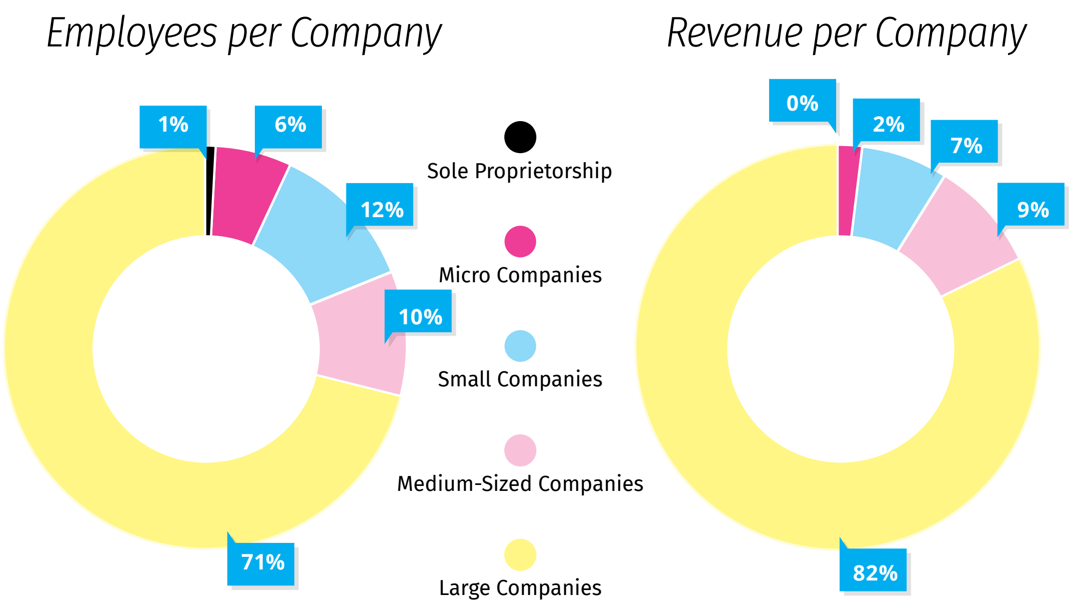
Similar to the reporting of the number of employees, we have updated the method in 2018 and now report not only the gender distribution in total but also specifically the proportion of women employed in Sweden. It's worth noting that Swedish companies employ more women abroad than in Sweden. 40% of all female employees are working in development studios internationally and among employees abroad, one in four is a woman. The vast majority are working for Embracer Group, G5 Entertainment and Stillfront. As a rule, studios that work on mobile platforms employ the highest number of women.

In total, the proportion of women is still low, compared to many related industries. There are big challenges ahead in developing recruitment methods, attracting women to the business and the strive for equal opportunities in the games business as well as the rest of society. The increase is despite the overall lack of skills in the industry and many companies looking for staff internationally to fill vacancies.

Women in video games development can mainly be found in the medium-sized and large companies and a clear challenge is to have smaller developers and startups include women from the start, as well as making more women establish their own companies. The most equal distribution is in companies working with mobile platforms and VR. A challenge, but also an opportunity when it comes to attracting more women to the industry, is that many have cross-industry roles, to a higher degree than their male colleagues.



Employees & Revenue per Company

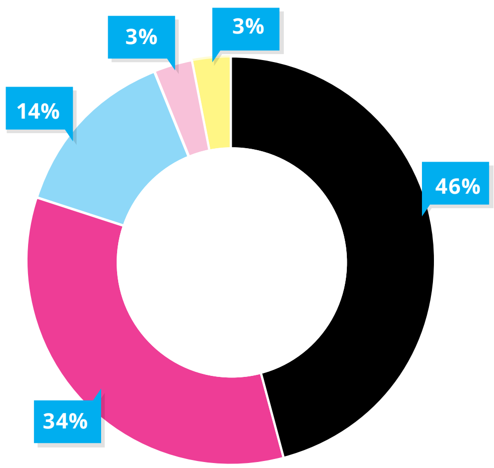


To qualify as a certain type of company it is sufficient to fulfill just one of the criteria. Mojang, for example, is defined as a large company because of its revenues, although it has fewer than 250 employees. Ubisoft Massive has over 400 employees but reports revenues of less than EUR 50 million. 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.

The report is made according to the 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**

Number of companies by size



Compared to previous years, the large companies have become larger, both in proportion and in absolute numbers, the biggest companies having grown significantly in terms of revenue and number of employees. The absolute numbers show somewhat reduced revenues in the micro companies and the number of employees in small companies. In all other categories, the numbers are increasing.

There is a movement between corporate categories, not least because relatively high revenue can be reached with few employees, but during 2018, growth has primarily been observed in the bigger and more established companies.

My Friend Pedro, Deadtoast Entertainment

Largest Companies

The annual list of the biggest companies includes ten companies in each category for the third time. More companies are growing larger. Seven are reporting revenues of over EUR 100 million and twelve had over 100 employees. A clear majority of the companies are showing positive results, 21 reported profits over EUR 1 million and 68 employed more than ten people.

Wolfenstein: Youngblood, MachineGames

Revenue in EUR Million

1	Embracer Group	402
2	Mojang	293
3	King	199
4	G5 Entertainment	141
5	EA DICE	136
6	Stillfront Group	129
7	Paradox Interactive	110
8	Avalanche Studios	60
9	Ubisoft Massive	37
10	Starbreeze	34

Number of Employees

1	Embracer Group	1 142
2	King	759
3	EA DICE	737
4	Ubisoft Massive	632
5	Starbreeze	604
6	G5 Entertainment	559
7	Stillfront Group	491
8	Paradox Interactive	327
9	Avalanche Studios	306
10	GoodBye Kansas	137

Clusters & Collaborations

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

Arctic Game Lab is one of Sweden's fastest growing games clusters. The cluster has become a hub of successful games development in the north with a common platform for development of new studios, startups, education, meet-ups and investments in the counties Norrbotten and Västerbotten. Since conception of the project in 2015, the region has gone from a handful to 40-something games companies and over 200 active professional developers. Arctic Game Week and the event Nordsken attract around 12,000 visitors annually and has started to become a natural meeting place for both the industry and the public. In 2019, companies such as House of How, WanderWord and Glorious Games set up satellite offices in Boden.

East Sweden Game has since its inauguration in August 2017 built an ambitious community in Östergötland county. With some 60 active members, almost 30 games projects running and the third batch of accelerator programs ready to start in the fall of 2019, ESG work 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, theLiU 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.

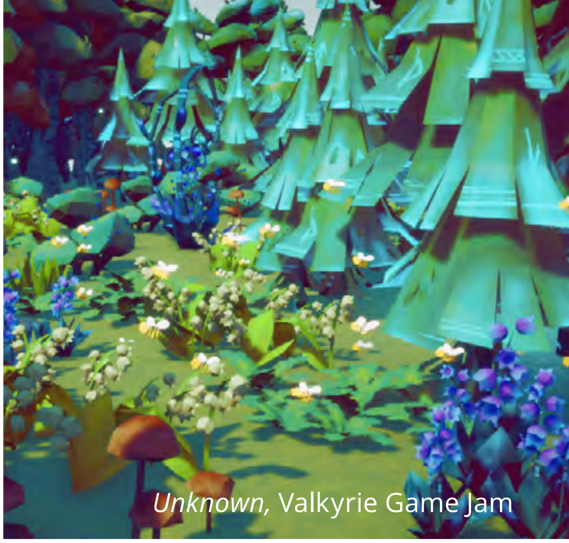
In Visby, Science Park Gotland is running the project Game Camp together with partners in the Baltic countries. Some ten companies and 240 aspiring game developers have taken part in the project during the year. In Karlstad, The Great Journey is establishing a hub together with Innovation Park Karlstad, Futuregames and Molkom College, with support from Embracer Group. Local meet-ups, an indie game education and a lab form part of the activities.

In Falun, the game development education Playground Squad has long been driving the activities. During the year, the region got the project Gamification of Dalarna underway, together with the company Tension, with the aim of enabling collaboration between the tourist industry and game developers. A handful of game developers in various stages of the incubator process can also be found in the county of Dalarna. Take the city of Borlänge, where Science Center 2047 is investing in games to attract young people to technical professions. By Falun, the game accelerator program Stugan took place in the summer of 2018.

Stockholm got its first game incubator in 2017, when Sting and Stockholm Innovation and Growth, introduced Sting Game, which now has three startups in the incubator stage. As a complement to Sting Game, there is now a co-working space at Embassy House and regular meets. 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 it can also be found in Gothenburg. The incubator has produced over 100 companies and is a strong contributing factor to why the western parts of Sweden have become a fertile ground for game companies.

Team Lynx, Valkyrie Game Jam



Unknown, Valkyrie Game Jam

The project Sweden Game Arena, based in Skövde, focuses on export drives at game fairs and international conventions. In Skövde, the Sweden Game Conference is also held annually in October, with speakers from the world over. This year, the first industry-employed PhD student has joined the University of Skövde and another is expected to take-up position at Malmö University shortly.

In the south of Sweden, Gameport has run a successful incubator in Karlshamn for a few years as part of the Blekinge Business Incubator. There is no incubator program in Malmö at present, but the interest group Game Habitat work alongside the region and the municipality to enable the local game community to grow. 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 around 20 employees on site at 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 or non-binary individuals to focus on going deeper into game development. Valkyrie Game Jam is arranged 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.

There are several other initiatives around the country fostering different kinds of collaborations. Collaborative is an innovation lab promoting diversity and inclusiveness and running annual game jams and meet-ups in primarily Gothenburg and Stockholm. In Väckelsång outside Tingsryd, Spelkollektivet is situated – a building where game developers from all over the world rent rooms short- or long-term to work on personal games 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 and the Technical Museum, too, has hosted game jams. Nordic Game Jam, No More Sweden and Forsbergs also arrange regular games events.

Game Developer Map

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, Paradox Interactive and DICE, have offices in more than one part of the country. Malmö-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. The actual number of people working in games development in the respective regions is therefore 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 Södermanlands county. WEST includes Västra Götaland county and Halland county, SOUTH is comprised of Skåne county and Blekinge county and NORTH includes Västerbotten, Norrbotten and Västernorrlands counties. As far as possible, employees at local offices are reported under respective location.

Companies in italics are either not limited companies or too new to be included in the reporting. Is your company missing on the map? 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

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

ALINGSÅS
Alega & Qiiwi Learning

MELLERUD
Vovoid Media Technologies

SKELLEFTEÅ
Cubetopia
Flat Tail Studios
Frostspektrum Interactive
Gold Town Games
Grand Pike
Innan AB
Mindforce Game Lab
Nordsken
North Kingdom
Orch Star Studios
Sound of Sunday
Strangewood Studios
Tales To Be Told Sweden
Tap Your Feet
Tarvalley
Time Stop Interactive
Triolith

STENUNGSUND
Ace Maddox

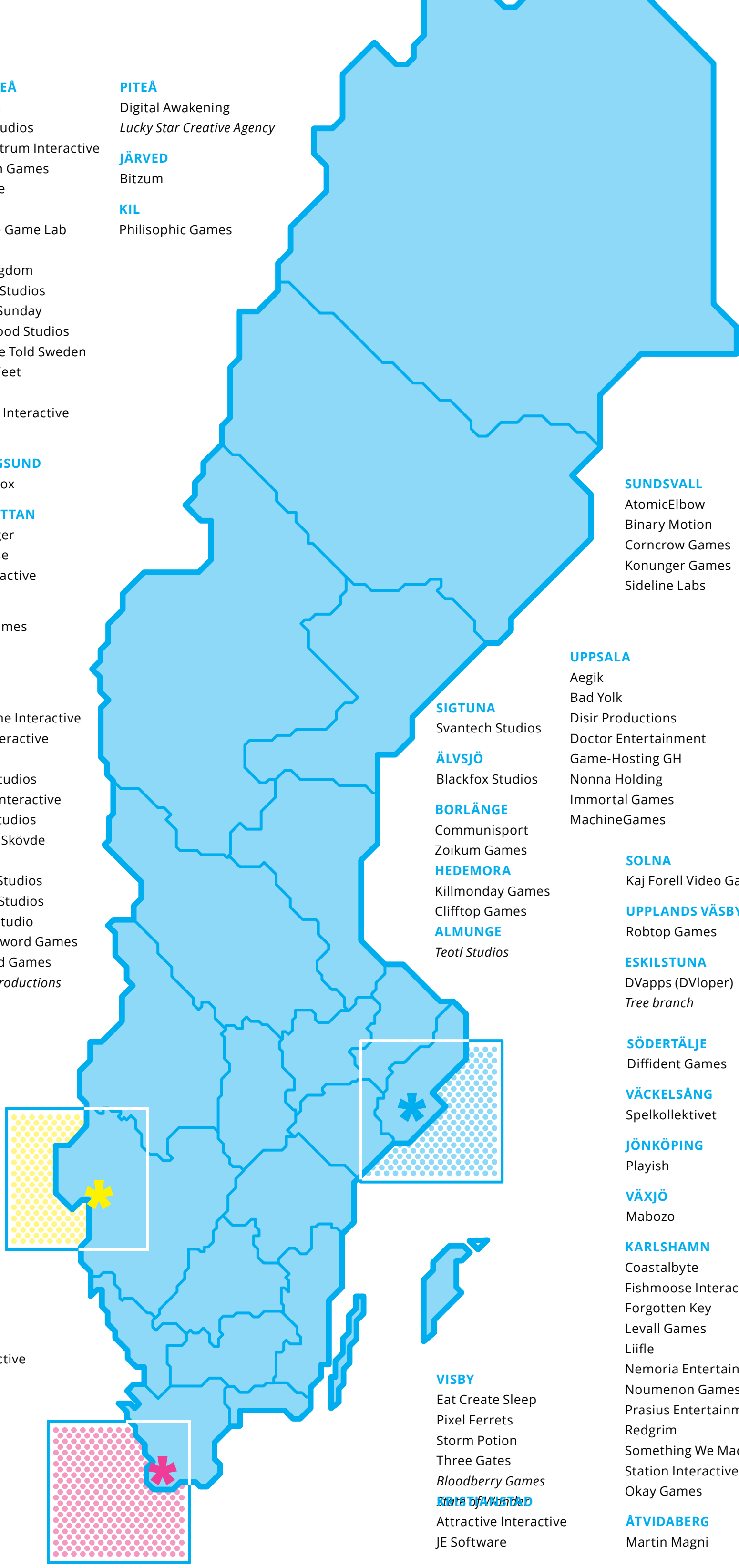
TROLLHÄTTAN
Easy Trigger
Friendbase
Trilo Interactive

HOVÅS
Humla Games

PITEÅ
Digital Awakening
Lucky Star Creative Agency

JÄRVED
Bitzum

KIL
Philisophic Games



BODEN
921 Studios
Glorious Games
House of How Games
WanderWord
Frozen Waffle

LULEÅ
Blamorama Productions
Virtual Light VR
Marada
Pixadome

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

SUNDSVALL
AtomicElbow
Binary Motion
Corncrow Games
Konunger Games
Sideline Labs

SKÖVDE
Angry Demon Studio
Babloon Studios
Brimstone Games AB
Coffee Stain Studios
Coilworks
Designlayout
DoubleMoose Games
Flamebait
Guru Games
I C YOU
Iron Gate
Lone Hero Studios
Ludosity
Miltonic Games
Palindrome Interactive
Pieces Interactive
Piktiv
PocApp Studios
Redbeet Interactive
Sector3 Studios
Solutions Skövde
Sonigon
Stunlock Studios
Sunscale Studios
Tarhead Studio
Thundersword Games
Whirlybird Games
Hörberg Productions

BOLLEBYGD
Rockheart Studios

BORÅS
Gigantic Duck
Sozap

FALKÖPING
VaragtP Studios AB

ONSALA
Snojken

ALVESTA
Wadonk

HELSINGBORG
Localize Direct
Monsuta
Odd Comet
Pixelbite

RONNEBY
Activout
Nodbrim Interactive

LUND
Illwinter Game Design
Pastille
Spiddekauga Games

SIGTUNA
Svantech Studios

ÄLVSJÖ
Blackfox Studios

BORLÄNGE
Communisport
Zoikum Games

HEDEMORA
Killmonday Games
Clifftop Games

ALMUNGE
Teotl Studios

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

SOLNA
Kaj Forell Video Game

UPPLANDS VÄSBY
Robtop Games

ESKILSTUNA
DVapps (DVloper)
Tree branch

SÖDERTÄLJE
Diffident Games

VÄCKELSÅNG
Spelkollektivet

JÖNKÖPING
Playish

VÄXJÖ
Mabozo

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

ÅTVIDABERG
Martin Magni

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

KRISTIANSTAD
Attractive Interactive
JE Software

KARLSKRONA
Suffocated
Svavelstickan
Viking Fabian

NYKÖPING
Sysiac Games

NORRKÖPING
AmberWing
Dimfrost Studio
FeWas
Goes International
Skyfox Interactive

MOTALA
Code Club (Onetoofree)
CSRJH Camp Creation
Friendly Fire

LINKÖPING
Aftnareld
Beyond Frames
Catalope Games
Chillbro Studios
Donya labs (Simplygon)
Flashe Gaming Group
Graewolv
Incredible Concepts of Sweden
Ioneo
Laxbeam
Lifee
Lurkware
Overflow
Power Challenge
Pugstorm
Rampant Pixels
Rymdfall
Therese Kristoffer
WaveBots
Solid Core

*Stockholm
*Gothenburg
*Malmö

Stockholm

2Play Studios
A Small Game AB
A Sweet Studio
Adventure Box Technology AB
Antler Interactive
Apprope
Aptitide (Blastronaut)
Arcticmill (Arcmill)
Arrowhead Game Studios
Avalanche Studios
Axolot Games
Bambino Games
Beadhead Games
Blackbeard (Svartskägg AB)
Bodbacka:Boom
BoldArc
Bridgeside AB
Bublar
Casual Games FK
Collecting Smiles
Crackshell
Daikon Media
Deadbreed
Defold
DevM Games
DorDor
EA Digital Illusions CE
Ekvall Games
Eldring Games
Elias Software
Embark Studios
Enterspace
Epic Games Sweden
Experiment 101
Fablebit AB
Fall Damage
Fast Travel Games
Fatshark
FEO Media
Filimundus
Foxglove Studios
Freshly Squeezed AB
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 Holding AB
Grindstone Interactive
Gro Play Digital
Happi Studios AB
Hatrabbit
Hazelight Studios AB
iGotcha
IMGNRY International
Interactive Productline
Isbit Games
Jajdo
Kaludoscope
Kavalri Games
KEP Games
King (Midasplayer)
LandFall Games
LeadTurn Gaming
Light & Dark Arts
Like a Boss Games
Lionbite (Rain of Reflections)
Liquid Media AB
Loot Spawn AB
MAG Interactive
Massive
Mibi Games
Midjiwan
Might and Delight
Mimerse
Mojang
Mutate
NeCo (Neat Corporation)
Neuston
Nialbe
Nordic Forest Games
Odd Raven Studios
Oxeye Game Studio
P Studios
Paradox Interactive
Peppy Pals
Photon Forge AB
Pixel Tales
Pixeldiet Entertainment
Polarbit AB
Poppermost Productions
Quel Solaar
Quizye AB
Raketspel
Raw Fury
Razzleberries
Really Interactive
Resolution Games
Ride & Crash
Right Nice Games
Rovio Sweden
SimWay
Skeleton Crew
Snowprint Studios
Spelagon
Spelkraft Sthlm
Spelkultur i Sweden
Star Stable Entertainment
Starbreeze
Stillfront Group
Strange Quest
Streamicence
Stringent Ljud
Sunhammer (Outsiders)
Talawa Games
Tealbit
Tiger & Kiwi
Toadman Interactive
Toca Boca
Tomorroworld AB
Troisdim Aktiebolag
TwifySoft
Unity Technologies Sweden
Valiant Game Studio
Villa Gorilla AB
Vinternatt Studio
Visiontrick media
Warpzone Studios
White Wolf Entertainment
WOOCATE
Xpert Eleven
10 Chambers Collective

Gothenburg

1337 Game Design
8 Dudes in a Garage
A Creative Endeavor
Atvis AB
Bulbsort
Carry Castle
Craft Animations
Creative AI Nordic
Creative Vault AB
Devkittens
Dreamon Studios AB
EA Ghost
Erik Svedäng AB
Hello There
Hiber AB
Image & Form International
Insert coin / Mobil Storytelling
Int3 Software
Itatake
IUS Innovation
Kirikoro
Lavapotion
Legendo Entertainment
MindArk
Nornware
Pathos Interactive
Pax6 Games
Playcentric Studios AB
Retroid Interactive
Räven
Sleeper Cell AB
Steelraven7
Thunderful Publishing
Wishful Whale
YCJY AB
Zoink
Elden Pixels
Faravid Interactive
Skygoblin
Warcry Interactive

Malmö

Apoapsis Studios
Attribite
Avalanche
Ayeware (Bearded Ladies)
Binary Peak
Blast Door Interactive AB
Coherence
Cross Reality International
DeadToast Entertainment
Divine Robot
ExtraLives
Frictional Games
Frogsong Studios AB
Haunted House
Illusion Labs
Impact Unified
IO Interactive AB
King
Learning Loop Sweden
Leripa AB
Locamotive
Longhand Electric
Luau
Mediocre
Midnight Hub
Multiscription
Nopalito Studios AB
Nordic Game Resources AB
Nordic Game Ventures
Not My Jeans AB
Outbreak Studios
Paradox
Pixilated production
Plausible Concept
Polyregular Studios
ProCloud Media Invest AB
Redikod AB
Senri
Sharkmob
Simogo
Star Vault
Swedish Game Development
Tales & Dice AB
Tarsier Studios
The Sleeping Machine
Ubisoft Massive
Visedu AB
VisionPunk AB
Webbfarbror (Grapefrukt)
Pixelshade
Trancenders

Game Developer World Map

Several games companies have expanded abroad. Below is a map of Swedish-owned games studios in 2018 with ten or more employees outside Sweden. In 2019 Starbreeze sold the Indian graphics studio Dhruva to Rockstar.

We have identified a total of 31 Swedish studios, together employing 2,604 persons.

AVALANCHE
New York

G5 ENTERTAINMENT
Kaliningrad
Kharkov
Lviv
Moskva

MAG INTERACTIVE
Brighton

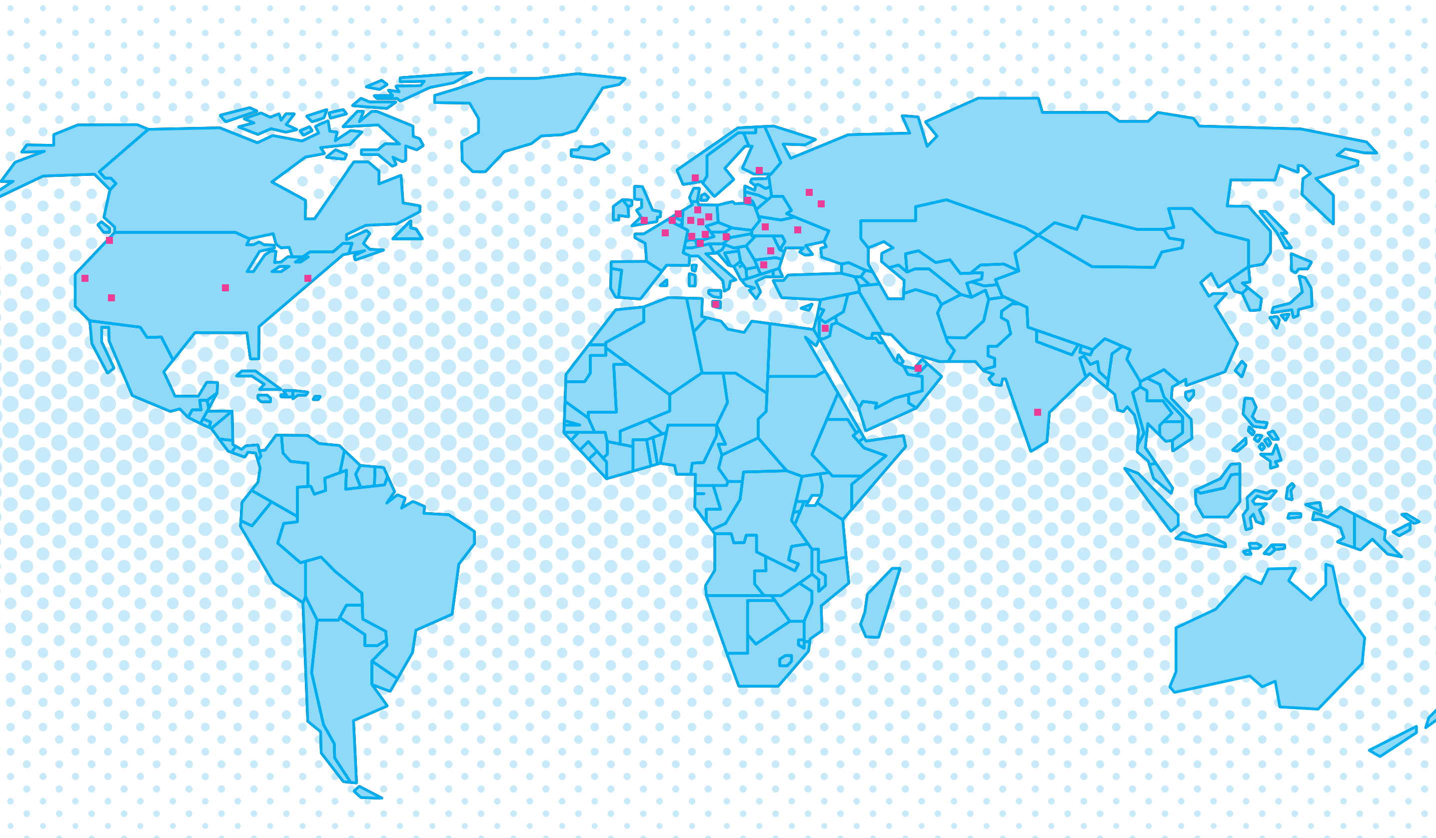
PARADOX
Berkeley
Delft
Seattle

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

Concept art from Embark Studio's first project

Investment 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 USD 5.9 billion price tag of mobile games developer King, purchased by Activision Blizzard in 2016, there have been several transactions worth over a billion. In 2017, Stillfront acquired German Altigi GmbH – better known as Goodgames Studios – at a price of EUR 270 million, a transaction completed in 2017 but only finalized in 2018 and not included in last year's report.

The single largest deal in 2018 is Embracer Group buying German Koch Media at just over EUR 121 million, closely followed by Danish Nordisk Film Games purchase of Avalanche, another deal with a value over a EUR 100 million. Nordisk Film Games also made big investments in Raw Fury and Starstable during the year.

The previously mentioned Embracer Group from Karlstad has made several big investments around the world in the last couple of years. At the end of 2018, they bought Coffee Stain in its entirety, including its publishing division and studios, thereby making Coffee Stain an operative group within Embracer Group AB. Domestically, Embracer grew further in 2019 and acquired Goodbye Kansas Invest, including the shares of Palindrome Interactive, Fall Damage, Neon Giant, Kavalri and Framebunker.

During 2018, a total of 38 known deals that included Swedish companies took place, compared with 24 transactions in 2017. The total value is estimated at around EUR 400 million, compared with EUR 500 million the previous year. Of these, 14 were acquisitions. In the majority of the deals in 2018, the Swedish companies were buying or investing, despite the weak currency.

The trend of Swedish buyers has continued in 2019. Embracer Group, Toadman and MTG VC Fund are behind most investments and acquisitions during the year and in August, Embracer incorporated parts of Goodbye Kansas' investment portfolio and its games investment team. Chinese Tencent has entered the Swedish market in earnest this year. The company's Swedish portfolio, which included a minority share of Paradox Interactive, has been completed with an investment in Fatshark and the acquisition of Malmö-based Sharkmob Studios. The biggest verified deal so far in 2019 was the purchase of newly established Embark Studios by South Korean-Japanese Nexon at around EUR 90 million.

A few games 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.

Recently, a number of new investment initiatives have 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 are Wing, with Swedish founders focusing on teams with diverse backgrounds and companies run by women.

The total value of the 38 deals in 2018 is estimated at just under EUR 400 million. In 2019, EUR 200 million 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.

It should be noted that the total value of the acquired companies and the total value of the listed companies are significantly higher than what is reported here.

Adventure Box


Totally Accurate Battle Simulator, Landfall Games

Investments & Acquisitions in 2018

Seller	Seller country	Buyer / Investor	Buyer country	Type of deal
A Sweet Studio	Sweden	Fatshark	Sweden	Acquisition
Artplant	Norway	Toadman Interactive	Sweden	Acquisition
Atomontage Inc	USA	KM Troedsson/ Loot Spawn et al	Sweden	Investment
Attractive Interactive	Sweden	Habby	China	Investment
Avalanche Studios	Sweden	Nordisk Film Games	Denmark	Acquisition
Blackfox Studios AB	Sweden	Fatshark	Sweden	Investment
Bugbear Entertainment	Finland	Embracer Group	Sweden	Acquisition
Coffee Stain	Sweden	Embracer Group	Sweden	Acquisition
Diskett Interactive Sweden AB	Sweden	Toadman Interactive	Sweden	Acquisition
Embark Studios	Sweden	Nexon	South Korea	Investment
European Minds/Artic Game Lab	Sweden	Goodbye Kansas	Sweden	Acquisition
Geometric Revolution	Denmark	KM Troedsson/ Loot Spawn et al	Sweden	Investment
Gone North Games	Sweden	Coffee Stain Studios	Sweden	Acquisition
Handy Media	Germany	Embracer Group	Sweden	Acquisition
Hardsuits labs	USA	Paradox Interactive	Sweden	Investment
Harebrained Schemes	USA	Paradox Interactive	Sweden	Acquisition
Hatrabbit	Sweden	KM Troedsson/ Loot Spawn et al	Sweden	Investment
IGDB	Sweden	Goodbye Kansas et al	Sweden	Investment
Image & Form/Zoink	Sweden	Thunderful	Sweden	Merger
Kavalri	Sweden	Goodbye Kansas	Sweden	Investment

The Curious Tale of the Stolen Pets, Fast Travel Games

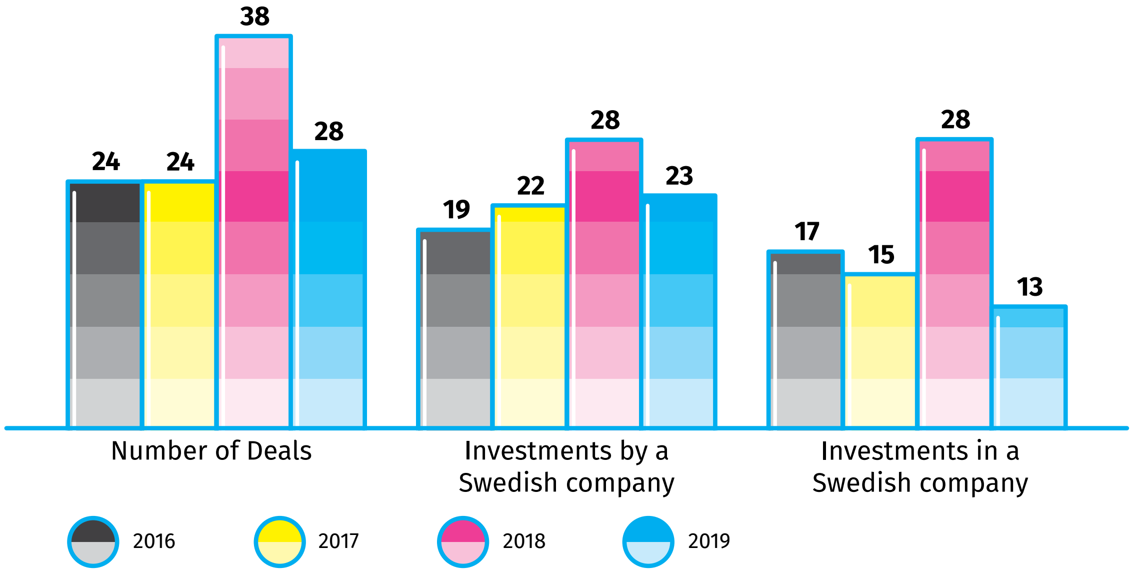
Seller	Seller country	Buyer / Investor	Buyer country	Type of deal
Koch Media	Germany	Embracer Group	Sweden	Acquisition
Like A Boss Games	Sweden	Leo Vegas	Sweden	Investment
Neat Corporation	Sweden	KM Troedsson	Sweden	Investment
Neon Giant	Sweden	Goodbye Kansas	Sweden	Investment
Other Tales Interactive	DK/SE	Coffee Stain Studios	Sweden	Investment
Peppy Pals	Sweden	Lego	Denmark	Investment
Quixel	Sweden	GP Bullhound et al	Sweden	Investment
Raw Fury	Sweden	Craig Fletcher	UK	Investment
Raw Fury	Sweden	Nordisk Film Games	Denmark	Investment
Resolution Games	Sweden	GP Bullhound et al	Sweden	Investment
Rising Star Games	UK	Thunderful	Sweden	Acquisition
Snowprint	Sweden	King et al	Sweden	Investment
Star Stable	Sweden	Nordisk Film Games	Denmark	Investment
Starbreeze	Sweden	Behaviour	USA	Trade Mark Acquisition
Time Stop Interactive	Sweden	Gold Town Games	Sweden	Acquisition
Toadman	Sweden	Craig Fletcher	UK	Investment
Valiant	Sweden	Stefan Lindeberg, Red Dawn Ventures et al	Sweden	Investment
Vobling	Sweden	Bublar	Sweden	Acquisition

Investments & Acquisitions in 2019

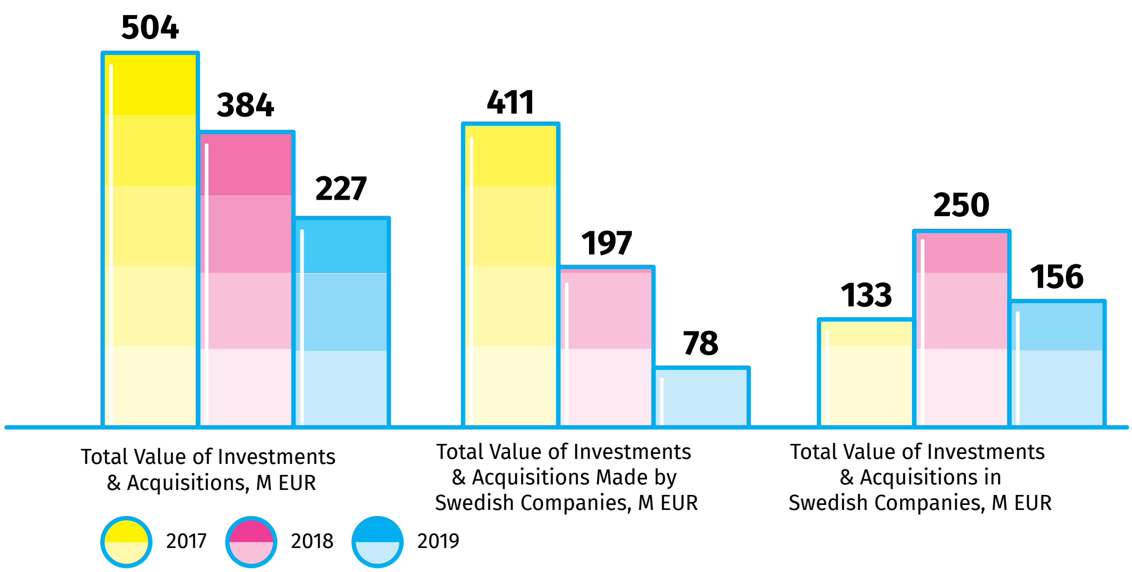
Seller	Seller country	Buyer / Investor	Buyer country	Type of deal
18point2	New Zealand	Embracer Group	Sweden	Acquisition
Adventure Box	Sweden	Blasieholmen Investment Group	Sweden	Investment
Antimatter Games	UK	Toadman	Sweden	Acquisition
Bitkraft E-sport Ventures	USA	MTG VC Fund	Sweden	Investment
Chief Rebel AB	Sweden	KM Troedsson/Loot Spawn	Sweden	Investment
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	Sweden	Investment
Framebunker	Denmark	KM Troedsson/Loot Spawn	Sweden	Investment
GoMeta	USA	MTG VC Fund	Sweden	Investment
Goodbye Kansas Game Invest	Sweden	Embracer Group	Sweden	Acquisition
Hatrabbit	Sweden	King	Sweden	Acquisition
Hiber	Sweden	Luminar Ventures/ Matthew Wilson	Sweden/Finland	Investment
IGDB	Sweden	Twitch	USA	Acquisition
Kingdom	Germany	Raw Fury	Sweden	Trade Mark Acquisition
Luau Games	Sweden	Supercell	Finland	Investment
Nomadic	USA	MTG VC Fund	Sweden	Investment
Odd Raven Studios	Sweden	Beyond Frames	Sweden	Investment
Petrol Advertising	USA	Toadman	Sweden	Acquisition
Playfull	USA	MTG VC Fund	Sweden	Investment
Sayduck	Finland	Bublar Group	Sweden	Acquisition
Sharkmob Studios	Sweden	Tencent	China	Acquisition
Sideline Labs	Sweden	Almi Invest	Sweden	Investment
Sviper	Germany	MTG VC Fund	Sweden	Investment
Tonk Tonk Games	USA	MTG VC Fund	Sweden	Investment
Valiant	Sweden	Susana Meza Graham	Sweden	Investment
Warhorse Studios	Czech Republic	Embracer Group	Sweden	Acquisition

Pendula Swing, Valiant Game Studio

Investments & Acquisitions



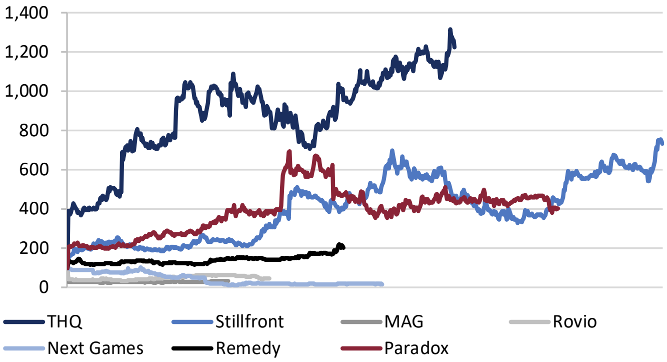
Value of Investments & Acquisitions, M EUR



Publicly Traded Game Development Companies

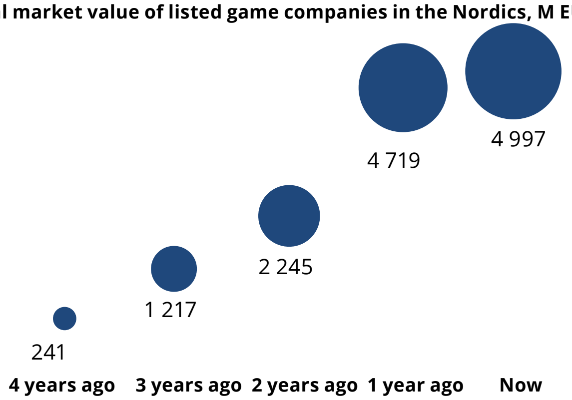
By: Lars-Ola Hellström, analyst Pareto Securities

Share price development since listing (Index 100)



Some of the game developer companies listed in the last few years
Source: Pareto, FactSet

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



The global video games industry is experiencing strong growth which, combined with more stable business models, has made the companies increasingly popular among both institutional investors and private individuals. From a global perspective, during 2013 until fall 2018, we witnessed tremendously positive share price development for the listed game developers. Sweden has managed this trend well and increasing number of games companies have found their way onto the stock market in the last few years, generating good returns for share owners. The Stockholm Stock Exchange has become something of a games hub with a wide selection of listed companies and increasingly knowledgeable investors. In the last year, however, the video games sector has had somewhat negative returns as many of the larger, global games companies have not been able to live up to market expectations, struggling as they do with slow growth due to ever stronger competition and more discerning users. In Sweden and the Nordic countries alike, we have seen mixed share price development and the crash of Starbreeze clearly highlight the risks in the sector and that investors ought to be selective.

From an investment perspective and for the wider community, the sector is still relatively new. Investors have had to learn a new business dynamic and the value chains of the games, the difference between digital and physical, AAA vs indie games, micro transactions and growing segments such as subscription models and E-sport. And that game release dates can be moved at short notice to maximize success rate. Despite somewhat slower growth in the last year the market value of Nordic game companies has markedly increased over a period of 3-4 years, but the sector as a whole remains small compared with foreign competitors or other sectors on the Stockholm stock market.

Multiples Expansions in International Game Companies

Historically, the volatility of the business income model has been high. This has led to investors viewing video games as a high-risk sector. With ever more possibilities for digital sales, the traditional income models have been supplemented by digital campaigns: GaaS (Games as a Service), micro transactions, game expansions, subscription models and increased opportunities for the companies to build loyal communities for their games, has seen more stable revenue streams and positively influenced the companies' margins.

More stable revenue streams, growing margins and generally good market growth for video games have led to a growing interest in the listed companies, and with good faith in future profit growth, investors have been willing to pay ever higher price/earnings ratios for game companies in the market. The graphs below illustrate how company valuations of Take Two, Electronic Arts, Activision and Ubisoft have developed in the last five years, from an investor perspective of earnings and profit (EBIT) and even if the valuations have been lower in the past year, they are still significantly higher than five years ago.

EV/Sales, 12 months ahead

EV/EBIT, 12 months ahead

Less volatile earnings & digitalization

Margin expansion & good financial development

Increased interest from investors

Multiple expansion

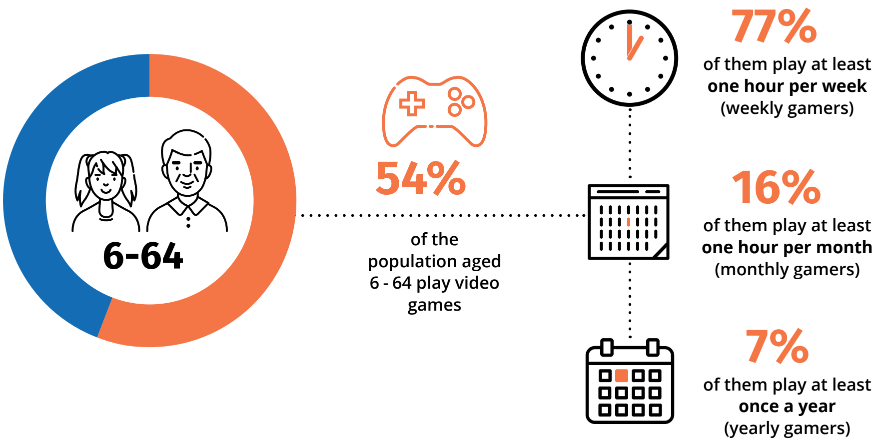
Good share price development

Competition in the sector is increasing daily and the end consumers have high expectations of new products. As an investor in the sector, one must accept that some game projects may have disappointing sales figures although the game itself looked promising; ultimately it is the user that decides. Generally, the industry experiences strong growth that is expected to continue in the foreseeable future, and digitalization supports a future higher margin scenario. E-sport and subscription models are still in their infancy but will most likely be able to support the industry growth. Lastly, the emergence of a number of new, competing distribution platforms has already begun to benefit the developers, as the owner of the platforms offer lower distribution fees and have been willing to pay for exclusive rights to the new games, in order to attract new users.

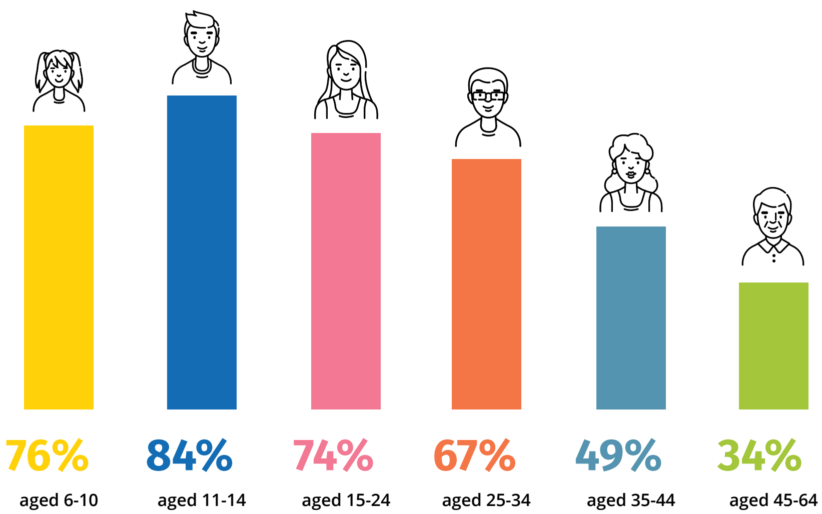
Gamers

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

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



Proportion of gamers per age category



50%
play on consoles

17%
play on handhelds

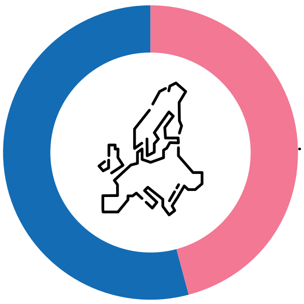
56%
play on computers

48%
play on smartphones

27%
play on tablets

17%
play on all of those devices

Women & Video Games



46%
of EU gamers are women

44%
play on consoles

54%
play on computers

63%
play on smartphone and tablets

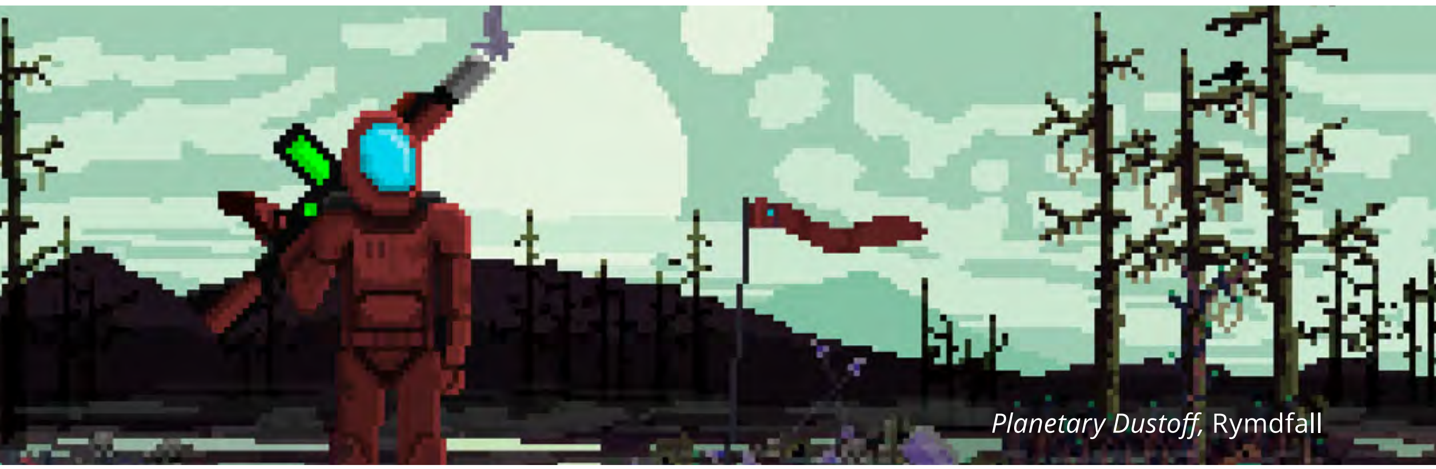
The Nordic Games Industry

Country	No. of Companies	Revenues M EUR	No. of Employees
Finland (2018)	220	2 100	3 200
Norway (2016)	180	37	599
Denmark (2017)	186	123	1 009
Island (2016)	18	53	450
Sweden (2018)	384	1 872	5 320

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 game making regions. Competition between the countries and between the companies in the region is limited. On the contrary, a growing job market and an increasing number of companies attracting international talent is beneficial for everybody. Good synergies can be found in workplaces and 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 can also be seen in the public listings of the companies and co-operation on for example Nasdaq.

The Nordic Game Conference was arranged for the 16th consecutive time in Malmö in May 2019. Judged by the number of visitors, it is the biggest game developer conference in Europe.



Planetary Dustoff, Rymdfall

Hayfever, Pixadome

Age of Wonders: Planetfall, Triumph Studios, Paradox Interactive

Polytopia Park, Midjiwan

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 can therefore substantially hinder 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 market places 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-owners 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 market places, 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.

Threats and Challenges

During the year, the Swedish game developers have increased both revenues and number of employees, but there are other aspects threatening these positive developments that need to be dealt with if growth is to continue and to prevent the Swedish industry from losing market share to the rest of the world.

Recruitment

2018 saw 650 new employees in Sweden, but the industry increased by almost 50 per cent, as several companies acquired development studios abroad. There is a huge demand for competence and it's clear that recruiting in Sweden is not enough for 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 expelled due to administrative errors, and long immigration processing times for the issue or renewal of work permits. This leads to insecurities in the job market and employees rejecting Swedish employers in favor of countries where the process is easier and more predictable, as well as practical obstacles, such as employees not being able to travel whilst waiting for permits. The work within the 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 markedly improved, but looking at the investments in the Swedish market, just like in previous years, a clear majority are from 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 countries such as the United States, Canada, United Kingdom and Finland, there are established financing structure, 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 Markets

The European Community is working extensively to simplify the digital market, and it is essentially an ambitious project, with benefits also for the Swedish companies selling games to consumers all over the world. But there is a lack of understanding of how games work, and oftentimes the game developers are impacted by rules made for tackling problems in other industries, or controlling specific US companies that have abused their position. The proposal of a digital tax is one such example, possibly having a very negative impact on smaller developers. The game companies are often also squeezed between the dominating platforms, trademark infringement and licensing abuse. The copyright directive reforms leave a lot to be desired in these areas, some of which could possibly be addressed when the directive is transposed into national law.

Sustainability

A majority of the population of Europe are gamers of some description, and with that comes a responsibility for how the games and 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.

Project Osiris, Toadman

Bad North, Plausible Concept

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: Elias Software (adaptive audio engine), Quixel (texture solutions) and Localize Direct (localization/ translation of games). Not included are game companies focusing on poker, gambling or casino games and as an example, this year Gaming Corps is no longer included as they have moved predominantly to wager games. Retailers and distributors (such as the Swedish offices of Bandai Namco, Activision and EA for example) are also not included, despite being important for 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 verified, audited and published by the financial authorities.

A few miscalculations occurred in last year's report and these have been adjusted in this issue. This also means that the result in 2017 has been marginally adjusted down. Regarding number of employees, the methodology has been updated as many companies have become international. A detailed description can be found in the section addressing employee numbers.

In some cases, the annual accounts have been filed late in the year, a pattern that often occurs. In these cases, the result for the previous year is reported. The same applies when companies use different fiscal periods. Avalanche has changed fiscal period during the year, which means that in this report, we publish the result from the calendar year 2018 and next year the fiscal year 2018-2019. Where possible, we have used the latest report for a full 12-month period.

There is also a problem with non-game related parent companies, more precisely 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 2018 annual reports have been unavailable, the previous year's figures for profit/ loss, revenues and number of employees have been used. Some companies file their accounts too late to be included when this report is printed, which means that Microsoft's purchase of Donya Labs is only visible in the statistics this year. With profits of around EUR 90 million in 2017, it's one of the most successful companies in the business. This year, there were unusually high number of companies whose annual accounts were not yet available, mainly due to long processing times at the company register. For three major companies, King, Fatshark and Toca Boca, we have used the accounts sent to the company register. In the case of listed companies, we have used the reports the companies themselves have published. For the remaining 75 companies, we report the results from 2017. Together, these had revenues of EUR 30 million and 355 employees. The largest of these companies are Oryx Simulations, Image & Form and iGotcha.

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.

Timeline

2019
Valkyrie Game Jam is arranged for the second time in Boden

2018
THQ Nordic acquires Koch Media for 121 EUR M

2017
The game accelerator Stugan opens its doors for the third year in a row

2016
Massive releases The Division and breaks several records

2015
Swedish game developers dominate industry trade fairs (E3, Gamescom etc.)

2014
The Swedish Industry breaks growth records for the fifth consecutive year

2012
King’s Candy Crush Saga is one of the most played games in the world

2011
Minecraft is launched and becomes one of the most sold games ever

2010s
Mobile games become a big part of the industry. Companies like King and Starbreeze are listed

2000s
AAA development lays the groundwork to the modern gaming boom. Indie development booms as well

2000
Paradox releases the first Europa Universalis

1997
Massive is founded in Ronneby, then moves to Malmö

1995
Aniware releases Backpacker, the biggest game series of the multimedia era

1993
Unique Development Studios (UDS) is founded in Norrköping

1992
Digital Illusions (DICE) is founded in Växjö

1990s
The demo scene creates the first big companies. Halycon days for “multimedia”

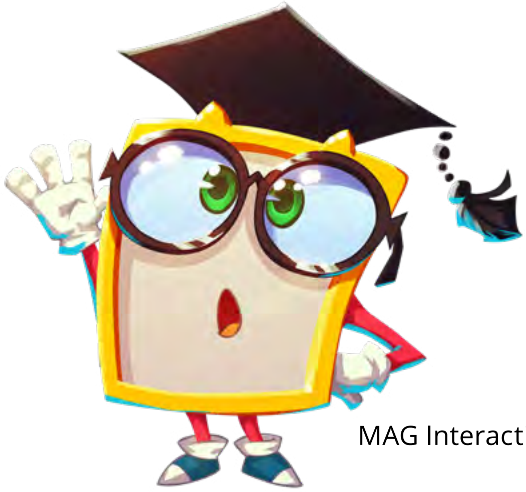
1983
Space Action is released, one of Sweden’s first commercial games

1980s
Commodore 64 makes way for the demo scene

1970s
Atari enters the living rooms. The game Stugan began development

1950-60s
The Swedish defense develops prototypes of what can be termed computer games

Glossary



MAG Interactive

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.

Raft, Redbeet

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