Swedish Game Developer Index 2018

DATASPELSBRANSCHEN
SWEDISH GAMES INDUSTRY

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The Swedish Games Industry is an association organization for ANGI and Spelplan-ASGD. ANGI represents publishers and distributors and Spelplan-ASGD represents developers and producers.

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Key Figures

Key Figures	5 years: 2012-2017
Number of Companies	137%
Revenue M EUR	257%
Profit M EUR	1047%
Employees	171%
Men	157%
Women	255%

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

Contents

3 Summary
5 Revenue
6 Revenue & Profit
9 Employment
10 Over a Thousand New Positions
11 Number of Companies
13 Gender Distribution
14 Women
15 Employees & Revenue per Company
17 Biggest Companies
19 Platforms
21 Game Developer Map
25 Game Investments
31 Game Developer Companies in the Stock Market
33 Game Developer Clusters
35 The Nordic Game Industry
38 Intellectual Property Rights Prompt Investments
39 Threats & Challenges
41 Methodology
42 Timeline
43 Glossary

Preface

Swedish game developers are strengthening their market position

It is a pleasure to be able to present another Games Developer Index, showing all time high revenues, number of companies, employment and percentage of women employees. The evolution of Swedish game development in the last nine years has created an astonishing situation; one where breaking record is the norm. There are several factors behind the success, not least ambitious developers and management. The most important external factor is the growing global market, valued at 138 billion dollars in 2018, an increase of 13.3 per cent, according to the analysts Newzoo. To have a head start in an international consumer market that is growing so rapidly is an enviable position to be in. The revenues of the Swedish companies are growing by 15 per cent according to this report – even better than the entire market, that is. The Swedish game developers continue to strengthen their position in the market.

Growth in the global market is driven by many factors. Geographically, new markets are emerging in Asia and in developing countries as living standards improve and access to the internet and smart phones increases. New gamers are being added in established markets, not least in target audiences that have traditionally been less represented; the fastest growing segment in the West is the age group 46-65 years for example. An increased supply, greater variation and more consumer-friendly offers also contribute to the trend. Beyond these factors, there are deeper human motivations: the value of play and a sense of community. All societies throughout history have had games and play as a central part of their culture. In the cradle of our civilization – Mesopotamia – the "Game of Ur" was popular, thought to have originated around 2500 BC. In other words, computer games are part of a tradition several thousand years old and there is no reason to believe that the people today are less entertained by games than in ancient times. The proliferation of games gives more people the chance to take part. Against this background, there is reason to believe that computer games will continue to reach more and more people, beyond the approximately two billion already taking part.

Swedish game developers are increasing their market share due to demand from real people globally. They make profit because these people are paying for the games with their own money. This is the opposite of speculation, the opposite of a bubble. Games are for real.

A big change in the Swedish games industry in recent years is that several companies are now listed on the stock market. The stock market veteran Starbreeze has been joined by companies such as Paradox Interactive and THQ Nordic, with very good share price development. In 2017, Finnish Nitro Games listed on the First North index in Stockholm. That a foreign company chooses Stockholm must be seen as proof of the knowledge and willingness to invest among those who buy shares here. This rapid development of computer game companies can be seen at few, if any, other stock markets in the world. However, the global growth mentioned above is not equally distributed. A large share of the skills, of both companies and investors, is concentrated to Stockholm and therefore investing largely takes place here. Unlike in the tech sector, the game companies listed on other markets are relatively few. Stockholm becomes an important stop for those wanting to invest in games. This is a trend that started already in 2006, when Electronic Arts acquired DICE, removing it from the stock market. This was followed by several high-profile acquisitions in the following years, not least Mojang and King, both fetching Billion-dollar prices. Acquisitions are also made in the opposite direction; Starbreeze made several acquisitions throughout the years and others are following suit. Not least THQ Nordic with the acquisition of German Koch Media for SEK 1.2 Billion. Through being traded on the stock market, Swedish companies can also make large investments. Worth mentioning, too, are Nordic Film Games, who, in a short period of time have established themselves as enterprising and initiated investors.

Another effect of improved capital funding is the emergence of new kinds of specialists. Companies such as Raw Fury, Coffee Stain, Goodbye Kansas, Landfall and several others who have come forward in the last few years offering support and advice to game developers in different aspects of publishing, investment, marketing, production, distribution etc. It's an evolution of the established game publisher role; more flexibility regarding contract formats and business models, more beneficial to the game developers. It is adapting to new market terms with digital distribution channels, games as services and a convergence in the global chain. I am confident in saying that the competence and work method that these operators represent is unique in the world and that it will be in higher demand, and possibly a key factor in Sweden's future competitiveness within the games industry.

On that note, it is very heartening that the development towards a more equal games business is continuing. Although there is a lot more work to be done, the number of women among the game makers has increased five-fold in six years, another reason to be optimistic.

Stockholm 6 September 2018

Per Strömbäck
Spokesperson Swedish Games Industry

Summary

The Game Developer Index analyses Swedish Game Developers' operations and international sector trends over a year period by compiling the companies' annual accounts. Swedish game development is an export business in a highly globalized market. In a few decades, the video game business has grown from a hobby for enthusiasts to a global industry with cultural and economic significance. The 2018 Game Developer Index summarizes the Swedish companies last reported business year (2017). The report in brief:

Game development is a growth industry. Around ten companies have been around since the 90's, but over half of all the companies in the industry were established in the last five years. The games developed in Sweden are released globally from day one, and new employees are also often recruited from the global market. Some factors for continuous growth are increased local and regional clusters with incubators, accelerators and educations, more entrepreneurs starting new companies, and the effects of the last couple of years of 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 number of ”second generation” companies is increasing, meaning experienced game developers who have gone on to new, independent projects or management creating second companies.

Also increasing is the number of investments and acquisitions with Swedish companies as buyers. In total, a Swedish company was main financer in 21 of 23 game-related transactions in 2017. Of these, 13 were acquisitions and investments within the native market.

Successful companies reinvest in the industry to an increasing degree, often within the Swedish market. One risk factor is that only a certain type of game is being funded, as the financers with industry experience are more likely to provide capital to projects they deem as safe bets, more closely resembling already successful ventures.

- Revenue increased to **EUR 1.53 billion** during 2017, which is an **increase by 15%** compared to 2016, and almost three times more in the space of five years. This is higher than the global average of 13%.

- Employment increased by **24 per cent** with over **1047 new full-time positions** to 5338 employees. Almost the double number of new positions compared with 2016.

- The industry is now **20 per cent female**, more exactly 1041 women, an increase by 241 women, and up with 30 per cent compared with 2016.

- Most companies are profitable and the sector reports total profits for the ninth year in a row.

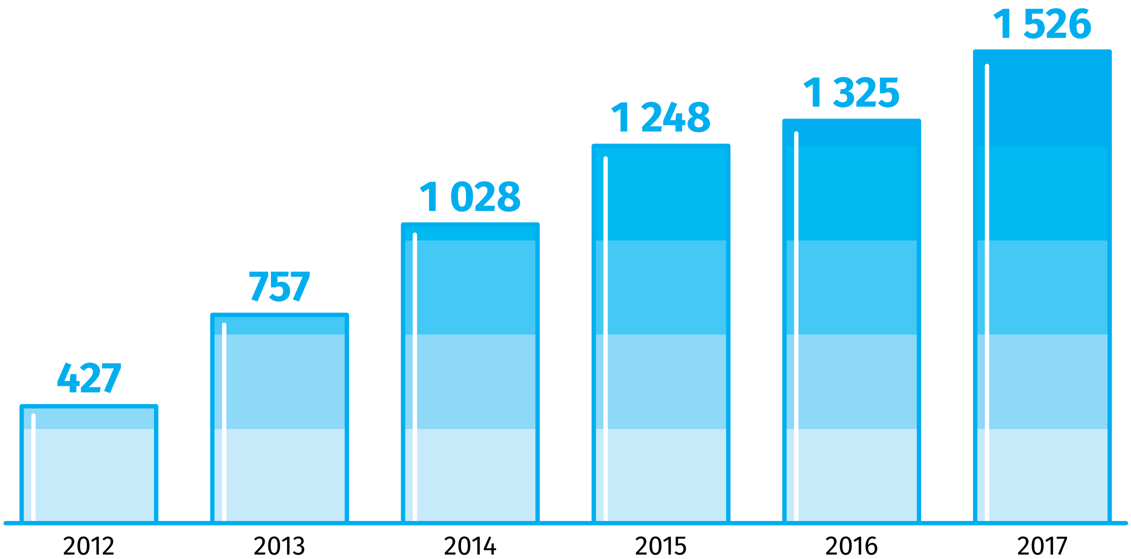
- **61 new companies** result in 343 active companies in total, an increase by **22 per cent**.

- During 2017 there was 23 reported investments and acquisitions for **over EUR 200 million** on the Swedish market. In 21 of these transactions, a Swedish company was the buyer.

- From January to September 2018 there were 23 reported investments and acquisitions on the Swedish market for a total of **340 million EUR**.

Revenue

Revenue EUR M



Revenue & Profit

With growth of 15 per cent resulting in total revenue of EUR 1.53 billion, 2017 was yet another strong year for Swedish game developers. In the global competition, they have successfully gained market shares, attracted competence and not least created gaming experiences for hundreds of millions of players the worldwide. With 61 start-ups and over a thousand new employees, the industry is witnessing its biggest increase yet in number of companies. In a world where games developed in Sweden reach over a billion users*, Swedish game makers have effectively maintained and refined the relationship with the players. With total profits of over EUR 445 million, the industry is profitable for the ninth consecutive year. In ten years, the number of companies has increased three-fold and the number of employees quadrupled. For Swedish companies, growth is higher than the global industry average, estimated at 13 per cent by Newzoo.

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

After a strong year in 2016 with game releases and several successful AAA launches, 2017 has rather been signified by new projects, drives and investments. This is evident in the annual numbers as the total profits are reduced, almost halved in comparison with 2016 but slightly lower even compared with 2015. The single biggest reason being that Mojang and its subsidiaries reported extraordinary profits of EUR 676 million in 2016, representing 78 per cent of the industry total. A large proportion of that of sum was paid out to the owner in 2017. Mojang was still the strongest actor in the business in 2017 but stood for only 55 per cent of the industry total.

The games industry is also an export trade and like all Swedish export it has benefited from the 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. By now, however, the industry has sufficient breadth and individual titles therefore have less impact on the total result. Here are a few examples of big events in 2017:

Mojang increases its revenues and, like in previous years, represents circa 30 per cent of the industry total. The company paid out a significant amount in planned dividends to the owner, Microsoft, which has resulted in reduced net profits. Minecraft continues to top the sales lists and is considered one of the most successful trademarks in the world. In 2017, the company launched the fiction novel Minecraft: The Iceland by Max Brooks and has also started the project Litcraft to promote reading. The convention Minecon became Minecon Earth, moved to the internet and can be visited through livestreams.

Since 2016, King (Midasplayer) is owned by US company Activision Blizzard. In 2017, King reported EUR 250 million in revenues and profits of EUR 88 million in Sweden, an increase compared to previous years. The company has three development offices in Sweden, two in Stockholm and one in Malmö. In the past year, the number of employees increased by 10 per cent and the company is one of the country's largest employers of game developers. The iconic Candy Crush Saga has been downloaded an astonishing three billion times and is the most downloaded game in App Store ever.

1 315 000 000 000
rounds of Candy Crush had been played in May 2018

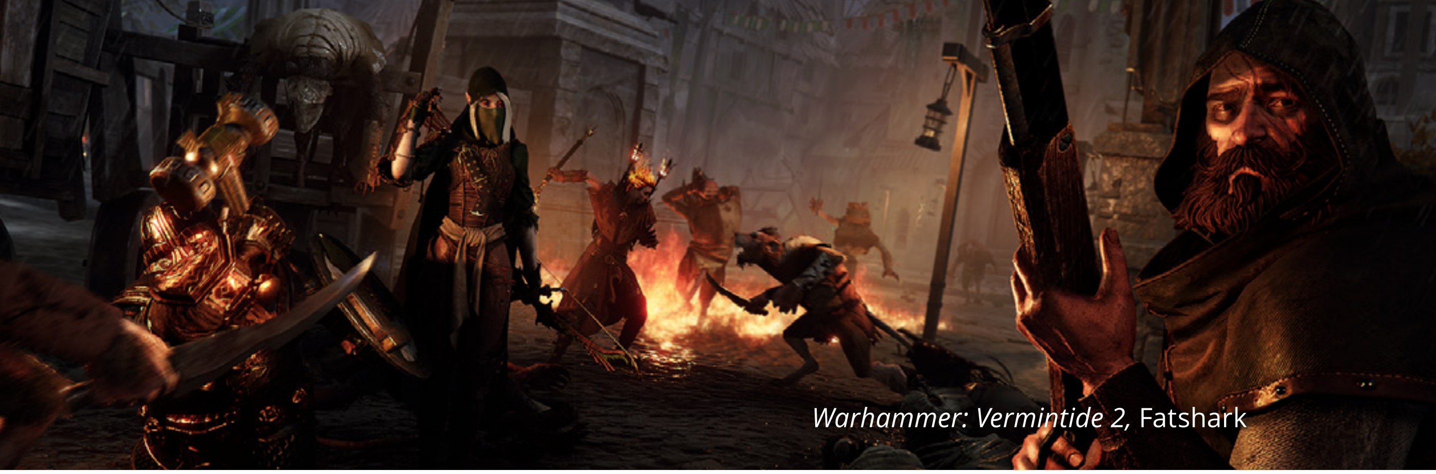
EA DICE also increased both revenue and number of employees with around 10%. The primarily Stockholm-based studio was Sweden's foremost games employer in December 2017, with 722 employees, including 101 people working at the Gothenburg studio Ghost and 44 in the Uppsala branch. The company released its second Star Wars game Star Wars Battlefront II and had significant sales success with the self-developed title Battlefield 1, released at the end of 2016, including several celebrated expansions. The studio is currently working on Battlefield V. The graphics engine Frostbite is frequently used within the Electronic Arts group, not least in the coming major launch Anthem from Bioware. EA's science center SEED in Stockholm is focusing on artificial intelligence, including deep learning, neural networks and virtual people

Avalanche Studios launched the game the Hunter: Call of the Wild in 2017. In the summer of 2018 they announced the upcoming Just Cause 4 with Square Einx, and Rage 2 together with Bethesda and iD Software, as well as Generation Zero, that the company is developing and publishing themselves. The company was acquired by Danish Nordisk Film Games for EUR 117 million in 2018 and a new development office was set up in Malmö.

The Malmö studio Ubisoft Massive expanded significantly during the year. After a solid period of staff recruitment, which can be noticed in the annual report, they totaled 460 employees in December 2017, three of whom work at the newly opened studio in Stockholm. The company is continuing work on the coming Avatar game, in collaboration with James Cameron, as well as the beta version of The Division 2 – ahead of the release Ubisoft's most popular beta ever. Massive's own graphics engine Snowdrop can be seen in Ubisoft games such as Battle for Atlas, South Park and Mario+Rabbid's Kingdom Battle.

Paradox Interactive is the country's biggest independent game developer, publicly listed in 2016. In 2017, the company increased its revenues by 25 per cent and had great success with new expansions of several in house games such as Stellaris, Hearts of Iron, Crusader Kings and Europa Universalis also announcing externally developed games such as for example Surviving Mars during the year. Paradox Interactive bought Dutch company Triumph Studios in 2017 and in connection with the deal announced another Age of Wonders game, expected to be completed in 2019.

Publicly traded Starbreeze continued work on several major projects in 2017, both their own development projects and publishing activities such as Overkill's Walking Dead, System Shock 3 and Double Fine's Psychonauts. Starbreeze made a number of large investments and acquired the Indian graphic studio Dhruva for SEK 71 million and the Swedish VR company Enterspace AB. In 2018, the company opened their first VR hall in Stockholm and is a partner in Emaar Entertainment's VR Park in Dubai Mall. Starbreeze are also developing their own VR



Warhammer: Vermintide 2, Fatshark

hardware called StarVR which they announced in 2018 in collaboration with the eye tracking company Tobii.

THQ Nordic has grown steadily in 2017 with revenues of EUR 61 million, up 68 per cent. The company acquired German Black Forest Games as well as the Swedish studios Pieces Interactive and Experiment 101. In 2017, the company had seven fully-owned development offices, of which four are located in Sweden. The expansion continues in 2018 and THQ Nordic bought Koch Media in a huge trade comprising a total of EUR 121 million, including for example the entire operations of German Deep Silver. The overall owner is THQ Nordic AB, based in Karlstad.

MachineGames released the critically acclaimed Wolfenstein II: The New Colossus at the end of last year. The Uppsala studio is owned by American ZeniMax Media and had 107 employees in 2017.

Tarsier Studios in Malmö launched their first game based on their own trademark Little Nightmares. In August 2018, the company reported having sold over one million copies.

MAG Interactive acquired FEO Media, another Swedish games studio, thereby completing its portfolio of word games, including the internationally successful QuizDuel. The company was listed in December 2017.

Stunlock Studios in Skövde released the full version of Battlerite during 2017 with financial backing from Coffee Stain Studios, and a successful pre-release. Battlerite Royale followed in 2018.

Another successful company from Skövde is Flamebait, who with their painting game Passpartout: The Starving Artist quickly reached both profitability and a mixed audience.

Among the smaller companies with high revenues and profits, Robtop Games stands out once again this year, continuing to prosper with titles like Geometry Dash and the follow-up Geometry Dash SubZero in 2017.

Hazelight released their first game A Way Out in spring 2018, with support from EA's Originals program. The game was immediately praised by critics and sold over a million copies in the first two weeks. Also among EA Originals is the game Fe from the Gothenburg studio Zoink, who founded the company Thunderful together with Image & Form in 2017.

Starstable increased revenues and the company is working on developing the brand and the eponymous game, which attracts a lot of young female players. Starstable has also arranged the live event Starstable Live in Stockholm for its fans. The company received funding of EUR 17 million from Nordisk Film Games in 2018.

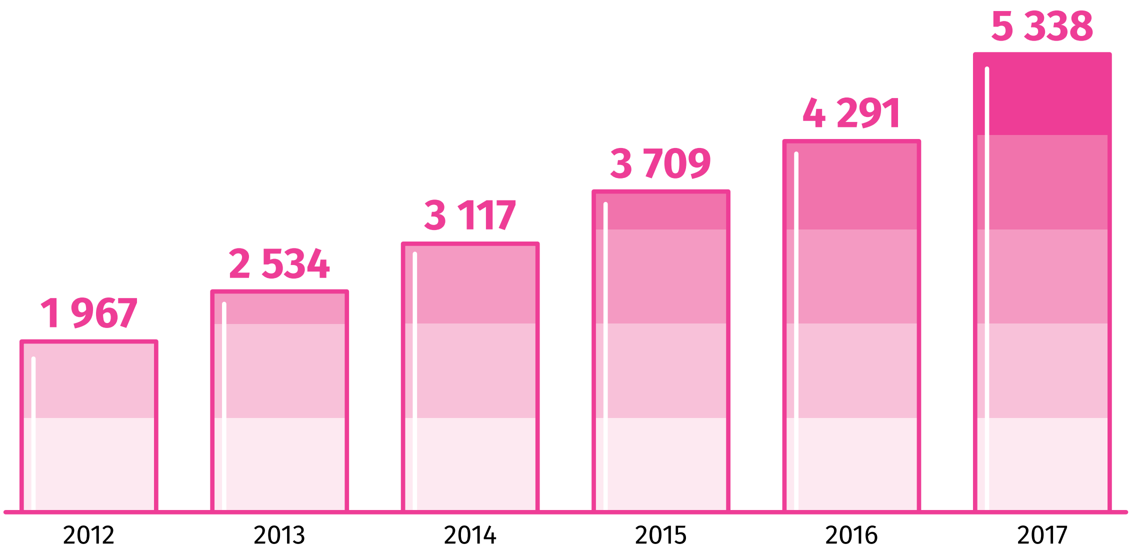
The Umeå company Level Eight has had considerable success with the mobile game Robbery Bob 2. Another two other commercially successful companies based in the northern region of Sweden are Zordix, who makes Moto Racing on water and snow, and Turborilla in Luleå with Mad Skills BMX and Mad Skills Motocross.

Several other companies in the industry can be seen backing one another financially or creating synergies. On the investment side, companies like Coffee Stain, Goodbye Kansas and THQ Nordic are very active and important for the future of the Swedish industry.

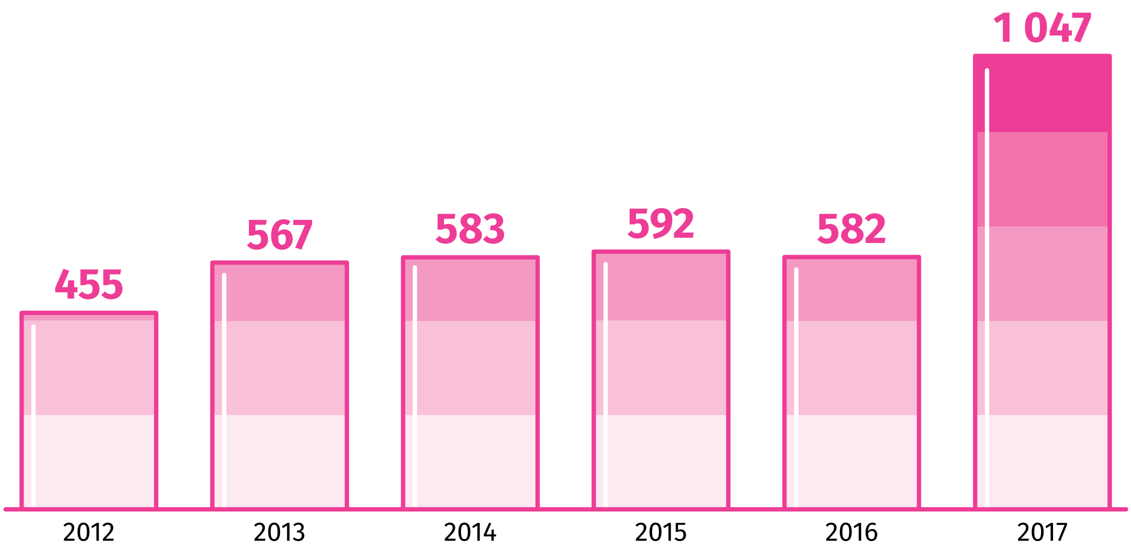
The above list is by no means exhaustive; there are many other good examples of success for Swedish game developers in the last year.

Employment

Number of employees



New positions



Over a Thousand New Positions

The total number of employees increased by 24% or with 1047 full time positions. That represents almost double the number of new positions in 2016, when the industry grew by 558 full-time positions. The increase alone is equal to almost the total number of people in the business ten years earlier, in 2007. Recruitment and staff expansion follows the trend for investment in future ventures and projects during the year. Many are recruited from abroad, as there are not enough trained game developers in Sweden. The companies are still lamenting the lack of competence and recruitment obstacles, as well as legal and practical difficulties when it comes to immigration. In some cases, this is seen in the investments made – a few Swedish companies have invested in larger studios abroad to cover production levels and lack of staff.

5338
full-time positions in the games industry in 2017

The number is based on the annual accounts yearly employment average during the entire period. This means that the actual number employed in the industry is often higher and that many companies that have expanded in 2017 ended the year with considerably more employees than in the beginning of the year. In a handful of cases, the number of employees in December 2017 has been used as a reference. Partly, it concerns the distribution of employees between different geographical locations, where there are several studios under the same company name. In a few cases, the December figure is used to establish the gender distribution of the company, and for the three biggest employers, Ubisoft Massive, EA DICE and King, data from December 2017 is used to better mirror the actual number of employees, as two out of three companies also have broken fiscal years. Compared to the annual accounts, this amounts to a further 155 persons.

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 big demand for employees in all work categories, which prevents the companies from fully developing to full potential. Reports from the companies indicate that the increase in both employment and demand will not lessen in 2018.

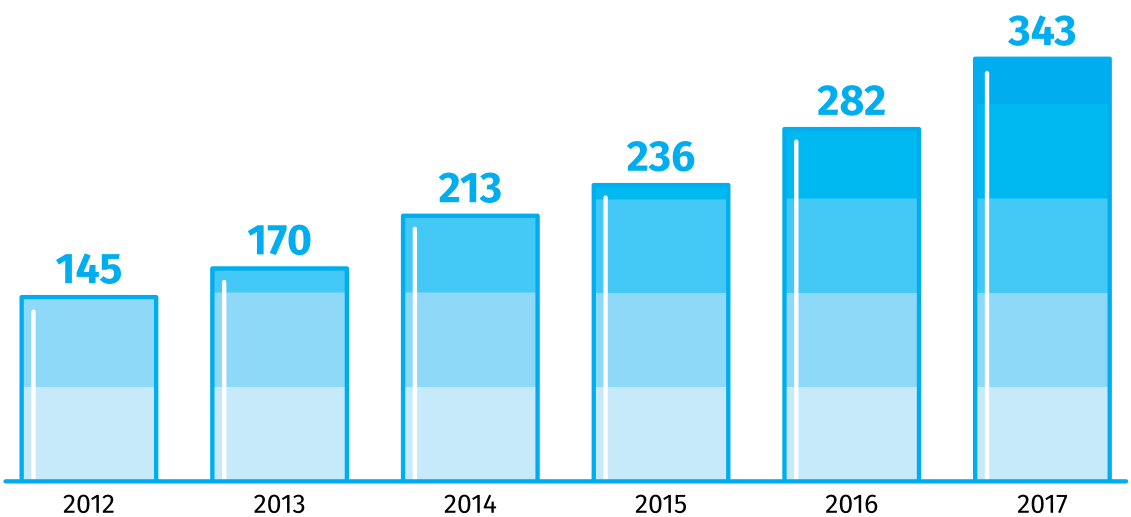
Number of Companies

Just like the growing number of employees, the number of new founded companies proves that the industry is continuing to expand. In the statistics for 2017, 61 new companies were added, an increase by 22 per cent. There have never been so many new companies than now.

Most of the new companies were founded in 2016 and published their first annual accounts in 2017. Local clusters and incubators are playing an important role in establishing new companies. In Skövde, the incubator has been active for over ten years and has a branch in Gothenburg. During the last few years, initiatives have been created in cities such as Linköping, Skellefteå, Malmö and Stockholm. In Falun, there have been corresponding activities for many years.

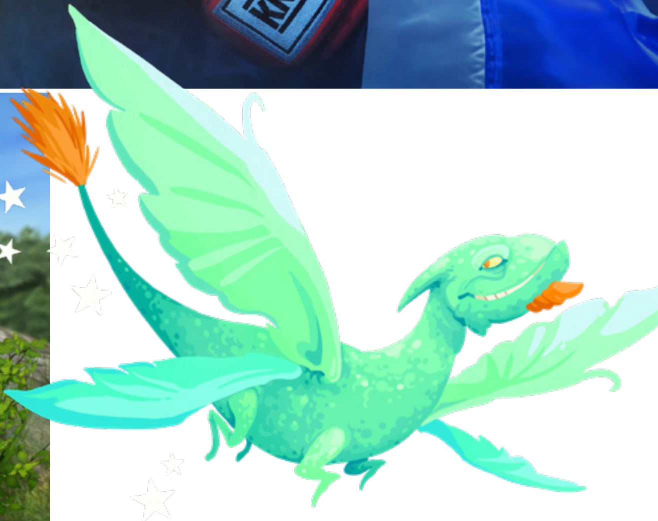
A handful of companies have failed, and some have, in practice, wound up their operations but continue as companies to maintain existing games. Some companies are not included in the report, e. g. app developers or media companies where the games development varies from year to year. Other companies 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 but some of them can be found among the game developers. Some examples are Nifflas, run by Nicklas Nygren in Umeå and maker of the award-winning Uurnog Uurlimited, Elden Pixels in Gothenburg who have developed the critically acclaimed Alva's Awakening and Teotl Studios in Uppsala, developers of successful single player games since 2010.

Number of Companies



Glowing Gloves, Bublar


Star Stable, Star Stable Entertainment



Gender Distribution

In 2017, for the first time ever, a fifth of all employees in the games industry were female, 20 per cent. It is also the year when women passed the one thousand mark, with a total of 1041 women in the industry. It is a 30 per cent increase among women, to be compared with a 23 per cent increase of male employees.

In total, the proportion of women is still low, compared to many related industries. There are big challenges ahead in developing recruitment, attracting women to the business and the strive for equal opportunities in the games industry 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. With even fewer women working in the business elsewhere in the world, it becomes even more difficult to achieve an equal recruitment base. Long processing times for work permits can often deter and hamper a broader talent pool.

Women in games development are mainly found in the medium-sized and large companies and a definite challenge is to have smaller developers and start-ups include women from the outset, as well as making more women found 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. A small number of companies have more female employees than male, 83 companies employing more than one person lack a female employee.

20% **Women represent a fifth of all employees in the Swedish games industry**

Within the industry, few women are in leadership positions, but they are increasing in numbers. In August 2018, Ebba Ljungerud was appointed CEO of Paradox and became the leader of one of the country's biggest listed games companies. Among several other companies, women can be found as studio executives, operative managers and Chief Executives.

Other activities are worth mentioning, for example the investment fund started by Coffee Stain in 2018, which concentrates on small companies where at least half of the employees are female, and that Women in Games have been established in many parts of the country, arranging network meetings for women active in the industry.

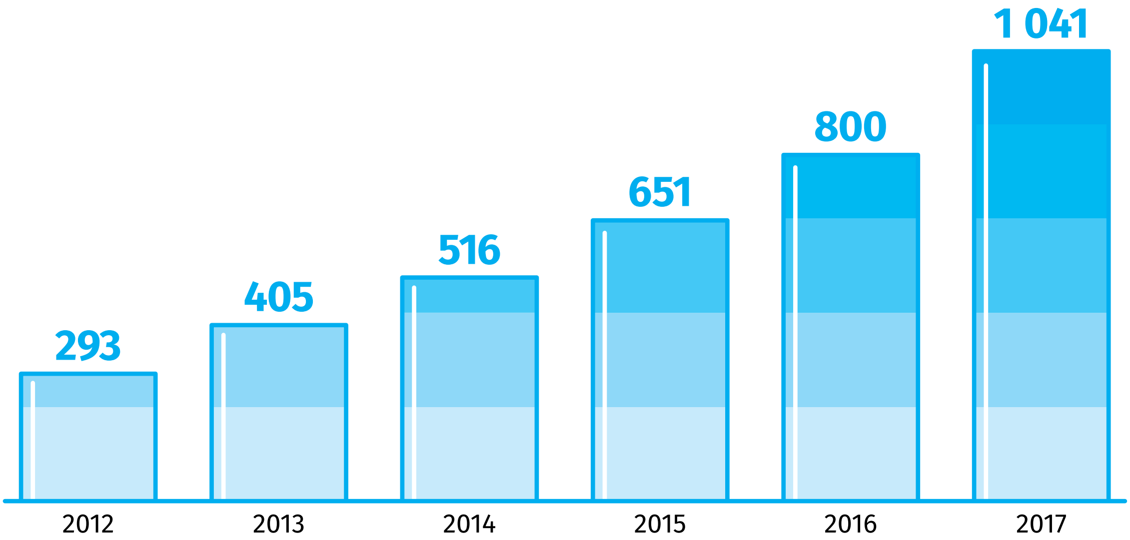
The number of women working in the business is greater higher than the number of men that worked in the business ten years ago.

About Diversi

Diversi was created in 2013 as an initiative to highlight and strengthen the diversity in Swedish game development. The goal is to make more people feel at home in the games industry, communities, education and companies. Games are not just for the few, they are an important part of society – creatively, socially, pedagogically and economically. Equality is important to allow the industry to grow and develop further. More information about the initiative can be found at diversi.nu. The Swedish games industry supports many other initiatives to do with diversity, equality and inclusiveness; several have gained international attention. Diversi Scholarship financed the visit to the 2017 Game Developers Conference in San Francisco for 15 female students.

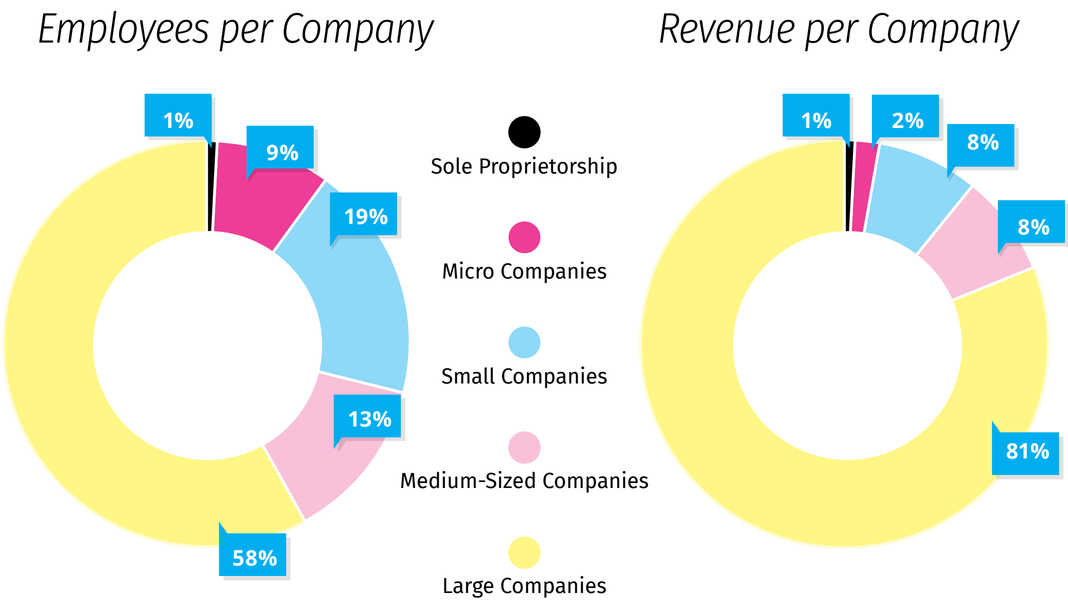
Women

Number of Women



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**

Compared to previous years, the large companies have become larger, both in proportion and in absolute numbers. This is because another two companies, THQ Nordic and Avalanche qualified as large companies in 2017. Revenues are correspondingly somewhat lower among the medium-sized companies in pure amounts, but employment is increasing across all categories. The small companies have increased revenues, but the micro companies and sole proprietorships are adding employees but producing lower revenues.

There is a movement between corporate categories, not least because relatively high revenue can be reached with few employees, but during 2017, growth has primarily been witnessed in the bigger and more established companies.

Budget Cuts, Neat Corporation

Biggest Companies

For the second time, the annual list of the biggest companies includes ten companies in each category. More companies are growing. Four are reporting revenues of billions and eleven had over 100 employees. A clear majority of the companies are showing profits and 70 firms employed more than ten people.

Tom Clancy's The Division 2, Massive Entertainment

Revenue, EUR M

1	Mojang	469
2	King	253
3	EA Digital Illusions CE	135
4	G5 Entertainment	118
5	Paradox Interactive	85
6	Starbreeze	62
7	THQ Nordic	61
8	Avalanche Studios	35
9	MAG Interactive	29
10	Ubisoft Massive	25

Employees

1	EA Digital Illusions CE	722
2	King	657
3	Ubisoft Massive	460
4	G5 Entertainment	315
5	Starbreeze	278
6	Avalanche Studios	252
7	Paradox Interactive	243
8	THQ Nordic	148
9	Goodbye Kansas Holding AB	144
10	Stillfront Group	129

Platforms

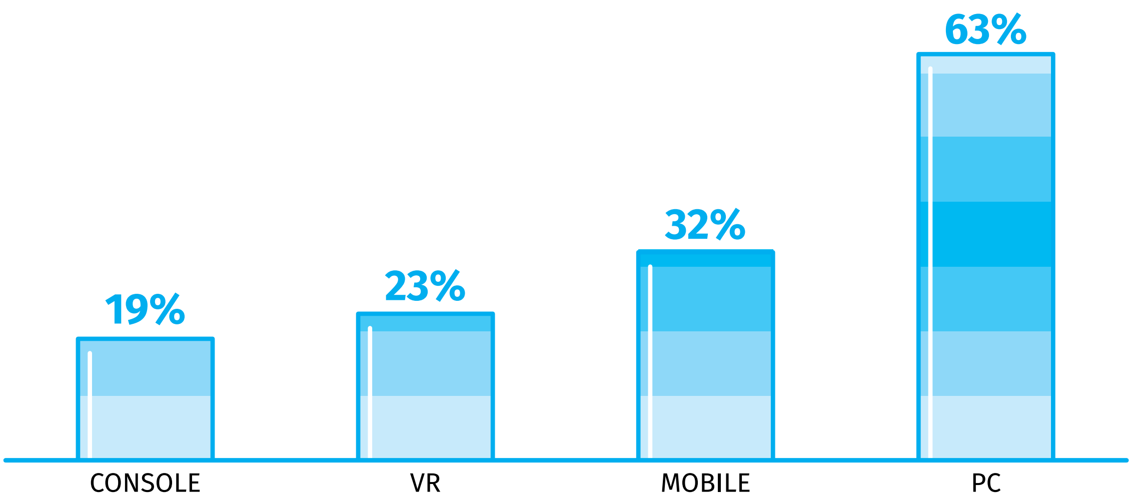
One of the many signifiers of the Swedish game development industry is its variety. It may seem obvious to focus on the biggest formats (PC, AAA/console, mobile), but few countries have successful companies in all segments. Sweden is world-leading on almost all commercial platforms and it also looks promising for VR and AR, as many Swedish developers have adopted the technology and caught the interest of the rest of the world, securing external investment as well as self-financing. Starbreeze are working with their own VR hardware, and Bublar has created a platform for AR and location-based games, working with brands such as Hello Kitty.

Whilst breadth is one of the cornerstones of the Swedish games wonder, the business is not as dependent on hardware platforms as it once was. Today, games are mostly sold digitally, and the same games can increasingly be found on different platforms. Many companies have their own distribution channels, but the big global players are dominating the market, digital channels such as App Store, Steam and PlayStation Network.

Compared to previous years, the distribution of platforms that the companies are working on remain constant. The bigger companies have established profiles and are more often working on several different platforms. The Swedish industry is broad and among the ten largest companies, there are those working only on mobile platforms, only for larger screens and some making games for all existing platforms.

Looking at the selection of platforms that new companies choose to focus on, PC and mobile are the most common choices. Many who started out developing for PC are also working on another platform, which means that the same company can feature more than once in the chart below. At least half of all new companies making games for VR are also working on some other platform. Several companies provide consultancy work, some to fund future game development, others as pure service providers.

Platforms, New Companies



Platform selection of 62 game developers formed in 2016–2017 and having reported their focus.

Stellaris: Apocalypse, Paradox Interactive

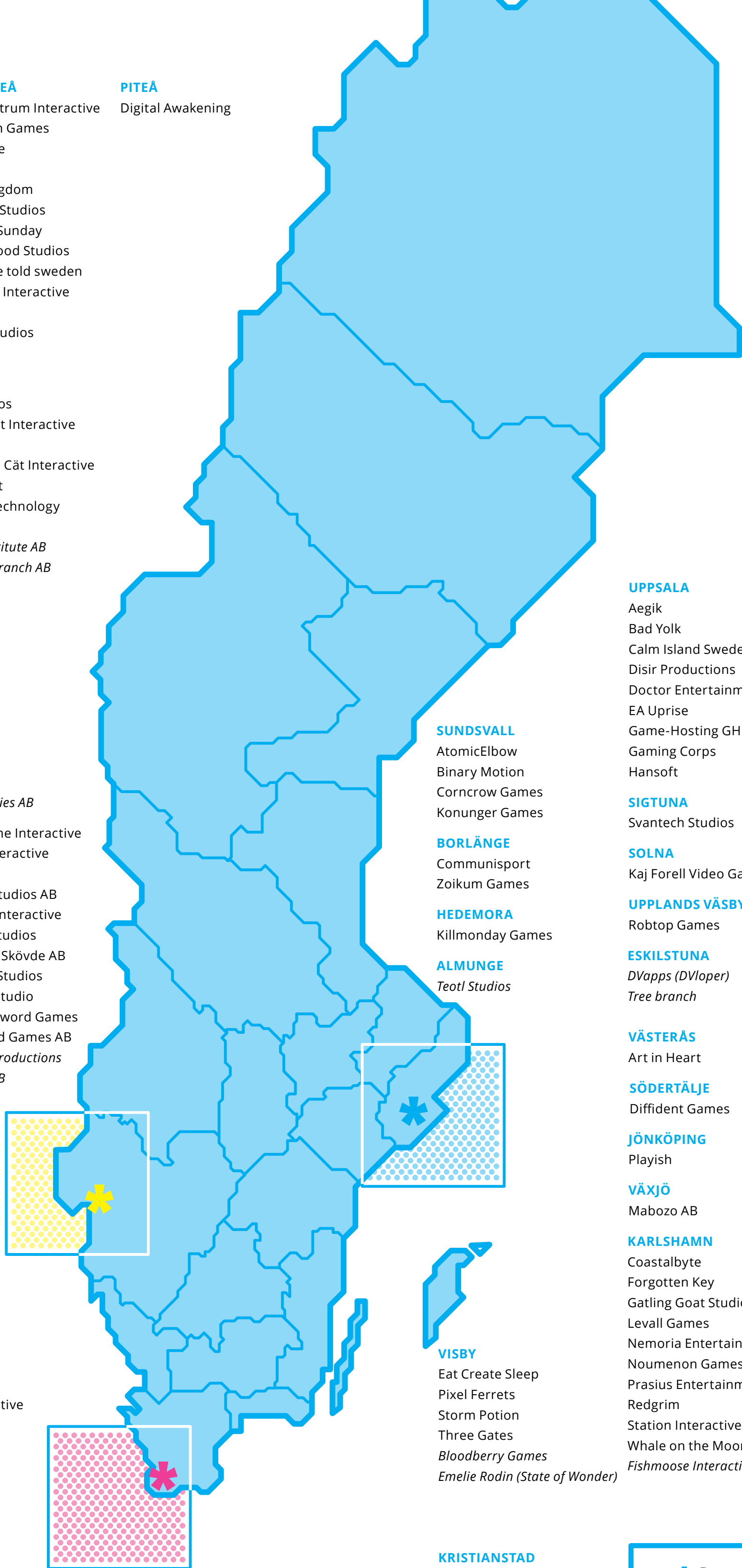
Game Developer Map

Below, a table of the biggest regions ranked by number of employees and number of companies. The table follows the sum of the percentages and does not consider the revenues of the company. Stockholm consists of Greater Stockholm and neighbouring places. Although most of the employees are based in the capital, there are significantly more 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 and Skövde's Coffee Stain also have offices in Stockholm.

CAPITAL includes Stockholm, Uppsala and Södermanlands county. WEST includes Västra Götaland and Halland county, SOUTH comprises Skåne and Blekinge county and NORTH includes Västerbotten, Norrbotten and Västernorrlands county. Employees at local offices are reported under respective location as far as possible.

REGION	Companies	Employees
CAPITAL	160	3532
WEST	60	470
SOUTH	62	738
NORTH	29	183

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



ÅRE
Hindelid Development

KÖPING
LS Entertainment

KARLSTAD
Mirage Game Studios
Nuttery Entertainment
THQ Nordic
Agera Games

SKELLEFTEÅ
Frostspektrum Interactive
Gold Town Games
Grand Pike
Innan AB
North Kingdom
Orch Star Studios
Sound of Sunday
Strangewood Studios
Tales to be told sweden
Time Stop Interactive
Triolith
Twoorb Studios
Tarvalley

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

PITEÅ
Digital Awakening

STENUNGSUND
Ace Maddox

TROLLHÄTTAN
Easy Trigger
Friendbase
Trilo Interactive

ALINGSÅS
Alega & Qiiwi Learning

Mellerud
Vovoid Media Technologies AB

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

HÄRRYDA
Rockheart Studios

BORÅS
Sozap

FALKÖPING
VaragtP Studios AB

ONSALA
Snojken

ALVESTA
Wadonk

RONNEBY
Activout
Nodbrim Interactive

HELSINGBORG
Localize Direct
Monsuta
Odd Comet
Pixelbite

LUND
Illwinter Game Design AB
Pastille
Spiddekauga Games

SUNDSVALL
AtomicElbow
Binary Motion
Corncrow Games
Konunger Games

BORLÄNGE
Communisport
Zoikum Games

HEDEMORA
Killmonday Games

ALMUNGE
Teotl Studios

VISBY
Eat Create Sleep
Pixel Ferrets
Storm Potion
Three Gates
Bloodberry Games
Emelie Rodin (State of Wonder)

KRISTIANSTAD
JE Software

UPPSALA
Aegik
Bad Yolk
Calm Island Sweden
Disir Productions
Doctor Entertainment
EA Uprise
Game-Hosting GH
Gaming Corps
Hansoft
Immortal Games
MachineGames
Neon Giant
Night Node
Pikkotekk
Quixel
VisualDreams
Wavr Tech
Yemsoft
Yoger Games

SIGTUNA
Svantech Studios

SOLNA
Kaj Forell Video Game

UPPLANDS VÄSBY
Robtop Games

ESKILSTUNA
DVapps (DVloper)
Tree branch

VÄSTERÅS
Art in Heart

SÖDERTÄLJE
Diffident Games

JÖNKÖPING
Playish

VÄXJÖ
Mabozo AB

KARLSHAMN
Coastalbyte
Forgotten Key
Gatling Goat Studios
Levall Games
Nemoria Entertainment
Noumenon Games
Prasius Entertainment AB
Redgrim
Station Interactive AB
Whale on the Moon
Fishmoose Interactive

BODEN
921 Studios AB
Frozen Waffle

LULEÅ
Virtual Light VR
Pixadome

UMEÅ
Bruno Janvier Software AB
Cassius Creative AB
Coldwood Interactive
David Marquardt
Level Eight
Morningdew Media
Oryx Simulations
Paradox Artic
Turborilla
Zordix
Nifflas Games

NYKÖPING
Sysiac Games

NORRKÖPING
Dimfrost Studio AB
Goes International
AmberWing AB

MOTALA
Code Club (Onetoofree)
CSRJH Camp Creation AB

LINKÖPING
Catalope Games
Chillbro Studios
Cortopia (Multivrses)
Donya labs (Simplygon)
Incredible Concepts of Sweden
Lifee AB
Power Challenge
Rampant Pixels
Stillfront Group
Aftnareld AB
Flashe Gaming Group AB
Graewolv
Rymdfall AB

ÅTVIDABERG
Martin Magni

KARLSKRONA
Attractive Interactive
Viking Fabian

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

Stockholm

2Play Studios
A Small Game AB
A Sweet Studio
Apprope
Aptitide (Blastronaut)
Arcticmill (Arcmill)
Arrowhead Game Studios
Avalanche Studios
Axolot Games
Bambino Games
Beadhead Games
BITZUM AB
Blackbeard (Svartskägg AB)
Bodbacka:Boom
BoldArc
Bridgeside AB
Bublar
Casual Games FK
Codarica
Coffee Stain North
Collecting Smiles
Commited Gaming Thule
Crackshell
Daikon Media
Deadbreed
Defold
DorDor
EA DICE
Ekvall Games
Eldring Games
Elias Software
Enterspace
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
Happy L-Lord AB
Hatrabbit
Hazelight Studios AB
iGotcha
IMGNRY International
Interactive Productline
Isbit Games
Jajdo
Kaludoscope
KEP Games
King
LandFall Games
LeadTurn Gaming
Light & Dark Arts
Like a Boss Games
Lionbite AB
Liquid Media AB
Logtown Studios
Massive
MAG Interactive
Mibi Games
Midjiwan
Might and Delight
Mimerse
Mojang
Mutate
NeCo (Neat Corporation)
Neuston
Nialbe
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
Rain of Reflections
Raketspel
Raw Fury
Razzleberries
Really Interactive
Resolution Games
Ride & Crash
Right Nice Games
Rigid-Soft Studios (RGDSoft AB)
Rovio Sweden
SimWay
Skeleton Crew
Snowprint Studios
Spelagon
Spelkraft Sthlm
Spelkultur i Sverige
Star Stable Entertainment
Starbreeze
Stockholm App Lab
Strange Quest
Stringent Ljud
Sunhammer (Outsiders)
SVRVIVE Studios
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
Xpert Eleven
10 Chambers Collective
DevM Games
Epic Games Sweden
Jaramba
Kaludoscope
Kavalri Games
Logtown Studios
Mibi Games
Ride & Crash

Gothenburg

1337 Game Design
8 Dudes in a Garage
Bulbsort
Carry Castle
Craft Animations
Creative AI Nordic
Creative Vault AB
Devkittens
Dreamon Studios AB
Erik Svedäng AB
EA Ghost
Free Lunch Design
Hello There
Image & Form International
Insert coin
Int3 Software
Itatake
IUS Innovation
Lavapotion
Legendo Entertainment
MindArk
Nornware
Pathos Interactive
Pax6 Games
Retroid Interactive
Räven
Steelraven7
YCJY AB
Zoink
Elden Pixels
Kirikoro
Skygoblin
Hiber

Malmö

Apoapsis Studios
Attribite
Ayeware (bearded ladies)
Binary Peak
Blast Door Interactive AB
DeadToast Entertainment
Divine Robot
ExtraLives
Frictional Games
Frogsong Studios AB
Haunted House
Illusion Labs
Impact Unified
Imperial Games Studio
King
Learning Loop Sweden
Leripa AB
Locamotive
Mandelform Studios AB
Mediocre
Midnight Hub
Nopalito Studios AB
Nordic Game Resources AB
Nordic Game Ventures
Not My Jeans AB
Outbreak Studios
Paradox Mobile
Planeto
Plasusible 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
VisionPunk AB
Webbfarbror (Grapefrukt)
Longhand Electric
Luau
Plasusible Concept

Narrows, Resolution Games

Surviving Mars, Paradox Interactive

Game Investments

RAGE 2, Avalanche Studios

Total investments in the Swedish games market in the last five years amount to close to EUR 80 billion. Two deals stand out; one is Microsoft's acquisition of Minecraft-developers Mojang for almost EUR 2 billion in 2014 and the other Activision Blizzard buying the mobile game developer King at a price of EUR 5.3 billion in 2016.

In November 2017, the Swedish games industry released the report Faith on investments, evaluation of game developer companies and the importance of intellectual property for the industry. The report charted some 50 investments 2015-2017 and can be downloaded from the Swedish Games Industry website, under reports. At the time of writing, data from the entire year 2017 is available and, all in all, there have been 23 well known trades including Swedish companies. The total value is estimated at over EUR 200 million and in almost every case, a Swedish company has invested in or acquired another company.

The investments and acquisitions of and by Swedish companies continued in 2018. Two deals have exceeded EUR 100 million; Nordisk Film's acquisition of Avalanche and THQ Nordic's acquisition of German company Koch Media.

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.

Investments and acquisitions of and by Swedish game developers 2017

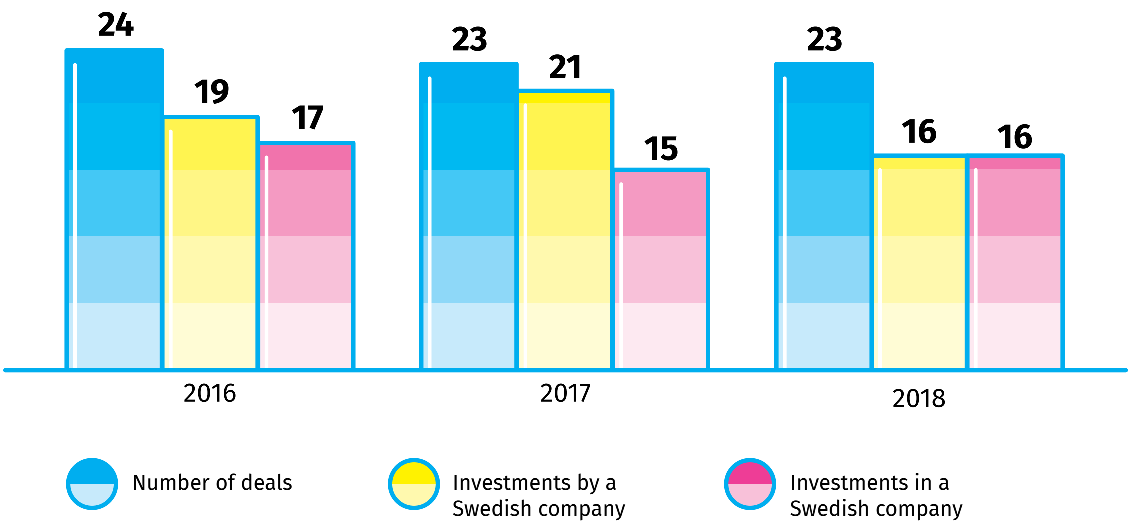
Year	Seller	Country of Seller	Buyer / Investor	Country of Buyer	Type of Deal
2017	Avalanche Studios	Sweden	Nordisk Film Games	Denmark	Investment
2017	Black Forest Games	Germany	THQ Nordic	Sweden	Acquisition
2017	Bublar	Sweden	Goodbye Kansas	Sweden	Investment
2017	Dhruva Interactive	India	Starbreeze	Sweden	Acquisition
2017	Donya Labs	Sweden	Microsoft	USA	Acquisition
2017	Peppy Pals	Sweden	Internetstiftelsen	Sweden	Investment
2017	Enterspace AB	Sweden	Starbreeze	Sweden	Acquisition
2017	eRepublik Labs	Ireland/Romania	Stillfront Group	Sweden	Acquisition
2017	Esportal	Sweden	Peter Liljestrand et al	Sweden	Investment
2017	Experiment 101/ Goodbye Kansas	Sweden	THQ Nordic	Sweden	Acquisition
2017	Fast travel games	Sweden	Industrifonden	Sweden	Investment
2017	FEO Media	Sweden	MAG Interactive	Sweden	Acquisition
2017	Fall Damage	Sweden	Goodbye Kansas	Sweden	Investment
2017	Gamestop / Kongregate	USA	MTG	Sweden	Acquisition
2017	Ghostship Games	Denmark	Coffee Stain Studios	Sweden	Investment
2017	Inferno Online	Sweden	Esportal	Sweden	Acquisition
2017	Lavapotion	Sweden	Coffee Stain Studios	Sweden	Investment
2017	Mag Interactive	Sweden	Swedbank Robur Microcap	Sweden	Investment
2017	Pieces Interactive	Sweden	THQ Nordic	Sweden	Acquisition
2017	Raw Fury	Sweden	Lootspawn et al	Sweden	Investment
2017	Simutronics Corp	USA	Stillfront Group	Sweden	Investment
2017	Slipgate Studios	Denmark	THQ	Sweden	Trade mark acquisition
2017	Triumph Studios	The Netherlands	Paradox Interactive	Sweden	Acquisition

Investments and acquisitions of and by Swedish game developers 2018

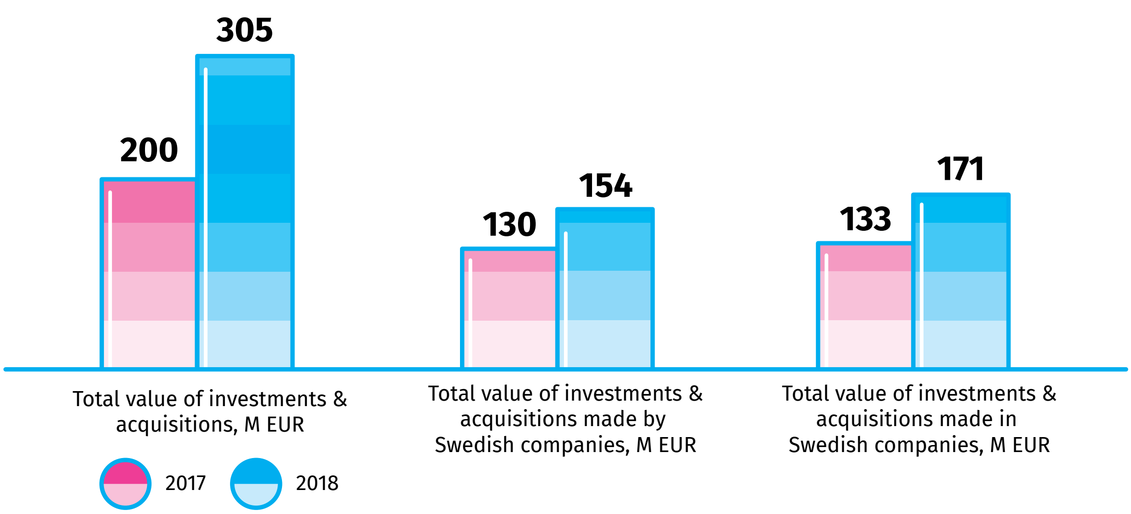
Year	Seller	Country of Seller	Buyer / Investor	Country of Buyer	Type of Deal
2018	Artplant	Norway	Toadman Interactive	Sweden	Acquisition
2018	Avalanche Studios	Sweden	Nordisk Film Games	Denmark	Acquisition
2018	Gone North Games	Sweden	Coffee Stain Studios	Sweden	Acquisition
2018	Handy Media	Germany	THQ Nordic	Sweden	Acquisition
2018	Hardsuits labs	USA	Paradox Interactive	Sweden	Investment
2018	Harebrained Schemes	USA	Paradox Interactive	Sweden	Acquisition
2018	IGDB	Sweden	Goodbye Kansas et al	Sweden	Investment
2018	Image & Form / Zoink	Sweden	Thunderful	Sweden	Merger
2018	Koch Media	Germany	THQ Nordic	Sweden	Acquisition
2018	Like A Boss Games	Sweden	Leo Vegas	Sweden	Investment
2018	Neat Corporation	Sweden	KM Troedsson	Sweden	Investment
2018	Neon Giant	Sweden	Goodbye Kansas	Sweden	Investment
2018	Other Tales Interactive	DK/SE	Coffee Stain Studios	Sweden	Investment
2018	Peppy Pals	Sweden	LEGO	Denmark	Investment
2018	Quixel	Sweden	GP Bullhound et al	Sweden	Investment
2018	Raw Fury	Sweden	Craig Fletcher	USA	Investment
2018	Raw Fury	Sweden	Nordisk Film Games	Denmark	Investment
2018	Rising Star Games	UK	Thunderful	Sweden	Acquisition
2018	Snowprint	Sweden	King et al	Sweden	Investment
2018	Star Stable	Sweden	Nordisk Film Games	Denmark	Investment
2018	Starbreeze	Sweden	Behaviour	USA	Trade mark Acquisition
2018	Time Stop Interactive	Sweden	Gold Town Games	Sweden	Acquisition
2018	Toadman	Sweden	Craig Fletcher	USA	Investment

Apex Construct, Fast Travel Games

Investments & Acquisitions



Value of Investments & Acquisitions, M EUR



Game Investments

The total value of the 23 deals taking place in 2017 is estimated at approximately EUR 200 million. In 2018, the figure has already reached over EUR 340 million.

Eleven of the 23 deals mentioned above are acquisitions. Apart from the initial investment of EUR 9.6 million in Avalanche by Danish Nordisk Film Games, and Microsoft's acquisition of the developers of Simplygon, Donya Labs, the deals have been made by Swedish buyers. In some cases, Swedish individuals or companies have headed a funding round.

The biggest deal in 2017 is estimated to be the acquisition by Microsoft of Donya Labs. The exact value is undisclosed but has been estimated by analysts to about EUR 83 million. The biggest published deal is MTG's acquisition of Kongregate from the US company Gamestop for EUR 48 million, followed by Paradox acquiring Triumph Studios for a total of EUR 25 million.

THQ Nordic has made several acquisitions and significantly expanded its catalogue of game titles. In 2017, the company bought the German studio Black Forest Games, the Skövde company Pieces Interactive and the new studio Experiment 101, with whom they already had a publishing deal for the coming game Biomutant. THQ also acquired the rights for the game Rad Rogers from Denmark's Slipgate Studios. The expansion continues in 2018 with the major purchase of Koch Media for EUR 121 million and a few other, smaller studios and trademarks.

Coffee Stain is another company to have made several investments and acquisitions in the last couple of years and founded a publishing division. They have, for example, created an investment fund for smaller companies with at least 50 per cent female employees and invested in the Swedish-Danish collaboration Other Tales Interactive, as well as invested in in companies such as newly formed Lavapotion and Danish Ghostship Games. At the beginning of 2018, the company acquired Gone North Games, rebranding the company Coffee Stain North.

A major player when it comes to investments in the Swedish games industry is the recently founded Nordisk Film Games. From its base in Denmark - with the Swedish games industry veteran Martin Walfisz heading the investment projects - the company has made several deals, the largest being the acquisition of Avalanche in 2018 for EUR 117 million. The company has also invested EUR 16 million in Starstable and EUR 5 million in Raw Fury.

Starbreeze made major investments in the last few years. Through share offers, they have invested in several companies and trademarks that they are collaborating with in some form. As mentioned above, Starbreeze acquired the Indian graphics studio Dhruva Interactive for EUR 7.4 and bought the Swedish VR/location company Enterspace for EUR 2 million. In 2018, the company sold the rights for Dead by Daylight to American company Behaviour in a deal worth over EUR 15 million.

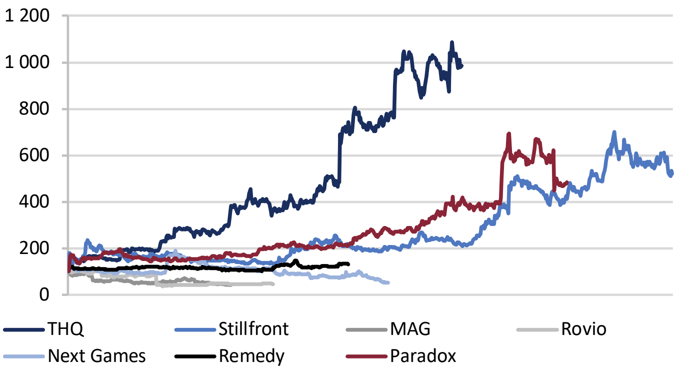
Goodbye Kansas has a growing stable of developer offices in which they have different forms of shares and stakes. This is in addition to their in-house production ear-marked for the games industry. Goodbye Kansas Invest often go in as relatively early investors and work closely with new studios. They are part-owners of The Bearded Ladies, Palindrome and Tarhead. In 2017 and 2018 the company entered Fall Damage, Bulbar, IGDB and Neon Giants. One company left the portfolio when Experiment 101 was bought by THQ Nordic in 2017.

As mentioned earlier in the report, Quiz Duel developer FEO Media was bought by another Stockholm company creating mobile games in 2017, MAG Interactive, for EUR 13 million. The company was listed in December. Within mobile games, Snowprint and King have been working in close partnership and Snowprint released their first game in August 2018: Legend of Solgard. In connection, Snowprint received funding of EUR 5 million from the owners, among them King. Gothenburg-based Image & Form and Zoink are two other Swedish companies that have collaborated for many years. They formed the new company Thunderful with Bergsala in 2018 and acquired Rising Star Games from Bergsala. Their offices in London and the US managed the launched of their games in the Japanese market.

Game Developer Companies in the Stock Market

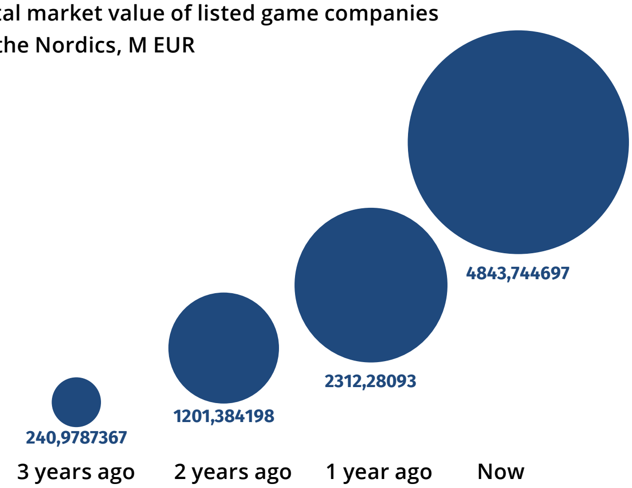
By: Lars-Ola Hellström & Viktor Högberg, analysts, Pareto Securities

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



Game developers in the stock market are strong. The last few years have seen positive share price development for the listed companies from a global perspective. Internationally, the industry is in a strong growth phase that, combined with more stable business models, has made the companies increasingly popular with both institutional investors and private individuals. Sweden manages this progress well, with Swedish game developers increasingly finding their way to the stock market and generating strong returns. The Stockholm stock market has become something of a natural games industry hub with a wide selection of listed companies and knowledgeable investors.

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.

Owing to the success of the last few years, the market value of Nordic game companies has increased markedly, but the sector remains small compared with foreign competitors or other sectors on the Stockholm stock market.

Multiple Expansion in International Game Companies

Historically, the volatility of the business income model has been high which has led to investors viewing computer 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, which has meant more stable revenue streams and positively influenced the companies' margins.

More stable revenue streams, growing margins and generally good market growth for computer games have led to a growing interest in the listed companies. 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 Blizzard and Ubisoft have developed in the last five years, from an investor perspective of earnings and profit (EBIT). In summary, our view is that the sector is now valued as the growth sector it proves to be.

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, it must be accepted that some game projects have disappointing sales figures although the game itself looked promising; ultimately it is the user that decides. Generally, however, the industry has strong growth that's predicted to continue for 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.

Game Developer Clusters

In a growing business, the important of regional support and engagement as well as cooperation with higher education and the local economy soon becomes 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.

Arctic Game Lab is an initiative seeking to unite the games industry in Norrbotten county under one roof and create a cluster of successful game developers in northern Sweden. The project was launched in Skellefteå in 2014 and can now also be found in the municipalities of Boden, Piteå, Umeå and Luleå. Jenny Nordenborg headed up the organization of the Valkyrie Game Jam in Boden in 2018, a game jam especially for women. The game convention Nordsken in Skellefteå had over 8,000 visitors in 2017.

East Sweden Game was inaugurated in August 2017 as a co-working space for game developers in the eastern region of Sweden and has since gathered 48 people in the building that comprises co-working spaces and an accelerator program. The initiative is led by the games industry veteran Tomas Ahlström and is situated in Ebbepark in Linköping. East Sweden Games has become a hub for game development in Östergötland with open work spaces and lectures. Linköping also hosts the annual LiU Game Conference and LiU Game Awards at the end of November.

On the island of Gotland, Science Park Gotland is pursuing the project Game Camp together with partners in the Baltic countries. Some ten companies and 240 aspiring game developers have taken part in the project, now in its last year.

In Falun, municipal seat of the county Dalarna, the game development education Playgroundsquad has long been a motor for activities. In 2017, the region launched the project Gamification of Dalarna with the company Tension, with the aim of enabling the tourist industry and game developers to collaborate.

A handful of game developers in various stages of the incubator process can also be found in the county of Dalarna and in the city of Borlänge, Science Center 2047 is investing in games to attract young people to technical professions. Outside Falun, the game accelerator program Stugan took place in the Summer of 2018.

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

The Game Incubator has run a successful incubator program for game developers in Skövde since 2004, and since 2016 it can also be found Gothenburg. The incubator has produced over 100 companies and is a strong contributing factor to the western parts of Sweden becoming fertile ground for game companies.

The project Sweden Game Arena, based in Skövde, focuses on driving exports via game fairs and international conventions. In Skövde, the Sweden Game Conference is also held in October every year, with speakers from all over the world.

In Karlshamn in the south of Sweden, Gameport has for many years run a successful incubator as part of the Blekinge Business Incubator, and in 2017 MINC ran a games business program within the framework of an incubator in Malmö. The interest group Game Habitat (formerly Game City) work together with the region and the municipality and the local games industry community, to become the leading region in Europe for game development. In September 2018, Game Habitat opened a co-working space called Game Habitat Dev Hub, hoping to make it a nerve center for the local business and invite smaller companies and individual developers into the community.


Legend of Solgard, Snowprint Studios


Immortal: Unchained, Toadman Interactive

The Nordic Game Industry

Country	Companies	Revenues	Employees
Finland (2017)	260	EUR 2.38 billion	2 900
Norway (2016)	180	EUR 39 million	599
Denmark (2017)	186	EUR 123 million	1009
Iceland	12 (2016)	EUR 65 million	443 (2014)
Sweden (2017)	343	EUR 1.53 billion	5 338

Please note! Because of the various methods for measuring the size of the companies, the figures above are not immediately comparable. In Sweden, we only include limited companies in the official count.

Spearheaded by Sweden and Finland, the Nordic 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 conference Nordic Game Conference was arranged for the 15th consecutive time in Malmö in May 2018. Judged by the number of visitors, it is the biggest game developer conference in Europe.

Aimpoint, Divine Robot

Generation Zero, Avalanche Studios


OVERKILL's The Walking Dead, Overkill Software, Starbreeze Publishing

Intellectual Property Rights Prompt 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 therefore means concrete obstacles for investments.

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 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 traditional 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 – a popular game is copied and published by somebody else. Title, brand, content and code is 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 must enlist the middle-men - the internet platforms or the digital market places where the app clones are distributed – so 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 specific market places whose official business idea is to allow gamers to re-sell used games.

The scope of the infringements is difficult to measure. There are other methods than those mentioned here, but the conclusion is that, unfortunately, computer 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 & 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.

In 2017, the number of employees almost doubled, but despite the creation of over a thousand jobs, there is a huge lack of competence. Every year, 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 processing times for the issue or renewal of work permits lead 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 for the industry to thrive.

The access to capital has improved markedly, but looking at the investments in the Swedish market, 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 threating to hinder innovation and diversity long-term. In countries such as the United States, Canada, United Kingdom and Finland, there are established financing structures, tax relief and other forms of support to give start-ups a boost in the international sphere. For Swedish companies, the absence of such measures means in practice, there's a restriction on trade. Within the industry, there is a need for further increased business competency, especially in small and newly formed companies.

The European Community is working extensively to simplify the digital market, and essentially it is an ambitious project, with benefits also for the Swedish companies selling games to consumers globally. But there is a lack of understanding of how games work, and often 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 for 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.

Totally Accurate Battle Simulator, Landfall

Battlefield V, EA DICE

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. 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 be slightly higher than those stated in this report. The strength in the method is that the data is audited and published by the financial authorities.

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 most industry organizations. In those instances where 2017 annual reports have been unavailable, the previous year's figures for profit/loss, revenues and number of employees have been used. In this report this concerns 35 companies that in 2016 reported revenues of EUR 14 million and had 33 employees. The biggest of these are Donya Labs, Hello There, Raw Fury and Unity Technologies Sweden.

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.

The annual reports are in SEK, but for translation purposes the currency has been translated into Euro, and we have used the yearly average Euro exchange rate according to the Swedish National Bank, Riksbanken. The average Euro exchange rate for 2017 was 9.6326.

Budget Cuts, Neat Corporation

Timeline

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

2000
Paradox releases the first Europa Universalis

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

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

AAA: Popular term for elaborate games with big budgets and many employees. Usually released by the biggest publishers in the business, primarily via physical distribution.

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

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

Beta: Follows the alpha phase. In this phase, the products available for software testing by people other than those who developed the software. These external users are called beta testers.

Casual games: Less sophisticated games. Often with a minimal storyline, shorter learning curves and designed to be played for a shorter length of time.

Cloud gaming: Also known as gaming on demand, it is a type of online games allowing streaming of a game onto the servers of an operator or a games company. This allows you to play a game without requiring a console or high-performance computer, since all processing is carried out elsewhere.

Core: A term to describe games created for more self-confident players or "gamers".

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

Crossplay: To make the same game available to play on various platforms.

Crowdfunding: Financing of a project through crowdsourcing. In recent years this has expressed itself through different web platforms that collect 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 computer games, often on a smaller scale than classic "expansions".

Early Access: Games in a development phase that are released for sale ahead of the official launch.

Freemium: Collective term for a business model where the main product or service is offered for free, but where the player can 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 for free in its basic version, but income is generated through for example adverts, or the option to unlock the full version for a fee.

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: The intellectual property of a company, often used in the world of games to describe a game concept, a trademark and everything connected.

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 without much fanfare on certain markets to gauge interest.

Virtual goods/items: Term referring to virtual objects, such as those existing in computer 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 goggle-like accessories.

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