

Game Developer Index **2022**



DATASPELSBRANSCHEN
Swedish Games Industry

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The Swedish Games Industry is a collaboration between trade organizations ANGI and Spelplan-ASGD. ANGI represents publishers and distributors and Spelplan-ASGD represents developers and producers.

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Key Figures

Key Figures	2021	2020	2019	2018	2017
Number of companies	785 (+15%)	667 (+12%)	586 (+13%)	513 (+14%)	442 (+12%)
Domestic Revenue MEUR Swedish companies	2,713 (+22%)	2,115 (+20%)	1,682 (+17%)	1,393 (+3%)	1,351 (+4%)
Global Revenue MEUR Swedish companies	5,805 (+43%)	3,311 (+30%)	2,318 (+19%)	1,871 (+25%)	1,403 (+6%)
Revenue per employee in Sweden TEUR	342 (+6%)	321 (+11%)	284 (+8%)	262 (-10%)	289 (-20%)
Domestic Result Swedish companies MEUR	288 (-56%)	630 (+42%)	369 (+26%)	273 (-37%)	434 (-50%)
Result in Swedish companies globally MEUR	-123 (-117%)	720 (+32%)	493 (+32%)	335 (-25%)	446 (-49%)
Number of employees in Sweden	7,944 (+17%)	6,596 (+10%)	5,925 (+11%)	5,317 (+14%)	4,670 (+25%)
Men	6,169 (77,7%)	5,186 (78,6%)	4,699 (79%)	4,286 (80%)	3,821 (82%)
Women	1,755 (22,1%)	1,410 (21,4%)	1,226 (21%)	1,036 (20%)	849 (18%)
Number of employees in Swedish companies abroad	11,158 (+36%)	7,177 (+55%)	3,253 (+20%)	2,604 (+74%)	668 (+19%)

Key figures from the last five years. Change from previous years in brackets. We have used the aggregated annual exchange rate defined by the Riksbank, Sweden's central bank. In 2021 1 EUR was 10.1449 SEK.

Value Chain with a Smile

This report is primarily about jobs and money, which are both created in abundance by the video games industry. But behind it all there is something else, namely joy. On the one hand, there is the creative joy felt by the artists and developers behind the games. While game development can be an arduous pursuit full of difficult issues and hard work, what drives game developers is passion and love for what they do. On the other hand, there is the joy felt by the players, which of course is the very reason for playing: to have fun on your own or together with others.

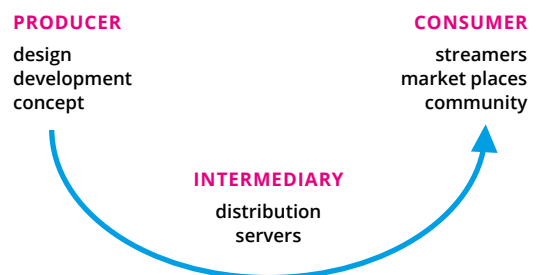
But video games do not only put a smile on the face of the people making and playing them, they also put a smile on the face of the value chain. To explain this, we need to consider the concept of the ‘smiling curve’, an economic theory which can be applied to games.

A value chain is usually represented by an arrow or a line with the producer on the left end and the consumer on the right end. In the middle are various intermediaries such as distributors, wholesalers, retailers, etc. The ‘smiling curve’ appears when you model a y-axis showing how much value is added in the various stages of the chain. As it turns out, most value is added at the two ends of the chain, closest to the producer and closest to the consumer. Therefore, the line bends like an inverted arc, or indeed a “smiley face”.

At the start of the value chain, there are complex processes such as concept, innovation, tools development, design, content development and other things that require creativity, specialized skills, and large resources. Here the risk is high and thus also the potential added value. These processes are difficult to automate or outsource. When you consider video games, this is where the game itself is made, in a creative process which

goes through trial and error and where many ideas are often scrapped along the way. The game emerges in an iterative process where content is incrementally added to the game and tested to make sure it is good enough to contribute to the playing experience.

At the middle of the value chain are things like manufacturing and logistics – operations which, once established, are standardized, can be automated to a large extent, outsourced, and exposed to competition. When it comes to video games, these processes often include servers and telecommunications networks, businesses characterised by large volumes and small profit margins, i.e., small (but necessary!) addition of value.



Towards the end of the value chain, the curve turns upwards. Here you will find things such as marketing, sales, branding and customer relations, i.e., communication in various forms. Communication requires people, who cost more than machines, and add greater value. In games, these include things like game launches, streamers, trailers, digital retailers, and customer support.

Foreword

People are thus most prominent at the beginning and end of the value chain. The closer to the 'corners of the mouth', the more jobs, the more value, and the more money. In the middle and bottom of the 'lower lip', many of the processes are automated, and the value is low. According to this theory, companies should strive to have as much of their business at the beginning and end of the value chain, where profitability is greatest, and the corners of the mouth smile the biggest. Just like the video game companies do.

The value chains of video games didn't evolve this way because we learned about the 'smiling curve' theory. However, the model fits perfectly to describe the business of video game companies. The fact that companies follow an economic model that provides the greatest possible value may be part of the answer to why this report once again shows new record figures for the industry's turnover, employment numbers, and tax contributions. But the most important reason is, of course, the fun for the players and the hard work and passion of the game creators. What follows from this is a happy, 'smiling' value chain.

Stockholm, October 2022

Per Strömbäck
CEO Swedish Games Industry

Footnote 1: The 'smiling curve' was first described circa 1992 by Stan Shih at the Taiwanese computer company Acer.

Footnote 2: The National Board of Trade has done a detailed analysis of value chains in Minecraft using the 'smiling curve' theory in the report Minecraft Brick by Brick (2013).

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Summary

The Game Developer Index maps, reports and analyzes Swedish game companies' operations and international industry trends during the past year by compiling the companies' annual reports.

Swedish game development is an export industry that operates in a largely global market. The games industry has grown over a few decades from a hobby for enthusiasts to a worldwide industry with cultural and economic significance. The Game Developer Index 2022 compiles the Swedish companies' most recently reported financial year (2021). The report in brief:

- The Swedish games industry's turnover grew to EUR 2.7 billion in 2021, which is an increase of 22% for the Swedish-registered companies. Including the non Swedish subsidiaries the industry had a turnover of EUR 5.8 billion, an increase of 41%.
- A total of 1,755 positions at games companies in the country are held by women, this corresponds to a share of just over 22%.
- Swedish game companies are growing, employing 7,944 people on site in Sweden and 11,158 people abroad. The difficulty of recruiting staff in Sweden persists and an increasing part of Swedish companies' expansion consists of establishing or acquiring development studios abroad. In Sweden, the number of employees increased by 1,348 people, an increase of 17%.
- 93 companies started in 2021, these together with 25 newly added older companies that changed operations to game development, resulting in 785 active companies in December 2021, an increase of 15% compared to 2020.
- In 2021, 81 investments and acquisitions were reported, five of which had a business value above the 100 million EUR mark. In 77 of the cases, Swedish companies were buyers and in 31 of the transactions, Swedish companies were sellers.
- The ten most profitable companies together paid over EUR 120 million in corporate tax on their profits.
- The ten largest employers have paid a total of almost EUR 200 million in payroll taxes.
- 21 Swedish companies are listed on the stock exchange in Sweden. Together, they had sales of EUR 3.6 billion in 2021.

Game development is a growth industry. 14 of the companies that exist today have existed since the nineties, but just over half of all companies have been registered in the last five years. In 2021, 93 new companies were registered. The games are launched directly to an international market with strong growth and the supply of skills to a large extent also comes from a global labour market. Factors that point to continued growth are more investments in regional hubs with incubators,



Flamebait Games - Passpartout 2

5.8

Swedish companies revenue globally including foreign subsidiaries was 5.8 billion EUR during 2021. An increase of 43%.

accelerators and educations, more veterans starting new companies and the fact that we have not yet seen the effects of the several and large investments and acquisitions during recent years.

Swedish game developers are characterised by depth and quality. Sweden has world-leading developers in AAA, console, PC, mobile games, VR /AR, digital distribution and specialised subcontractors.

The industry's biggest challenges are the availability of skills and access to capital, the latter not least in the early stages, as well as laws and regulations regarding digital markets that are out of step with developments. The most important question for the future is about diversity, both among the game creators and the players. Although there has been a rapid development in recent years, there is still a lot of work to be done. In the longer term, computer games have all the prerequisites for diversity and inclusion, games offer an opportunity

2.7

The revenue for the Swedish Games Industry grew to 2.7 billion EUR during 2021, an increase with 22%.

to leave one's everyday life and step into worlds where only the imagination sets the limits.

The number of 'second generation companies' where experienced game developers have gone ahead with new personal projects, or where business leaders have created their second company continues to increase.

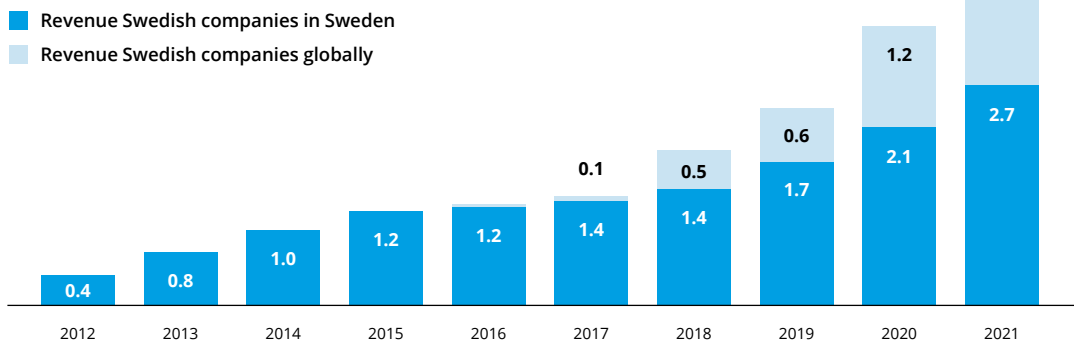
The number of investments and acquisitions where Swedish companies are buyers is increasing. In total, a Swedish company was the main financier in 77 out of 81 game-related transactions in 2021. One third of these were acquisitions and investments entirely in the Swedish market.

Successful companies are increasingly reinvesting into the industry, and often in the Swedish market. According to a report on investments in Europe in the games industry from Sifted (sifted.eu), Sweden came in third place out of the countries where the most investments had been made.

Revenue and Results

Swedish game companies have continued to grow in 2021, increasing sales by 19.4% to EUR 2.7 billion. This is an increase of more than EUR 500 million.

Revenue in Billion EUR



In recent years, a couple of large business groups have grown larger through investments and acquisitions, and a significant part of the acquisitions has taken place outside Sweden. In total, Swedish companies and groups have a turnover of almost EUR 6 billion globally.

In previous reports, sales numbers from the consolidated financial statements have been the basis for the number of total sales. Following evaluation of similar reports within Europe, we have from this year chosen to report domestic group turnover based on parent companies and Swedish subsidiaries. Total group turnover, including foreign subsidiaries, is reported separately in global sales.

This gives a fairer picture of how Swedish companies are doing and produces a comparable report both with other domestic industries and the same industry in other countries.

Comparative figures from previous years have been revised up to and including 2016 to give a fair picture of growth.

In the global competition, the companies have successfully gained market shares, attracted expertise and not least, created gaming experiences for several hundred million players worldwide.

A Growing Industry

With 93 new companies, the Swedish industry is growing steadily and over the past decade it has increased turnover from just over EUR 300 million to almost EUR 2.7 billion in domestic companies and EUR 5.8 billion when the foreign subsidiaries are included. In 2021, sales were for the first time higher for the Swedish-owned foreign companies than the turnover in the Swedish-registered companies; this is an effect of the many large acquisitions that took place during the year outside Sweden.

The pandemic has continued to affect the industry in 2021. Several development projects have been delayed and it remains to be seen what long-term

effects it has had on the industry. A longer analysis of the pandemic's impact can be found in the chapter Threats and Challenges.

Domestic Revenue and Results

Seven of the Swedish companies had sales of more than EUR 100 million during the year. The ten largest companies account for just over 70% of total sales and in addition to the billion-dollar companies, 31 companies have sales of more than EUR 10 million. The Swedish companies are profitable overall, although earnings have been decreasing compared with previous years.

Investments and write-offs and write-downs of development projects have had a major impact

on the reported earnings. The ten most profitable companies have paid in almost 50 million EUR in tax and the largest employers have paid in around EUR 100 million in social security contributions.

King and Mojang have both had sales of over EUR 500 million and are thus the largest companies in Sweden.

The games industry is an export industry, and like all Swedish exports, it has benefited from the low SEK exchange rate vis-à-vis other currencies. This is

particularly noticeable in good turnover figures, but sales in Euro terms have also increased by 22 percent. Despite the continuously weak SEK. Furthermore, several companies have made large investments, which of course affect earnings. A more detailed review of investments in the Swedish industry can be found in the chapter Acquisitions and Investments.

Revenue and Result Globally

In 2021, turnover in the Swedish-owned foreign companies was higher than the turnover in the domestically owned companies, an effect of the large acquisitions that took place during the year.

Embracer Group has had sales of over EUR 1.7 billion this year, a growth of 90% from the previous year, which means that the Karlstad based company continues to be the country's largest business group in game development, and one of the largest games groups in Europe.

Globally, reported earnings during the year were negative for the first time in eleven years. One explanation for this is large investments and write-downs on previous development projects among several of the larger companies.



Sharkmob - Bloodhunt

Highlights

The number of Swedish-developed games that are released varies from year to year, but nowadays the industry has such a wide range that individual titles do not determine the overall outcome. Here are some examples of major events in 2021 and early 2022.

- **Embracer Group** continued to grow by acquiring several companies around the world and now consists of 130 studios and owns around 850 IPs and brands. In early 2021, Embracer acquired American **Gearbox Software**, the creator of well-known games such as *Borderlands* and *Brothers in Arms*. The Swedish operating group **Coffee Stain** is the publisher of the independent Skövde studio **Iron Gate**, which in January 2021 released the game *Valheim*. A game that in the first year was a huge success and sold over ten million copies. In August 2022, the news broke that Embracer group had bought American **Middle earth-Enterprises** and thus has global rights to Tolkien's fantasy work *The Lord of the Rings*.
- **King** continues steadily moving forward. *Candy Crush Saga*, along with the company's other games, has 250 million players every month. The Swedish company reported sales of EUR 547million.
- **Mojang** continues to have stable sales and *Minecraft* continues to be the world's best-selling game with over 240 million copies sold and 93 million players every month in 2021.
- **Stillfront** has had continued good growth and in 2021 acquired several game studios such as **Game Labs** and **Jawaker** and the group now consists of 22 game studios around the world.
- **G5 Entertainment**, which in 2021 celebrated 20 years as a group, has a continued stable position in the



Expansive Worlds – Call of the Wild: The Angler



Hazelight Studios – It Takes Two

mobile games segment; the company has a turnover above the billion mark for the fifth year in a row. With a wide catalog of games including *Hidden City*, *Mah-jong Solitaire*, and *Jewels of Rome*, the company had 6.5 million active players (MAUs) at the end of 2021.

- **Paradox Interactive** started 2021 after having its best year ever both in terms of sales and earnings, but in 2021 sales and profit margin decreased compared to previous years. During the year, Paradox has released several expansions to existing games and expanded to several platforms.
- Skövde-based **Stunlock Studios** released their vampire game *V Rising* in 2022. Already in the first week, the game sold over one million copies and after a month sales had doubled.
- **Raw Fury** has enjoyed continued solid growth during the year, has invested heavily in more indie game projects, and in the summer of 2021 opened two art galleries, one in Stockholm and one in Croatian Zagreb. In August 2021, the investment company **Altor** acquired a majority stake in Raw Fury and bought out the former co-owner **Nordisk Games**.
- **Avalanche Studios Group** had several major successes during the past year. In addition to the announcement of the new roguelite game *Ravenbound*, both *Generation Zero* and *Second Extinction* (all from **Systemic Reaction**) reached over a million players. In addition, the fishing game *Call of the Wild: The*

Angler was released while the hunting game *theHunter: Call of the Wild* (both from **Expansive Worlds**) passed revenues of over 100 million EUR since its launch in 2017. In the summer of 2021, Avalanche Studios announced its ambitious open world game *Contraband* published by **Xbox Game Studios**, and since 2015, Avalanche Studios Group has had an average annual growth in total revenue of approximately 25 percent.

- **Ubisoft Entertainment** was, like last year, the country's largest employer with 837 employees. In January 2021, Ubisoft announced that **Massive** will be making *Star Wars* games in partnership with **LucasArts**. The studio is already working on the upcoming *Avatar: Frontiers of Pandora* alongside **Lightstorm Entertainment** and **FoxNext Games** as well as on *Tom Clancy's The Division* series
- In March 2021, **Hazelight Studios** released the game *It Takes Two*, which has already sold over seven million copies and won several awards, including *Game of the Year*.

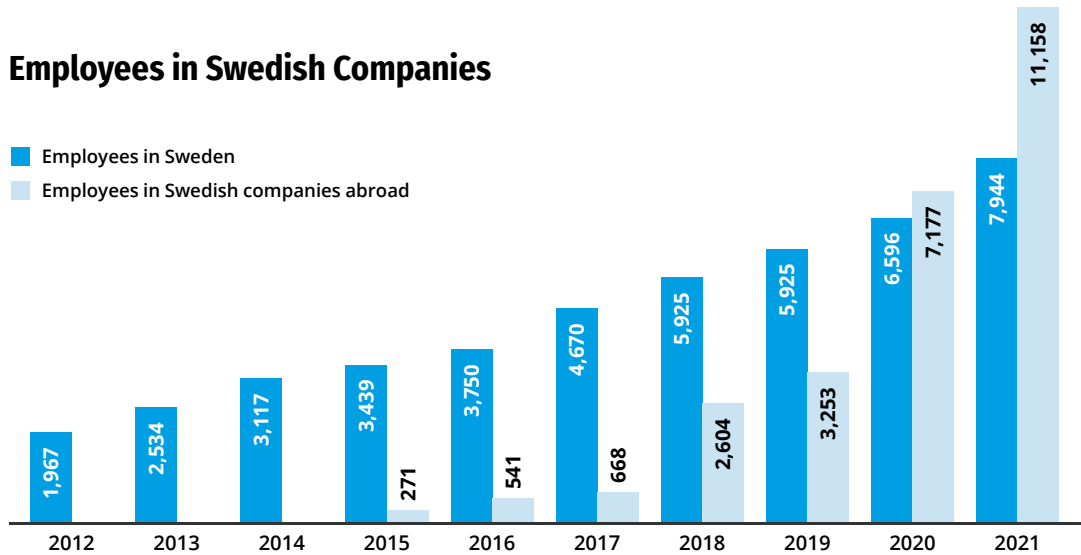
During the year, several Swedish game companies were awarded prizes at various galas. **Hazelight Studios** *It Takes Two* won *Game of the Year* at The Game awards and **Fatshark** won *Best Multiplayer Game* with *Warhammer 40,000: Darktide* at the Gamescom award 2022.

The above list is not exhaustive, there are many more examples of successes for Swedish companies over the past year.

Employees

The number of employees in the games industry in Sweden increased by 17% in 2021 to 7,944 people. This corresponds to 1,348 new full-time positions.

Employees in Swedish Companies



At the same time, almost 4,000 full-time positions abroad were added in Swedish-owned companies, mainly due to acquisitions.

The largest employers in Sweden are Ubisoft and EA DICE, both of which employ over 700 people. 20 companies have over 100 employees in Sweden.

In addition to employees in Sweden, Swedish-owned companies have over 11,000 employees around the world outside Sweden, and a total of 19,055 people are employed by a Swedish-owned game development company. More about this in the chapter on Swedish game companies in the world.

The number of employees is based on the average number of full-time employees in the annual reports throughout the financial year. This means that the actual number of workers in the industry is in many cases higher due to the fact that many companies that expanded in 2021 have had more employees at the end of the year than at the beginning of the year. To the

extent that the information has been available, the number of employees in December 2021 has been used as a reference to better reflect the changes made during the year. When it comes to employees abroad, offices and employees are only represented in countries where the Swedish company has reported they have subsidiaries.

Smaller offices, such as individual marketing offices or other forms of business offices, often run on a consulting basis, have not been represented. These have a very small impact on the total number of employees, we have also excluded employees at foreign marketing offices based in Sweden.

In addition to the reported numbers, there are people in other types of companies, people in companies that have not yet submitted annual reports, and freelancers and consultants who are not included as employees in the companies' annual reports. Taking these unreported figures into account, the real

98,219

worked with games in Europe in 2020

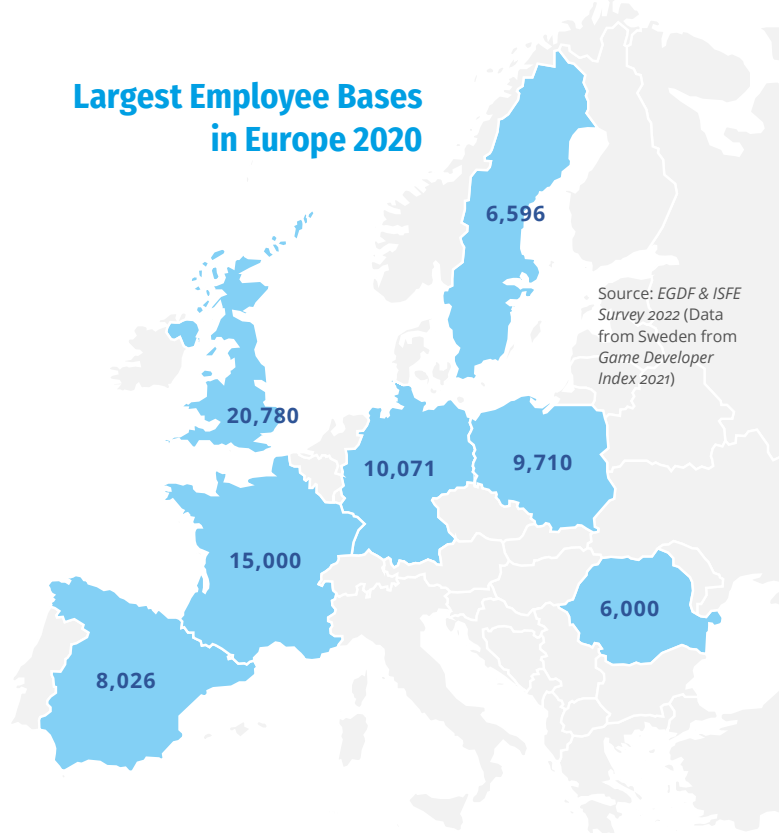
numbers are higher. For example, there are 306 sole traders registered under computer games.

In the survey The south Swedish game development industry 2022 (Game Habitat), 87% stated that they had permanent full-time employment. Almost no employees work on a part-time basis.

There is still a high demand for labour in all occupational categories, which is holding back the growth of companies, not least when it comes to hiring on site in Sweden. This is evident as the companies expand, and Embracer Group, StillfrontGroup, EG7 and G5 Entertainment are examples of companies

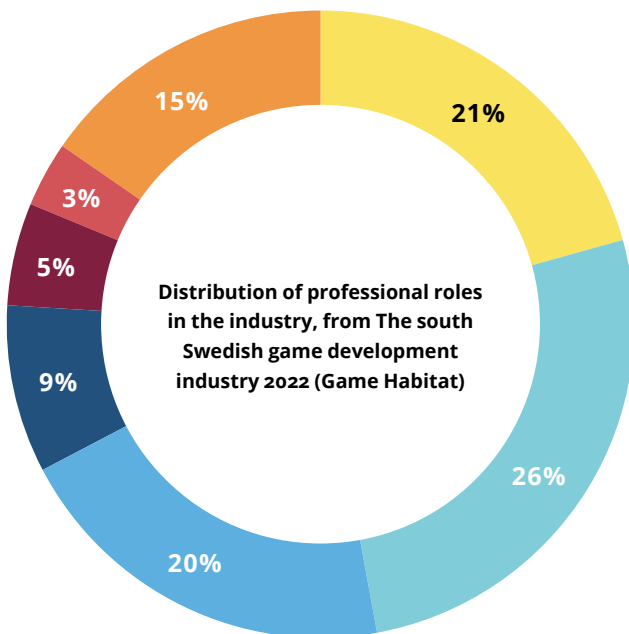
that employ more people abroad than in Sweden. An overview of all Swedish-owned game studios can be found in the game developer world map further on in the report.

Largest Employee Bases in Europe 2020

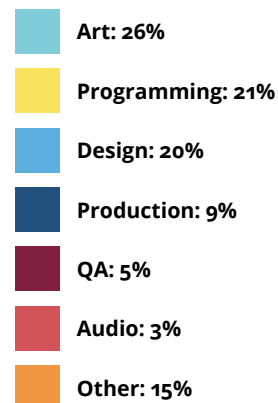


22%

women working in the European games industry



Professions in the Industry



Number of Companies

In 2021, 93 new games companies were registered and 25 companies changed operations to conduct game development, an increase of 15%.

The total number of companies is now 785. 192 companies are more than 10 years old.

Data on the number of companies has been acquired through Statistic Sweden's business register, game companies that we gain knowledge about through contacts and through manually looking at all companies with NACE code 58.210 - Publishing of computer games.

Other Types of Businesses

In 2021, there were 306 sole traders, 33 trading partnerships and eight economic associations registered under NACE 58.210 Publishing of computer games.

Of the sole traders, 95 reported sales in 2021.

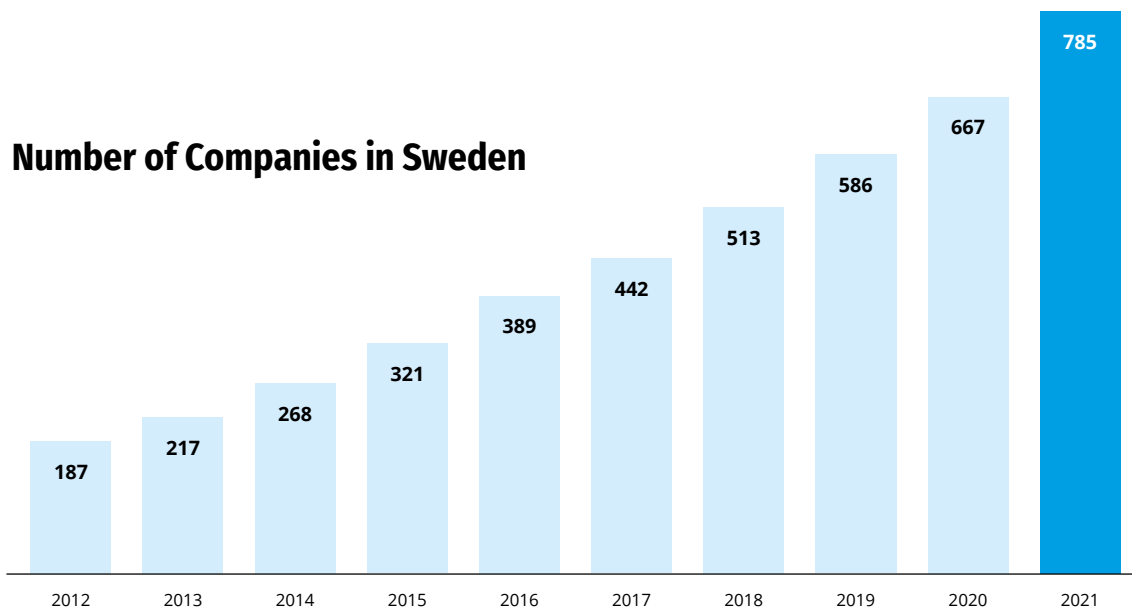
Nine companies reported a turnover of more than half a million and only three sole traders had a turnover of more than one million. 17 firms were run by women, four of these reported a positive turnover, none over half a million.

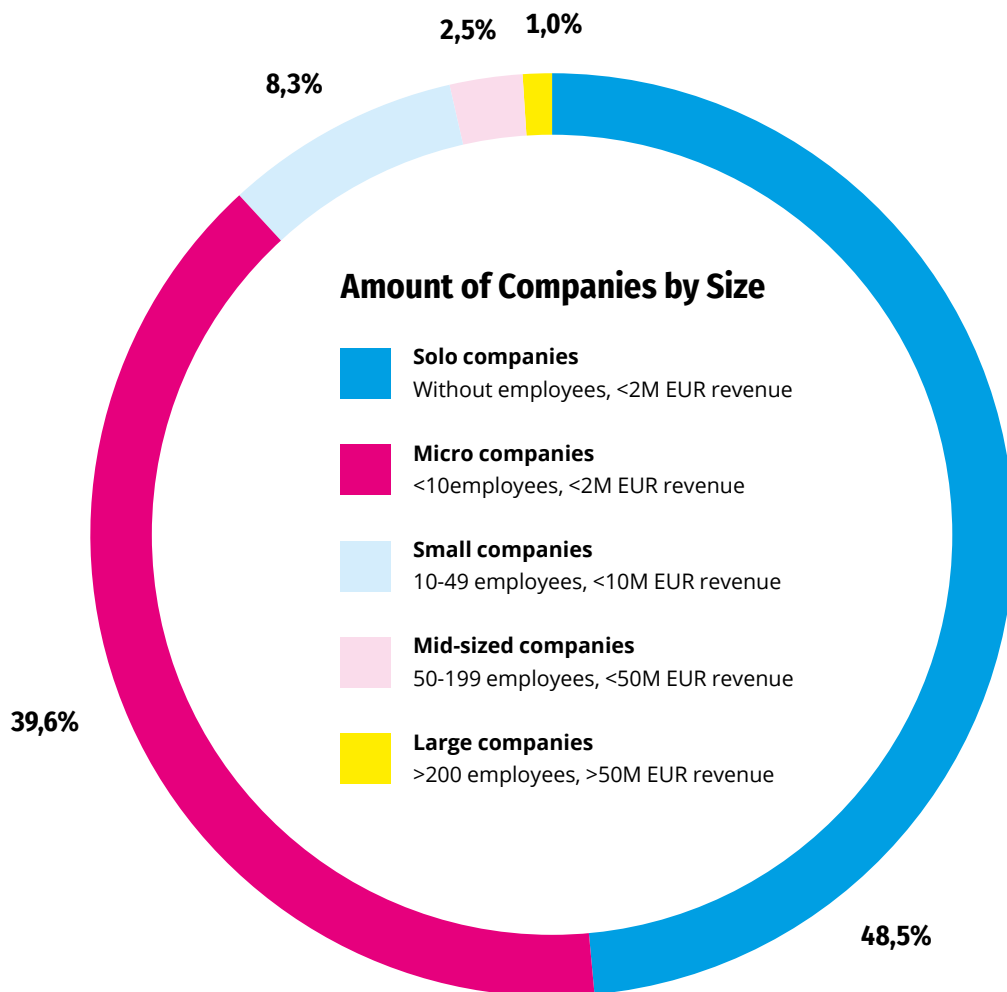
Of the trading companies, ten reported a positive turnover.

Several of the companies that were registered under 58.210 and had operations in 2020 did things other than games. In addition to these, we have knowledge of about 40 companies that make games or content for games that are registered under other NACE codes.

Some of these can be found on the Game Developer Map on page 28.

Number of Companies in Sweden





Number of Employees and Revenue by Company Type

A large percentage of companies in the industry are small. Just under half have no employees and a quarter of the companies lacked sales in 2021.

The categorization is based on the EU definition of company size, but we have changed the definition of solo companies to companies completely without employees (the EU also includes companies where the owner is employed), and medium-sized companies are between 50-199 employees instead of 50-249 people. This is due to how the data has been reported from Statistics Sweden. In this compilation, we have used a fixed exchange rate of SEK 10 per EUR for the sake of clarity.

The compilation shows that the largest proportion of companies in the industry are small. The solo and micro companies together make up 88% of all companies in the industry. 21 companies employ more than 50 people. 38 companies in the industry had a turnover of more than EUR 10 million in 2020.

The number of solo companies has increased but the share remains at 48% just as in 2020, micro companies have also increased in number but also in share to 40%, a large number of the new companies that have been added during the year are solo or micro companies. This year, the larger companies have not been represented as collective conglomerates but rather as individual parent and subsidiary companies. This has led to the share of large companies having decreased to 1%.

Inclusion and Gender Distribution

In 2021, both the number and proportion of women working in the games industry increased. In total, there were 1,755 women in Sweden who worked with game development, which corresponds to 22.1% of the employees in the domestic industry, an increase of 345 people compared to previous years. Among the people added to the industry, 26% were women.

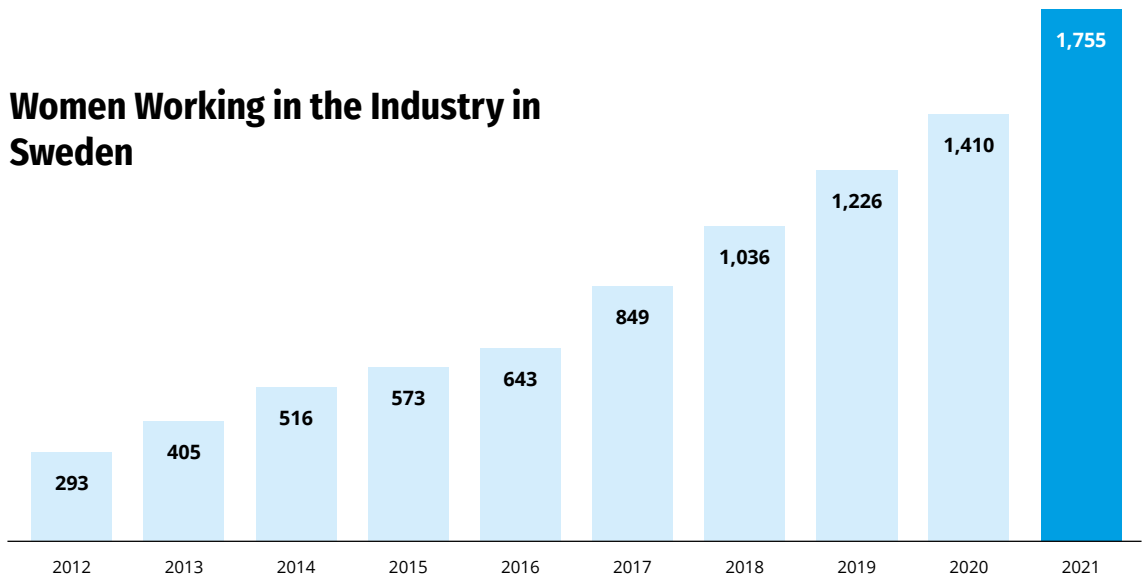
During the year, 3,519 women were employed at a Swedish-owned foreign game company, an increase of 51%. This corresponds to 31% of all staff at Swedish-owned game studios outside of Sweden. The majority of these are employees of Embracer Group, Stillfront Group, G5 Entertainment and Paradox Interactive.

What complicates the analysis of this topic is the difficulty in obtaining data on the gender distribution of many companies. The listed companies are obliged to report this in their annual reports, but most of the small, medium-sized and even large companies do not communicate this information in their annual reports or via websites. For this report, we have supplemented the numbers with data on gender distribution from

Statistics Sweden, however it has not been available for all companies. In order for the industry to be able to address the challenges that exist and to be able to work actively with gender equality, it would be positive if more companies reported on their own situation.

There is still a great challenge in attracting more women to the industry and in retaining them, but also in getting more women to start their own companies. Women in the games industry are mainly found in medium and large companies. The most even gender distribution is found within companies that work with mobile platforms and VR. Ten companies have exclusively female employees, nine of which only consist of the founder.

Women Working in the Industry in Sweden



In the UK, a second census for the UK game industry was published in March 2022. The census was published by the trade association Ukie and carried out by the University of Sheffield. 3,200 people (about 20% of the total workforce) working in the video game industry in the UK participated and anonymously answered the questions. The report's goal was to understand what the industry really looks like in terms of gender, nationality, age, education, etc. and to determine what the starting point is for improvement and change.

Some of the findings of the UK survey were that 70% of all people working in the game industry in the country are men, 28% identify as women and 2% as non-binary. It also found that 21% of all people working in the industry belonged to the LGBTQ+ community, a significantly higher percentage than the national average of between 3-7%.

In Sweden, some companies have begun to report the share of non-binary employees in their annual reports. Of the Swedish companies that provided this figure, the proportion that did not identify as either male or female was 1.24%. To the extent the information has been available, the gender distribution is based on gender identity according to how each company has reported data.

Initiatives in the Industry

Game Dev Force - Founded in early 2019 with the vision of reconciling different initiatives within Sweden that all aim to create a more inclusive and diverse game development industry. Game Dev Force returned in 2022 with both the mini-conference The Thing and a new edition of Valkyrie Jam.

Levelling the Playing Field - A funding initiative from Coffee Stain that targets smaller studios that employ at least as many women as men to promote gender equality in the industry. They have since the start invested in three studios.

In 2021, the Internet Foundation arranged Tidsvåg - gaming parties, on 2 different occasions that celebrated games and women's successes in the games industry.

Wings was founded in 2018, investing in indie games developed by teams where women and marginalised genders hold key positions at the companies.

GEM, Game Empowerment Movement, started in southern Sweden in 2021 as a local initiative to support an equal and inclusive culture in the game industry.

GEM is supported by Massive Entertainment, Avalanche Studios Group, The Game Assembly, King and others.

DONNA is an interest group based at the University of Skövde that since 2011 has worked with gender equality issues in game development, work that has been hailed as a teaching example of how to work with gender mainstreaming at colleges and universities. In 2022, the mini-conference DONNA DAY was held over two days for both students and alumni in connection with the Sweden Game Conference.



Itatake -
Gumslinger

Some Key Figures

- 29 companies consist of at least 50% women compared to 22 the previous year. The largest of these is Star Stable with 88 female employees.
- 83 companies have a higher than average proportion of women with at least 22% women employed. Together they have a turnover of EUR 2 billion.
- 94 companies with more than one employee consist of only men, the largest of these companies has 22 employees.
- 30 companies with more than one employee have at least 50% women in management or on the board.

The south Swedish game development industry 2022

In the south of Sweden, the interest association Game Habitat has conducted a survey among people working in the game industry, inspired by the British census. Just over 200 people (approx. 14% of the number working in the region) participated in the survey which focused on finding out information about the employees, how they view working in the games industry and what they think about the region. The full report is available at gamehabitat.se

Who is Working in the Games Industry?

- Almost half have worked for more than six years in the industry. 25% have been working with games for over ten years.
- A majority have reached the age of 30. 11% percent are over the age of 40.
- 20% have children and two-thirds live in a steady relationship.
- Many have moved to Sweden to work in the industry. 56% have Swedish citizenships.
- Among respondents, 76% were men, 18% identified as women, and 2.9% as non-binary. The rest chose not to state gender. The result gives both a lower proportion of men and a lower proportion of women than the reported average for the region.

THE INDUSTRY VOICE **EMILY DRAMEUS**

Head of People & Culture, **Amplifier Game Invest**

"We can all contribute to creating a sustainable industry where more people can see clear career paths and a healthy work environment."



Hi Emily Drameus, what are you most satisfied with in your work on inclusion?

I am most pleased that diversity and inclusion are clearly stated goals on the agenda. The questions permeate our business from goals at management team level to, for example, training for staff and how we carry out recruitment processes. Of course, it is always a work in progress, but I see how much difference it makes when inclusion becomes a pronounced focus area for the entire organization.

What is your best advice for how to start working with inclusion and diversity?

The best advice for the management of companies is to prioritise diversity and inclusion as something they want to work actively with. When it is added as an item on the management agenda and is included in relevant role descriptions, it becomes easier for everyone in the organisation to contribute to the work. Start by setting goals that feel clear and achievable and get help from those who have knowledge and experience of working

with inclusion. It is not possible to rely on a few enthusiasts in the organisation to pursue it as a separate issue; inclusion is an issue that is crucial for how employees thrive, who you manage to attract in recruitment processes and what collaboration looks like internally.

What more would you like to see Swedish game companies do to contribute to a positive development in terms of inclusion and diversity?

I think the industry has taken good steps forward in recent years, but I would love to see more collaboration between companies to reach out to younger generations to attract a wider diversity in the long run. Given how the video games industry is growing, it will be critical that more people see it as an attractive option to work with game development. We can all contribute to creating a sustainable industry where more people can see clear career paths and a healthy work environment. I also believe that representation is one of the keys to attracting greater diversity.

Largest Companies

More companies are getting bigger. Seven companies reported sales over 100 million Euro and 16 companies had over 100 employees. 38 companies had a turnover of over ten million Euro. About 40% of the companies showed positive net results, 48 companies reported a profit north of 10 million, and 107 companies had ten or more employees. Below is the turnover of only Swedish-registered companies. A list of the largest Swedish companies' global turnover can be found in the chapter on game companies in the world.

Swedish Revenue in M EUR

	Company	Revenue M EUR 2021
1	King	547
2	Mojang	536
3	EA DICE	152
4	Paradox Interactive	143
5	Toca Boca	132
6	G5 Entertainment	130
7	Coffee Stain Publishing	117
8	Avalanche Studios Group	84
9	Ubisoft Entertainment Sweden	79
10	Embracer Group (moderbolag)	52

Employees in Sweden

	Company	Employees in Sweden 2021
1	Ubisoft Entertainment Sweden	837*
2	EA DICE	730
3	King	648
4	Paradox Interactive	511
5	Embracer Group	463*
6	Avalanche Studios Group	415*
7	Sharkmob	251
8	Embark Studios	209*
9	Thunderful Group	189
10	Star Stable Entertainment	172

**Embracer Group's key figures are from June 30, 2022 and include figures from all domestically owned companies. The key figures from Ubisoft Sweden, Avalanche Studios Group, Sharkmob and Embark are from December 31, 2021. The remaining companies have reported their average number of full-time employees during the year.*

THE INDUSTRY VOICE EMMA IHRE

Head of Sustainability, **Embracer Group**



"If we succeed in broadening recruitment and bringing in more perspectives and experiences, the industry can stay competitive and innovative."

Hi Emma Ihre, Head of Sustainability, Embracer Group! What are you most satisfied with in your sustainability work?

Embracer's sustainability work is based on our business and helps us continue to live according to our values – I am proud of that. Our work helps us navigate a world full of challenges and opportunities. In addition, the games our studios produce contribute to the development of society. Our global group includes examples of games that help scientists crack the genetic code, as in *Borderlands Science*, and *Asmodees Access+* which is designed for people with cognitive and neuropsychiatric variations.

What is your best advice for how to start working with sustainability issues?

Start by looking at how you work today and your existing business. What issues are most important to work on? Where do you have opportunities and what risks do you have to manage? You can prioritise the work based on that. In this work, simplicity and clarity are crucial.

When you know what you are doing and why you are doing it, the work permeates the entire organisation. Everyone from programmers, board members, office assistants, marketers, managers to lawyers and more has a role to play in ensuring that sustainability work contributes to value creation for the company's stakeholders. Another important lesson is to create ownership of your sustainability work within the organisation, while not being afraid of receiving outside help when needed.

What are the biggest challenges when it comes to sustainability in the video game industry?

In the challenges, I see both risks and opportunities for the industry. Diversity, inclusion and equality are such issues. If we succeed in broadening recruitment and bringing in more perspectives and experiences, the industry can stay competitive and innovative. If we do not handle the challenge, we create risks pertaining to skills provision.

Business Groups and the Stock Exchange

A change that has taken place in the Swedish games industry in recent years is that more and more groups with foreign subsidiaries have emerged, gained market shares and retained their headquarters in Sweden.

This is reflected in market capitalisation, where Karlstad-based Embracer Group became the highest valued game company in Europe in the spring of 2021. This report's world map of Swedish-owned game development companies also illustrates where Swedish listed companies buy up studios around the world.

Some groups, such as Embracer and Stillfront, have a large part of their operations outside Sweden. Together, the two companies own a significant part of the German games industry. THQ Nordic, PLAION and Goodgame are some examples of Swedish-owned companies in Germany. This year's report separately reports on the turnover and number of employees in Swedish and foreign companies for these groups.

Listed Companies

21 Swedish game companies are listed on the stock exchange, ten of these were listed on the stock

exchange in the last 5 years. Seven of the companies had sales of over 100 million EUR in 2021.

Put together, the listed companies had a net turnover of EUR 3.6 billion in 2021, a large increase compared to 2020 when they had a total turnover of SEK 2 billion.

The combined market capitalisation of the listed Swedish games companies was EUR 14 billion in December 2021.

Flamebait Games -
Passpartout 2



Flamebait Games -
Passpartout 2



Company	Year of (first) listing	Listed on	Revenue 2021 MEUR
Modern Times Group MTG AB	1999	NASDAQ Stockholm Mid Cap	523
Starbreeze AB	2000	NASDAQ Stockholm	12
G5 Entertainment AB	2006	NASDAQ Stockholm	130
Star Vault AB	2007	Nordic SME	1
Safe Lane Gaming AB	2010	Nordic SME	5
Stillfront Group AB	2015	First North Stockholm	538
Embracer Group AB	2016	First North Stockholm	1,679
Paradox Interactive AB	2016	First North Stockholm	143
Jumpgate AB	2016	Nordic SME	2
Gold Town Games AB	2016	Nordic SME	1
Enad Global 7 AB	2017	First North Stockholm	165
MAG Interactive AB	2017	First North Stockholm	28
Goodbye Kansas Group AB	2017	First North Stockholm	26
Qiiwi Games AB	2017	NASDAQ First North Growth Market	6
Beyond frames Entertainment AB	2018	Spotlight Stock Market	2
Zordix AB	2018	Nordic SME	46
Adventure Box Technology AB	2019	First North Stockholm	0
Thunderful Group AB	2020	First North Stockholm	310
Sozap AB	2021	NASDAQ First North Growth Market	2
Fragbite Group AB	2021	NASDAQ First North Growth Market	12
Wicket Gaming AB	2021	Spotlight Stock Market	0

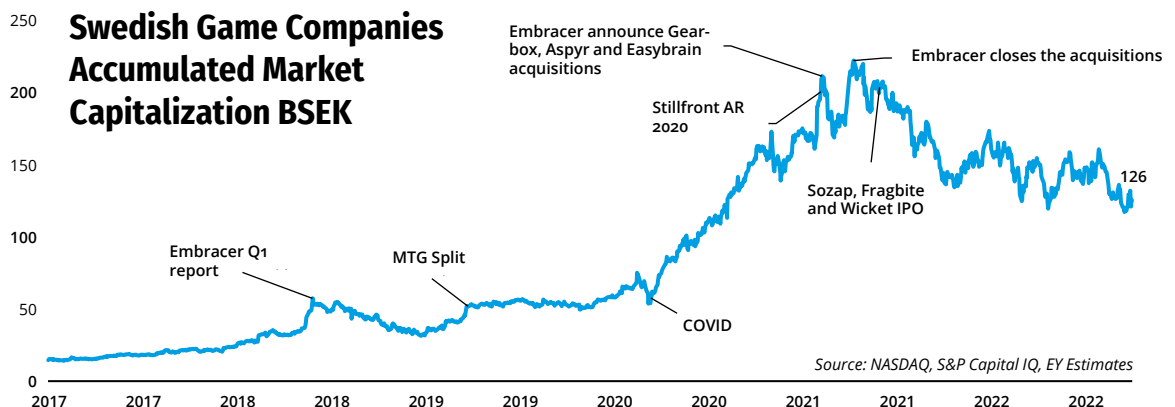
The Development of Public Game Companies

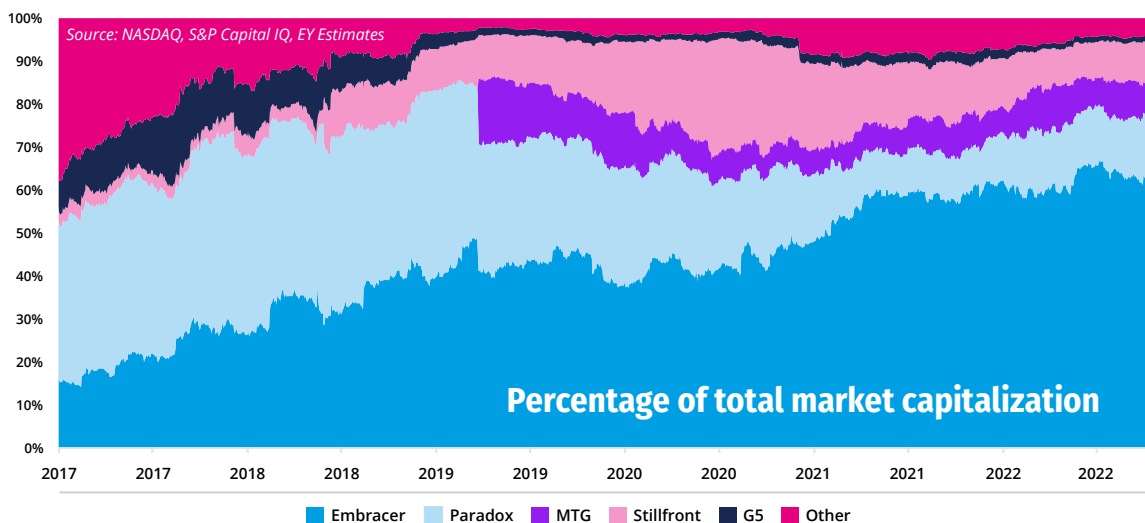
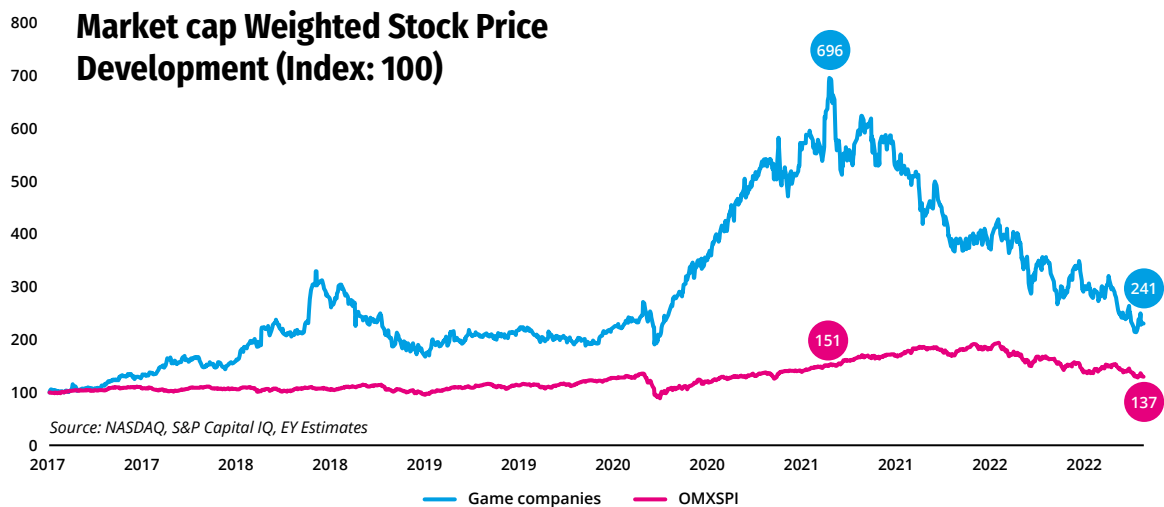
Guest chapter by Staffan Ekström, Mikael Jakobson, Johan Jintoft, Anna Widemar and Carl-Fredrik Bley from EY Corporate Finance, who have significant experience in assisting in M&A transactions within the game industry. This chapter analyses the development of the listed companies, with data contributed by NASDAQ.

The global video game market has experienced a noticeable transformation during the past five years, largely driven by an increased internet penetration rate as well as an improved accessibility to games due to smartphones, which currently account for roughly 50% of the total market. A general increase in adoption and a higher social acceptance of gaming as a leisure activity, has further benefited the industry and has been accelerated by the pandemic where enforced lockdowns resulted in more people turning to online activities to socialise. As of April 2020, the online video game streaming platform Twitch reported an increase of 50% in the number of gaming hours watched and the online PC game platform Steam saw its concurrent user base surpassing 20 million. Although we are currently in a post-COVID state, a portion of the newly recruited corona-gamers are likely to stay true to their

new-found hobby. As a result, the global games market is expected to continue its growth and Newzoo estimates the market will reach a cap of USD 197Bn in 2022, where Asia-Pacific will hold the largest market share of roughly 50%.

The Swedish publicly listed game companies have seen impressive stock price increases, underpinned by a high M&A activity level and several IPOs. The accumulated market capitalisation of the Swedish publicly listed game companies grew from approximately SEK 15Bn in January 2017 to SEK 223Bn at its' height in April 2021, driven by the same fundamental market trends supporting the global market. However, one must take into consideration the number of share issues which have been conducted throughout the period, which directly increases the market capitalization – primarily by Embracer Group and Stillfront Group. Since the peak





in late April of 2021, the accumulated value has declined to SEK 126Bn as of early October 2022. The total market capitalization of game companies listed in Sweden has shown an annual growth rate of 46% over the last three years. Games is a global market and most of the revenues for the Swedish game companies are generated internationally. MTG, which completed their transformative journey into a pure-play games holding company following the split with Nordic Entertainment Group (currently Viaplay Group), have only been included post-split in all derivations.

Despite the continuously growing portfolio of publicly listed Swedish game companies, currently standing at 21, a vast majority of the market capitalisation is concentrated to a handful players – although there has been a shift among these largest contributors.





The two most noticeable transformations are those of Embracer Group and Paradox Interactive. As of January, Paradox Interactive accounted for 37% of the total market capitalisation of the Swedish games market but has since reduced its share by more than half to 15% whilst Embracer have grown from 16% up to 61% - largely driven by a highly active M&A agenda, having completed approx. 50 acquisitions and effectively increased its market capitalization from SEK 2Bn to SEK 77Bn throughout the observed period. MTG, although late to the party, has managed to obtain a sizable market share since its transformation, currently standing at 7%. Stillfront has followed a similar pattern to that of Embracer, having increased its market share from 3% to 10% whilst G5 has declined from 6% to 1%. Irrespective of the individual companies' performance, the market has been and still is dominated by a select number where the top five individual companies measured by market capitalization accounted for almost 96% as of October 7, 2022.

The substantial game-specific benefits of the pandemic are further observable when compared to the broader market. But it also shows a significant decline due to wider macroeconomic events and a conservative market sentiment where investors have transitioned from high-growth to more traditional assets

following the growth-oriented post-COVID bull-run, where games assets have been punished harder than the broader market.

A similar development can be observed in the accumulated Forward EV/EBITDA valuation of the top five largest listed companies which all saw an upswing as a consequence of the pandemic outbreak. Following recent global events, one could argue that a market correction can be observed similar to the stock price development, a theme which has been prevalent across the entire stock market. In fact, the companies are trading at valuations approximately 33% lower compared to the beginning of the observation period, and 68% lower when compared to the peak in October 2020.

However, an important point to highlight is that the companies also have grown substantially, and thereby the future expected growth rate is potentially lower. Additionally, the cost of capital following interest rate hikes and a more risk averse investor community have increased the required rate of return, effectively lowering the estimated Forward EV/EBITDA multiples. An alternative interpretation is that investors do not believe that the game companies will be able to sustain its growth and profitability levels despite the strong underlying game-specific market fundamentals.



Game Developer Map - Sweden

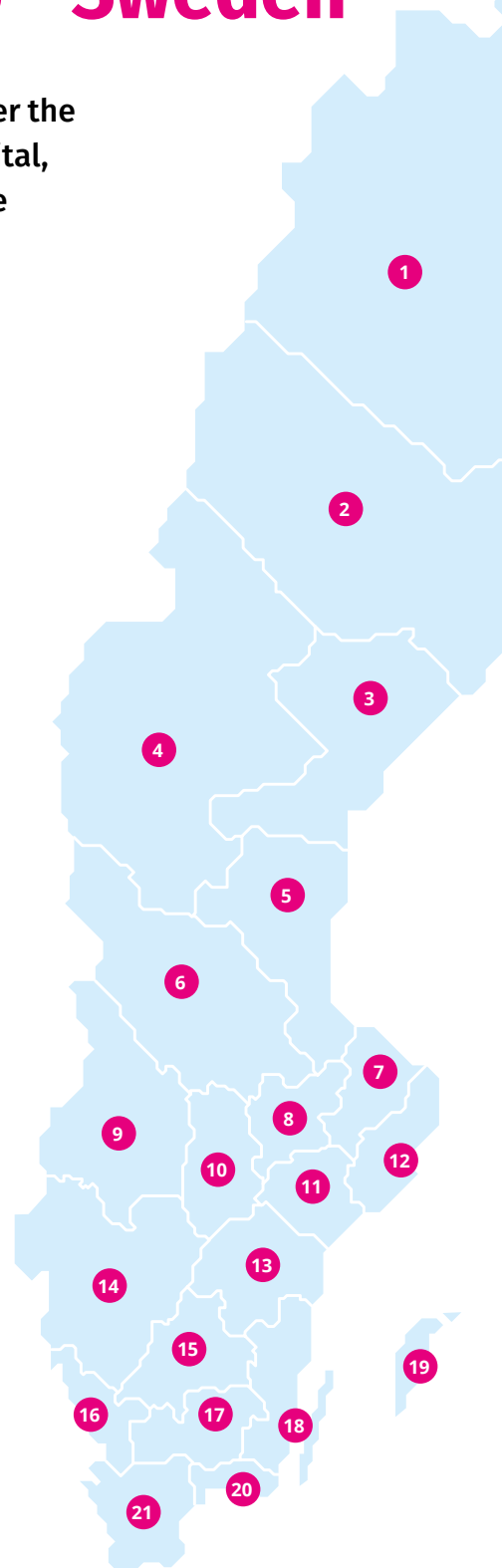
Game development companies are scattered all over the country. A majority of the employees are in the capital, but significantly more companies are based outside Stockholm.

It is clear that more companies and employees have been concentrated in places with an active regional hub or cluster organisation that has worked actively to promote the industry. This year, therefore, the regions are reported separately divided into the country's largest hubs. There are some initiatives other than those listed below but they are still smaller in scale and thus not represented separately.

It is worth noting that only employees of limited liability companies are included in the statistics and that this data is based on full-time positions from the companies' annual reports. The total number of people working with game development in each locality is therefore significantly higher. Employees at local offices are reported at the respective place of work to the greatest extent possible. The numbers below include game studios that started in 2022 and thus may differ from the key figures.

The purpose of the map is to illustrate as far as possible where game development is based in the country and which companies are behind it; therefore we have used studio names rather than company names where such information was available. For the same reason, to a large extent, administrative divisions of companies are not included on the map. Is your company missing from the map? Feel free to contact us with a description.

Regional Hubs	No. Companies	No. Employees
Stockholm	333	4,745
Västerbotten & Norrbotten <i>Arctic Game</i>	75	322
Skåne & Blekinge <i>Game Habitat/Gameport</i>	130	1,515
Västra Götaland <i>Sweden Game Arena/ The Game Incubator</i>	120	841
Östergötland <i>East Sweden Game</i>	45	52
Rest of Sweden	129	469
Total	832	7,944



NORRBOTTEN 1

Boden

5 Fortress AB
921 Studios AB
Aurora Punks
House of How Games Sweden AB
Nethash AB
Northify AB
October8 AB
Pixadome
Streiff Studio AB
Synical Studios AB
TNTX in Boden AB
Wanderword i Sverige AB
Volatile Frameworks AB

Luleå

Bazooka Game Studios AB
Blamorama Games
RDY Arena AB
UNIGIL-SUPPORT AB

Piteå

Baldheads Creative AB
Digital Awakening AB
Frozen North Studios AB

VÄSTERBOTTEN 2

Skellefteå

Aurora Punks
Boxplay Skellefteå AB
ChillChat Studios AB
Creative Crowd AB
Cubetopia AB
DANIEL LEHTO AB
Flat Tail Studios AB

Frigol IT & Media AB
Goat Mountain Development AB
Gold Town Games
Grand Pike AB
Gumlin Games AB
Lazer Wolf Studios AB
Mind Detonator AB
Mindforce Game Lab AB
Natural User Interface Technologies AB
Nirah Studios
Nordsken Handlingskraft AB
NORTH KINGDOM DESIGN & COMMUNICATION AB
Northplane AB
Spinoff Games AB
Tarvalley, Aktiebolag
TECHNIQUE PROGRAM I
SKELLEFTEÅ AKTIEBOLAG
Throw away company AB
Triolith Games AB
Vavel Games AB
Vorto Gaming AB
White Warlock AB
Windswept Interactive
Yalts AB

Umeå

Aurora Punks
Blast Bit Enterprises AB
Bruno Janvier Software AB
Cassius Creative AB
COLDWOOD INTERACTIVE AB
Crypto Rouge Games
David Marquardt Studios AB
Frostspektrum Interactive AB
Game Boost Sweden AB
Level Eight AB
Mattias Wiking Development AB
Morningdew Media AB
Moxville AB
Musikmedel Future Vision AB
Nostop Horses AB
Oddgames Umeå
ORYX SIMULATIONS
Paradox Arctic
RankOne Global AB
Sam & Frida AB
Slice Start Software Solutions AB
The Fine Arc Nordic AB
Turborilla AB
TWO 58 PRODUCTIONS AB
Zordix

VÄSTERNORRLAND 3

Kramfors

Grey Tower AB

Örnsköldsvik

Northern Ice Handelsbolag
WHYMAC AB

Sundsvall

A bit ago AB
AtomicElbow AB
Caeiro AB
Corncrow Games AB

Datacraft Holding AB
Good Decision AB
Gr IT AB
KONUNGER GAMES AB
Mixxus Studio
Molntuss Spel AB
Neozoo Creative
R&P Games AB
Romeo Invest AB
Saber Interactive Sweden
Sideline Labs AB
SideQuest Sweden AB
SPACELOOM STUDIOS AB

Timrå

Edym Pixels

Viksjo

Simtarget

JÄMTLAND 4

Åre

Hindelid Development AB

Östersund

Skyturns AB

GÄVLEBORG 5

Gävle

Early Morning Studio AB

DALARNA 6

Borlänge

Quiz Anytime AB
Zoikum Games Aktiebolag

Falun

Aktiebolaget Adit Studios
Deadghost Interactive AB
Giron Software AB
Kolesterol Cät Interactive AB
MEGAFRONT AB
North Concept ArtStudio AB
Tension Onsite Sport AB
TENSION technology AB
The New Branch AB

Hedemora

Clifftop Games AB
Killmonday Games AB

Malung-Sälen

North Modding Company AB

Säter

Twoorb Studios AB

REGION UPPSALA 7

Enköping

Yoger Games AB

Håbo

aMASE AB
Rennert Games AB

Knivsta

Studio Knick-Knack AB

Uppsala

Aegik AB
Bitfix AB
Chizu AB
Dinomite Games AB
Disir productions AB
Doctor Entertainment AB
Ember Trail AB
Epic Games
Everlight Studio AB
Frojo Apps AB
Javxa
Kinda Brave Publishing AB
MachineGames Sweden AB
Matematikspel i Uppsala AB
Nena Innovation AB
Neon Giant AB
Nexile AB
Night Node AB
Red Cabin Games AB
Semiwork Studios AB
Tretton Adam AB
VisualDreams AB
Wicket Gaming AB
YemSoft AB

VÄSTMANLAND 8

Köping

LS Entertainment AB

Västerås

Bumble Byte AB

VÄRMLAND 9

Arvika

Shaping Games AB

Forshaga

Insanto Studios AB

Hammarö

Jonatan Röjder Delnavaz
Mystik AB

Karlstad

Agera Games AB
Clear River Games AB
Embracer Group AB
Firma Noah Molteberg Lundén
Forgebyte Studio AB
Frostglade AB
Isak Liljengren Enskild firma
Concepting
Mirage Game Studios AB

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Nimble Giant Sweden
Nine Lives Game Studio
Nuttery Entertainment AB
Plucky Bytes AB
Studio Malosi AB
Team Velocita AB

Kil
Philosophic Games

REGION ÖREBRO 10

Degerfors
ORBMIT Productions AB

Hallsberg
vibinary Aktiebolag

Lindesberg
AC GAMES AB

Nora
Toasty Leaf AB

Örebro
DANJO CREATIVE AB
Elder Grounds AB
LOYD Studios AB
NBrigade Music AB
Shemshem Design AB

SÖDERMANLAND 11

Eskilstuna
anananas studio AB
AppsAlliance AB
DVapps AB
Tody's Games AB

Nyköping
SOZAP
Sysiac games AB

Strängnäs
Agile Softworks AB

REGION STOCKHOLM 12

Botkyrka
Beadhead Games AB
Eelooz AB
Stringent Ljud AB

Danderyd
bNosy AB
Peppy Pals AB
Planeshift Interactive AB
Solvarg AB
Tinto Consulting AB

Ekerö
chillbro studios AB

Mr.Ws Development AB
Playstack AB

Haninge
FeWes AB
Gamatron AB
Pretty Fly Games AB
Rain of Reflections AB

Huddinge
Bearded Ladies
Bright Gambit AB
Holmgång AB
Moon Mode AB
Razzeberries AB
Strawberry Hill AB
Typosaurus AB

Järfälla
Cresthelm studios AB
Merrybrain AB
Smojo AB
Unleash the Giraffe AB

Lidingö
My Left Head Entertainment AB
PIXEL TALES AB
Right Nice Games AB
The Froghouse AB

Nacka
2Play Studios AB
Colin Lane Games AB
Domoore AB
Game Advisor Sweden AB
LeadTurn Gaming AB
Liquid Swords AB
Polygongruvan AB
Shellander Games AB

Norrtälje
Argent Realms AB
Aurora Punks
Dovora Interactive AB
Space Plunge AB

Österåker
Ringtail Interactive AB
Sprint1 Productions AB

Sigtuna
Eight Lives AB
Epic Games
Svantech Studios AB
Usurpator AB

Södertälje
Diffident Games AB
JN Interactive AB

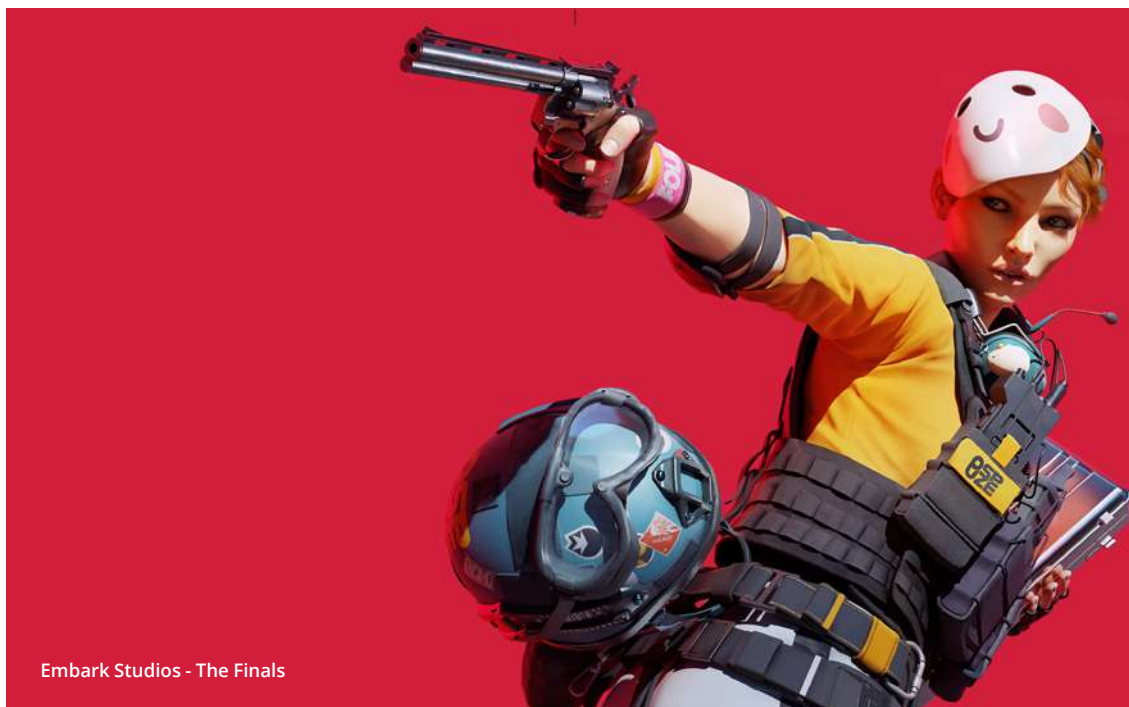
Sollentuna
Ullbors Illustrations AB

Solna
BBS Games AB
BitBear AB
Christian Nordgren AB
DIVR Sweden AB
Frozen Dev AB
FunGI AB

Jona Marklund AB
Kaj Forell Video Game Brand AB
Sharcoal Studios AB
Solutions Skövde AB
ToeDev AB
TRB Studio AB

Stockholm
10 Chambers AB
A Small Game AB
Acegikmo AB
Adventure Box Technology AB
Aktiebolaget Fula Fisker
Almost Fantastic AB
Amplifier Studios AB
Antler Interactive AB
Apprope AB
Arcmill AB
Arrowhead Game Studios AB
art by rens AB
Ashes & Diamonds Entertainment AB
Aurora Punks
Avalanche Studios Group
Axolot Games AB
Babel Studios AB
Barnacles Studio AB
Battlecamp AB
Bewildermill AB
Beyond Frames Entertainment AB
Blackfox Studios
Blastronaut AB
Bodbacka:Boom AB
Book of travel AB
Chief Rebel AB
Chuffy Puffy Games AB
Coffee Stain
Cold Pixel AB
Collecting Smiles AB
Cortopia AB
Cosmico AB
Coulianos Studio AB
Crackshell AB
Creation Zero Point Holding AB
Dark Riviera AB
Define Reality AB
Dejan Dimic AB
Denove Service AB
Devn Games AB
DiAx Game AB
Digital Exception Sthlm AB
Doomlord Interactive AB
DorDor AB
EA Dice
Ekvall Games Sweden AB
Eldring Games AB
Elias Software AB
Embark Studios AB
Enad Global 7 AB
Enember Studios AB
Envar entertainment AB
Evergreen IT AB
ExoCorp AB
EXP Studios AB
Experiment 101 AB
Fablebit AB
Fall Damage Studio AB
Fast Travel Games AB
Fatshark

Filimundus AB
FJRD Interactive
Flarie AB
Flashe Gaming Group AB
Fragbite Group AB
Fredtob Games AB
Frever AB
Friendly Foe Games AB
FunRock Development AB
Fury Studios AB
Fuyu Games AB
G5 Entertainment AB
Gambit Technologies AB
GAME-HOSTING GH AB
Gameloom AB
Gamersgate AB
Gamescan Stockholm Studios AB
Ghetto Blaster AB
Gleechi AB
Glorious Games Group AB
Goals AB
Goodbye Kansas Group AB
GraphN AB
Grindstone Interactive AB
Gro Play Digital AB
GURATRON Industries AB
Hati Hati Games AB
Hatrabbit AB
Hazelight
HELG Group AB
HVNT Entertainment AB
Hyperspeed Entertainment AB
Ichigoichie AB
IdaP Studios AB
JO Johansson Film & L Lindbom AB
Jonas Levin AB
Jopter Interactive AB
Kavalri Games AB
Keepsake Games AB
Kickflip Digital AB
King
Landfall Games AB
Legendo Entertainment AB
Lejongrejer AB
Lekis AB
LERP AB
Level Stars AB
Light & Dark Arts AB
Linbasta AB
Lionbite AB
LIQUID MEDIA AB
Maadwalk Games AB
MAG Interactive AB
Mentalytics AB
Mibi Games AB
Midjiwan AB
Might and Delight AB
Millionth Line AB
Minoan Studios AB
Miso Games AB
Mojang AB
Moreish Games AB
Motvind Studios AB
MTG
MuddyPixel AB
Mudpike AB
Mutate AB
NAG Studios AB
Nampa Design AB
Neat Corporation



Embark Studios - The Finals

Neuston AB
NFG Nordic Forest Games AB
Nibiru Software AB
NL Productions AB
Northplay Holding AB
Odd Raven Studios AB
Osivvi AB
Other Games AB
Oxeye Game Studio AB
P Studios AB
Palabit AB
Paradox Interactive
Petter Bergmar AB
Photon Forge AB
PLAYCOM GAME DESIGN AB
Playtrigger Games AB
Plotagon Production AB
Polarbit AB
POTEMKIN AB
Psychogenic AB
Pusselbit Games AB
Quel Solaar AB
Questadore AB
Rainbow Road AB
RAKETSPEL INTERAKTIVA
PRODUKTIONER AB
Raw Fury AB
Really Interactive AB
Red Cup Games AB
Refold AB
Regius Group AB
Reset Media AB
Resolution Games AB
Rightsized Games AB
Rock A Role Games AB

Rovio Sweden AB
Rowil AB
Rymdfall AB
Safe Lane Gaming AB
Schmugan AB
Scion Studios AB
Shelter Games AB
Simway AB
Sleeper Cell AB
Snowprint Studios AB
Solid Studios Creative Lab AB
Sons of Mim AB
Source Empire AB
Spelkraft Sthlm AB
Square Dreams AB
STAR STABLE ENTERTAINMENT AB
Starbreeze
Stillfront Group AB
Stroboskop AB
Sunhammer AB
Svartskägg AB
Systemic Reaction AB
Tale Maker Productions STHLM AB
Tappily AB
Ternios AB
The Gang Sweden AB
Thriving Ventures AB
Tiger & Kiwi AB
Toadman Interactive AB
Toca Boca AB
Tomorrowworld AB
Toppluva AB
Trail Games AB
TROISDIM AB
TwifySoft AB

Ubisoft Stockholm
Unity Technologies Sweden AB
Unordinal AB
Valiant Game Studio AB
Villa Gorilla AB
Vinternatt Studio AB
Virtual Brains AB
Vishindo AB
Visiontrick Media AB
Warm Kitten AB
Wayfare Studio AB
Westre Games AB
Wild Games AB
Wildlife Studios Sweden AB
Wilnyl Games AB
Wings
Wonderscope AB
wrlds creations AB
Xpert Eleven AB
Zordix
Ztar Games AB

Sundbyberg Novamitech AB

Täby
Delayed Again AB
Frojo Investment AB
NIALBE AB
Polyregular Studios AB
Sleipner Games AB
Soundkids AB
Synthetic Mind AB
Tealbit AB
Warzone Studios AB

Yangmei Studios AB

Tyresö
Sista Potatis AB
Spelagon AB
Wynne Technology AB

Upplands Väsby
Fredaiks AB
RobTop Games AB

Upplands-Bro
Bambino Games AB
Freshly Squeezed AB

Vallentuna
Pixeldiet Entertainment AB

Värmdö
Blue Scarab Entertainment AB
Good Night Brave Warrior AB
IMGNRY International AB
Massive Shapes AB
Spelkultur i Sverige AB

ÖSTERGÖTLAND 13

Linköping
Aftnareld AB
Another Game Sweden AB

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Appelsin Apps AB
Aurora Punks
Avokodo Studios AB
Beartwigs AB
Catalope Games AB
Ghiblio AB
Graewolv AB
Hihat Studios AB
Holmcom AB
Incredible Concepts of Sweden AB
Irrbloss AB
Landell Games AB
Laxbeam AB
Lurkware AB
Lutra Interactive AB
Martin Magni AB
Miltonic Games AB
Neogon Holding AB
overflow AB
Pixleon AB
Power Challenge AB
Red Nerv AB
Simplygon studios
SocAli Socialpeda-
gogiska Verktyg AB
Strategy Mill AB
Therese Kristoffer Publishing AB
VISIARC Inclusive Design AB
Worldshapers AB
Zero Index AB

Mjölby
Jidindi AB

Motala
Campcreation AB
Code Club AB

Norrköping
AmberWing AB

Correcture Games AB
Dimfrost Studio AB
Gamesclub International AB
GOES International AB
Molindust Interactive AB
One Potato Kingdom AB
Perpetuum Media Sverige AB
Pugstorm AB
Skyfox Interactive AB
Sutur AB

Söderköping
Loud Hat Productions AB

VÄSTRA GÖTALAND 14

Åle
1337 Game Design AB
Wishful Whale AB

Alingsås
Qiiwi Games AB

Bollebygd
Rockheart Studios AB

Borås
Gigantic Duck AB

Gothenburg
A Creative Endeavor AB
Ampd AB
An Otter Team AB
Atvis AB
Aurora Punks
Beardybird AB
Bitwave AB
Box Dragon AB
Bulbsort AB
Carry Castle AB
Choofun Games AB
Craft Animations and Enter-
tainment AB

Creative AI Nordic AB
Creative Vault AB
Dennaton Games
Dennaton Games
Devkittens AB
EA Gothenburg
Elden Pixels AB
Epic Games
Friendbase AB
Frostcore AB
Fully Multiplayer AB
Greenblade Studios AB
Hello There AB
Hiber AB
Humla Games AB
inDirection Games AB
Insert Coin AB
int3 software AB
Itatake AB
ius innovation AB
just some games AB
Lavapotion AB
Lician Games AB
Like a Boss Games AB
MindArk
Mistwave Interactive AB
Neckbolt AB
Outbreak Studios AB
Pax6 Games AB
Playcentric Studios AB
Räven Aktiebolag
River End Games AB
SkillzWin Studios AB
SkyGoblin AB
Soupmasters AB
SteelRaven7 AB
Studio Far Out Games AB
Studio Northshade AB
Swarm Creations AB
The Fully Arcade AB
Thunderful
TinyHill AB
Winteractive AB
Wishfully Studios AB

YCYJ Games AB
Zcoolly AB

Härryda
Mambo Jambo Studios AB

Kungälv
Dreamon Studios AB

Lidköping
Pixel Pointer Studios AB
Mark
EXTRALIVES AB

Mellerud
Vovoid Media Technologies AB

Mölnadal
E Games Invest Nordic AB
GSP golf AB
Heyman Atelje & Verkstad AB
Mindforce Game Lab AB
nornware AB
Oddiko AB
Pathos Interactive AB

Munkedal
Coilworks AB

Partille
Moonhood AB

Skara
Alega & Qiiwi Learning AB
VaragtP Studios AB

Skövde
Angry Demon Studio AB
Babloon Studios AB
Brimstone Games AB
Coffee Stain
Designlayout EGU AB
DoubleMoose Games AB
Flamebait AB



FRAME BREAK AB
Green Tile Digital AB
Iron Gate AB
Knackelbang Productions AB
Let it roll AB
Ludosity AB
Nattland Interactive AB
Nördlight Games AB
Palindrome Interactive AB
Pieces Interactive AB
Piktiv AB
PocApp Studios AB
Pretty Broken Code AB
Pronoia AB
Redbeet Interactive AB
Sandspire Interactive AB
Sonigon AB
Stunlock Studios AB
Subfrost Interactive AB
Sunscale Studios AB
Thunderful
Twitchy trigger finger AB
Whirlybird Games AB

Stenungsund
Ace Maddox AB

Tanum
Tenstar

Trollhättan
ActiveQuiz Europe AB
Easy Trigger AB

Vänersborg
Virtuverse AB

REGION JÖNKÖPING 15

Jönköping
Brandywise AB
Cuddle Monster AB
PrettyByte AB
Radical Sunset AB

Tranås
Head Coach Games AB

HALLAND 16

Falkenberg
Gellyberry Studios AB

Halmstad
Erik Svedäng AB

Kungsbacka
Breaker Interactive AB
Nifly Apps AB
Oganon interactive AB
Snojken AB

KRONOBERG 17

Älmhult
Inntq AB

Alvesta
Wadonk AB

Ljungby
Bläckfisk Förlag AB

Markaryd
Reality Park AB

Tingsryd
Spelkollektivet Sweden AB

Växjö
Arcade Mixtape AB
Maboza AB
Nemo Studios AB
Universal Learning Games ULG AB
Wildcore AB

REGION KALMAR 18

Nybro
Deadly Serious Media Sweden AB

GOTLAND 19

Eat Create Sleep AB
Jumpgate AB
Pixel Ferrets AB
Storm Potion AB
Tableflip Entertainment AB

BLEKINGE 20

Karlshamn
Aurora Punks
Dreamwalker Studios AB
Mana Brigade AB
Noumenon Games AB
Pretty Ugly AB
Redgrim AB
Something We Made AB
Svavelstickan AB
Thunderful
Virtual Tree Design AB

Karlskrona
Blackdrop Interactive AB
Macaroni Studios AB
Shatterplay Studio AB
Suffocated AB

Olofström
Black Tundra Productions AB

Ronneby
Activout AB
Nodbrim Interactive AB
Powersnake AB

SKÅNE 21

Ängelholm
PMABit AB

Burlöv
Happi Papi AB
Pfanne AB
Spiddekauga Games AB

Eslöv
Digital kittens AB
Pastille AB
Triassic Games AB

Helsingborg
Decemberborn AB
Duckpond Interactive AB
Localize Direct AB
Monsuta AB
Pixelbite AB
Shapefarm AB

Höganäs
KEP Games AB

Hörby
CroolBright AB

Kristianstad
JE Software AB

Landskrona
KFH Graphics AB
Urban Binary AB

Lund
Abcde Entertainment AB
Bridgestars Techno-
logies Sweden AB
Illwinter Game Design AB
Jitesoft AB
Junno Labs AB
Undone Games AB

Malmö
Apoapsis Game Laboratories AB
Art in Heart AB
Aurora Punks
Avalanche Studios Group
Bearded Ladies
Chromatic ink AB
Codeborn AB
Coffee Stain Malmö
Coherence Sweden AB
Cross Reality International AB
DeadToast Entertainment AB
Dengu AB
Diatomic AB
Divine Robot AB
Dunderbit AB
Echo Entertainment AB
Ernst & Borg Arkitektur AB
Frictional Games AB
Frogsong Studios AB
Gameflame
Gameheart Studio AB
Golden Possum Games AB
Gottterdammerung AB
Haderajan AB
Icehelm AB
Illusion Labs AB
Infinite Mana Games AB
IO Interactive AB
King

Learning Loop Sweden AB
LERIPA AB
Longhand Electric AB
Luau AB
Massive Entertainment –
a Ubisoft Studio
Mediocre AB
MU Studios AB
Multiscription AB
Neon Noroshi AB
nevsram AB
Nordic Game Resources AB
Nordic Game Ventures i Malmö AB
Nordic Stone Studio AB
Not My Jeans AB
On the Outskirts AB
Oskar Stålberg AB
Paradox Thalassic
Pixel Shade
Plausible Concept AB
ProCloud Media Invest AB
Rashidi Interactive AB
Rau Studios AB
Richard Meredith AB
Robertson Nordic Partners AB
Rubycone AB
Section 9 Interactive AB
Senri AB
Sharkmob AB
She Was Such a Good Horse AB
Simogo AB
Southend Interactive AB
Star Vault AB
Stjärnstoft Studios AB
SWEDISH GAME DEVELOPMENT AB
Tales & Dice AB
Tarsier Studios
The Sleeping Machine AB
Thunderful
Transmuted Games AB
Tuxedo Labs AB
Velodrom AB
Vova Games AB
Vreski AB
webbfarbror AB
WhatAreBirds AB
WhyKev AB

Skurup
Spelmakare Jens Nilsson AB

Staffanstorps
Straw hat games AB
VoDoo Studios

Svedala
Binary Peak AB

Tomelilla
Pixilated Production AB
Trancenders Media AB

Vellinge
Impact Unified AB
Primary Hive AB

Ystad
VisionPunk AB

Swedish Game Companies Around the Globe

Several game companies are expanding abroad. In October 2022 there were 197 Swedish owned studios around the world.

	Company	Group Revenue MEUR 2021	Employees outside Sweden 2021
1	Embracer Group	1,679	6,183
2	King	547	-
3	Stillfront Group	538	1,166
4	Mojang	536	-
5	Modern Times Group MTG	523	1,386
6	Thunderful Group	310	167
7	Enad Global 7	165	764
8	EA DICE	152	-
9	Paradox Interactive	143	205
10	Toca Boca	132	-

Largest Swedish Companies Globally

Largest Swedish companies including global revenue

That is an increase from last year's game developer index where there were 126 Swedish owned studios.. This year's data excludes about fifty distribution offices and other more administrative units.

In total, there are studios spread across 49 countries and on all continents. The largest number of companies is in the US, 32, and 123 studios are in Europe, of which 22 are in Germany.

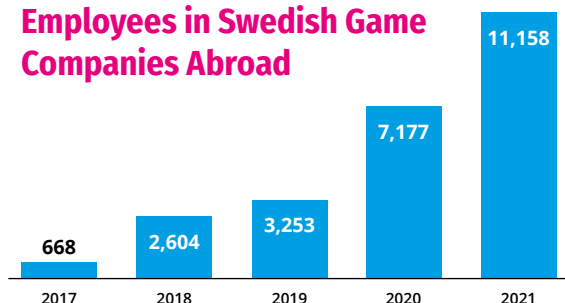
Sweden has been the largest investor in German companies in recent years.

The largest company outside Sweden's borders is Embracer Group, which through its various branches has 113 studios and a high global presence, followed by Stillfront Group with 27 studios in 16 countries. In total, 18 Swedish companies have various forms of branches and subsidiaries in other countries. Of these, two studios, Avalanche Studios



Martin Magni – Fancade

Employees in Swedish Game Companies Abroad



Group's New York & Liverpool offices have a Danish group parent and Sharkmob's London studio has a Chinese group parent.

In 2021, G5, Embracer Group and EG7 had offices in Russia. Since Russia's renewed war in Ukraine, many employees have been relocated to offices in other countries, but remain on the map.

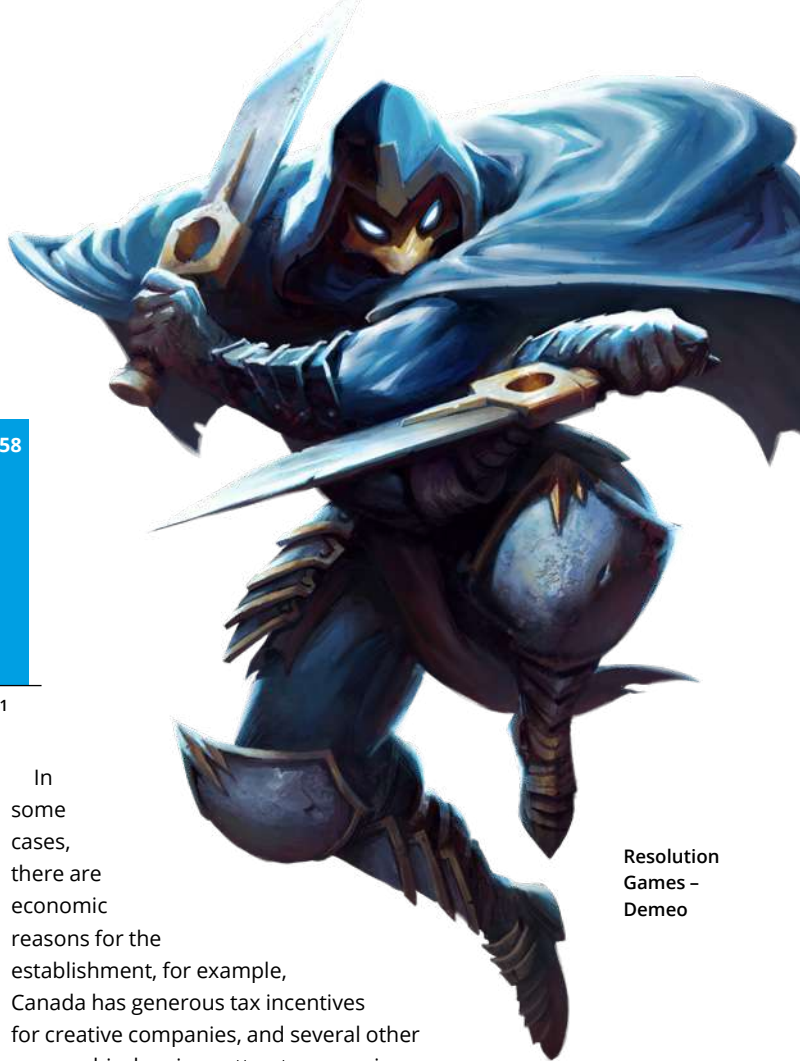
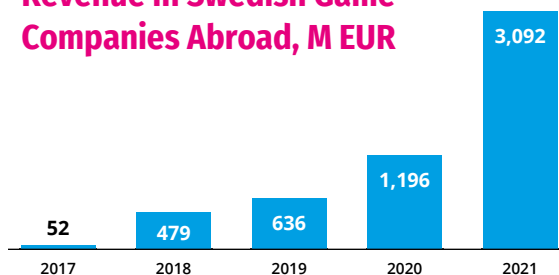
Together, Swedish-owned game companies employed just over 11,100 people in other countries in 2021. Of these, 6,183 of the employees worked for Embracer Group. In October 2022, the Group estimated that 14,900 employees work for them globally, which means that almost 28,000 people in game development globally now work for a Swedish-owned company. Out of the employees working in Swedish owned companies abroad 31.5% were women.

The growth of the number of studios and employees domestically is largely driven by organic growth, while the increase abroad is largely acquisition-driven, although several of the individual studios abroad also increased in size.

Where in the world companies establish themselves depends largely on where there are game studios that have performed well in the past.

In some cases, there are economic reasons for the establishment, for example, Canada has generous tax incentives for creative companies, and several other geographical regions attract companies with financial incentives specifically aimed at foreign companies. To some extent, it may also be due to cultural connections, for example, where there are employees or founders with backgrounds in specific countries. An overwhelming majority of employees around the world are located in countries with salary levels comparable to, or higher, than Sweden.

Revenue in Swedish Game Companies Abroad, M EUR



Resolution Games – Demeo

Game Developer Map - Global

Below is a list of Swedish-owned game studios in the world, as well as foreign-owned studios that are subsidiaries of Swedish game studios.

AFRICA 1

Egypt

Fragbite group

ASIA 2

India

MTG, Playsimple
Stillfront, Moonfrog

Israel

Embracer: DECA Games,
CrazyLabs

Japan

Stillfront, 6waves
Stillfront, Goodgames

Jordan

Stillfront, Babil Games

Philippines

Goodbye Kansas Group,
Vobling

Russia

G5
Embracer: Saber Interactive, Bytex
EG7, Artplant Russia

United Arab Emirates

Stillfront, Jawaker
Stillfront, Babil Games

China

Stillfront, 6waves

EUROPE 3

Austria

Embracer: PLAION,
PLAION GmbH
Embracer: THQ Nordic,
Pow Wow Entertainment
Embracer: THQ Nordic,

Purple Lamp
Embracer: THQ Nordic,
THQ Nordic GMBH
Embracer: Amplifier Game Invest,
Rare Earth games

Belarus

Embracer: Easybrain, Easybrain
Embracer: Saber Interactive,
Saber Interactive Belarus

Belgium

Embracer: Asmodee,
Repos Production
Embracer: THQ Nordic,
Appeal Studios
Embracer: Asmodee,
Pearl Games

Bosnia

Embracer: THQ Nordic, Gate21

Bulgaria

Embracer: Saber Interactive,
Snapshot Games Bulgaria
Stillfront, Imperia Online JSC
Embracer: DECA Games,
DECA Games Eood

Croatia

Stillfront, Nanobit

Cyprus

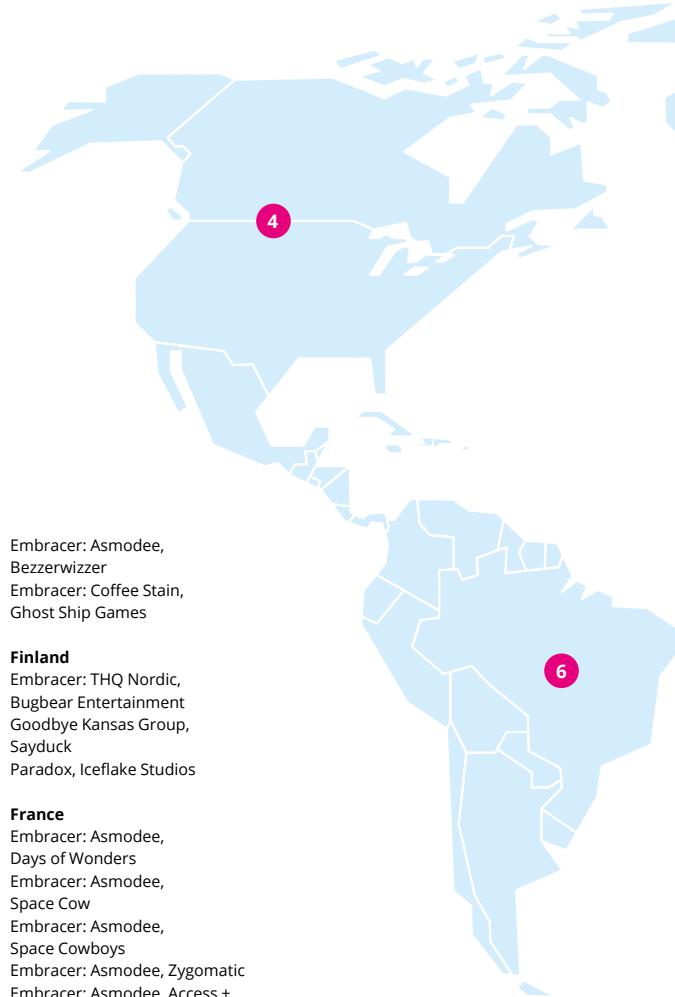
Embracer: Easybrain, Easybrain
Qiiwi Games, Milligames /
WeAreQiiwi International

Czech Republic

Embracer: PLAION,
Warhorse Studios
Embracer: THQ Nordic,
Ashborne Games

Denmark

Embracer: Saber Interactive,
3D realms
Embracer: Saber Interactive,
Slipgate Ironworks
Embracer: Amplifier Game Invest,
Invisible Walls



Embracer: Asmodee,
Bezzerwizzer
Embracer: Coffee Stain,
Ghost Ship Games

Finland

Embracer: THQ Nordic,
Bugbear Entertainment
Goodbye Kansas Group,
Sayduck
Paradox, Iceflake Studios

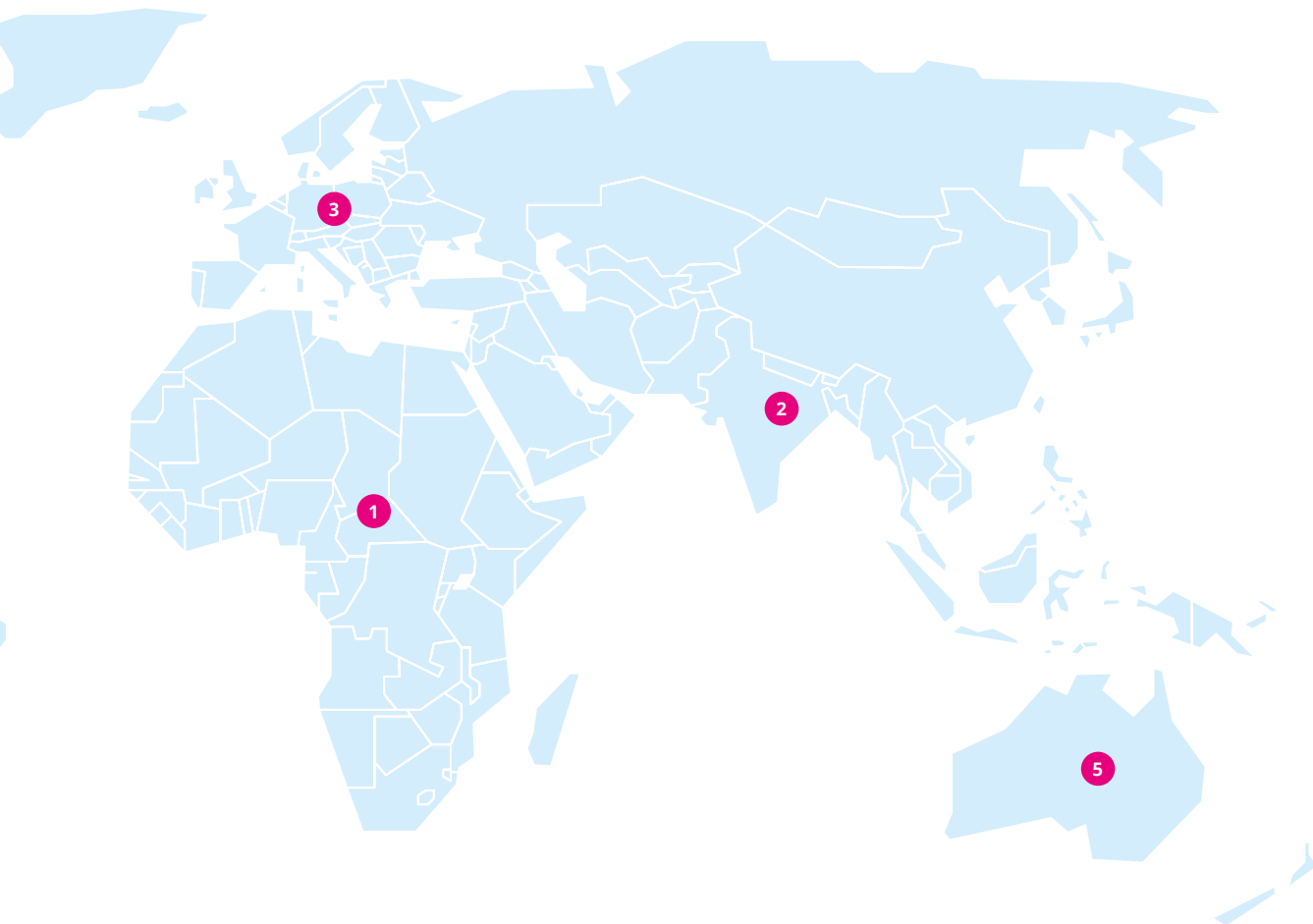
France

Embracer: Asmodee,
Days of Wonders
Embracer: Asmodee,
Space Cow
Embracer: Asmodee,
Space Cowboys
Embracer: Asmodee, Zygomatix
Embracer: Asmodee, Access +
Embracer: Asmodee, Asmodee
Embracer: Asmodee, Mixlore
Embracer: PLAION,
Digixart Studio
Embracer: Asmodee,
Tric Trac
Embracer: Asmodee,
Asmodee Digital
Embracer: PLAION, Voxler
Fragbite Group, Playdigious
Paradox, Playrion Game Studios
Embracer: Asmodee, Libellud
Embracer: Asmodee,
Edge Entertainment
Embracer: Asmodee, Philibert

Germany

Aurora Punks
EG7, Toadman Berlin

Embracer: Asmodee,
Gamegenic
Embracer: Asmodee,
Lookout Games
Embracer: DECA Games,
DECA Games
Embracer: PLAION,
Deep Silver Fishlabs
Embracer: PLAION,
PLAION GmbH
Embracer: THQ Nordic,
Black Forest Games
Embracer: THQ Nordic,
Grimlore Games
Embracer: THQ Nordic,
Handygames
Embracer: THQ Nordic,
Kaiko Games



Embracer: THQ Nordic,
Massive Miniteam
Embracer: THQ Nordic,
Metricminds
Embracer: THQ Nordic,
Piranha Bytes
Jumpgate, gameXcite GmbH
Jumpgate, Tivola Games
MTG, InnoGames
Snowprint, Snowprint Studios
Germany GmbH
Stillfront, Bytro Labs
Stillfront, Goodgames
Stillfront, New Moon Production
Stillfront, OFM Studios
Stillfront, Playa Games
Stillfront, Sandbox Interactive

Hungary

Embracer: Saber Interactive,
Zen Studios
Zordix, Invictus Games

Ireland

Stillfront, eRepublik

Italy

Aurora Punks
Embracer: Amplifier Game Invest,
Destiny bit
Embracer: PLAION, Milestone S.r.l.
Embracer: Saber Interactive,
34BigThings

Lithuania

Goodbye Kansas Group, Sayduck

Malta

Stillfront, Dorado Games
Embracer: Saber Interactive,
4A Games Malta

The Netherlands

Paradox, Triumph Studios

Fragbite Group, Lucky Kat
Embracer: PLAION, Vertigo Games

Norway

EG7, Artplant Norway
Embracer: Amplifier Game Invest,
Misc Games

Poland

Embracer: Asmodee, Rebel
Embracer: PLAION, Flying Wild Hog

Portugal

Embracer: Saber Interactive,
Saber Interactive Portugal

Romania

Stillfront, eRepublik

Russia

G5

*Embracer: Saber Interactive,
Saber Interactive Russia*

Serbia

Sozap, SOZAP DOO
Embracer: Saber Interactive,
Mad Head Games

Slovakia

Embracer: THQ Nordic,
Nine Rocks Games

Spain

Embracer: Amplifier Game Invest,
Vermila Studios
Embracer: Saber Interactive,
Saber Interactive Spain
Embracer: THQ Nordic,
Alkimia Interactive
Paradox, Paradox Tinto
Stillfront, Everguild
Thunderful, Stage Clear Studios

**Avalanche Studios Group -
Ravenbound**



Ukraine

Embracer: Saber Interactive,
4A Games Ukraine
Embracer: Saber Interactive,
Fractured Byte
Stillfront, Game Labs
G5

United Kingdom

Aurora Punks
Avalanche Studios Group
EG7, Antimatter Games
EG7, Fireshine Games
Embracer: Amplifier Game Invest,
Silent Games
Embracer: Asmodee,
The Green Board Game
Embracer: PLAION,
Deep Silver Dambuster Studios
Embracer: PLAION,
Free Radical Design Limited
Embracer: PLAION, PLAION Ltd
MAG Interactive,
MAG Interactive
MTG, Hutch
Qiiwi Games, Playright Digital
Entertainment
Qiiwi Games, Qiiwi Games UK
Sharkmob, Sharkmob London Ltd
Stillfront, Everguild
Thunderful, Coatsink
Zordix, Merge Games

NORTH AMERICA 4

Canada

EG7, Big Blue Bubble
EG7, Piranha Games

Embracer: Amplifier Game Invest,
Goose Byte
Embracer: Asmodee, Plan B
Embracer: DECA Games,
A Thinking Ape
Embracer: DECA Games,
IUGO Mobile Entertainment Inc.
Embracer: Gearbox Entertainment,
Gearbox Studio Montreal
Embracer: Gearbox Entertainment,
Gearbox Studio Quebec
Embracer: Saber Interactive,
New world Interactive Canada
Embracer: THQ Nordic,
Rainbow Studios Montreal
MTG, Hutch
Stillfront, Kixeye

USA

Avalanche Studios Group
EG7, Big Blue Bubble
EG7, Cold Iron Games
EG7, Darkpaw Games
EG7, Daybreak Games
EG7, Dimensional Ink
EG7, Petrol Advertising
EG7, Rouge Planet Games
Embracer: Amplifier Game
Invest, C77 Entertainment
Embracer: Amplifier Game
Invest, Zapper Games Inc
Embracer: Asmodee,
Atomic Mass Games
Embracer: Asmodee,
Catan Studio
Embracer: Asmodee,
Exploding Kittens
Embracer: Asmodee,
Fantasy Flight Games
Embracer: Asmodee,

Unexpected Games
Embracer: Asmodee,
Z-Man Games
Embracer: Dark Horse,
Dark Horse Entertainment, LLC
Embracer: Dark Horse,
Dark Horse Media, LLC
Embracer: Dark Horse,
Things From Another World, LLC
Embracer: Gearbox Entertainment,
Cryptic Studios
Embracer: Gearbox Entertainment,
Gearbox Entertainment
Embracer: Gearbox Entertainment,
Gearbox Software
Embracer: Gearbox Entertainment,
Lost Boys Interactive
Embracer: PLAION,
Deep Silver Volition LCC
Embracer: Saber Interactive, Aspyr
Embracer: Saber Interactive,
Demiurge Studios
Embracer: Saber Interactive,
New world Interactive US
Embracer: Saber Interactive,
Saber Interactive US
Embracer: Saber Interactive,
Sandbox Strategies
Embracer: Saber Interactive,
Shiver Entertainment
Embracer: Saber Interactive,
SmartPhone Labs
Embracer: Saber Interactive,
Snapshot Games US
Embracer: THQ Nordic,
Gunfire Games
Embracer: THQ Nordic,
Rainbow Studios Phoenix
Goodbye Kansas Group,
Infinite Entertainment

MTG, Kongregate
Paradox, Harebrained Schemes
Paradox, Paradox Tectonic
Stillfront, Candywriter
Stillfront, Simutronics
Stillfront, Storm8

Stillfront, Super Free Games
Zordix, Mane6
Zordix, Maximum Games
Zordix, Modus Games

OCEANIA 5

New Zealand

MTG, Ninja Kiwi

SOUTH AMERICA 6

Argentina

Embracer: Saber Interactive,
Nimble Giant Argentina

Brazil

Zordix, Modus Games Brazil

Chile

Embracer: Saber Interactive,
Nimble Giant Chile

Peru

Embracer: Saber Interactive,
Nimble Giant Peru

Uruguay

Embracer: Saber Interactive,
Nimble Giant Uruguay

THE INDUSTRY VOICE **GEORG STENSTRÖM**

Head of Sustainability and Compliance, **Kinda Brave**

"If we can make it easier for others to be sustainable, it is something that everyone benefits from."



Hi Georg Stenström, Head of Sustainability and Compliance, Kinda Brave! What are you most satisfied with in your sustainability work?

That we decided early on to take a holistic approach to both social and ecological sustainability. Once the decision is made and complied with, it's so much more fun to work with and talk about it. Now it's deeply rooted and is a central part of our culture and business model. This makes it easy for us to make decisions such as buying used instead of new when possible, or letting all our studios take training in how to adapt their games to accessibility.

I am also very happy that we chose to publish our emission calculations online, in a usable format. This means that we can get help if we happen to miss something. But above all, we can help others with the somewhat complicated step of calculating emissions. If we can make it easier for others to be sustainable, it is something that everyone benefits from.

What is your best advice for how to start working with sustainability issues?

Start with something small! Too many companies

believe that the task is overwhelming. Therefore, nothing is done at all. Take such a simple thing as buying used equipment where possible. Why don't more companies and government agencies do it? How many people get a new phone when they start at a workplace just because the old one has been written off? The cost to the planet – and often to the wallet as well – is always there as a good argument. It can create a positive snowball effect throughout the organisation, and all of a sudden it's not a big deal anymore. Rather, it becomes a natural part of the work to work actively and consciously with sustainability issues.

What do you hope will be obvious in the industry in 10 years?

In 10 years, I hope that the majority of the games industry will work actively with social sustainability. It may already sound like a given, but the dark headlines around discrimination and abuses that haunt the games industry show otherwise. The most important thing of all is to take care of their staff. It is closest to home and spreads positive ripples on the water.

Acquisitions and Investments

In recent years, investments and acquisitions have played an increasingly larger role in the Swedish games market.

No single deal has reached the same value as Activision Blizzard's acquisition of mobile game developer King for EUR 5.9 billion in 2016, but since then, several deals have topped the EUR 100 million mark. What has been consistent in recent years is that it has been Swedish companies that have stood as buyers, and in the few cases where a foreign player finances game development in Sweden, in recent years it has more often been investments rather than acquisitions.

Five acquisitions, where the value of the deal has been disclosed, topped the EUR 100 million mark in 2021. Embracer Group's largest deal was the acquisition of US-based Gearbox Software in a deal worth over EUR one billion, which is the largest single deal to date where a Swedish company has been the buyer. Embracer Group also accounts for the second largest deal with the acquisition of Easybrain for EUR 760 million. Stillfront Group's acquisition of Jawaker landed at approximately EUR 200 million, during the year they also acquired the American company Super Free Games Inc. EG7 acquired the Luxembourg-based game publisher Innova for EUR 110 million.

In 2021, a total of 81 public transactions involving Swedish games companies were made, compared with 44 transactions in 2020. Three foreign companies have had financial interests in Swedish studios. Chinese Tencent invested and became the majority owner of Stunlock Studios, Tencent also

increased its holding in Fatshark through another investment. During the year, LDA Capital invested in Goodbye Kansas Group and UK-based Hiro Capital invested in Snowprint Studios AB.

In one third of all public transactions in 2021 both buyers and sellers were Swedish companies, and in a large proportion the buyers were Swedish and the sellers from another country. Many of the sellers are located in Europe, but a larger proportion of sellers are in the US than in previous years.

In 2020 and 2021, there were fewer foreign buyers than in previous years.

In July 2021, Altor acquired a majority stake in Raw Fury by buying out the previous owner Nordisk Film but also investing directly into the company through a new share issue. Altor has previously invested in a wide range of companies from different industries and the acquisition of Raw Fury is a first step for Altor into the video game sector.

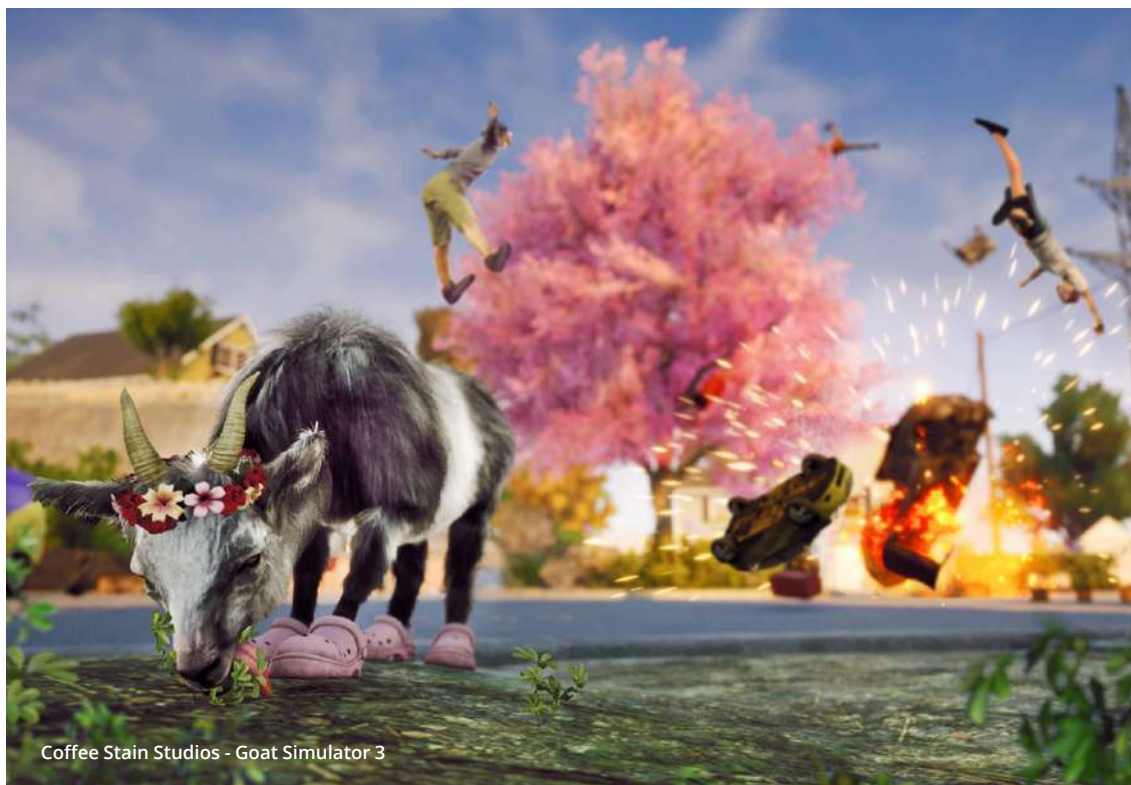
Many investments and acquisitions in the game industry are made through larger groups and large international conglomerates. But business is also carried out through publishers, individual investors and smaller investment companies - or through investment funds such as Behold Ventures, which is Sweden's latest, purely venture capital fund that targets games. In 2021, Behold Ventures made eight investments in Nordic companies in the games industry.

Acquisitions and Investments 2021

Seller	Country	Buyer / Investor	Country
3D Realms Entertainment Aps	Denmark	Embracer	Sweden
5 Fortress	Sweden	Behold Ventures	Sweden
Aionic Labs Inc.	USA	Embracer	Sweden
Appeal Studios SA	Belgium	Embracer	Sweden
Aspyr media	USA	Embracer	Sweden
Atomontage Inc	USA	Loot Spawn AB	Sweden
Aurora Punks AB	Sweden	Behold Ventures	Sweden
Aurora Punks AB	Sweden	Loot Spawn AB	Sweden
Bitwave Games	Sweden	Embracer	Sweden
Blue Scarab Entertainment	Sweden	Behold Ventures	Sweden
Bright Gambit AB	Sweden	Loot Spawn AB	Sweden
Bytex	Russia	Embracer	Sweden
Carly and The Reaper Man (IP) (from Resolution Games)	Sweden	Beyond Frames	Sweden
CrazyLabs Ltd.	Israel	Embracer	Sweden
Death Dungeon (from Victory Games)	South Korea	Safe Lane Gaming	Sweden
Demiurge Studios, Inc.	USA	Embracer	Sweden
DFS King	USA	Wicket Gaming AB	Sweden
Digic Holdings Kft	Hungary	Embracer	Sweden
DigixArt	France	Embracer	Sweden
Dinomite Games AB	Sweden	Kinda Brave Publishing AB	Sweden
Early Morning Studio	Sweden	Thunderful	Sweden
Easy Trigger AB	Sweden	Embracer	Sweden
Easybrain	Cyprus	Embracer	Sweden
Eddaheim	Denmark	Behold Ventures	Sweden
Ember Trail AB	Sweden	Kinda Brave Publishing AB	Sweden
Fan of Guns (from IP Leopardin)	Russia	Safe Lane Gaming	Sweden
Fatshark	Sweden	Tencent	China
Firescore Interactive Private Limited	India	Embracer	Sweden
Flat Tail Studios	Sweden	Behold Ventures	Sweden
Force Field B.V.	The Netherlands	Embracer	Sweden
Frame Break AB	Sweden	Embracer	Sweden
Game Labs Inc.	USA	Stillfront Group	Sweden
gameXcite GmbH	Germany	JumpGate	Sweden
Gearbox Software	USA	Embracer	Sweden
Ghost Ship Holding Aps	Denmark	Embracer	Sweden
GodziLab Inc.	USA	Stillfront Group	Sweden
Goodbye Kansas Group	Sweden	LDA Capital, Nordea	USA/Sweden
Grand Pike AB	Sweden	Gold Town Games	Sweden

Green Tile Digital	Sweden	Embracer	Sweden
Headup	Germany	Thunderful	Sweden
Hello There AB	Sweden	Loot Spawn AB	Sweden
Innova	Luxembourg	EG7	Sweden
Iron Throne: The Firstborn	South Korea	Stillfront Group	Sweden
Jawaker	UAE	Stillfront Group	Sweden
Jufeng Studio	China	Embracer	Sweden
Just for Games	France	Zordix	Sweden
KAIKO GmbH	Germany	Embracer	Sweden
Lurkware AB (Lurkit)	Sweden	Loot Spawn AB	Sweden
Lurkware AB (Lurkit)	Sweden	Behold Ventures	Sweden
Magic: The Gathering Online	USA	Enad Global 7	Sweden
Massive Minitteam GmbH	Germany	Embracer	Sweden
Maximum Games	USA	Zordix	Sweden
Merge Games	UK	Zordix	Sweden
Moonfrog	India	Stillfront Group	Sweden
OÜ Fractured Byte	Estonia/Ukraine	Embracer	Sweden
Piranha Games, Inc.	Canada	Enad Global 7	Sweden
Playright Digital Entertainment	UK	Qiiwi Games	Sweden
Playwood Project	Denmark	Behold Ventures	Sweden
Plotagon Production AB	Sweden	Goodbye Kansas	Sweden
Raketspel	Sweden	Safe Lane Gaming	Sweden





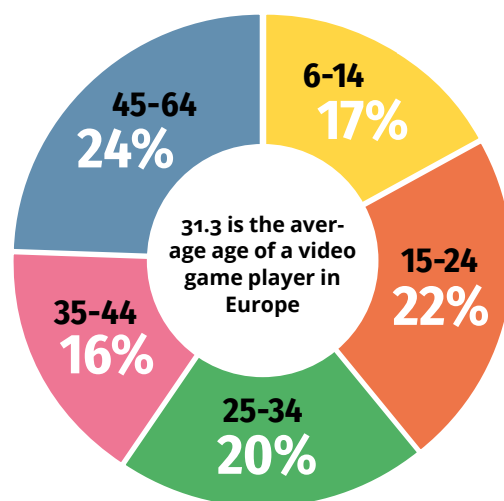
Raw Fury	Denmark	Altor Fund V	Sweden
Robot Teddy	UK	Thunderful	Sweden
Shiver Entertainment Inc.	USA	Embracer	Sweden
Sideline Labs	Sweden	Gold Town Games	Sweden
Slipgate Ironworks Aps	Denmark	Embracer	Sweden
SmartPhone Labs	Russia	Embracer	Sweden
Snowprint	Sweden	Hiro Capital	UK
Spellscaper	Sweden	Behold Ventures	Sweden
Spotfilm Networx GmbH	Germany	Embracer	Sweden
Stage Clear Studios	Spain	Thunderful	Sweden
Stunlock Studios	Sweden	Tencent	China
Super Free Games, Inc.	USA	Stillfront Group	Sweden
Tableflip Entertainment	Sweden	JumpGate	Sweden
Tatsujin	Japan	Embracer	Sweden
To The Sky	Sweden	Thunderful	Sweden
Tussilago AB	Sweden	Thunderful	Sweden
Uplandme Inc.	USA	G5 Entertainment	Sweden
Varyag Group AB	Sweden	Embracer	Sweden
Wegesrand	Germany	Wicket Gaming AB	Sweden
Zens VR (from Beyond Frames)	Sweden	Zens VR	Sweden

World Market

Our estimate based on download data is that at least every fourth person has played a game created in Sweden. In total, Swedish-developed games have been downloaded almost six billion times, and large Swedish games regularly top the download and sales lists.

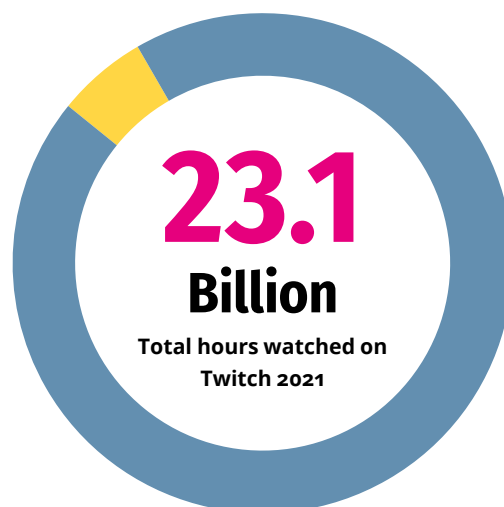
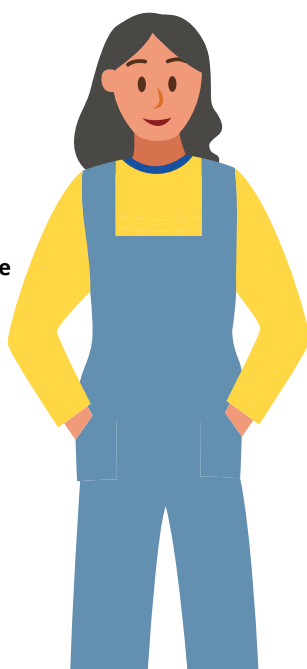
The world market for games continues to grow. According to market research firm Newzoo the global games market enjoys an estimated annual growth of almost 5% and will reach a market cap of almost EUR 230 billion by 2025. The players are driving growth at the companies, and despite the shortage of semiconductors, the new generation of consoles have sold more than the last generation. The Swedish game development companies together cover a broad base and develop games in almost all genres and for all established platforms, which is a great strength, and makes sustained stable growth possible..

The European trade association ISFE, the Interactive Software Federation of Europe, published a report in August 2022 of the European games market, based on data from the major countries France, the UK, Spain and Germany. The report titled *Key Facts from 2021* is available for download at isfe.eu.



48%

of European video game players are women



The Games Reach

Game developers and publishers reach players all over the world with their games by, for instance, streaming the games on different platforms. Every year, millions of people watch others play games; in 2021 the platform Twitch had 23 billion watched hours, games from Swedish game developers and publishers accounted for 6% of these.

Swedish Games on Twitch 2021

Games with a Swedish association stood for 6% of all watchtime on Twitch 2021. Top list with Swedish Games based on most watched hours.



863.3M
1. Minecraft



61.8M
2. Valheim



30.2M
3. It Takes Two



15.5M
4. Little Nightmares II



10.7M
5. Satisfactory



8.7M
6. Raft



8.2M
7. Hearts of Iron IV



7.6M
8. Little Nightmares



7.2M
9. Battlefield V



6.8M
10. Bloodhunt

Top Games Most Watched Hours Globally 2021



1,874M
1. GTA 5



1,735M
2. League of Legends



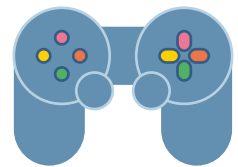
966M
3. Fortnite



951M
4. Valorant



863.3M
5. Minecraft



Swedish games aggregated got 1.4 Billion watched hours during 2021. That amounts to 160,000 years.

Swedish indie games released in 2022, *V Rising*, *Core Keeper*, *Midnight Ghost Hunt* and *Dome Keeper* have all seen success on Twitch.

The gaming phenomenon *Minecraft* is still the biggest Swedish game on Twitch and is among the top 5 most watched in the world.

Game Developer Educations

Learning to become a game developer can be done in different ways. Some are completely self-taught, some start making games in high school, but the vast majority have furthered their education in the subject or related subjects. The most common qualification is a post-secondary education in game graphics, game programming or game design at one of the country's colleges, universities or higher vocational educations.

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About one third of all people who work at games companies work in programming. Almost as many work in various graphic arts professions. A large proportion also works on design, level creation, mechanics and game worlds that make up the game. On top of that, there's everything from QA testers, community managers, producers, marketers, analysts, and a range of other professional roles both game-specific and more general. In October 2022, the independent initiative SwedenGameJobs.com listed ads for 654 vacancies at game companies in Sweden.

Some high school programs focus on game development. For example, students from LBS won Sweden Game Awards in 2018 and 2019.

There are also several folk high school courses at the upper secondary level. Among those who do not also do post-secondary education are Bona folk high school in Motala, which collaborates with Female Legends, as well as Framnäs folk high school in Öjebyn and Solviks folk high school in Kåge, which are linked to Arctic Game.

Games have also become a focus of adult education in several locations. Spelkollektivet conducts a municipal adult education in Tingsryd municipality with a focus on games. In Luleå there is an adult education

by FCV with a game focus, and in Boden an Indie Game Dev training in collaboration with Futuregames.

In an increasing number of places in the country, games have taken their place in cultural schools. For example, in Lomma, Malmö, Luleå and Stockholm.

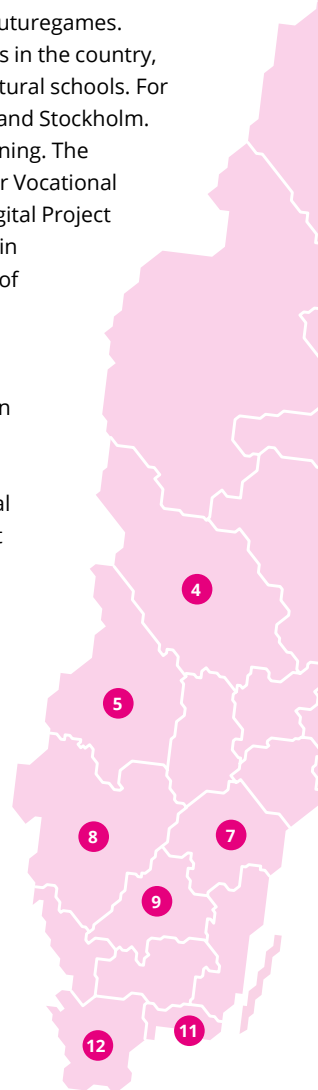
There are also other types of training. The Game Assembly runs a short Higher Vocational Education distance course titled Digital Project Game Management, which started in December 2021 with the first batch of students.

House of Minds does post-secondary diploma training, including an education in the Unreal engine in partnership with Epic.

Blekinge Institute of Technology has for several years offered several game educations in Karlshamn, but in 2022 these did not commence due to a shortage of teachers.

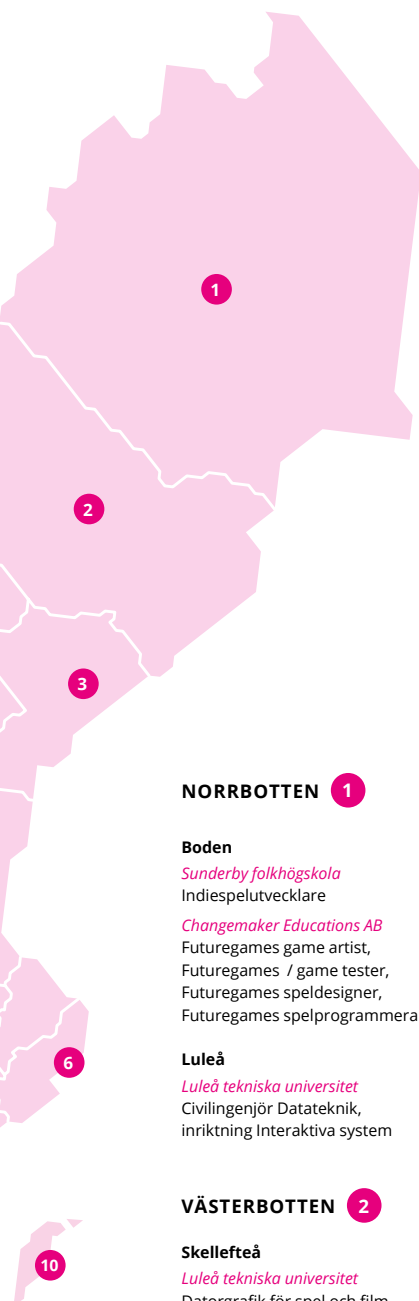
In August 2022, the Swedish Games Research Council was formed, which brings together computer game researchers from eight colleges and universities in Sweden, as well as from RISE. The Council is probably the first of its kind in the world.

Are you missing a programme on the list? Get in touch with us at the Swedish Games Industry.



Higher Game Education

Longer CSN-eligible game education at post-secondary level
commencing in autumn 2022



NORRBOTTEN 1

Boden

Sunderby folkhögskola
Indiespelutvecklare

Changemaker Educations AB
Futuregames game artist,
Futuregames / game tester,
Futuregames speldesigner,
Futuregames spelprogrammerare

Luleå

Luleå tekniska universitet
Civilingenjör Datateknik,
inriktning Interaktiva system

VÄSTERBOTTEN 2

Skellefteå

Luleå tekniska universitet
Datorgrafik för spel och film,
Högskoleingenjör Datorspels-
programmering

Changemaker Educations AB

Futuregames game & ux designer,
Futuregames game artist,
Futuregames game programmer
mobile platforms,
Futuregames spelprogrammerare,
Project manager it & games,

Skellefteå kommun Vuxen- utbildningen / Visual Magic

Vfx-artist: 3d-visualisering och
digital compositing

VÄSTERNORRLAND 3

Sollefteå

Höla folkhögskola
Indiespelutveckling

DALARNA 4

Falun

Tension Education AB
Playgroundsquad, upplevelse-
och speldesign,
Playgroundsquad, upplevelse-
och spelgrafik,
Playgroundsquad, upplevelse-
och spelprogrammering

VÄRMLAND 5

Karlstad

Kristinehamns folkhögskola
Indiespelutvecklare,

Changemaker Educations AB

Futuregames game artist,
Project manager it & games,
Futuregames game programmer
mobil platforms,

REGION STOCKHOLM 6

Huddinge

Södertörns högskola
Spelprogrammet - inriktning grafik,
Spelprogrammet - inriktning
speldesign och scripting

Stockholm

Stockholms universitet
Kandidatprogram i datorspels-
utveckling

Changemaker Educations AB

Futuregames game artist,
Futuregames game designer,
Futuregames game designer,
Futuregames Immersive
Experience Creator,
Futuregames spelprogrammerare,

Forsbergs Skola

Forsbergs, spelutvecklare – game
programming

TGA Utbildning AB

Leveldesigner,
Spelgrafiker,
Spelprogrammerare

Botkyrka

Botkyrka kommun / Xenter Botkyrka
Vfx-artist

ÖSTERGÖTLAND 7

Linköping

Linköpings universitet
Civilingenjör i mjukvaruteknik,
Högskoleingenjör i datateknik

Valla folkhögskola

Valla Game Education,

VÄSTRA GÖTLAND 8

Gothenburg

Chalmers tekniska högskola
Interaction Design and
Technologies, Msc Progr

Göteborgs Universitet

Game Design & Technology
masterprogram

Göteborgs Stad, Yrgo

Game creator artist,
Game creator programmer

Skövde

Högskolan i Skövde

Dataspelsutveckling – 2D-grafik,
Dataspelsutveckling – 3D-grafik,
Dataspelsutveckling – animation,
Dataspelsutveckling – design,
Dataspelsutveckling – Game
Writing,
Dataspelsutveckling – ljud,
Dataspelsutveckling – musik,
Dataspelsutveckling – program-
mering,
Digitalt berättande: spel och
kulturarv – magisterprogram,

Games user experience –
magisterprogram,
Serious Games –
magisterprogram,
Spelutveckling – masterprogram

REGION JÖNKÖPING 9

Jönköping

Ädelfors folkhögskola
Indie Game Studio

GOTLAND 10

Visby

Uppsala universitet
Kandidatprogram i speldesign,
Kandidatprogram i
speldesign och grafik,
Kandidatprogram i speldesign
och programmering,
Kandidatprogram i speldesign
och projektledning,
Magisterprogram i speldesign,
Masterprogram i speldesign

BLEKINGE 11

Karlshamn

Blekinge tekniska högskola
Design av digitala och
immersiva upplevelser

Karlskrona

Blekinge tekniska högskola
Civilingenjör i spelteknik

SKÅNE 12

Vellinge

Östra Grevie Folkhögskola
Virtuell kompositör och
ljuddesigner

Malmö

Malmö Universitet
Spelutveckling

TGA Utbildning AB

Leveldesigner,
Spelmanimator,
Spelgrafiker,
Spelprogrammerare,
Technical artist

Entrepreneurship and National Collaborations

In a growing industry, the demand for regional support functions, commitment and collaboration with education and local business is created. In recent years, several regions, often thanks to local enthusiasts, have invested in game development and local entrepreneurship. Investments that produce results in the form of start-ups and job creation throughout the country.

Arctic Game is a fast-growing game cluster based in Västerbotten and Norrbotten. With a common platform for the development of new game studios, company establishment, education, meeting places and investments in Norrbotten and Västerbotten, the cluster has become a base for successful game creation in northern Sweden. A major educational investment in the region has led to more education programs being started, and there are now 18 post-secondary educations scattered in different professional categories at university, folk high school and HVE with a total of 800 students in the autumn of 2022, an increase of 30% from 2021. The region's first game incubator, Boden Game Camp, started in Boden. During the year, Arctic Game held a Game Jam, Femmejam, only for women and non-binary people and a networking event, Female Meetup, for women, trans and non-binaries in the games industry with the aim of building networks.

The cultural event Nordsken and the associated Arctic Game Week could once again be held in May 2022.

In Västernorrland, a completely new cluster has been built up – Game On Mid Sweden – based in Sundsvall and Kramfors, and is based on a project funded by the European Fund for Regional Development together with Region Västernorrland, as well as the municipalities of Sundsvall and Kramfors. During the year, the project has carried out several activities such as



Valiant -
KreatureKind

network meetings, workshops with established industry players, lectures in collaboration with NTI Gymnasiet and a Skill Up Program to educate people who are interested in entering the industry. In the autumn of 2021, Hålsjö Folk High School in Kramfors started a new education in game development.

Since its inauguration in August 2017, East Sweden Game has built up an ambitious community in Östergötland, and in 2021 the third round of the ESG Accelerator was held, a series of lectures with experts and guests with the goal to make participants go from hobby developers to game entrepreneurs. In the autumn of 2020, East Sweden Game started its own game

education together with Valla folk high school, Valla Game Education. During the year, a collaboration was also initiated with the podcast Spelskaparna and they have jointly released several interviews with people from the industry. In 2021, Linköping Game Week was held for the first time during 22-28 November. The week includes LiU Game Conference, Winter Game Jam, Atomic Café (arcade game weekend) and afterwork at Kappa Bar. In 2022, member Pugstorm released the game Core Keeper which sold 500,000 copies in two weeks.

Visby is home to one of Sweden's oldest game educations run by Uppsala University Campus Gotland. Alumni from the training include the founders of games companies Nexile, Neat Corp, Toadman Interactive, Enad Global 7, Redbeet Interactive and Pixel Ferrets. The incubator Science Park Gotland has also run game-related projects over the years. One example is Game Camps, which was an international collaborative project that gave game developers from Sweden, Finland, Estonia and Latvia an opportunity to learn about the game industry. The main purpose of the project was to give the participants knowledge about the games industry and arrange Game Jams that would lead to new companies and business opportunities. Game Camps engaged nearly 300 participants and 10 new cross-border companies were formed, an example of commercial success being the game *Death & Taxes* by Placeholder Gameworks.

An additional game release expected from the project is *Birds With Feelings* by Birdpals.

Midway between Oslo and Stockholm, lies The Great Journey, Karlstad's hub for game development. Supported by Embracer Group, the hub currently has several teams and studios under development, some in the accelerator and two studios in Fasttrack, with the possibility to finance nine months of game development with the help of CSN. The Great Journey also offers a range of events and activities, such as Friday Stories, a presentation and Q&A session with industry profiles sharing their experiences. Alongside Futuregames, the hub offers training in games; more are expected in the autumn of 2022. The Great Journey supports several initiatives around inclusion and diversity where, for example, women in the computer game industry are highlighted but also around mental health and they have hosted game jams especially to invite the LGBTQ+ community to the industry.

Falun has the traditional game education Play-GroundSquad, which for over 20 years has graduated students in game graphics, game programming and game design. During the year, a record number of students applied for the education so the number of places was expanded.

Here, the games industry works closely with the more traditional Swedish industries such as paper, steel and the hospitality industry with how digitization, gamification and the knowledge from the game industry



Hiber - HiberWorld

can be used to develop and become more attractive to, for example, future labour. During the year, a new company with a focus on the traditional sports world also started.

Stockholm got its first game incubator in 2017 when Sting opened. Sting Game has three companies in the incubator program. As a complement to Sting Game, there is a co-working space at Embassy House and regular meetups. Partners of Sting Game are Goodbye Kansas, Resolution Games and Paradox Interactive.

Since 2004, The Game Incubator has successfully led incubators for game companies in Skövde, and since 2016 is also located in Gothenburg. Over the years, the game incubator has produced about a hundred companies, and is a major contributing factor in Västra Götaland being a strong breeding ground for game companies. In the business park you will find companies such as PocApp, Coffee Stain Studios, Stunlock Studios, Flamebait, Pieces Interactive, Redbeet Interactive and Ludosity with titles such as Goat Simulator, Satisfactory, Battlerite, Castle Cats, Passpartout, Raft, Slap City and Valheim. Skövde is the base for the Sweden Game Arena project, which has made several export investments at game fairs and international conferences, and in the city, Sweden Game Conference is also arranged annually in October with speakers from all over the world.

In 2022, Skövde Science Park launched the Interlink initiative together with Arctic Game, The Great Journey and Game Habitat to support newly started game companies in their journey towards an international market. The project was co-financed by the Swedish Agency for Economic and Regional Growth.

In southern Sweden, Gameport has long run successful incubator operations in Karlshamn, part of Blekinge Business Incubator. In Malmö, the interest association Game Habitat works in collaboration with Region Skåne and the City of Malmö to grow the local game community.

The success of the work is noticeable in both the number of employees and the number of new companies that can be seen in the region. The office hotel Game Habitat opened in 2018, DevHub, has survived the pandemic and was up to full capacity in 2020.

Gothenburg company Thunderful opened a Malmö studio in 2020 and industry veterans started new companies such as She Was Such a Good Horse and Section 9 Interactive in 2021. In 2020, Game Habitat also started GASS, Game Accelerate South Sweden, a game accelerator with support from the European Regional Development Fund, and GEM, a network for women in the games industry, in 2021.



THE INDUSTRY VOICE **EMIL SANDBERG**

Business Developer, **Boden Game Camp**

"By 2026, Boden as a city will have over 1,000 people active in the game industry."



Hi Emil Sandberg, Business Developer at Boden Game Camp! You have been up and running since 2017, tell us about how you help students and game studios with your incubator.

The game industry is completely unique in its corporate journey compared to other industries, therefore we needed a pure game incubator in Norrbotten.

Boden Game Incubator helps driven game developers to step over the thresholds that can be difficult in the beginning: acquiring share capital, creating start-ups, acquiring equipment, grants for marketing and senior mentors as guides. But most importantly we collect no immediate royalties. The incubator is there to create local indie successes where we would rather see their journey completed than take early-stage royalties, something that usually hampers game studios.

After the incubation period, all studios should be prepared to take the next step by acquiring an investor or publisher.

How many courses are there in Boden and how many students are welcomed each year?

Today, there are seven different game training programs with 300 students from all over the world training in the same house. The upper secondary school Future Games has invested in a pure three-year game education, with Future Games and our own programs,

young students can pursue a five-year educational ladder and develop good skills.

Most of the courses have joint game projects and this is part of the core of what we want to build at Boden Game Camp. Developers, companies and driven people meet each other and good things happen.

Why should you start a game studio in Boden?

If you are a studio that wants to expand and wants an effective On-Boarding, a process that is usually quite extensive and time consuming, then we at Boden Game Camp can help with the whole process. A campus that provides quality, students, developers, HR, recruitment, finance and business development are literally in the room or house next door.

We offer the solutions that game studios demand, all so that the studio itself can continue to expand.

What is your goal with Boden Game Camp?

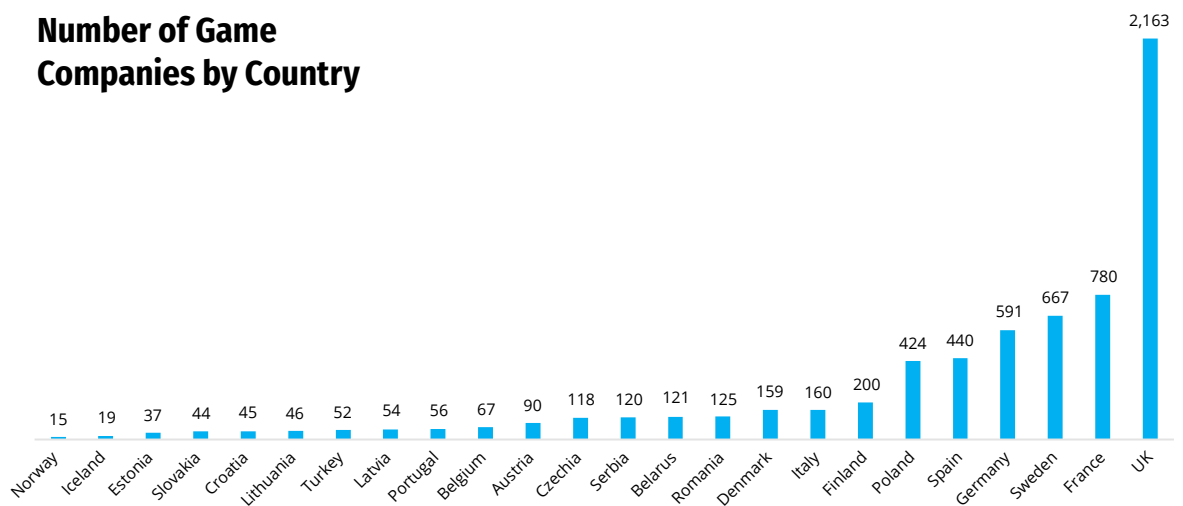
By 2026, Boden as a city will have over 1,000 people active in the game industry. We want to build a self-sustaining industry that makes it possible for companies to establish themselves where we cover its needs. Students and workers move here, not only because of the industry, but also for the lifestyle that Norrbotten offers.

We also aim to become the Nordic QA hub, as we have training and QA Studios located at Boden Game Camp.

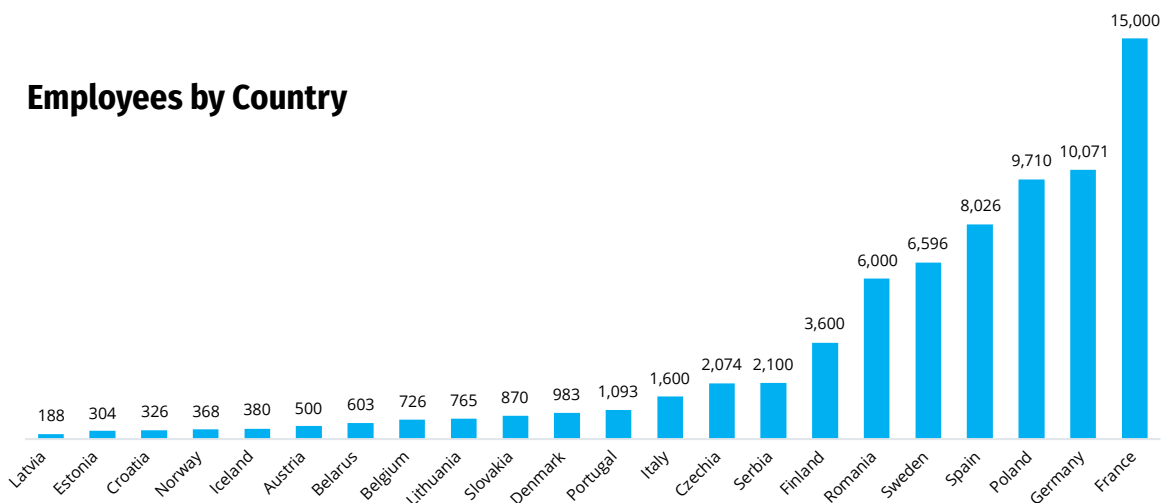
Games Industry in Europe

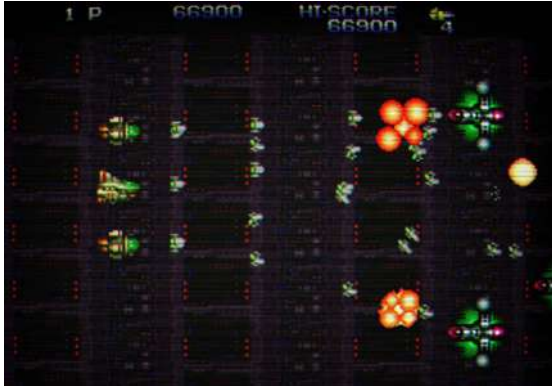
EGDF (European Game Developers Federation) and ISFE (Interactive Software Federation of Europe) released an industry report on game development in Europe in 2022. It is a compilation of the different countries' industry reports from 2020, where some reports are based on surveys and some on data collected from official registers.

Number of Game Companies by Country



Employees by Country



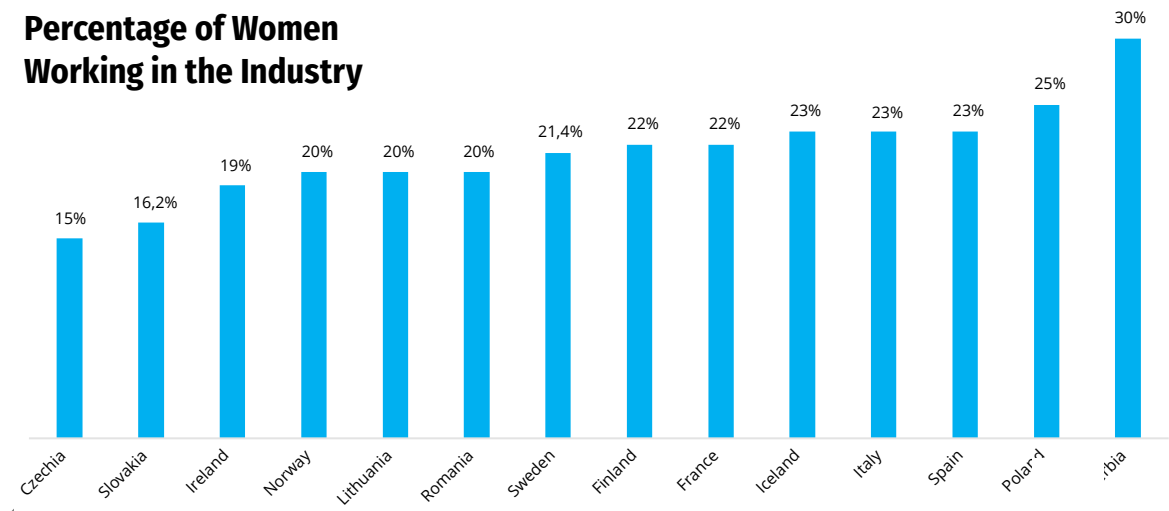


Bitwave Games - Zero Wing

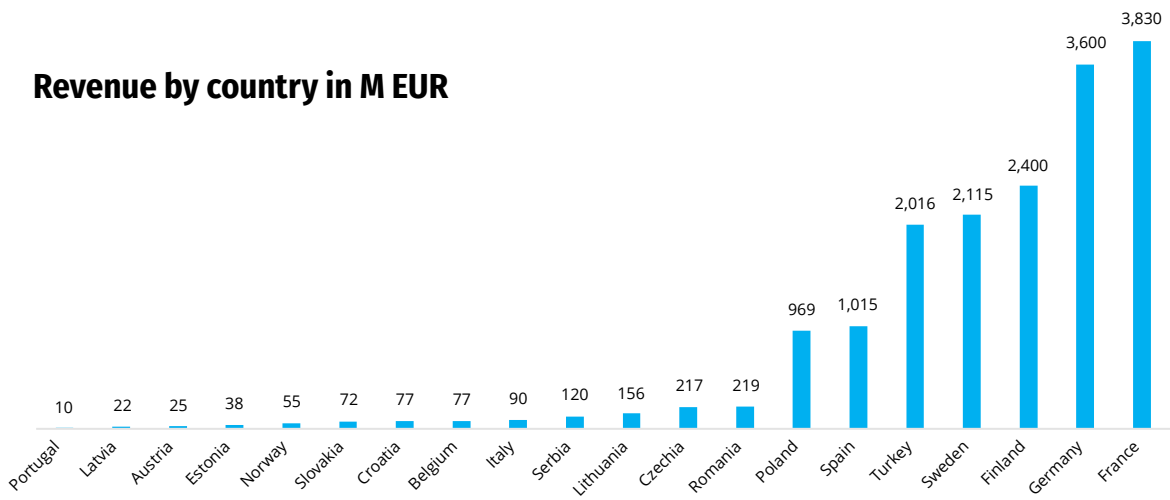


Embark Studios - The Finals

Percentage of Women Working in the Industry



Revenue by country in M EUR



The Clash of the Titans Enables Trend Shift

With the introduction of the new generation of consoles into the market, Microsoft gained a new perspective. The number of consoles sold no longer became the primary measurement of success, but rather the number of subscribers to their game service *Game Pass*.

For countless years, platform owners have been the big stable growth winners in the games industry, while game publishers and developers have had a bumpier road to success. I will focus here on the PC/console market and how subscription services from the big platform giants can possibly make life “better for everyone” or well, at least for most...

In the film industry, the transformation of the last decade is evident. On the big screen, superheroes and other well-known brands dominate at the box office. The dark horses often end up on a streaming platform. In the game industry, we can see similar patterns, but also significant differences. For the game consumer, the range of offers has never been greater; competition creates diversity. Despite the fact that 65% of all revenue in the industry ends up in the hands of the ten largest global players, the diversity of games on offer is greater than ever.

Top-down Industry Still Creates Diversity

Microsoft and challenger Epic Games have proven to be the two players who most frequently spend big for exclusivity rights for their platforms. There are countless examples where half or all of the development budget has been funded from these two giants. The better the content the game developer is expected to contribute, the more generous the potential profit sharing has

been when the costs are paid. In many ways, I dare say that this has strengthened the indie scene, which means that many game projects that previously would not happen, are now receiving the capital needed to be realised and thus create further innovation in the games industry.

The downside of this trend can of course be that the concentration of wealth at the top increases every year, which means that the giants can steer the innovation in the direction they themselves prefer to a large extent. However, the fully open and digital competitive landscape gives developers opportunities to find publishers and funding elsewhere. It is also possible to finance and publish the game yourself, but this involves taking risks not everyone can afford.

Natural Evolution Awaits

But does the development of subscription services really benefit all game developers? I’m leaning towards a yes on that question, at least for smaller game developers. As a developer, you can manage the financial risk with this option, and hopefully at the same time control the creative freedom sufficiently for everyone to be satisfied enough.

For medium to large game developers/publishers, my answer is more uncertain. The increased competition within the industry leads to higher budgets in more popular genres of games. At the same time, players’



GUEST ARTICLE BY **TOMAS OTTERBECK**

Head of Equity Research, **Redeye**

willingness to pay may decrease for games that do not "have to be purchased", as there are many options in subscription services. For us consumers, this means that quality increases while the prices of games stay at reasonable levels. But for those players in the industry who do not have time for development, the future will be more difficult.

Safe Harbour During Recession

Historically, the games industry has been relatively unaffected by economic cycles. Many games provide good value for money. However, the mobile game industry, which makes up just over half of the games market, is still a relatively new industry that has not experienced a major economic downturn, which in my opinion makes it more uncertain.

When Sony and Microsoft released their new consoles at the end of 2020, they raised the prices of games by about 20%. Recently, Sony even raised the price of the PS5 by 10 percent. Just before the summer, Sony started to seriously compete with Microsoft Game Pass, introducing two new subscription tiers to their Playstation Plus service, where the highest tier is twice as expensive as the original one. If Microsoft succeeds in the purchase of Activision Blizzard some observers say a price increase for Game Pass is to be expected. However, this is not nearly as certain in my opinion, as they currently probably prioritise subscription growth.

Since inflation concerns started at the beginning of the year, there has been loud talk about consumers not being able to afford more streaming services, as shown, for example, in Netflix's declining numbers. This, in turn, has led to the subscription business model being questioned as a viable alternative in times of recession by the investor community. A big difference between Netflix and game subscription services is that the consumer is platform dependent, making it impossible (unless they buy new hardware) for the consumer to jump between different services on a monthly basis. At the same time, all subscriptions offered by console suppliers offer online gaming, which has continued to increase in popularity since the pandemic. For these two reasons and because of the higher quality content being offered by the subscription services, I do not see any major downward adjustments in the price of the subscriptions.

As the content war escalates between the giants, the qualitative value will increase for the consumer of the subscription services. Both Microsoft and Epic have also lowered distribution fees in recent years, improving the profitability potential of game publishers/developers. The increased competition at the top among platform owners can thus mean a trend shift where the best game developers are rewarded even more. May the best content win!



Sustainability

A majority of the population in Europe plays video games, with this fact comes a responsibility for how the games and game development affect the environment and climate.

The shift to digital distribution leaves a lower carbon footprint than physical distribution, but server operation and hardware are still a factor to be reckoned with. Online games over servers where the game itself is powered by local software is more energy efficient than, for example, video streaming, but the cloud gaming of the future requires greater access to renewable energy to become sustainable in the long term. The Finnish trade association Neogames have made a model for game developer studios' calculating CO₂ emissions.

In recent years, several initiatives have emerged around Europe whose purpose is to raise sustainability issues and help companies work with sustainability.



PlayCreateGreen is an initiative founded in October 2020 where several large Nordic games companies together with the Swedish games industry are involved in supporting the work of creating and spreading knowledge about the environment and climate change and what companies can do to be involved in driving activities that lead to a more positive climate impact.



In 2021, Green Games Guide was founded by Ukie, Games London and the UN's Playing for the Planet Alliance with the aim of helping companies improve their approach to sustainability.



The German trade association GAME has developed an environmental guide aimed at helping those in the computer game industry who are looking for practical tips and best practices for game companies to become more climate friendly. Three out of four German game companies are involved in the initiative.

Threats and Challenges

The Swedish game development companies have continued to grow during the year and increased both in terms of net turnover and in the number of employees and as an industry have proven to be resilient to several external threats such as the pandemic and previous economic fluctuations. But there are several challenges that the industry needs to address in order for growth to continue.

Covid -19

The pandemic has affected Sweden and the world in many ways. Several industries have been hit hard, people have fallen ill, and many have lost their jobs.

The computer games industry, together with other home entertainment industries, has been spared from the biggest financial consequences and for many companies sales have increased. As the world shut down, more people worked and studied from home, and restrictions made many other activities impossible, more people found their way to the world of games. Games have also been a way to socialise and hold on to a social life where it has not been possible to meet physically.

The effects of the global pandemic continued in 2021, although more and more countries began to open up. For the companies, the pandemic has led to new ways of working and many report that in 2021 they continued to work remotely. A major challenge was to find the "new normal" when the opportunity to go back to offices came and many have chosen hybrid models where employees work both remotely and in offices.

Some events were cancelled or postponed at the beginning of 2021, but during the second half of 2021, several took place, many in hybrid format. In 2022, however, several major events could take place. GDC was held on site in San Francisco in March 2022, in Sweden, Arctic Game Week was held in Skellefteå and Nordic Game Conference in Malmö in May.

Globally, you can see the effects of the pandemic, among other things, in that many titles that were to be released in 2021 have been postponed to 2022. There are also discussions about strategies around releasing

games in a recession or whether to postpone further so as not to suffer from falling sales figures. This mainly applies to major titles from established studios.

Ukraine

Several Swedish companies have hundreds of employees in Ukraine and when Russia again attacked the country in early 2022, several initiatives were started in the industry to help Ukrainian game developers. Several large companies with staff in the country donated money to aid organisations, redeployed employees to safer regions, and offered workplaces in other countries to the extent possible.

A global initiative where over 700 game developers joined forces and sold their games in a bundle on Itch.io which included over 1,000 games. In March 2022, it was reported that 450,000 copies had been sold and over USD 6 million had been collected.

The European trade association EGDF, the European Game Developer Federation, of which the Swedish Games Industry is a member, has been active in supporting the country's game developers both practically and through a clear message that the invasion should be condemned.

Inflation

In 2022, inflation has risen globally and this has also affected prices for both new consoles and major games.

Sony announced in the second half of 2022 that it will increase the price of the Playstation 5 in all markets except the United States due to the economic climate

and inflation. However, both Microsoft and Nintendo soon after stated that there will be no price changes on their consoles.

Ubisoft announced in September 2022 that it is raising the price of its latest AAA games. The reason is said to be both inflation, increased production costs and that previous prices are no longer profitable.

Both increased electricity prices, hardware prices and production costs may affect prices for games in the near future. Most likely, the market has not yet seen the effect of the increased production costs as it may be reflected in the games that are in development right now and are set to be released within the next few years.

Recruitment

In 2021, 1,301 people were newly employed in Sweden, but there is still a great lack of skills, and it is clear that the supply of domestic labour is not enough to satisfy demand.. Significantly fewer game developers graduate each year than there is demand for, even though more courses have been set up around the country. The industry recruits to a large extent from other countries, and it is difficult for newcomers to find housing and get work permits. It is estimated that at least one third of employees in the domestic industry has moved to Sweden for work. In many of the larger companies, almost half of the employees are foreigners. The processes and lead times for work permits became even more difficult in 2022 where many employees risk work bans when reapplying for permits, and the Migration Agency only grants six month work permits for probationary periods.

The work within the industry on diversity and equal opportunities has meant, among other things, that more women have been employed and the recruitment base has increased. But this work, as well as the skill development of existing personnel, also needs to be further developed so that the industry can continue to grow.

Work Environment

A clear challenge is the work environment. The industry as a whole works to constantly improve working conditions, but does not always fully succeed. The games industry is not immune to occasional poor leadership,



Ember Trail -
Distant Bloom

bad corporate culture and workplace problems, which are things we are constantly trying to improve. During the year, there were reports of misconduct in Swedish workplaces, something that interested parties have taken seriously and are continuing to work on. At the same time, there are challenges with many young new employees, cultural clashes with employees from different backgrounds in an international environment, and creative projects where many strong wills need to coexist. The games industry is also largely a consumer-oriented industry, where contact with players can have a major impact on product development, which comes with both benefits and challenges.

Financing

Access to capital has improved, but if you look at the investments that have taken place in the Swedish market, just as in the previous year, a clear majority comes from companies that are already well-established in the industry. The inflow of new capital can be improved, and not least in the early stages it is still remarkably difficult to find financing. It particularly affects companies that do not have an existing strong network of contacts, and risks becoming an obstacle to innovation and diversity in the industry in the long term. In competing countries such as the US, Canada, the UK and Finland, there are long-established financing structures, tax breaks and other forms of support to give start-ups an edge in international competition. For Swedish companies, the lack of a Swedish equivalent in practice means a barrier to trade with the outside world. Within the industry, there is also a need for increased business competence, not least in small and new companies.

Methodology

This report is a compilation of annual reports from the Swedish Companies Registration Office's Business Register and data from Statistics Sweden's business register, from limited liability companies that have game development, publishing or specialized subcontracting functions as a significant part of their business.

This report is a compilation of annual reports from the Swedish Companies Registration Office's Business Register and data from Statistics Sweden's business register, from limited liability companies that have game development, publishing or specialised subcontracting functions as a significant part of their business.

Examples of subcontractors include Elias Software (adaptive audio engine), LocalizeDirect (localization/translation of games) and a large part of Goodbye Kansas' VFX business. Companies mainly focused on money games such as poker, gambling or casino games are not included in the selection.

In previous reports, turnover from the consolidated financial statements have been the basis for total turnover. Following evaluation of similar reports within Europe, we have as of this year chosen to report national group turnover based on parent companies and Swedish subsidiaries. Group turnover, including foreign subsidiaries, is reported separately in global sales. This is done to get a fairer picture of how Swedish companies are doing and to get a comparable report both with other industries and the same industry in other countries.

Comparative figures from previous years have been revised up to and including 2016 to give a fair picture of growth.

The report is based on annual reports which are published in SEK and the exchange rate used to calculate the EUR rate is 10.1449 SEK per 1 EUR which was the average exchange rate for 2021 published by the Swedish central bank.

As of last year's report, data has been collected from Statistics Sweden on all limited liability companies registered under NACE 58.210 – Publishing of computer games. On June 15, 2022, there were 1072 active companies. Among these companies, 372 have since been excluded as they have been found to have main operations in other industries, mostly casino games or other software development, during our manual review.

In addition to companies registered under NACE 58.210, we have manually identified companies that belong to the video game industry, but which are registered under other NACE codes, mainly 62.010 – Computer programming. The largest company in this category is the game studio EA DICE.

Retailers or pure distributors, such as the Swedish office of Bandai Namco, are not included in the report despite their importance to the industry. The report also does not include companies with e-sports as a player or audience activity as the main focus, for example Dreamhack or individual e-sports professionals.

The main part of the report deals with limited liability companies. A small review of other forms of enterprises can be found under the chapter on the number of companies.

Several companies have broken financial years. For these, the latest available annual report has been used and for the larger companies, a review has been made for the number of employees in December 2021 to get as up-to-date a picture as possible of the total industry.

One consequence of this is that Embracer Group is one year ahead of, for example, EA DICE and Ubisoft



Sweden, which should be noted in the top list of largest companies.

In isolated cases, such as in the case of newly formed or reconstructed companies, the annual report has covered a period longer than 12 months. In these cases, data for the full year has been used as much as possible. In this year's report, this only concerns a handful of smaller companies.

Data from Statistics Sweden's business register was collected on 15 June 2022 and includes key data from 2021.

The method as a whole has several shortcomings. There may be more companies that should be in the report but aren't included because we don't know about them. The manual selection opens up for mistakes, and there is a grey area with companies that are difficult to assess. The strength of the method is that the documentation is audited and publicly reviewed through the authority's publication. The manual selection allows us to ensure that all major companies are included and the industry receives a more representative data base regardless of NACE code.

For companies that in Statistics Sweden's business register have no registered turnover or employees, the annual report has not been obtained from the Swedish Companies Registration Office. In 2021, there were 96 such companies. Data on the number of employees

and gender distribution from the business register have been supplemented from the annual reports when this has been available.

In some cases, the annual report has been submitted late in the year, which is often a recurring pattern. In these cases, the annual report for the last year is reported.

In total, there are 75 companies whose annual report has not yet been registered at the time of publication for this report, which means that the figures presented for these companies are from 2020. The total turnover of these companies is approximately 0.8% of the total turnover, which means that the impact on the total report is marginal. The largest company to which this applies is Localize Direct AB.

Two reports have been used as a basis for comparison data in Europe. One is ISFE & EGDF Key Facts 2022, which is mainly based on a survey commissioned by ISFE from the research institute ISPOS MORI. The second is the 2020 European Video Game Industry Insights Report from EGDF which is based on national industry reports; for Sweden the data source is last year's game developer index. Both of these reports were published in August 2022 and are available to download and read in full on isfe.eu and egdf.eu respectively.

More details about the selection and method of the key figures can be found in each chapter.

Glossary



Adventure
Box

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

AI: Artificial Intelligence - in its simplest form 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, with elements augmented (or complemented) 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 a simpler kind. They often have minimal storylines, shorter learning curves and are designed to be played in short segments.

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 of a 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.

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 the product or service is offered 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 in its basic version, but where the income is instead generated through 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 levels, equipment, experience points or subscription services.

Indie: from “independent”. A prefix

characterising games from independent developers, usually with a narrower scope than big budget productions such as AAA-titles, 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 transactions: 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 physical 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 cell phones 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: Att smyglansera ett Soft launch: To launch a game in certain markets to evaluate engagement.

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

Studio: Game development company or a division within a game development company, e.g. at another location

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

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

XR/Extended Reality: Umbrella term for technologies that enhances/changes the users' perception of their surroundings, these include AR and VR.



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