

# Game Development, Education & Incubation

A report from the Scandinavian Game Developers project.



# Introduction

This brief inventory and analysis of the state of Swedish, Danish and Norwegian game development aim to highlight past and current trends within the regions' industries and supporting structures. In a short period of time, the situation for game developers has been severely altered as a result of the closure of big players and the rapid evolution of the marketplace. The industry in each country has been able to adapt to these changes well, and we've seen a dramatic industry expansion in the past couple of years as the main turbulence has subsided and new companies are given space and opportunity to establish themselves.

In Sweden, Mojang has played an important role when it comes to characterizing the industry as the company's policies are quite indicative of where Swedish game development is heading and what it has been shifting towards in past years. In 2010 and 2011, approximately 49 new companies were founded in Sweden, which is reminiscent of the rapid industry expansion industry in 2006-07 before it slowed down due to the economic turmoil around 2008. A huge influx of smaller indie developers are cropping up all over Sweden and all but a few focuses on creating entertainment titles for the new markets and distribution channels.

The Danish industry has enjoyed an equally impressive expansion in recent years. It's interesting to note, however, that the Danish developers are involved in a slightly different culture than the Swedish ones, as Serious Games (e-Learning, games for change, advergames, etc.) and work-for-hire activities are much more common occurrences here. Where both the Swedish and Norwegian industries mostly consist of entertainment game developers, the Danish industry is split between entertainment and the aforementioned practices.

Norway has long been quite low key when it comes to game development, with Funcom being the only major player. However, a couple of companies has made quite a splash recently, such as Bertheussen IT's sensational success Wordfeud and the social gaming company Playfish being acquired by EA for 400 million USD. The Norwegian industry is growing at a slower pace than its Danish and Swedish counterparts, but all in all the countries are all seeing plenty of new additions in their industries; both from new talent and from experienced developers who decide to go indie.



# **Editor's Notes**

The intention of this report is, as previously stated, to present an overview of the Norwegian, Swedish and Danish game development industries and communities. These industries, while undoubtedly well established and increasingly important for their countries culture and growth, has so far not been well documented and mapped out in detail; which is a bit sad from an academic point of view, but it can also be harmful as general factoids regarding the industry situation may come to proliferate in the wake of lacking evidence. Overly dramatic statements aside, this report will most likely serve as a validation of most in-the-know developers' and industry enthusiasts' presumptions. But, this report may be a step towards a deeper rooted understanding of the facts that these presumptions are based on.

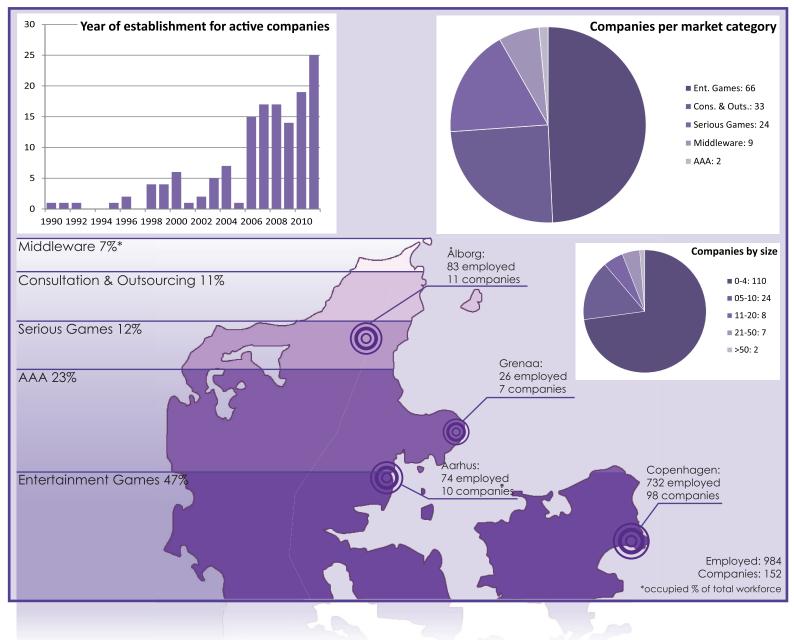
# Methodology

It's important to note that collecting data regarding all the companies in the region is not an exact science, and in many cases finding information regarding a game company's number of employees, the focus of their development, year of establishment and their location comes down to old fashioned internet sleuth work. Thus, many of the numbers presented are not precise figures; we've done our best to limit methodological issues and kept the process of inventory in the different countries identical, but some margin of error is unavoidable in these types of endeavors. This is not to be too apologetic about the presented information, but it should be made clear that the numbers should be considered good approximations of the real-world situation and not as absolute truths.

As for the sleuthing methodology, sites, organizations and networks that collect and categorize companies were used as the starting point for the investigation of each country as these provided a broad selection of companies within the sector of general software- and game development. Through some quick research in each individual company, this large sample was narrowed down to only contain companies where game development or work within the game development sector was a clear part of their agenda. The data regarding these companies that you see in this report has been gathered from the companies' own webpages, recently published interviews with company CEOs, their social network presence and of course bookkeeping available through registration offices.

# Thanks!

The data leading up to this report was gathered during April and May in 2012. The data was collected and analyzed in a joined effort of the members in the Scandinavian Game Developers project, and special thanks go out to Mathias Poulsen, Emil Kjær and Joakim Pedersen for their input and information regarding the Danish and Norwegian industries of which I wasn't very familiar prior to writing this report. Furthermore, the efforts of Kristine Jørgensen and Jørgen Tharaldsen<sup>1</sup>, as well as the people at Computerspilzonen<sup>2</sup> and Dataspelsbranschen<sup>3</sup> have been crucial in laying the foundation for this study.

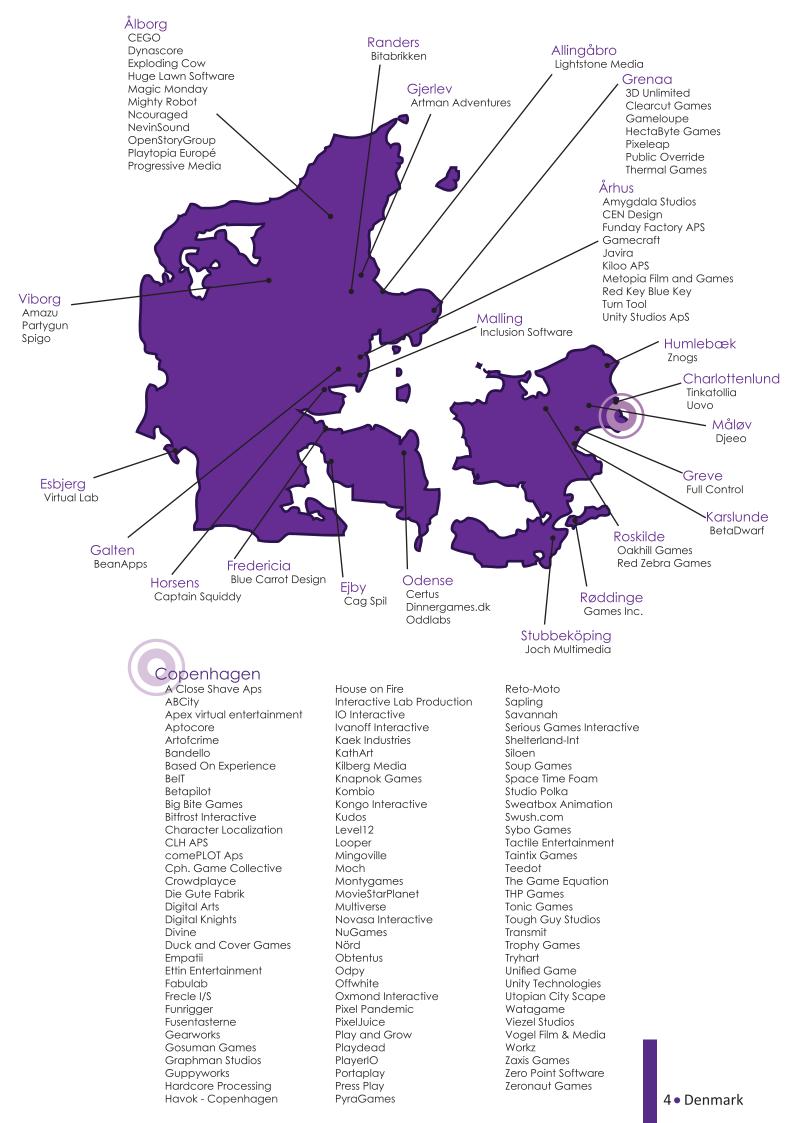


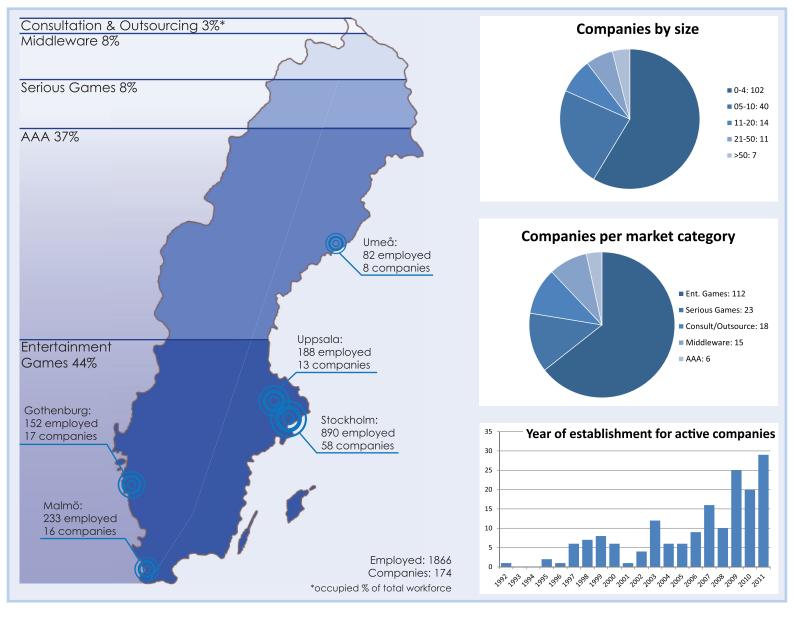
#### Denmark

The Danish game industry has historically been characterized by a few large companies and game franchises, but this image is rapidly shifting. The overwhelming majority of the game companies are small, agile teams of less than ten people, most of which develop games for handheld devices, primarily iOS, i.e. iPhone and iPad.

The Danish game industry is a relatively small one, yet the growth in the number of established companies during the most recent years have been considerable, and the number of people employed in the industry is rising as well. The industry presently consists of a few large companies (e.g., IO Interactive), and a much larger number of quite small companies. In addition to most companies being rather small, only a relatively small number of companies are older than five years. We are thus yet to see the permanency and lasting contributions of the industry as a whole. The creative industries in Denmark have traditionally been heavily concentrated in and around the capital, Copenhagen, and this is also, to a large degree, true for the game industry. The concentration of game companies in the capital is much higher than anywhere else, as 2/3 of the existing companies are based in the Greater Copenhagen area. This situation is not bound to change radically any time soon, but we do see several initiatives across the country aiming to create better opportunities for developers not located in or around Copenhagen (e.g., The Ranch in Grenaa and Digital Hotspot in Aalborg).

As for distribution and monetization, Danish developers are undergoing the same processes as their Swedish and Norwegian counterparts, and they are currently exploring numerous new business models to adapt to new markets.





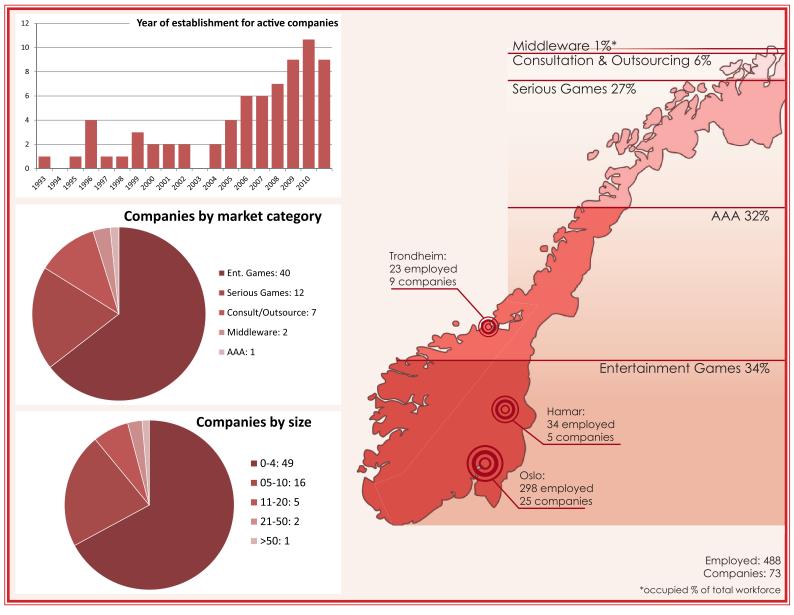
#### Sweden

The face of the Swedish games industry has changed significantly in the aftermath of big company closures, the subsequent relocation of experienced developers and an influx of new talent in the industry. The growth of the big studios has been slowing down a fair bit in comparison to pre-2008 numbers, and we have seen a dramatic increase in new indie companies. In 2010 and 2011, 49 new companies were added to the Swedish roster, which is on par with the game development boom in 2006-2007<sup>4</sup>.

Sweden still asserts itself as a nation primarily built on the development of games for entertainment. High quality entertainment titles are still the main focus for the vast majority of Swedish developers as approximately 80% of the workforce is working in indie- or AAA-studios. As for means of distribution and monetization the mobile market and web-based games are, not surprisingly, the most common in most of the smaller studios, and very few of the newer startups direct their efforts towards distributing for the 'traditional' platforms (i.e., PC/Consoles). Developers are divided between middleware, serious games development and a few companies have consultation and outsourcing services as the main part of their business. Important to note is that the percentage of freelancing developers is derived from the ones who prioritize these services; many of the smaller companies offer these services as a means for supplemental income to fund their development but aren't included in the percentage as it's a secondary activity.

As for geographical distribution, active game development is found all over Sweden. The Stockholm region, however, still has the largest concentration of developers by far, housing 47% of the country's workforce and a third of its companies.





# Norway

Similarly to the other countries, Norwegian game developers are concentrated around the capital, and Oslo is home to over a third of the registered companies and half of the industry's employees. There are, however, plenty of smaller developers scattered around adjoining counties. Trondheim, for example, is home of the Norwegian university of science and technology (NTNU), and has an active and growing game developing community. All in all, the companies are far more spread out throughout the country in comparison to the Swedish industry which has its active developer clusters.

According to a newly released report on the current status of the Norwegian games industry, commissioned by the Norwegian Film and TV Producers' Association<sup>1</sup>, approximately half of the Norwegian companies are developing entertainment games companies, while the other half are doing other activities in addition to game production. About 1/3 of the companies are self-sufficient, in the sense that they do not do commissioned work. For the rest, making commercials,

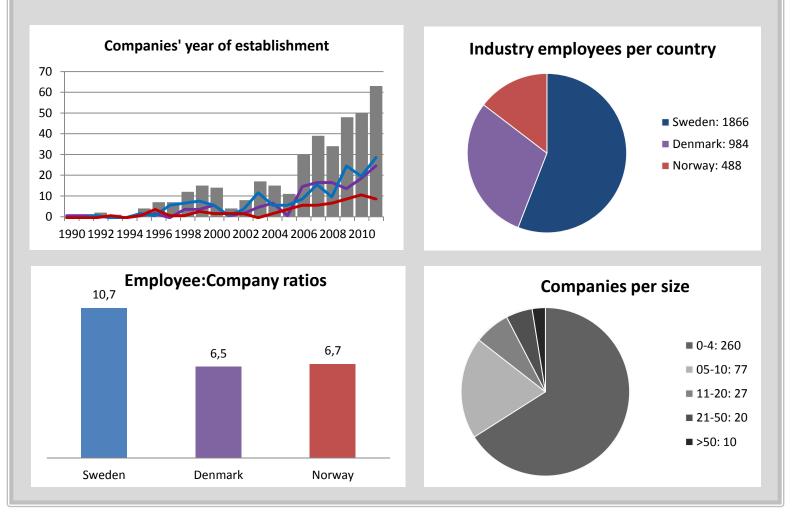
apps, installations and other interactive services on contract is an essential part of their income.

Funcom ('Anarchy Online', 'Age of Conan', 'The Longest Journey', and the soon to be released 'The Secret World') is without doubt the country's major player, and is representing almost half of the total revenue from games in Norway. There are approximately 310 people working for Funcom in total, and about half of them are working from their offices in Oslo (only the Norwegian workers are included in the presented numbers).

Along with Bertheussen IT and Playfish, Funcom is also the most successful when it comes down to revenue. While Bertheussen IT still is owned completely by Håkon Bertheussen himself, and only has 2 fulltime and 2 parttime employees, Funcom and Playfish stands out from the rest when it comes to number of employees and ownership. The majority of the country's registered companies are small and independent. 78% of the companies says that no Norwegian or foreign company have any ownership in their company.



	Sweden	Denmark	Norway	Total
Companies:	174	152	73	399
Employed:	1866	984	488	3338



#### Summary

While the game industries in the three countries are of similar age, the Swedish industry has certainly grown at a more rapid rate. This may in part be a result of early successes (e.g., Digital Illusions) paving the way for game developers and legitimizing the industry in the eyes of the public in the 90's. This effect is also somewhat reflected in the numbers regarding how the different countries' industries have grown; The Danish, for instance, having a higher increase in companies relative to the growth of the workforce. The Swedish industry's tradition of being led and inspired mainly by AAA studios wasn't disrupted until recent years (~2008), giving way for today's thriving indie culture and a decreasing employee-per-company ratio (from 12 in 2010<sup>4</sup> to 10,7 in early 2012). Of course, as this study doesn't investigate the turnover of the companies, we can't

speak for the financial growth of the new developers at this juncture. What we can say for certain, however, is that the industry in the region continues the rapid expansion of previous years and that the crafts that characterize Denmark, Norway and Sweden influence the way it expands in each of these countries in a major way.

# Supporting the Industry

As the industry grows, organizations that aim to support the industry grow along with it. Game development programs in universities, schools for vocational training and incubators for game companies have in recent years become more and more prevalent in Scandinavia. These supporting functions are examined and discussed in the pages that follow.

### Norway

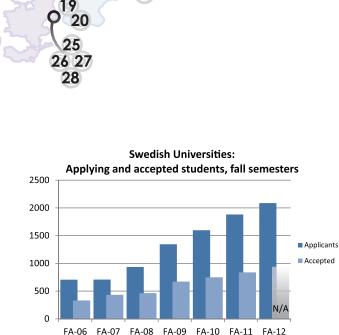
- 1. Nord-Trøndelag University College
- 2. Norwegian University of Science and Technology
- 3. University of Bergen
- 4. Hedmark University College
- 5. Gjøvik University College
- 6. The Norwegian School of IT
- 7. Noroff University College Sweden
- 8. Luleå University of Technology
- 9. PlaygroundSquad
- 10. Stockholm University
- 11. Södertörn University
- 12. FutureGames Academy
- 13. Nackademin
- 14. Mälardalen University College
- 15. Örebro University
- 16. University of Skövde
- 17. Gotland University
- 18. Blekinge Institute of Technology
- 19. Malmö University College
- 20. The Game Assembly

# Denmark

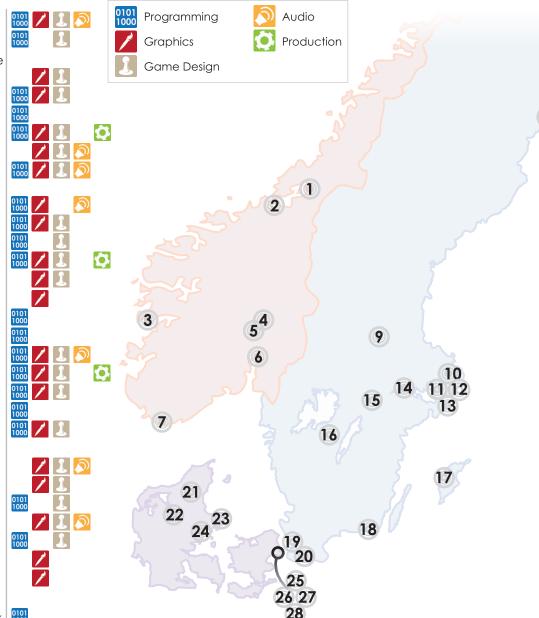
- 21. Aalborg University
- 22. The Animation Workshop
- 23. Viden Djurs
- 24. Aarhus University
- 25. University of Copenhagen
- 26. TRUEMAX Academy
- 27. The National Film School of Denmark
- 28. Technical University of Denmark

# Education

Parallel to the game industry's expansion, the amount of available third tier educations has increased rapidly in the past decade. While the above map only shows the universities and vocational training schools that have specialized game development programs, most schools in each country has started skewing some of their courses towards game development. Together, the universities and schools displayed in the map provide a total of approximately 60 game development programs, which is a notable amount seeing as the first programs started cropping up in the early 2000's; in a decade's time, tertiary education in game development has gone from non-existent to ubiquitous.



The number of applicants for the listed Swedish universities has increased in the past years, and continues to do so this year. The rate of the increase is, however, slighter than previous years. While information regarding how many applicants get accepted into the universities aren't final for the fall semester of 2012 yet, estimations based on previous years' numbers land at 940 new students. Important to note is that vocational schools aren't included in any of the listed numbers (Swedish vocational schools accept ~140 students per year). It's difficult to get as precise statistics over the universities in the other countries as their data isn't as easily available in the same granularity as Swedish educations. That being said, our inventory of



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the listed schools has shown in approximately 500 students in Norway and 655 in Denmark being involved in game-related studies in 2011, bringing the total amount of students in the region last year to 2095, once again excluding the vocational schools. The Norwegian and Danish statistics may suffer from a fair amount of bloating from studies that are quite peripheral to game development, which is a result of the data for game-specific programs not always being available separately from more general studies in visual arts or computer sciences.

The advance of game education is of course a positive development as the industry will be able to receive proper support in terms of capable personnel, but the rates at which the educations have grown are reason for some concern. Educations are frequently critiqued by industry professionals and students for lack of quality and relevance, and many institutions struggle to find a proper focal point for their programs and recruit teachers that are well versed in the field. However, due to the continuous process of natural selection and increasing efforts to highlight and combat the causes of these issues, sub-par educational forms are disappearing or evolving. Students are becoming savvier in their expectations and judgments of educators, and industry professionals are becoming more vocal in what skillsets they expect from new employees. As the craft is becoming better understood by enthusiastic students, professionals as well as educators, many of the growing pains that many game educations suffer from may be lessened.

### **History**

Sweden is home to the oldest game educations between the three countries, reaching back to 2001 where the first program started up at Gotland University. Sweden's strong tradition in software engineering is apparent in what types of educations are the most common (and also more valued by employers) as programming is taught in all but two of the 13 schools. In comparison, the Danish game educations are less abundant and more focused on the visual arts-side of game development and many of the schools with a tradition in animation and film studies have developed programs directed towards animation, game graphics and concept art. While being fairly limited in numbers and size, the Danish game educations collaborate in the joined project DADIU (the National Academy of Digital Interactive Entertainment). Students from the collaborating educations can apply to the DADIU program in order to undergo a full semester long game development project coupled with a game focused curriculum alongside other students,. The history and focal point of Norwegian educations lie somewhere in between computer sciences and visual arts; IT colleges such as NTNU provide curriculums deeply rooted in the former, whereas schools like the University of Bergen and Noroff University accommodate for the latter.

# **Post-Education**

As the company-to-employee-ratio in the Nordic gaming industry is increasing, supporting graduates in their way out into the games industry has become a matter of assisting start-up endeavors. Incubators have thus become a crucial instrument for educators and students alike, and several of the listed universities are collaborating closely with incubators to provide students with a platform to explore their ideas and ambitions.



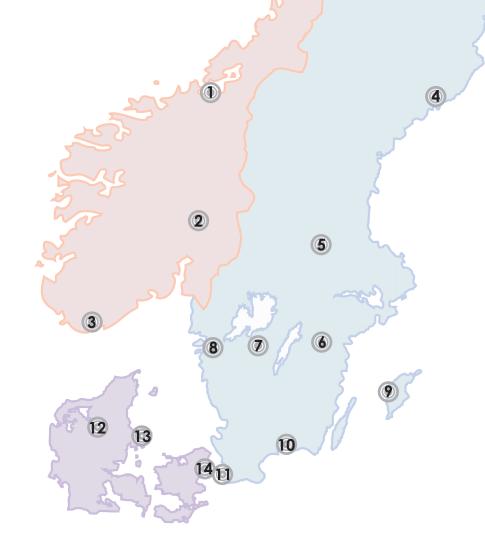
Nimbus, Noumenon Games Walkabout Journeys, LucidDreams Colosseum, Shortfuse Games Bloodline Champions, Stunlock Studios

#### Norway

- 1. Start NTNU Trondheim
- 2. Hamar Game Studio Hamar
- 3. Sørlandet Kunnskapspark Kristiansand Sweden
- 4. Uminova Innovation Umeå
- 5. Gamecubator Falun
- 6. LEAD Incubator Linköping & Norrköping
- 7. Gothia Science Park Skövde
- 8. Innovatum Trollhättan
- 9. Science Park Gotland Visby
- 10. Blekinge Business Incubator Karlshamn
- 11. Minc. Malmö

#### Denmark

- 12. Arsenalet Viborg
- 13. The Ranch Grenaa
- 14. DADIU Greenhouse Copenhagen



#### Swedish Incubation

The Game Incubator Network is a Swedish cooperation for hosts of game industry start-ups; mainly incubators and science parks. The headquarters of this cooperative body is situated in Skövde and is co-located at Gothia Science Park with the biggest game incubator in Sweden, The Game Incubator. The incubators assist startups by providing them with office environments, venture capitalist networks and professional assistance with their fiscal book-keeping responsibilities. The incubators host a wide variety of companies, ranging from entertainment game developers (small Apps, XBLA and PSN titles, as well as MMOs, MOBAs, FPSs and other bigger productions), serious game developers, work-for-hire and consulting agencies.

As for statistics regarding history and growth of game companies in the incubators, game development is seldom the main bulk of the business for the incubators as their entrepreneurial heritage lie in traditional software development, design and/or engineering. The Game Incubator in Skövde currently has 13 companies in their collective, and since 2005 a total of 18 companies have started in the incubator. Distribution for the PC was common among the startups in the mid 00's, but as new opportunities to self-publish to more platforms (consoles and mobile devices) several companies has started to focus on these newer market places instead. The exceptions to this platform migration are the companies who are creating bigger productions (e.g., CoffeeStain Studios) or the companies who develop games for external clients.

# **Danish and Norwegian Incubation**

As of yet, there's not much to be said about the Danish and Norwegian incubation scene. Similarly to the situation for educations, the incubation endeavors in Denmark and Norway aren't as big as the Swedish ones, and there's also large differences in what fields of expertise the incubators have been operating. Both the Danish and Norwegian incubators have a rich tradition in media production for television and film, and these industries are still laying the foundation for new incubators (e.g., Talentfabrikken in Aarhus). Of the non-Swedish incubators, The Ranch in Grenaa stands out as being an incubator with a clear game-centric agenda, as six new companies have started up within the incubator in as many months.

# **Challenges for Start-ups**

Attaining new capital through contracts and assignments is generally quite a challenge for any startup. The clients who consider the incubator companies attractive often approach them with a very low development budget, and as a result many assignments are denied by the companies.

The overall profitability of the companies in the incubator environments is still under investigation, but generally speaking the profitability is low for all companies in so far as only a few of the employees within the companies can be paid standard market salaries. This is mainly because of the fact that it's very hard to attract venture capital. The reason behind this being that many of the companies are focused on developing niche products that often have limited scalability and lack sound or interesting business models and plans for monetization. Building your own IP:s is a very time-consuming process, and requires deep knowledge of the target market (both audience and means of distribution) to even get a reasonably advantageous position on any platform. When it comes to marketing and maintaining their products and audience, there also seems to be a certain skill deficit in the realms of social marketing and community management in most incubator companies.

# Scandinavian Game Developers

The growth of game educations in the region mean that an increasing amount of new talent will constantly be looking for a way into the industry. For newly graduated students the indie route is becoming increasingly attractive as they can directly reach an extraordinarily wide audience through new digital distribution channels. Business incubators will serve a crucial role for these prospecting entrepreneurs by providing them with the environment and guidance needed to nurture the students' ambitions and innovative drive. As stated previously, startups still face many challenges in terms of their available competencies and access to venture capital. The Scandinavian Game Developers project aims to provide structures that can alleviate these challenges and aid new entrepreneurs in the games industry by developing and testing new business models suitable for startups and establish a network for companies to connect and share competencies with one another.

Through the evaluation of business models, we hope to produce guidelines that can aid startups in understanding the ways through which they can monetize their products or advertise themselves to clients. Taking on contractual work is a proliferating practice amongst startup companies as a way to generate income while developing their own IP:s, and our aim is to map out ways for companies to maximize profitability in both of these facets in their work. For the purposes of networking and building a strong community in which the startups can thrive, a database that maps out and connects incubators and startups will be constructed. The database will be a resource through which companies will be able to commission freelance work and look for competence exchanges with other startups; furthermore, external contractors interested in gamebased solutions will also be able to access the database to advertise projects that are in need of studios. Combining these two activities, our ambition is to both provide material that can aid entrepreneurs from the start of their careers as game developers as well as a continuous service that can help connect the region's

This report is a part of the introductory analysis in the EU-Interreg funded project Scandinavian Game Developers, which is a collaboration between the University of Skövde, Viden Djurs, The Animation Workshop and SoSu-Aarhus

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