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The Entrepreneurial Perspective: Financing of the Production of Digital Games

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The article describes funding models in Germany, France, UK and in Poland. The second part of the article concentrates on entrepreneurial implications and the context. At the end of the article of financing path is described including public funding opportunities in Europe from a game developers' perspective.

Keywords: game development, game production, Europe, Germany, France, United Kingdom, Poland, game incubation, game development education, game production financing, financing path, entrepreneurial game development, indie developer, hobby developer

Introduction

After many years of political discussions, Germany decided to set up a federal funding system for computer game development. The system has been coming to life in 2019. In 2020 an even more substantial call was set up with the permission of the EU commission. The support program encountered some practical challenges; comparisons with other countries like France, United Kingdom, and Poland allow a better understanding of the current system. In the second part the article describes the entrepreneurial approach, including the question whether students which are graduating from game related educations are usually opening up their own studios immediately. Further questions of incubation are also discussed. The financing path brings the different elements of the study together and tries to answer the financing questions from a game developer perspective. The article is based on the study, which was pursued for the BGZ in the BGI project in November and October 2020.[1]

Policies for Game Development in Europe

Germany

The history of computer game funding in Germany goes back about 20 years. The demand was first raised in 2003 in a document (the so-called "Förderantrag"); later it was published in the book *Kino und Spiele* (Behrmann, 2005). In this document it was stated for the first time, that computer game production, similar to film production, cannot be competitive, when production volumes grow due to the particular market size of Germany. Until the year 2000, computer games had been cheaper to produce because computing capacities

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[1] Free download: https://creativeindustries.berlin/wp-content/uploads/2020/12/creative-industries-M.Behrmann-BGI-Game-Development-Financing-Strategies-eng.pdf

were limited, and teams therefore did not exceed a certain size. Until this time, Germany also had a comparatively flourishing computer game development scene. Already then, the *Centre NationaleCinématographie* in France was supporting computer game development (Behrmann, 2005, pp. 25-32).

By 2010, Germany had gradually begun to establish funding schemes for the development of computer games at the level of the federal states—usually in cooperation with film and media funding agencies in those states. This first happened in the regions of Hamburg, in Central Germany (MDM Film Fund) and Lower Saxony (Nordmedia Film Fund). Later, Berlin-Brandenburg and Bavaria were followed suit. Finally, North Rhine-Westphalia and Baden-Wuerttemberg also opened their film funds for game development. The budgets for prototypes were initially very moderate but have been increased steadily in recent years. The advantage of these subsidies is, that they are based on a selective approach (Castendyk & Müller-Lietzkow, 2017, pp. 152-153). However, as the debate evolved it became increasingly clear that the crisis in game development in Germany would have to be responded to on a national level.

Sadly, the resistance was initially particularly strong. Modernisation issues take a longer time in Germany. There were concerns regarding protection of minors and media policy. On the other hand, the cultural argument speaks in favour of funding for the development of computer games. In an increasingly digitised world of communication, only those countries that can produce their own computer games on a significant scale will be able to hold on to their own cultural identity in the long term (Behrmann, 2005, pp. 28-29).

The economic basis for funding schemes in Europe is public investment. Considering cultural heritage, it is important to support audio-visual productions such as films, television, and computer games as both the smaller European countries and the larger ones, such as Germany, Poland, or France, cannot sustainably assert themselves on the world market due to economic principles governing the media economy, such as economies of scale and network effects. Domestic markets are available, but not large enough. Therefore, for both cultural and economic reasons, it is necessary to support media production in these countries on a long-term basis (Behrmann, 2008, p. 115).

The first step is to minimise risk in a hit-driven economy, because every project is to be understood as a new business: Given the problem of fixed cost degression and network effects and the quasi free reproducibility of goods (Behrmann, 2017, pp. 35-37) in the digital environment, the size of the home market and the potential market is not ideal. According to the Pareto principle, about 20% of the projects make a disproportionately high profit in a portfolio, while 80% perform below this level (Sanders, 1992, pp. 37-40). In this context, we speak of the "*the winner takes it all*" phenomenon. The development of computer games is subject to special risks, which are, for example, higher than those in film production, because fixed salaries must be paid between project cycles, especially as they need to build their own technology. Otherwise, the distribution and production risks are similar to the film industry. From the entrepreneurs'point of view, subsidies are always a part of the market. The inclusion of public funding for the development of computer games is therefore ultimately a risk minimisation strategy. While countries such as China or the USA have large domestic markets in which network and economies of scale can spread unhindered, this is not the case in Europe, as the domestic markets are comparatively small (Behrmann, 2005, pp. 30-31).

The modern approach to the development of computer games has a lot to do with the change in the perception of computer games as cultural assets. For example, Chancellor Angela Merkel has for the first time opened the largest German games fair "*Gamescom*" in 2017, where she clearly acknowledged the "cultural

asset of computer games" (Merkel, 2017). Already in 2008, the Bundestag had unanimously passed a resolution to this effect (Deutscher Bundestag, 2008). Today, it is undisputed that computer games do not only influence the imaginations of entire generations, but they also affect how we perceive values, how we structure our thoughts, and how we express ourselves. And they also shape how we learn and how we organise our communication—therefore they are part of our cultural communication structure and as such important for our national cultural constitution. At the same time, computer games are an important economic driver. They are the spearhead of digitisation: When digitisation becomes playful in itself, digitisation has reached the top. This is due in particular to the fact that the core of games is entertainment, and computer games additionally provide the fun of using computers (Behrmann, 2008, p. 115).

In computer game support programmes, we usually differentiate between selective and automatic schemes. In the case of selective funding schemes, selection committees decide on the approval. Federal funding is an automatic system; certain conditions must be met, then the support is unlocked automatically. Typical examples are tax breaks, direct grants, or tax credits (Castendyk & Müller-Lietzkow, 2017, p. 150). In Germany, however, tax-based models are not legally conceivable, so a subsidy fund is the only option.

Support systems require approval by the EU Commission, by Art. 107 of the EU Treaty. The background to the complicated approval structures within the EU is the state-aid control regime (BMWI, as of 2020). The EU wants to prevent the member states from entering into a subsidy race with each other. This subsidy race has occurred in the past in the steel industry, for example. In Europe, the aim is to avoid such a race and they, therefore, have adopted a regulation according to which subsidy schemes within Europe are only permitted under certain exemption rules or up to a specific limit (de minimis limits allowing subsidy up to €200,000 within three years). This means that all member states, such as France, the UK, or the Federal Republic of Germany cannot simply launch a computer game funding programme. Instead, Germany had to undergo an EU approval procedure and present an exceptional case to go beyond the de minimis limits. In 2019, when the German government launched its funding programme for the development of computer games, the so-called Pilot Test Programme, it still hadn't received the notification from the EU for the exception status which is why only funding up to a maximum of €200,000 was available (Behrman, 2019).

In 2020, the German government had meanwhile obtained approval from the EU Commission for the so-called cultural exception. Under this, it is possible to support higher amounts of funding if they actually serve the cultural advancement of a country. This is proven in detail through a so-called cultural test. This means that a list of questions must be answered in the funding application, which ensures that the funded project can be, or at least promises to be, culturally valuable in terms of content and production technology (BMVI, 2020).

So far, there exists no European-level block exemption yet for game development support programmes, too few member countries have applied for the EU to see a basis for adopting game production into the GDER. As this appears to be possible in the future (and should be considered), there are simply too few cases yet to draw more general rules (as existing in other sectors as in the film industry). When the block exception rules are revised in a couple of years, this should be envisaged.

France

France has the oldest computer game support scheme in Europe. The French understanding of computer games as part of the audio-visual sector (Behrmann, 2005, p. 47), or at least the cultural sector (Behrmann,

2005, p. 44) has a long tradition. Computer games have long been an economic factor in France. This is also due to the fact that computer games are culturally more recognised than that in other countries and that issues of the protection of minors are less present. Infograms (later Atari) from Lyon was already able to build up a strong global position on the PC market in the 1990s. Companies such as Ubisoft were also present at an early stage, and although the first major online game in Europe, World of Warcraft, was developed by the US company Blizzard, the publishers were French (Vivendi) and had special network expertise (Behrmann, 2005, pp. 42-47).

Early on, France began to systematically provide prototype funding of around €200,000. In the early years of the 2000s, the funding volume was increased. This was the first time that France came into conflict with French state-aid law, as the de minimis limit was exceeded. For this purpose, France set up a large tax credit model for computer game development, which was based on the cultural exception. However, it took four to five years until the EU Commission agreed to this, because the topic was controversially discussed in Brussels. The resistance came mainly from large software companies from overseas, who feared that a cultural view of games would entail additional regulatory obligations.

The *Video Game Assistance Fund* (FAJV) (CNC, 2020) is a selective support system. It aims to support video game projects on the basis of their artistic quality and their economic potential. The *Fonds d'aide au jeu vidéo* (FAJV)[2] is jointly financed by *Centre National du Cinéma* (CNC) and the Ministry of Economy and Finance. This fund provides support for the development and production of prototypes and in the production phase.

The aid for prototype development consists of 50% repayable advance on the sales revenue and 50% subsidy. The selective aid is intended to support the development of games in the production phase, especially new creations. Companies are thus encouraged to create their own content and obtain the rights to it. Grant recipients must retain the intellectual property rights. In 2018, 42 projects were supported with an amount of €3.5 million. In principle, the *Fonds Images de la diversité* is also open to projects in the video game sector (CNC, 2020). However, it has not yet been possible to realise any projects, so that this fund particularly supports linear audio-visual productions.

The *tax credit for video games* (CIJV) is a tax incentive scheme for established video game companies in France (CNC, 2020). The measure was introduced in 2008 and allows companies in the creative sector to deduct 30% of eligible expenses from their taxes[3]—this is the total cost of production. The 40 projects approved in 2018 will receive an equivalent of €40 million financial support. The special feature of this tax credit is that it will be paid even if the company does not make a profit, i.e. is not subject to tax at all (Behrmann, 2005, pp. 51-54). The *Direction generale des enterprises* is thus trying to attract more game development studios to France. The subsidy is technically provided by offsetting certain costs against the corporate tax liability: 30% of the core expenditure in game development in a fiscal year is credited against the corporate tax liability (capped at €6 million per year) (CNC, 2020). If the amount exceeds the corporate tax liability, the company can have the excess amount paid out.[4] However, the game project must contribute to the cultural diversity and originality of French and European games.

[2] This funding type is the oldest for video games, formerly FAEM.
[3] Eligible expenditure includes the production of video games that contribute to the diversity of the French and European markets.
[4] This circumstance is not conceivable under German tax law, which is why a genuine tax credit model is not conceivable in this country.

Unlike in Germany, more space is given to creative production in France. The tax credit point system features projects, where expenditures (subcontracted or not) are spent to 80% in France or Europe. Subcontracts are capped at €3 million and may only be spent in the EU. At least two thirds of the spending on salaries needs to be made in France or Europe. Care is taken to ensure that the developers retain intellectual property during production and public support will vanish, when developers are forced to give up their IP (a strong argument in developer-publisher negotiations). As a result, France is looking better after its expenditures than Germany.

United Kingdom

The United Kingdom was traditionally the largest country in Europe in terms of computer game production, with the first computer games being imported from overseas. Because of this, the country had a head start in Europe. Especially the production of console games has a long tradition here. The UK was also the first country in Europe to develop and export computer games at world market level. According to the publisher association Ukie, the UK Games Market Total 2019 amounted to €5,994,176 (n.p., 2019). Here, however, the support of computer game development is younger than that in France. As the second country following France in the EU, the UK has attempted to establish a national funding scheme for computer game development based on cultural means. The first funding models still failed due to resistance from the EU Commission, as the cultural test was not met. The British government then modified the funding model, so that it became legally permissible and the funding began to be awarded in 2014 (Tiga, 2016, pp. 5-6).

The certificate of the culture test is issued by the *British Film Institute*. It can be said that the comprehensive cultural examination by the BFI is obviously taken very seriously, but it also contains some of its own contemporary approaches. The BFI is not aiming at traditional British culture but is embracing the contemporary. Subcontracting is capped at £1 million. While residents are fine, it is clearly they are not allowed to circumvent the rules. According to sources, it is not likely, that with Brexit this will change considerably in the short run.

Poland

In Poland, the history of the development of computer games is much shorter. However, the computer games industry in Poland has grown very strongly in recent years (Rutkowski, Maszalkowksi, & Slawomir, 2020, pp. 7-9). The Polish game industry had its breakthrough in 2007 with the computer game "*The Witcher*", of which more than 50 million copies were sold and which was produced by the Warsaw-based company *CD Projekt Red*. The Poles were so proud of the game's success that Polish President Donald Tusk presented a copy of the successful Polish role-playing game "The Witcher" as a guest gift to then US President Barack Obama during an official visit. In his speech, he mentioned the game again, saying it was "a good example of Poland's position in the world economy" (Obama, 2014).

The annual income of the Polish games industry exceeds today €500 million. About one sixth of the size of the German market, it makes about one per thousand of the Polish GDP; 96% of this is generated on the world market. At the same time 97% of the computer games sold are imported from abroad (Rutkowski, Maszalkowksi, & Slawomir, 2020, pp. 7-9). All in all, the use of computer games in Poland is particularly strong in addition to mobile games, but console games are also being increasingly consumed. As almost everywhere, the mobile segment is experiencing the greatest growth. It is remarkable that 47% of all female computer players in Poland are female.

Since 2016, Polish game developers have been able to increase their revenues by almost 30% annually, if

you ignore the market leader (Rutkowski, Maszalkowksi, & Slawomir, 2020, p. 9). Poland is home to just over 400 game developers, a country with comparatively low labor costs and a well-trained workforce. However, the industrial structure of the Polish games industry is volatile: Although more than 120 computer game development studios have had to close within a year, 160 have been newly opened. A surprisingly large number, 43 companies are listed on the Warsaw Stock Exchange. The market leader CD Project Red had a market capitalisation of over €8 billion in 2020 (GPW, 2020). However, the share price development of the companies is unstable. Of the approximately 10,000 employees in the Polish games industry, 80% work in SMEs and 20% in the largest companies. Poland has about 60 different computer game-related training programmes, all together there are programmes. Early on, there was also close cooperation with German companies, in both directions: German publishers published Polish titles and Polish publishers published German titles.

Polish game developers were also able to benefit from state subsidies. In addition to direct financial support, public recognition came with the granting of subsidies. However, the funding landscape is fragmented and confusing. Various government agencies try to outdo each other with each awarding small amounts of money.

The Polish funding system is still fragmented and a large national funding system, such as the one recently established in Germany based on the cultural exception, does not yet seem to have been implemented. There has been an attempt to replicate the Finnish TEKES approach to technology funding in recent years, but this attempt is apparently facing problems. At present, the greatest dynamic in Poland's video game industry is generated by the capital market on the stock exchange. Whether this is sustainable, however, remains to be seen. While the stock market is very dynamic and maybe even overheated, the public funding measures are still multifold and emerging, a work in progress.

Entrepreneurial Perspective

The second part of this study deals with questions of the definition of different developer typologies and the perspective of graduates regarding entrepreneurship.

Definitions

Hobby developers are non-professional video game developers. Games made and played by friends (developing a hobby game) have a long tradition and are often closely related to the modding community. Today people all over the world are making personal games with classmates, neighbours, family, etc. Concretely, it includes those private endeavours that were never made with profit as the driving goal. They have a focus energy that we rarely see with major release games which reflects this other motivation, being not about the money but about personal growth. The big emotional investment is meaningful to the people doing it and to the people who care about the developer.

Although the ambitions of all hobby developers are high, not all make it into the "professional level". This is because with the large number of non-professional game makers, not everyone manages to become a professional, e.g. as we know it from sports. Nevertheless, it is enriching because it can expand the developer's world, build their confidence and discipline, give them the opportunity to network or to enlarge their network (n.p., 2017).

> Others may start performing contract work for other game companies or may start doing non-games work. Some of these teams may eventually build a second or third game, and one of these may eventually become a hit. But for many of these start-ups, the profits from their company will be too low, and they need additional income from elsewhere. These

> kinds of companies are what I consider “hobby companies”. (Kirkeby, 2020, p. 22)

Indie developers (derived from the word “independence”) are independent game developers, often consisting of smaller teams not owned by (i.e. independent from) any major publisher (Hebecker, 2018, p. 122). They are more likely to finance themselves through a colourful mix of financing sources such as start-up financing via crowd sourcing platforms like Kickstarter and/or public funding. If the game has reached a certain market size, publishers are also involved (Hebecker, 2018, pp. 121-127). Here, pitching is usually done with the help of a prototype. In an “advance-against-royalties-deal” the publisher finances the production to completion and takes over responsibility for marketing.

Indie developers often create innovative, inspiring games that do not yet exist in this form and fit perfectly into a niche but could pose a risk in terms of marketability. But this does not mean less success at the same time, because the market and demand are very diverse—in other words, the needs of the players are very different. Indie developers are constantly changing the market, because innovation is one of the main characteristics of indie developers (Lehmann, 2020, pp. XI-XIII).

Another special characteristic of indie developers is that they are often producer and creator in one, they are not just game developers and not just game publishers—they are often both and very often refuse to be pigeonholed (Lehmann, 2020, p. 5). The advantage is that indie developers have and keep creative control over their game. They can produce their game exactly the way they want it (i.e. they can choose the themes they are interested in, choose characters, design their own worlds, etc.). With a publisher you often get specifications, which are mostly linked to making the game marketable, which could limit an indie developer’s creativity and change the game (Lehmann, 2020, pp. 5-9). One challenge is commonly a lack of entrepreneurial expertise in an indie team: these are often students who have come together as a team during their studies to develop game projects (like hobby developers) and then decide to start their own business in the industry. Furthermore, it is not enough for an indie team to have only one specialisation, everyone in the team must be able to cover a wide range of activities/knowledge (Lehmann, 2020, pp. XI-XIII).

On the other hand, almost all commercial game developers have emerged from indie developers and especially in the last years indie companies like Supercell and Rovio have been able to outshine the profits of all major game companies. Despite the risks that an indie developer takes, the number of currently released indie games is increasing year by year (has increased sixfold in three years) and is reaching its historic peak at the moment (Galyonkin, 2017).

> Indie games have been experiencing a steep upswing for about a decade, resulting in many high-profile, artistically daring and experimental games. Really new interpretations of the medium are indeed often created in this field, partly because large mainstream productions with dozens or hundreds of millions of production budgets simply cannot afford the risk of failure. (Hebecker, 2018, p. 125)

Commercial game developers are developers who take a commercial approach and place it at the centre of their activities. The opinion, which is partly represented in the literature, that this is only about big developer studios is not enough (Lehmann, 2020, pp. XI-XIII). The pure number of employees is a subordinate category. For example, the Finnish company Supercell (Clash of Clans) was sold to Softbank for €1.2 billion when it only had 38 employees (Steinleicher, 2013). This was also a commercial approach.

The largest companies include Nintendo, Sony, Ubisoft, NC-Soft, Tencent Games (this Chinese manufacturer is considered the largest in the world) (n.p., 2020). Very large teams are known to publish “core”

games (i.e. hardcore games) such as the Nintendo titles from the Mario series. Formerly these companies operated as pure publishers, but in times of platform economies they are reaching to broaden the depth of added value, so they organise themselves more as a value creation ecosystem which includes its own development. In contrast to small indie teams, these large teams have the advantage of being specialised in a certain activity rather than covering many activities as a single person. Since this often revolves around the development of large mainstream productions with AAA titles, the prospect of success is apparently easier to calculate (Hebecker, 2018, pp. 121-127). However, in view of the enormous costs involved, this cannot always be reconciled with reality. In content business, smaller units can be much more profitable.

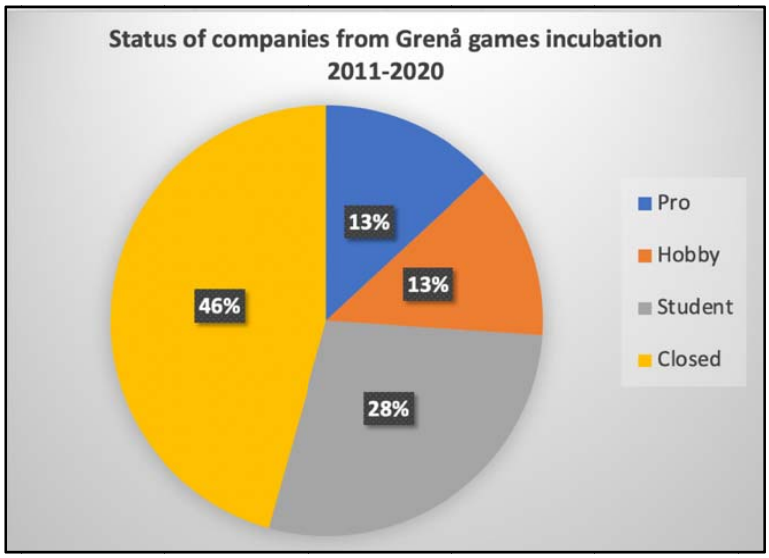

Figure 1. Circle (or pie) graph. Status of companies from Grenå incubation.

Graduates Entrepreneurship

Within the framework of this study, experts were interviewed throughout Europe on these different categories of developers. It was investigated which perspective graduates have in this context.

Altogether it can be stated from the interviews, that in some countries half of the graduates aim at independence, in other countries this is the case only to a substantially smaller portion. Many of them do so for both: creative-artistic and economic motives. Graduates often first try to realise their life's dream and often fail on the way there. Apparently, only to then—often with the support of an incubator—slowly prove themselves commercially.

There is relative agreement in the interviews that students in the game industry are encouraged to start their own start-ups/companies after graduation. Many, especially artists, decide to start a non-self-employed business first. The number of founders in training with incubator programmes is higher. Otherwise, only few dare to take the step into self-employment directly after graduation, some do so later.

There is also relative agreement among the experts surveyed on the choice or design of the studio. Although the students are beginning to realise their life's dream, they also want to earn money. Most experts do not see a contradiction between entrepreneurial aspirations and artistic self-realisation. Some succeed better than others in bringing these seemingly contradictory poles together. The experience is positive for some teams, but others have to give up.

It is not easy to break down these assumptions into concrete figures. In most cases, no reliable data are available. The Finnish association Neogames is an exception. According to its survey, 54% of the graduates were employed by existing game studios and 8% become self-employed and set up studio of their own. In addition to these global figures, we were also provided with figures from the Grenaa Start-up Incubator. These suggest that such centres can increase the proportion of self-employment. However, the number of failed attempts is very large. There could be a connection between a functioning incubator in the local ecosystem and the ability of companies to survive the start-up phase. Most of the experts share the idea of a common European approach to support entrepreneurship in Europe. However, some have a more sceptical view.

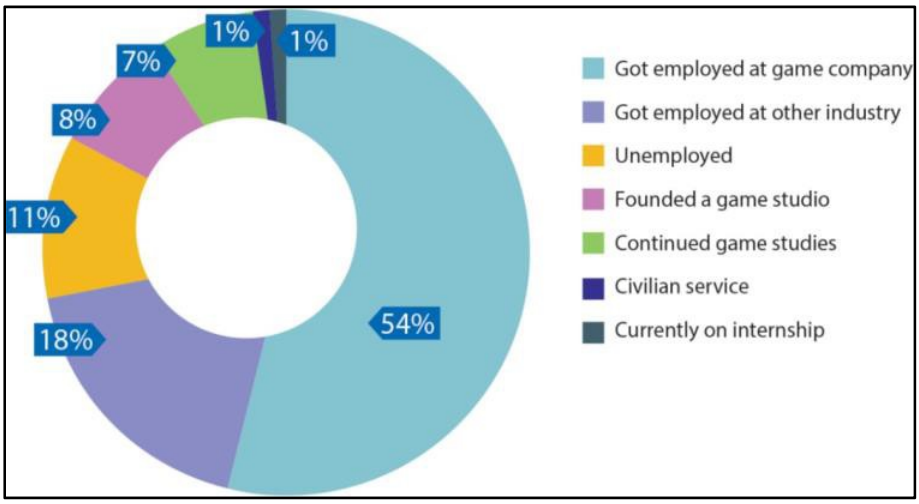

Figure 2. Circle (or pie) chart. Employment of game graduates in Finland. Source: Own representation.

The Financing Path

In the last chapter, which deals with the topic of studios, we will conclude with some thoughts and try to apply the above information from the perspective of a game developer.

This study has shown that a clear separation between the entrepreneurial approach, the content-driven "indie" approach and the hobby approach does not necessarily help. After all, the dual nature of computer games means that they are both cultural and economic—and that is precisely what makes them so fascinating.[5] But it is also true that the failure of many young companies is pre-programmed. In incubated environments, however, the risk of failure is lower.

But the specific risk structure of the media business has certain special rules that apply to risks and to profits in equal measure. It is therefore important to think carefully about the financing path of game projects. Public funding is primarily market-driven risk minimisation. With counter-balanced media specific production risks (high fix and low reproductions costs according to pareto law), this approach has long proven its worth in other sectors within the cultural and creative industries with even lower risk structures. The path character is intended to make it clear that this is a standard case, but exceptions may exist in individual cases. Let us take the perspective of a developer.

In general, companies should follow their financing path in a logical order, which should be as follows: customers, partners (who are not customers), public funding, and finally investment. Difficulties often arise

[5] Good examples are the very successful project Minecraft, which started as a user generated content project and initially had no commercial goal at all.

when companies try to find investors too early or at the wrong time. Our considerations here concentrate on the question in which order the financing supported by public funding might take place, i.e. what has to be done first—especially in the interaction between the federal and state governments and the question to what extent the rules of the new federal funding systems will be affected. Different starting constellations can play a role in the application of the funding.

The first case is the case of a graduate in Germany. They want to implement a computer game with a budget of about €200,000, for example for a mobile application. In order to raise the 30% own funds, they must in any case show 10%, i.e. €20,000, in cash. They have to get this money somehow—be it from personal savings, from their family or something similar. If the developer has the 10% together, they have to prove further 20% of own funds at least in a publisher contract or an investment contract. This means that—unlike it was initially the case in the first round in 2019—the money does not have to be in their account, but they can guarantee it within the framework of a third-party financial commitment. In this case, the commitment of a minimum guarantee (or similar) from a publisher in the amount of €40,000 would have to be available. For another €40.000 (that would be another 20%) they could apply for a regional state grant (Medienboard, FFF Bayern or similar). This application for state funding is, however, in contrast to the nationwide requirement, selective. A condition is here that they already made a name for themselves in the local network and is therefore noticed by the local Länder agencies as promising actor. The state funding agencies also act in a specific rhythm, so that the deadlines for submission and decisions determined in the context of selective funding must be monitored closely. Apparently, however, it is sufficient to have submitted an application; the decision does not have to be made yet to apply for federal funding. With these three elements, the developer would have the first €100,000 together, with which they can apply for federal funding and would then receive 50% of the total budget (i.e. another €100,000) for the development of their computer game.

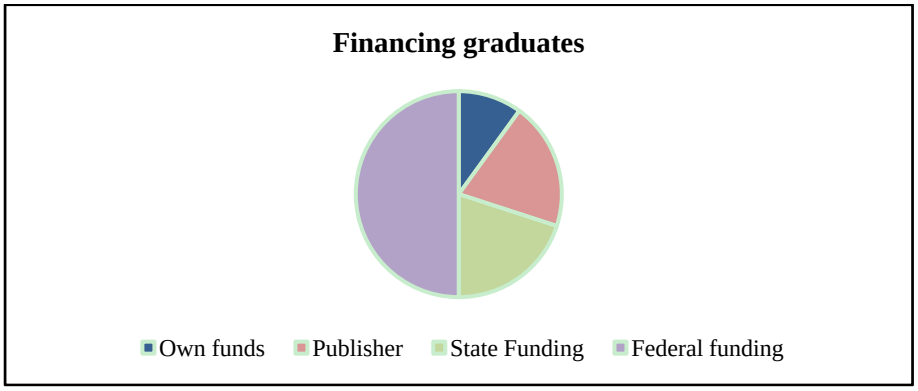

Figure 3. Circle (or pie) chart. Financing graduates. Source: Own representation.

The second case (to the other extreme), that may occur is that of an international publisher, who operates outside of Europe. They have the intention to implement a project in Germany with the help of federal funding and to invest €1 million for this. At the same time, they want to withdraw as much of the funds as possible from Germany after the operation. In this respect, the foundation of a company in Germany, or the takeover of a small developer studio that already exists, comes into consideration. This studio will then receive a project order in the amount of €2 million. Of this, €1 million will be provided from abroad and proven on a bank account. The application for federal funding will be submitted and approved, provided that the culture test is

met: The game needs to be German or European, the team needs to be to 50% in Germany, or some of the staff have to have a degree from a German game developer educational facility. The application specifies that subcontracts amounting to about €1 million are to be awarded. For these subcontracts, two comparable companies and the client's company—i.e. the development studio of the foreign publisher—are shortlisted, whereupon the company is selected. In this way, the money of about €1 million can be returned to the original investor and can be used for the production of the subcontracted elements. In this case only about 50% of the production costs are then implemented and realised in Germany but the total project of €2 million is the sole property of the foreign investor. With higher amounts the ration of 50% does not apply any more but is reduced up to 25% at €8 million. However: Long-term rents are paid to the foreign investor when the project is successful—so they are the one who makes the biggest profit.

The comparison with other neighbouring subsidy systems has clearly shown, that those countries, which have a comparable support scheme based on the cultural exception do actively cap subcontracts to other countries. The "German way" of even allowing non-European players to participate is quite unique and probably not helpful. At least this needs to be monitored closely.

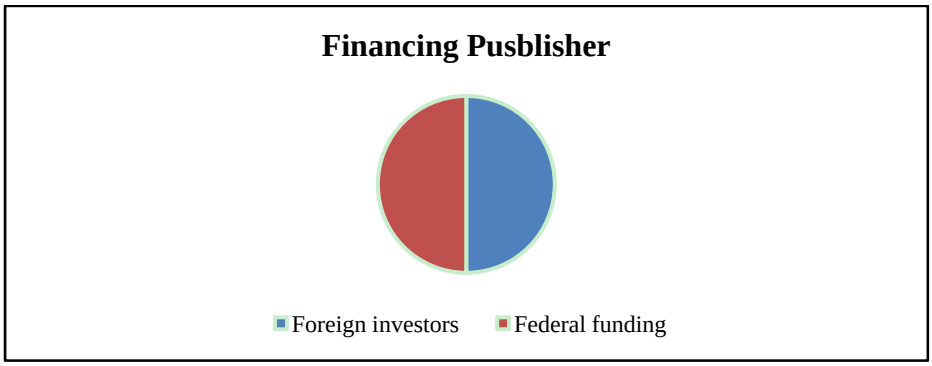

Figure 4. Circle (or pie) graph. Financing publisher. Source: Own representation.

Public funding for game development—it appears now—has been the way Europe will go. Besides Germany, France, the UK, Poland, Denmark, Italy, Belgium, Spain, and other EU members have made considerable efforts. Based on cultural, but also economic considerations, this pathway is a specifically European one. It will allow Europe to implement the digital catch-up as a dual phenomenon—economic and culturally. Besides, the spill-over effects are considerable. A block exemption might be a step in the near future.

For the success of the game developers themselves, quality is more important than quantity. Game studios need not to be large to be successful, especially in times of platform economies and digital distribution. A clear separation between commercial and cultural content has proven to be not only helpful. Games are usually successful when they create a tight relationship with the player. The human-machine relation is crucial: gameplay must be smooth. The game itself must be immersive and fascinating. Linking frequently used, unusual or surprising patterns with intuitively existing and refreshing new ones is challenging and playful at the same time. The vast cultural heritage of Europe can as well be an asset as the size of the European market. Visibility of European content and the firm belief in home-made productions is an area where we still need to improve.

For us this means that we have still some open questions for research. The impact of incubators is one element, but this might reach to more than just spin-offs of universities. Many successful developers come from

nowhere (or anywhere) and maybe inter-European exchange could be a very fruitful pattern, especially—but not only—across the former iron curtain.

The new federal funding in Germany is a huge and significant step forward. Many have fought for years for it and it is very important that the funding for computer games has been enforced. Now it is important to adjust it and make sure, that the German taxpayers' money, at least for the most part, actually reaches the German game developers. The aim is to support companies that contribute to the German game industry beyond the digital divide and ultimately pay back to the state in the form of taxes. The digital catch-up is vital for Germany. Examples from the Nordic countries trigger hopes, that tax returns up to a factor of 15 of the amounts invested by the government are not unrealistic. However, to achieve this, we must ensure in particular that subcontracting can no longer take place worldwide in the future and we must monitor the results closely.

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