Working methods and structure of commercial digital games developed in Germany

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Abstract

The German game industry is facing significant challenges and demonstrates a clear need for innovations that allow it to compete internationally. Such innovations could be driven by a potential change in project management approaches, which have historically been necessary gamechangers for enabling sustainable and resilient software development practices. The goal of this thesis is to explore the working methods and structure of commercial digital games developed in Germany in order to provide an openly accessible, scientifically grounded basis for future research. An online survey is conducted following guidelines from prior research done in Austria, Brazil, Finland, and New Zealand. The structure of development teams and the types of frameworks, meetings, and artifacts are investigated through the lens of individual game workers at a variety of studio sizes. This enables new types of insights into job roles and remote work within the German game industry, while preserving the ability to gather general information about an individual studio's approach to game development. A first in this line of research, the survey design and process are documented and made available alongside anonymized results. Key findings are comparable to previous research, such as a majority of participants working in a massively parallelized fashion with hybrid and iterative process management frameworks. The survey provides additional ways of understanding how game workers themselves experience these frameworks, and ascertains problem areas without tying itself to specific management practices. Additional interviews further contextualize the German game industry and show that the experienced problems are largely the same as in other countries.

Abstract (German)

Die deutsche Videospielindustrie steht vor der Herausforderung, dem internationalen Wettbewerb entgegentreten zu können. Nachhaltige und belastbare Projektmanagementansätze könnten Innovationen in der Branche ermöglichen und weiter vorantreiben. Das Ziel dieser Arbeit ist es, die Arbeitsweisen und Struktur in Deutschland entwickelter kommerzieller digitaler Spiele zu untersuchen, um eine frei verfügbare und wissenschaftlich fundierte Basis für weitere Forschung zu schaffen. Zu diesem Zweck wird eine Onlinebefragung nach dem Vorbild früherer Forschung in Österreich, Brasilien, Finnland, und Neuseeland durchgeführt. Neue Ergebnisse werden durch einen Perspektivwechsel von Studios hin zu Individuen ermöglicht. Dies ermöglicht Einblicke in die Jobrollen und Nutzung von Remote-Arbeit in der deutschen Spieleindustrie. Die Möglichkeit, Studioansätze zum Projektmanagement zu untersuchen bleibt erhalten. Eine weitere Neuerung stellt die Gesamtdokumentation des Designs und Durchführung der Befragung dar. Der Datensatz der Befragung wird in anonymisierter Form verfügbar gemacht. Schlüsselergebnisse decken sich größtenteils mit vorherigen Forschungsergebnissen. Die Mehrheit der Befragten arbeitet mithilfe hybrider und iterativer Prozesse an hochgradig parallelisierten Projekten. Die Befragung zeigt auf, wie diese Rahmenbedingung von Individuen erlebt und verstanden werden. Problembereiche werden ohne Beschränkung auf eine bestimmte Managementpraktik ermittelt. Interviews helfen dabei die Ergebnisse der deutschen Videospielindustrie weiter zu kontextualisieren. Es wird demonstriert. dass die erlebten Probleme weitgehend mit denen anderer Länder übereinstimmen.

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1. Introduction

Poor working conditions continue to be a hot button issue widely reported on within the game industry [1, 2]. Pressure from managers and peers, as well as personal ambitions misplaced within the greater culture around making games, lead to long working hours and excessive unpaid overtime, colloquially known as *crunch* [3, 4]. When asked about the reasons behind crunch and extended overtime, game developers blame poor or inexperienced management with detrimental effects on planning and fulfilling development goals [4, 5].

Game development is much closer aligned to creative industries than other fields of software development, requiring specialized roles such as Directors and Producers to achieve success [6, 7]. Yet it shares the same foundations of project management frameworks and processes with the rest of the software development industries [8, 9]. The aforementioned management issues are identified and discussed as fundamental challenges within the wider software project management literature [10, 11, 12]. The extent to which traditional software projects are successful and the metrics by which success is measured are themselves a topic of contention [10, 13]. Nevertheless it is evident that the extent of harmful overtime practices described in game development do not occur in similar measures when comparing the available data [14, 15]. As such, a need for explaining these discrepancies emerges. Does game development suffer from a lack of transferable knowledge readily available in other software development fields? Or are there deeper reasons why established knowledge does not apply to the intricacies of game development?

Literature on the changes made to adapt existing management practices to game development and on specific game management frameworks does exist, but often lacks or provides insufficient data on practicability like actual usage statistics [16]. It therefore appears more reasonable to follow a practice-oriented approach by analyzing current practices within the game industry. Existing research largely concentrates around two approaches: Post-mortem analysis of finished game projects [8, 17, 18] and questioning game workers at companies currently working on game projects [19, 20, 21]. This thesis makes a contribution to the latter approach by conducting an industry-wide survey about the working methods and structure of commercial digital games developed in Germany.

Germany makes for an interesting research target, as its game industry is characterized as overwhelmingly young but still sizeable [22]. It is Europe's biggest market for game sales by revenue and sports a strongly growing job market for game workers thanks to an even stronger growth in new business start-ups. This is in part the result of recent political developments that lead to the creation of a nationwide government support program for financing video game development [23]. Still, the German game industry is underdeveloped when compared to strong international business centers such as the UK and Canada [22]: The average age of a business is seven years with every second business having been founded less than five years ago. Seven out of ten businesses have less than ten employees. Projections done in 2022 estimated the size of the German game industry at 786 businesses developing and publishing games in Germany, with an estimated 11.242 employees. A further estimated 17.048 people work as service providers, in retail, at educational institutions, media outlets, and in the public sector with a connection to the game industry.

Having to compete with better founded and more experienced international businesses puts German game companies in a tough spot. An analysis by the Hamburg Media school [24] raises concerns over the rising number of national game studios acquired by international groups, which further increases the competitive pressure within Germany. It stands to reason that this current business climate is going to exacerbate existing issues of project management, such as crunch, which in turn is going to negatively affect the development of the German game industry as a whole. As a regional study of Hamburg's game developers, one of the leading cities in German game

development and publishing, put it: “Managerial capacities with procedural knowledge are key to understand the competitiveness of creative industries” [25]. The researchers found that the sharing of knowledge is a crucial strategy for Hamburg’s game development companies, and concluded that there was a demand for the exchange of know-how on a scale beyond the convenience of spatial locality.

The German game industry is facing significant challenges and demonstrates a clear need for innovations that allow it to compete internationally. Such innovations could be driven by a potential change in project management approaches, which have historically been necessary gamechangers for enabling sustainable and resilient software development practices [26, 27].

2. Literature review

The reviewing process started out with a set of previously known works in [19, 20, 21]. As latter works reference earlier ones, the possibility of conducting forward and backward snowballing to capture a wider cluster of related works was considered. As snowballing is a practice that requires substantial effort [28], it was decided to first conduct a search for potential works that had already untertaken snowballing or similar steps themselves. [19] made reference to another previously known work in [16], a systematic literature review of software development processes. Dedicated systematic literature reviews make use of a variety of techniques to go beyond identifying individual clusters of related research and therefore provide a more complete overview than any individual technique alone could [29]. [16] provided a deeper understanding of the research landscape, but lacked recency. A search for a more recent systematic literature review was planned. The plan was structured from least effort to most effort with the following steps:

1. An online search for the authors of [16, 19, 20, 21] with Google Scholar for their most recent related work, possibly containing a reference to one or more recent systematic literature reviews.
2. An online search for recent references to [16, 19, 20, 21] at their respective publisher websites, as well as Google Scholar, to identify one or more recent systematic literature reviews.
3. An online search through publisher databases, as well as Google Scholar, with various keyword searches assembled from the keywords listed in [16, 19, 20, 21] to find one or more recent systematic literature reviews or works making reference to them.

Recency was interpreted as having been published after [16], with newer works being preferred, as long as they made references to the existing known bulk of works. Step one yielded the desired results in [30], which conducted an organic backwards and forwards search of existing literature reviews about agile video game development up until 2021, highlighting and summarizing related works, including those in the initial starting set of known works, as well as their shared references. Agile project management frameworks and methods have been noted to be predominantly and widely in use. Therefore studies mainly concentrate research around it. Other types of methods, such as traditional waterfall approaches and bespoke solutions, have also been noted in research on agile video game development. As such, following agile research on video game development is a standard approach that closely follows game industry developments and trends. From [30] and [31], a systematic literature review of agile game development research up until 2016, a list of works conducting surveys was compiled. They are laid out and reviewed in chronological release order below.

The earliest work identified was “A Survey on a State of the Practice in Video Game Development” [32] in 2010 which aimed to “investigate if empirical/evidence-based software engineering can be of assistance in providing solutions for problems in VGSD [Video Game Software Development] and in identifying similarities and differences between game and nongame software development”. Feature creep and crunch time were two industry specific problems the researchers wanted to learn more about, purporting that their research could “be the starting point for a more detailed analysis of video game development practice in a larger context.” The researchers’ knowledge consisted of their own prior research in the field of game development, recent academic works by other European and North American researchers, and books written on the topic of game development by industry insiders. A review of existing literature conducting game industry specific surveys yielded little results apart from the work of the *International Game Developers Association IGDA*, which has continued to provide relevant data throughout recent years [5, 15]. In absence of any prior established body of knowledge the researchers chose to follow the evidence-based software engineering guidelines laid out in [33, 34, 35]. They also established the convention of conducting research

on a national level, in this case the researchers' home country of Austria. The questionnaire was based on the Goal-Question-Metric approach by [36], "where the survey metrics are derived from the research questions", as well as additional guidelines provided by [37, 38, 39, 40, 41, 42]. The questionnaire was "divided into four question blocks: (1) demographical information, (2) processes & tooling, (3) features, requirements, and (4) testing". In accordance with findings by [40] the response formats were standardized. Answer options were directly derrived from literature and all questions were reviewed by industry insiders. An optional "other" field was added to each question to allow the collection of individual answers that deviated from the pre-chosen responses. A list of potential participants, each one working at a different developer studio, was collected through industry contacts and reviewed at a developer meetup. The participants were contacted through an e-mail that explained the purpose and potential benefits of the study, and contained a direct link to an online version of the survey. 13 out of 20 contacted participants responded. Their answers were split into two studio types: "Major" and "Independent". The former type was characterized by its larger staff size and reliance on publisher funding. The latter was characterized as being small and generally self-funded. Additional metrics that were collected were "staff size, average development time, the number of released original games and the target platforms". To combat threats of internal validity further analysis was conducted through blind analysis. The researchers concluded that some external validity threats, such as the small sample size, and the focus on participants being software developers in lead roles, might impact their findings. Of the 13 responding studios around 85% were found to belong to the "Independent" category, which lead the researchers to conclude that the Austrian game industry was still in its infancy. They contrasted these findings against US-centric literature, which assumed much larger development studios, and would therefore not apply as much or not at all to the Austrian industry. 72.7 % of participants reported a staff size less than five, which was attributed to a small job market and difficulties with recruiting and funding. These studios typically had developed one to two games before their current project, each of which took six months on average to complete. Their games were mainly released on mobile platforms. The "Major" studios were found to mainly develop for PC and console platforms, with average staff sizes of more than 15 and a development time of 1 to 2 years. Process methods were largely found to be flexible, with a majority of studios making use of Scrum. All major studios made use of Scrum, while some indies reported an unstructured approach, and none reported a use of a more traditional waterfall-based process model. Agile techniques were therefore identified as an area of high interest in game development. The researchers reasoned that "game developers will profit to a certain extend [sic] also from existing software engineering best-practices [sic]", although their findings did lead them to conclude that "games are different in some aspects and their way of development demands domain specific tailoring. It is therefore not enough to just blindly apply the same proven techniques and best-practices [sic] from software engineering, but to countercheck if adaptations or complete redesigns are necessary in order to serve game developers well." Crunch and feature creep were found to occassionally impact a majority of respondents, although to a lesser degree than the numbers reported in the aforementioned American surveys. This was still found to be an anomaly, as flexible processes should compensate for irregular workloads. The underlying causes were found to be workflow and integration issues. As such a potential misuse or lack of knowledge in the application of these techniques was found to be probable. Another potential factor was identified in the "heterogenous nature of video game development", which would demand more modifications to existing software development processes. The researchers concluded their findings with a set of recommendations for future research, stressing the importance of repeated surveys in different countries at regular intervals, which should be coupled with the use of interviews and case studies for deeper insights.

In 2013 Koutonen and Leppänen published their research on the extent of agile use, namely their methods and practices, as well as their impact on game development in Finnish game development studios [21]. Compared to [32] they were able to rely on a wider knowledge base. This was the result of a thorough search of a wide selection of 2000′s book sources on video game development, and the inclusion of recent research findings about agile practices and game development in general, which had been published within the last 3 years. Most notably among them are a survey of Finnish software developers and their use of agile, and the findings of [17, 18], achieved through the pioneering of a post-mortem analysis approach for researching video game development. The researchers included a detailed formal description of a generalized game development process. They remarked upon the reported wide use of agile, milestone based development, and the importance of prototypes for assessing the abstract metric of "fun". They also found conflicting descriptions on the number of game development phases in existing literature, ranging from three to six, presumably stemming from authors going into different levels of detail. [21] described "a large array of agile methods and principles, such as Scrum, eXtreme Programming (XP), DSDM, FDD, Kanban and Lean." Koutonen and Leppänen started their research portion off by explaining the benefits of using an anonymous, unsupervised online survey: This approach enables data collection from a large population with a low barrier of answering, which should allow for more generalizable results. Like [32] they followed principles and guidelines laid out in [37, 38, 39, 40, 41, 42]. Their survey was "edited through several iterations, including pre-testing by four persons". Koutonen and Leppänen obtained a data set of game studios directly from two Finnish game developer associations. They chose to exclude studios with a staff size less than five "based on an assumption that work in very small studios is not well organized and may apply more or less ad hoc ways of working". Of the 45 studios that met the criteria, 37 answered a request for contact information for a knowledgable staff member that would be contacted for conducting the survey. These contacts "were also promised a copy of the research report for their reflection and benchmarking". After sending out a letter to them, 20 filled out the survey. The researchers considered the number of answers sufficient for generalizing to Finland as a whole, and potentially other countries with comparable game industries. Similar to [32] the survey consisted of four parts. The "background section" characterized each studio in regard to staff size and studio age, target platforms and genres, size and duration of projects, and the number of concurrent projects. The Finnish game industry was found to be similar to the Austrian one, with 75% of studios having existed for less than five years, and half of them having 15 or less employees. This was attributed to the same issues reported in [32]. The development duration for projects was usually under a year. "Casual games "for PC and mobile platforms were found to be primarily developed. "The last question of this theme concerned the number of concurrent projects. Five (25%) companies had only one project at a time, six (30%) companies two projects, three (15%) companies three projects, four (20%) companies four projects and two (10%) companies five or more projects." Further analysis, however, found no dependencies between agile use, studio size, and number of concurrent projects. The next section on game development phases and tasks was omitted from the findings due to space constraints with the chosen publishing format, and was also not made available elsewhere. The findings on agile methods and practices were consistent with the findings by [32], with 80% of studios making use of Scrum, and a small minority making use of Lean and Kanban. Notably the researchers found that a majority of studios did not use Scrum throughout all project phases. They also noted that use of XP was not reported at all, likely due to being perceived as a set of individual practices, which fell in line with prior findings "that game studios did not deploy agile methods as such but rather some of agile practices". Koutonen and Leppänen also surveyed the use of individual Scrum meetings, finding that for each of them between 25% and 44% of respondents said they "do not use it". Planning and feedback meetings were neglected compared to daily standups, which was the only practice together with conducting sprints that was con-

sistently used throughout all development phases. The most reported XP practices consisted of cross-functional development teams sitting together in an informative work space, and making use of continious integration. The reported levels of agile use, and the use of individual practices were less frequent than those reported by the general software development surey conducted in Finland. The final section of the survey asked respondents about their levels of agreement with various statements about the positive impacts of agile. Respondents largely agreed that agile enabled an incremental process that benefits faster recognition of fun and implementable features, as well as improves communication. "Although agility was seen to help scope management, estimation of schedule and budget, and sticking to the schedule, there were still problems as regards overwork and feature creep". The authors closed by concluding that further research into the customizations and deployment of agile methods and practices could lead to better matching the needs of the game industry.

In 2014 a collaboration between a research scientist from the North Carolina State University and two members of the Microsoft Research Team resulted in the largest study to date in terms of respondents. The survey was answered by 364 survey respondents [43]. The researchers aimed to analyze the differences between video game development and software development. They stressed the importance of relying on empirical observations of large scale groups over the reliance on individual experience accounts. They mainly relied on works by *Tschang et al.* who developed deeper theories on game development based on qualitative investigations of game post-mortems [44, 45]. The earlier works by *Petrillo et al.* were also referenced [17, 18]. Unlike prior studies, the researchers first went through an interview stage, which lead to the creation of statements that would be rated by survey participants. This approach was informed by a growing body of published research on individual interviews that complimented prior survey findings. Interview partners were recruited internationally through searches on LinkedIn, resulting in 14 interviews with individuals that had experience with both video game development, as well as other types of software development. This number of participants was not reached by conducting a single round of participation requests, but rather based on repeated attempts at contacting the 38 individuals identified by LinkedIn searches. These attempts were repeated until a saturation in the form of an absence of differences between interview answers from responding individuals was reached. Participants were asked about software development specific topics as well as general work features. Their answers were used to write statements for the survey. Survey participants would rate their agreement with them on a 5 point likert scale. Ambigous statements and similar worded statements were removed until a target time of 10 minutes for the entire survey was reached. The survey was then sent out to 900 internal Microsoft employees. The employees composed 3 equal sized groups: Game developers, Microsoft Office developers, and a control group of developers belonging to neither ones of the aforementioned groups. Each group consisted of software engineers and testers, as the researchers felt that the more technically minded nature of the statements could be misunderstood or not understood at all by other groups. The distributions of answers were then compared using a Wilcoxon rank-sum test. The researchers chose this approach because it achieved high levels of generalizability, but also listed a number of limitations. Both interviews and the survey made use of convenience sampling methods, and overgeneralized potential differences in populations. As people were asked to list differences, rather than similarities, these were also more likely to be exaggerated. Both also asked about subjective opinions. The definition of certain terms like "agile" was therefore sure to be differently interpreted by different participants. The number of interview participants was on par with other studies but low overall, therefore the interview results would be much less generalizable than those of the survey. The survey was also limited in terms of depth because of its length. The study's findings are broadly interpreted as indicating that there are indeed significant differences in the development of games when compared to other types

of software, which necessitate adaptions and new developments when it comes to tooling and project management. “Nebulous requirements” such as the concept of fun were found to be adverse factors, deterring game developers from making full use of existing best practices. Code reuse and tooling was found to take place on a more fundamental level compared to other types of software development, especially as pertains to game engine development. Pipelines were found to be crucial for game development, echoing the findings of [21]. Similarly, the adherence to agile was more in question when it came to game development. Reports of inflexible deadlines, and significantly higher amounts of pressure were also in line with previous research. Game development work was found to contain challenges unique to its field, with its interdisciplinary workforce purported to have a higher need for good communication and conflict resolution. Taking these findings into account, the researchers concluded that “not only does game development have something to learn from non-game development, but vice-versa as well. Interviewees found that games provided high user satisfaction in part because of extensive focus on understanding user needs, rather than satisfying pre-defined requirements. More focus on the user in other types of software may be beneficial as well.” They resounded the need for more game specific research, not only in terms of project management, but also in terms of software and tooling.

In 2016 a team at the Federal University of Santa Maria in Brazil looked into the software engineering processes of 58 Brazilian game developers [20]. They were informed by previous game developer surveys, post-mortem research, and interviews. Like previous surveys they followed the research guidelines of [37, 38, 39, 40, 41, 42]. The work differed from previous surveys by asking about process-specific problems and success rates. Individual processes taken from literature were grouped into one of four categories: “Agile”, “Predictive / Waterfall-derrived”, “Ad-hoc for customized processes”, and a “no-process or code&fix approach”. Participants would answer a set of questions for each process category they had experience participating in. Before sending the survey out to potential participants it went through a two-step feedback process. First, software development professors were asked to verify the questions in terms of correctness, then the survey was sent out to game developers, who gave feedback on usability and their levels of understanding. Afterwards a search for potential participants commenced. They were located by web searches for Brazilian video game developer associations, which were compiled into a list of development studios. Companies were contacted to verify wether or not they were still active, with 236 different development studios responding and confirming their active status. Additionally, developers were contacted over social media, namely LinkedIn and Facebook. After discarding noisy and contradictory answers, the remaining 58 replies were analyzed. In line with previous findings most game developers reported a predominant usage of agile project management techniques. Interestingly, in terms of success rates, “Ad-hoc processes, with a success rate of 88,53%, represent the best result, followed by Agile with 80,82%, Predictive with 79,63% and lastly No-process, with 66,09%.” The researchers had expected a bigger difference in project success. This might be explained by the small sample size compared to the size of the Brazilian game industry, as well as a lack of definition of what constitutes success. The researchers concluded that “projects that used a systematic approach, regardless of the type, resulted in better products.” Throughout all process categories delays, scope issues, and a lack of documentation were noted as the most widespread problems associated with each process type. Notably, waterfall approaches were the only ones to have a higher number of participants having experienced problems with delays, rather than scope issues. The researchers argued that “the root cause may be related with the requirements phase”. They found that agile and waterfall processes shared the same issues to a larger degree than with ad-hoc and no-process models respectively. Developer experience and project success rates were found to not be correlating. The researchers made a connection between project failure and “a good amount of projects being developed with no systematic approach”.

The most recently published paper is “Software Engineering Practices and Methods in the Game Development Industry”, which targets the game industry of New Zealand and was published in 2019 [19]. Its authors were informed by prior studies within the same field, surveys on New Zealand’s software developers, as well as censuses of the New Zealand game industry’s business aspects. The study sought to explore the usage of different methodologies directly, namely “Scrum, Kanban, Feature Driven Development (FDD), Extreme Programming, Spiral, Lean, and Rapid Application Development”. It also explored how well a studio’s perception of aligning to a prescribed practice matched up with their actual development practices. The method of using an online survey was chosen to obtain the same benefits as existing research, as well as to make it possible to align research results with it. The survey went through an more-indepth testing process than its predecessors. It is described as follows: “Several reviews by senior software engineers, consultations with a professional Scrum Master, an expert in psychometrics and survey design, and pilot testing with a senior game developer and an industry expert.” It was brought before and approved by the University of Canterbury Human Ethics Committee. The survey made use of the New Zealand Game Developers Association website, “thus providing near total population sampling potential”. Like the surveys conducted before it, it relied on the best practices and methods as described in [37, 38, 39, 40, 41, 42]. This meant that “participants were provided with a cover letter explaining the purpose of the study, the extent of their involvement, how and why they were chosen, survey instructions, and how their confidentiality will be preserved”. The survey was advertised through “email [sic], one-on-one meetings with industry representatives, and via online industry networking channels (Slack and Discord).” The authors chose to make use of periodic reminders to increase awareness and response rate within the sample population. They implemented the same inclusion criterion as [21], requiring participating studios to have a staff size of five employees or more. This meant that out of 84 identified game development studios, 30 were contacted. 15 studios replied. 12 met size inclusion criterions in terms of answer length, and were thus analyzed. The survey ran for a period of six weeks. The participants were asked to provide basic information about their studio, as well as information on their usage of, and adherence to different methods throughout various development phases in a way similar to [21]. The chosen development phase model differed from previous research, as it consisted of merely three development phases: Preproduction, production, and postproduction. Questions were opened up by providing “Other/Not applicable/Comments options”. Of the 10 studios that answered questions about their methodology use, 100% used Scrum, 50% used Kanban, and 33% used Feature Driven Development. Notably, none of the other methods were used. In line with the findings by [21] most studios used Scrum during production, and many also used Scrum during the other phases of development. In regards to levels of Scrum use, all studios but one were found to be consistently overestimating their level of adherence to Scrum practices: “Seven of the 11 studios who answered the question had a daily stand up, and of these only four reviewed threats to the sprint goal during this event. Again, only seven of 11 studios incorporated Scrum retrospectives, and of these only four tried to evaluate their development practices and even fewer formalized these into action points. Seven studios conduct sprint reviews but only four of these had team leadership attendance, and five had stakeholder attendance. Only four of the 11 studios that use sprint planning created sprint goals.” Another important finding was that the PO role was only associated with its intended responsibilities at four studios. Seven other studios mixed their PO’s responsibilities with those of other roles, or reported POs taking on only a part of the responsibilities described in literature. Similar findings were made when asking studios to estimate their use of Kanban, as only one studio estimated its use within the corridor of expected answer deviations. The researchers reasoned that these results indicated that studios were using aspects of methods other than Scrum as supplements only. They also suspected that an understanding of Kanban and Feature Driven Development was less ubiquitous: “[It] may be a combination of logistical as well as knowledge contextual factors that limit the full

application of Kanban and FDD." Some of the deficiencies in adherence to Scrum were attributed to the understanding of the PO role itself, and the changes implemented by studios to better adapt Scrum to their work. The researchers stated the assumption that "Scrum may have been adopted by game studios and applied in a mechanistic fashion. This could help explain why studios might be having issues around project management and team dynamics." They also admitted to issues in generalizability, as the number of study participants was small. Nevertheless, the study's results were found to align with previous findings about New Zealand's software developers, as well as previous surveys in other countries targeting game development practices. The researchers suggested that research into the decision making process of studios was needed. Understanding which choices lead to the use of which management techniques could play a key role in better understanding existing findings, as well as explain why modifications to software practices within the game industry exist in the first place.

3. Research questions

The main goal of this work is to explore the working methods and structure of German game studios by conducting a survey, as done previously in other countries. In order to better contextualize the results, they should be made comparable to previous research findings. Additionally, the research itself should be documented and preserved to enable future researchers to analyze the same data set, conduct the same survey, and be able to question the same sample. This should lower the barrier for repeated research, and allow for a more in-depth critique of research findings. As the nature of video game research is still largely exploratory in nature [31, 16], the questioning, rephrasing, restructuring, and redesign of existing research norms as they pertain to survey design should be considered. This might result in new or more differentiated findings that further the understanding of the game industry as a whole. The research questions are thus as follows:

RQ 1: How are the development teams working on commercial digital games in Germany structured?

RQ 2: Which types of frameworks, meetings, and artifacts are used in commercial German game productions?

RQ 3: What changes could be made to existing survey practices to enable new or more differentiated insights as pertains to RQ 1 and RQ 2?

RQ 4: How do the findings compare to previous studies done in other countries?

Answering RQ3 first would have a direct impact on the survey designed to answer the other research questions. As such RQ3 gets directly answered in Chapter 4.1.

4. Survey design

4.1. Changes made to existing survey practices

In order to identify meaningful changes to the design of previous surveys, an analysis of their findings, and those of related works as laid out in Chapter 2, was conducted. The analysis resulted in the formation of a list of critical observations, as pertains to the character of video game development. A subset of thse observations was chosen based on the following criteria: Observations contradicted or suggested a design different from that of existing surveys and were likely to have an impact on the results of answering RQ 1 and RQ 2. This final list of observations is presented below.

O 1: The majority of German game studios have a small staff size [22].

This has implications for the inclusion criteria, as discarding all studios below a certain staff size also discards a majority of the sampling population. [21] and [19] based their exclusion of studios with a staff size below five on assumptions about the lack of organizational complexity and diminished needs of smaller studios. These assumptions have not yet been sufficiently praxis-proven. The last study to include small studios was [32], which did in fact observe lesser complexity and use of advanced techniques in smaller studios. However these findings alone do not justify discarding a majority of the sampling population, especially if this population is likely to benefit from findings anyhow. If small studios, especially those starting out, are not included in research then they can't benefit from current research, which will impact their chances of growing into more mature, larger studios. Instead it appears sensible to follow the approach of [32] in sampling all studios. Afterwards a split between studio sizes or other factors can still be performed before further analysis, but needs to be based on substantial differences found within the data itself.

O 2: The development of a game is performed by a variety of professions [46, 47, 15].

Yet so far the main focus of existing surveys were developers, and in some cases testers. This leaves out a huge percentage of the people working on games. The majority of staff working on large-scale projects is tasked with asset creation and has been largely ignored so far. Smaller game studios are still likely to have a significant amount of people involved in their projects that do not write code, or test the game, and were therefore so far not taken into account when conducting surveys. Asset production roles are complex and multi-faceted, requiring their own workflows, techniques, and tools to work efficiently. Their work is likely to have a major impact on the methods and work structure of game projects as a whole. Therefore, they should both be included in general survey work, as well as be the focus of more specific studies that aim to research individual groups of professions, such as artists.

O 3: Work on games is interdisciplinary [43, 48].

While this has been proven by multiple studies so far, it has not been the topic of further research. It can be reasonably assumed that this impacts the workflows and structuring of project teams. Are team setups static or ever-changing? How and when do roles and responsibilities collaborate? What does this collaboration entail? How is it communicated? Is the process organic and self-governed or part of the responsibility of the higher-ups at a studio? If certain patterns emerge from research on these questions it might be possible to

formulate best practices or problem solving approaches for team configurations of various sizes.

O 4: Many game workers hold multiple roles within the same project [46].

This further complicates research, as specialization on one, or knowledge of multiple roles is likely to play a factor in interdisciplinary collaboration. It is also very likely to impact the formation of teams, especially in studios with smaller staff sizes. How does the knowledge of a person having worked or currently working in multiple roles affect their work and the work of others? Which roles and what knowledge is typically combined within the same person? What are the reasons and factors for taking on the work of multiple roles? Which advantages and disadvantages does this entail? Answering these questions is going to allow for a better contextualization of prior and new research work, and should therefore be considered an important research goal that needs to be handled with care.

O 5: The majority of game studios work on multiple projects at the same time [15, 21].

This finding is likely to have had and continue to have a major impact on the way game development work is organized on individual projects. It opens up a new field of questions about the structures and organization of individual resources: Which roles work on which tasks in which projects and in which phases? Efficiently planning and scheduling work is a complex task on one project alone. How is the additional complexity of planning around work on multiple projects handled? It is also likely to have a large impact on contingency plans and their artifacts, e.g. risk logs. There are also questions on the macro-level, such as what motivates work on multiple projects, the selection of projects, and the upper bounds on how many projects a studio or individual works on over a span of time.

O 6: Highly specialized, well-experienced game workers are very sought after [49, 50].

This has been reported to result in a much more diverse array of employment situations [50]. Expert freelancers might be hired as technical advisors, or to solve specific problems in areas where studio staff lacks expertise. Parts of asset creation or development are outsourced to other studios on a global scale. Expertise is also sold in the form of ready-made products, such as game engines and middleware, e.g. game audio and physics solutions that can be readily integrated into a game project. This poses challenges for conducting surveys, as a pure listing of game studios alone is not going to capture the entirety of what entails work on game projects. Casting a wider net, and specifically researching these arrangements is going to be a key puzzle piece in understanding game development. Additionally, research on how studios collaborate geographically might prove interesting.

Another factor this plays into are hiring practices of game studios. If local talent is hard to come by, it is much more likely that a studio will offer remote working opportunities. This in turn is going to affect communication and collaboration within a project. Especially, if staff is outsourced or only hired on a temporary basis, and therefore doesn't have full knowledge of a game's development.

O 7: The global Pandemic has impacted and transformed work on game projects [51, 15].

Establishing more flexible work methods and arrangements was crucial in continuing work on games. This is likely to have had a permanent impact on the way game workers collaborate. As such, the distribution and impact of remote and hybrid work is a topic of high interest.

O 8: Management in games thinks differently of and makes modifications to existing software practices compared to traditional software development [31].

The differences between game development and other forms of software development have been well-documented and empirically proven to exist. A majority of the theories about these differences so far has contextualized them as potential deficiencies within the game industry at large. Other explanations, such as game development nescesscitating these changes have been proposed, but not yet further explored. Game development is a highly complex topic, but its perception has been found to have become trivialized at times [43]. Conversely, unique problems of game development, such as hard to specify requirements like fun, intense iteration, and highly specialized technical work have been well reported. The question of how well existing methods generalize to solve these problems remains largely unexplored. While comparisons with other industries make sense, they have so far largely only focussed on software development. Exploring similarities with other creative industries has been neglected so far. Additionally the nomenclature and classification of existing techniques should be allowed to differ when it comes to the field of games. Instead of solely enforcing a lens that lends itself to more easy comparison with other industries, building up an understanding of how game workers perceive and classify their work methods should also be taken into account.

O 9: The definition of project success is fuzzy at best, and highly subjective. It differs based on stakeholders. Well-executed management has been shown to correlate positively with project success, but a direct link has not been established [10].

There are countless confounding effects at play during the development of a game. As such researchers need to be careful about the links and conclusions they draw. Claims such as one type of project management practice being more “succesfull” than another one have to criticized for steering the interpretation of results into an unscientific direction. Similarly, while poor management practices are likely to correlate with the amount of extra hours spend to compensate project delays, this correlation first has to be proven, and is far from the only factor at play. Research should at most make observations, explore and explain certain phenomena, and aim to better inform the decisions of game workers. Survey questions must be formulated within the boundaries of these goals.

O 10: Employing a management method or framework is an active, on-going process that impacts every single project member [52, 53].

Existing research broadly identifies which management practices are employed and how they are used, but neglects to ascertain the degree to which individual project members understand, correctly partake in, and efficiently make use of these practices. The focus on interviewing the most knowledgable or leading role individual in a project or studio distorts the perception of how well-known and utilized these practices are throughout the project or studio. Scrum explicitly defines the role of a Scrum master, a person tasked with provid-

ing guidance and teaching other staff the philosophy and correct usage of Scrum and its principles. Surveying all project members of a games project is going to yield a much more nuanced view. Analyzing the data presented by such a survey could help identify systematic issues, such as certain roles having a lack of knowledge and understanding. Tracking the sources of misunderstandings and origins of knowledge gaps could help inform teaching and communication practices.

O 11: The gams industry is very fast-paced [54, 55].

While many papers have stressed the importance of repeated surveying, so far none of the research outlined in Chapter 2 has been conducted again within the same country. Deeper insights into the game industry are certainly needed. But this need has to be balanced with another need for relevancy in games research. There is value in simpler and easier to repeat surveys, especially if their findings can be proven to be replicated, which so far hasn't been attempted. This might be related to the fact that none of the studies so far have made their survey designs completely accessible, only describing part of them in their respective papers. This means that a lot of the effort required to conduct a survey is done again and again for each individual research group. While there are some positive aspects of this, such as different results from different choices made in the design of survey questions, being able to closely compare and contrast a survey against its predecessors in different aspects, e.g. wording choices or structure, would undoubtedly be beneficial. The research landscape on methods used in game development should ideally consist of both easily repeatable short-term and longer-term studies that compliment each other.

Many of the previously conducted surveys also partially based their knowledge on early 2000′s books and individual developer accounts. As [43] pointed out, these accounts are likely to be highly biased and reliance on them should be discouraged in favor of the empiric research that is now more widely available. Adding on to that point, these accounts and books are now largely decades old, which means they are increasingly unlikely to accurately capture and explain the game industry of today. Even with empiric research there is a risk of lagging behind and eventually falling out of step with the reality of game development, if research is not kept up to date. Previous research has already documented instances in which existing literature and empiric results did not match up. Furthermore, the needed cooperation of game workers partaking in interviews and surveys hinges on being able to present potential benefits that are relevant to them and their work. If game workers are able to more easily access and make use of research, they might be encouraged to increase cooperation with researchers, or even start conducting and publishing research on their own. A research field that is organically driven by the game industry itself would be preferable to the current paradigm of researchers having to contend with potentially bridging a chasm between literature and actual practice.

These observations resulted in the following changes made to existing practices, which guided the design of the survey:

Change 1: Include all studio sizes.

This should enable insights into smaller studios which form the majority of studios in Germany and elsewhere. Designing a question about potential organizational units within a project should enable insights into the types of work structures that exist within commercial game development. It should also enable further insights into bigger studios, which are more likely to have a bigger need for organization.

Change 2: Design a survey for all types of game workers.

This should enable insights on how different professions understand, work on, and collaborate on game projects. It is important to thoroughly test survey questions with a variety of professions to make sure questions can be understood by both more technically minded and less technically minded people, as well as professions having more and less insights into management work and work structures. It is important to track both understanding and non-understanding, as such the inclusion of "other" and "don't know" options should be made standard. The "other" option should allow for fill-in answers, which should limit how much the phrasing of a question impacts the results, and allow researchers to figure out wether or not a question is sufficiently well-designed.

Change 3: Request that the survey is shared internally at studios.

This should enable insights on more projects, as well as on how different people perceive the same game project. It is important that anonymity can be preserved, while still enabling researchers to identify answers coming from people working on the same project.

Change 4: Introduce a question that allows for the categorization and analysis of game worker professions. This should enable insights on differences between survey answers from different job groups, and reveal common job pairings.

Change 5: Consider the importance assigned to the number of projects an individual is currently working on.

Either allow for the questioning of work on all projects or design the survey in a way that makes it clear that answers should be consistently about one project. This should enable consistent insights and the discovery of potential links to other data points.

Change 6: Introduce a question that asks about the physical closeness of people collaborating on a project.

Are people collaborating in person or through the internet? This should enable insights into how collaboration is done, as well as its potential impacts on project work. Further insights, such as how work time at a studio and elsewhere is distributed might also be of note.

Change 7: Ask about types of management approaches and methods in a generalized way that doesn't assume a clear black and white picture.

This is in line with prioritizing learnings about the game industry itself over assuming that concepts hold a similar role as in other industries. This should enable insights into how well concepts of the game industry generalize to other industries and where they stem from. It also enables further insights into key differences without assigning them an inherent value.

In addition to these changes it was also decided to include a request for interviews at the end of the survey. Interviews have been proven to compliment survey research by enabling deeper insights and contextualization of the data collected [43]. Discussing the findings of the survey with

industry insiders should result in a more nuanced and complete picture. The interview process is outlined in Chapter 4.4, while its findings are described in Chapter 7. The interviews themselves have been added to Appendix D: “Interviews".

4.2. Survey population

Germany has an official game industry association in *Game* [56]. *Game* provides a list of German game studios in the form of a publically available data set that anyone can add to [57]. A spot check of the data set confirmed that it contained both established bigger studios, as well as smaller indie developers, and recent startups. A search on social media similar to [43] and [20] was considered, but rejected based on a lack of control and an inability to easily replicate findings. As such the data set provided by *Game* was used as the sole source for the candidate search.

The data set contained entries for developers, publishers, service providers, public and educational institutions, and an “other category designed for press contacts, industry events, and e-sports organizations. The list is uncurated, which means potential misclassifications were very likely. In order to keep the data preparation step within a reasonable time span and provide clear criteria for inclusion, it was decided to only make use of the entries by developers and publishers. The survey would make use of snowball sampling by asking candidates to directly share the survey with their coworkers, which should result in a more diverse population of game workers. A total of 882 entries were checked for the following criteria:

Criterium 1: Website listed and accessible.

Some entries listed multiple websites, e.g. for their different games. Company pages were preferred. Otherwise all websites were considered.

Some of the entries did not specify a website or had typos. A Google search was conducted to try and find an associated website with the exact wording of the studio or publisher name. In order to keep search times reasonable it was limited to the first page of results. If the first page did not yield any results that matched, the entry was rejected.

Some of the listed websites did not load and eventually timed out. For those websites a retry with another browser on another day was attempted. If that did not succeed either, the entry was rejected.

Some of the listed websited did load but displayed an error, administrator login, or work in progress message. These entries were also rejected.

This resulted in the rejection of 88 entries marked “inactive or no website”.

Criterium 2: E-mail available.

Some entries listed multiple e-mail addresses. Contact and press inquiry addresses were preferred.

Some entries only listed a job application address. In these cases the listed website was searched for another address used for general communication or press inquiries. If no direct contact information was found, the website’s imprint was searched. If no viable e-mail adress was found in the imprint, the entry was rejected.

Some entries directly listed a customer support e-mail address. In these cases associated websites were searched for another e-mail address, using the same method described above. If one was found it replaced the customer support adress, otherwise

it was kept. This was later proven to have been the right approach, as some studios directly replied to the e-mails sent to their support adresses.

Some entries did not list any e-mail address. In these cases the website was searched for contact information using the same method as for customer support e-mail addresses. If no viable e-mail was able to be located, the entry was rejected.

This resulted in the rejection of 16 entries marked “no e-mail available”.

Criterium 3: Unique entry.

Some of the entries were exact duplicates of previous entries with the exception of the company name field. If the website did not allow for making any further distinctions, the duplicate entry was rejeced. This resulted in the rejection of 10 entries marked “duplicate entry”.

A further 3 entries listed the same e-mail address as a previous entry. As no other e-mail address could be located on the company website they were rejected and marked as “same e-mail”.

Criterium 4: Commercially active game development work.

The website of each entry was checked for listings or blog posts of published commercial digital games or other projects in active commercial development. It had to be clear that these projects were intended to be sold or made as the result of contract work. Fan projects, portfolio work, and similar other works did not qualify. If no listings or blog posts matching the requirements was found, the entry was rejected.

If a website had last made mention of working on a game project more than five years ago, the project was considered abandoned and the entry was rejected. The vast majority of game development takes less than five years [58]. Outlier projects that take more than five years are typically made by big publishers and studios with a consistent output of blog posts and other media releases [2]. It was considered strongly unlikely that there were any people at those rejected companies that could meaningfully contribute to the survey based on the time that had passed.

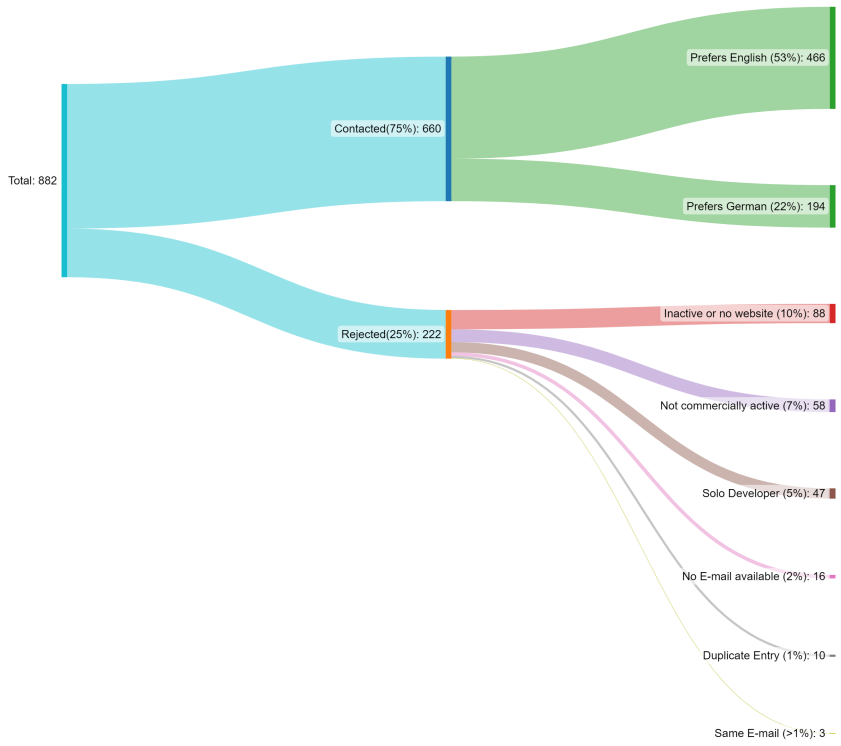
If a website had only made mention of finishing a project, and the date of that release or associated piece of writing was older than five years, the entry was rejected as well. Some companies do not make mention of a game project being in development until it nears completion. Based on the same reasoning as above, a gap of more than five years was considered a sign of having abandoned commercial game development work, or not having been contracted to work on a game project in that frame of time. It was considered strongly unlikely that there were any people at those rejected companies that could meaningfully contribute to the survey based on the time that had passed.

This resulted in the rejection of 58 entries marked “no commercially active game development work”.

Criterium 5: Publisher or studio.

47 entries listed were of inidividual developers. These were rejected and marked as *solo developer* because the criteria outlined above was not generalizable to the information provided by them. For example it was hard to gauge if a developer was involved in any commercial game projects, and if so with other people.

All together a total of 222 entries were rejected and 660 entries were contacted. The entries are available in Appendix A: “Rejected studios and solo developers" and Appendix B: “Contacted studios". *Game* has done projections on the number of publishers and developer studios making games in Germany at the start of 2022 and estimated their number at 786 [22]. Comparing this number with the final number of contacted companies shows that a majority of the German game industry was included in this population. If a sufficient number of respondents were to be achieved the results could reasonably be assumed to generalize to Germany as a whole. The entries were further split into a German and English speaking category, based on the language used on each entry’s preferred or available website, as well as their e-mail address. The survey and its associated communication documents were designed bilingually to reduce the risk of misunderstandings for native German speakers. English was included because its use is well-taught and widespread in Germany, and therefore used as a default for communicating on a more international level. The use of additional languages might benefit more people, but was considered out of scope for this survey. This was because of an absence of research on other languages spoken in the German game industry. 466 entries were noted as preferring English comunication, while the other 194 were noted as preferring German. These numbers are presented in a summarized way in Figure 1.



Rough percentages of the total amount are given to better illustrate the distribution.

Figure 1: Overview of the candidate selection process

4.3. Survey structure

The survey was designed following the guidelines from the *Hochschule der Medien (HdM)* and [37, 38, 39, 40, 41, 42]. Feedback on the survey and associated materials was provided by five personal contacts who speak both English and German on a daily professional basis. Three of those contacts had a background in game development and were currently working as game developers, 2D and 3D artists, tech artists, as well as managers in a commercial setting. They provided input on the length of the survey, as well as its content through their perspective. Two contacts had a background in information management and were therefore well-equipped to give feedback on the general design and goals of the survey questions. An additional contact who worked in marketing was planning to assist with the writing of the initial contact letters by giving feedback on communicating intent and goals of the survey in a clear and concise way. Due to personal circumstances they were unavailable for a longer period of time, and no replacement was found before the survey was due to be released. Both of the supervising professors were consulted as well, having a profound background in and knowledge of management and game development respectively. The *HdM* also provided the necessary infrastructure for sending out e-mails and conducting an online survey through the use of LimeSurvey. The survey was designed with prior research and the modifications made to it in Chapter 4.1 in mind. It was designed to run for a span of at least four weeks, from 28th of February till 31st of March. If engagement at the end of the deadline was still high, it was planned to be kept running until engagement dropped off. Keeping ethical guidelines in mind one reminder would be sent out at the halfway mark, if engagement had significantly dropped off by then [59]. As the survey was intended to be anonymous, companies that had already participated were not delineated from those that did not. The guidelines provided by [59] were not consulted until the first e-mail had been sent out. As such first correspondence with the participants was missing information on the possibility of sending out a reminder mail. The initial contact e-mail was designed to drive engagement by being concise and clearly laying out the purpose and advantages of answering the survey. It contained a bespoke e-mail address for participants to reach out to, that was intended to build trust by aligning with the goals of the survey. The English e-mail is depicted below:

E-mail 1: Initial reachout

Subject: Working methods and structure of commercial digital game projects in Germany

Good morning!
You are receiving this e-mail due to your listing in the directory of the German game industry. We are reaching out to ask for your and your employees' participation in a study about the working methods and structure of commercial digital games in Germany. The results of the study are intended to facilitate the development of future game projects and will be made freely available to all participants. You may participate in a short survey via this link until March 31st. If you would be available for a more in-depth interview or have any questions, we would be delighted to have you reach out to [e-mail address omitted].

With kind regards
Simon Robl
Master Student at Stuttgart Media University

It was sent to all participants that were recorded to have a preference for English communication. A similarly worded e-mail in German was sent out to the participants that were recorded to have a preference for German communication. In both cases the link to the survey differed slightly, starting each participant off with the language version of the survey they should prefer. It was possible to switch this preference at any time after visiting the link. The survey restated the information provided in the e-mail in a more concise way:

> *Information Box 1*
>
> Thank you for your interest in this survey!
>
> The following survey examines the work methods and structure of commercial digital games in Germany. It is being conducted as part of a master's thesis at the Hochschule der Medien in Stuttgart. The aim of the thesis is to create an openly accessible, scientifically grounded basis for future game projects. This survey can be paused at any time after you've begun by clicking on the "Resume Later" button in the upper right corner of the page.

The initial survey page also contained a privacy statement detailing how each participant's data was going to be kept private and which parties were responsible for processing the survey data. After accepting the privacy statement, participants would take the survey one section after the other, before being redirected to a final page intended to reiterate the requests for snowball sampling and possibility of reaching out as an interviewee candidate.

4.3.1. Personal information

Unlike prior surveys the participants were encouraged to provide information about themselves and not just about their work. Recording demographic data was considered, but since Germany provides no detailed demographic data due to its history, and *Game* also didn't perform studies about this topic, there is no data the demographics could be compared to. As the contacted studios had been written down, the aspect of being able to replicate the survey population was considered to have been fulfilled. Additionally, the design of and time taken to answer these questions can prove a critical hurdle in survey design. The focus was instead on capturing factors that might influence the answers given in later sections.

As the nature of these questions is potentially sensitive, care was taken to communicate that data was going to stay anonymous:

> *Information Box 2*
>
> The information provided by you in this section is going to be anonymized into grouped sections, for example job groups instead of individual answers. For each question, there is also the option to decline giving an answer ("prefer not to answer").

Closed-ended questions in the form of ranges or buckets were not used since the distribution of the data was either unknown or had little to no prior research findings. This way the shape of the data could first be determined, and then presented in a manner granular enough to preserve anonymity without losing important features. Allowing participants to not provide an answer was done in order to dsiscourage the filling in of wrong information, which would skew the data.

One factor that had been discussed but not yet explored is the experience of the people working on a project. Experience touches on a number of complex factors that make up the different

forms of knowledge an individual can draw on [25]. Assessing all the factors that influence a project member's decision making process alone would be an entire survey's worth. Still, there could be some correlations between the experience an individual posseses and their work, which would provide interesting insights. As such, a question was designed to gather the experience a participant has had professionally working on digital games. The wording was chosen to be generic enough to be easily answerable, but caution has to be taken when interpreting the results. The factor *time spent working* alone does not reflect the total relevant experience a participant posesses. A simplified assumption might be that a group of people possessing years of experience working on games makes different choices to a group of people having only recently begun working in games. If that assumption does not hold true, it indicates an area where more research should be conducted to find out the reasons behind this lack of change. On the other hand if significant changes are observed they should be questioned under the same lens. Therefore *time spent working* is not expected to be a direct factor that explains differences, but rather one that can reveal them along its axis. In order to standardize answer formats to some degree participants were given some additional information on how to treat months:

Question 1

How many years have you spent professionally working on digital games so far (decimal, 6 months = 0.5)?

.....

☐ Please specify: _____

☐ Prefer not to answer

The number of concurrent projects had previously been assessed on a studio level. Asking the question on the level of individuals allows for determining if experience plays a part in the number of projects a games worker is part of, among other factors. If individual answer sets differ enough to conclude that participants are part of different studios they also allow for comparing the results to previous data.

Question 2

How many digital games do you currently work on in a professional capacity (whole number)?

.....

☐ Please specify: _____

☐ Prefer not to answer

The job and therefore project roles an individual holds were taken as the last individual factor to observe. Do experience, number of projects, and job titles correlate? If so, how? If individual answer sets were similar enough to conclude they are part of the same studio or game project, they could give information on how different roles perceive the project, and how they interact. Once more, explicit categories were not given to allow for more fine-grained detail if the number of participants was high enough.

Question 3

What is your current job title / What are your current job titles?

.....

☐ Please specify: _____

☐ Prefer not to answer

Some studies profitted from being conducted within an individual company or limited geographical area [43, 25]. *Game* identified some game developer hotspots in Germany, such as Berlin and Hamburg based on the number of studios located in and around these cities [22]. Asking where developers are working from might give some insights into particularly cooperative regions for research. It also helps with identifying potential blind spots for this survey. If enough answers were to be collected, the distribution of participants could give valuable insights as well. For example, the results could be compared to the original data set to assess if it is representative, while also potentially giving insights into how remotely working game workers are distributed inside and outside of Germany. This question was grouped in with the personal questions, and is shown on a the next page, due to its size.

Question 4

In which state or states do you work?

.....

- ☐ Prefer not to answer
- ☐ Outside of Germany
- ☐ Baden Württemberg
- ☐ Bavaria
- ☐ Berlin
- ☐ Brandenburg
- ☐ Bremen
- ☐ Hamburg
- ☐ Hesse
- ☐ Mecklenburg Western Pomerania
- ☐ Lower Saxony
- ☐ Northrhine-Westphalia
- ☐ Rhineland-Palatinate
- ☐ Saarland
- ☐ Saxony
- ☐ Saxony-Anhalt
- ☐ Schleswig-Holstein
- ☐ Thuringia

4.3.2. Project structure

The main part of the survey was about a participant's last worked on game project. This design was chosen to encourage answers about more recent work, which was assumed to be more relevant and better kept in the mind than older projects. It was decided to only ask questions about one project, even if an individual currently worked on multiple ones. This was done to keep answer times within reasonable limits. Participants were reminded about these restrictions right at the start of the survey section.

Information Box 3

The information provided by you in this section is about the commercial digital game you last worked on or are currently working on. If there are multiple games, please answer all questions in relation to a single game. When doing so, choose the game that you remember best or are working on the most.

The information given by you is going to be anonymized into grouped sections, for example distinct project types. For each question you may instead answer with "don't know" or "prefer not to answer".

The inclusion of a "don't know" option was motivated by prior research in Chapter 2 indicating that clearly delineating between a lack of knowledge and a desire not to answer results in a clearer picture, as it allows researchers to draw conclusions about the level of knowledge potential groups of survey participants possess. A high amount of people answering "don't know" might also indicate problems with the design of the survey, especially if the participants have roles associated with the knowledge that is being asked of them.

Questions about the team structure and number of people within a team been absent from existing research so far. This absence has to be remarked upon because management literature stresses the importance of applying methods to teams of reasonable sizes [11, 53]. "Reasonable" being a team size for which processes don't take up excessive time, e.g. a daily progress meeting in a big project team, and one in which team members can collaborate best. If the intended sizes for a certain method are exceeded, it is typically advised to break teams down into subteams, so as not to gradually lose the advantages a method relies on for organizing work in an effective manner. As no studies on the team structure of game projects exist the question was formulated based on research findings from traditional software development, as well as literature on game development practices. An "other" option was introduced as to not restrict participants into predefined categories.

Question 5

How are the people working on the game structured?

.....

- ☐ One joint team
- ☐ Multiple feature teams for different parts of the game, such as levels, mechanics, etc...
- ☐ Several departments for different tasks, such as art, game design, etc...
- ☐ Other, please specify: _____
- ☐ Don't know
- ☐ Prefer not to answer

Question 6

How many people work on the game in your team or department (whole number)?

.....

☐ Please specify: _____

☐ Don't know

☐ Prefer not to answer

The topic of collaboration is another extensive research area, whose close study would go beyond the scope of the survey. It was decided to focus on initial questions about the use of remote and hybrid work scenarios, as they provide a first impression of the variety and distribution of the types of collaboration found within game development. The second question about the "work on-site percentage" was only shown to participants that selected both the "on-site" and "remotely" option for the first question. Once more care has to be taken when interpreting the results of these questions. The percentage should not be used as a direct indicator for how game work is generally distributed, but rather as an assessment tool for how the percentages themselves shape up. It was deliberately designed to oversimplify a complex topic in favor of obtaining a rough first impression that respondents could intuitively answer in a quick manner. If percentages are clustered around extremes, it could be taken as an indicator that hybrid work scenarios occur differently than if a more even distribution were to be found. As such it adds context to the interpretation of the first question.

Question 7

How do you collaborate with others on the game (select all that apply)?

.....

☐ On-site

☐ Remotely

☐ Don't know

☐ Prefer not to answer

Question 8

What percentage do you typically work on-site on the game?

.....

☐ Please specify: _____

☐ Don't know

☐ Prefer not to answer

The next set of questions was similar in design to previous research by [19]. It sought to explore the adherence to Scrum practices, which have been found to be overwhelmingly in use in game projects. Due to the large survey population, the focus on surveying individual game workers, and in keeping reasonable time restrictions for the survey, a new questionnaire design was necessary. Utilizing the insights from [19] and available literature on best practices, a simplified two question design was created. A list of meeting types and associated examples was compiled from [11]. Different likert scales were considered for rating the regularity with which these meetings were conducted, based on guidelines and examples taken from [60, 61, 62]. The designed scales were either subjective, rating the perceived rate of repeated meetings, or tried to match absolute and relative time spans such as “once a week” or “once a sprint”. In the end all of these scales were rejected, as they would have depended on extensive additional information about each game project in order to obtain useful results. The phases and configuration of game projects is highly individualistic [8], as such the data would have been oversimplified to the point of no longer being able to be meaningfully interpreted as it wouldn’t generalize well. Instead it was decided to assess if the findings by [30] could be replicated by checking which types of meetings were neglected compared to others. Best practices recommend conducting all the meetings on a regular basis throughout all the phases of a project, and documenting them well. It was assumed that a majority of participants were likely to be able to tell accurately if these practices were being followed. As game development comes with its own set of special requirements and other factors as laid out in Chapter 2 the interpretation of these results should not assign a value to findings that differ from recommendations, but rather focus on finding potential factors for differences within the other information provided by participants and existing research to formulate theories on why these differences exist.

Question 9

What types of meetings took place and how often?

.....

	Prefer not to answer	**Don’t know**	**Spontanous / When Needed**	**Regularly**
Meetings on the progress of individual team members, e.g. standups or dailies	◯	◯	◯	◯
Meetings on the progress on the project as a whole, e.g. status meetings and reviews	◯	◯	◯	◯
Meetings to work out upcoming tasks, e.g. refinements or modeling	◯	◯	◯	◯
Meetings for planning and scheduling tasks, e.g. Sprint Planning	◯	◯	◯	◯
Meetings about the progress of work in recent times, e.g. retrospectives and lessons learned	◯	◯	◯	◯

Question 10

Do the meetings and their results get documented?

- ☐ Yes, all of them
- ☐ Partially, please specify: _____
- ☐ No, none of them
- ☐ Don't know
- ☐ Prefer not to answer

The final two questions of the survey were intended to find out more about the way that game workers characterize the development process of a game project. Question 11: "How does the development of the game progress?" adresses the different ways development can be done, which is informed by post-mortem analysis of development work [17]. Work is expected to be done largely in parallel on a feature level, in order to best make use of all available resources. Similarly, work on bigger projects that necesscitates engine modifications, custom pipeline development, etc... would be expected to be done in parallel layers to the development of the game itself. If one or both of these expectations hold true this could be presumed to be a factor for why game development has a need for different management flows, as the people working on it, potentially in a variety of roles, have to be matched with a variety of time-critical ever-changing tasks on short notice in an efficient way.

Question 11

How does the development of the game progress (Check all that apply) ?

- ☐ Work on one layer of the game at a time. For example, first on an engine, then the basic mechanics, etc...
- ☐ Work on multiple layers of the game simultaneously. For example, on the engine and game in parallel.
- ☐ Developing one feature at a time. For example, level by level, mechanic by mechanic, etc..
- ☐ Parallel development of multiple features such as levels, mechanics, etc....
- ☐ Other, please specify: _____
- ☐ Don't know
- ☐ Prefer not to answer

Question 12: “How would you characterize the development process?" then asks the question of how individual game workers understand that process within the nomenclature of management methods. The nomenclature and descriptions were taken from and combined with the empiric findings of [18] and [8]. Unlike prior surveys this question was designed as a multiple choice question, which was intended to paint a clearer picture of how game workers perceive these processes. To this end there an “other” option was added, which would allow game workers to provide a deeper understanding in their own words, as well as give additional context to their process if necessary.

Question 12

How would you characterize the development process?

.....

☐ Waterfall / Predictive

A sequential progression in which the next project phase is started only if the previous phase is completely finished.

☐ Iterative

Progress consists of repeating short-cycles (e.g. Sprints) to deliver a complete feature or meaningful increment.

☐ Hybrid

A combination of linear and iterative progression types in the same project.

☐ Ad-Hoc

Bespoke process created for a specific project, without a previous definition. In ad-hoc process, activities like meetings and work steps are defined on demand and the process changes to respond to issues as they arise.

☐ Other, please specify: _____

☐ Don’t know

☐ Prefer not to answer

After answering all questions the participants were redirected to a final page that thanked them for their participation and reiterated the requests for snowballing and interviews:

Information Box 4

Thank you so much for your participation!

If you would like to receive the analysis of the results, or if you would be available for further interview questions please reach out to [e-mail address omitted in thesis]. You can continue supporting this survey by forwarding the survey link to others: [survey link omitted in thesis]

4.4. Participation results

There is no clear consensus on which day and time yields the best response rates for surveys delivered by e-mail [63]. General advice is to not choose the start or end of the week, and to choose a time that is not too early or too late, as people tend to be the busiest at the start of a day, and end of day times can vary. Tuesday the 28th of February at 3 PM was chosen as the date the initial e-mail was to be sent out. Two e-mails were sent, one in English and one in German, containing all of the company e-mail adresses in the BCC field, split by their language preference so that each company only received one e-mail.

Seven e-mails were not delivered due to human error when compiling the list of companies, as their addresses contained typos. It was decided to contact these companies again at a later date. 35 e-mails were not delivered due to technical difficulties. 20 of them were rejected due to spam filters and lack of trust in the *HdM* domain name. A further 11 were not delivered as "user unknown", indicating the address did no longer exist on the recipient mail server. Three e-mails were not delivered due to a connection timeout to the recipient mail server, and one e-mail was not delivered as the recipient had no more storage left for e-mails, likely indicating an abandoned e-mail address.

Figure 2 shows the participation in the study over time, which was monitored on a daily basis to decide whether or not a reminder e-mail should be sent out. Participation was highest on the day the initial e-mail was sent and then dropped off significantly until the end of the week. Numbers stayed very low for the following week, which lead to the decision to send out a survey reminder. The reminder was sent out on March 16th at 10 AM. Changes to the weekday and time were made in order to increase potential reach to participants that had different e-mail checking habits. Since participation was anonymous, the study was largely sent out to the same addresses. The seven companies that had not been contacted initially due to human error were included in this e-mail. The 35 adresses that were not able to be initially contacted were not contacted again. Additionally three companies had replied to the request for an interview, and a further three companies had sent an e-mail declining any further participation. These six companies did also not receive a reminder. The subject line, as well as the initial paragraph were changed to indicate it was a survey reminder, while the rest of the text stayed the same as in E-mail 1.

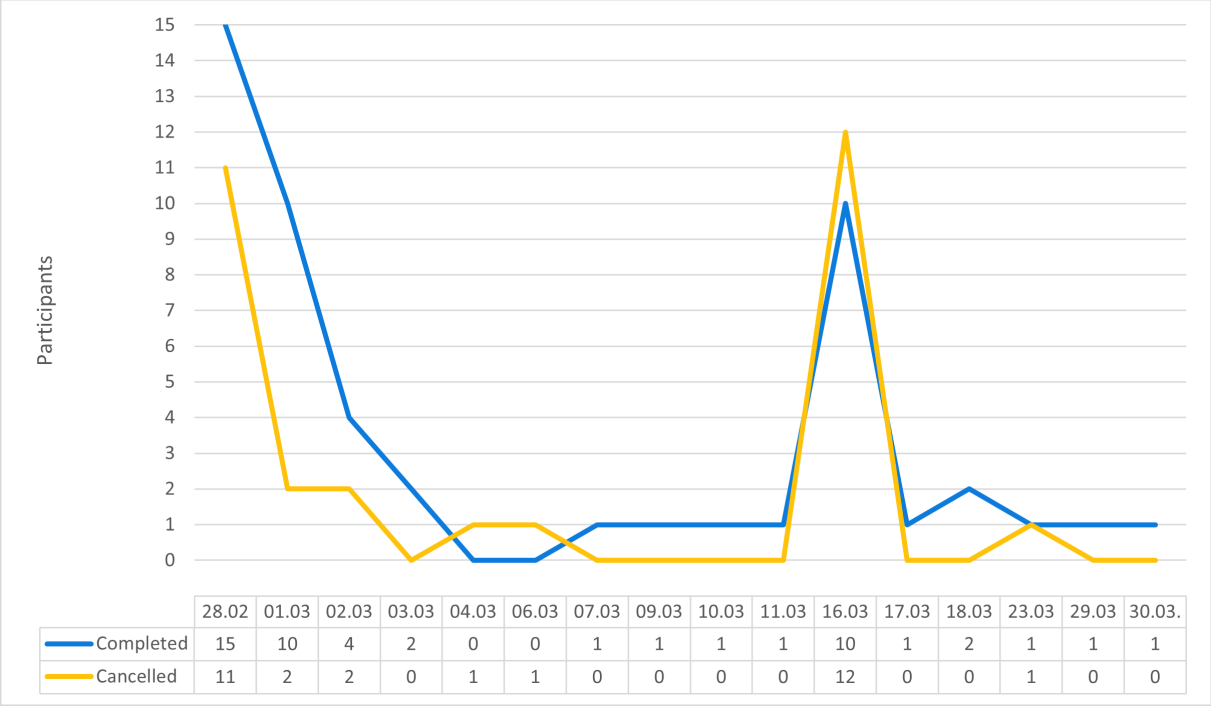
E-mail 2: Reminder

Subject:
Reminder - Working methods and structure of commercial digital game projects in Germany

Good morning!
You are receiving this e-mail due to your listing in the directory of the German game industry. We are very thankful for the interest in our survey so far and are sending out this one-time reminder to reach out to more potential participants.

The reminder e-mail was successfully delivered to all participants and resulted in a one-day spike in survey participation numbers. Notably the number of participants who did not complete the survey was slightly higher than the number of successful completions. Afterwards participation numbers fell sharply and faster than when the initial e-mail had been sent out, which had been anticipated. An additional 16 complete responses were obtained for a total of 51 complete responses until the end of the survey. A further 30 people did not complete the survey. In compliance with

data protection laws partial answers were not taken into account. This puts the total amount of participants at 81. As none of them answered more than the first or second question at most before quitting, this represented no substantial loss in answers. One of the 51 complete responses was removed from the answer set, as the answers belonging to that response made clear it was not about a commercial project. The variety of answers and answer times leads to the conclusion that each remaining complete response was given by a different company. This means that roughly 13% of the contacted companies started the survey, and that 63% of them, or 8% in total, completed the survey.



	28.02	01.03	02.03	03.03	04.03	06.03	07.03	09.03	10.03	11.03	16.03	17.03	18.03	23.03	29.03	30.03.
Completed	15	10	4	2	0	0	1	1	1	1	10	1	2	1	1	1
Cancelled	11	2	2	0	1	1	0	0	0	0	12	0	0	1	0	0

Figure 2: Study participation over time

The three participants answering the request for an interview were contacted two weeks after the survey had concluded, in order to hold a 30 minute interview intended to follow up on initial survey findings, and discuss factors outside the survey that influence game development projects. One interview candidate was entering a hot phase of development that allowed for little extra time, as such no interview was conducted. The two interviews were held on the 19th and 21st of April respectively over a Microsoft Teams video call, that was recorded and later transcribed. The interview partners were provided with a set of three questions in advance and also gave their consent to be recorded. As such the offered alternative of taking notes during the interview was not nescassary. The transcribed interviews were sent back to the interview partners to allow for the removal of individual sentences, and the decision of whether or not it should be published under their name or be made anonymous instead. Interview partners and the results of the interviews are discussed in Chapter 7, while the interviews themselves have been added to Appendix D: “Interviews".

5. Data processing

The completed answers were processed by manual means with Microsoft Excel and XLSTAT, and by automated means using Python and R. Charts were created using Excel, XLSTAT, and the Python “Seaborn” and “Plotly” packages. Chart colors were taken from [64] in order to make research accessible for color-blind and vision-impaired individuals. It was decided to make the research results themselves available in Appendix C: “Survey results" to encourage use and further research by others. As such the data processing step not only consisted of coding data but also of added anonymization steps where needed. This was a procedure all participants had been informed about and explicitly consented to prior to starting the survey.

Question 1: “How many years have you spent professionally working on digital games so far?" and Question 2: “How many digital games do you currently work on in a professional capacity?" were answered by all participants. Participants stuck to the suggested answering formats of specifying a decimal and whole number respectively. For Question 1: “How many years have you spent professionally working on digital games so far?" all participants used one decimal place at most, requiring no further rounding to standardize the data further. Answers to both questions were considered highly sensitive, as they could lead to the identification of individuals in the context of presenting the survey results for use by other researchers. The answers to Question 1: “How many years have you spent professionally working on digital games so far?" were almost all unique, and were turned into quartile ranges that preserved the approximate shape of the data without revealing individual values. The answers to Question 2: “How many digital games do you currently work on in a professional capacity?" were only partially unique. As such, all unique values were grouped into a range, while other values were preserved as is. These distinctions once more correlated with splitting the data into quartiles. The answers to both questions were also tested for normal distribution using the Shapiro-Wilk test. As the data was highly unlikely to be normally distributed (exact values are reported in Chapter 6), a two-tailed Wilcoxon signed-rank test was computed to find if data correlated.

Question 3: “What is your current job title?" was answered by 45 participants in both German and English, resulting in 39 unique combinations of job roles. All combinations were split into individual job roles. German job roles were translated to their English gender neutral equivalents. The data contained both the long forms as well as the abbreviations of some job roles, e.g. both “Product Owner” and “PO”. The job roles were unified by taking the dominant version used to refer to them within the data. If there was no dominant version the long form was used. The data also contained some verb forms of job roles, e.g. design and designer. In these cases the verbs were replaced by job roles. Afterwards, a manual clustering process was used to group the job roles by broader job categories. Each job was assigned a dominant job category. Figure 3 provides an overview of the results of this clustering process.

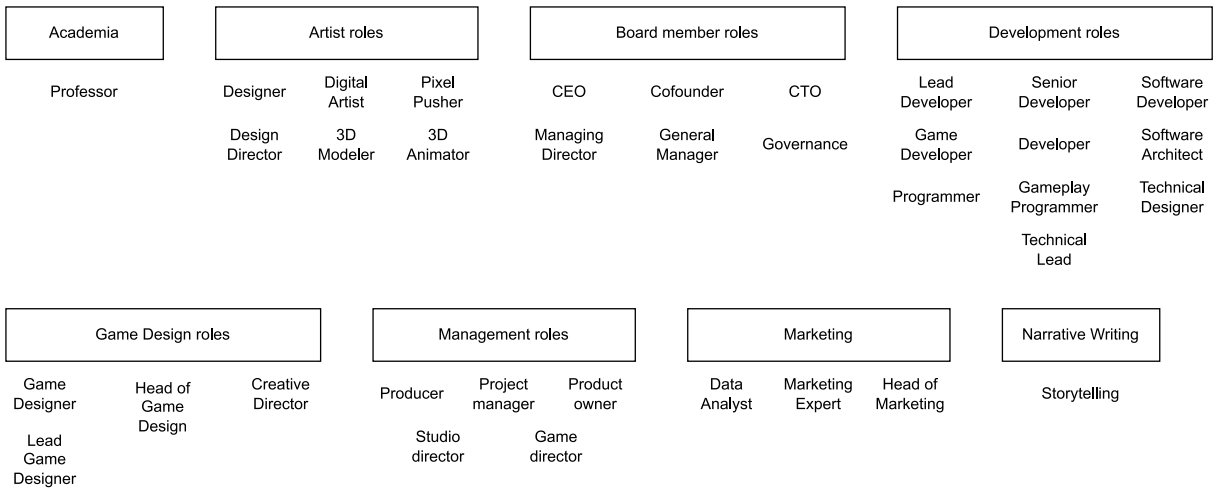


Figure 3: Individual job roles specified by participants

After clustering, the number of participants belonging to each job category was counted. If a category had at least five participants it was considered significant enough to be studied in terms of its relation to other questions. If a category had less than five associated participants, it was folded into an “Others” category. This threshold number was chosen to provide a balance between the preservation of distinct categories and their share of total participants. A low number of participants makes providing anonymity through categorization impossible to achieve, which was considered a priority, as job titles and their combinations could lead to the identification of survey participants. This resulted in the erasure of the “Academia”, “Marketing”, and “Narrative Writing” categories. The “Management roles” category was renamed to “Producers / Managers” to stress the intertwined nature and ambiguity of these roles, as a number of participants specified job roles belonging to both. For each participant their job roles were encoded as y and n for belonging and not belonging, or x for no answer, for the following job categories: “Board members”, “Producers / Managers”, “Developers”, “Game designers”, “Artists”, and “Others”. Additionally a “Lead positions” category was added that was set to y for all Developers, Game designers, Artists, and Others that were in a leading role position. This was done to allow a finer distinction between participants that had leadership experience in these roles and those that did not.

The answers to Question 1: “How many years have you spent professionally working on digital games so far?" and Question 2: “How many digital games do you currently work on in a professional capacity?" were then also analyzed in the context of the answers to Question 3: “What is your current job title?". Correlation between the number of job roles and the answers to the first two questions were computed using the Wilcoxon signed-rank test once more.

Question 4: “In which state or states do you work?" was answered by 49 out of 50 participants. The number of participants made it unlikely that their geographical distribution could be correlated meaningfully with prior data. As such the answers to Question 4: “In which state or states do you work?" was solely analyzed in terms of raw count. As stated previously in Chapter 4.1, finding where participants are located can allow further research to specialize on promising areas. Allowing other researchers access to answer sets including geographical location was considered too sensitive, as such the answers to this question has been omitted from Appendix C: “Survey results".

Question 5: “How are the people working on the game structured?" was answered by all participants and analyzed by individual answer options as well as answer combinations. Four participants chose an additional “other” option to explain that their team collaborated with or included external resources, e.g. freelancers and other types of business relationships. These answers were used to

create an additional answer option called “Externals” that was included in the analysis. Answer combinations were standardized in terms of their order and included as is in Appendix C: “Survey results". The associated team or department sizes provided by Question 6: “How many people work on the game in your team or department?" from all but 2 participants were considered highly personal and as such went through a similar anonymization procedure to Question 1: “How many years have you spent professionally working on digital games so far?" and Question 2: “How many digital games do you currently work on in a professional capacity?". In order to still provide meaningful results for future research the numbers were anonymized by the first category chosen by each participant: “One joint team”, “Multiple feature teams”, or “Multiple departments”. The resulting sets were still too small to provide quartile data, as such they were instead split once at the median. Each category also had special cases that were specified seperately with a wider range, including limited padding of maximum numbers, which served to preserve anonymity while still seperating the values cleanly from other data.

All participants answered Question 7: “How do you collaborate with others on the game?" as well, with 25 of 26 that had specified working both remote and on-site providing an answer to Question 8: “What percentage do you typically work on-site on the game?", while one participant specified “don’t know”. As these values were unlikely to lead to the identification of individuals, especially due to the anonymization done to prior, more sensitive questions, the answers to Question 7: “How do you collaborate with others on the game?" and Question 8: “What percentage do you typically work on-site on the game?" were included as is in Appendix C: “Survey results". The same is true for Question 9: “What types of meetings took place and how often?" which was analyzed per meeting category, and only consisted of closed-ended answer options.

Question 10: “Do the meetings and their results get documented?" was answered by 49 out of 50 participants. 23 of them chose the “partially” option and further specified in their own words. Answers ranged from estimating a percentage to specifying meetings and protocol tools. This large variety of answers points to deficits in the design of this question which are further elaborated on in Chapter 6. Individual points were summarized and paraphrased within Chapter 6 as well. The general answer categories of “all”, “none”, and “partially” were recorded within Appendix C: “Survey results".

All participants answered Question 11: “How does the development of the game progress?", which was analyzed like Question 5: “How are the people working on the game structured?" in both combinations and individual answer options. One participant chose the “other” option in addition to the preprovided answer options. Their answer was paraphrased and included as a “bespoke” option. Combinations were standardized and added to Appendix C: “Survey results" as is.

Question 12: “How would you characterize the development process?" was answered by all participants as well and was analyzed and processed like Question 11: “How does the development of the game progress?" and Question 5: “How are the people working on the game structured?". Three participants chose to use the “other” option. Two of those answers were recorded as “bespoke”, as participants clarified that their process model was a unique creation within their company. One participant’s answers indicated a misunderstanding of the answer options, and was interpreted as specifying a “hybrid” development process. All answer combinations were standardized and added to Appendix C: “Survey results".

6. Findings

32 respondents filled the survey out in English, while 18 respondents used the German language version. After processing the dataset as described in Chapter 5, no significant differences were found when comparing the answers of English and German language version participants. This leads to the conclusion that the bilingual survey design did not contain any meaningful differences that lead to a different understanding between speakers of different languages.

50% of participants took less than three and a half minutes to answer all questions and 90% took less than 13 minutes. Six participants took 15 to 30 minutes to answer the survey. This was interpreted as the survey being within reasonable time bounds given question length and complexity.

The findings of Question 3: “What is your current job title?" were used to further differentiate the findings of Question 1: “How many years have you spent professionally working on digital games so far?" and Question 2: “How many digital games do you currently work on in a professional capacity?". After the clustering process described in Chapter 5, the count and number of job roles and their distribution were studied. The number of job roles was found to be effectively categorical in nature, as participants had one to three associated job categories. 25 participants had one job category. A further 16 participants were part of two job categories, and a final four participants were part of three job categories. Figure 4 provides a heatmap of job category combinations. The most overlap was found between Board members and Producers / Managers as six participants specified jobs belonging to both. Developers also overlapped with Board members and Producers / Managers with four participants naming jobs belonging to these category combinations, as well as three participants belonging to both Developers and Artists. Three people were working as Game designers as well as roles included in the “Others” category, that didn’t make up a high enough percentage to be their own distinct category.

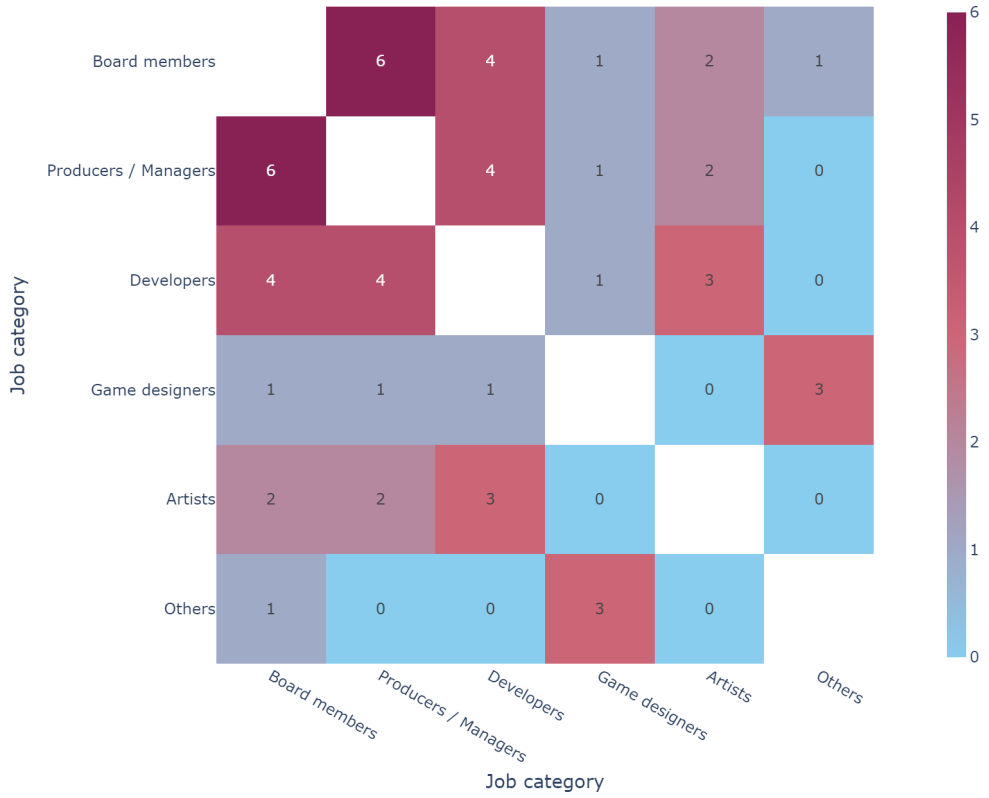


Figure 4: Heatmap of job category combinations specified by survey participants

The overall distribution of job categories is shown in Figure 5. Five participants did not answer this question. Half of all participants, or 25 out of 45 participants who answered this question, were responsible for the upper management at their company. Nearly a third of participants who answered the question belonged to either Producers / Managers and Developers. This is nearly as much as the number of Game designers, Artists, and Others combined. Of the 30 jobs belonging to Developers, Game designers, Artists, and Others, eight were lead position jobs. In total 39 out of 45 participants who answered the question had jobs associated with a higher level of responsibility and management duties as they belonged to the Board members, Producers / Managers, and Lead positions.

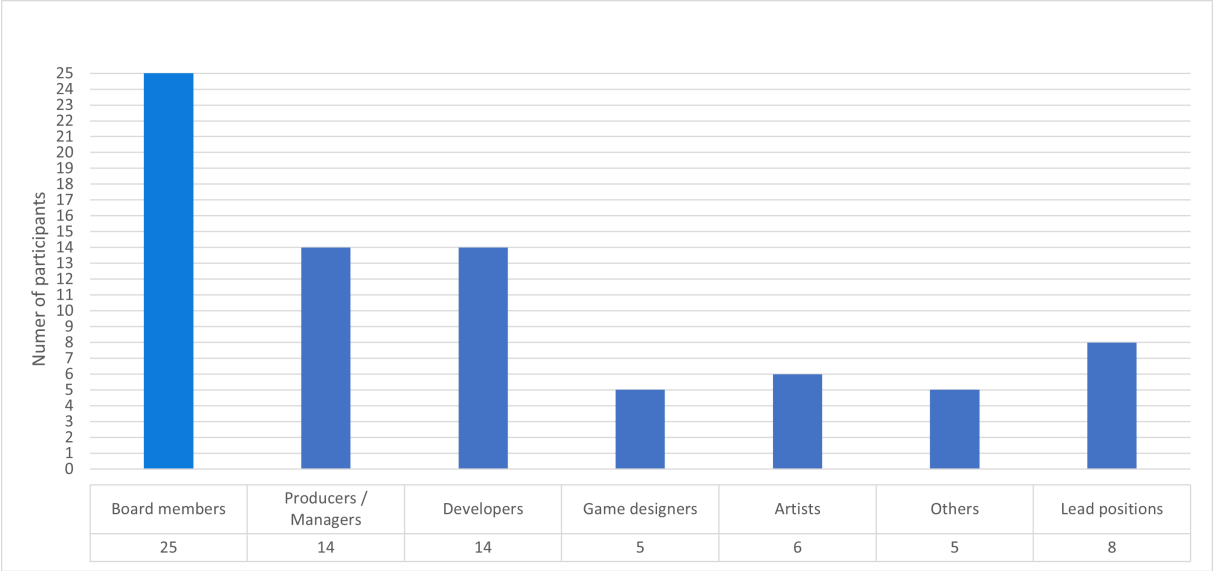
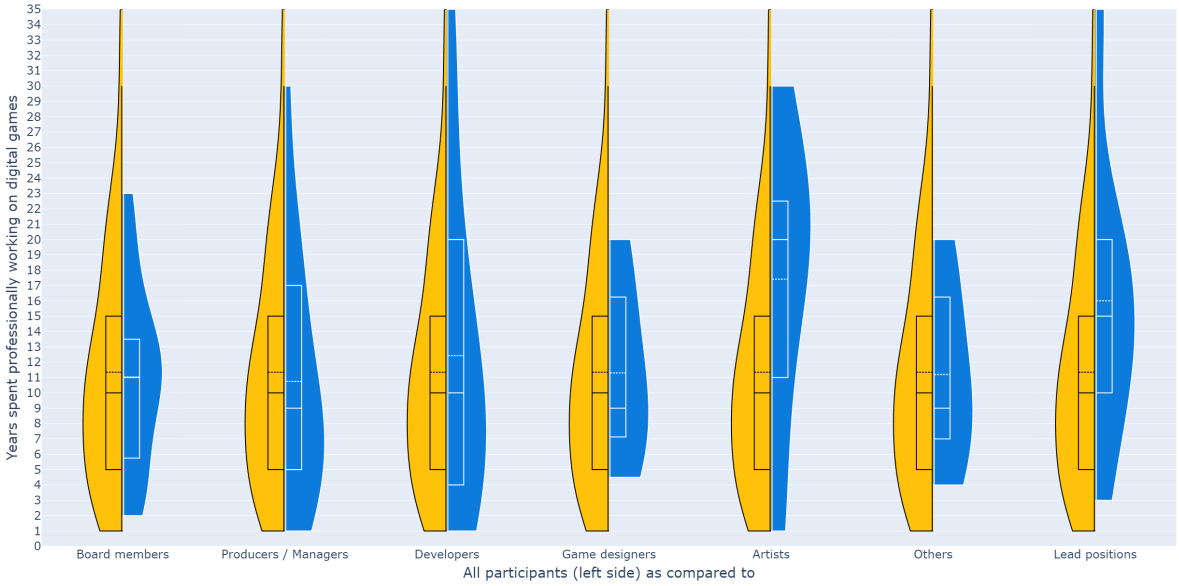


Figure 5: Number of participants belonging to a particular job category

Question 1: “How many years have you spent professionally working on digital games so far?" was answered by all participants, spanning a range of one to 35 years of experience in working on digital games in a professional capacity. The average participant had 11,35 years of work experience, a number that is inflated by the high amount of experience a small number of participants posessed. Given the small sample size and unknown distribution of experience within the German game industry, these high experience individuals should not be treated as outliers, but kept in mind when interpreting these findings. The standard deviation from the mean is 7,71 years. The Shapiro-Wilk test showed a significant departure from normality, with $\alpha = 5\%$ and $W(50) = .92$ and $p = .003$. As such the empirical rule must not apply. Given the wide range of the standard deviation compared to the range of the data itself, no meaningful observations could be achieved using the Bienaymé–Chebyshev inequality propability distribution guarantees, as nearly all data falls within 2 standard distributions. Given the sample size and irregular distribution, quartiles were preferred over k-means clustering to establish a framework of concrete comparison numbers along the graphical representation of data in Figure 6.



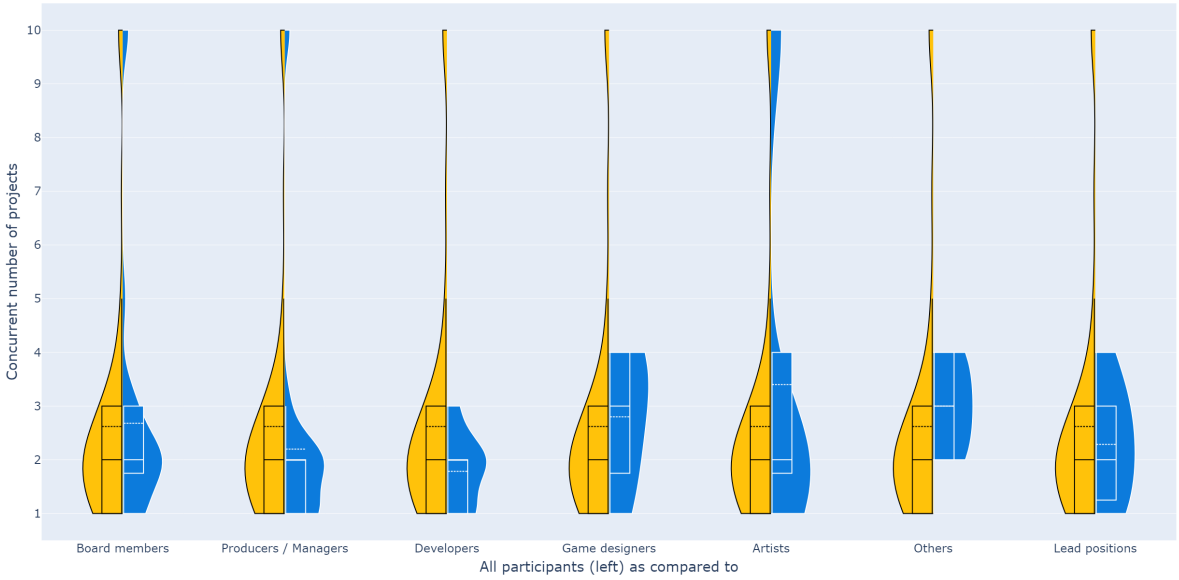
	All	Board members	Producers/ Managers	Developers	Game designers	Artists	Others	Lead positions
Count	50,00	25,00	14,00	14,00	5,00	6,00	5,00	8,00
Min	1,00	2,00	1,00	1,00	4,50	1,00	4,00	3,00
Max	35,00	23,00	30,00	35,00	20,00	30,00	20,00	35,00
Mean	11,35	11,04	10,75	12,43	11,30	17,42	11,20	16,00
Standard deviation	7,71	6,02	8,12	10,39	6,16	10,08	6,30	9,53
1st Quartile	5,00	6,00	5,00	4,12	8,00	13,25	8,00	10,00
Median	10,00	11,00	9,00	10,00	9,00	20,00	9,00	15,00
3rd Quartile	15,00	13,00	15,75	18,25	15,00	21,88	15,00	20,00

Figure 6: Distribution of participants' professional work experience by job group

Half the participants had less than 10 years of professional work experience on digital games. The bottom 25% had less than five years of work experience, while the top 25% had more than 15 years. The category of Board members shows a lower average due to the highest experience individuals not belonging to this category. This is reflected in the upper 25% having two years less of experience when compared to the upper 25% of all participants. The median and 1st quartile values are one year higher compared to the corresponding values of all participants. The average and median participant belonging to the category of Producers / Managers had less working experience than all participants, while the upper 25% had slightly more at 15,75 years. Developers were made up of both the least and highest experienced individuals. The lowest 25% of participants belonging to this category had the least experience out of all job categories at below 4,12 years. This trend reverses for the upper 25% which had the second most experience out of every job category. Game designers had a much smaller span of experience compared to other categories with the lowest 25% having below eight years of work experience, while the median is below nine years of experience. Given that only five participants specified a role belonging to this job category, this finding should be treated more cautiously than the findings of job categories with a higher

amount of participants. Artists had the highest mean out of all job categories at 17,42 years. Three artists had more than 20 years of experience which was the highest concentration of highly experienced participants compared to the overall number of participants belonging to a job category. The overlap between Artists and Board members, and Artists and Producers / Managers has to be taken into account when interpreting these findings. The findings for the Others category appear almost similar to the findings on Game designers, which is due to the high amount of overlap between these roles. Participants in Lead positions outside of dedicated producing, managing, and company stewardship roles had noticably higher values than the aforementioned categories. The value of the 1st quartile is double that of all participants and four to five years higher than that of Board members and Producers / Managers respectively. This trend continues for the median and 3rd quartile with the latter having an even wider gap of 4.25 to seven years with a reversed order of Producers / Managers and Board members.

Question 2: “How many digital games do you currently work on in a professional capacity?" was answered by every participant as well. The average number of concurrent game projects was at 2,6 with a 2,2 standard deviation. As expected the Shapiro-Wilk test showed a significant departure from normality, with $\alpha = 5\%$, $W(50) = .64$, and $p < .001$. Figure 7 shows that the distribution of values is largely bottom-heavy with the vast majority of participants partaking in four projects or less. There is a significant jump in the number of concurrent projects up to the maximum of 10 projects, which was reported by multiple participants. Analyzing the number of concurrent projects worked on by each job category provides insights into which groups of participants reported these higher numbers. Board members, Producers / Managers, and Artists all have a maximum value of 10 projects. Given the small number of participants in the Artists category and an overlap of two participants having roles belonging to both the Board members job category as well as an artistic role, it seems reasonable to conclude that 10 concurrent projects are an outlier for Artists that should not be taken into account. The highest number of projects for Artists that were not Board members is two concurrent projects. This is consistent with the quartile findings that put 75% of artists at one project and 25% at more. This makes artists and developers the groups of people that had the least amount of concurrent projects for the most part. Developers had a slightly higher maximum of three concurrent projects, but also had more participants at 14 people belonging to the category, including once more some overlap with Board members. Notably, the median for all job categories except Game Designers and the Others category is the same at two concurrent projects. Game designers and Others reported similar numbers for the median and third quartile that are higher by one and two projects than their peers, although the small number of participants and some overlap with other roles might be to blame for distorting these findings. Lead roles reported a maximum of 4 projects, although the distribution was overall consistent with the job categories that partially belonged to the Lead roles category. As such it might once more be related to overlaps more so than any strong indication on its own. Board members and Producers / Managers had the same distributions of quartiles as the overall data set, with Producers / Managers having a lower 3rd Quartile by one whole project. This indicates that the multiple reports of a very high number of concurrent projects are in themselves a special case and not the norm for these categories. Overall the data appears very sparse at higher project numbers, diminishing the potential validity of conclusions drawn from them. The wider bases of one to four projects with a more even distribution that centers around two projects and tapers off gradually as the number of projects increases appears to be the main insight that can be gained from interpreting the available data.



	All	Board members	Producers/ Managers	Developers	Game designers	Artists	Others	Lead positions
Count	50,0	25,0	15,0	14,0	5,0	5,0	6,0	7,0
Min	1,0	1,0	1,0	1,0	1,0	1,0	2,0	1,0
Max	10,0	10,0	10,0	3,0	4,0	10,0	4,0	4,0
Mean	2,6	2,7	2,2	1,8	2,8	3,4	3,0	2,3
Standard deviation	2,2	2,4	2,2	0,7	1,3	3,7	0,9	1,1
1st Quartile	1,0	2,0	1,0	1,0	2,0	2,0	2,2	1,5
Median	2,0	2,0	2,0	2,0	3,0	2,0	3,0	2,0
3rd Quartile	3,0	3,0	2,0	2,0	4,0	2,0	3,8	3,0

Figure 7: Distribution of participants' number of concurrent projects by job group

The answers to Question 1: “How many years have you spent professionally working on digital games so far?" and Question 2: “How many digital games do you currently work on in a professional capacity?" were analyzed for correlation using the two-tailed Wilcoxon signed-rank test. Results indicated that there is a significant large difference between the first answer set and second answer set with Z = -5.8, p < .001, and r = -0.8. The first answer set was also compared to the concurrent number of job roles from Question 3: “What is your current job title?" where answers for both were available. The results indicated that there is a significant large difference with $\alpha = 5\%$, $Z = -5.8$, $p <. 001$, and $r = -0.9$. The second answer set was also compared to the number of job roles, once more indicating a significant large difference with $\alpha = 5\%$, $Z = 3.1$, $p =. 002$, $r = 0.6$. As such, no correlations were found to be probably between any of these data sets.

Figure 8 shows the answer options selected by participants when answering Question 4: “In which state or states do you work?". The state specified by most participants was Bavaria which was selected by 10 participants, followed by Baden Württemberg, Hamburg and Northrhine-Westphalia at six participants each. Berlin, Hesse, and Rhineland-Palatinate were chosen by five participants. The only federal states to not have been selected at all are Bremen, Mecklenburg Western Pomerania, and Thuringia. One participant specified that they were working outside of Germany and one other participant preferred not to answer the question. Four participants chose more than one of the Länder. The combinations were as follows: Berlin and Brandenburg, Bavaria and Baden Württemberg, Baden Württemberg and Northrhine-Westphalia, and Northrhine-Westphalia and Hesse. With the exception of Baden Württemberg and Northrhine-Westphalia all of these combinations are from federal states that directly border each other.

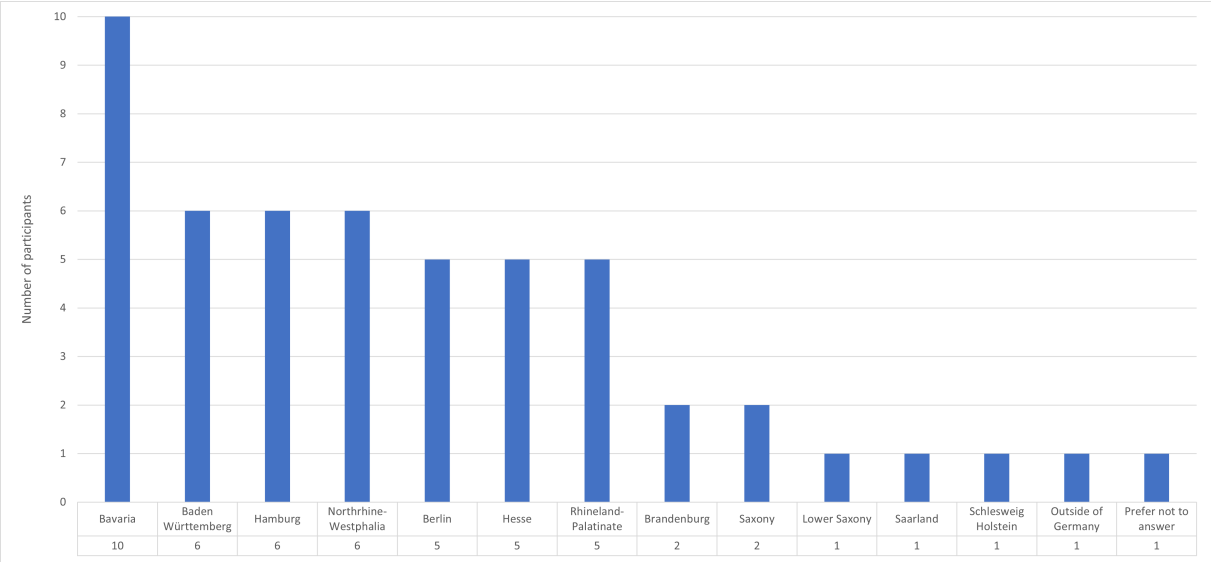


Figure 8: Survey participants by federal state

Question 5: “How are the people working on the game structured?" was answered by all participants. 30 participants worked in one joint team as can be seen in Figure 9. All but one answered Question 6: “How many people work on the game in your team or department?". Two teams consisted of 10 to 20 members, while the rest was approximately evenly split between small teams of two to three members, and larger team sizes of four to 10 members. The next biggest category chosen was *Several departments* which had been exclusively selected by 10 survey participants. The number of department members was answered by nine of them. Two departments consisted of 30 to 50 members, more than double the size of the biggest joint teams. The remaining seven departments were comparable in size to joint teams although slightly larger on average, with three being four to five members, and four counting six to 10 members.

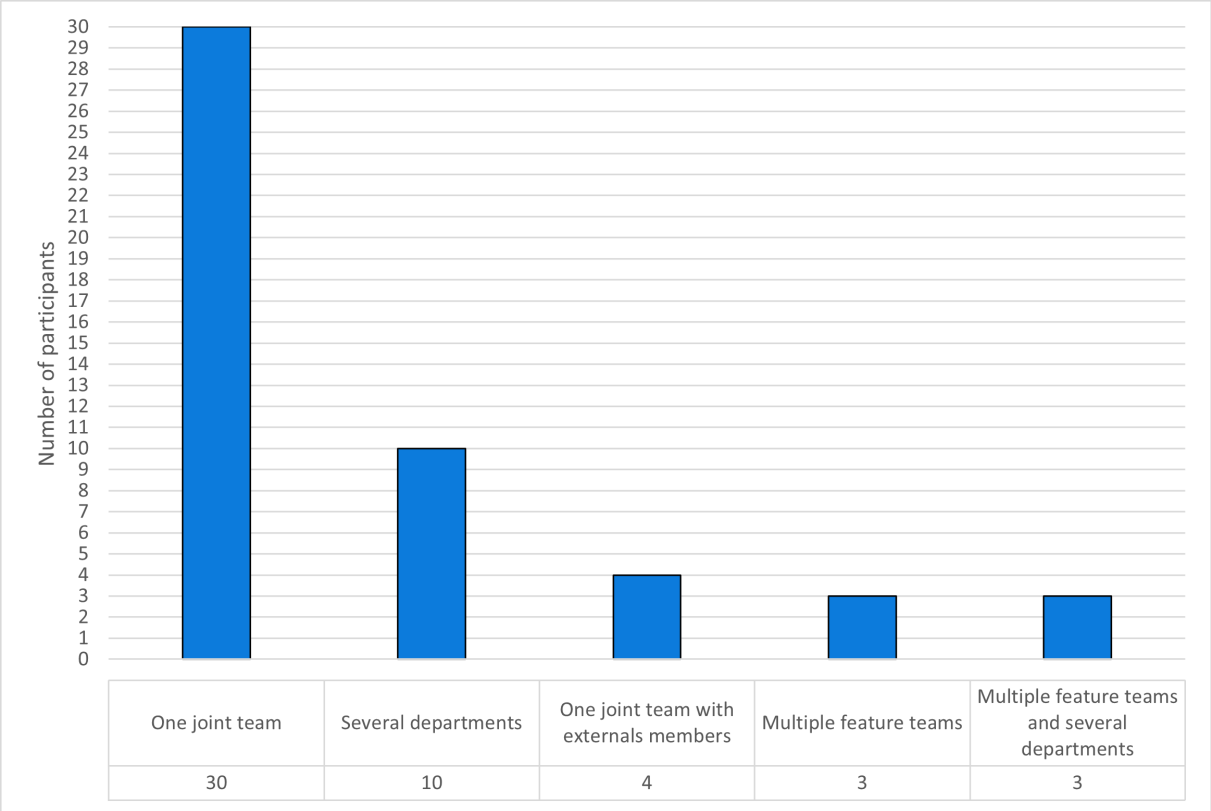


Figure 9: Project team structures by number of participants

Joint teams with external members were chosen by four participants. Their numbers were comparable with and grouped in with other joint teams. Three of the teams consisted of two to three members, while one team consisted of four to 10. “Multiple feature teams” was chosen by three participants, and just as many participants chose “Multiple feature teams” in combination with “Several departments”. As their numbers were comparable they were also grouped together. Two teams were made up of three to 11 participants and belonged solely to Multiple feature teams. The other four teams were bigger than joint teams but smaller than pure departments with some overlap at 12 to 35 participants.

Figure 10 shows the exact distribution of all joint team sizes, including teams with external members. Approaximately half the teams consisted of four or less members. There is a noticable dip of team sizes between five and nine members. This makes for an interesting finding that needs to be interpreted cautiously as the number of participants belonging to this category was only 33 in total.

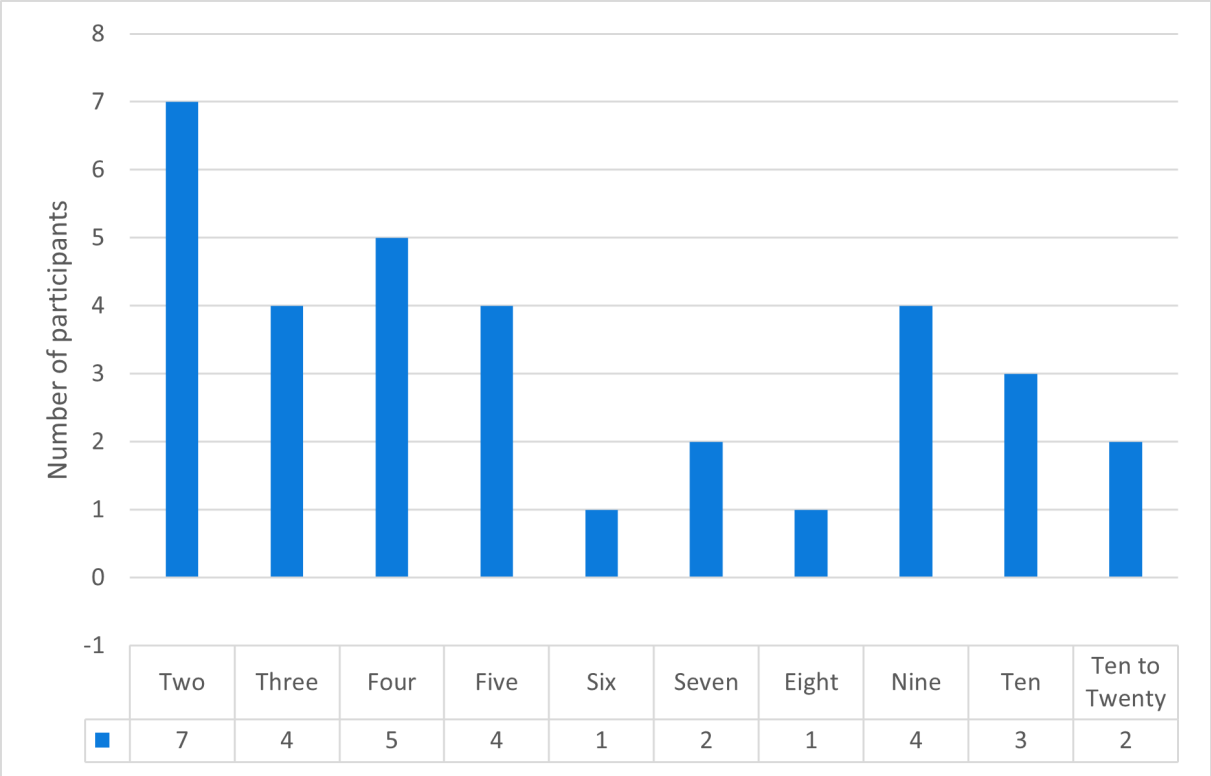
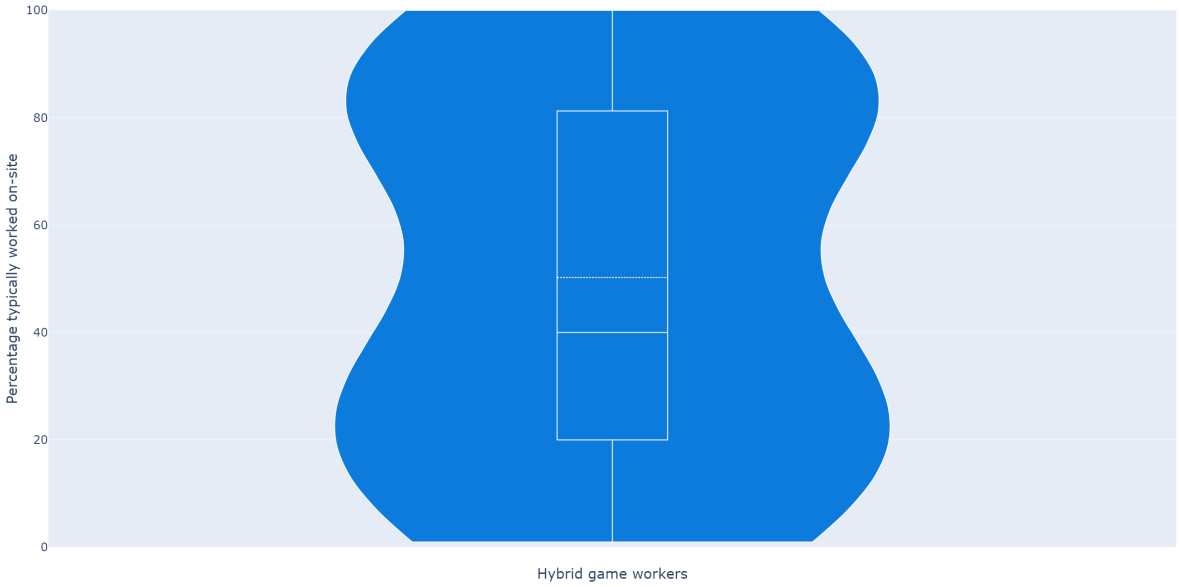


Figure 10: Distribution of team sizes in joint teams

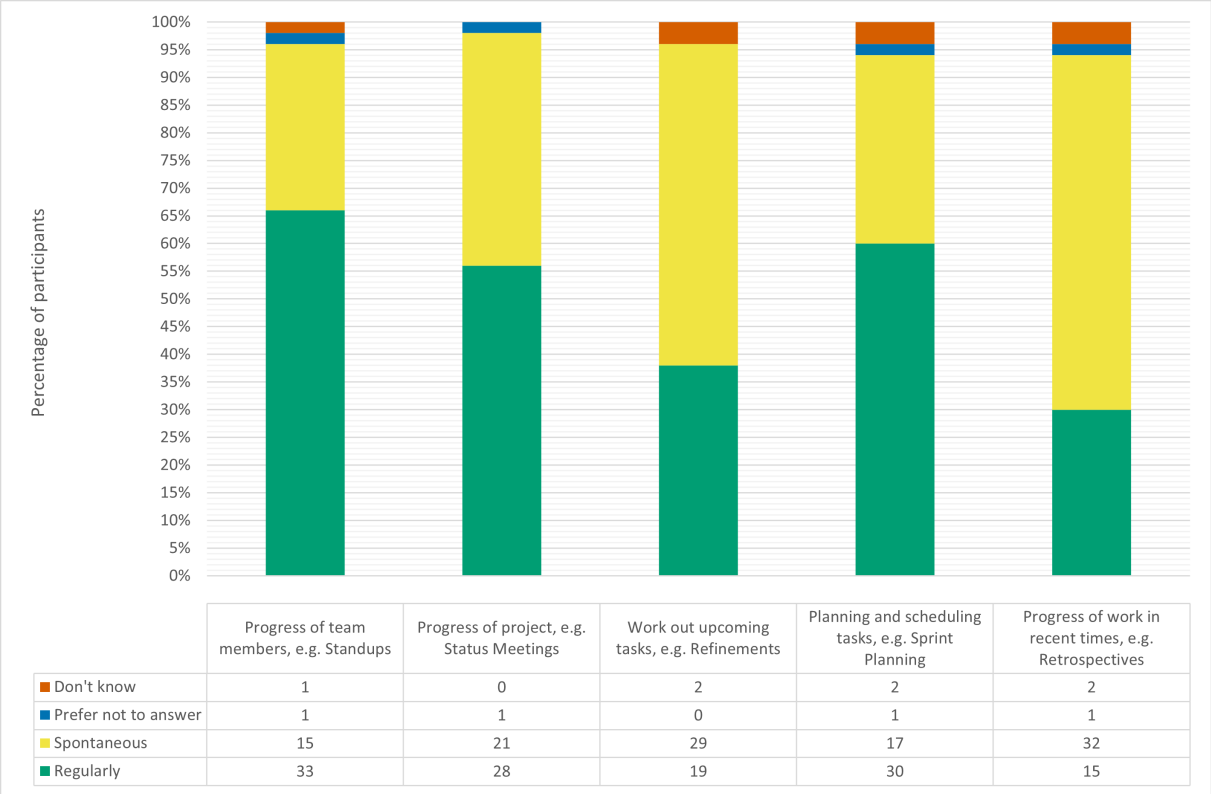
Question 7: “How do you collaborate with others on the game?" was answered by every survey participant. 26 of them specified that they are collaborating both remotely and on-site. A further 22 collaborated solely through remote means. Only two participants solely collaborated on-site. Of the 26 participants who specified working in a hybrid setting, 25 answered Question 8: “What percentage do you typically work on-site on the game?". The distribution of answers is illustrated in Figure 11. Participants made use of the full percentage range from 1% to 100% with half the participants working less than 40% on-site. The distribution shows two distinct groups of people: Those who prefer being on-site more than 75% to 95% of the time, and those that prefer being on-site between 10% and 30%. A dip in the middle shows that the average value of 50, 2% is the result of these two distinct groups. As no finer distinction was made these results should not be interpreted directly, but rather inform the interpretation of other answers in the survey, as well as possibly indicate trends that can lead to future research making more accurate assumptions, although the generalizability is assumed to be very limited as the sample size is comparatively small.



Count	25
Min	1,0 %
Max	100,0 %
Mean	50,2 %
Standard deviation	34,8 %
1st Quartile	20,0 %
Median	40,0 %
3rd Quartile	80,0 %

Figure 11: Distribution of percentages typically worked on-site for hybrid game workers

Question 9: “What types of meetings took place and how often?" was answered to varying degrees, as visualized in Figure 12. The answers show that a majority of participants regularly conduct individual and general progress meetings, as well as meetings for planning and scheduling tasks. 38% of participants regularly held meetings for refining upcoming tasks, while 30% of participants regularly held meetings to reflect on the progress of work in recent times. Two participants did not provide an answer, while another four participants were not able to answer all questions and chose the “don’t know” option for one to three categories of meetings. Only one of those participants had a job category not directly associated with the development of a game, as they worked in marketing. Another participant was purely a CEO, perhaps not being actively involved in the details of game development. The other two participants had a producer and lead role in game development, and would therefore have been expected to know this information. One theory would be that the don’t know option was chosen for a lack of a “not at all” option, indicating that the use of the provided meeting categories is not completely ubiquitous.



	Progress of team members, e.g. Standups	Progress of project, e.g. Status Meetings	Work out upcoming tasks, e.g. Refinements	Planning and scheduling tasks, e.g. Sprint Planning	Progress of work in recent times, e.g. Retrospectives
Don't know	1	0	2	2	2
Prefer not to answer	1	1	0	1	1
Spontaneous	15	21	29	17	32
Regularly	33	28	19	30	15

Figure 12: Regularity of meetings reported by participants

Question 10: “Do the meetings and their results get documented?" was answered by all but one participant. 16 participants stated that they documented all meetings and meeting results, while two participants disclosed they did not document these ongoings at all. These two participants worked in joint teams of two to three people, which was assumed to be an important factor for their answer. 31 participants, a majority, reported a partial documentation strategy. 23 of them chose to make use of the write-in field. This indicates a failure to properly categorize the complexity and dimensions of documentation approaches when designing this question. Four participants stated that they did not document the progress of individual team members. Two participants stated that they explicitly documented status meetings. Six participants made mention of issuetracker and note taking systems as a mean of documenting progress, with One Note, Kanban and Trello boards being explicitly mentioned. One participant detailed taking notes with clients, as well as conducting post mortem surveys, and documenting career aspirations. Some participants made note of a percentage, certain work documents, or relevant findings but did not further specify what exactly these categories entailed. The overall finding indicates that only a minority of participants document diligently, and that further research is necessary to find out more about documentation strategies and the motivations behind them.

Question 11: “How does the development of the game progress?" was answered by all participants. A majority of them chose to describe the progress as a combination of layer and feature categories, visualized in Figure 13, with “Parallel work on multiple layers and on multiple features” being chosen by 26 participants, and “Parallel work on multiple layers, one feature at a time” being chosen by four of them. One participant chose “One layer and one feature at a time”, while another detailed a custom approach that combined work on one layer at a time with parallelization on a department level. This was stated to result in a better utilization of resources, as asset producing teams could be used throughout the entire game production duration. The most chosen single option reflected the dimension of features, with 10 participants picking “Parallel work on multiple features”. The second most chosen single option was “Parallel work on multiple layers” by four

participants, followed by “One layer at a time” by 3 more participants. One final participant chose work on “One feature at a time”.

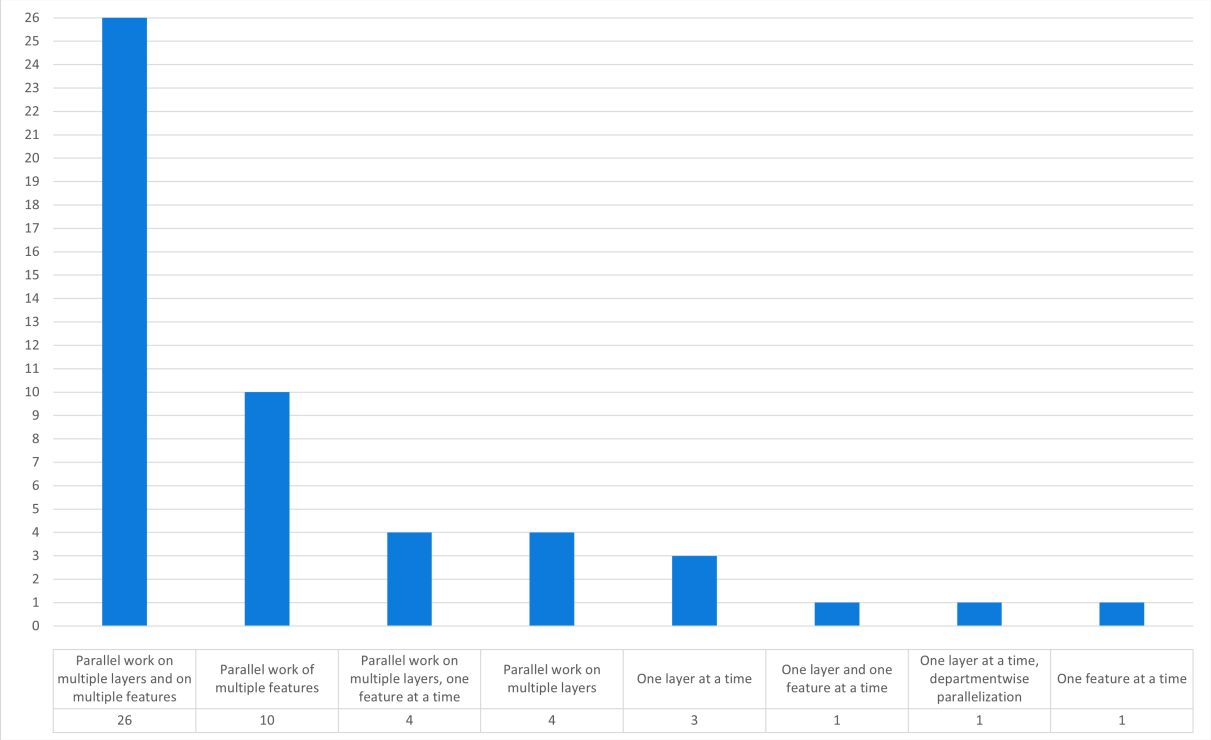


Figure 13: Descriptions of progress of game development by chosen category combination

Figure 14 shows the individual numbers of descriptions chosen to describe the progress of game development. “Parallel work on multiple features” and “Parallel work on multiple layers” are the most chosen options overall with 36 and 34 participants respectively. A minority of participants chose other options with “One feature at a time” being chosen by six participants, followed by “One layer at a time” at five participants. As previously stated, one participant chose to detail a custom approach.

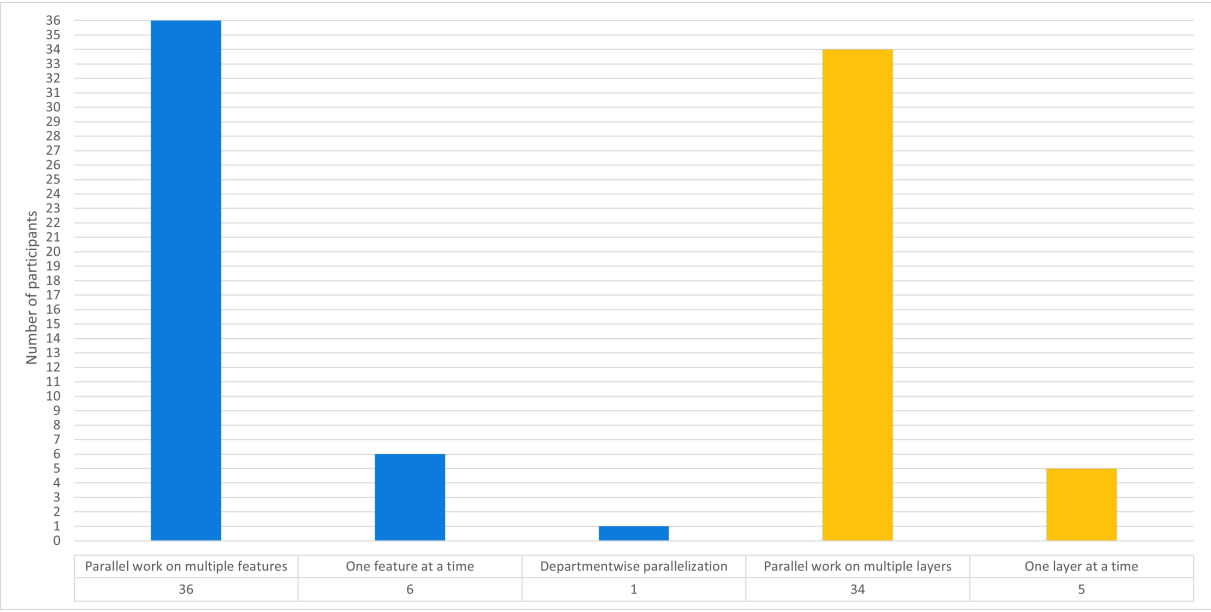


Figure 14: Descriptions of progress of game development by individual categories

Question 12: “How would you characterize the development process?", the final question, was answered by all participants as well. Figure 15 shows the distribution of answers. Two participants chose to detail a bespoke development process, while one participant chose the write-in option to detail a “Hybrid” approach. That participant was folded in with the “Hybrid” category, which made up the biggest category at 17 participants. The next biggest category chosen was “Iterative” at 14 participants. A “combination of Hybrid and Iterative” was chosen by two participants, perhaps to stress the importance of iterative processes over waterfall methods or to highlight the importance of the former within the process, rather than being an indication of a failure to understand the Hybrid process category. The next three categories all mentioned “Ad-Hoc” processes with five participants choosing “Hybrid and Ad-Hoc”, and four choosing purely “Ad-Hoc” and “Iterative and Ad-Hoc” respectively. A pure “Waterfall / Predictive” process was chosen solely by one participant.

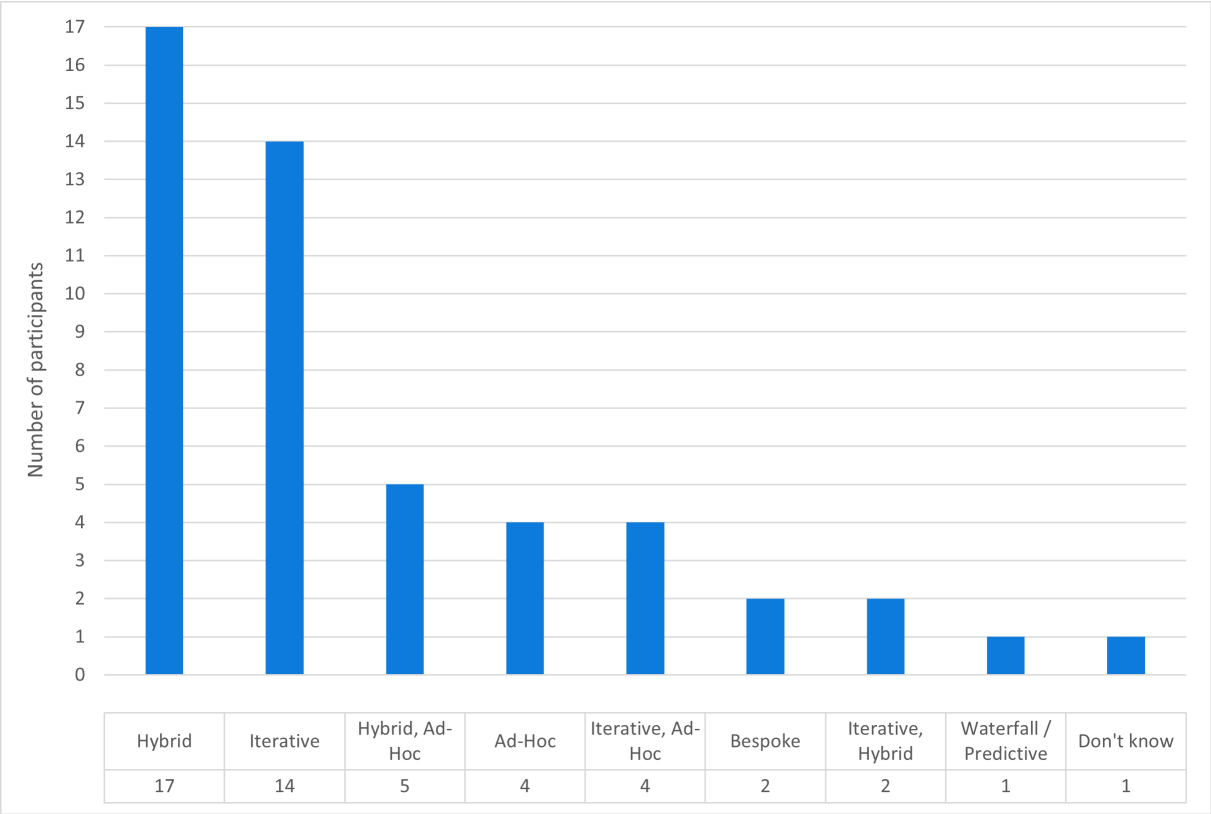


Figure 15: Characterization of the game development process by participants

7. Discussion

In order to further contextualize the survey findings, as well as to obtain a clearer picture of the German game industry in general, two additional interviews were conducted. Three survey participants had reached out per e-mail after completing the survey to signal their willingness to be a potential interview candidate. They were contacted two weeks after the survey had concluded, with the time in between being used to obtain first survey findings, which were used to form a list of questions the interview would focus on. Two interviews were able to be scheduled, while one interview candidate had to drop out due to increased time pressure from their projects which didn't allow for an interview date to be planned. The two interviewees were asked for consent in recording the interview for the purposes of transcribing it. They were also provided with the list of questions in advance, which were as follows: "How does experience factor into your work?", "How did you learn the skills needed for your work?", "How do you handle problems during the development process?", and "Do the insights obtained from one project transfer to other projects?". These questions were intended to provide potential answers to the findings of Chapter 6, mainly the lack of any correlation between the work experience of participants and their other survey answers, as well as the low numbers of regular meetings reflecting on existing work, coupled with a general lack of insights on documentation strategies. Interviews were planned for a duration of 30 minutes, but were kept open-ended. This was done to facilitate a back and forth between interviewer and interviewees in order to more fully explore the insights provided by them. The interviews were conducted on the 19th and 21st of April in the interviewees' native tongue of German. The interviews were transcribed afterwards, following best practices described in [65]. The transcribed interviews were sent to the interviewees on the 24th and 26th of April. Interviewees were offered the possibility of appearing anonymously, and allowed to make limited edits to the transcription. The interviews are included in Appendix D: "Interview with Laura Körting, Executive Board member at Lab132″ and Appendix D: "Interview with Yasemin Hamurcu, Chief Operating Officer at Misc Games". References to them are made as [Körting] and [Hamurcu] within this chapter.

"How are development teams working on commercial digital games in Germany structured" was answered by survey questions five through eight, and further contextualized by Question 3: "What is your current job title?". Question 4: "In which state or states do you work?" was not able to describe the geographical structure of development teams due to a lack of participants from the same studio. However, it identified the potential for localized research in the south of Germany, as nearly one third of all participants worked in Bavaria and Baden Württemberg. Question 5: "How are the people working on the game structured?" showed that a majority of participants was working in joint teams of less than 10 people, while bigger teams tended to instead be organized into departments and feature teams. Team members overhwelmingly collaborated in hybrid and remote work scenarios, with a tendency to either work mainly on-site or mainly remote. The reality of remote working teams that aren't nescassarily close together in geographical terms is reflected by [Hamurcu] whose studio consists of game workers from both Germany and Norway collaborating on shared game projects on a daily basis. The team of [Körting] works completely remote, in part due to the Corona pandemic disincentivizing on-site collaboration. Question 3: "What is your current job title?" shows that participating game workers have a variety of both general and specialized job roles. Participants involved with management roles tended to also hold another position, while asset production and coding roles were largely focused on their specific job. This specialization is reflected in half of participants belonging to one distinct job category. The need for highly skilled specialized game workers is also reflected in the interviews with [Körting] and [Hamurcu]. [Körting] stated that publishers provide many services not easily done by smaller development teams on their own, such as testing, localization, and marketing. She also remarked

upon the difficulties of recruiting new talents for specialized roles. [Hamurcu] made mention of partner companies that provided additional services as well. She stressed the importance of being aware of a global market. The variety of team roles did not correlate with any other findings. Further research is nescassary to capture the complex landscape of today's game industries.

"Which types of frameworks, meetings, and artifacts are used in commercial German game productions?" was answered by survey questions nine through twelve, with additional context provided by questions one through three. On their own the most chosen answer categories for Question 11: "How does the development of the game progress?" showed that a majority of participants characterize their game's development as parallel in terms of both layers and features. This way of development is corraborated by [Körting]. Parallel work also makes up a majority of chosen category combinations. This indicates a majority development model that should be researched further. A small number of non-parallel works can perhaps be understood as a model that is being phased out, or as a special case whose exact circumstances should be explored. Answers to Question 12: "How would you characterize the development process?" lend themselves to the parallel dominated nature, as hybrid and iterative development processes made up the majority of survey respondents' answers. A notable number of participants chose to make use of the "Ad-Hoc" categories to describe development processes. Statements by [Körting] and [Hamurcu] indicate a certain volatility within the games market that reflects upon the game development process itself. While technological knowledge is a constant that can be grown through proven means, the betterment of processes is an area of constant work. Answers to Question 9: "What types of meetings took place and how often?" and Question 10: "Do the meetings and their results get documented?" suggest that a lack of consistent documentation and meeting practices might be to blame. However, even in companies that heavily make use of best practices, such as those of [Körting] and [Hamurcu], a degree of uncertainty remains. Both interviewees strongly echoed the belief that the exchange of information is crucial for improving upon these areas. In both companies, delays get compensated by reducing work and cutting down on less important features, rather than promoting crunch. [Hamurcu] stated that the development of self-published titles afforded a greater degree of freedom when it comes to milestones and deadlines. For her, a well-planned budget should have enough buffer to compensate for delays, although she admitted that planning correctly had been a learning experience. In closing [Körting] asserted that the everchanging nature of game development was another notable factor that made development hard, as the way games are made today is fundamentally different than that of games made 10 or 20 years ago.

The final research question was "How do the findings compare to previous studies done in other countries?". In terms of population size this survey was most similar to [43], but had a much smaller percentage of actual participants at 50 out of 660 studios. The total number of studios was higher than in previous studies, but the generalizability is much lower as participants only represented a small fraction of the total number of game studios in Germany. [32] categorized the Austrian game industry in 2010 to consist of two categories: 85% of the 13 surveyed studios were classed as independant with a staff size of one to four members. The other 15% had a staff size of over 15. Eighteen of the 50 respondents of the German survey had a staff size of one to four members in a joint team, and six had a confirmed staff size of more than fifteen members. The latter number is potentially higher as the total staff size was not a direct question within the survey, but could be derrived from some of the answers to Question 3: "What is your current job title?". This puts larger studios at a comparable level, while the number of small studio sizes is at 36%. The largest percentage is taken up by midsized studios that have a staff size above four but below 15. This is more comparable to the findings of [21] in 2013 that half of the surveyed Finnish studios had a staff size of less than 15. Given that [21] excluded studios with staff sizes less than five, the German game industry appears to have larger studio sizes on average. Numbers are further

complicated by the involvement of external team members and publisher services. Comparing the makeup of development studios alone does no longer suffice to compare the developmental levels of modern game industries belonging to different countries. The development or adoption of more sophisticated means of comparison should be considered a priority by future research. [21] also made note of the number of concurrent projects at a company: “Five (25%) companies had only one project at a time, six (30%) companies two projects, three (15%) companies three projects, four (20%) companies four projects and two (10%) companies five or more projects.” For this survey 14 participants (28%) worked on one project at a time, 20 participants (40%) worked on two, 9 participants (18%) on three, and 7 participants (14%) on four or more. As each respondent belonged to a different company and a majority was involved in Board roles and other management tasks likely to be related to all or nearly all projects at a company, these numbers do lend themselves to a limited amount of comparability. It appears that distributions have remained largely the same, although with a lesser amount of concurrent projects above three. Just like [21] no correlation between studio size and number of concurrent projects was found. [21] also observed that in terms of meetings planning and feedback meetings were neglected compared to daily standups. The findings in Chapter 6 show that refinement and retrospective tasks were practiced less regularly than daily standups, while sprint planning itself was practiced at similar levels. Comparisons to [19] show that standups were practiced regularly at similar levels, while game studios in New Zealand made much more use of regular retrospectives. Given the much smaller percentage of German development studios represented in this survey these comparisons have to be interpreted cautiously as well.

Additional limitations apply. CEOs and Board member roles in general were overrepresented in the data set and therefore impact the validity of findings when taking other job roles into account. Many questions were oversimplified, making results less meaningful. Data also appeared highly irregular at times, which, coupled with a limited sample size, negatively impacted the number of observations that could be made with high confidence. Survey questions were not tested as thoroughly as prior research, and as such are likely to exhibit a number of deficiencies in their design. The use of convenience sampling further limits the importance that can be assigned to these findings. Some findings are also not based on an objective measurement but rather on the subjective opinion of individuals. It is unlikely that all survey participants shared a common understanding of the answers provided, which is going to result in some inherent variance. Further subjectivity could have been injected by the research and interviews having been conducted by a single person. While feedback was incorporated, and best practices were followed, the decisions made on the design and interpretation of the survey was ultimatively not a completely transparent process. Non-response bias and survivorship bias are also likely to have played a major role, as only currently active development studios were sampled, and a majority of them did not choose to respond. Question order and acquiescence bias were taken into account when designing the survey, but no formal measurements were made to safely conclude that participants were not influenced by these factors.

8. Conclusion

A first survey about the working methods and structure of the German game industry was conducted. It follows the same guidelines and general direction of previous research performed in other countries over the last 15 years. The structure of development teams and the types of frameworks, meetings, and artifacts were investigated through the lens of individual game workers at a variety of studio sizes. The change from studio to individual was informed by the findings and notable omissions of previous surveys, such as excluding non-developer roles, and smaller studio sizes. The changes made enabled new types of insights into the job roles and working methods practiced within the German game industry while preserving the ability to gather general information about an individual studio's approach to game development. A first in this line of research, the survey design and process were documented. The results were made available to encourage more accessible, repeatable research. Key findings are comparable to previous research, such as a majority of participants working in a massively parallelized fashion with hybrid and iterative process management frameworks. The survey provided additional ways of understanding how game workers themselves experience these frameworks, and ascertained problem areas without tying itself to specific management practices. Documentation strategies and the regularity with which meetings, especially those reflecting on past work, were conducted, point towards potential deficits that were not solely explainable by modifications made to existing practices. The general landscape of game development revealed itself to be a complex area requiring a plethora of further research. While the amount of survey participants does not lend itself to greater generalizability, the survey results nonetheless fulfilled the goal of providing an openly accessible, scientifically grounded basis for future research. Additional interviews further contextualize the German game industry and show that the experienced problems are largely the same as in other countries. It is recommended that future research follows the same approach of designing surveys for all types of game workers, and to make use of multiple voices at the same company to provide a better understanding of how different types of job categories understand and partake in the game development process. To that end it is also important to consider not only game development studios themselves, but also the work done by publishers, third parties, freelancers, and service providers. Characterizing the interconnectedness of different companies collaborating on the development of a game could prove to provide key insights into the complexities of modern game development. As the understanding of the game industry in different countries evolves, so should the methods by which they are described. The fast, trend-based nature of game development demonstrates a clear need for researchers to consider the importance of repeated studies. This necessitates providing others with complete means of replicating the conducted surveys and their results. The industry itself desires a greater exchange of knowledge that should be channeled into scientifically sound research. A symbiosis of game workers and researchers could accelerate research progress by encouraging a more organic approach to topic selection, driven by the needs of the industry itself. A variety of topics, such as the ties between the game industry and other creative industries, remain yet to be explored. Clearly there is much to do in the field of video game development research. It is the author's personal hope that this work inspires the creation of many more to come.

Appendices

A. Rejected studios and solo developers

Reason	Name	Url
Duplicate entry for Active Fungus GmbH	ActiveFungus Studios - Jakob Braun	https://activefungus-studios.de/
Duplicate entry for Black Pants Studio GmbH BERLIN	Black Pants Studio GmbH KASSEL	www.blackpants.de
Duplicate entry for gamigo AG	Aeria Games GmbH	www.aeriagames.com
Duplicate entry for gamigo AG	gamigo Portals GmbH	https://corporate.gamigo.com/
Duplicate entry for lyniat.games UG & Co. KG	lyniat.games UG & Co. KG	https://lyniat.games/
Duplicate entry for Nurogames GmbH	Nuromedia GmbH	www.nurogames.com
Duplicate entry for Ubisoft Blue Byte GmbH	Ubisoft Düsseldorf	duesseldorf.ubisoft.com
Duplicate entry for Wild River Games GmbH	Wildriver Games / EuroVideo Medien GmbH	www.wildriver.games
Duplicate entry for Kalypso Media Group GmbH	Kalypso Media Mobile GmbH	https://www.kalypsomedia.com/de/kalypso-mobile/
Duplicate entry for Konsole Game Labs GmbH	KONSOLE LABS GmbH	www.konsole-labs.com
Inactive or no website	101 Schoolware GmbH	
Inactive or no website	9 Lives Left UG	
Inactive or no website	A grumpy Fox	
Inactive or no website	Acureus GmbH	
Inactive or no website	Arvur GmbH	www.arvur.com
Inactive or no website	Awesome Prototype GmbH	https://www.awesomeprototype.com/
Inactive or no website	bluebox interactive UG	http://www.bluebox-interactive.de/
Inactive or no website	Bunny&Gnome GbR	www.muell.ag
Inactive or no website	Cashcowgames	https://store.steampowered.com/app/604770/Dark-_Prospect/
Inactive or no website	Ceres Games GmbH	
Inactive or no website	Chronos North GmbH	https://www.chronos-north.com
Inactive or no website	Cudding Raccoons Studio	
Inactive or no website	Cyberfly Entertainment UG	
Inactive or no website	Demigod Dynamics UG	
Inactive or no website	Dennis Neetix – Markus Reichl GbR	www.madegames.com
Inactive or no website	Direfang OHG	
Inactive or no website	DJAMACAT GmbH	http://www.djamacat.com
Inactive or no website	Donausaurus GbR	
Inactive or no website	Double Shot Audio	https://www.doubleshot-audio.com/
Inactive or no website	DysTopic	
Inactive or no website	Elaborate Games e.K.	
Inactive or no website	Emberstorm Entertainment UG	
Inactive or no website	Enter-Brain-Ment GmbH	www.enter-brain-ment.net
Inactive or no website	Fonteinsoft UG	
Inactive or no website	Food for Thought Media UG	http://foodforthought.media/
Inactive or no website	Forking Paths Gardening Interactive UG	http://www.forkingpathsgardening.com/
Inactive or no website	Gamebook Studio HQ GmbH	https://gamebook.studio/
Inactive or no website	GearEight Games UG	https://www.geareightgames.com/
Inactive or no website	Godcomplex	
Inactive or no website	Harikoah GmbH	
Inactive or no website	Haze of Grapes Games UG	
Inactive or no website	HDF Games UG	
Inactive or no website	ILOVIT GmbH	
Inactive or no website	Keep Humming Games e.K.	www.Keep-Humming.de
Inactive or no website	Konspiracy UG	

Inactive or no website	Krummhorn Games UG	
Inactive or no website	Künzler und Engel Urban Invention GbR	www.urban-invention.com
Inactive or no website	Lazy Koala Games GmbH	
Inactive or no website	Leto Games UG	
Inactive or no website	Lightstorm3D GmbH	www.lightstorm3d.com
Inactive or no website	Little Bat Games UG	
Inactive or no website	LogiTales UG	
Inactive or no website	Lost The Game Studios UG	www.lostthegame.de
Inactive or no website	Marshmallow Fort GmbH	https://marshmallowfort.com/
Inactive or no website	Metaplays Studios UG	
Inactive or no website	mHERO GmbH	http://mhero.de/
Inactive or no website	Mobile Monsters GmbH	www.mobile-monsters.com/
Inactive or no website	Nikolai Hilz Kleingewerbe	
Inactive or no website	Octofox Games UG	
Inactive or no website	Paintbucket Games UG	http://paintbucket.de/index.html
Inactive or no website	Patrick Henschel	https://www.patrickhenschel.de
Inactive or no website	Phantom 8 Studio UG & Co. KG	www.phantom8.studio
Inactive or no website	PitForest UG	www.pitforest.de
Inactive or no website	PLAION GmbH	https://plaion.com
Inactive or no website	polynauten hamburg UG (haftungsbeschränkt)	www.polynauten.eu
Inactive or no website	Rathmann, Gil Siepmann GbR	
Inactive or no website	Real Human Games GmbH	https://www.rehuga.com/
Inactive or no website	Rho-Labyrinths GmbH	
Inactive or no website	Scorpius Forge GmbH	business.scorpius-forge.com
Inactive or no website	Skunk Brothers GmbH	www.skunkbrothers.de
Inactive or no website	Sleeping Forest Interactive	
Inactive or no website	Slow Bros. UG	http://slow-bros.tumblr.com/
Inactive or no website	SORCERERS LAB GMBH	
Inactive or no website	Space Pug Games	
Inactive or no website	Spaceflower UG	https://spaceflower.de
Inactive or no website	SparklingBit UG	http://www.sparklingbitapps2.de/
Inactive or no website	Studio 19-99 UG	
Inactive or no website	Studio Firlefanz UG	
Inactive or no website	Studio Moondowner UG	https://studiomoondowner.com/
Inactive or no website	Super Awesome Studios UG	
Inactive or no website	Team Marty	
Inactive or no website	Techtive Games UG	
Inactive or no website	TeraKnights GbR	http://teraknights.de/
Inactive or no website	ThreeDee GmbH	https://www.threedee.de/
Inactive or no website	Toitan UG	
Inactive or no website	TopTech UG	
Inactive or no website	Treecastle Studio UG	http://treecastlestudio.com/
Inactive or no website	Triclap GmbH	https://triclap.com
Inactive or no website	Tuffi-Tainment UG	https://www.tuffi-tainment.de/
Inactive or no website	United Independent Entertainment GmbH UIG	www.uieg.de
Inactive or no website	Virtual Vizor UG	http://www.virtualvizor.com/
Inactive or no website	Vividchain AG	https://vividchain.com
Inactive or no website	VRA Games, Uecker Karpalyuk GbR	vra-games.de
Inactive or no website	Winter Games	
Inactive or no website	Wobble Ghost UG	

Inactive or no website	Young Wolf Interactive	https://www.nuraswish.com/
Inactive or no website	Zar21 GmbH	http://www.zar21.de/
Inactive or no website	Zunderfabrik - Patrick Ferling & Marie Wellershoff GbR	www.zunderfabrik.de
No commercially active game development work	505 Games GmbH	www.505games.com
No commercially active game development work	articy Software GmbH & Co. KG	https://www.articy.com/en/
No commercially active game development work	Augmented Minds Ambrus & Lonau GbR	https://www.augmented-minds.com
No commercially active game development work	BeamNG GmbH	https://beamng.gmbh/
No commercially active game development work	Behind The Stone GbR – Slawa Deisling, Monika Rider	www.behindthestone.de
No commercially active game development work	BitPunked Games e.K.	https://www.bitpunked.com/index.html
No commercially active game development work	Budde Medien GmbH	https://www.budde-mediendesign.de/
No commercially active game development work	Codeularity GmbH	https://codeularity.de/
No commercially active game development work	creatale GmbH	www.creatale.de/
No commercially active game development work	Daubit Programmierung Service GmbH	www.daubit.org
No commercially active game development work	Deck 13 Spotlight GmbH	https://spotlight.deck13.com/
No commercially active game development work	DT games e.K.	
No commercially active game development work	Eleet Games GmbH	https://eleet.games
No commercially active game development work	Endava Berlin GmbH	https://www.endava.com/
No commercially active game development work	European Games Group AG	www.gamesgroup.eu
No commercially active game development work	extra toxic GmbH & Co. KG	www.extratoxic.com
No commercially active game development work	Fancy Bytes Development	www.fancy-bytes.de
No commercially active game development work	GAMEFORGE 4D GmbH	www.gameforge.com
No commercially active game development work	Gameroasters GmbH	https://www.gameroasters.com
No commercially active game development work	Giiku Games GmbH	www.giikugames.com
No commercially active game development work	H.O.P.E. – humans on planet earth UG	https://humans-on-planet.earth/
No commercially active game development work	Inline Internet Online Dienste GmbH	http://www.inline.de
No commercially active game development work	InnerMe GmbH	https://www.inner-me.de
No commercially active game development work	Intellivision Entertainment Europe GmbH	www.intellivisionentertainment.com
No commercially active game development work	Kitto GmbH	https://www.kitto.app
No commercially active game development work	KKM Interactive Entertainment UG	www.kkm.berlin
No commercially active game development work	Konsole Game Labs GmbH	https://www.konsole-labs.com
No commercially active game development work	KRITZELKRATZ 3000 GmbH	www.kritzelkratz.de
No commercially active game development work	LikeZ Group GmbH	https://escape-game-solutions.com/
No commercially active game development work	Lootboy GmbH	https://www.lootboy.de/
No commercially active game development work	Markt + Technik Verlag GmbH	https://www.mut.de/
No commercially active game development work	Medien.Bayern GmbH, Games/Bavaria	https://welldonegames.io/
No commercially active game development work	Mondia Media Germany GmbH	https://mondia.io
No commercially active game development work	Motion Works GmbH	www.motionworks.eu/
No commercially active game development work	NeoBricks GmbH	https://www.neobricks.com
No commercially active game development work	NERDIC GmbH	https://nerdic.org/
No commercially active game development work	NeXR Technologies SE	https://www.nexr-technologies.com/de/
No commercially active game development work	nodapo Software GmbH	https://www.nodapo.de
No commercially active game development work	outermedia GmbH	www.outermedia.de
No commercially active game development work	planpolitik GbR	www.planpolitik.de
No commercially active game development work	PLAYT.net AG	http://www.playt.net
No commercially active game development work	Plinga GmbH	www.plinga.com
No commercially active game development work	Private Division	www.privatedivision.com
No commercially active game development work	Rhizomedia GmbH	www.kiecker.de
No commercially active game development work	Riot Games Services GmbH	www.riotgames.com
No commercially active game development work	SAFKAS Games	http://www.safkas.de
No commercially active game development work	Serapion GmbH	https://www.serapion.net/

No commercially active game development work	SFP Software GmbH	https://www.sfp.de/
No commercially active game development work	Snobfox UG	https://www.snowfox.eu
No commercially active game development work	Social Anvil UG	http://socialanvil.de/
No commercially active game development work	Soft Sun Simulation	https://softsunsimulations.com/
No commercially active game development work	SPiN AG	www.spin-ag.de
No commercially active game development work	Ströer Media Brands GmbH	www.stroeermediabrands.de
No commercially active game development work	Styxcon	https://styxcon.com/
No commercially active game development work	Thoughtfish GmbH	www.thoughtfish.de
No commercially active game development work	United Soft Media Verlag GmbH	www.usm.de
No commercially active game development work	upjers GmbH	de.upjers.com
No commercially active game development work	VR Nerds GmbH	http://www.vrnerds.de
No E-Mail available	BANDAI NAMCO Entertainment Germany GmbH	http://de.bandainamcoent.eu
No E-Mail available	BoomByte Games GmbH	https://www.boombytegames.com/
No E-Mail available	Cyberwave UG	https://cyber-wave.io/
No E-Mail available	Happy Broccoli Games	https://www.happybroccoligames.com/
No E-Mail available	Heathrun Game Consulting & Design - Achim Heidelauf	www.heathrun.com
No E-Mail available	Konami Digital Entertainment B.V. Germany Branch	www.konami.com
No E-Mail available	Microsoft Deutschland GmbH	www.microsoft.com
No E-Mail available	MobX GmbH	https://mobx.games/
No E-Mail available	monkey mac jones adventures UG	https://www.ofpawnsandkings.de/
No E-Mail available	Moonrunner GmbH	https://moonrunner.de/
No E-Mail available	Niantic Germany GmbH c/o Rent24	https://nianticlabs.com/
No E-Mail available	Red Fur Games	https://witchtastic-game.com/
No E-Mail available	Sony Interactive Entertainment Deutschland GmbH	www.playstation.com/de-de
No E-Mail available	Studio Maurer UG - FAT Games	https://fat-games.com/
No E-mail available	Warner Bros. Entertainment GmbH	www.warnerbros.de
No E-mail available	welevel GmbH	https://welevel.com/
Same E-Mail as Epic Games Cologne GmbH	Epic Games Germany GmbH	www.epicgames.com/
Same E-Mail as gamigo AG	gamigo Publishing GmbH	https://corporate.gamigo.com/
Same E-Mail as Gaming Minds Studio GmbH	Gaming Minds Studios GmbH, Studio Paderborn	http://www.gamingmindsstudios.com/
Solo developer	Dakror Games	https://dakror.de/
Solo developer	Andreas Illiger	www.andreasilliger.com
Solo developer	AntMe! GmbH	http://www.antme.net
Solo developer	AOYOA - Jonas Wagner	https://www.aoyoa.net/
Solo developer	Bitbeast Games - Oliver Jeskulke	
Solo developer	Brave Squire GmbH	www.BraveSquire.com
Solo developer	Busy Roots	www.busyroots.com
Solo developer	ClaudiaThe Dev e.K.	https://ovamagica.com/
Solo developer	codepixie	https://www.codepixie.de/
Solo developer	Dreamcloud Interactive	https://dreamcloud-interactive.com/
Solo developer	Eduard Anton – Multimedia Design	www.eduardanton.com
Solo developer	electrocosmos Apps und Games Alexander Leps	www.electrocosmos.de
Solo developer	Elin Meinecke	https://www.elinmeinecke.de/
Solo developer	Hallgrim Games GmbH	https://puzzlepelago.com/
Solo developer	Heptamind UG (haftungsbeschraenkt)	heptamind.com
Solo developer	Hyeson Games	www.hyeson.net
Solo developer	ION LANDS	https://ionlands.tumblr.com
Solo developer	Jan Essig, Dipl. Designer (FH)	www.janessig.com
Solo developer	Julian Dietz	
Solo developer	Kai Kramhöft	

Solo developer	Kai Rosenkranz	www.kairosenkranz.com
Solo developer	Layered Mind	http://www.layeredmind.de/
Solo developer	Lightmile	http://lightmile.studio/
Solo developer	Manuel Schenk Games	https://www.magiccauldron.de/
Solo developer	Mystic Shelter e. K.	https://www.mysticshelter.com/home
Solo developer	Nerdvision Games	https://www.nerdvision.net/
Solo developer	OneManOnMars Art & Games e.K.	https://onemanonmars.com/
Solo developer	PartTimeIndie	https://parttimeindie.com/
Solo developer	Peter Schauß	https://www.peterschauss.de/
Solo developer	Ramon Janousch Softwareentwicklung	www.RamonJanousch.com
Solo developer	Re-dye / Ronja Böhringer	ronja.space
Solo developer	Rebusmind Game Design	www.rebusmind.de
Solo developer	Sharkbomb Studios	www.sharkbombs.com
Solo developer	Shelly Alon	www.shellyalon.net
Solo developer	Siactro	https://siactro.itch.io/
Solo developer	Slash Games GbR	slashgames.org/coeing
Solo developer	Spiderwork Games	https://www.spiderwork-games.com/
Solo developer	spieleschreiber	www.spieleschreiber.de
Solo developer	Stefan Wolf	https://jacudibu.com/
Solo developer	Stéphan Barbé freier Entwickler für Web & iOS Apps	www.stephanbarbe.de
Solo developer	Story Dwelling	https://www.story-dwelling.com/
Solo developer	Sven Ahlgrimm	https://store.steampowered.com/app/1627870/ODDADA/
Solo developer	swizzle kiss UG	https://swizzlekiss.com/
Solo developer	Teister Games	https://teister.games/
Solo developer	Tobias Braun	www.bounce42.de
Solo developer	Torben Ratzlaff	www.torben-ratzlaff.de
Solo developer	Zaubersee.de Ralf Zimmer	www.zaubersee.de

B. Contacted studios

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English	5th Planet Games GmbH	https://www.5thplanetgames.com/	info@5thplanetgames.com
English	A.MUSE – Interactive Design Studio	www.amuse.vision	hello@amuse.vision
English	AAS Achtung Autobahn Studios UG	https://achtungautobahn.com/	info@achtungautobahn.com
English	About Cannons + Sparrows Gbr	www.acas.studio	kabooom@cannonsandsparrows.com
English	Actrio Studio UG	http://actrio-studio.de/	info@actrio-studio.de
English	Aesir Interactive GmbH	https://aesir-interactive.com/	hq@aesir-interactive.com
English	Ahoiii Entertainment UG	www.ahoiii.com	support@ahoiii.com
English	Airborn Studios GmbH	www.airborn-studios.com	info@airborn-studios.com
English	Alchemist Interactive GmbH	https://www.alchemist.email	contact@alchemist.email
English	Anaconda Game Studios	https://anacondagamestudios.com/	press-contact@anacondagamestudios.com
English	Andarion Games GmbH	https://www.andarion-games.com/	info@andarion-games.com
English	Andrade Games	https://andrade-games.com/	mail@andrade-games.com
English	Anomaly Games UG	https://fermi-paradox.carbonmade.com/	contact@fermi-paradox.com
English	anotherworld GmbH (AnotherWorld VR)	http://anotherworldvr.com/	info@anotherworldvr.com
English	Anteater Games GmbH	www.anteater-games.com	contact@anteater-games.com
English	Area 1 GmbH	https://www.area1.one	info@area1.one
English	Arnold Rauers	www.tinytouchtales.com	hello@tintouchtales.com
English	ARQUOIA	arquoia.com	studio@arquoia.com
English	Ascendancy Games UG	https://ascendancygames.de	info@ascendancygames.de
English	AsgardSoft GmbH	https://asgardsoft.com	Service@AsgardSoft.com
English	Assemble Entertainment GmbH	www.assemble-entertainment.com	info@assemble-entertainment.com
English	Asylum Square Interactive GmbH	https://www.asylumsquare.com	contact@asylumsquare.com
English	Augmented Robotics GmbH	https://www.augmented-robotics.com/	info@augmented-robotics.com
English	B-Alive GmbH	www.b-alive.de	admin@b-alive.de
English	Backwoods Entertainment GbR	www.backwoods-entertainment.com	contact@backwoods-entertainment.com
English	Bad Monkee GmbH	www.badmonkee.de	info@badmonkee.de
English	Bagpack Games UG (haftungsbeschränkt)	www.bagpack.games	mail@bagpack.games
English	Barrel Roll Games GmbH & Co. KG	barrelrollgames.com	contact@barrelrollgames.com
English	battyRabbit UG (haftungsbeschränkt)	https://battyrabbit.com	contact@battyRabbit.com
English	BBG Entertainment GmbH	www.bbg-entertainment.com	info@bbg-entertainment.com
English	Beardshaker Games	www.beardshaker.com	contact@beardshaker.com
English	Benjamin Justice - BrutalHack	https://www.BrutalHack.com	contact@BrutalHack.com
English	Bigitec GmbH	http://www.bigitec.com	info@bigitec.com
English	BIGPOINT GMBH	www.bigpoint.com	press@bigpoint.net
English	BINJI CLASEN UND CLASEN GBR	www.binji.de	hello@binji.de
English	Bit Barons GmbH	www.bitbarons.com	info@bitbarons.com
English	bitComposer Interactive GmbH	www.bitcomposer.com	info@bitcomposer.com
English	Bite Through Entertainment UG	https://bitethrough.com/	info@bitethrough.com
English	Black Forest Games GmbH	black-forest-games.com	info@bfgames.biz
English	Black Pants Studio GmbH BERLIN	www.blackpants.de	mail@blackpants.de
English	blackHound GmbH	www.blackhoundstudios.com	hello@soulven.com
English	Blankhans GmbH	https://blankhans.io/	contact@blankhans.io
English	Bleakmill GmbH	http://www.bleakmill.com	hello@bleakmill.com
English	Bling Bling Games GmbH	blingblinggames.com	info@blingblinggames.com
English	Blue Ocean Entertainment AG	www.blue-ocean-ag.de	apps@blue-ocean-ag.de
English	Bonus Level Entertainment UG	http://bonuslevel.com/	info@bonuslevel.com

English	Boxelware GmbH	http://boxelware.de/	contact@avorion.net
English	Brain Connected	http://portaldogs.com	contact@portaldogs.com
English	Brainseed Factory e.K.	http://www.brainseed-factory.com	studio@brainseed-factory.com
English	Breakpoint One GmbH	https://www.breakpoint.one/	contact@breakpoint.one
English	Brew Games Hamburg GmbH	https://www.brew-games.com	info@brew-games.com
English	Bright Future GmbH	https://brightfuture.de	info@brightfuture.de
English	btf GmbH	https://btf.de	info@btf.de
English	Byteghoul UG	http://www.byteghoul.com	contact@byteghoul.com
English	Bytro Labs GmbH	www.bytro.com	info@bytro.com
English	celrage GmbH	www.celrage.com	info@celrage.com
English	Chasing Carrots GmbH & Co. KG	www.chasing-carrots.com	info@chasing-carrots.com
English	Chimera Entertainment GmbH	www.chimera-entertainment.de	info@chimera-entertainment.de
English	Classy Kitten Games UG	classykitten.games	contact@classykitten.games
English	Claymore Game Studios GmbH	https://claymore-games.com/	info@claymore-games.com
English	Clockwork Origins - Bonrath & Frenzel GbR	https://clockwork-origins.com	contact@clockwork-origins.com
English	Cloud Imperium Games Ltd.	www.cloudimperiumgames.com	info@cloudimperiumgames.com
English	ColdFire Games GmbH	http://www.coldfiregames.com/	info@coldfiregames.com
English	com8com1 Software	https://www.com8com1.com/	contact@com8com1.com
English	Competition Company GmbH (Rennsport.gg)	https://www.rennsport.gg/	info@competition.company
English	cooee GmbH	https://www.clubcooee.com	info@clubcooee.com
English	core x group	www.core-x-group.com	contact@core-x-group.com
English	Couch in the Woods Interactive	https://couchinthewoods.de/	contact@couchinthewoods.de
English	Crafting Legends UG (haftungsbeschränkt)	http://www.craftinglegends.com/	info@craftinglegends.com
English	CRATR.games GmbH	https://CRATR.games	contact@cratr.games
English	Crazy Labs	https://www.crazylabs.com	pr@crazylabs.com
English	CrazyBunch UG	www.crazybunch.biz	team@crazybunch.biz
English	Creactstudios GbR	creactstudios.com	info@creactstudios.de
English	CRENETIC GMBH STUDIOS	www.crenetic.de	info@crenetic.de
English	Cribster UG	https://www.cribster.biz	contact@cribster.biz
English	Crimson Company UG	https://www.crimsoncompany.cc/	crimsoncompany@gmx.net
English	Crit Crew GmbH	https://critcrew.com/	info@critcrew.com
English	Crows Crows Crows GmbH	https://crowscrowscrows.com/	hello@crowscrowscrows.com
English	CRUNCHY LEAF GAMES GMBH & CO. KG	http://www.crunchyleafgames.com/	hello@crunchylg.com
English	CrystalMesh UG (haftungsbeschränkt)	http://crystalmesh.de/	contact@creatingcorner.de
English	Crytek GmbH	www.crytek.com	info@crytek.de
English	Cubidoo Entertainment UG	www.cubidoo.de	contact@cubidoo.de
English	Curvature Games GmbH	https://curvaturegames.com/	mail@curvaturegames.com
English	Cyber Manatee GmbH	https://cybermanatee.com/	info@cybermanatee.com
English	Cykyria – Virtual Reality	https://www.cykyria.com/	info@cykyria.de
English	Daedalic Entertainment GmbH	www.daedalic.com	info@daedalic.com
English	DECA LIVE OPERATIONS GMBH	http://decagames.com/#home	partner@decagames.com
English	Deck 13 Interactive GmbH	www.deck13.com	info@deck13.com
English	Deep Silver FISHLABS	www.dsfishlabs.com	business@dsfishlabs.com
English	DEFICIT Games GmbH	www.deficit-games.de	mail@deficit.games
English	Demodern GmbH Hamburg	https://demodern.de/	hi@demodern.de
English	designmatic GmbH	https://www.designmatic.xyz/	info@designmatic.xyz
English	Devil Cookie Games UG	https://devilcookie.com/website/index.html	info@devilcookie.com
English	Dexai Arts UG	http://dexai-arts.com/	info@dexai-arts.com
English	Digidiced UG	https://digidiced.com	info@digidiced.com
English	DigiTales Interactive UG (haftungsbeschränkt)	http://digitales.games/	contact@digitales.games

English	Digitalmindsoft e.K.	http://www.digitalmindsoft.eu/	info@digitalmindsoft.eu
English	Digitalsirup GmbH	https://www.digitalsirup.com/	contact@digitalsirup.com
English	Dionic Software (Oachkatzlschwoaf Interactive UG (haftungsbeschränkt))	https://dionicsoftware.com/	press@dionicsoftware.com
English	DIVR e.V.	https://divr.de/	contact@divr.de
English	Don VS Dodo	https://donvsdodo.de/	studio@donvsdodo.com
English	Doppel Real GbR	https://doppelreal.com/	info@doppelreal.com
English	Dot8 Studio	https://dot8studio.com/	business@dot8studio.com
English	DOTW GmbH (Ducks on the Water)	www.ducks-on-the-water.com	post@ducks-on-the-water.com
English	Dreamfab GmbH & Co. KG	www.dreamfab.com	askthedevs@dreamfab.com
English	DU&I UG	https://duandigames.com/	contact@duandigames.com
English	Dutyfarm GmbH	www.dutyfarm.com	info@dutyfarm.com
English	Edurino GmbH	https://edurino.com/	info@edurino.com
English	Egosoft GmbH	www.egosoft.com	info@egosoft.com
English	Electronic Arts GmbH	www.ea.de	info@ea.com
English	Elysium Game Studio UG	https://www.elysiumgamestudio.com/	contact@elysiumgamestudio.co
English	encurio GmbH	https://www.encurio.com	info@encurio.com
English	Endzeit Entertainment	http://endzeit-entertainment.com/	info@endzeit-entertainment.com
English	Enigma Entertainment	http://enigmaentertainment.net/	contact@enigaentertainment.net
English	ENREVO UG	https://enrevo.de/	hello@enrevo.de
English	EntwicklerX GbR	https://entwickler-x.de/	mail@entwickler-x.de
English	Envision Entertainment GmbH	www.envision-entertainment.de	info@envision-entertainment.de
English	Epic Games Cologne GmbH	www.epicgames.com/	questions-DE@epicgames.com
English	epicsauerkraut studio	https://epicsauerkraut.com/	info@epicsauerkraut.com
English	Etermax Germany GmbH	http://www.etermax.com	hi@etermax.de
English	Evil Grog Games GmbH	https://evilgrog.com/	info@evilgroggames.com
English	Exit Adventures GmbH	exit-vr.de	hello@exit-vr.de
English	Expanding Focus GmbH	https://www.expanding-focus.de/	info@expanding-focus.de
English	Explorlings UG (haftungsbeschränkt)	https://explorlings.com	contact@explorlings.com
English	Extraordinerdy GmbH	https://extraordinerdy.app/	support@avoidsociety.app
English	Faber Courtial GbR	https://faber-courtial.de/	public@faber-courtial.de
English	Fabula Games GmbH	https://www.fabula-games.de	info@fabula-games.de
English	Fairytale Distillery UG	www.fairytale-distillery.com	contact@fairydist.com
English	Famobi GmbH	www.famobi.com	info@famobi.com
English	Fantastic Foe UG (haftungsbeschränkt)	https://fantasticfoe.com/	hello@fantasticfoe.com
English	Farbspiel Interactive GmbH & Co. KG	https://farbspiel-interactive.com/	info@farbspiel-interactive.com
English	FDG Entertainment GmbH & Co. KG	www.fdg-entertainment.com	press@fdg-entertainment.com
English	Fein Games GmbH	https://www.fein.games/	hello@fein.games
English	Feisty Fox Studios UG	https://www.feistyfoxstudios.com/	contact@feistyfoxstudios.com
English	FIERY THINGS GmbH	www.fierythings.com	info@fierythings.com
English	Firepunchd Games UG	www.firepunchd.com	press@firepunchd.com
English	fivefingergames GmbH	https://fivefingergames.com/	info@fivefingerames.com
English	flaregames GmbH	www.flaregames.com	info@flaregames.com
English	Flow Fire Games UG	https://www.flowfiregames.com/	info@flaregames.com
English	Flying Sheep Studios GmbH	www.flying-sheep.com	post@flyingpotato.de
English	Fourexo Entertainment GmbH	http://highrisecitygame.com/	highrisecitygame@gmail.com
English	framelocker GmbH	https://framelocker.com	info@framelocker.com
English	Frontiers of Fantasy GmbH	frontiersoffantasy.com	info@frontiersoffantasy.com
English	Fun Flavor Games	https://www.funflavorgames.com/	info@funflavorgames.com
English	FusionPlay GmbH	https://www.fusion-play.com/	info@fusion-play.com

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English	Gaijin Developments GmbH	https://gaijinent.com	press@gaijinent.com
English	Game Art Brain - Creation and Consulting GmbH	http://www.gameartbrain.com/	contact@gameartbrain.com
English	Game Matter UG	http://game-matter.com/	info@game-matter.com
English	GameBros. UG	http://www.gamebros-studio.com	info@gamebros-studio.com
English	GameExPro UG	https://www.gameexpro.com/	felix@gameexpro.com
English	GameFlow Studios GmbH	https://www.regain-earth.com/	publicmail@gameflow-studios.com
English	Games in Flames UG (haftungsbeschränkt)	www.gamesinflames.com	info@gamesinflames.com
English	GAMEVIL COM2US Europe GmbH	https://gamevilcom2us.com/	info_eu@gamevilcom2us.com
English	gameXcite GmbH	www.gamexcite.de	info@gamexcite.de
English	gamigo AG	https://corporate.gamigo.com/	info@gamigo.com
English	Gaming Minds Studios GmbH	www.gamingmindsstudios.com	info@gamingmindsstudios.com
English	Gamma Minus UG	https://www.gammaminus.com	jeremiah@gammaminus.com
English	GE-MU Systems UG	http://ge-mu.de/	info@ge-mu.de
English	gentlymad Studios UG (haftungsbeschränkt)	https://gentlymad.org	team@gentlymadstudios.com
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English	giantdoor UG (haftungsbeschränkt)	https://giantdoor.games/	hello@giantdoor.games
English	GIANTS Software Entertainment GmbH	www.giants-software.com	mail_us@giants-software.com
English	Glaucus Games GmbH	http://www.glaucus-games.com	info@glaucus-games.com
English	Gloho Games UG	https://glohogames.com/	info@glohogames.com
English	Glome GmbH	https://glome.ai/	mail@glome.ai
English	Gold & Lumber Games UG	www.goldandlumber.com	business@goldandlumber.com
English	Golden Orb UG	https://www.golden-orb.de	mail@golden-orb.de
English	Goodgame Studios - Altigi GmbH	www.goodgamestudios.com	info@goodgamestudios.com
English	Google Germany GmbH	https://www.google.de	alampe@google.com
English	Grimbart Tales GmbH	https://www.grimbart-tales.com	contact@grimbart-tales.com
English	Grimlore Games GmbH	www.grimloregames.com	contact@grimbart-tales.com
English	Gunzilla GmbH	https://gunzillagames.com/	contact@gunzillagames.com
English	Hammer Labs Oliver Eberlei	www.hammer-labs.com	oliver@hammer-labs.com
English	Hammer Slammer Games GmbH	https://www.hammer-slammer.com/	info@hammerslammer.com
English	HandyGames - www.handy-games.com GmbH	www.handy-games.com	info@handy-games.com
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English	Happy Tuesday UG (haftungsbeschränkt)	www.happy-tuesday.de/	contact@happy-tuesday.com
English	Happy&Trails 22 UG	https://wunderklub.com/	joerg@happyandtrails22.com
English	Headup GmbH	www.headupgames.com	info@headupgames.com
English	Hekate GmbH	http://www.hekate.games	legal@hekate.games
English	Hessburg – creating video games since 8 bits	https://www.hessburg.com	contact@hessburg.c0m
English	Hexagon Game Labs GmbH	www.hexagongamelabs.com	Info@HexagonGameLabs.com
English	HokaBento Studio GmbH	http://hokabentostudio.de/	contact@hokabentostudio.de
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English	holoride GmbH	https://www.holoride.com/	info@holoride.com
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English	JIW-Games e.K.	https://www.rising-world.net/	info@jiw-games.net
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English	rose-engine GbR (Wittmann & Zwerger)	www.rose-engine.org	hi@rose-engine.org
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English	Savage Game Studios GmbH	https://www.savagegamestudios.com/	info@savagegamestudios.com
English	Schwiezer System GmbH	http://www.schwiezer.com	contact@schwiezer.com
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English	Spaces of Play UG (haftungsbeschränkt)	www.spacesofplay.com	support@spacesofplay.com
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German	Meister Cody GmbH	www.meistercody.com	team@meistercody.com
German	Mixtvision Games	www.mixtvision.games	info@mixtvision.de
German	mmc - Agentur für interaktive Medien GmbH	https://mmc-agentur.de/	info@mmc-agentur.de
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German	MPG media production group	www.archaeologica.de	info@archaeologica.de
German	Nau-Hau GmbH	www.nau-hau.com	mail@nau-hau.com
German	Neobird GmbH & Co. KG	www.neobird.de	info@neobird.de
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C. Survey results

Q1: Years spent professionally working on digital games	Q2: Current number of projects	Q3: Number of job roles	Q3: Board member	Q3: Producer / Manager	Q3: Developer	Q3: Game Designer	Q3: Artist	Q3: Other	Q3: Lead position	Q5: Structure of people working on the game	Q6: Number of people working in same team/ department	Q7: Collaboration with others	Q8: Percentage on-site	Q9: Meetings - progress of individuals	Q9: Meetings - progress as a whole	Q9: Meetings - work out upcoming tasks	Q9: Meetings - planning and scheduling tasks	Q9: Meetings - progress of work in recent times	Q10: Documentation for meetings and their results	Q11: Development progress layerwise?	Q11: Development progress featurewise?	Q12: Characterize the development process
[1,4.75)	1	1	n	n	y	n	n	n	n	Several departments	[4,6)	On-site, Remotely	100	Regularly	Regularly	Regularly	Regularly	Spontaneous/ When needed	All	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid, Ad-Hoc
[10,15)	3	1	y	n	n	n	n	n	n	One joint team	[4,10]	On-site		Regularly	Regularly	Regularly	Regularly	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative
[4.75,10)	2	1	n	y	n	n	n	n	n	Several departments	[6,10]	On-site, Remotely	90	Regularly	Regularly	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative
[4.75,10)	3	1	n	n	y	n	n	n	n	Several departments	[4,6)	Remotely		Regularly	Regularly	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative
[1,4.75)	2	1	y	n	n	n	n	n	n	One joint team	[2,4)	On-site, Remotely	90	Regularly	Spontaneous/ When needed	Don't know	Don't know	Don't know	Partially		Parallel development of multiple features.	Hybrid, Ad-Hoc
[1,4.75)	[4,10]	1	y	n	n	n	n	n	n	Multiple feature teams	[12,35]	On-site, Remotely	100	Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially	Work on one layer of the game at a time.		Ad-Hoc
[1,4.75)	1	2	y	y	n	n	n	n	n	One joint team	[2,4)	On-site, Remotely	80	Regularly	Spontaneous/ When needed	Don't know	Regularly	Spontaneous/ When needed	All	Work on one layer of the game at a time.		Hybrid
[10,15)	3	1	n	n	y	n	n	n	y	One joint team, Externals	[4,10]	Remotely		Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative
[1,4.75)	1	x	x	x	x	x	x	x	x	One joint team, Externals	[2,4)	On-site, Remotely	5	Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Regularly	Prefer not to answer	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative, Ad-Hoc
[1,4.75)	2	1	n	n	y	n	n	n	y	One joint team	[2,4]	Remotely		Spontaneous/ When needed	Regularly	Regularly	Regularly	Spontaneous/ When needed	All	Work on one layer of the game at a time.	One feature at a time.	Iterative
[15,35]	3	x	x	x	x	x	x	x	x	One joint team	[11,20]	On-site, Remotely	70	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative, Ad-Hoc
[15,35]	1	x	x	x	x	x	x	x	x	One joint team	[4,10]	Remotely		Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially		Parallel development of multiple features.	Don't know
[15,35]	2	2	y	n	n	y	n	n	y	Several departments	[6,10]	Remotely		Don't know	Spontaneous/ When needed	Regularly	Don't know	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Ad-Hoc
[1,4.75)	2	2	y	n	n	n	n	y	n	One joint team	[4,10]	On-site, Remotely	Don't know	Regularly	Regularly	Regularly	Spontaneous/ When needed	Regularly	Partially		Parallel development of multiple features.	Hybrid
[15,35]	1	1	n	n	y	n	n	n	y	One joint team	x	Remotely		Spontaneous/ When needed	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Spontaneous/ When needed	x	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative
[10,15)	2	2	y	y	n	n	n	n	n	One joint team	[4,10]	Remotely		Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially		Parallel development of multiple features.	Iterative, Hybrid
[15,35]	3	1	n	n	n	n	n	y	y	Several departments	[30,50]	On-site, Remotely	20	Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Don't know	All		Parallel development of multiple features.	Iterative
[1,4.75)	2	1	n	n	y	n	n	n	n	One joint team	[4,10]	On-site, Remotely	1	Regularly	Regularly	Regularly	Regularly	Regularly	Partially	Work on one layer of the game at a time.	Bespoke: Parallel development department-wise	Iterative
[10,15)	2	2	y	y	n	n	n	n	n	Multiple feature teams, Several departments	[12,35]	On-site, Remotely	35	Regularly	Regularly	Regularly	Regularly	Regularly	All	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative, Hybrid
[1,4.75)	1	1	y	n	n	n	n	n	n	One joint team	[4,10]	Remotely		Regularly	Regularly	Regularly	Regularly	Regularly	Partially		One feature at a time.	Hybrid
[4.75,10)	[4,10]	x	x	x	x	x	x	x	x	Multiple feature teams, Several departments	[12,35]	On-site, Remotely	8	Regularly	Regularly	Regularly	Regularly	Regularly	All	Work on multiple layers simultaneously	One feature at a time.	Hybrid

[15,35]	2	2	n	n	y	n	y	n	n	One joint team	[4,10]	Remotely		Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially		Parallel development of multiple features.	Hybrid, Ad-Hoc
[10,15)	3	1	y	n	n	n	n	n	n	One joint team, Externals	[2,4)	On-site, Remotely	2	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	None	Work on multiple layers simultaneously	Parallel development of multiple features.	Ad-Hoc
[4.75,10)	2	1	y	n	n	n	n	n	n	One joint team	[2,4)	Remotely		Regularly	Regularly	Regularly	Regularly	Regularly	All	Work on multiple layers simultaneously		Iterative
[4.75,10)	3	2	n	n	n	y	n	y	n	One joint team	[4,10]	Remotely		Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid
[4.75,10)	3	2	y	y	n	n	n	n	n	Several departments	[6,10]	Remotely		Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative, Ad-Hoc
[10,15)	[4,10]	1	n	y	n	n	n	n	n	Several departments	x	Remotely		Regularly	Regularly	Spontaneous/ When needed	Regularly	Regularly	All	Work on multiple layers simultaneously		Iterative
[1,4.75)	2	x	x	x	x	x	x	x	x	Several departments	[4,6)	On-site, Remotely	30	Regularly	Regularly	Regularly	Regularly	Spontaneous/ When needed	Partially	Work on one layer of the game at a time.		Iterative
[1,4.75)	1	3	n	y	y	y	n	n	n	One joint team	[4,10]	Remotely		Regularly	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Spontaneous/ When needed	All	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative
[15,35]	[4,10]	1	y	n	n	n	n	n	n	One joint team	[4,10]	On-site, Remotely	80	Spontaneous/ When needed	Regularly	Regularly	Regularly	Regularly	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid
[15,35]	[4,10]	2	y	n	n	n	y	n	n	One joint team	[4,10]	Remotely		Regularly	Regularly	Spontaneous/ When needed	Regularly	Regularly	All	Work on multiple layers simultaneously	Parallel development of multiple features.	Iterative
[15,35]	1	1	n	n	n	n	y	n	y	Several departments	[6,10]	On-site, Remotely	40	Regularly	Regularly	Regularly	Regularly	Regularly	Partially		Parallel development of multiple features.	Bespoke
[10,15)	2	2	y	n	n	n	y	n	n	One joint team	[4,10]	On-site, Remotely	80	Regularly	Regularly	Regularly	Regularly	Regularly	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid
[10,15)	2	2	y	n	y	n	n	n	n	One joint team	[4,10]	On-site, Remotely	50	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	One feature at a time.	Iterative, Ad-Hoc
[10,15)	1	1	y	n	n	n	n	n	n	One joint team	[11,20]	On-site, Remotely	10	Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid
[15,35]	2	1	y	n	n	n	n	n	n	Multiple feature teams, Several departments	[12,35]	On-site, Remotely	40	Regularly	Regularly	Spontaneous/ When needed	Regularly	Regularly	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid, Ad-Hoc
[10,15)	2	2	y	n	y	n	n	n	n	One joint team	[2,4)	On-site, Remotely	25	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	All	Work on multiple layers simultaneously	One feature at a time.	Hybrid
[15,35]	2	3	n	y	y	n	y	n	n	One joint team	[2,4)	Remotely		Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	One feature at a time.	Hybrid
[15,35]	2	3	y	y	y	n	n	n	n	One joint team	[4,10]	On-site, Remotely	25	Regularly	Regularly	Regularly	Regularly	Spontaneous/ When needed	All		Parallel development of multiple features.	Iterative
[10,15)	1	2	y	n	y	n	n	n	y	One joint team	[4,10]	Remotely		Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Partially		Parallel development of multiple features.	Ad-Hoc
[1,4.75)	1	3	n	y	y	n	y	n	n	One joint team	[4,10]	Remotely		Spontaneous/ When needed	Regularly	Regularly	Regularly	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid
[10,15)	3	1	y	n	n	n	n	n	n	One joint team, Externals	[2,4)	On-site, Remotely	80	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously		Hybrid, Ad-Hoc
[15,35]	[4,10]	2	n	n	n	y	n	y	y	One joint team	[4,10]	On-site, Remotely	20	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	All	Work on multiple layers simultaneously		Hybrid
[4.75,10)	1	1	n	y	n	n	n	n	n	Multiple feature teams	[3,12)	Remotely		Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid
[15,35]	2	2	y	y	n	n	n	n	n	Several departments	[30,50]	On-site, Remotely	90	Regularly	Regularly	Spontaneous/ When needed	Regularly	Regularly	All	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid

[4.75,10)	2	1	y	n	n	n	n	n	n	One joint team	[2,4)	On-site, Remotely	85	Prefer not to answer	Prefer not to answer	Spontaneous/ When needed	Prefer not to answer	Spontaneous/ When needed	None	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid
[4.75,10)	[4,10]	2	n	n	n	y	n	y	n	Multiple feature teams	[3,12)	Remotely		Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Bespoke
[15,35]	2	1	n	y	n	n	n	n	n	One joint team	[4,10]	Remotely		Regularly	Regularly	Regularly	Regularly	Regularly	All	Work on multiple layers simultaneously	Parallel development of multiple features.	Waterfall/Predictive
[10,15)	1	1	y	n	n	n	n	n	n	One joint team	[2,4)	Remotely		Regularly	Spontaneous/ When needed	Spontaneous/ When needed	Regularly	Spontaneous/ When needed	Partially	Work on multiple layers simultaneously	Parallel development of multiple features.	Hybrid
[4.75,10)	1	1	n	y	n	n	n	n	n	One joint team	[4,10]	On-site		Regularly	Regularly	Spontaneous/ When needed	Regularly	Regularly	All		Parallel development of multiple features.	Hybrid

D. Interviews

Both interviews were conducted in German, the native language of all participants. Questions and comments made by the author during the interview are rendered in italics. Interviewees were offered a transcript of the interview after it was conducted, and were given the choice of appearing by name or anonymously. They were also given last say on the removal of individual sentences. Other modifications have been made apparent with square braces.

Interview with Laura Körting, Executive Board member at Lab132

Wenn du in eigenen Worten nochmal zusammenfassen willst, was du beruflich machst, wie du da hingekommen bist, das fände ich sehr interessant.

Klar, sehr gerne. Ich bin Mitgründerin und Geschäftsführerin bei Lab 132. Wir arbeiten komplett remote, aber unser Firmensitz ist in Heidelberg. Wir hatten zwischendurch mal ein Office in der Nähe von Stuttgart. Dann war da wegen Corona zwei Jahre lang niemand, wieder zugemacht, also jetzt wieder komplett remote. Wir haben zu viert gegründet, damals 2017, also haben wir jetzt nächsten Monat unseren sechsjährigen Geburtstag. Und mittlerweile sind wir zu zwölft, inklusive Studenten. Es sind drei Studierende, drei Werkstudenten, die wir haben, und neun Mitarbeiter.

Wir machen vor allem PC und Konsolenspiele. Wir haben zwei eigene Spiele bisher entwickelt und veröffentlicht. Einmal 2017, 2018, direkt am Anfang, ein Plattformer Racing Game, für PC und Playstation 4. Das war so ein bisschen unser Einstieg in den ganzen Konsolenmarkt, weil wir dachten „Wir probieren jetzt einfach mal: Wie macht man überhaupt ein Playstationspiel". Und dann haben wir relativ schnell rausgefunden, dass es ziemlich cool ist und ziemlich viel Spaß macht, in die Richtung zu gehen. Auch weil die Hürde auf Konsole zu gehen ein bisschen höher ist als auf sowas wie PC oder Mobile. Dass da auch nicht so ein unglaublich heftiger — ich will nicht sagen Konkurrenzkampf… aber auf Steam zum Beispiel kommen, ich weiß nicht, tausende neue Spiele jeden Tag oder jede Woche raus und auf Konsole wahrscheinlich nur hundert oder sowas. Also ist es verhältnismäßig noch ein bisschen angenehmer sich da zu platzieren. Wir haben 2017 damals unsere ersten Titel für PC und Playstation gemacht, um so ein bisschen zu gucken, wie wir da reinkommen. Dann haben wir vier Jahre lang on und off immer mal mehr, mal weniger an unserem zweiten Titel gearbeitet, „Orbit Industries", der kam vor ziemlich genau einem Jahr raus, letztes Jahr im April. Da haben wir dann alles abgedeckt: PC, PS4, PS5, Xbox One und Xbox Series und Switch. Es ist ein Simulationsstrategiemanagementspiel, wo man eine eigene Raumstation aufbauen und managen muss. Es gibt verschiedene Missionen, die man spielen kann, mit unterschiedlichem Ziel und Ende natürlich.

Was einen großen Teil unserer Arbeit ausmacht, sind aber Arbeiten für andere Studios und Publisher. Wir haben in den sechs Jahren, die es uns jetzt gibt, an knapp 20 Titeln von anderen Leuten mitgearbeitet. An Co-Entwicklung und Portierung vor allem. Also gerade diese Expertise und Erfahrung, die wir in Richtung Konsole haben, ist relativ wertvoll, weil die gerne mal vor allem von Publishern, aber auch von anderen Studios, eingekauft oder dazugenommen wird. Und das sind dann zum Beispiel wir als Team, die das abdecken. Dass uns jemand ein fertiges oder fast fertiges PC-Spiel gibt und wir portieren das entsprechend für sie. Auf entweder nur eine Plattform, nur Playstation oder sowas, oder wir machen einen Rundumschlag und machen alle fünf zentralen Konsolenplattformen für die. Wir sind ein relativ technisch orientiertes Team, also knapp die Hälfte vom Team sind Programmierer und Entwickler. Ein großer Teil davon eben mit Erfahrung, wie man für Konsole entwickelt. Deswegen kommt es auch immer mal wieder vor, dass wir so kleinere Projekte machen. Mehr Richtung, ich würde nicht sagen Engine Consulting, aber so was wie „wie arbeite ich denn am besten mit der Unreal Engine", oder „wie optimiere ich Performance für die Konsole". Je nachdem, mit wie viel Konsole im Hinterkopf man ein PC-Spiel entwickelt, ist es natürlich leichter oder schwerer, das am Ende auf Konsole zu packen. Die Performance zum

Beispiel kann extrem mies oder schon mal ganz gut sein. Wo da die Ansatzpunkte sind, wo man noch optimieren kann, die Frage „Ist es eher von der Game Logik her oder ist es eher Grafik, was optimiert werden muss?“. Also es kommt auch immer wieder vor, dass wir da so gezielt ein paar Tage oder ein paar Wochen nur helfen. Genau. Das war, glaube ich, der Rundumschlag.

Ich selbst habe auch an der HdM Medieninformatik und dann Computer Science and Media studiert. Ich meine 2016 oder 2017 war der Masterabschluss. Und meine Kollegen haben auch den Bachelor und Master an der HdM gemacht. Da haben wir uns ein bisschen kennengelernt und haben uns gedacht: „Wir verstehen uns gut, wir machen gerne Games zusammen, lasst uns doch einfach mal ein Studio gründen. Die Einstiegshürde ist nicht riesig, man hat ja eh einen PC zu Hause". Am Anfang viel halt nebenbei in der Freizeit gemacht. Haben einen Teilzeitjob gehabt, alle, um ein bisschen Miete zu bezahlen. Und dann so 2019 ging es richtig los dann. Dass wir uns selber wirklich fest voll angestellt haben und Gehälter zahlen konnten und dann Praktikanten hatten. Seit 2019 ging es damit jetzt eigentlich immer weiter bis zu den zwölf Leuten jetzt. Und es sind auch einige Titel, die wir mittlerweile im Portfolio haben. Wir arbeiten grade an unserem dritten eigenen Titel. Habe ich dich erschlagen oder hast du noch Fragen?

Ne, das ist super interessant und freut mich zu hören. Ich kenne viele, die sich überlegen zu gründen. Es ist viel Arbeit, aber es gibt die Erfolgsstorys und das finde ich sehr cool. Du hast gerade schon gesagt, dass Expertise viel eingekauft wird. Was mich da auch so ein bisschen interessiert: In deinem Arbeitsalltag, kannst du dich viel darauf verlassen, dass du sagst „Okay, ich habe jetzt die Erfahrung um die Probleme, die da so auftreten, gut lösen zu können" oder ist es mehr, dass du sagst „Hey, es ist nach wie vor viel spontanes Problem Solving, jedes Projekt ist anders"?

Hm, dieses spontane Problem Solving geht glaube ich nie ganz weg, weil halt doch jedes Team, wenn jemand neu dazukommt oder so, oder auch jedes Projekt, anders ist. Wo wir immer noch, oder dauerhaft, immer so ein bisschen reinwachsen, ist einfach die wachsende Teamgröße. Und auch die — hoffentlich — wachsende Professionalität, mit der wir arbeiten, der wachsende Projektumfang mit mehr Erfahrung und auch mehr Budget. Mit mehr Finanzierungssicherheit, die wir haben, können wir uns natürlich auch ein bisschen mehr trauen und entsprechend mehr in ein Projekt reinstecken, an Manpower, an Budget und so weiter. Bei unserem jetzigen Projekt zum Beispiel wollen wir wieder Selfpublishing machen. Unseren letzten Titel haben wir mit einem Publisher gemacht, das wollen wir jetzt nochmal selbst probieren und sind entsprechend jetzt in der Position, wo ich eben planen und einkaufen muss: Wer macht denn QA und Testing bei uns? Wir haben keine eigenen QA-Tester. Wer übersetzt uns unsere Texte in die Sprachen, die wir haben wollen? Wer macht Marketing und PR für uns? Was ist da die Timeline? Also das sind jetzt Sachen, die zwar nicht ganz neu sind für uns, aber in dem Umfang auf jeden Fall neu. Und ja, bei der Teamgröße, da glaube ich, ist immer noch viel Learning-By-Doing. Einfach, dass auf alle geachtet wird und geguckt wird, dass alle genug zu tun haben, aber nicht zu viel, und auch grob das machen, was ihnen Spaß macht und was sie können. Von daher ist immer noch auf eine andere Art und Weise, glaube ich, so ein Learning-By-Doing dabei.

Was extrem hilft, natürlich weniger von der Orga- oder Managementseite, ist die technische Seite. Je mehr Konsolenports wir gemacht haben, je mehr Konsolenspiele an denen wir mitgewirkt haben, umso leichter fällt es uns, neue Projekt anzugehen. Also wir sind auch ein großer Fan von sehr modularem Arbeiten oder Abstrahieren. Wir haben im Prinzip eine eigene Engine. Wir arbeiten am liebsten mit der Unreal Engine und haben auf Basis von der Unreal Engine vier oder jetzt von der Fünfer eine eigene Engine über die Jahre aufgebaut. Einfach weil unsere Programmierer sehr gerne sehr generalistisch arbeiten, weil man es ja immer mal nochmal gebrauchen könnte. An den Stellen wo es geht wird möglichst unspezifisch, nicht für ein einziges Projekt, sondern möglichst generell gearbeitet. Vielleicht in ein externes Plugin oder so ausgelagert für die Engine, so dass es uns,

unseren Kunden und allen, mit denen wir so zusammenarbeiten, weiterhin zugutekommt. Genau, da bauen wir extrem viel auf der Erfahrung auf. Oder die ganzen Tools, die wir über die Jahre geschrieben und maintained haben, die wir immer laufend weiter benutzen für Projekte. Gerade im Sinne von einer automatischen Build-Pipeline, zum Beispiel. Von Tools in der Richtung, die wir selber geschrieben und aufgebaut haben und für alle Projekte nutzen, wo es relativ leicht ist, ein neues Spiel mit reinzupflegen und da sozusagen auf Knopfdruck einen Build für PC, Playstation, Xbox, was auch immer wir haben wollen, zu bauen und in die Cloud hochzuladen. Also das ist was, wo ich schon länger, aber jetzt erst recht, merke: „Oh, das war gut, dass wir uns die Arbeit damals von Anfang an gemacht haben". Und das ist echt was, das uns die Arbeit bei neuen Projekten sehr erleichtert, auch bei den eigenen.

Je mehr wir an Spielen von anderen Leuten mitarbeiten, umso mehr merken wir natürlich auch für unsere eigenen Spiele: „Was hat bei denen gut funktioniert? Könnte das bei uns auch gut funktionieren?". Oder umgekehrt: „Was war bei denen grauenvoll und völlig unorganisiert? Das könnten wir bei uns ja vielleicht besser machen". Denn es kommt häufig vor, oder kam bei uns jetzt häufig vor, dass Publisher uns beauftragt haben, Konsolenversion von einem Spiel zu machen, das von einem anderen Entwickler kam. Und dass die nie an Konsole gedacht haben, rein an PC, weil das so natürlich die zentrale Plattform ist, auf die man gehen will, klar. Und wenn sowas dann an uns gegeben wird, um eine Konsolenversion zu machen, ist das natürlich eine ganz andere Sache wie jetzt bei unseren eigenen Spielen. Wo wir von Anfang an wissen: „Hey, wir sind so spezialisiert auf Konsole, wir gehen auf jeden Fall mindestens auf Playstation und Xbox!". Da können von Anfang an entsprechend mit planen, zum Beispiel was Input und Steuerung angeht. Dass wir uns da zuerst das Konzept für Gamepad und Controller überlegen und dann später überlegen, wie mache ich es denn mit Maus und Tastatur. Da hast du viel mehr Knöpfe, das ist ein bisschen leichter auf jeden Fall, dafür so ein Schema zu designen. Oder sowas wie Performance. Was sind denn so die Bottlenecks auf der Playstation zum Beispiel, dass ein Spiel ruckelt oder ungut läuft. Die kann man von Anfang an mitbedenken. Es gibt viele Vorgaben von den Konsolenplattformen, wie denn ein Spiel aufgebaut sein sollte, also gerade mit dem Controller. Wenn du in einem Ladescreen bist und der Controller disconnected sich und dann meldet er sich auf einer anderen Playstation an, also so wirre Sachen irgendwie, die werden aber getestet und die musst du entsprechend bedenken. Und wenn man das von Anfang an macht, spart man sich einfach am Ende super viel Arbeit. Von der Seite merke ich, dass es immer routinierter wird. Was Management, Orga, Arbeitsmethoden angeht ist es immer noch ein Lernen und immer ein regelmäßiges Anpassen an jeden Fall.

Wie genau arbeitest du da? Also, du meintest gerade schon, das sei ein Lernen, ein Anpassen. Lernt ihr hauptsächlich aus dem Team heraus? Oder sagst du „Ah, ich eigne mir noch irgendwo von woanders Dinge an."?

Ich sollte mir wahrscheinlich von anderen Quellen, also von extern, ein bisschen mehr reinholen, aber da fehlt irgendwie immer die Zeit. Also dass man sich sagt „ich nehme mir jetzt einen halben Arbeitstag Zeit, um Literatur zu lesen, Blogs zu lesen, GDC Talks anzugucken", was auch immer. Da fehlt natürlich oft ein bisschen — oder man denkt zumindest es fehlt — die Zeit. Man sollte das eigentlich ein bisschen eher abwägen und sich denken, das kommt mir und meinem Job ja zugute, wenn ich das jetzt mache. Von daher ist es hauptsächlich intern, würde ich sagen. Wir haben auch unser letztes Projekt „Orbit Industries" viel reflektiert: „Was lief da gut, was lief schlecht? Was wollen wir beim nächsten Projekt anders oder besser machen?". Teilweise klappt es, teilweise nicht, zum Beispiel die Dokumentation. Das leidet schon wieder viel zu sehr. Oder dass Phasen so arg vermischt werden. Wir hatten beim jetzigen Projekt nie so eine richtige Ideenphase, Prototypenphase, Produktion, Publishing und so. Das ist alles irgendwie eins und manche Sachen sind schon praktisch fertig und manche Sachen sind noch als Konzept da. Es ist ja ein bisschen chaotisch und

wir können es nur besser machen, hoffentlich am Ende. Es ist viel im Team und wir versuchen auch wirklich, das ganze Team da einzubinden, gerade in Form von regelmäßigen Projektmeetings mit allen. Dann machen die Grafiker noch ihre eigenen Meetings, die Programmierer machen ihre eigenen Meetings und so weiter.

Das heißt, wenn ich das richtig raus höre: Viel Kommunikation, aber auch viel, wie soll man sagen, Planung, sehen was Probleme macht und dafür sorgen, dass die richtigen Ressourcen an die richtigen Stellen kommen.

Ja, genau. Das ist auf jeden Fall immer so, dass die ganze Managementarbeit eigentlich mal besser, mal schlechter läuft. Das ist, was ich immer mehr gelernt habe — kann natürlich sein, weil ich jetzt die Managerin bin — dass es wirklich eine sehr, sehr wichtige Rolle ist. Ich glaube ein Zweier- oder Dreierteam, kann sich bestimmt noch irgendwie so organisieren. Aber ab vier, fünf Leuten braucht man eigentlich jemanden, der sich hauptsächlich um diese ganzen Belange kümmert. Der irgendwie ein Taskmanagementsystem aufsetzt und auch maintained und guckt, dass es möglichst aktuell ist. Und nicht nur einmal auffüllt und ein Jahr später wird erst wieder reingeguckt. Eine Person die ein bisschen guckt, dass ein Wiki gepflegt wird und guckt, was im Team rund läuft. Wer kann mit wem, wie oft sollten wir Meetings machen, wer muss da dabei sein, wer sollte sich mit wem absprechen, bisschen Workflows definieren. Auch gerade in einem Taskmanagementsystem: Wie sollten die Tasks da denn durch laufen? Was ist unsere Definition von „Done“ zum Beispiel. Also ist ein Task fertig, wenn ihn jemand abgehakt hat oder ist er erst fertig, so ist es bei uns zum Beispiel, wenn es im Spiel erlebbar ist für die anderen. Also es muss durch einen Review Prozess. Es muss von unserem Lead Programmer oder Lead Artist oder so angeguckt werden. Dann wird es für alle in den Master, in den Main Branch, reingemerged. Es wird eine neue Version gebaut. Und wenn da erfahren und getestet werden kann, was da hätte entstehen sollen — ob es jetzt ein neues Asset ist oder ein neues Feature oder was weiß ich was — erst dann darf man das auf fertig setzen. Das sind auch sehr wichtige Dinge. Also es macht ab einer gewissen Teamgröße wirklich Sinn, dass sich jemand nur darum kümmert.

Das ist so ein bisschen fies. Gerade Projektmanagement, Producer, die ganze Rolle. Ich hab das Gefühl, wenn es gut läuft, achtet niemand drauf. Oder dann denkt niemand „Ah, das lief jetzt gut, weil unser Manager drauf aufgepasst hat". Wenn es aber schlecht läuft, dann ist es „Ja warum hast du das nicht gemanagt? Da hättest du doch dran denken müssen". Also ich hab Glück, in unserem Team sind wir da alle sehr derselben Meinung. Und wir haben entsprechend als wir damals zu viert gegründet haben auch gesagt „Okay, ihr zwei programmiert, du machst Grafik, und die Laura macht bitte die ganze Orga drum herum. Und hilft uns anderen praktisch, dass wir überhaupt richtig und in Ruhe arbeiten können. Und du machst das Projektmanagement drumherum und alles Mögliche". Von daher war es bei uns von Anfang an so ein bisschen mitbedacht und das hilft an ganz vielen Stellen, auf jeden Fall, ja.

Hast du das Gefühl, dass es einfach ist, den Rest vom Team dazu zu bewegen, dass sie mitziehen? Oder das Wissen zu vermitteln, dass sie dir gut zuarbeiten können? Oder sind da auch gewisse Schwierigkeiten vorhanden?

Das ist natürlich ein bisschen Persönlichkeitssache. Ich habe keine großen Probleme, würde ich sagen. Es ist wirklich von Anfang an so, auch wenn dann jemand Neues ins Team kommt, wird eben entsprechend kommuniziert: „So und so läuft es ab. Das sind die Workflows. Dann und dann sind die Meetings. Wenn die Laura dich um was bittet, dann mach das. Oder wenn du valide Einwände hast, darfst du es selbstverständlich sagen". Also ist es keine Diktatur, dass ich hier mit dem Zeigefinger den Leuten sage, was sie zu tun haben. Aber wenn ich darum bitte, Tasks aktuell zu halten, oder wenn ich darum bitte, dass eine Info ins Wiki hinzugefügt wird oder so, dass das dann auch gemacht wird, dass genau das tut, klappt eigentlich ganz gut. Da bin ich sehr zufrieden.

Das ist sehr gut, das kenn ich auch gut aus meinen Projekten. [Erzählt von Studentenprojekt] Wir haben jetzt verschiedene Subteams, die an verschiedenen Aufgaben arbeiten und teilweise in mehrere Sachen eingeteilt sind. Wenn ich jetzt Verzögerungen an einer Sache habe, wie setze ich das um? Und wie mache ich meine Planung? Ah, da würde mich auch interessieren, wie gehst du damit um? Gibt es da gute Tools oder Methodiken oder ist es …

Praktisch bei Verzögerungen oder Planänderungen zur Laufzeit oder so?

Genau.

Hm. Ich bin gespannt, ob jemand anderes dir eine klare Antwort geben kann. Das ist mit eine der größten Schwierigkeiten in der Rolle in einem Gameteam, würde ich sagen. Es gibt immer Änderungen, es gibt immer Verzögerungen, da kann man noch so gut planen vorher. Genau deswegen klappt so ein reines klassisches Wasserfallmodell oder so auch bei Games einfach nicht. Dazu gibt es zu viele Unbekannte, zu viele Risiken. Ein ganz verrückter Markt, der sich auch einfach mal nach einer Woche ändert. Auf einmal spielen alle das Spiel, obwohl sie die letzte Woche noch ein anderes gespielt haben. Es ist eine verrückte Branche. Games sind super komplexe Software, es ist super komplexe Echtzeitsoftware. Aber es ist halt auch irgendwo ein Entertainmentprodukt und ein Kreativmedium und hat vielleicht auch was mit Film und Buch und so was zu tun. Diese Überschneidungen, die sind ganz schwierig zu managen manchmal, finde ich.

Also man kann Games nicht von Anfang an runter planen. Ich versuchs nicht. Ich mache Pläne, ich mache Arbeitspakete, ich mache Personalpläne und so weiter am Anfang von dem Projekt, im Prinzip gezwungenermaßen, weil wir die Computerspiele Förderung vom Bund bekommen. Seit circa 2019 gibts die ja, die hatten wir für unser letztes Projekt schon und fürs jetzige auch, was super ist. Die Förderung ist extrem gut für die Branche und für die Entwickler. Die wollen natürlich entsprechend einen guten Stapel Dokumente sehen; dass man sich Gedanken gemacht hat: An was arbeiten wir denn da überhaupt, wie soll das Spiel grob am Ende werden, wer arbeitet daran mit, mit welchem Umfang und so weiter. Also gezwungenermaßen mache ich am Anfang Pläne, beziehe mich aber sehr gerne und unabhängig von der Förderung auch während der Produktion tatsächlich dann immer wieder darauf und gucke nach. Also ich hab zum Beispiel auch die Arbeitspakete, die ich damals geplant habe — was für ein Inhalt, was für Features wollen wir haben in dem Spiel, in Absprache mit dem Team natürlich — habe ich auch genutzt als Grundlage für das Taskmanagementsystem. Wir benutzen Jira als Taskmanagementsystem. Als Grundlage um da eine bisschen eine Rope mit abzubilden und um Meilensteine festzusetzen.

Und dann, wenn es richtig losgeht muss man so ein bisschen immer von Woche zu Woche oder Monat zu Monat gucken. Wir sind jetzt nach ungefähr der Hälfte der Produktionslaufzeit erst an dem Punkt, wo wir wirklich in Richtung First Build kommen, zum Beispiel. Das hätte ich gerne viel früher noch gehabt. Dann gab es aber Verzögerungen, wie zum Beispiel „Oh, wir brauchen dringend einen neuen Programmierer", weil keiner von den bestehenden Programmierern sich voll auf dieses Projekt konzentrieren kann, weil sie noch in anderen Projekten stecken. Zum Beispiel für Dinge vom letzten Projekt, Kundenprojekte, Portierung und sowas. Letzten Mai glaube ich angefangen zu suchen und im Dezember erst jemanden gefunden. Also es hat einfach so viel länger gedauert jemand Neuen zu finden, was natürlich entsprechend auch Dinge verzögert hat. Aber tatsächlich ist es im Moment in dem Projekt so, dass wir entsprechend auch Anpassungen am Content machen. Es gibt ein paar Features und kleinere Sachen, die wir entsprechend jetzt hinten dran stellen müssen und weniger priorisieren und vielleicht in einen Patch oder ein größeres Update nach dem Release schieben, weil es zu viel Stress wäre oder zu aufwändig das komplette Projekt nach hinten zu verschieben. Dass es Ende dieses Jahres noch rauskommen soll ist schon so lange so fix und wir haben worauf wir hinarbeiten und auch darüber hinaus so weit geplant, dass es glaube ich, oder wir, keinen Sinn machen würde, den kompletten Release jetzt nach hin-

ten zu verschieben. Dann kommen noch so Sachen dazu, wie „Wollen wir Oktober, November releasen, weil im Dezember will man als Fan zu dir nicht reinkommen, da ist Weihnachtsgeschäft, da kommen die großen dicken Titel raus und dann spielen auch alle nur diese Titel und keiner achtet auf kleinere Indie Games. Deswegen wäre dann höchstens Februar, März nächstes Jahr eine Option. Aber da wollen wir nicht reinkommen“. Deswegen sind wir aktuell gerade aufgrund von solchen Verzögerungen und Änderungen, die wir eben vornehmen mussten, an dem Punkt, wo wir nochmal härter priorisieren, härter nochmal auf Entscheidungen hinarbeiten. Also Dinge, die jetzt schon seit Wochen in der Schwebe sind, was das Game Design angeht, „Wollen wir jetzt das an der Stelle wirklich so machen oder doch einen Tick anders“, dass wir langsam an dem Punkt sind, wo wir sagen „Okay, das müssen wir jetzt auch entscheiden. Lasst uns nicht mit dieser Entscheidung jetzt noch weitere Wochen aufhalten, weil davon wieder andere Sachen abhängen“. Ob es eine bestimmte Mechanik an einem Charakter gibt, bestimmt ja auch, wie das Level aufgebaut wird. Ob er sich teleportieren kann oder nicht ist das ja auch was, was ein Leveldesign berücksichtigen sollte und entsprechend entweder enforcen oder begrüßen oder halt unterbinden sollte.

Uns selber ein bisschen mehr an die Nase fassen, Entscheidungen zu treffen, festzuhalten und dann auch nicht mehr zu einem viel späteren Zeitpunkt in Frage zu stellen. Und ein bisschen auch, leider, Content runterschrauben. Ich glaube, das ist eh so ein bisschen eine Krankheit bei kleineren Teams, dass man sich immer so viel vornimmt. Und es dauert auch lange und da kommt man, glaube ich, nie so ganz raus. Man hat ja Lust, geile Spiele zu machen. Das ist ja das, warum man in der Branche arbeitet. Dass man sich eben zu viel vornimmt, von Anfang an, und dann erst nach einer Weile oder nach der Hälfte merkt „Ach Scheiße, das schaffen wir ja eigentlich gar nicht". Gerade auf Konsole, wenn du releasen willst, muss du Monate vorher schon anfangen in Kontakt mit den Plattformen zu treten. Da sind die ganzen Abnahmeprozesse und Einreichungsprozesse viel, viel länger als auf PC, auf Steam zum Beispiel. Und die Zeit muss man sich auch entsprechend einplanen. Wenn wir sagen „wir releasen im Oktober" kann ich nicht erst im Oktober fertig sein, dann muss ich praktisch im August fertig sein.

Ist es dir dabei gut möglich zu sagen „Ich steuere das mit den Methodiken, die ich bisher an der Hand hab"? Oder ist es mehr so ein bisschen ein, wie soll ich sagen, „Ich krieg das Chaos ein bisschen unter Kontrolle, aber nicht komplett"? Gerade wenn du meinst, es kommt immer mal wieder vor, dass Overscoped wird und danach wird realisiert „Oh, es war zu viel"? Du hast gerade schon gesagt, es hängt viel mit Elan zusammen. Dass man sagt „Aber natürlich wollen wir, dass das Produkt möglichst cool wird". Hängt es davon ab, dass die Arbeit unterschiedlich ist in den Bereichen? Oder warum, denkst du, kommt da immer mal wieder so ein bisschen die Überschätzung? Dass man am Ende dasteht und sagt „Jetzt müssen wir aber plötzlich die harten Entscheidungen treffen"?

Ja, gute Frage. Die Arbeit ist immer ein bisschen unterschiedlich. Ich weiß nicht, wie das bei Studios zum Beispiel ist, die sich nur auf ein Genre fokussieren. Die sagen „Wir machen nur 2D Sidescroller Mobile Games" oder so. Wir sind sehr wenig festgelegt. Sowohl die Kundenprojekte, die wir gemacht haben, als auch die eigenen Projekte sind alle sehr unterschiedlich. Einmal 3D Platformer Racing, einmal Simulation Strategie, jetzt wieder was anderes. Also vielleicht wäre es was Anderes wenn wir jetzt wirklich am dritten Titel arbeiten würden, der genau dasselbe Genre hat, genau denselben Artstyle und so weiter. Vermutlich hätten wir dann realistischere Schätzungen oder einen realistischeren Plan am Anfang aufstellen können. Wir legen uns noch nicht auf ein Genre fest, aber ich glaube, das wollen wir auch nicht.

Von daher ist es wahrscheinlich jedes Mal ein bisschen was Anderes, auch vom Artstyle her. Verzögerungen gab es beim Workflow von den Grafikern zum Beispiel, weil wir erst in eine Art Richtung gehen wollten, die sehr viel handgemachte Texturen benötigt hätte. Das heißt, ein finales Asset zu machen hätte sehr lang gedauert, aber dafür hätte es halt einen sehr speziellen, uniquen

Look gehabt. Im Gegensatz zu einem Workflow, wo mehr Texturen gekachelt und wiederverwendet werden können. Das heißt, man kann sich eine Texturbibliothek aufbauen, aus denen dann alle Grafiker ziehen können und Sachen für ihre Assets benutzen können. Was an vielen Stellen einfach Zeit spart und den Workflow verschnellert und weniger handgemacht werden muss. Das hätte aber dann einen ganz anderen Art Look hervorgerufen, weil man diesen uniquen Look mit den kachelbaren Sachen einfach nicht hätte abdecken können. Und das war auch lang so ein bisschen hin und her, in welche Richtung wollen wir denn gehen. Bis wir auch da wieder gesagt haben: „Jetzt müssen wir uns mal entscheiden, was wollt ihr Grafiker denn machen? Was ist gut, was ist umsetzbar? Okay, alles klar, dann gehen wir in die Richtung".

Ein bisschen hängt es wahrscheinlich mit den verschiedenen Genres zusammen, verschiedenen Looks, und verschiedene Mechaniken, die in den Spielen drin sind. Ich vermute, wenn jemand seit zehn Jahren, wie gesagt, nur 2D Sidescroller macht, dann hat er ein bisschen eine andere Herangehensweise. Aber was so dieses Reagieren auf Planänderungen oder Probleme während der Produktion angeht: Da habe ich schon das Gefühl, dass die Herangehensweise und die Methodiken, die wir bisher so benutzt haben, auch vor zwei, drei, vier Jahren schon, doch durchaus immer noch greifen und funktionieren. Man muss halt hinterher sein, das ist ganz, ganz wichtig. Und kommunizieren, kommunizieren, kommunizieren. Also dass alle mitgenommen werden und alle auch verstehen, warum es jetzt irgendwo eine Änderung gab und wie damit umgegangen wird. „Wie wirkt sich das auf eure einzelnen Tasks aus“ und sowas. Das ist wahrscheinlich das Allerwichtigste.

Mich würde so ein bisschen abschließend interessieren: Das heißt, du siehst das mehr als ein inhärentes Problem an, oder bist du der Meinung, irgendwann mal kann sich ändern wie sehr da das kreative Chaos ist? Ich habe das Gefühl, in der Literatur wird der Frage gerne ausgewichen. Ist halt das, was du sagst, da gibts einen Innovationsdruck. Da gibt es, dass man sagt „Hey, wir wollen uns selbst verwirklichen" und dass teilweise viel explorativ gearbeitet werden muss und dann erst danach wirklich erkannt wird, was funktioniert, wenn es im fertigen Build drin ist. Hast du das Gefühl, da sollte sich was ändern? Da müsste sich was ändern? Oder: Wenn du die Möglichkeit hättest, irgendwo Stellschrauben zu ändern, wo würdest du die verorten? Wäre da wirklich was im Prozess drin oder wäre das mehr was wo zum Beispiel sagst „Wenn wir die Förderung und die Sicherung dadurch haben, dann haben wir auch die Möglichkeit das zu machen und müssen nicht sagen, Verzögerungen sind super schlimm oder so was"?

Ich glaube, einfach aus meiner Funktion heraus wäre es natürlich schön, wenn nicht mehr so ein kreatives Chaos ist, weil mein Job dann praktisch leichter wäre und ich viel mehr routiniert wahrscheinlich einfach abarbeiten könnte. Ich bin mir nicht sicher, ob das jemals ganz weggehen wird oder ob das realistisch ist, dass es ganz weggeht. Ich weiß auch wirklich nicht, wie es in anderen Teams und Studios ist. Ich habe oft das Gefühl, wenn wir mit anderen Entwicklern quatschen, in anderen Studios, die ungefähr gleich groß sind, ja, da hat man öfter das Gefühl „Oh die haben jetzt schon wieder ein Spiel rausgehauen, die machen ja noch ein Patch, boah, die sind voll aktiv auf Social Media. Wie schaffen die das alles?". Und wenn man dann ein bisschen tiefer geht, dann merkt man „Ah, die haben dafür an den und den Stellen Probleme". Oder die haben genau wie wir Probleme, qualifizierte Mitarbeiterinnen und Mitarbeiter zu finden. Oder die haben die und die Stellschrauben dafür. Die haben niemanden, der sich dediziert ums Projektmanagement kümmert. Also jeder hat so seine kleinen Baustellen und das alles macht dieses kreative Chaos aus, was glaube ich bei fast allen herrscht. Mich würde auch mal interessieren, wie andere, also aus meinem Team zum Beispiel unsere Programmierer, Artists oder so, wie die dazu stehen, wie die das wahrnehmen. Wie chaotisch nehmen die das überhaupt wahr? Nehme ich das vielleicht schlimmer wahr, weil ich für den Überblick verantwortlich bin? Oder finden die es furchtbar chaotisch oder wie viel Chaos wünschen Sie sich? Weil so ein bisschen, wie du gesagt hast, Innovation, explorativ

arbeiten will man ja auch, was aber dafür mit mehr Risiken und weniger Planbarkeit verbunden ist. Also gute Frage.

Also was ich raushöre: Alles so eine Gratwanderung? Und so ein bisschen auch den Wunsch: Es wäre toll, wenn mehr Kommunikation stattfinden würde zwischen Studios, wenn es vielleicht insgesamt offener wäre? Ich weiß nicht, wie oft du dazu kommst zu sagen, „Ich kann mit anderen Leuten in denselben Rollen kommunizieren". Du hattest ja schon gemeint, dass es manchmal schwierig sein kann, ein bisschen zu rechtfertigen: „Ich setz mich jetzt mal einen halben Tag hin und plane den ein nur für mehr oder weniger Softfaktoren, wo nicht ganz klar ist, dabei rauskommt".

Ja, genau das. Aber die Zeit ist schon wichtig, glaube ich. Auch da ist es wieder eine Gratwanderung, wie viel Zeit und wie oft und wer das macht. Aber das macht, glaube ich, schon Sinn. Man hat dann mehr einen Vergleich. Wie deine Survey. Wenn du da die Ergebnisse veröffentlichst, gibt es bestimmt einige, die sagen: „Oh, verrückt. Ich wusste gar nicht, dass die meisten Studios so und so arbeiten". Das bräuchte es noch viel mehr in viele Richtungen in der Gamesbranche. In der Professionalität, wie sie mittlerweile besteht, die ganze Branche, so besteht sie halt noch nicht so lange. Also Games vor zwanzig Jahren zu machen war anders als vor zehn Jahren als jetzt. Ja, das ist ganz interessant.

Vielen Dank, dann würde ich an der Stelle das Interview beenden.

Interview with Yasemin Hamurcu, Chief Operating Officer at Misc Games

[Answers were edited by the interviewee in order to add additional context about the game development process at Misc games]

Dann würde ich dich als Erstes darum bitten, dass du mir noch mal ein bisschen was zu dir als Person erzählst. Zu deiner Rolle und zu deinem Werdegang. Und momentan zu der Firma, bei der du arbeitest.

Vor vielen Jahren habe ich Medizintechnik studiert und mich auf die Bereiche MRT und Computertomographie spezialisiert. Mich hat schon immer fasziniert, wie Technik eingesetzt werden kann, um 2D- oder 3D-Bilder zu erstellen und auszuwerten. Im Jahr 2013 lernte ich meinen Lebensgefährten kennen, der Norweger ist und in der Amiga/Commodore-Demoszene aktiv und erfolgreich war. Eines Tages hatte er die Idee, einen kommerziellen Fischereisimulator zu entwickeln, da Norwegen stark in der Fisch- und Ölindustrie vertreten ist. Gemeinsam mit zwei weiteren Personen haben wir einen Prototyp in 2D in GameMaker entwickelt. Irgendwie kann man unsere Geschichte wie mit so namenhaften Firmen wie Microsoft und anderen vergleichen, eine Idee, die in der Garage oder auf dem Sofa getüftelt wurde. Obwohl keiner von uns eine Ausbildung im Gaming-Bereich hatte (also kein Spieldesigner, Programmierer oder geschweige ein erfahrener 3D-Artist), waren wir alle schon, jeder auf seine Art und Weise, in Videogames interessiert. Meine erste Spielkonsole, die ich von meinen Eltern erhielt, war die Atari 2600 im Jahre 1990. Als dann im selben Jahr der Game Boy mit Super Mario veröffentlicht wurde, war ich dann komplett von Videogames nicht mehr wegzukriegen. Auch die Jahre die ich in Köln während meiner Ausbildung gelebt habe, quasi fand die Gamescom direkt vor meiner Haustür statt, konnte ich durch Freunde an der Gamescom teilnehmen und hatte auch die Gelegenheit hinter die Kulissen eines der größten Videogame Messen zu blicken.

Im Jahre 2015, beschlossen wir unseren Prototypen von GameMaker zur Unreal Engine 4 zu transportieren. Die 3D Grafikqualität der Unreal Engine war erstaunlich und praktikabel. Die Benutzeroberfläche von Unreal Engine wurde ständig mit den neusten Tools und Optionen aktualisiert und es hatte einfache Codes wie Blueprints. Also genau das richtige für Anfänger die in die Spielentwicklung einsteigen wollen. Im selben Jahr noch, besuchten wir die Gamescom und präsentierten unsere 3D Unreal Engine Version unseres Spiels. In unserer Gamescom Demo konnte man ein Fischerboot fahren und eine Langleine ins Wasser setzen, um Fische zu fangen. Aber die Besucher an unserem Indie-Booth in der Entertainment Halle hatten viel Spaß mit unserer Interpretation der kommerziellen Fischerei. Dieser Besucherandrang erweckte auch das Interesse eines Deutschen Publishers. Sie publishten hauptsächlich Simulationen wie Landschafts Simulator oder Euro Truck Simulator. Wir schlossen einen Vertrag mit denen und haben dann unser erstes Spiel „Fishing: Barents Sea“ im Februar 2018 veröffentlicht. Bei der Veröffentlichung hatten wir mehr als 10 Fischerboote, unterschiedliche Fischfangmethoden, wie Langleinen, Netz und Hochseefischen. Es wurde unteranderem in 18 Sprachen veröffentlicht. Wir waren über den kleinen kommerziellen Erfolg sehr glücklich. Wir wussten die Arbeit mit dem Publisher sehr zu schätzen und sind auch dankbar für die Erfahrungen, die wir gerade in dem Bereich Veröffentlichung und Vermarktung sammeln konnten, dankbar.

Unsere Vision war immer, reale Regionen und Karten, Boote und Schiffe sowie Ausrüstungen aus der Fischindustrie in unserem Spiel zu präsentieren, um den Spielern einen Einblick in die Welt des kommerziellen Fischens zu geben. Wir möchten ihnen zeigen, wie Langleinenfischen oder Schleppnetzfischen funktionieren und welche Fischarten es gibt. Nachhaltiges Fischen, also wenn du zu viel in einer Region fischst, reduziert sich auch der Fischbestand im Spiel. Du musst also warten, bis sich die Fischbestände wieder erholt und reproduziert haben. Gleichzeitig soll das Spiel die Möglichkeit bieten, etwas über die jeweilige Region zu Erlenen. Nachdem unser erstes

Spiel „Fishing: Barents Sea“ erfolgreich war, haben wir an unserem zweiten Spiel „Fishing: North Atlantic“ gearbeitet. Hier haben wir uns auf die Fischereiregion Nova Scotia in Kanada konzentriert uns sechs Häfen im Spiel präsentiert. Dabei haben wir eng mit Lizenzpartnern, Bürgermeistern und der lokalen Fischindustrie zusammengearbeitet. Fishing: North Atlantic wurde im Jahre 2020 veröffentlicht und unsere Fanbase ist seitdem gewachsen. Unser Ziel ist es heute, der nächste Flight Simulator auf dem Wasser zu sein, mit verschiedenen Schiffstypen wie Transport- und Serviceschiffen sowie vielen Elementen aus der Fischerei. Aber auch werden andere Typen von Booten und Schiffen sowie neue Regionen folgen. Wir arbeiten momentan an unserem dritten Spiel, in Multiplayer.

Mein Lebensgefährte und ich sind heute erfolgreiche Besitzer eines Entwicklungsstudios, mit vielen talentierten Mitarbeitern, von Programmieren, UI/UX Designern bis hin zu 3D Artists. Meine Rolle als COO ist es, Direktion und Produktion der Trailer, Submission und Storepräsenz auf den unterschiedlichen Plattformen. Key Art und Asset Design, die Überwachung der QA, um erfolgreiche Releases sicherzustellen. Zusätzlich bin ich der Game Writer und der Erfasser der Pressemitteilungen. Also ein kreativer visueller Kopf der zusätzlich an Ideen entwickelt, zum Bsp. die Auswahl der Schiffe und Ausrüstungen der Lizenzpartner für das Spiel, Charakter Design und Charakteranpassungen um das Spiel einzigartig und ansprechend für die Zielgruppe zu machen. Ich versuche das das Spiel erfolgreich wird, indem ich eine ansprechende Präsentation für die Öffentlichkeit entwickele, die das Interesse der Zielgruppe weckt und von der Öffentlichkeit wahrgenommen wird.

Das ist fantastisch. Also, das ist beeindruckend zu hören. Dann wäre meine erste Frage direkt: Als ihr im Aufbau wart, wie hast du, wie haben sich die anderen Mitglieder, dein Lebensgefährte, andere Leute im Studio, darum gekümmert, dass sie sich das nötige Wissen aneignen?

Vielen Dank für das positive Feedback. Zu Beginn unserer Karriere, wie schon erwähnt, waren wir alle nur „Gamer“. Wir befanden uns alle in Vollzeitjobs, wie IT-Consultant, Elektriker und in der Medizinbranche. In unserer Freizeit dann haben wir gemeinsam an der Idee meines Lebensgefährten getüftelt. Wir waren alle sehr motiviert und haben uns alle intensiv darum bemüht, das nötige Wissen für die Spielentwicklung zu erwerben. Das bedeutete für uns, dass wir uns viel Zeit für die Forschung und die Weiterbildung genommen haben, zum Beispiel über das Internet und das Lesen von Fachliteratur, um unser Verständnis für die verschiedenen Aspekte der Spielentwicklung, Leitung eines Studios und Self-publishing zu verbessern. Wir haben auch von unseren Fehlern gelernt und uns auf erfahrene Mitarbeiter konzentriert, um unser Team zu verstärken. Insgesamt war es ein gemeinschaftlicher Prozess, bei dem jeder Einzelne hart daran gearbeitet hat, seine Fähigkeiten zu verbessern und zum Erfolg des Studios beizutragen. Das Entwickeln und Designen von Spielen ist ein kreativer und sich ständig verändernder Prozess. Deshalb ist es für uns wichtig, im Team zusammenzuarbeiten und uns gegenseitig in unseren Kompetenzbereichen zu unterstützen. Wir können nicht alles wissen und es fällt kein Meister vom Himmel, deshalb sind wir immer auf der Suche nach neuen Erkenntnissen und Erfahrungen. Dabei spielen auch die Rückmeldungen und das Feedback unserer Fanbase eine entscheidende Rolle. Wir möchten sicherstellen, dass unsere Spiele nicht nur uns, sondern auch unseren Fans und Spielern gefallen. Aus diesem Grund haben wir bei unserem dritten Spiel besonders viel Wert daraufgelegt, die Wünsche und Anregungen der Community in unser Produktdesign mit einzubeziehen. Denn am Ende des Tages geht es uns darum, dass unsere Spieler unser Spiel in vollem Umfang genießen können.

Super, das hat sehr viel geklärt. Gerade diesen Faktor „Spaß" habe ich jetzt auch schon aus einem früheren Interview mitbekommen. Er taucht auch immer wieder in der Literatur auf, aber auch als große Schwierigkeit, weil Spaß ja schwer zu quantifizieren oder potenziell zu finden ist.

Es ist in der Tat eine große Herausforderung, den Spaßfaktor in der Gaming-Branche zu quantifizieren und zu messen. Aber ich denke, dass es vor allem wichtig ist, dass jeder Mitarbeiter in unserem Team das tut, was ihm oder ihr Spaß macht und wo er oder sie seine oder ihre Stärken hat. In unserem kleinen Studio haben wir alle unterschiedlichen Aufgaben, je nach den individuellen Fähigkeiten und Interessen. Ich persönlich finde es sehr spannend und erfüllend, dass ich jeden Tag mit neuen Herausforderungen konfrontiert werde. Mal schreibe ich Pressemitteilungen, mal arbeite ich an der Entwicklung und kreativem Design und an den anderen Tagen bin ich für die Submission des Spiels auf den unterschiedlichen Plattformen zuständig. Je nach dem in welchem Zyklus wir uns gerade in unserem Projekt befinden. Wir versuchen dabei auch immer darauf zu achten, dass jeder Mitarbeiter zufrieden ist und dass niemand das Gefühl hat, unglücklich oder unzufrieden mit seiner Arbeit zu sein. Wir haben Gleitzeit und achten darauf, dass niemand überarbeitet ist. Wir versuchen auch, uns gegenseitig zu lehren und voneinander zu lernen, um uns ständig weiterzuentwickeln und zu verbessern. Kurz gesagt: Wir versuchen, den Spaßfaktor in unserer Arbeit aufrechtzuerhalten, schließlich verbringen wir die meiste Zeit auf der Arbeit. Jedem Mitarbeiter ist die Möglichkeit gegeben, seine Stärken auszuspielen und sich ständig, falls gewünscht, weiterzuentwickeln.

In meinen Studierendenproduktionen hatte ich bisher auch viele Hüte auf. Ich finde das sehr spaßig, gleichzeitig aber auch sehr schwierig. Und gerade in den Studierendenproduktionen kommt es leider auch häufig vor, dass man irgendwelche Verzögerungen, die sich aufgrund von Problemen ergeben, versucht irgendwie niederzuknüppeln, indem man mit mehr Zeit kompensiert. Von daher finde ich es super zu hören, dass du sagst, dass es bei euch von Anfang an ein „Wir gucken, dass wir unsere Zeiten einhalten" ist. Was mich interessieren würde: Wie geht ihr denn dann mit Problemen konkret um? Ändert sich da was am Scheduling oder am Scope? Wie macht ihr das?

Es ist sehr wichtig, von Anfang an ein realistisches Budget und einen klaren Plan zu haben, um sicherzustellen, dass man sich auf Kurs hält. Bei uns im Studio planen wir immer eine Research-Phase ein, in der wir uns Zeit nehmen, um die Spielmechaniken und Elemente, Region und Lizenzpartner zu definieren und zu entscheiden. Dann setzten wir uns Milestone und arbeiten hart daran, diese zu erreichen. Natürlich gibt es während des Entwicklungsprozesses immer unvorhergesehene Probleme, die auftreten können, und wir versuchen diese gemeinsam zu lösen. Wenn eine Milestone nicht erreicht wird, verschieben wir ihn um den entsprechenden Zeitraum, um sicherzustellen, dass wir das Projekt auf Kurs halten.

Ein gutes Beispiel für eine Herausforderung, mit der wir konfrontiert waren, war die Entwicklung eines Multiplayer-Modus für unser neues Spiel. Wir hatten bisher keine Erfahrung damit und mussten vieles berücksichtigen, wie die Anzahl der Spieler, die Server Host-Optionen und wie die Interaktion zwischen den Spielern funktionieren soll in Multiplayer. Hier haben wir uns Zeit genommen, um zu lernen und anzupassen, um sicherzustellen, dass wir die bestmögliche Erfahrung für die Spieler schaffen. Es ist auch wichtig, ein Notfallbudget zu haben, um flexibel zu bleiben, falls unvorhergesehene Ereignisse eintreten, wie z. B., wenn ein Mitarbeiter durch Unfall oder schwerer Krankheit für eine lange Zeit ausfällt und die Veröffentlichung des Spiels gefährdet und man eventuell gewisse Dinge wie Assets also 3D Modelle outsourcen muss. Man sollte in der Lage sein diese zu kompensieren.

Insgesamt ist es wichtig, realistisch zu sein und zu akzeptieren, dass nicht alle Milestones immer erreicht werden können. Aber wir halten uns an unseren Plan, haben unsere Kosten unter Kontrolle und arbeiten hart daran, die bestmögliche Erfahrung für unsere Spieler zu schaffen.

Ist dieses Modell mit einem eher flexibleren Zeitplan etwas, das von euch ausgegangen ist? Musste das erst mal mit einem Publisher besprochen werden oder war es gar kein Problem, das umzusetzen?

Ja, das Modell mit einem flexibleren Zeitplan ist von uns ausgegangen, da wir sowohl Publisher als auch Entwickler sind und somit die Entscheidungen selbst treffen können. Es ist jedoch wichtig zu betonen, dass wir trotz dieser Flexibilität immer noch die Bedürfnisse und Erwartungen unserer Fanbase (Kunden) im Auge behalten müssen. Wir wollen sicherstellen, dass unsere Spiele pünktlich und in hoher Qualität veröffentlicht werden, um das Vertrauen unserer Spieler zu erhalten und unser Unternehmen (Studio) erfolgreich zu halten. Schließlich haben wir auch Arbeitsplätze kreiert und sind somit verantwortlich für unsere Mitarbeiter. Sie verlassen sich auf uns, dass wir realistische und gute Entscheidungen treffen. In diesem Sinne ist die Flexibilität im Zeitplan eine Möglichkeit, unsere Arbeit besser zu organisieren und zu optimieren, aber wir müssen auch die Auswirkungen auf die Spieler/Fanbase-Zufriedenheit berücksichtigen.

Du hast jetzt schon einige technische Schwierigkeiten angesprochen, wie zum Beispiel der Wechsel von bisherigen Singleplayerspielen zu Multiplayerspielen. Hat sich infolgedessen auch etwas am Projektmanagement oder an der Organisation von dem Projekt an sich geändert?

Natürlich hat sich unsere Organisation und unser Projektmanagement im Laufe der Zeit angepasst, um den neuen Anforderungen gerecht zu werden. Wir mussten uns beispielsweise auf die Entwicklung von Multiplayerspielen umstellen und unsere Ressourcen entsprechend planen. Es kann vorkommen, dass wir unseren Programmierern mehr Zeit geben, um sich auf die neue Herausforderung einzustellen, indem wir beispielsweise den Zeitplan ein wenig verschieben. Unsere Vision und unsere Ziele bleiben jedoch unverändert. Wir passen unsere Arbeitsabläufe an, um sicherzustellen, dass wir unsere Ziele erreichen können, auch wenn es manchmal länger dauert, als wir ursprünglich geplant hatten. Es ist also eine ständige Anpassung und Flexibilität erforderlich, um sicherzustellen, dass wir unsere Projekte erfolgreich abschließen können.

Benutzt ihr dafür bestimmte Projektmanagementframeworks oder Techniken?

Ja, wir verwenden bestimmte Projektmanagement-Tools und Techniken, um unsere Arbeit zu organisieren und effektiver zu sein. Ein Beispiel dafür ist Jira, dass in der Gaming Branche sehr beliebt ist. Mit Jira können wir als Team, Projekte und Aufgaben teilen und verfolgen, wir können Task kreieren und sie an die verschiedenen Abteilungen verteilen. Es ermöglicht uns unsere Milestones gut im Überblick zu behalten. Auch können wir Bugs in Jira loggen und sie dann der jeweiligen Person zuweisen. Mit Jira lasen sich Projekte leichter organisieren und Projektressourcen können optimal eingesetzt und die Ziele bleiben in Sichtweite. Da die Projektschritte in Echtzeit angezeigt werden. Zusätzlich zu dem Jira enthält der Atlassian Tool, Confluence. Confluence ermöglicht uns, Dokumentationen von Game Design, Marketingplanungen und Management. Des Weiteren nutzen wir Slack, um unsere Kommunikation zu vereinfachen. Wir haben verschiedene Channels für Programmieren, Grafiken, Play-Testing und Bug-Reports. In Slack kann man Calls halten, um schnell Probleme und Bugs z. B. mit einem externen QA-Studio durchzugehen.

Das heißt, ihr habt, so wie ich das mitkriege, einen relativ schnellen Feedbackprozess. Du hattest gesagt, jeden Freitag kommt ein Build und ihr testet ihn auch. Macht ihr Sprints in gewissen Abständen oder wie organisiert ihr dann die Arbeit rund um diese Playtests?

Ja, Feedback ist sehr wichtig und wir versuchen, den Feedbackprozess so schnell wie möglich zu gestalten. Wir haben jeden Freitag einen internal Team Test, bei dem wir unser Produkt testen und sehen, ob wir auf dem richtigen Weg sind oder ob wir etwas an unserem Produkt verbessern können. Die Entwicklung eines Spiels läuft unterschiedliche Entwicklungsphasen durch, jeden Tag entwickelt sich das Spiel weiter und es kommen neue Mechaniken, Systemen und Assets hinzu, somit entscheiden wir mit dem Play-Test, welche Aspekte des Spiels getestet werden müssen, um sicherzustellen, dass wir Probleme frühzeitig erkennen und beheben können. Wenn wir Probleme

erkennen, setzen wir diese als Sprints und priorisieren sie entsprechend, um sicherzustellen, dass wir sie schnell lösen können, bevor der nächste Teil auf den anderen aufgesetzt wird.

Dann hätte ich abschließend noch die Frage, inwieweit die Kommunikation bei euch innerhalb vom Studio funktioniert. Seid ihr vernetzt mit anderen Studios in der Region oder auch international? Tauscht ihr Wissen aus?

In Bezug auf die Kommunikation innerhalb des Studios ist es wichtig zu betonen, dass die Türen immer offen sind und die Mitarbeiter direkt miteinander sprechen können. Wir haben auch in Slack einen Channel eingerichtet, wo wir alle mal mit Lust und Laune, frei von der Seele kommunizieren können. Witze und Jokes teilen, oder aber auch mal lustige Videos hochladen. Die Kommunikation innerhalb des Studios ist also sehr gut und familiär. Mit einem etwas kleineren Team ist dies noch problemlos umzusetzen und wir würden auch gerne diese in Zukunft beibehalten, selbst wenn unser Team größer werden sollte. Wenn ein Unternehmen jedoch wächst und mehr Mitarbeiter einstellt, können sich oft auch verschiedene Gruppen innerhalb des Teams bilden. Dies ist uns bewusst und wir sind auch auf solche Dinge vorbereitet. Wir haben ein Personalhandbuch erstellt, der als Orientierungshilfe und zentrale Informationsquelle für alle relevanten Themen rund um das Unternehmen und das Miteinander bietet. Dies soll die Kommunikation innerhalb eines Teams verbessern und eine einheitliche Arbeitskultur fördern. Um weiterhin ein effektives, effizientes und harmonisches Arbeitsumfeld zu schaffen und sicherzustellen.

Ja, wir sind auch mit anderen Studios in der Region als auch international vernetzt. Wir tauschen mit anderen Studios Wissen aus, um voneinander zu lernen und die eigene Arbeit zu verbessern. Ein solcher Austausch kann in verschiedenen Bereichen stattfinden, wie beispielsweise in der Unternehmungsführung, in projektrelevanten Fragen, im Marketing, bei der Entwicklung von Tools und Systemen oder bei anderen Themen. Die Vernetzung erfolgt auf unterschiedliche Art und Weise, beispielsweise durch die Teilnahme an Branchenkonferenzen, wie Gamescom, GDC oder Nordic Games, aber durch Workshops oder anderen Veranstaltungen, durch Kooperation oder Partnerschaften. Insgesamt ist so ein Austausch sehr wertvoll, um neue Perspektiven und Ideen zu gewinnen, von den Erfahrungen anderer zu profitieren und letztendlich auch die eigene Arbeit zu verbessern.

Super, dann würde ich an der Stelle das Interview beenden.

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