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THE CONCEPT OF "EARLY ACCESS" FROM GAME DEVELOPERS' PERSPECTIVE

ABSTRACT

Early access in the video games industry means paid access to an in-development video game. As a game development model, early access is utilized as a way to get feedback and funding for finishing an incomplete video game. This thesis examines how game development studios generally regard the early access model. The study was conducted through analysis of Game Design Conference talks by various game developers. It was found that the early access model is utilised mostly as a community-driven game development model and as a marketing tool relying on open development and word-of-mouth. Game developers view the model as a way to improve their video games through community feedback and testing, and as a way to build a community that will sell their games for them. Such a community is achieved by making the development process interesting to its audience: transparency in development, visibility of the community's effects, and frequent updates.

TIIVISTELMÄ

"Early access" tai ennakkojulkaisu videopeliteollisuudessa tarkoittaa maksullista pääsyä käsiksi kehityksen alla olevaan videopeliin. Ennakkojulkaisua pelikehitysmallina hyödynnetään tapana saada palautetta ja rahoitusta keskeneräisen pelin viimeistelyyn. Tämä työ pyrkii selvittämään, miten pelikehitysyritykset yleisesti mieltävät mallin. Tutkimus suoritettiin analysoimalla yritysten näkymiä Game Design Conference -paneelien avulla. Tuloksena saatiin, että ennakkojulkaisumallia hyödynnetään yhteisöllisenä pelikehitysmallina ja avoimeen kehitykseen sekä kuulopuheeseen nojaavana markkinointityökaluna. Pelikehittäjät näkevät mallin tapana kohentaa luomiaan videopelejä yhteisön palautteen ja testauksen tukemana, sekä tapana luoda yhteisö, joka myy peliä yrityksen puolesta. Tällainen yhteisö luodaan tekemällä pelikehitysprosessista mielenkiintoista yleisölleen: läpinäkyvyys kehityksessä, yhteisön vaikutusten näkyvyys, sekä säännölliset päivitykset.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

1

LIST OF SYMBOLS AND ABBREVIATIONS

EA   Early access
EAG   Early access game
GDC   Game Design Conference
GDCV   Game Design Conference Vault
QA   Quality Assurance
RQ   Research question

1 INTRODUCTION

1.1 Background

"Early access" in the games industry has come to mean paid access to an in-development video game. Steam - a popular digital video game distribution platform by an American game development company Valve Corporation - have their own early access program "Steam Early Access" since of which release 15% of all games released on the platform make use of the early access model (Lin et al., 2017). According to Valve early access is not a form of crowdfunding or a pre-purchase but a system for "games that are in a playable alpha or beta state, are worth the current value of the playable build [which might differ from the final price], and that [the developer plans] to continue to develop for release" (Valve, n.d. a). Valve suggests that the early access model is about developing games with the community's involvement as they send the developers crucial feedback about the game as it develops (Valve, n.d. b). This idea is shared by other digital game distribution platforms such as GOG, whose "Games in Development" program follows suit to Steam Early Access (GOG, n.d. a, n.d. b).

As the early access model is both a way to fund the development of a product as well as a way to test it and get feedback, it is well suited for small independent developers who lack the funds to otherwise fully develop and release a video game. An example of this type of use of the model is the game Minecraft. According to an article by the technology-focused publication TechRadar, Minecraft started in 2009 as a part-time internet browser game project by Markus Persson, but by utilizing paid alpha and beta he managed to eventually quit his job to develop the game full-time, founded the game development company Mojang and eventually sold his company and game to Microsoft for $2.5 billion (Cox, 2020). Succeeding with this strategy, Minecraft was possibly one of the factors that inspired Valve among other distribution platforms to start offering methods for developers to release their game unfinished. This would give the chance for other small developers to also finish games through customer funding and feedback.

Another project development funding method along early access suitable for game development is crowdfunding, where you finance your project by collecting the funds from

a large group of people, but with no guarantee of a finished product (Moritz and Block, 2015). Various crowdfunding platforms, such as Kickstarter and Indiegogo, attract people who have an idea for a product in their mind they want to pursue but lack the funding to do so. Through these platforms, they can collect necessary funding from potential customers interested in the product while offering different rewards for doing so. While with game projects one of these perks could be to get to play the game while it's still unfinished, the early access model still differs from crowdfunding, and major platforms such as Valve claim early access is not a form of crowdfunding (Valve, n.d. a). One decisively differentiating factor is that early access games should be sold in a playable state, while crowdfunded games have to make no such promise, and may not ever reach a playable state even after being funded if the project fails.

When compared to crowdfunding, early access seems more suitable for small game developers who can get their game development started even without outside funding. An example could be a company that managed to develop and sell a game before their current project, but which didn't create enough profit to see through a whole another development cycle without problems. A developer working on an early access project offers a promise of a playable game, possibly showing gameplay footage of it. This alone could be enough to attract people to fund the project. The same could be hard for a crowdfunding project, at the start of which one wouldn't necessarily have anything yet to show and could have to offer promises of other rewards for taking part in the funding.

1.2 Goals and delimitations

This thesis will look at the concept of early access as a form of game development and as a way of funding the game development process. The goal of the thesis is to examine how game developers regard the early access model and how they perceive the effects it has on game development. The effects of the model are studied foremostly through literature review.

The thesis studies the aspects of the early access model by analysing industry professionals' accounts on the subject. In practice, this means going through panels, presentations, and other talks by various game studios and people working in the games industry. For a

4

comprehensive view of how the model is regarded, it would be beneficial to inspect accounts by people working in various roles in the industry as well as game studios with varying amounts of experience in the field, with the early access model, and with different types of games. Especially useful would be direct comparisons to a more traditional game development process if the author in question were to have experience with both. When considering the comparability of the accounts, keeping in mind the differences in experiences between the people giving them is something to consider; a large, thriving game studio with years of experience in the field could see a specific game development model very differently from a young game development start-up. For the validity of the study on the subject, the thesis will gather data on both positive and negative aspects of the model that get mentioned during any of these accounts.

The thesis' literature review is delimited to topics of early access, crowdfunding, and public alpha and beta testing. Inspected related literature is sought through Google Scholar and the game developers' point-of-views are reviewed from past Game Developers Conference talks, stored and available on Game Developers Conference Vault (https://gdcvault.com/).

1.3 Structure of the thesis

The following second section of this thesis discusses research related to the topic of early access, such as earlier research on the topic, prevalent problems in games development, and unfinished games as an investment. The third section defines literature review as the research method used for the thesis and goes over the reviewed primary sources for the thesis. The fourth section looks at the results of the study, analysing the data we find regarding the topic. In the fifth section, the thesis will discuss the findings and what conclusions we can make from the found data. Lastly, the sixth section summarises and wraps up the thesis.

2 RELATED RESEARCH

2.1 Studies on early access software

A 2017 empirical study by Lin et al. looked at early access games (EAGs) on the Steam platform to gauge the early access (EA) model. Their study found that a total of 15% of all games on Steam at the time either were in EA or were formerly EA, totalling 1,182 games with the popularity constantly growing. The study also found that 88% of all EAGs were "indie" games or made by small independent developers and that 70% of former EAGs stayed in early access for less than a year. EAGs generally also received fewer reviews on the platform during their EA time but had more discussion going on in the games' forums, which the study considers a "double-edged sword" in that the chance of complaints in the reviews due to incomplete mechanics in the game is lesser, but it also becomes harder for the developer to gauge how the game is perceived. Additionally, 47% of the games were priced lower during their early access period than after full release, and on the contrary, 16% were priced higher, which the study speculates could indicate developers value the higher number of feedback they receive by selling the in-development game cheaper than the opportunity to collect development funding by pricing the game higher. (Lin et al., 2017)

Focusing on the feedback aspect of early access is not a bad idea since the lack of testing has been studied to potentially highly increase the project costs later on (RTI, 2002), and using early access as a means to achieve feedback and bug reports from to the community can be compared to a public alpha or beta test, though with paid access. A beta test means testing a product with a small number of actual customers with the hope of receiving feedback for improving the product. A public or open beta test is a beta test where the product is openly released to the public. Jiang et. al. looked at the economic impact of public beta in their 2011 report and found that "public beta testing not only improves the reliability of a new software product, but also speeds up the diffusion of the product after release".(Jiang et al., 2011) If we then consider that developers would rather either sell their game in EA for cheaper than their planned final price or give it away for free, we can deduce they'll also reap some of the benefits of public beta.

2.2   Agile in game development

A 2010 publication by Clinton Keith looks into some general problems in the games industry and how these could be solved using agile practices, which utilise short cycles of production in comparison to the waterfall model. This allows developers to constantly gather new information about which things do or do not work. Given examples of such problems are feature creep where features are added to a project after its scope has already been defined, overoptimistic schedules which are a cause of the difficulty of estimating the length of time to finish various tasks, and challenges in production and pre-production which are mostly related to maximizing efficiency, minimizing waste and creating predictability. (Keith, 2010)

A systematic literature review by O'Hagan et al. published in 2014 found most used software processes in game development were either agile or hybrid (mixed agile and traditional) approaches to development (O'Hagan et al., 2014). This shows game developers see and make use of the benefits of agile. Aleem et al. discuss this in their 2016 study among other points like "game development is a form of software development process with several additional requirements", concluding that overall game development is different from the traditional software development process; game development is done in a multidisciplinary environment combining technical and creative aspects, bringing complexity to an already rapidly changing field. The study finds through survey and analysis several factors that correlate positively with an enhanced game development process: team configuration and management, game design document management, game engine development, game test management, and programming practises. (Aleem et al., 2016).

2.3   Games as an investment

José Planells studies the evolution of game development from the traditional publisher-funded model to the possibility to crowdfund efforts through Kickstarter and other crowdfunding platforms. He takes as an example the game development company Double Fine, and how they in their infancy failed to gather funding from publishers. The company then asked the public for US$400k through Kickstarter to fund their project, and after a month had gathered over US$3.3M, calling into question the validity and need for the

traditional game development model. Planells also brings up the failures and uncertainty of crowdfunding, however, naming an unborn project "Day One" from Pendulo Studios and the video game "Haunts: The Manse Macabre" and the disappearance of its capital 3 months after procuring funds.

Overall, Planells discusses the crowdfunding model "in the context of digital participatory culture and the transformation of the passive consumer to a new prosumer-investor." Various crowdfunding platforms are looked at in terms of hosted video game projects, finding the largest ones to be Kickstarter, Indiegogo, RocketHub, and Ulele. Different forms of crowdfunding and their popularity are discussed, with the most popular model being "crowd donation", followed by "crowdlending", where the backers are expecting something in return such as tangible goods, and lastly "crowd investment" which functions as a real investment towards the company. (Planells, 2017)

2.4   Consumers' perspective on Early Access

Arafat M. et al. reviewed consumers' perspectives on early access games on the Steam platform in their 2019 article. The paper considers the viability of EA as a crowdfunding model and inspects various possible problems of the model. Through a survey of 176 respondents, they looked into various theories regarding the success of the financing model. The study finds that though the number of EAGs bought on the Steam platform is substantial, it still amounts to only a fraction of the games purchased on the platform. Of the presented survey's respondents, 75% bought 0 to 3 EAGs a year with few buying more than 20. On the other hand, around 16% bought 0 to 3 fully released games a year with 36% buying 20 games or more.

Reasons that influenced the users to buy EAGs leaned more towards an interest in the marketed game concept and the want to support the game's development and seemed less affected by their possibly cheaper pricing. While most respondents seemed to agree that the EAGs they bought provided enough information for them to make an informed purchasing decision, their confidence in the games getting a full release was very varied and leaned towards the lack thereof. The factors most affecting the consumers' decisions were the game's concept, its frequency of updates, and the developer's history in EA, while promised

rewards after release were not considered important. The study suggests this stems from the high risks the model introduces to the consumers investing in an incomplete game and their lack of trust in the game ever being officially released. (Arafat et al., 2019)
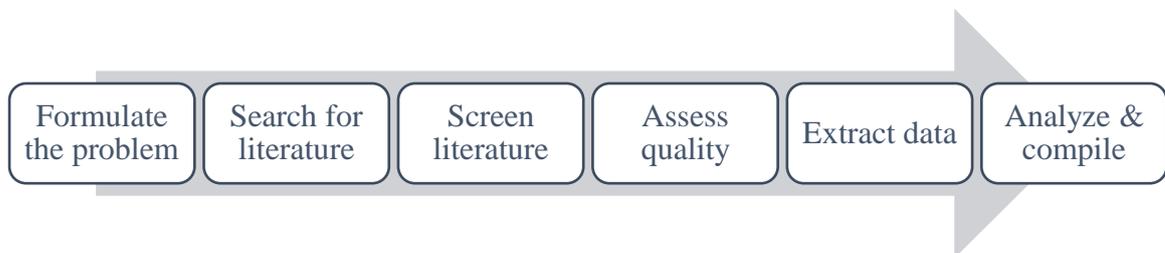
3 THESIS

3.1 Research method

The research method used for this thesis is a literature review. A literature review is a method aiming to gain an understanding of a subject through a systematic review of various literature regarding the subject. The general procedure to conduct a literature review starts by formulating the problem to which the author of the review seeks understanding, creating one or several research questions (RQ). (Templier and Paré, 2015)

After the problem has been defined, the following step is to search and screen for any literature related to the problem. This means looking through a range of studies within chosen search restrictions to cover all relevant sides of the topic, after which one would evaluate their relevance to their selected criteria and either select or exclude the evaluated study. Following this, the selected studies should still be assessed for their methodological quality to evaluate whether the differences in quality between various studies could affect the results of the review and how should the data be analysed. (Templier and Paré, 2015)

In the final steps of the literature review, all the applicable data is extracted from the selected studies. The type of data gathered depends on the chosen research questions, although alongside this other important information like how the studies were conducted, could be gathered. The extracted data should then be analysed: one should "collate, summarize, aggregate, organize, and compare" the data. Any findings should be interpreted and discussed and overall presented in a way that gives a coherent view of the review and its topic. (Templier and Paré, 2015)

| Formulate the problem | Search for literature | Screen literature | Assess quality | Extract data | Analyze & compile |

Although there is a guideline for how a literature review is generally conducted, literary searches can be seen as "open-ended iterative processes". While initially a small number of relevant studies could be identified and reviewed, the findings from these works can then be used to further hone the search and come up with new research questions. (Finfgeld-Connett and Johnson, 2013)

3.2   Initial data collection

This thesis looked to investigate what professionals in the games industry think about the concept of early access, and what are the recent opinions regarding the subject. The study was conducted by going through the Game Design Conference Vault (GDCV), a website storing Game Design Conference (GDC) panels, speeches, and presentations of past years given by industry professionals ("GDC Vault," n.d.). A search was done with the keywords "early access" as well as "Klei" since several other panels relevant to the topic mentioned Klei Entertainment, the company behind games like Don't Starve and Don't Starve Together – the former's multiplayer sequel, which utilized Steam Early Access in development. The search was delimited to publicly available archived panels from the year 2019 or newer for the term "early access" and 2015 or newer for "Klei", onwards from the first GDC after their first EAG Don't Starve Together hit Steam Early Access. The panels found relevant to the study amounted to 11 as seen in Table 1. The titles of the panels as well as the companies hosting them and the panel speakers are specified in Table 2.

RQ: What do game developers think about early access?

Of the reviewed panels, the ones considered relevant to the thesis addressed either the early access concept, a similar subject like other forms of crowdfunding, or subjects in common among the panels that were often brought up concurrently with the early access concept like community management, public reception, and general marketing. The primary sources chosen for this review are not scientific studies on the subject, but public speeches and as such could call into question the quality of the study. However, the panels were held by industry professionals at an official conference for game development, thus giving validity to the speakers' claims regarding matters in the games industry.

Table 1: GDC panel results for "early access" are from 2019 or newer and "Klei" from 2015 or newer.

Keywords	Panels	Relevant	Excluded
"early access"	14	9	5
"Klei"	3	2	1
	17	11	6

Table 2: Panel titles, speakers, and companies of the GDC panels relevant to the study.

Panel title	Host(s)	Company(-ies)	Summary
Be Spiky: A Decade of New Ideas	Jamie Cheng	Klei Entertainment	A presentation of Klei's approach to game development.
Beyond the Install: "Building Robust Communities on Mobile" & "True Indie Stories: Learnings, Challenges and More" (Presented by Google)	Dave Geffon, Sarah Thomson	Google Play Games, Seriously Entertainment, Social Point, SuperEvilMegaCorp, 505 Games, About Fun, Disruptor Beam, Klei Entertainment, Schell Games	1st panel addresses community building to help sustain product growth. 2nd panel discusses accounts of launching games on Google Play by indie developers.
'Dead Cells': What the F*n!?	Sebastien Benard	Motion Twin	Motion Twin's experience developing their first PC/console title Dead Cells which spent 1.5 years in Steam Early Access.
Decorticating 'Dead Cells': A Business and Marketing Deep Dive	Steve Filby	IndieCatapult & Motion Twin	A deep dive into how Dead Cells achieved sales of over 2M copies since its Steam Early Access launch in 2017; marketing process, development of strategy, production management, costing, and results.
Forging 'Hardspace: Shipbreaker': Creating Processes for Original IPs	Elliot Hudson, Rory McGuire	Blackbird Interactive	Blackbird goes through the process of creating the IP, protecting the game from idea fatigue and other dangers, and various studios that influenced setting up their creative processes.
GDC Podcast Live! Hosted by Gamasutra feat. Mohawk Games	Leyla Johnson, Soren Johnson	Mohawk Games	A talk about game community, company culture, strategy game design, and the company's experiences with their games Offworld Trading Company and Old World and early access.

'Slay the Spire': Metrics Driven Design and Balance	Anthony Giovannetti	Mega Crit Games	A talk about balancing the mechanics of Mega Crit Games' first game, metric-driven development focus, and the utilization of data and community during the early access process.
'Slay the Spire': Success through Marketability	Casey Yano	Mega Crit Games	A talk about the process of adding value to a game, building a community, and how Slay the Spire became a top-selling indie game in 2018 after a slow start.
Stress-Free Game Development: Powering Up Your Studio With DevOps	Seth Coster	Butterscotch Shenanigans, Inc	The talk goes through Butterscotch Shenanigans' experience with DevOps during early access and reshaping their development process.
'Subnautica' Postmortem	Jonas Boetel	Unknown Worlds Entertainment	This postmortem explains how Unknown Worlds evaded bankruptcy and how Subnautica's poor sales during early access were turned around, and how to thrive in early access.
Thriving in Steam Early Access: Turning 20XX's Slow Launch into Success	Chris King	Batterystaple Games	A talk discussing tactics for building and leveraging a game's early access community and how to best utilize feedback, from 2.5 years of experience in Steam Early Access.

3.3   Data review and analysis

The study will review the selected GDC talks to look for relevant data through comparison. Similarities and differences in views, recurring themes in the talks, and any other interesting subjects are extracted. A set of questions is created to further analyse the extracted data; the questions are used as a tool to structure the findings to help their synthesis. The various answers are then compiled to highlight the developers' collective thoughts on early access as a development model.

4 RESULTS

After the first run-through of the GDC talks to find sources relevant to the study, a set of questions was created to help further analysis and to pay closer attention to these details while going through the GDC talks for a second time gathering data for analysis.

- Which types of games come up when talking about EA?

- Is there mention of the state the game to be pushed to EA should be in?

- What does "community" mean for various game companies in the sphere of EA?

- How community-driven is the EA process (i.e., development, marketing, etc.)?

- How is the EA title marketed towards an audience? Is it at all?

The examined GDC talks addressed the topic of early access to a varying degree. For half, it was mentioned briefly alongside the main topic while for the rest the topic was of significance but chosen perspectives varied. The main theme of most talks was either game development or marketing in the games industry. The majority of the GDC talks that addressed the concept of early access mentioned it together with community management.

The study finds that most of the concerned developers who utilize early access see it as a way of getting feedback from their community to fix bugs and bring new content to their games that the community wants to see. While several developers like Motion Twin, Unknown Worlds Entertainment, and Batterystaple Games went into early access as a method of funding their game development, community involvement still prevails as the most valued aspect.

4.1 Development and funding with early access

From the thesis' analysis, all the game studios studied regarded early access as a development model alongside other aspects, which varied from one studio to another. While early access is generally also seen as a method of funding, few studios highlighted the

model's importance in financing their games. The majority of the studios however stressed their games' communities' importance in their development process during EA.

The community's importance in early access game development is brought up as a way of getting feedback and bug reports from their customers to ensure higher quality and success for their games. This allows the developers the prioritise features to build per their customers' wishes, as well as prioritise fixing the most critical bugs plaguing their game first. The community appears to be seen as a way to test the game for free, with Mega Crit Games pointing out their community doing a job for Slay the Spire that would otherwise require a dedicated quality assurance (QA) team. This way of utilizing one's community is reminiscent of an open beta phase, and the benefits seem to follow the findings of Jiang et al. mentioned in section 2.1; like public beta, early access improves the product-in-making and helps with its marketing.

While early access is seen as a good chance to test an in-development game title with a broad group of testers, several studios suggest you shouldn't enter the early access phase with a very unfinished product. Motion Twin and Mega Crit Games point out that going into EA with an unpolished game is generally a bad idea, and the latter mentions this is also where EA gets a lot of the bad reputation it has in some people's eyes from. They suggest the early access phase is more suitable for finishing and polishing a game, or at least what little has been build should be working well. This will be more appreciated by the game's audience and make them more trusting of the studio in finishing, and not abandoning the game.

Most of the game development studios presenting the GDC talks made frequent updates to their games during their early access phase. The frequency varies depending on the studio; many speakers didn't give a specific time frame, but most of the mentioned schedules went from weekly to monthly updates. While big feature updates are a difficult task to get done weekly, one should still attempt to push out even a small update regularly, as Batterystaple Games for example mentions that small updates are better than late updates. Some studios mentioned updating daily, but these daily updates were mostly a part of an experimental development branch, which would be optionally available for players who wouldn't mind a constantly changing and often-times buggy gaming experience. This branch was utilized to test out new features and fix any evident problems before they were pushed to the game's

stable branch. As such, the expectations for the state of the daily builds have to be set correctly so players don't expect similar stability as a weekly or monthly build would have. Namely, the studios Butterscotch Shenanigans, Mega Crit Games, and Unknown Worlds mentioned doing daily updates, of whom only Butterscotch Shenanigans didn't utilize an experimental branch but was rather doing continuous development following DevOps principles.

As seen in section 2.2, Keith's 2010 publication and O'Hagan et al.'s 2014 literature review speak of the advantages of Agile in game development, and the latter's findings of most game studios utilizing Agile or hybrid practises can be seen in practice from the GDC talks. The weekly, biweekly, or monthly updates a lot of game developers create per their audience's feedback, mentions of concepts like sprints, and the importance of iteration during development come up. Butterscotch Shenanigans also speaks of their experiences and success with DevOps during the development of their game Levelhead and how it helped the studio escape a cycle of overwork, or "crunch". To make it feasible to frequently update a game, the game studios' processes have to be set up so that they don't have to crunch themselves as this seems a relatively big problem in the industry. While Butterscotch Shenanigans solved this problem with heavy automatisation of processes, Batterystaple Games brings up the importance of setting up a "life-friendly" update schedule. Mega Crit Games points out that in their next game project, it would be better to settle for biweekly updates instead of weekly since this did cause them overwork.

The study finds that all the games developed in early access by the studios examined had high replayability and genres of rogue-like and multiplayer were most prevalent. This means they all had aspects to them that allowed a player to repeatedly acquire new experiences playing the game, even if they had previously played it through. The suitability of replayable games for early access was also explicitly voiced by Blackbird Interactive, Mohawk Games, and Motion Twin, of whom Mohawk Games described these non-replayable games as games which "consume the narrative". As the only narrative experience in the set, Unknown World's Subnautica also contains elements of replayability; while its narration helps guide the player to new areas, the focus is on deep-sea exploration, featuring personalized base-building.

16

4.2 Early access and community management

The thesis finds that the early access model of game development is a very community-driven process. As noted in section 4.1, the game's community during the early access phase is generally seen as a form of feedback for the game's direction and as a way of QA. Many studios talk about the importance of creating such a community. Klei Entertainment mentions that a part of early access is slowly building a community, and using the feedback of both their community and analytics to make better original games. Motion Twin also notes that in the creation of their game Dead Cells, they set as a marketing constraint the need for a community who would both spread word of their game and help with balancing its features.

To grow and maintain such a community, the game studios take various steps. It is seen as a good practice for an early access game to fix bugs and other problems like character skill balancing when their community notifies them of such. Batterystaple Games, Motion Twin, and Unknown Worlds all believe that as a developer, one should also visibly show their audience that they are doing this, explicitly marking community suggested additions, changes, and fixes to the game in the game's patch notes. This will quickly give the community the understanding that they have a feasible impact on the game, and that their voices are being heard.

While Batterystaple Games notes that community management is not free, as it takes many hours of work, it can be made more efficient later when your community members can answer questions about the game to new players, too, which they've seen the developers answer previously. Mohawk Games have assigned members of their Offworld Trading Company's fanbase as moderators on the game's community Discord server, letting the community self-moderate itself to a degree. Discord is a chatting application which many of these studios utilize as part of their community management.

4.3 Early access as a marketing tool

A few of the studios treat early access as a method of marketing. Motion Twin explains that while they get feedback for their game during EA, there's a dynamic with their audience to be maintained. The game has to always be interesting for its players, getting new game-

changing updates monthly. Motion Twin notes they consider the early access phase like a "show", citing Unknown Worlds, creators of the game Subnautica. According to Unknown Worlds, watching and influencing how a game is made is entertainment, comparing it to an open-kitchen restaurant, where a customer can watch their food being made.

The audience of an early access game can affect the game's development through their feedback, in a sense turning this development process into an interactive "game" as well. Developers being very involved in their game's community throughout the EA phase, being transparent about the development, including showing and addressing problems they've had, like a game-breaking bug or going off-schedule, is considered good for marketability. Transparency in the development of a game is valued by most studios and seen both as a way to make the process, the game's evolution, more exciting for the early access audience, as well as grow trust in the studio and thus help retain the community they've gathered.

In practice, EAG developers rely a lot on word-of-mouth when it comes to marketing their games. It's common to be active on different social media platforms (i.e., Twitter, Facebook), posting updates on the game's development or interesting screenshots of the game to generate interest, getting people to share this content, and bring new people into the community. Many studios also found that an effective way to market their games and to get word-of-mouth in motion is to "stream" them, or live broadcast their gameplay. For Mohawk Games, this meant streaming the game themselves while Mega Crit Games, Motion Twin, and Unknown Worlds sent free copies of their game to various established video game streamers mainly on platforms like Amazon's Twitch and Google's YouTube. The streamers' audience would get to see what the game is like which works for games that, Mega Crit Games says, aren't very visually engaging or interesting in concept.

5   DISCUSSION AND CONCLUSIONS

The thesis finds that game developers hold various views of the early access model. The most prevalent are viewing the early access concept as a very community-driven development process and viewing it as a marketing tool, though these views are not mutually exclusive. Studios holding the former view see EA as an excellent way to improve their game during development through free feedback and quality assurance, while also growing a community that will advertise their game for them. This aligns with the audiences' perspective, as shown in section 2.4, in how Arafat M. et al.'s 2019 article found that people willing to buy early access titles often do so to support the game's development. Studios' wanting to update their game often, with most studios opting for weekly updates, also aligns with customers' wishes.

As found in section 4.3, EAG developers rely on word-of-mouth a lot when it comes to their games' marketing. This makes sense especially for small game development studios that don't have the budget for more traditional advertising, and as shown in section 2.1, Lin et al. found that the majority of all early access games are made by small studios. Mega Crit Games, a two-person studio, suggests that to make games that are popular for streamers – an effective way to get word-of-mouth going – instead of focusing on marketing, one should focus on marketability, "the ability of a video game to be sold or marketed".

In modern game development, marketability can be created through making a streamable game, growing a community and through the ability to update easily. A streamable game according to Motion Twin is a game that is fun to watch; there should only be interesting but useful things on the screen, and elements shouldn't get in the way of other elements. Then, when a streamer plays a particular game, their audience will talk about a game, joining the game's community and showing the game to their friends and so on. Other streamers might then hear about the game from their friends and also stream the game, continuing the cycle. Meanwhile, as the game constantly gets new content through frequent updates, the game remains interesting to play and to watch even to the first members of the community. Unknown Worlds suggests open development cuts down on the need for separate marketing; also increasing marketability.

It was suggested during a few talks that when entering the EA development phase, a studio should have one or two updates readily made, but not pushed out right away. This content should be held back from a large audience for the first week or two, depending on the promised update schedule. This is done to create more trust in the community, to show that one can steadily develop their game. Otherwise, the first updates during EA will easily be delayed beyond the planned schedule, since the first weeks after EA release will mostly go to responding to community feedback and fixing bugs and balancing issues found by the customers. Thus, the studio won't be able to give polished enough content soon enough to keep their audience interested in the game and entertained.

While EA is also a method of funding a game's development, not many studios brought this aspect up. As was discussed in section 2.1, Lin et al.'s 2017 empirical study found that most EAGs were cheaper during their early access phase and the price was raised at full release. The game studios' talks analysed in this thesis expressed a preference for more community feedback rather than more funding, some studios gradually raising their game's price moving closer to the game's completion and full release.

Though developers opting for early access emphasised the importance of frequent, regular updates, it seems that to favour frequent updating is not only limited to EAGs. The speakers of Google Play's first talk focusing on mobile game development had all partaking studios agree that "most of us" update their games with new features every few weeks, though only one of the studios mentioned having experience with early access. All these studios specialize in free-to-play games, however, which might warrant more continuous development, with any profits from the game only coming from third-party advertisements and in-app purchases. However, in the second talk Klei and 505 Games, developers of Don't Starve and the mobile port of Terraria, respectively, both emphasise the importance of continuous updates even with the one-time-payment type of games. This raises the question of whether frequent updates are considered a feature of the mobile game development market, or just modern game development in general. It is worth noting though that none of these studios brought up daily updates in regard to their mobile or non-EA games.

Studios that update their games frequently, especially those in early access with a lot of communication with their audience can't push out big content patches every update, since

big feature updates often take more than a week or even a month to create. Some developers discuss this, mentioning that even if you can't put out something big, you should still give your community something. If possible, those big features could be cut into smaller parts, even if they alone wouldn't be completely satisfactory to the developers. When pushing out frequent updates, especially when testing out new features there's always a risk that the game is introduced to a game-breaking bug. At least according to Mega Crit Games, this is just a part of early access game development. It appears one of the perks of a daily update branch with lower expectations is that you can fix these broken parts for the following update, never introducing them to a stable weekly or biweekly branch. Of the same thought, Motion Twin and Unknown Worlds bring up the importance of iteration in game development in general.

Something to note about the source of data used for this thesis is that all presented talks were held by people who had found success in the games industry. Given the nature of the Game Developers Conference, it makes sense to invite guests to talk about their successes in the industry and how those successes were reached, and the people who failed to garner any sales for their games or failed to publicly release them in the first place most likely wouldn't have the recognition for the people inviting speakers to even know of them. And while the presented speakers also talk about their challenges in the field, the overall view is still skewed in favour of the successes.

In an attempt to look into the developers' perspective of early access, this thesis has compiled some practices generally found good for early access game development. The thesis considers these a part of the best practices available for the model, which can be utilised as a way to develop new successful EAGs. However, in search for research related to the thesis' subject, it was found that there weren't many formal studies done related to early access in the field of game development. As such, further research on the subject should be conducted; a starting point for such research useful to the field would be an attempt to fully compile the best practices of the early access development model. The thesis finds that game studios appear to have a lot of information on this, but at the time of writing it can mostly only be found through non-scientific sources.

For a different subject on potential research, it could be worth looking into how early access in game development differs from other fields like general software engineering, is the

practice common in other fields, and could these various fields benefit from each others' experiences. On the marketing side, there's potential for research in looking into word-of-mouth marketing, especially through streaming of video games, which seems to be growing increasingly popular among game developers; how with an investment of a few free copies of a game, one can achieve a significant spike in sales of their product.

6 SUMMARY

This thesis looked at early access as a form of game development and a way of funding the development process, to examine how game developers regarded this model as well as how they perceived the effects it has on game development. The thesis studied the concept of early access from the game developers' perspective to look into what these developers thought of the subject. The study was conducted through analysis of various Game Design Conference talks by different game development studios.

It was found that early access was utilized for the most part as a community-driven game development model in the video games industry, and secondly as a marketing tool relying on open development and word-of-mouth. Game developers view early access as a way to improve their games through valuable customer feedback and free testing, as well as a way to build a community that will sell their games for them. The game studios achieved and maintained these communities by making the game development process entertaining for their audience; through transparency in development, making the community's effects on the game visible, and frequent updates with new content. Another important factor in creating a successful modern video game is ensuring it is streamable; fun to not only play but also to watch. This suits the quickly evolving early access games well, as there is frequently new content to enjoy.

There emerged a need for further research on the subject, as many studios seem to have good insight into how to utilize the early access model, but there is a lack of documentation available of this through formal sources. Even informally, the information appears fragmented; it would be good to research and compile the best practices for the early access model. Another subject of further study is looking into the differences of early access in game development and other fields, i.e., software engineering. In regard to marketing, streaming – or having notable personalities live broadcast a game – as an emergent way to sell a game would also be an interesting subject of research.

REFERENCES

Aleem, S., Capretz, L.F., Ahmed, F., 2016. Critical Success Factors to Improve the Game Development Process from a Developer's Perspective. J. Comput. Sci. Technol. 31, 925–950.

Arafat, M., Qusef, A., Al-Taher, S., 2019. Steam's Early Access Model: A Study on Consumers' Perspective, in: 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT). Presented at the 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), pp. 336–341.

Cox, A., 2020. The history of Minecraft – the best selling PC game ever [WWW Document]. TechRadar. URL https://www.techradar.com/news/the-history-of-minecraft (accessed 2.27.21).

Finfgeld-Connett, D., Johnson, E.D., 2013. Literature Search Strategies for Conducting Knowledge-building and Theory-generating Qualitative Systematic Reviews: Discussion Paper. J. Adv. Nurs. 69, 194–204.

GDC Vault [WWW Document], n.d. URL https://gdcvault.com/ (accessed 7.22.21).

GOG, n.d. b. What are games in development? [WWW Document]. GOGCOM SUPPORT Cent. URL https://support.gog.com/hc/en-us/articles/115000577409-What-are-games-in-development- (accessed 2.27.21).

GOG, n.d. a. Is this different from early access? [WWW Document]. GOGCOM SUPPORT Cent. URL https://support.gog.com/hc/en-us/articles/115000591705-Is-this-different-from-early-access- (accessed 2.27.21).

Jiang, Z., Scheibe, K.P., Nilakanta, S., 2011. The Economic Impact of Public Beta Testing: The Power of Word-of-Mouth 18.

Keith, C., 2010. Agile game development with Scrum, The Addison-Wesley signature series. Addison-Wesley, Upper Saddle River, NJ.

Lin, D., Bezemer, C.-P., Hassan, A.E., 2017. An empirical study of early access games on the Steam platform. Empir. Softw. Eng. 23, 771–799.

Moritz, A., Block, J.H., 2015. Crowdfunding: A Literature Review and Research Directions, in: Crowdfunding in Europe: State of the Art in Theory and Practice. Springer Berlin Heidelberg, New York, NY.

O'Hagan, A.O., Coleman, G., O'Connor, R.V., 2014. Software Development Processes for Games: A Systematic Literature Review, in: Barafort, B., O'Connor, R.V., Poth, A., Messnarz, R. (Eds.), Systems, Software and Services Process Improvement, Communications in Computer and Information Science. Springer, Berlin, Heidelberg, pp. 182–193.

Planells, A.J., 2017. Video games and the crowdfunding ideology: From the gamer-buyer to the prosumer-investor. J. Consum. Cult. 17, 620–638.

RTI, 2002. The economic impacts of inadequate infrastructure for software testing. Natl. Inst. Stand. Technol.

Templier, M., Paré, G., 2015. A Framework for Guiding and Evaluating Literature Reviews. Commun. Assoc. Inf. Syst. 37.

Valve, n.d. a. Early Access (Steamworks Documentation) [WWW Document]. URL https://partner.steamgames.com/doc/store/earlyaccess (accessed 2.27.21).

Valve, n.d. b. Introducing Early Access [WWW Document]. URL
        https://store.steampowered.com/earlyaccessfaq/ (accessed 2.27.21).