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Project Management in Game Design
A hypothesis

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Abstract

The aim of this thesis is to create a project management plan through case studies and literature research for a Game Design Canvas. Literature research is performed into project management methods within game development. This research also includes production, budget and scheduling. Different management methods are compared.

A hypothesis is formed, based on the methods studied during the literature review. This speculation is applied to the project management plan. A fitting management method is chosen. Project objectives are defined.

Case studies about management methods are performed on existing game companies, and employee feedback is taken into consideration. The companies chosen were decided by their revenue, studio headcount and product type. A conclusion is made whether the hypothesis was correct, and the final aspects of the project management plan are decided upon.

Within the project management plan the project roles, timeline and risk management are explained more in-detail. The iterative agile scrum technique is applied as the main method.

The final conclusion explains the difficulties this project management plan has faced during its development. The future of agile development is speculated.

Keywords

research, project management, game design

CONTENTS

GLOSSARY

GDC

Game design Canvas. A flowchart created with the design of a game in mind that is to be developed.

Skin

In this context, “skin” is referred to the overall look of a character inside video games, including but not limited to the color scheme, outfit and weapons. This feature is often monetized.

DLC

Short for “Downloadable Content”. It is additional material for the released game.

The Product Owner

The initiator and the license owner of the product, the commissioner. In games, it is often the publisher who hires a studio for the development of the game. As an example, Maxis is the developer for the Sims franchise, but EA is the publisher (Electronic Arts Inc. 2019).

Casual Player

A player who plays games unfrequently with minimal investment, hence the name casual.

Indie Studio

It is a small game developer studio. Its content is experimental, and the studio is often independent, not relying on a publisher and is self-funded.

AAA (Triple A) Studio

A big game developer studio, often working with a publisher, or independently and is funded by a massive budget.

1 INTRODUCTION

In recent years, the popularity of games has outgrown the popularity of the film industry significantly (D'Argenio 2018). The reason behind this is often the broader range of immersion the player can enjoy without leaving the comfort of their house, compared to other entertainment genres like books or movies. Therefore, it is safe to assume that the key to success is the underlying studio that makes decisions both marketing and content creation wise. However, having a game studio – and a product – in itself does not guarantee a profitable box office. (Fullerton 2014.)

The aim of this thesis is to analyze financially – or, from a management's point of view – stable corporations and to observe strategic decisions about marketing, design choices and project management. After the analysis, the goal is to create a project management plan and a GDC (Game Design Canvas) to be able to gain the initial idea of whether there are any common factors that help upholding a project and creating a strong development team.

The first part of this thesis consists of budget, production and project management research through a literature review, from which a hypothesis would be speculated with. The research through literature serves as a starting point in discovering the proper method to structure the schedule of the GDC on. The hypothesis consists of a brief theory about the project's management method, stakeholders, milestones and project objectives.

Subsequently, case study research based on existing companies would help to reflect upon the accuracy of the hypothesis. By concluding the information gathered, a project management plan is created with the GDC in mind. Despite calculations, no plan is perfect; a set of potential risks must be taken into consideration. It is important to note that the Hypothesis is mainly a tool to brainstorm the ideas gained from the literature review and the deciding factor will be the information found about the case studies.

The GDC pictures a PC game based on puzzles and time-limits in an original fantasy setting. Creating smaller sized games within the same universe is a goal for the future, however, this thesis concentrates only on the production of the very first one. By using a GDC of their own, the creator would gain an exquisitely detailed experience about the production, planning, and project management parts on the game industry, what could take several working years otherwise.

Typically, the game industry is rather secretive and does not share their key business assets. The reason for this exclusivity is solely a business strategy to protect the company from releasing sensitive information (Schreier 2018). The secondary goal of this thesis is to gain insight on a well-functioning team of people with different skillsets and backgrounds, which can hopefully serve as an anchor point to those new to the industry.

2 RESEARCH ON BUDGET, PRODUCTION AND PROJECT MANAGEMENT

This chapter concentrates on the basic idea of success and project management, mostly from the production's point of view, but also marketing and PR are taken into consideration. The main objective is to get an insight into creative decisions based on the factors mentioned below. In this thesis, a company's or corporation's success is determined by its sales, profit and critique. This lies in the company's ability to create a financially stable skeleton for itself, with sustainable resources and a solid customer base. In other words, a successful company can maintain itself by its product through creative decisions in production and marketing; with regards of staying relevant to the target audience. (Aalto 2015.)

2.1 Production and Project management

Without proper management, the company is off to a slow but painful demolition. During production, the team must face often unpredictable changes, such as technical issues, miscommunication between the creative team and PR, staff shortage and so on. The changes that seem to be the least of significance, like

pregnancies, vacations and hardware resources can potentially “kill” a project months before the due date. (Cohen & Bustamante 2010.)

According to Cohen & Bustamante (2010), before the project can start, the producer(s) create a management plan to be able to determine the budget and headcount required. This starts with resolving the job at hand by splitting it into several general goals, example: character art, level design and environment design. The goals then can be further split into several smaller tasks that can be given out to individuals (Figure 1). The tasks must be as easily comprehensible as possible, so there is absolutely no place for misconceptions or interpretation. As Cohen & Bustamante (2010) states, after breaking down the task at hand, the team leads must give an estimate about the timeframe they need in order to finish the objective. The estimate might not calculate the possible obstacles the project can face, so Bustamante advises adding 15% extra time to each task’s schedule. Similarly, in his video, Sasal (2017) divides the project management process into so called process groups. This starts with the initiation process which includes developing the project charter, by identifying the objectives, the scope, milestones and key stakeholders. By characterizing the major deliverables, the milestone schedule can be determined with ease.

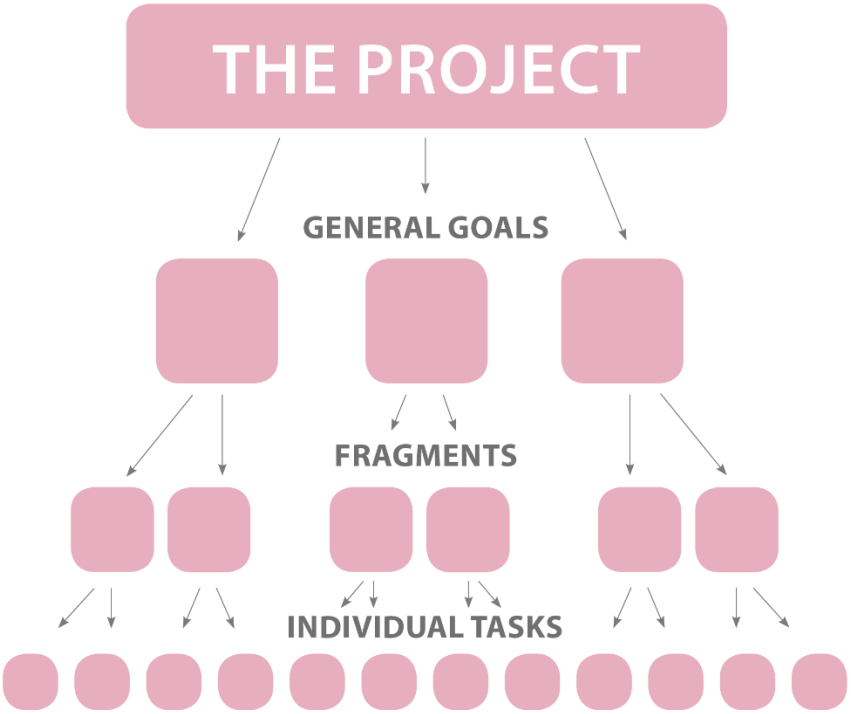

Figure 1. Project Tasking

After the timeline and tasks are set and clear, an order of priority must be set, where the tasks are given to the employees with different responsibilities. For example, the lead artist or senior gets the task with the most responsibilities and juniors are entrusted with tasks of lesser importance. It is advised to use a project management software instead of Microsoft Excel, as they are more suitable for the cause. (Cohen & Bustamante 2010.) This is called a Work Breakdown Structure plan, WBS (see Portny 2013).

The entirety of a project from the conceiving/concepting to the termination is called the **project lifecycle**. This consists of several stages, such as the concept phase, the prototyping phase, production phase, the launch and the servicing phase (Aalto 2015); or as Sasal (2017) explains it in business terms: initiation, planning, executing, monitoring and controlling, and closing the process group. A lifecycle is unique to the project, regarding its industry, size and type.

While concepting, prototyping and production phases are essential to complete a game design project, it is important to mention the post production and servicing phases, since they are unique to game design as they are crucial elements to the product's success. In games, post production and servicing has become an essential feature, since the first one is the overall polishing of the game and the latter provides a possibility to address further issues with the game and to potentially add new content to keep customers satisfied based on their reviews. (Aalto 2015.)

2.2 Scheduling

Schedules help to ensure the project's timely completion. Dividing the tasks required help identifying the man-month schedule, which covers the personnel needed for each state the project progresses in (Cohen & Bustamante 2010). Usually, the schedule is published through a project management software such as Gantt, or a spreadsheet one, such as Microsoft Excel. One of the first tasks in scheduling, or initiating a project is identifying the key stakeholders. As Sasal (2017) states, during the initiation phase it is enough to mention the most important stakeholders, like the project owner, publisher and project leaders.

Detailed scheduling is the core part of a successful product. Without it, the product's management would lead to chaos and a game that is low-quality and is a waste of everyone's time and resources. It is usually the producer's role to supervise the project's progress and timely release. It is important to have a balanced and highly detailed lineup with a chance to correct potential mistakes if or when they occur. (Cohen & Bustamante 2010.)

For the lifecycle of the project to progress smoothly, master and milestone schedule plans are created. The former is the full-detailed schedule, with personnel included, leaving as little place for mistakes as possible. The latter is rather a set of deadlines which defines certain deliverables to be accomplished within a given timeline (Figure 2). During game development, milestones' purpose consists of serving the publisher marketable material and dividing the

project into smaller segments so that the developer team can have a clearer view on where the project is heading. (Cohen & Bustamante 2010.)

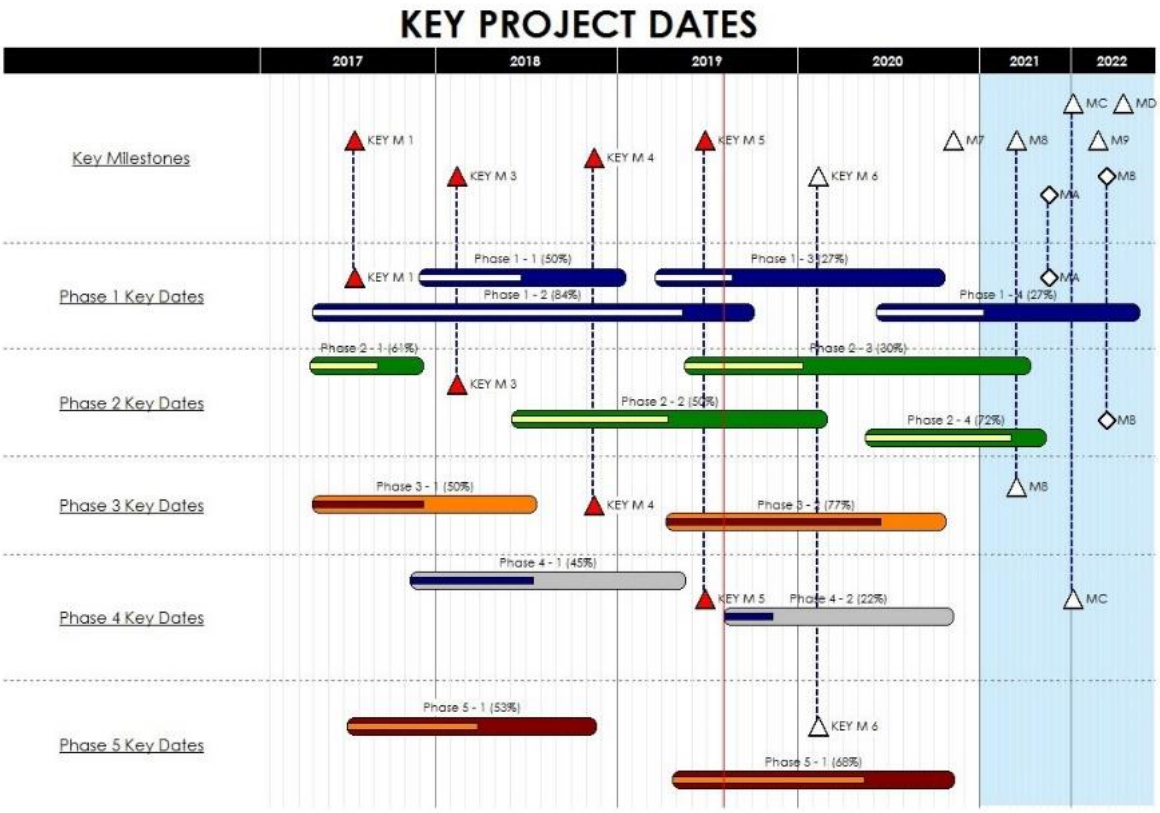

Figure 2. Project Schedule Example with Milestones (KIDASA Software Inc. 2019)

Milestone schedule also serves as a “checklist” for the development team and so the publisher pays according to it, so staying on schedule is essential (Cohen & Bustamante 2010). This schedule can be then divided into sprints; this method is used in an iterative management approach called agile. As shown in Figure 2, a sprint describes a 2-3 week period, where a task is aimed to be delivered. Setting up deadlines help to reduce the final crunch of the project, which occurs near delivery deadlines, especially near project termination. (Vanderjack 2015.) While using an iterative approach, a sprint helps to gain insight on where the project is heading in a significantly short amount of time. While working with a publisher, this also helps to ensure that the development team has a major deliverable introduced.

2.2.1 The Waterfall Methodology

Management methods such as waterfall, agile and scrum are often used in game production, but the first one is very different from the latter. **Waterfall** is the oldest method out of the three: it is a linear approach, where all the game's design plans are completed before production. This consists of finishing the overall game design, before implemented into code. Only after that starts the testing phase; which, however, leaves very little space for change and for correcting mistakes that were potentially overlooked in the planning process and leaves the risk of crunch, as shown in Figure 3. In spite of this, some producers still find this method useful, hence its clear structure and understandability. (Mahalakshmi & Sundarajan 2013; Cohen & Bustamante 2010.)

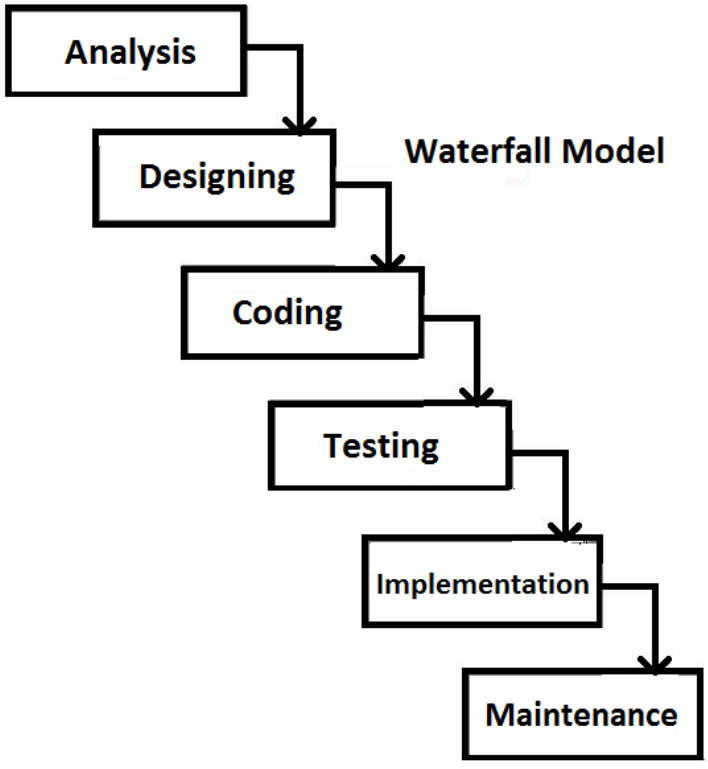

Figure 3: Waterfall model (Studytonight 2019)

During game jams, due to the fact that they are usually one or two days long, a waterfall method proves useful. Example: the game jam is 30 hours. In the first 4 hours, the team (usually 3-5 people) decides on the game's initial approach, script and design method. Then, the tasks are identified and divided between the

participants who are now the development team. After gaining an initial understanding of the tasks at hand, the team starts to work through constant communication. When the graphics are almost finished, it gets implemented into the code and testing starts. This approach can prove safe, when there is a project with direct instructions and needs to get done quickly.

2.2.2 Agile and Scrum

Agile and **scrum** were made to complement each other with a more flexible, team work and communication driven, iterative development process. According to Cohen & Bustamante (2010), the agile method was created using Scrum's technique, but it removes the responsibility of the team leader and divides it between team members. Within scrum, the different branches of the development team each work on the project simultaneously, just like in a sports team. In fact, the word "SCRUM" is implemented from a rugby term, which includes teammates exchanging the ball back and forth in order to score. Having the team members work on smaller assets of the project with a set deadline allows immediate feedback and trial-error possibilities. The team leader, or Scrum master, is the supervisor of the team at hand, and the one who assigns the tasks to each individual. Contrary to popular belief, the Scrum Master is not a Project Manager. A Project Manager's responsibility is the planning, execution and the timely delivery of the product while staying inside the budget's borders (Ageling 2018). The important members within Scrum are: the scrum master, the product owner and the development team (Cohen & Bustamante 2010). What makes iterative management methods so contradictory to waterfall is their lifecycle, as shown in Figure 4. It is a method that relies strongly on repetition and alteration regarding feedback.

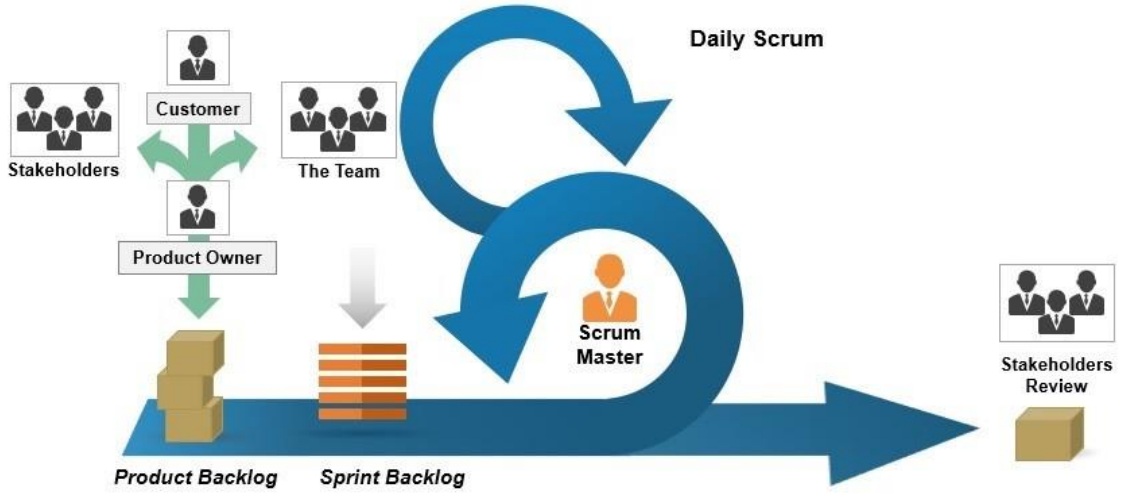

Figure 4: Agile Scrum project lifecycle (Diaame Consulting Services. 2018.)

Using the information gathered about scrum, a good example of this is designing a skin to an existing character in a game, like League of Legends. The Scrum master assigns the task to the designer, who creates a 2D implementation of the idea. Then, when the design is approved, it goes forth to the 3D artist, who creates a virtual sculpture for the asset. If the concept needs further adjusting or is cancelled, the scrum master sends the 2D art back to the character designer to be fixed. If approved, the sculpture proceeds to the rigger and animator and later on, the programmer implements it into the game.

These methods are so similar that they are often used at the same time. This approach is called **agile scrum**. According to Vanderjack (2015), agile scrum consists of three levels: visioning, grooming and iteration.

The visioning process is basically the process of defining the borders of the project's scope (Figure 5; Vanderjack 2015). In the game industry, this is called the concept phase and Sasal (2017) calls it initiation. As Cohen & Bustamante (2010) defines, **scope** is technically the extent of the project's deliverables. In work life, scope is used to define the responsibilities of an individual or the whole company. For example, if an individual is hired as a video editor, coding is out of their scope, but mastering commercial material belongs to their duties. Concluding this logic, if a game developer studio is working with a publisher, the publisher's scope includes marketing the material that the studio provides. In this case, the studio's scope includes the delivery of the game and providing material

to the publisher to be marketed. Also, a studio's scope might include creating a fantasy RPG, but delivering a DLC or a multiplayer version of it might not be. (Cohen & Bustamante 2010.)

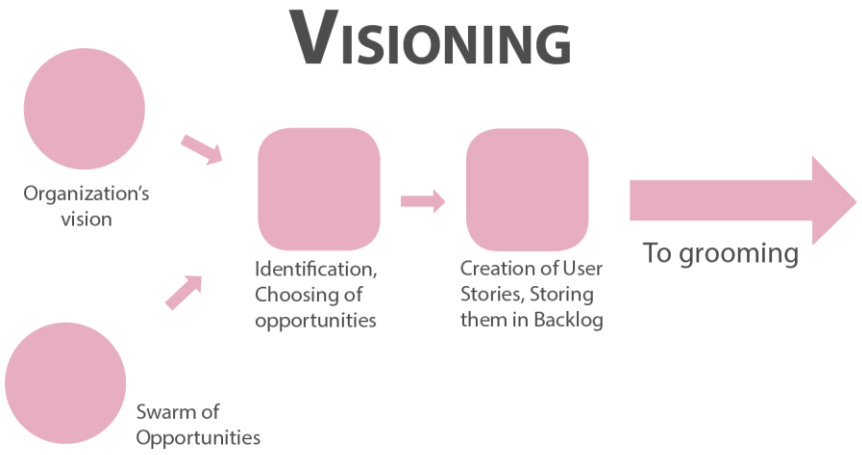

Figure 5. The visioning process map (Vanderjack 2015).

The Visioning process is a vital step for the Product Owner to understand, because the success of the project lies in the vision of the organization. The responsible ones for the completion of this process are no other than the project and organization's leaders. During visioning process, the requirements for the developers and testers are characterized, thus the tasks are clearer to determine; as seen on Figure 5. After defining the organization's (here, publisher's) scope, opportunities that fit inside the project's vision are identified while keeping priorities in mind. Once opportunities are defined, the Product Owner then creates user stories. Measey (2015) specifies that user stories and backlogs are used to define the requirements for the team by the product owner and stakeholders. Both Vanderjack (2015) and Measey (2015) agree that a user backlog story should consist of the following main factors:

- **"As a"**
  – The one who requires the feature.
- **"I want"**
  – The feature they want.

- **“So that”**
  – The reason they want the feature.
- **“Acceptance Criteria”**
  – Questions that must be answered in order to regard the story done.

Measey (2015) states, that user stories can occasionally become irrelevant and therefore get disregarded.

The process that transforms user stories into layouts that the development team is willing to accustom into their iterations is called **Backlog Grooming.** During the grooming ceremony, the product owner, the scrum Master and the development team examine the User Stories (Figure 6) and make decisions on its formatting, estimate the time required to complete them and divide them into smaller sections if a story is too vague. (Vanderjack 2015.)

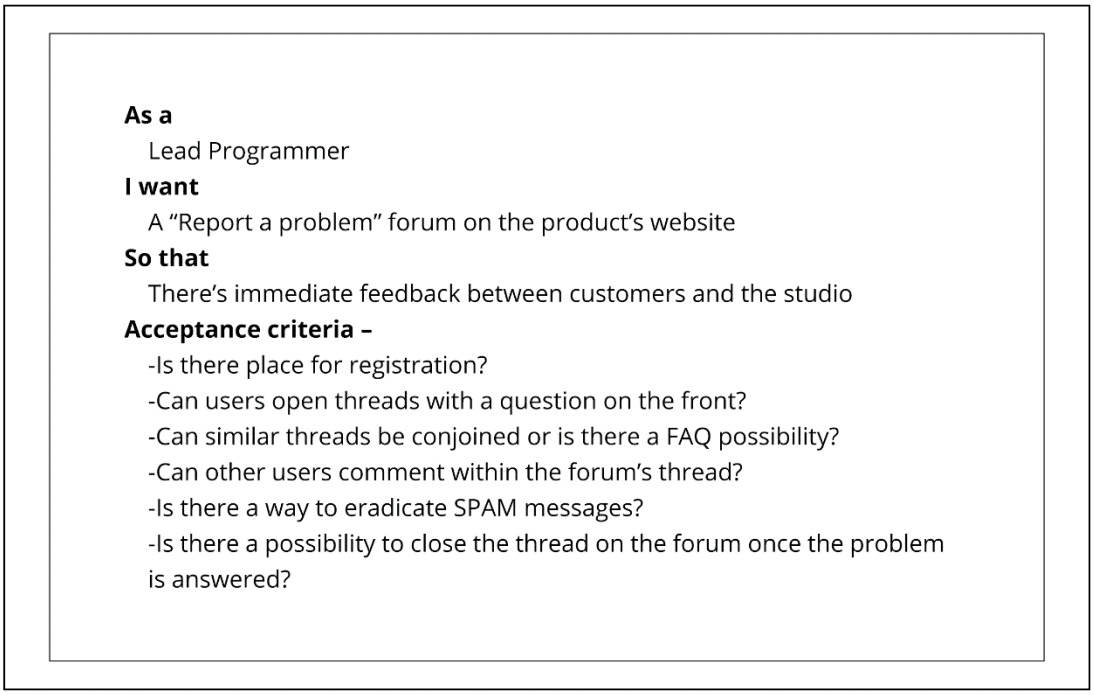

Figure 6: User Story example

When the grooming is done, the **iteration** process starts. There, through continuous meetups, building, testing and inspection, the product is being made. In agile scrum, the iteration process allows fast decision making within content creation, which enables the potential “kill off” of an idea. The process stops, when

the deliverable is approved and is ready to ship. The requirements must be met before the project could ship, which can depend on quality and on the deadline as well. (Vanderjack 2015.) It is important to note that the outcome of iterative projects can often differ from what was originally planned (Aalto 2015).

Another important asset of this iterative management method is the Daily Scrum. Daily standups are a crucial part in production, since this way the development team can synchronize their tasks with the backlog. This includes a short, 15-20-minute meeting along the development team and the Srcum Master, where the team discusses what they are working on, whether there is an obstacle and what they will do after they finished their task. (Viscardi 2013.)

2.3 Budget and Resources

It is crucial to plan for a bit wider budget than needed, so in case of unexpected expenses and cuts, the project stays manageable. It is also essential to count with extra personnel, especially in the creative and content creation departments. This ensures the safety of staying on-schedule with the project. Prioritizing the departments to utilize budget cuts are also an important feature, as failing this could cause a potential crisis within the studio. (Cohen & Bustamante 2010.) As an example, if the game depends heavily on mechanics, it is essential not to lay off coders.

Outsourcing is also a feasible opinion for tedious and minor tasks that are time-consuming, so the official team can concentrate on the more important tasks. This means hiring a smaller studio, often from foreign countries that provides an aspect of the product and it is often less expensive. For example, Riot Games Studios hired Fortiche Production animation studios to animate a music video debuting before their world championship (Won & Oak 2018). Overusing this factor, however, can cause the overall project to look inconsistent and thus less immersive. (Cohen & Bustamante 2010.)

When there is no proper plan and hierarchy settled, and the team lacks the understanding of the project's scope, the project is opted to fail. Cohen & Bustamante (2010) calls this occurrence cowboy coding. In a case like this, the project often gets discarded and the development team is left without payment.

2.4 Conclusion of Literature Research

Observing the information gathered, all project management templates have certain steps in common. A project starts with the visualization of the concept that is to be achieved, the scope is defined (Cohen & Bustamante 2010; Vanderjack 2015; Measey 2015; Sasal 2017). Next, throughout analyzing the objectives set, the project's management plan goes through definition (pre-production phase). When all planning is done, iteration or in other words, the production phase takes place. To ensure that the product's quality is tested, monitoring and controlling happens. Once the project has reached its objectives, the testing is done and the due date is close: the project's termination, or in this case, release is at hand.

It is worth mentioning that due to the accelerated virtual networks, most of the time patching and post-production occurs after release. Thanks to the immediate feedback and customer reviews, potential bug fixes occur that have been missed during the testing phase. For this however, a lot less personnel are needed than during production. (Cohen & Bustamante 2010; Aalto 2015.)

3 HYPOTHESIS

In this chapter, the basic project management method is decided upon and an overall speculation of project management, resources and time is created. This includes the handling of basic questions about the size of the project in question. For this hypothesis and project management plan, a fictional, self-publishing indie company is used: *PoshAlpaca Games Ltd.* In-depth information about the game can be found in the GDC attached (See appendix 1). This hypothesis will be used as a base for the project management plan (chapter 5), which will provide a more extensive explanation with the upcoming case studies (see chapter 4) in mind. The GDC mentioned in this thesis describes the hypothetical game, named

“Grassdivers” and will be used to refer to it below. It is important to note, however, that this hypothesis mostly serves as an opportunity for brainstorming and the final decisions are made in the Project Management Plan.

Before developing the project any further, a scope definition is required in order to have a clear understanding of what is needed to be completed and what is out of the project’s requirements, as shown in Table 1. This way, the development team can gain an insight of what is expected to be done and what is not, and the scheduling can develop smoothly. This project’s scope includes:

Table 1: Project’s Scope

IN SCOPE	OUT OF SCOPE
Delivering the game in premium format	Micro transactions
PC and console platform compatibility	Compatibility with mobile and tablet
Platform compatibility testing	Translation to different languages
Informational website and availability on Steam	DLC content
Demo for soft launch	Minigames, other than the main game itself
Testing user’s satisfaction	Online social features within the game, like chat
Ability to both locally and cloud save	Online co-op
Score board, 3-star system	Voice acting
Ability to local Co-op	
Visual novel style written dialogues	

Once the scope is set, user stories can be created. The template used can be found in Chapter 2, it is used to create three user stories:

- As a project owner I want a demo so that there is material for soft launch. Acceptance criteria: The demo should show minimal bugs.
- As a developer I want reusable game assets so that development time can be saved. Acceptance criteria: The assets can be modified easily if needed.
- As a stakeholder I want a budget report alongside the milestone report so that the consistency of the company can be followed. Acceptance criteria: The report requires the budget spent and the estimate of the costs for the next period.

3.1 The chosen management method

Since the project is highly dependent on the creativity on mechanics and level design and is regarded as a smaller company, an agile scrum approach seems to be the most fitting for its completion. Because the game is a puzzle based casual game with little to no direct storyline, the best approach to designing would be a trial error, sprint-based method with the possibility of immediate testing. Because of the game's nature and target audience, one of the main liabilities would be reaching an aesthetically pleasing art style, which could interest young children and possibly adult female casual players. Through Agile Scrum, there would be an opportunity to discover new ideas about mechanics and level design that could possibly improve the game's quality and overall user experience.

As mentioned above, the game's main focuses are level design and art. Therefore, it is crucial to have the ability to immediately discard an idea that does not fit into the game's scope. Although the game's target audience consists of casual players, the game itself should be challenging and interesting.

Considering the game's goals both visuals and gameplay-wise, the delivery of the game would be challenging, but possible for an indie studio. However, indie studios have proven that they are able to deliver projects that compete with the quality of AAA studios, like Ori and the Blind Forest (Mäki 2015).

3.2 Project objectives and tasking

Before the resources can be defined, the objectives must be put into place (Table 2). Based on the nature of the GDC and Cohen & Bustamante (2010), the development team's objectives include:

Table 2: Project objectives and the strategies to achieve them

OBJECTIVES	STRATEGIES
Retention	Visually pleasing game Unpredictable game flow Creating understandable mechanics Small learning curve
Hit even (Gaining the same amount of revenue as the costs of the production)	Approachable game Marketing
Reaching 20 000 players	Crowdfunding Campaign Buying players to market the game
Getting the product shipped in 8 months	Successful project plan and management with an efficient production team Recycling assets
Get funding	Shareholders Governmental support Crowdfunding
100 playable levels	Solid development team

Considering these objectives and the literature research, the anchor point of the concepting process could be regarded as the GDC, which briefly defines the aim the project should take. With the GDC in mind, the development team needs to revisit the core ideas and implement them to a more detailed version, so a Game Design Document (GDD), an Art Design Document (ADD), a Sound Design

Document (SDD) and a Tech Design Document need to be delivered (Cohen & Bustamante 2010).

Since the main objectives are clarified, the main deliverables can be brainstormed. With regards to Cohen & Bustamante (2010) and chapter 2 of this thesis, the main deliverables determine the milestone schedule. These deliverables are the project divided into smaller pieces so that the Build Team can communicate their progress to the publisher. This case, a self-publishing indie company's model is used, however, milestones can be repurposed for the sake of the company simply keeping to their schedule. Major deliverables often depend on outer variables, such as E3; an event organized by Entertainment Software Association for the purpose of introducing upcoming games to the industry and to the customer base (Entertainment Software Association 2019). Considering these deciding factors mentioned in this paragraph, the project's objectives and the literature review, major deliverables should include everything related to the milestone, such as art, the implementation to code so far, all design documents, a walkthrough of the game builds, the changes made since the last milestone and what the next milestone should include. (Cohen & Bustamante 2010.)

3.3 Cost, Time and Resources

In order to be able to provide an estimate of headcount needed, the project's requirements need to be understood. Since the project is heavily mechanics-based, it is safe to assume that a responsible number of programmers are needed and a senior programmer, who has a basic understanding and experience in game design. The next one is the art team, which requires 3D artists, riggers, animators, character and background artists. A small, but incredibly important marketing team would be responsible of building a customer network and providing options in making the game more known.

It is difficult to give an estimation of monetary needs without case studies, but there are several options in achieving support to obtain the needed resources. For example, many indie companies choose the option of crowdfunding, which

also helps building a customer base. For instance, the game Your Royal Gayness has successfully managed to cover their finances by Kickstarter, a crowdfunding website (Harp 2019).

Considering that the game Grassdivers is heavily based on mechanics and 3D art as mentioned before – thus containing tedious work with animation and level design, and testing – the estimated time for an indie studio with 50 personnel could take roughly half a year or a year. This is yet to be proven during the 5th chapter.

List of required resources:

Mechanics

- Level Design
- UX/UI Design
- Implementation to code, Programming
- Testing
- Hardware
- Software

Art

- 3D Character Design and Modelling
- Technical Art
- Asset Design
- 2D Concept Art
- 2D Mapping
- Animation and Rigging
- Environment Design
- Marketing Illustration
- Sound and Music Design
- Visual Effects Design, FX

Marketing

- Marketing Management, QA
- Social Media Management

- Customer Network Management

The chosen engine for the project's smooth development is Unity, which is favored among indie and mobile game studios (Famularo 2018). The following step is to determine the man-month schedule, which helps understanding how many employees the project need on its phases. Regarding Cohen & Bustamante (2010), most of the manpower will be needed during the production phase. As reusing game assets within levels is a goal, the production would be concentrating mostly on level building and testing.

3.4 Stakeholder Identification

According to Portny (2013) a stakeholder list includes people who support the project and are affected by it. Thus, from the Project Owner, through the Development Team to the Customer Base, everyone is a stakeholder (Table 3). Relying on Portny (2013), a stakeholder analysis covers a less broad variety of people and prefers using the term "Audience list", which provides a more in-detail statement of the people involved with the project. Said author also divides Audience list into further categories, such as internal and external audience list, which could possibly prove useful in identifying stakeholders. However, for the sake of this hypothesis and the theoretical nature of this thesis, a stakeholder identification provides an opportunity for future adjustments, while it helps to give an idea about the size of the final project management plan.

Table 3: Stakeholder Identification

STAKEHOLDER NAME	IMPACT ON PROJECT	Project's Impact on Stakeholder	Communication Requirements
Product Owner	Owning the rights to the product Part of the development team	Income	Meetings about the project at hand in-person Scheduling

			Reporting sudden changes
Development Team: • Art Team • Programmer Team	Developing the product	Income Development of skills	Daily scrum Milestone Schedule setup Meetings about the project at hand in-person Scheduling Reporting sudden changes
Marketing	Advertising the game	Income	Milestone schedule
Customer Base	Provide potential playtesting Supporting the game	Enjoying benefits given by the product	Release and updates pre-launch and post-launch
Investor(s)	Supporting the game	Income	Milestone schedule
Platform the game is released on	Providing a platform to build customer network on	Income	Release and updates pre-launch and post-launch

Considering the objectives described above, it is possible to define key stakeholders early on, such as Project Owner, Development Team and Customer Base pictured in Table 3. However, so that the Project Management Plan become realistic, further research is needed. With regards to the literature research and the project's objectives mentioned above, a stakeholder chart is brainstormed, which will be solidified during the project management plan in chapter 5.

3.5 Milestones

As stated in chapter 2, milestones are set of deadlines based on the major deliverables. So, in order to proceed, the major deliverables must be defined. According to Cohen & Bustamante (2010), the milestone schedule is an interchangeable document, regarding unforeseen factors that might change the date of the delivery.

Aalto (2015) explains that what is so challenging in an agile development method is that its stages are nonexistent. Based on said author, typically the major stages of a game development process are:

- Concept
- Prototyping
- Preproduction
- Post-production
- Servicing

However, approval from stakeholders so that the project can continue is necessary. For the sake of this project management plan and hypothesis, certain modifications are done for a more iterative completion (Table 4).

Table 4: Milestone identification

Milestone name	Milestone description
Project planning	Concepting, brainstorming. Iterating.
Project starts	Prototyping. Visioning. Backlog Grooming.
First Prototype	First prototype delivered. Decisions regarding the prototype is made. Preparing for production.
Alpha (Production)	Implementation to code
Code Freeze (Production)	The development team has a clear idea about the main features of the game. Iterating.
Beta (Production)	Content Complete. Demo ready for playtesting.
Code release candidate (Production)	Most of the bugs of the game are addressed, ready for final check.

Release and Post-Production	Game release, project closure.

According to Cohen & Bustamante (2010) during the planning phase, the main concept of the game must be decided. Alpha is the stage, where the code has been partially implemented into the game. The next step is where the code is approved, and no major changes occur to the game anymore, hence the name code freeze. Beta is the stage, where the content is already complete, and the bugs are being addressed and groomed. After approval, the game is ready for release. The milestone schedule is further discussed during chapter 5.

3.6 Risk and SWOT analysis

As mentioned in chapter 2, unforeseen changes can potentially kill a project long before the due date (Cohen & Bustamante 2010). However, having a potential risk analysis can help adjusting to the changes or to keep potential threats in mind so that the project can develop smoothly (Table 5).

Table 5: SWOT Analysis

Strengths (S)	**Weaknesses (W)**
• Fast production • Original idea	• 3D isometric puzzle-strategy game might be confusing • Big crew, might face management issues • New crew, not used together
Opportunities (O)	**Threats (T)**
• Opportunity to discover a slightly different platformer game • Hitting international markets	• Possibility of game not being interesting enough • Players not playing the whole game, quitting and forgetting • Communication issues within the studio • Players not willing to pay for the game

Regarding the nature of the project and the potential size of the studio, the agile method might prove to become a challenge. Considering that this approach removes the responsibility of a manager and divides it between the workers, an unresolved conflict and the tension that it produces due to communication issues might kill the whole project. Resolving the problem of underperforming workers and creating a team that works well together is a crucial part of this project. The major threats might lie within the product itself. If the game's mechanics and art are not appealing enough for the target audience, the company can potentially lose revenue.

The major strength of this project is that the production can develop rather fast, given the number of personnel, which can be compelling to future investors. Considering the fact that it is an original idea being worked on can be appealing to the customer base, it is easier to differ from the other indie games. This project provides a great opportunity to discover a unique but appealing platformer game hence the strong iterative approach. With a game this nature, it might be possible to deliver to not only to the western, but international markets as well.

4 CASE STUDIES OF EXISTING COMPANIES

This chapter consists of case studies of existing companies based on the literature review and articles, analyzing their management methods in order to gain a general understanding of the base strategies used parallel with their product. Along researching, a conclusion is made whether there are any unforeseen miscalculations made during the hypothesis. The companies chosen for this case study are Valve, Ghost Town Games, Supercell and Rovio. The reason for choosing these companies differs and are explained below.

4.1 Valve

Valve Corporation (later referred to as "Valve" or "the company") is a multimillion-dollar company, with projects such as Team Fortress, Dota and Counter-Strike. According to Webster (2017), the CEO's Gabe Newell's net worth is 5.5 billion dollars, owning about half of his company. The reason for choosing this particular

AAA studio as a case study participant is their unique management method, as it is similar to the agile methodology in terms of hierarchy. However, it is stated that Valve's approach is a lot more drastic than the above mentioned. (Roberts 2013.)

During his interview, Yanis Varoufakis implies, that Valve uses a so-called flat management method, where there is no established hierarchy between the employees within the company. Varoufakis explains, that this is called an anarcho-syndicalist approach. The recruiting and firing processes both must be agreed upon by the team; which can often be a difficulty if the team members disagree whether the person being recruited would fit into the company's social standards or not. As for marketing, it is revealed, that Valve relies strongly on online platforms as Steam, hence they already have a strong customer network to entrust the duty of advertising their product through social media. It is important to note, that Valve also owns the rights to Steam, an online marketplace for videogames. (Roberts 2013.)

Another interview with a former employee Jeri Ellsworth reveals that the company's structure "felt a lot like high school" and implies that there actually is a certain hierarchy: "Communication was a problem. There is actually a hidden layer of a powerful management structure in the company." She explained that if someone was uncomfortable with working on a risky project, the employees could just put the responsibility on something else. According to Valve's handbook, if an employee is uncomfortable working with someone, they can just move their chair and desk where they wanted. Workers can also choose what they want to work on. (Warr 2013; Grey 2013.)

The idea works very well on a smaller scale, with a smaller group of people, but not with 300, Ellsworth explains (Grey 2013). However, Valve has been and still is a solid company with a great number of products on the market. However, news sources cite that there is a management issue currently ongoing within the company. (Wilde 2018.)

4.2 Ghost Town Games

Ghost Town Games is an indie company that was founded by two professionals who were previously working at Frontier Developments. The production of the company's first - award-winning - game was done in 18 months, starting in March 2015 and released in August 2016. The reason why Ghost Town Games and their game project Overcooked is so interesting is because the company consisted of two people during the production of their debut. (Dring 2017.)

The game itself is a real-time co-operative puzzle game and is made with the intent of encouraging local multiplayers. According to its developers, Overcooked was a highly experimental project and they are aiming to create more games with the same approach. According to Dring (2017), Ghost Town Games would like to stay small, since this way they can take more creative risks. If they were bigger, they would endanger the livelihood of many by potentially failing a project. Since then, the company has only hired two other employees. (Dring 2018.)

"Seeing people play makes a huge difference because you can see the problems they are having even if they don't realise they're having them." (Dring 2017.)

Taking their unfinished game to conventions for testing early on reveals an iterative approach for their project, hence the studio was chosen for this case study. However, unlike Valve, Ghost Town Games works with a publisher called Team17, this studio helped with their marketing and PR. As the two developers describe, conventions did not help raising their games' popularity. (Dring 2017.) Ghost Town Games has since released on Nintendo Switch, two DLC's and a sequel for Overcooked (Dring 2018).

4.3 Supercell

Supercell OY (later referred to as "Supercell" or "the company") is one of the top successful companies within the industry, with an 810 million dollars profit and a 2-billion-dollar revenue only in 2017 (Graft 2018). The company is well-known for their free-to-play games dominantly for mobile.

Alongside Valve, Supercell's management method is team-oriented. Supercell uses what they call an upside-down management method demonstrated in Figure 7, which gives most of the responsibility to the development team and less to the management and the CEO (Graft 2018); an incredibly similar approach to the one Valve's former employees described. Both companies are almost religiously protective of their culture within the team – stating that the quality of their products lies within them. It is also considerable, that Supercell's development team consists of a handful of highly skilled individuals with years of professional experience within the industry, like that of Ghost Town Games'. (Mykkänen 2014.)

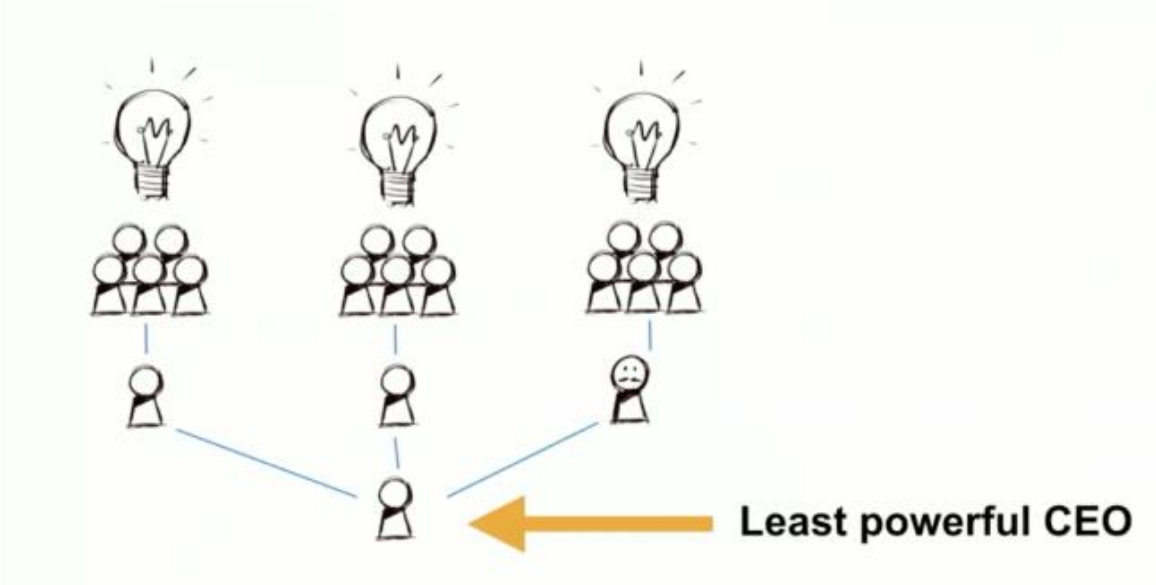

Figure 7: The Supercell Model (UBM 2018.)

Unlike many other companies, Supercell allowed its workers to sell off an equal amount of stock along the company's investors. This occurrence is highly unusual within the industry, but according to Mykkänen (2014), it ensured the strength of the company and the faith of their employees in its success and the ability to take risks. This is also the reason why the employees are so invested in the company's success.

As stated, Supercell has a solid team to rely on in terms of development. However, while starting out, the company needed investors. According to the

article released on Aalto University's website, convincing investors to invest in their company took more than just their product. It is stated, that investors aim to support a team that is well-balanced, attentive and develops from their mistakes. (Mykkänen 2014.)

Supercell's agile approach to its management techniques allowed them to break into not just the Western market, but to the international markets as well. They were the first and only western company whose game rated top ten in the Japanese market in 2013. (Sarle 2013.)

4.4 Rovio

Unlike the four studios mentioned above, Rovio Entertainment Corporation ("Rovio" or "the company") is game-oriented (Rovio Entertainment Corporation 2019). The company is famous for its globally known Angry Birds franchise, and has collaborated with companies like NASA, Disney and Hasbro (Weverberg 2012). The company also is currently in association with Sony Pictures to create their second animated movie (Rovio Entertainment Corporation 2018).

Rovio is also known for its brand licensing, which was 11% of their revenue in 2018, as seen in Figure 8. Their brand licensing includes animated series and movies, consumer products, activity parks and live events. It is mentioned in the report, that the revenue of their licensing dropped in 2018, compared to their release of the first Angry Birds Movie in 2017. Acknowledging the fact that Rovio is a globally-known company, brand licensing can still be considered a significant source of income for the corporation. (Rovio Entertainment Corporation 2019.)

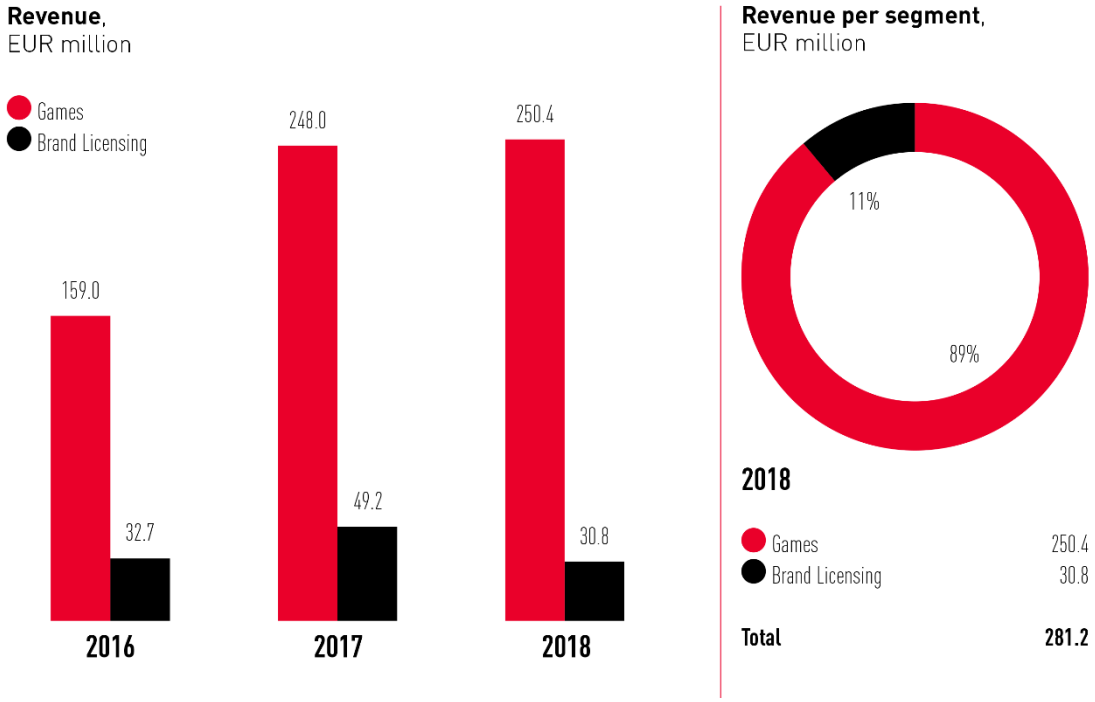

Figure 8. Rovio's revenue chart from their annual report 2018 (Rovio Entertainment Corporation. 2019.)

Although the company seem to have taken an iterative approach in terms of game design, the fact that Rovio is product-oriented suggests a more classical management method compared to Supercell. Unlike Supercell, Rovio takes a safe and steady approach to releasing games. Due to the company's size, its strategy is logical and highly analytic. The corporation has also succeeded to create a balanced release schedule, which ensures substantial income for the company. In their annual report, the company states, that the biggest impact on corporate decision making happens during their General Meeting of Shareholders (Rovio Entertainment Corporation 2019.)

4.5 Conclusion of Case Studies

In this conclusion, the management choice for the GDD is considered. Recognizing the possibilities presented in these studies, the management methods of Ghost Town Games and Supercell proves more suitable than the rest. While in Supercell there is little to no management, the developers within

Ghost Town Games are the managers themselves. Since the nature of the hypothetical game depends on an iterative and highly creative workflow, it is important that creative freedom and the possibility of risk-taking is taken into consideration.

If the project embraces a risk-taking environment, it means that the development team must be small but solid, with experienced and skilled individuals who also have a sense of business. So that creative freedom can prevail within the company, the management needs to be minimal, but still existent. As seen with Valve, it is important to have a deciding factor whenever the development team faces doubts. For the timely release of the project, killing of an idea that does not work must be immediate, for that communication proves to be a key feature. Since the product is highly experimental, user-testing on conventions would prove useful, and the popularity of the game would not suffer either (see chapter 4.2).

With a small team, a strategic decision would be placing the responsibilities of marketing to a trusted publisher that ensures the safety of the product's release. Also, according to this chapter, finding investors is a crucial part of game development.

5 GAME DESIGN CANVAS AND PROJECT MANAGEMENT PLAN

In this management plan, the aim is to create a simple and understandable plan structure based on the research, the hypothesis and the case studies. In short, a management method should be able to answer these questions: the "What", the "When" and the "How" and has been categorized as such.

5.1 The WHAT

5.1.1 Executive Summary

GrassDivers is an isometric 3D puzzle game which includes real-time gameplay with pause and is planned for PC with a controller device or console. The puzzles work in an “avalanche”-like setting: once set off, a chain reaction happens.

The game is set in a visually pleasing, sunny, cutesy environment, where the main objective is to get out of the tall grass and/or stop the monsters lurking in the tall grass from eating the player. The game concentrates mostly on gameplay, with limited narrative elements. There is a possibility to create game modes depending on difficulty, however it would not affect the difficulty of the puzzles themselves. The game would have two player modes: single player and two player co-operative gameplay. The goal of this game is that the players would not pass easily and return to the completion of the levels. The secondary aim of this project is to set up a game that could possibly develop into a franchise. (Figure 9; Appendix 1.)

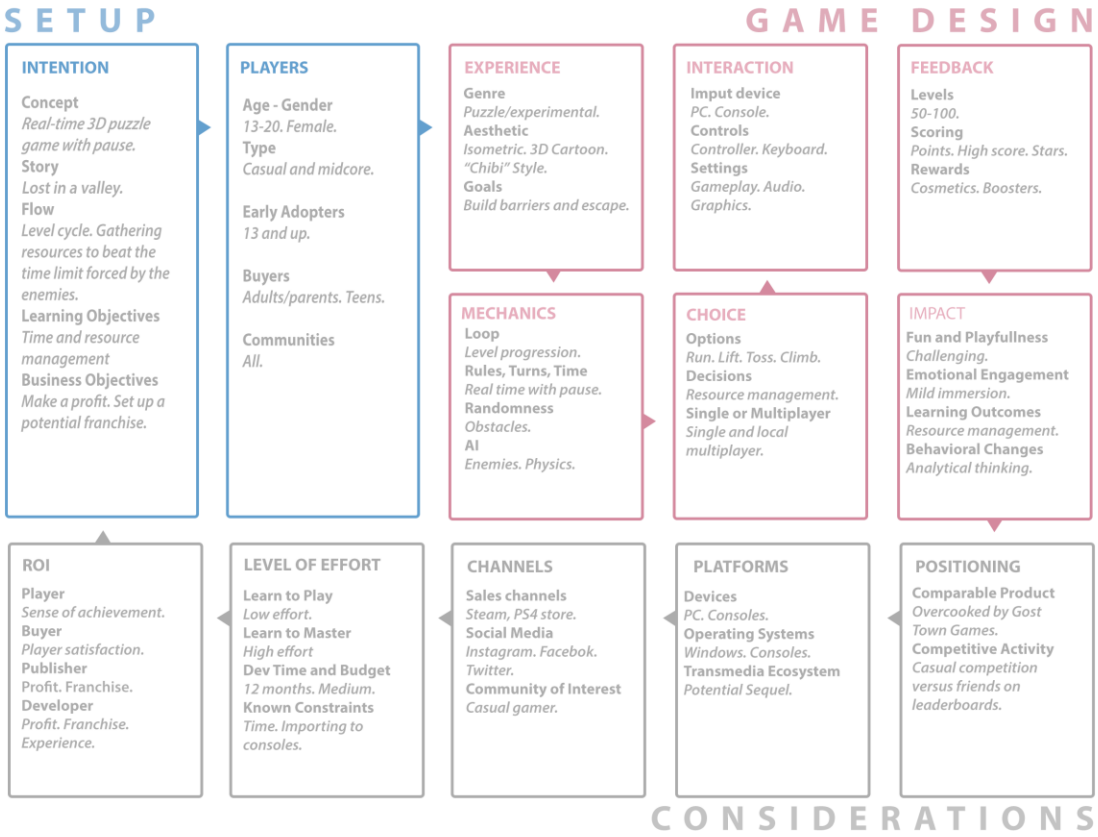

Figure 9: GDC Flowchart (Carey 2015)

The game's mechanics need to be controller-friendly, but manageable with a keyboard as well. This way, the game can be fitted for console or Nintendo Switch, like Ghost Town Games' project, Overcooked did (see chapter 4), would an opportunity arise. The game's target audience consists of 13-20-year-old, mostly female individuals; as stated by Yee (2016), the three main interests of female players consist of: completion, fantasy and design. A more detailed market research is needed considering these different age groups, however it is outside of the scope of this thesis.

5.1.2 Project Objectives, Deliverables and Work Activities

Most of the project's objectives are already established within the hypothesis in chapter 3. However, during this chapter it is reviewed further in detail. In games, retention aka having players return to interact with the product is essential (Table 6). Simply put, the more people are invested in the game, the more likely that

potential customers get interested in buying the game. Since the monetization feature is decided to be premium (Table 6), same as mentioned in the hypothesis, it is important to stay flexible with advertisement. Premium monetization means an upfront, singular payment for the full game (Nurminen 2013).

Table 6: Project objectives and the strategies to achieve them - Modified

OBJECTIVES	STRATEGIES
Retention	Visually pleasing game Unpredictable game flow Creating understandable mechanics Small learning curve
Hit even (Gaining the same amount of revenue as the costs of the production)	Approachable game Marketing
Reaching 100 000 players	Publisher Buying players to market the game
Getting the product shipped in 12 months	Successful project plan and management with an efficient production team Recycling assets
Get funding	Shareholders, Investors
100 playable levels	Solid development team

Since in Finland it is rather difficult and costly to properly utilize crowdfunding, (Hemmilä 2012) the steadier choice to cover the budget of the game is through investors and a potential publisher. It is important, that the publisher can review the game months before its initial release, so possible iterations can be delivered if necessary (Table 7).

Table 7: Project's deliverables

Deliverable	Recipient(s)	Delivery date	Delivery Method
The game in a premium format	Publisher	Two months before release	Online and hard copy

Product website with information and updates	Posh Alpaca Ltd.	6 months before release	Outsourcing

The project's scope has stayed almost identical to the one shown in the hypothesis, as shown in Table 8. As mentioned in chapter 3, the goal is still to deliver the game that is compatible with different platforms, concentrating on PC and PS4. While translating the game and voice acting is out of the project's scope, vocal sound effects ("HMM" or "HUH") are intended to be a part of the game's design. A big part of the project depends on testing, and that needs to be paid special attention to. It's essential that potential customers do not find the game boring or uninteresting.

Table 8: Project's Scope

ACTIVITIES IN SCOPE	ACTIVITIES OUT OF SCOPE
Delivering the game in premium format	Micro transactions
PC and console platform compatibility	Compatibility with Mobile and tablet
Platform compatibility testing	Translation to different languages
Informational website and availability on Steam	DLC content
Demo for Testing user's satisfaction (testing in conventions)	Minigames, other than the main game itself
Ability to both locally and cloud save	Online chat feature
Score board, 3-star system	Online social features within the game, like chat
Ability to local Co-op	Online co-op
Visual novel style written dialogues	Voice acting, Localization

The dialogues serve more of a tutorial's purpose, where the level's target is revealed, and some key puzzle elements are mentioned. Through dialogues, the player can find tips, if stuck. Features, such as online multiplayer would take too

much time and potentially burn out the programmers, however, it is a good option for a sequel.

5.2 The WHEN

The time period of the project would be approximately 12 months; regarding Cohen & Bustamante (2010) mentioned in chapter 2, the additional 13 % would be roughly three months, overall 15. If the project was to begin on 1 September 2019, the project's milestone schedule would look like this:

Table 9: Milestone schedule with dates

Estimated Delivery Date	Milestone name	Milestone description
01.09.2019	Project planning	Concepting, brainstorming. Iterating.
01.11.2019	Project starts	Prototyping. Visioning. Backlog Grooming.
24.01.2020	First Prototype	First prototype delivered. Decisions regarding the prototype is made. Preparing for production.
13.05.2020	Alpha (Production)	Implementation to code.
06.06.2020	Code Freeze (Production)	The development team has a clear idea about the main features of the game. Iterating.
06.08.2020	Beta (Production)	Content Complete. Demo ready for playtesting.
10.10.2020	Code release candidate (Production)	Most of the bugs of the game are addressed, ready for final check.
24.12.2020	Release and Post-Production	Game release, project closure.

The project's schedule was given one more month due to the fact, that a Christmas release might raise awareness for the product. Since the project's

management method is agile, the ones with the responsibility of timely release are both the development team and the producer. The producer merely serves as an anchor point, a communicator between the publisher and the development team. Each team member uses an online checkboard to track their progress and discusses it with the ones involved with the task. The time management strictly relies on the decisions of the development team, which members must be capable of having a clear idea what their own workflow is under pressure.

5.3 The HOW

5.3.1 Project Roles, Responsibilities and Stakeholders

Since this project management plan is about a hypothetical company, the roles of the employees are referred to instead of names, as seen in Table 10. As the management method is agile, it raises the question whether it would suit a ten-person development team. However, if there is any unforeseen change in staff, such as an illness, the whole production can face a meltdown. Therefore, it is important that the employees have a wider set of skill so they can fill in different roles if needed, or to possibly outsource.

Table 10: Roles and Responsibilities

Role	Responsibilities
Project owner	Communication between the publisher and the development team, Acquisition
Project Sponsor	Funding the project
Producer	Communication between the publisher and the development team (Status Reports), Ensuring the project’s timely release, Acquisition
Scrum Master	Paying attention to the needs of the production team, Acquisition, Maintaning the project’s scope
Senior Game Designer	Game Design, Level Design, Testing,

Level Designer	Level Design, Testing
3D Artist	3D Character Design and Modelling
Technical Artist	Technical Art, Visual Effects Design, FX
Junior Designer	Asset Design, Visual Effects Design, FX
Concept artist	2D Concept Art, 2D Mapping, Marketing illustration, Environment Design
UI/UX Designer	UX/UI Design
3D Animator	Animation and Rigging, 3D Modelling
Environment Artist	Environment Design
Sound Designer	Sound and music design
Programmer #1	Programming, testing
Programmer #2	Programming, testing
QA Engineer	Testing

One of the important factors to mention is the responsibility of decision making about talent acquisition. During chapter 4, it has been discussed that certain studios handle the hiring of employees themselves, however this requires a solid balance between the members of the development team. Since the project is only about one year long, it is important note that this can potentially exhaust or overwhelm the employees already working on different roles. Whenever a staff shortage, and a need for hiring occurs, the requirements should be discussed within the company, but ultimately, it should be the producer's, scrum master's and product owner's responsibility to decide. Similarly, underperforming workers should face a one-on one meeting with the scrum master, producer, or a group

meeting with the development team. In agile, the employees should be able to request a change in the management; such as the roles of the scrum master or the producer.

Another important factor to mention is the stakeholders and the methods to acquire funding for the game (Table 11).

Table 11: Project Stakeholders

STAKEHOLDER NAME	IMPACT ON PROJECT	Project's Impact on Stakeholder	Communication Requirements
Publisher	Marketing and PR	Income	Milestone statement, Weekly reports
Product Owner	Supporting the project, Owning the rights to the product, Part of the Development Team	Income	Milestone statement, Weekly report, Meetings about the project at hand in-person, scheduling, Reporting sudden changes
Investor 1	Financial Support	Investment, Income	Milestone statement
Investor 2	Financial Support	Investment, Income	Milestone statement
Investor 3	Financial Support	Investment, Income	Milestone statement
Development Team	Developing the product, Timely Completion	Income, Development of skills	Milestone statement, Weekly report

Platform the game is released on	Providing a platform to build customer network on	Income, Revenue	Release and updates pre-launch and post-launch
Customer Base	Provide potential playtesting Supporting the game	Enjoying benefits given by the product	Release and updates pre-launch and post-launch, Customer support

In order to convince potential investors about the company's trustworthiness, a potential playable or demo must be done and introduced in a potential conference.

5.3.2 Project Cost-, Quality- and Human Resource Management

Since the decision of applying to a publisher has been made, it is essential to have a milestone schedule set up to provide the publisher with marketing material. An average employee's payment in Finland is 2000€ to 3500€ (rounded), according to Trading Economics (2019). As stated in the same source, an employee's paycheck per month in a senior position is roughly ("High Skilled") 4000€, and a junior's is 2000€ ("Low Skilled"). Plus, outsourcing and hardware. For a crew consisting of roughly ten or more people, a 15-month salary would gross about 600 000€. Since the decision has been made to use the help of a publisher, which would help with the marketing budget wise as well. Overall, a vague estimate for budget could potentially reach 900 000€. As for quality measures, it is important to minimize the amount of errors a player can face during the game, as described in Table 12.

Table 12: Project Quality management

Quality Measure	Quality Measure Goal	Baseline
No Bugs		Minimal bugs released into the game

No major crashes	All levels are clear of crashes	Minimal number of players get stuck due to engine difficulties
Challenging game	Most of the levels are played multiple times	From level 5 and up, players try to complete the levels more than once

Since the staff is relatively small - not counting the outsourcing – the headcount needs to be quite consistent. For planning, there certainly is less need of personnel, than production, but hence the agile features of this project, it is crucial that the brainstormed ideas could be developed and tested immediately. However, the personnel are acquired to be able to fit in with different roles.

5.3.3 Risk management, Reporting and Communication

While most of the risk analysis is done already in chapter 3, one of the greatest risks are the project being a “one-hit wonder” shown in Table 13. This means that the company produces this one game that – in theory– succeeds, and the following releases are inconsistent. This is unsuitable for the investors as discussed in chapter 4. In order to keep stakeholders satisfied, the development team needs to ensure the steady development of the project and a possible sequel – or a new and different project–, if the game succeeds. A new team can be proven hard to trust, so it would be very tactical for the development team to include a highly regarded senior throughout the whole development process.

While a 3D puzzle game might look interesting, it can potentially become overwhelming and confusing. One of the greatest strengths and both weakness of this project is the originality of the idea. This, if done right, could provide a success like Overcooked (see chapter 5), but if it fails to deliver an exciting gameplay, the whole product can become uninteresting. As seen in case studies, professionals with former experience in the industry work with agile, and the company chooses oftentimes very specific people to suit the deliverable tasks. However, juniors might possibly be able to deliver similarly, given the possibility of instant feedback and testing. Also, if the crew is not used to working together,

possibilities to strengthen the culture within the company is needed, like activities outside of work pressure attended voluntarily. In chapter 4, it is stated that Supercell was the first one to hit international markets, including the Asian ones. Regarding this fact, it is very possible that other companies are also trying to find a gap in the markets to gain more revenue. This could prove as a great opportunity for the game to harvest income, if the timing is well-positioned.

Table 13: The final SWOT analysis

Strengths (S)	**Weaknesses (W)**
• Possibility of fast production • Original idea	• 3D isometric puzzle-strategy game might be confusing • Small Crew, might burnout • Original idea • Agile method with juniors • Constant development of industry standards • New crew, not used together
Opportunities (O)	**Threats (T)**
• Opportunity to discover a slightly different platformer game • Hitting international markets	• Possibility of game not being interesting enough • Players not playing the whole game, quitting and forgetting • Communication issues • Unfitting crew • ” A one-hit wonder” • Technology

This raises the issues for timing and communication. Especially in an iterative process such as agile, it is essential to have constant information flow between the development team and the Scrum Master (see Table 14), who can forward the information to the project owner and the producer. The publisher team gets informed about the progress of the project by the milestone deliverables (see chapter 2) and immediately gets informed whenever a delay occurs. However, it is important to remember that this methodology is agile, which means that immediate information flow is required whenever necessary, but too many scheduled meetings can potentially ruin the workflow of the development team.

Table 14: Project Reporting and Communication

Type of Communication	Communication Schedule	Communication Mechanism	Initiator	Recipient
Daily Scrum	Every day at 10.00-10.15 A.M.	Team Meeting	Scrum Master	Development Team
Status Report	Every Friday	Team Meeting	Development Team	Producer, Product Owner
Information flow	Instantaneous, Spontaneous	Slack, online group chat	Anyone	Anyone
Milestone delivery	Every 2-3 months	E-mail	Producer	Publisher
Feedback and updates	Instantaneous, Spontaneous (Daily)	E-mail, online chat	Publisher	Development Team

The Daily Scrum in this case is used as a check-up on the development team's progress, but if the team decides against it, the frequency of these meet-ups can be changed. During this meeting, the team members report about what they have done and will be working on that day.

5.4 Project Close Out

After the deliverables are accepted and the project objectives are met for the release, the game is set to launch; post-production and servicing starts. Based on the success of the project, the company continues to brainstorm new ideas to potentially earn new investors, but mainly to keep the trust of the ones already part of the project. The company's aim is to stay agile and to keep its efficient development team for as long as possible.

While servicing is still ongoing, the company must keep a meeting that overviews the project. During this conference, potential risks and mistakes must be addressed that occurred during the team's first project. This meeting is also a good opportunity to discuss the company's future and discuss the aim it is taking

with its next project. This is especially important for the development team, since in the agile methodology, any member can make a difference.

If the publisher is content with the results of this collaboration, this partnership shall continue in the future, if the development team is able to enjoy the treasured creative freedom it established.

6 CONCLUSION

The outcome of this thesis was more unexpected than it was originally assumed. Creating a hypothesis based solely on a literature review was challenging but rewarding of essential information to properly complete this thesis. As stated in the introduction, there is little information about the management method of companies released, and the literature review helped to fill in what was left unanswered by the case studies. However, the case studies proved to be an anchor part of this thesis, since it proved how differently companies apply the iterative management approach to their projects.

Ultimately, iterative management methodologies have been used in the past and will most likely continue to be favored in the future. However, if executed poorly, the agile methodology can cause a rather destructing atmosphere within a company, judging by the case studies. While Supercell has succeeded marvelously with the agile management method, its success also lies within the size of the company. A giant like Valve, who uses a similar management method has been reportedly suffering from not being able to have a decision-making power (see chapter 4), since the company does not want to sacrifice the treasured culture it established. Considering these two companies, it would be unfair to claim that agile is going to become a norm. Instead, a modified version to suit one’s company standards would prove more effective. Although agile is likely not becoming the company’s standard, the waterfall method will most likely not make a comeback either. Waterfall, being the more classical method leaves little to no possibilities for iteration which oftentimes proves to be destructive within a creative project. This method is said to be widely hated throughout the industry. (See chapter 2.)

In the hypothesis, the core belief was that for a project to succeed, self-publishing is essential. However, it would have taken too many resources and proved to be overwhelming for a small company in the long run. Concentrating on the product creates better results and the objective of this hypothetical company was to create a way to develop a unique game that also sells.

One of the challenges of this thesis was creating a clear and understandable Project Management Plan with the agile scrum methodology in mind, which needed to show in the structure of the plan as well. As described in this thesis, agile removes most of the hierarchy within the development team, so it was essential that creative freedom was not limited. However, since the game is delivered through a potential publisher, a minimal amount of management is a must. In conclusion, the objectives of the project were successfully met and hopefully can prove useful to those trying to understand the gaming industry better.

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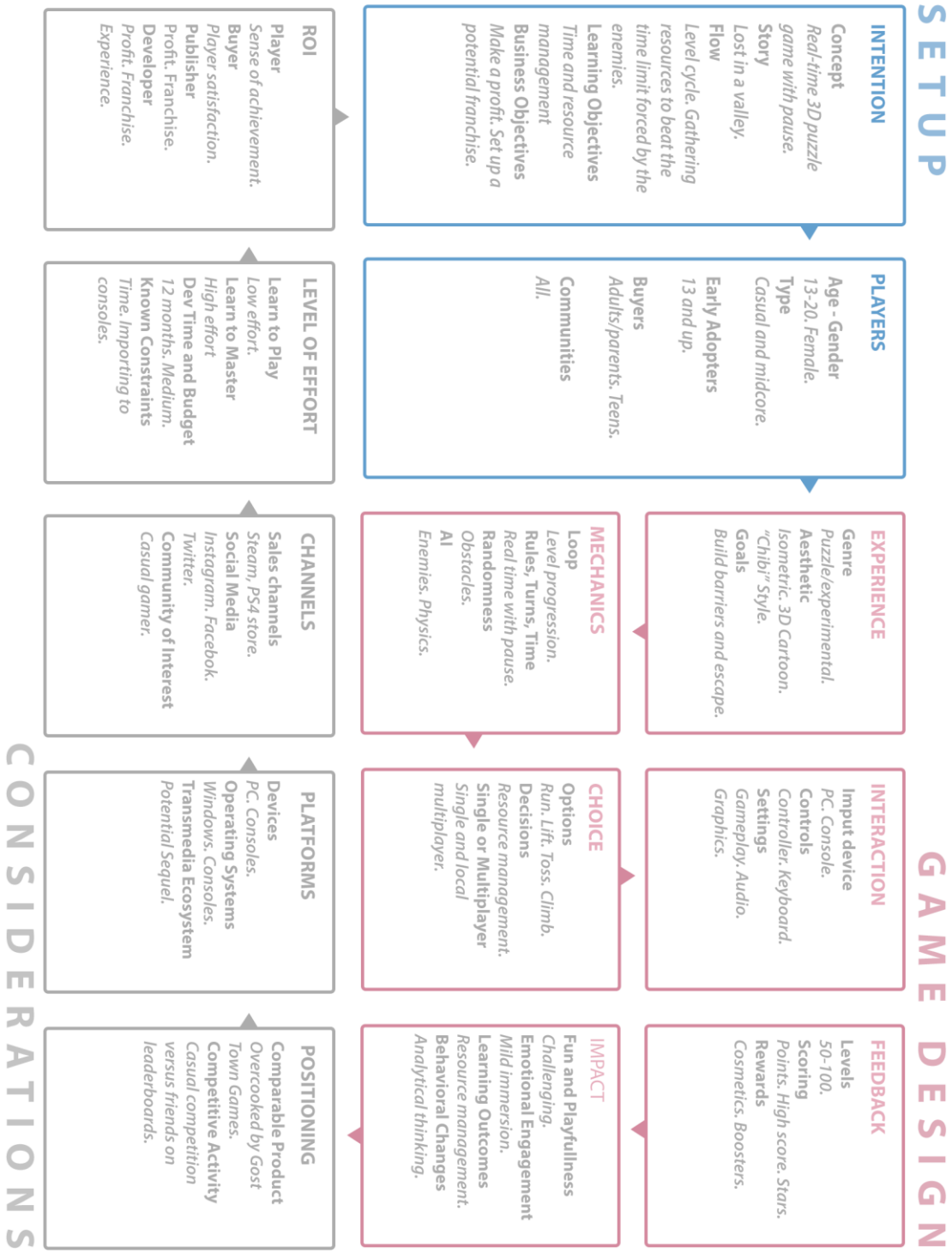
Figure 9: GDC Flowchart (Carey 2015). Kecskes, Zs. 1 April 2019. Altered from: Carey, R-A. 2015. Game Design Canvas. Richard Carey Digital Media LLC. WWW Document. Available at: https://www.slideshare.net/SeriousGamesAssoc/richard-a-carey-game-design-canvas [Accessed 4 April 2019].

LISTS OF TABLES

Appendix 1

Game Design Canvas



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