



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH
Centre de la Imatge i la Tecnologia Multimèdia

Beezy: A Gamified Project Management Tool

Paula Hitz

Director: Joan Arnedo Moreno

Degree: Video Game Design and Development

Course: 2022-23

University: UPC (CITM)

Index

| | |
|--------------------------------------|-----------|
| Summary | 6 |
| Keywords | 7 |
| Index of Tables | 7 |
| Index of Figures | 8 |
| Glossary | 12 |
| 1. Introduction | 13 |
| 1.1. Motivation | 13 |
| 1.2. Problem Formulation | 14 |
| 1.3. General Objectives | 15 |
| 1.4. Specific Objectives | 15 |
| 1.4.1. Project Management Tool | 15 |
| 1.4.3. The Game: HoneyRush! | 16 |
| 1.4.2. The Avatar: Beebo | 16 |
| 1.4.4. The Study | 17 |
| 1.6. Project Scope | 17 |
| 2. State of the Art | 18 |
| 2.1. Project Management | 18 |
| 2.1.1. History of Project Management | 18 |
| 2.1.2. Methodologies | 21 |
| Agile | 21 |
| Scrum | 22 |
| Kanban | 23 |
| Waterfall | 24 |
| Lean | 25 |
| PRINCE2 | 26 |
| PMBOK | 28 |
| 2.1.3. Tools | 30 |
| Jira | 30 |
| Trello | 32 |
| Asana | 33 |
| HacknPlan | 34 |
| 2.2. Gamification | 35 |
| 2.2.1. Applications and Examples | 36 |
| Education | 36 |
| Health and Fitness | 38 |
| Productivity | 40 |
| 2.2.3. Benefits and Drawbacks | 42 |
| 2.2.4. Gamification Elements | 42 |

| | |
|---------------------------------------|------------|
| 2.2.5. Interactive Storytelling Games | 50 |
| Social Deduction Games | 50 |
| Procedural Narrative | 51 |
| 2.4. Market Study | 52 |
| 3. Project Management | 55 |
| 3.1. Tools and Procedure | 55 |
| 3.1.1. Gantt | 55 |
| 3.1.2. JIRA | 60 |
| 3.2. Validation Tools | 61 |
| 3.1. SWOT Analysis | 62 |
| 3.2. Risks & Contingency Plan | 63 |
| 3.3. Initial Cost Analysis | 64 |
| 4. Methodology | 67 |
| 5. Project Development | 70 |
| 5.1. Hypothesize | 70 |
| 5.1.1. MVP Canvas | 71 |
| 5.1.2. Product Brief | 77 |
| 5.2. Empathize | 79 |
| 5.2.1. Superfan Screener | 80 |
| 5.2.2. Speed Interviews | 89 |
| 5.2.3. Job Stories | 93 |
| 5.3. Design | 95 |
| 5.3.1. Beezy | 95 |
| The PMT | 98 |
| HoneyRush! | 101 |
| Beebo | 121 |
| 5.3.2. Mastery Path | 128 |
| 5.3.3. Learning Loop | 144 |
| 5.3.4. Social Action Matrix | 148 |
| 6. Project Validation | 151 |
| 6.1. Playtest | 151 |
| 6.1.1. Prototype | 152 |
| 6.1.2. Testing | 156 |
| 7. Conclusions | 169 |
| 7.1. Achieved Objectives | 169 |
| 7.2. Future Work | 170 |
| 7.2.1. Amy Jo Kim's Validate | 170 |
| 7.2.2. Balancing | 171 |
| 7.2.3. New Features | 171 |
| 7.3. Final Words | 172 |
| 8. Bibliography | 173 |
| 9. Appendices | 177 |

| | |
|---|-----|
| 9.1. Appendix 1: Speed Interviews | 177 |
| 9.2. Appendix 2: Playtesting Presentation | 182 |
| 9.3. Appendix 3: Warm-up Interview | 193 |
| 9.4. Appendix 4: Post-playtesting Interview | 197 |
| 9.5. Appendix 5: Infographic | 206 |

Summary

In today's fast-paced business world, companies struggle to manage their projects effectively without suffering the negative effects of excessive workloads and deadline pressures. In order for teams to effectively coordinate their efforts and monitor their progress towards achieving their goals or objectives, project management is essential for any company. However, burnout is still a common problem among employees, which lowers efficiency, morale, and productivity. Businesses must come up with creative and innovative solutions to sustain employee motivation and engagement, while still maintaining their projects efficiently and successfully, as well as incentivizing team building, as it helps create a sense of unity and common purpose among team members.

This university thesis embarks on the journey of designing Beezy, a gamified project management tool, following a methodology of one of the most famous authors in the field, Amy Jo Kim. Beezy's design aims to transform the project management landscape by incorporating elements of gamification to help motivate and increase team collaboration, ultimately offering a fresh and engaging approach to project management.

After setting the stage for the project by identifying the motivations that sparked this idea, as well as articulating the problem, the objectives for this project, and the project's scope, an in-depth study of the relevant topics is made. Located within the State of the Art, this study delves deeply into project management and gamification, providing the essential foundation to understand the project's full potential and capabilities.

Beezy is made up of three main components: a project management tool, an immersive social deduction game called HoneyRush!, and a friendly customizable pet companion, Beebo. These elements contribute to enhancing employee morale, fostering engagement, and increasing overall productivity and efficiency.

Playtesting and validation plays a crucial role in ensuring Beezy's usability and effectiveness. In the thesis's final stages, playtesting and interviews offer valuable insights that helped validate the project's viability.

In summary, Beezy represents an innovative approach to bridging project management and gamification, with the intention of transforming workplace dynamics, enhancing team collaboration, and increasing job satisfaction. It embodies innovation and the future of work, assuring a shift toward more effective and engaging project management practices.

Keywords

Project management, agile, gamification, game design, social deduction games, procedural narrative, fun.

Index of Tables

| | |
|---|---------|
| Table 2.1: Gamified PMT comparison..... | Pg. 53 |
| Table 3.1: Gantt chart (1st iteration)..... | Pg. 58 |
| Table 3.2: Updated Gantt chart..... | Pg. 59 |
| Table 3.3: SWOT analysis..... | Pg. 62 |
| Table 3.4: Risk and contingency analysis..... | Pg. 63 |
| Table 3.5: Cost for each milestone..... | Pg. 64 |
| Table 3.6: Cost analysis..... | Pg. 65 |
| Table 3.7: Updated cost for each milestone..... | Pg. 66 |
| Table 3.8: Updated cost analysis..... | Pg. 66 |
| Table 5.1: Unique product vs extension..... | Pg. 74 |
| Table 5.2: HoneyRush! player states..... | Pg. 116 |
| Table 5.3: HoneyRush! bee cards..... | Pg. 118 |
| Table 5.4: HoneyRush! wasp cards..... | Pg. 120 |
| Table 5.5: Beebo's needs..... | Pg. 122 |
| Table 5.6: Beezy's gamification elements..... | Pg. 141 |

Index of Figures

| | |
|---|--------|
| Figure 2.1: Gantt chart example..... | Pg. 19 |
| Figure 2.2: Agile methodology flow..... | Pg. 21 |
| Figure 2.3: Scrum process..... | Pg. 22 |
| Figure 2.4: Kanban board..... | Pg. 23 |
| Figure 2.5: Waterfall methodology steps..... | Pg. 24 |
| Figure 2.6: Lean Value Stream Map..... | Pg. 25 |
| Figure 2.7: PRINCE2 processes..... | Pg. 27 |
| Figure 2.8: PMBOK knowledge areas..... | Pg. 29 |
| Figure 2.9: Jira dashboard..... | Pg. 31 |
| Figure 2.10: Trello dashboard..... | Pg. 32 |
| Figure 2.11: Asana dashboard..... | Pg. 33 |
| Figure 2.12: HacknPlan dashboard..... | Pg. 34 |
| Figure 2.13: Duolingo interface..... | Pg. 37 |
| Figure 2.14: Classcraft interface..... | Pg. 38 |
| Figure 2.15: Zombie, Run! interface..... | Pg. 39 |
| Figure 2.16: Nerd Fitness Journey interface..... | Pg. 40 |
| Figure 2.17: Level Up Life interface..... | Pg. 41 |
| Figure 2.18: Habitica interface..... | Pg. 41 |
| Figure 2.19: Periodic table of gamification elements..... | Pg. 43 |
| Figure 2.20: Level Up Life points..... | Pg. 44 |
| Figure 2.21: Duolingo levels..... | Pg. 45 |
| Figure 2.22: Fastic levels..... | Pg. 45 |
| Figure 2.23: Khan Academy badges..... | Pg. 46 |
| Figure 2.24: Kahoot leaderboards..... | Pg. 47 |
| Figure 2.25: Fitbit challenges..... | Pg. 47 |
| Figure 2.26: Starbucks rewards..... | Pg. 48 |
| Figure 2.27: Waze avatars..... | Pg. 49 |
| Figure 2.28: Habitica avatars..... | Pg. 49 |
| Figure 2.29: Among Us..... | Pg. 50 |
| Figure 2.30: BANG!..... | Pg. 51 |

| | |
|---|---------|
| Figure 2.31: Asana gamification elements..... | Pg. 53 |
| Figure 2.32: Atlassian badges..... | Pg. 53 |
| Figure 3.1: Jira planification..... | Pg. 60 |
| Figure 4.1: <i>Game Thinking</i> methodology..... | Pg. 67 |
| Figure 5.1: MVP Canvas template..... | Pg. 71 |
| Figure 5.2: Beezy MVP Canvas..... | Pg. 72 |
| Figure 5.3: Superfan funnel..... | Pg. 78 |
| Figure 5.4: Informal recruiting message..... | Pg. 80 |
| Figure 5.5: Recruiting message..... | Pg. 81 |
| Figure 5.6: Age range interview result..... | Pg. 82 |
| Figure 5.7: Gaming frequency interview result..... | Pg. 84 |
| Figure 5.8: Job satisfaction interview result..... | Pg. 84 |
| Figure 5.9: Job satisfaction graph..... | Pg. 85 |
| Figure 5.10: Gamification interview result..... | Pg. 86 |
| Figure 5.11: Gamification and motivation pie chart..... | Pg. 87 |
| Figure 5.12: Team building interview result..... | Pg. 87 |
| Figure 5.13: Team building activities pie chart..... | Pg. 88 |
| Figure 5.14: Screener follow-up letter..... | Pg. 90 |
| Figure 5.15: Job story template..... | Pg. 93 |
| Figure 5.16: Beezy job story 1..... | Pg. 93 |
| Figure 5.17: Beezy job story 2..... | Pg. 94 |
| Figure 5.18: Beezy landing page..... | Pg. 96 |
| Figure 5.19: Beezy login screen..... | Pg. 96 |
| Figure 5.20: Employee sheet..... | Pg. 97 |
| Figure 5.21: Beezy Board..... | Pg. 99 |
| Figure 5.22: Beezy Backlog..... | Pg. 100 |
| Figure 5.23: Beezy Issues..... | Pg. 101 |
| Figure 5.24: HoneyRush!..... | Pg. 103 |
| Figure 5.25: HoneyRush! player list..... | Pg. 104 |
| Figure 5.26: HoneyRush! player..... | Pg. 104 |
| Figure 5.27: HoneyRush! Story Fragment pad..... | Pg. 105 |
| Figure 5.28: HoneyRush! Story Modifier..... | Pg. 107 |

| | |
|---|---------|
| Figure 5.29: HoneyRush! hive..... | Pg. 107 |
| Figure 5.30: HoneyRush! nodes..... | Pg. 107 |
| Figure 5.31: HoneyRush! diary/chat..... | Pg. 108 |
| Figure 5.32: HoneyRush! cards..... | Pg. 109 |
| Figure 5.33: HoneyRush! Nectar..... | Pg. 109 |
| Figure 5.34: HoneyRush! phases..... | Pg. 110 |
| Figure 5.35: HoneyRush! voting screen..... | Pg. 110 |
| Figure 5.36: HoneyRush! reroll..... | Pg. 114 |
| Figure 5.37: HoneyRush! redraw..... | Pg. 115 |
| Figure 5.38: Beebo..... | Pg. 121 |
| Figure 5.39: Beebo's needs menu..... | Pg. 123 |
| Figure 5.40: Beebo's needs..... | Pg. 123 |
| Figure 5.41: Beebo's store..... | Pg. 124 |
| Figure 5.42: Beebo's inventory..... | Pg. 124 |
| Figure 5.43: Beebo's wardrobe icon..... | Pg. 125 |
| Figure 5.44: Beebo's wardrobe menu..... | Pg. 125 |
| Figure 5.45: Beebo's customization items..... | Pg. 127 |
| Figure 5.46: Mastery path..... | Pg. 129 |
| Figure 5.47: Discovery story template..... | Pg. 130 |
| Figure 5.48: Beezy discovery story 1..... | Pg. 130 |
| Figure 5.49: Beezy discovery story 2..... | Pg. 130 |
| Figure 5.50: Onboarding story template..... | Pg. 131 |
| Figure 5.51: Beezy onboarding story 1..... | Pg. 132 |
| Figure 5.52: Beezy onboarding story 2..... | Pg. 132 |
| Figure 5.53: Habit story template..... | Pg. 134 |
| Figure 5.54: Beezy habit story 1..... | Pg. 134 |
| Figure 5.55: Beezy habit story 2..... | Pg. 134 |
| Figure 5.56: Mastery story template..... | Pg. 142 |
| Figure 5.57: Beezy mastery story 1..... | Pg. 143 |
| Figure 5.58: Beezy mastery story 2..... | Pg. 143 |
| Figure 5.59: Learning Loop..... | Pg. 144 |
| Figure 5.60: Social Action Matrix..... | Pg. 148 |

Figure 5.61: Social Action Matrix example.....Pg. 150

Figure 5.62: Beezy’s Social Action Matrix.....Pg. 150

Figure 9.1-9.33: Playtesting presentation.....Pg.182-Pg.193

Figure 9.34: Beezy infographic.....Pg. 206

Glossary

1. **Gamification:** The process of incorporating game elements into non-gaming contexts.
2. **Project management:** The practice of planning, executing, and controlling projects to achieve specific goals or objectives.
3. **Burnout:** A state of physical or emotional exhaustion, often caused by prolonged stress or overwork.
4. **Motivation:** The psychological factors that drive individuals to take action and achieve their goals.
5. **Fun:** A subjective and multifaceted concept that typically refers to the enjoyment, amusement, or pleasure experienced during an activity, event, or experience.
6. **Collaboration:** The act of working together with others to achieve a common objective or goal.
7. **Team building:** Activities or processes that enhance the cohesion and effectiveness of a group of individuals working together.
8. **Efficiency:** The ability to achieve maximum results with minimum resources, time, or effort.
9. **Morale:** The emotional and psychological well-being of individuals within an organization or a team.
10. **Productivity:** The measure of how efficiently resources are used to produce goods or services.
11. **Playtesting:** The process of testing applications or games with real users to gather feedback and evaluate its effectiveness and user experience.
12. **Prototype:** A preliminary version of an application or game created for testing and validation purposes.

1. Introduction

The importance of project management cannot be overseen. When executed properly, it is a process that helps run the development of a product or a service more smoothly. It helps teams bring forward their ideas while ensuring successful project outcomes. With the use of project management tools, companies are able to use different practices in order to build their projects within time and budget. Nowadays, there are plenty of tools to choose from, each and one of them with their own characteristics. Companies have a varied selection to decide which one fits better with their team, however, what they are lacking is a way to ensure that their employees feel motivated and engaged to work with them.

Parallely, gamification is a practice with a proven track record that revolves around applying game-like elements to non-game contexts, with the purpose of engaging and motivating their users towards specific behaviors or actions, such as executing tasks, physical activities, or learning. It has become increasingly popular in recent years, with companies using it to incentivize desired behaviors on their users.

Incorporating gamification elements into a project management tool can have a number of advantages, including increasing engagement among team members, as well as enhancing motivation and participation. By adding these game-like elements, it can make the process of building a product more enjoyable and help achieve better project outcomes.

This thesis is an in-depth study and design of a gamified project management tool that will give companies a way to carry out their projects in an efficient way whilst still engaging their employees throughout the process.

1.1. Motivation

It was not long ago when I found my passion for video game production. It started with my university subject Project III, coursed in the third year of my degree, where I had the amazing opportunity to be the Producer for the class project we had to deliver. We were a group of 25 students that got together to make a real-time tactics video game using our own engine in under 4 months, *Dune: Special Spice Ops* [1]. Before that experience, the idea of production was more abstract than anything to me. No one really prepared us for what it actually is to make a whole production of a video game, and especially having to lead and direct a large group of university students. My experience in that project opened my eyes and showed me the importance of project management, and how much I love to lead and have a global vision of all the different parts that make up a video game.

This opportunity opened many doors for me, and I am proud to say that I am currently working as a Junior Producer for an indie video game company here in Barcelona.

It's been over a year now since I started working in my company and, although I don't have much experience yet, it has surely shown me how this industry works and what it is to make a video game. More than ever, I truly understand how important it is to use project management to plan, organize, and keep track of the different pieces that make up a video game, but not only that, how important it is for a team to be satisfied and feel recognized by their work.

Job dissatisfaction and low employee engagement are prevalent issues in today's industries, which often lead to lower levels of productivity and overall success. Now, more than ever, it is crucial for companies to find innovative ways to find a solution.

During the same semester of Project III, I also studied Gamification in university, where I had the chance to learn about the importance of product design with game-like elements and the potential it has over users in order to incentivize certain behaviors in an engaging way. With my knowledge and understanding from this subject, my passion for project management and video games, and my experience in the industry, I came to realize that these problems we are facing can be solved by giving companies a tool that structures and leads the progress in the development of a project while keeping a fun and engaging experience for the employees.

1.2. Problem Formulation

Project management is an essential aspect of any organization, no matter the size of it, as it ensures that the team efficiently tracks their progress and collaborates on a project. However, managing complex and tedious projects can often lead to a lack of motivation and engagement among employees. This can result in lower productivity, missed deadlines, and burnout, ultimately impacting the company's success and goals.

A gamified project management tool can address this problem by incorporating gamification elements, such as point systems, challenges, and rewards, into daily tasks. The purpose of this tool would be to motivate employees, encourage team collaboration, provide a sense of achievement and recognition, and improve job satisfaction, which all lead to higher productivity and efficiency.

1.3. General Objectives

The project's aim is to design a gamified project management tool that companies can use as well as making a study whether it would work in the actual gaming industry. This will be divided into two sections:

The Tool:

- To design a project management tool that allows the user or company to plan, track, and manage their tasks in a project.
- To design gamification elements that will complement this tool to fix the current problem.

The Study:

- To do an in-depth research on this product following Amy Jo Kim's procedure on developing a project with game design elements, explained in her book *Game Thinking* [7].

1.4. Specific Objectives

Introducing Beezy, a gamified project management tool that is designed and studied for this thesis. It has the most important functionalities of nowadays most recognizable project management tools, like Jira [2] and Trello [3], with the incorporation of gamification elements that serves as a solution for the problem formulated.

Beezy is divided into three different sections, all of them with linked functionalities. Please note that this design is further detailed in [Section 5: Project Development](#), as it is the main focus of this thesis, and the following subsections just give a general description.

1.4.1. Project Management Tool

The first section is dedicated to project management, where users can access all the important functionalities in this area, like having a centralized platform in order to track and manage all the different project issues, tasks or bugs. Teams are able to create, manage projects, set priorities, time estimations, and track their progress on their tasks using a Kanban-style board [4].

An issue, or a task that needs to be done, is represented as a ticket, and has the following characteristics:

- Title
- Description
- Time estimation
- Honey Drops
- Priority (lowest, low, medium, high, highest)
- Assignee
- Reporter
- Type (bug, task, subtask)
- Tag

1.4.3. The Game: HoneyRush!

HoneyRush! is an engaging multiplayer card game that immerses players in the vibrant world of a bee colony. Players are randomly assigned one of two roles: Bees or Wasps.

Bees work diligently to gather honey and fill their hive, striving to completely fill their hive before their next milestone ends. Meanwhile, Wasps aim to sabotage the Bees' efforts and take control of the hive during this period of time.

With elements such as AI generated stories, unique time phases with their own mechanics, and a voting system, **HoneyRush!** offers players an immersive, fun, and unpredictable game to play with their colleagues at work.

1.4.2. The Avatar: Beebo

The third section displays the user's avatar, **Beebo**. As the general theme of Beezy is bees, the **Beebo** is represented as a customizable pet bee. Similar to other games like Tamagochi [5], or Pou [6], the user has to take care of their avatar as if they were a pet, since they have different necessities, such as hunger, entertainment, hygiene, and sleep.

The player has access to a menu to customize their **Beebo**. They can spend points in order to buy customizable items, such as pieces of clothing or accessories.

1.4.4. The Study

As part of this thesis, there is an in-depth study following Amy Jo Kim's steps, which are explained in [Section 4: Methodology](#). This procedure is divided into five sections:

1. **Hypothesize:** An analysis of the product's target audience and their needs.
2. **Empathize:** A deeper analysis on the customer's needs, goals, motivations and pain points.
3. **Design:** A design proposal with the information gathered previously.
4. **Playtest:** A testing session to gather feedback on the design proposal.
5. **Validation:** An analysis of the feedback to enhance or correct specific aspects of the design.

1.6. Project Scope

The scope of this project can be easily enlarged, which is one risk that can have a very negative impact on my project due to time restrictions. It is important that a procedure and a timeline is followed, which are defined below in [Section 3: Project Management](#).

For this project, I am focusing on the design of Beezy whilst my colleague Irene Hernandez develops the prototype for her Bachelor's thesis [65].

In order to design the product I have followed Amy Jo Kim's book *Game Thinking* [7]. In this book, she does an in-depth step-by-step framework to develop products using game design techniques. She teaches how to build successful products on principles of agile and lean design, as well as design thinking.

The product's intention is to bring fun, engagement, and motivation to the day-to-day life of employees that use project management tools in their companies. The audience that the product is aiming for will be meticulously detailed in the first section of the project's development, [Section 5.1.1: MVP Canvas](#), with the intention of finding the right target audience. As Amy Jo Kim mentioned in *Game Thinking*:

“Here's the punchline: if you're innovating, you need to find and delight a small early market before you target a larger segment.” [7]

With that being said, Beezy is suitable for indie video game companies, since they are a smaller group of people that are very close to games and know the concept of “fun”.

2. State of the Art

In this section of the project, a study of the different areas that cover Beezy is made, starting off with one of its main pillars, project management. This section begins with an exploration of its history, following with the most recognizable methodologies that exist, as well as the different tools that are in today's world.

Then, the concept of gamification is being explored, as well as a study of its history, its applications with examples, its benefits and drawbacks, as well as a mention of its moral and ethical values in the work environment. Next, an analysis of what is game design and the different elements that will be present in Beezy is made, such as a social deduction game and procedural narrative.

Lastly, an exploration of the market and a study of other gamified project management tools that already exist is made.

2.1. Project Management

In today's business environment, companies need to be able to manage projects efficiently to remain competitive. Project management is a crucial process that allows organizations to organize, execute, and monitor their project efficiently, in order to achieve their specific goals inside a determined timeline. They use it to accomplish different tasks, like the development of new products. It can ultimately improve efficiency, reduce costs, and increase customer satisfaction.

In order to manage their projects successfully, companies choose between a wide variety of methodologies and tools, which help them to break down a project into manageable tasks, allocate their resources effectively, track their progress, manage their risks, and communicate with stakeholders.

2.1.1. History of Project Management

As Peter W.G. Morris, a well known academic, author, and leader of project management, said in his book *A Brief History of Project Management* [8]:

“The word “project” means something thrown forth or out; an idea or conception (OxfordEnglish Dictionary); “management” is “the art of arranging physical and human resources towards purposeful ends.”

In this book, he provides an overview of the history and the evolution of project management as a discipline, and how before the 1950s, the actual term of project management did not exist. Either way, it has been present from dates back to ancient civilizations. The construction of ancient civilizations such as Egypt and Mesopotamia, as he mentions, are believed to have been managed through the use of project management principles, such as planning, organizing, and controlling resources. He notes that the construction of large-scale infrastructures, such as pyramids or aqueducts, require to a certain extent project planning. These early civilizations developed techniques and tools for organizing and coordinating these complex projects. Since then, it was in the 19th century when the industrial revolution saw and understood the importance of large-scale manufacturing processes. This required new approaches to managing resources and coordinating activities.

In the 20th century, project management began to emerge as a distinct field of study and practice. The development of large-scale projects such as constructions of dams, bridges, and highways required more sophisticated project management techniques. Morris discussed the contribution of key figures such as Henry Gantt and Frederick Taylor, who developed key techniques such as the Gantt Chart and Scientific Management to improve project planning and coordination.

The Gantt chart, designed and popularized around 1910-1915, is one of the most common tools used nowadays for production and project management. It is used as a visual tool to help managers schedule and track projects on a timeline, making it easy to identify start and end dates of each task that needs to be completed for the project. Another key factor that it shows is the dependency on other tasks. It has the potential to show and monitor the project's potential delays, risks or issues. See Figure 2.1 as an example of a Gantt chart.

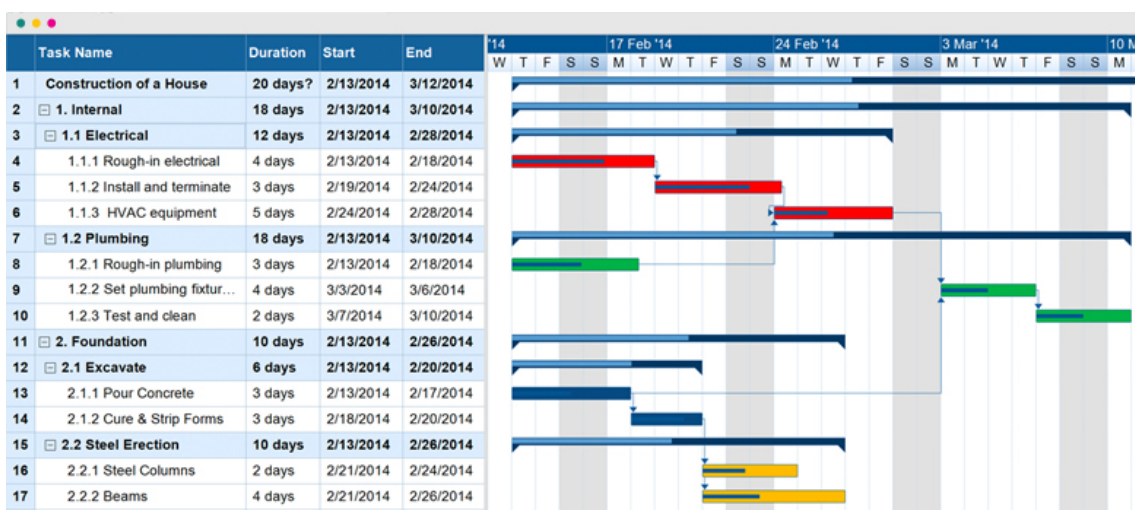


Figure 2.1: Gantt chart example

As for Scientific Management, by Frederick Taylor, which was developed around the same time, focuses on optimizing efficiency and productivity by improving the work processes. This approach identifies the most efficient way to perform a task, and then trains the workers to perform them using standardized methods. In his Principles of Scientific Management [9], he states:

“The principal object of management should be to secure the maximum prosperity for the employer, coupled with the maximum prosperity for each [employee].”

Taylor believed the organization and its employees should work together, and work for everyone's best interest. For workers that would be shorter working hours, better work conditions, and higher wages, and for companies that would mean higher productivity, efficiency and lower costs.

Later in the 1960s, project management became increasingly recognized as a profession, with the formation of professional associations such as the Project Management Institute (PMI) in the United States. This movement helped define and promote project management as a distinct discipline. The PMI published the first edition of the Project Management Body of Knowledge (PMBOK) in 1983, which has since become a widely recognized standard for project management.

In the 1990s, Agile project management methodologies emerged, emphasizing flexibility and adaptability over rigid planning and control. Agile methodologies such as Scrum and Extreme Programming, have become increasingly popular in software development and other industries. The role of technology also had a big impact in shaping project management practices. The advances in computing and software development led to the development of tools such as Jira [2] and Trello [3], which have revolutionized project planning.

Today, project management is a mature field with a wide range of methodologies, tools, and certifications available. Companies across various industries rely on it to ensure the successful delivery of projects within a scope, budget, and timeline. Inside the video game industry, project management is a key aspect that helps teams manage the development process of video games. Video game development is a complex process that involves multiple teams and profiles, as well as stakeholders, and a tool for project management can help organize and coordinate the team efforts as well as their communication. Additionally, some project management tools, such as HacknPlan [68], are specifically designed for video game companies, with specific features such as bug and asset tracking, as well as version control, that are tailored to the needs of this industry.

2.1.2. Methodologies

There is a wide variety of methodologies that have been developed over time. There is no right or wrong methodology if applied to the correct situation. Some of the most commonly used ones include:

Agile

The agile methodology is one of the most common methodologies used nowadays. It consists of an iterative, incremental approach to project management, in which a project is broken down into small, manageable parts. Since this approach is adaptable and flexible, it is ideal for projects whose requirements are subject to change and whose results are unpredictable. It is based on the *Agile Manifesto* [10], which was produced by a team of software developers in 2001 seeking for a more efficient way to manage projects.

Agile teams often consist of cross-functional, self-organizing teams. This indicates that the team members are in charge of planning their work and possess a variety of abilities that enable them to work on various components or aspects of the project.

The idea of continuous improvement, which is one of Agile's core pillars, encourages teams to evaluate their performance and pinpoint areas where they may make improvements for upcoming iterations. By constant feedback, teams can get better, adjust to client needs, and guarantee that the project will be finished quickly and effectively. As shown in Figure 2.2, the Agile methodology is about iteration and constant improvement.

Teams with poor communication and teamwork may find that agile is not the best approach. As Agile is all about cooperation and iterating, it might be difficult for businesses who are used to more conventional project management approaches or a very independent-based workflow.

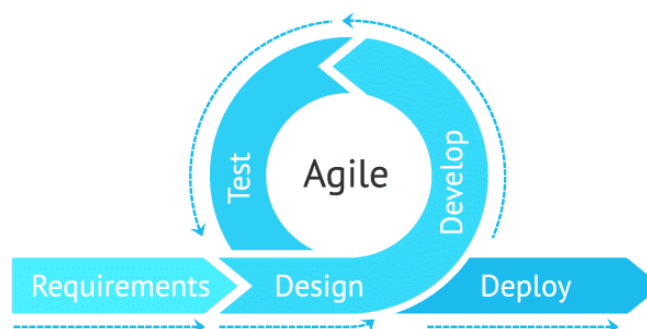


Figure 2.2: Agile methodology flow

Scrum

Scrum is a branch of Agile and a project management and execution framework. It is a framework for managing and completing complicated projects that was first introduced in the 1990s and places a focus on teamwork, cooperation, and iterative development.

The different steps that build the project are divided into manageable chunks called sprints, which refer to the time frames within which these activities must be finished. Typically, they last two to four weeks. The team works on a specified set of tasks during each sprint.

As shown in Figure 2.3, the use of several meetings, such as daily stand-ups, sprint planning sessions, sprint reviews, and retrospectives, that give the team opportunities to cooperate, communicate, organize, review, and evaluate their work, is what distinguishes Scrum from other Agile techniques. Additionally, it involves the use of many tools that support progress tracking and planning, such as the product backlog, sprint backlog, and burn down chart.

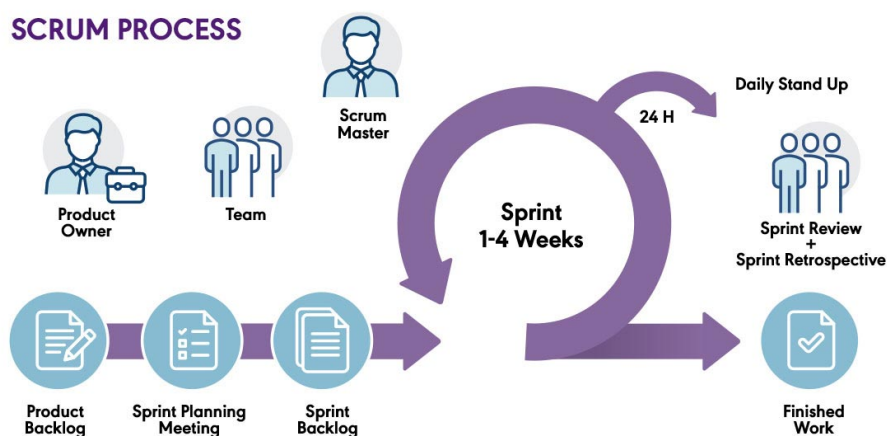


Figure 2.3: Scrum process

Kanban

Kanban is another subset of Agile, specifically a manufacturing methodology that is used to manage and improve work processes. It focuses on visualizing work, limiting work in progress, and optimizing the flow of work through the system. Coming from Japan, the word “Kanban” means “signal card” [11].

The core aspect of Kanban is the Kanban board. As shown in Figure 2.4, it is the visual representation of the work that needs to be done, separated into different columns that represent the stages of the workflow, “To Do”, “In Progress”, and “Done”. Each task or issue is represented by a card that is placed in a column, and moved between them as they progress through the workflow. One of its key principles is to limit the work that is in progress. Teams limit the amount of tasks that are “In Progress”, and therefore reducing multitasking encourages and favors productivity. This helps examine the work flow, locate bottlenecks, and implement adjustments to optimize the flow, since one of the most important principles of Kanban is the optimization of the work flow through the system. Continuous improvement is emphasized by Kanban as well. Teams can experiment with process changes to determine if they lead to improvements by using metrics like cycle time, lead time, and throughput to discover areas for improvement.

Kanban is an agile approach that may be applied to a variety of projects and workflows, since it is flexible. It offers a straightforward and transparent way to manage work and can assist teams in boosting productivity, cutting waste, and providing value to their clients.

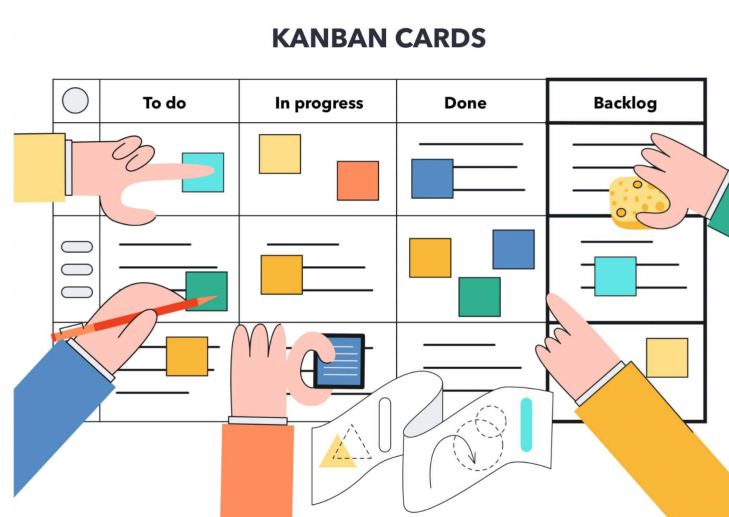


Figure 2.4: Kanban board

Waterfall

The waterfall method is a sequential, linear approach, in which every stage of the project is completed before the next one starts (see Figure 2.5). This is very useful for those projects whose requirements are very well-defined and the outcome is known in advance. It is commonly used in the construction and manufacturing industries since tasks must be completed in a specific order and changes are difficult and expensive once the work is done. The waterfall methodology involves the following steps or phases:

1. The gathering and analysis of the requirements, where the team works with stakeholders to define their requirements and detail their project plan.
2. The design of the project, where they do a detailed design of their product.
3. The implementation, where the team starts building the design planned out.
4. The testing, where the quality and requirements of the product or service is tested and it's seen if they meet their expectations.
5. The deployment, where the finished product is released to the customer or user.
6. The maintenance, where the team provides constant support and updates for their product as time goes by.

The waterfall methodology has its advantages and downturns, like all the other methods, being that although it provides a clear and structured progress for managing projects, it can be inflexible and not suitable for those that require frequent changes or high collaboration between team members.

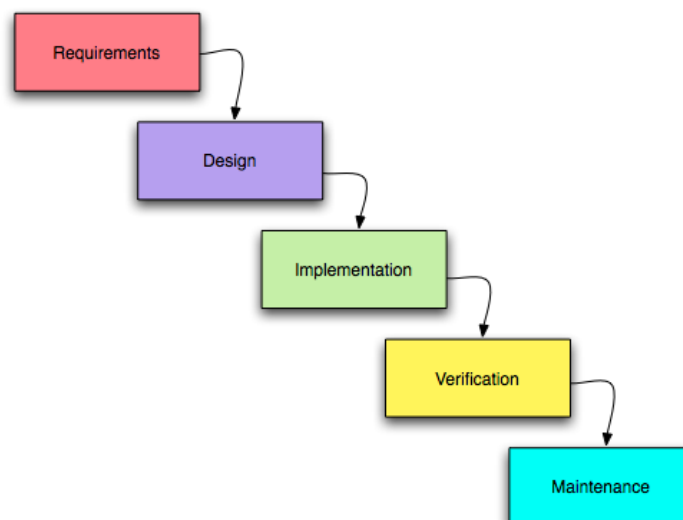


Figure 2.5: Waterfall methodology steps

Lean

Lean is a management philosophy that is based on principles of continuous improvement and waste reduction. It was developed in the manufacturing industry by Toyota, and has since been applied to a wide variety of industries, including software development, healthcare, and construction.

It mainly focuses on the concept of continuous improvement, as teams are encouraged to constantly identify areas of improvement, make changes, and evaluate their results. This process is known as the “Plan-Do-Check-Act” (PDCA) cycle.

Another key principle is the identification and elimination of waste, such as overproduction, excess inventory, unused talent, or simply waiting. By identifying and reducing this waste, teams can be more efficient, reduce their cost, and at the same time, increase customer satisfaction.

The lean methodology also emphasizes how important it is to empower team members to make their own decisions and take ownership of the work, since collaboration and open communication are highly praised, as it is a great way to improve and share knowledge between themselves.

One of the most used tools in the lean methodology is the *Value Stream Map*. It is a visual representation of the flow of value through a system, and it helps teams identify any bottlenecks or areas that could be improved (see Figure 2.6).

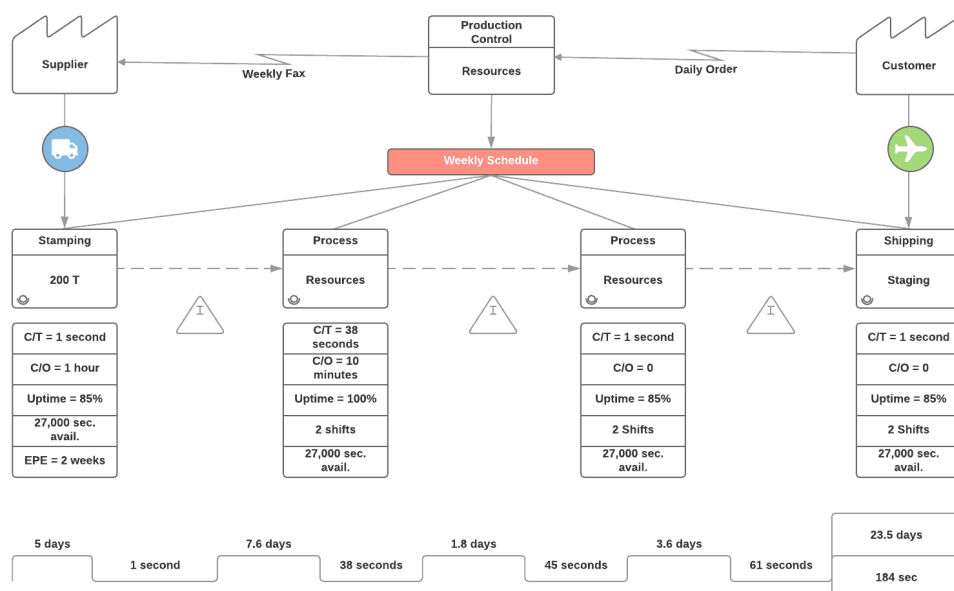


Figure 2.6: Lean Value Stream Map

PRINCE2

PRINCE2 [12], also known as PProjects IN Controlled Environments, is another methodology that originates from the UK. It is a structured approach to project management, with a focus on controlling and managing the project's progress, quality and risks.

This methodology is built around seven principles:

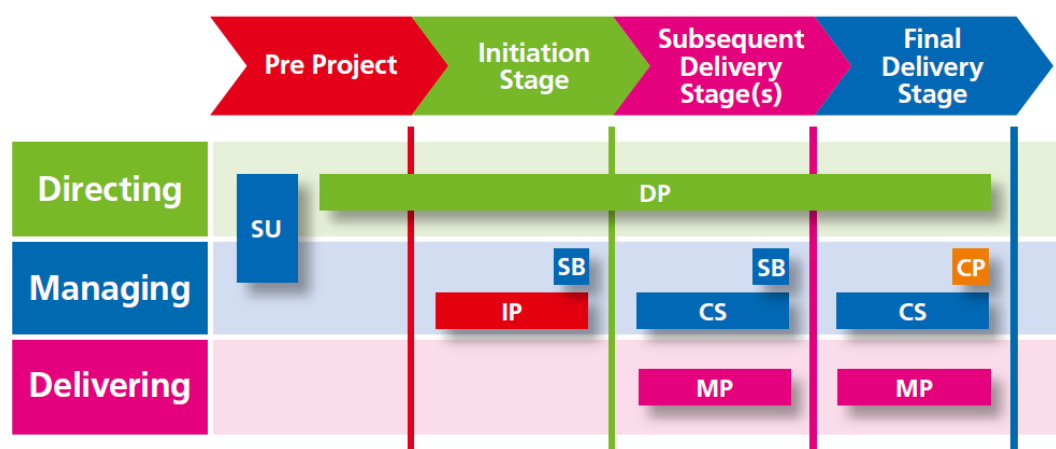
1. **Continued business justification:** A project should have a clear and justifiable business sense, and remains viable so the time and resources spent are justified.
2. **Learn from experience:** Project members should be continuously learning from their experiences and applying this knowledge to future projects.
3. **Defined roles and responsibilities:** Roles should be clear, as well as the responsibilities for all team members and stakeholders.
4. **Manage by stages:** Difficult tasks should be divided into smaller stages so they are easier to manage.
5. **Manage by exception:** The project manager should only intervene when it is strictly necessary.
6. **Focus on products:** All projects should be focused on delivering tangible products or outcomes, not just completing activities.
7. **Tailor to suit the project environment:** PRINCE2 should be tailored and scaled to meet the project's needs, taking into account different factors such as complexity, risks, and scope.

The PRINCE2 method consists of seven processes that encompass the process of making a project from start to finish:

1. **Starting Up a Project (SU):** This process is focused on determining the project's objectives and goals. The team members are assigned and assembled for the project initiation.
2. **Initiating a Project (IP):** This phase is about defining the project's scope, identifying the stakeholders, creating a plan and outlining the different elements in its project management such as time, cost, scope, benefits, risks, etc. This is the foundation for the rest of the development.
3. **Directing a Project (DP):** This is a continuous process across beginning and end of a project, where the project board manages the different activities that will determine and ensure the project's goals and objectives.

4. **Controlling a Stage (CS):** This process is about monitoring the progress of the project, identifying the risks and ensuring that the quality that is aimed is met. This helps ensure that the project is on track and any risks or issues are being tackled.
5. **Managing Product Delivery (MP):** This phase is about delivering products or services that the team is producing, such as physical goods or softwares. This process ensures that the products are being delivered with the right quality, within budget and on time.
6. **Manage Stage Boundaries (SB):** This stage is focused on ensuring that everyone has everything they need during the development. Is a constant communication between project managers and team members.
7. **Closing a Project (CP):** This is the final phase of the project, where it is completed and all the documentation is archived. There is usually a final review to make sure that the goals and objectives are met.

The following Figure 2.7 is a visual representation of the stages and processes that are present in this methodology.



The PRINCE2 Stage-Gate Management Model

© Crown copyright 2007. Reproduced under licence from OGC. Figure 11.1 The PRINCE2 Processes – Section 11

Figure 2.7: PRINCE2 processes

PMBOK

PMBOK, or Project Management Body of Knowledge, is a guide to project management that was developed by the PMI (Project Management Institute). It is a comprehensive framework that covers all aspects of project management, from initiation to closure. It is not considered a methodology in itself, but more like a guide that outlines practices and processes to manage a project.

This framework is based on five process groups that represent all the different stages or phases in a project, from start to finish. They are:

1. **Initiating:** Defining the project and objectives.
2. **Planning:** Developing a plan to guide the execution of the project.
3. **Executing:** Carrying out the plan and completing the work defined.
4. **Monitoring and controlling:** Tracking, reviewing, and regulating the project process to meet objectives.
5. **Closing:** Formalizing project completion and obtaining customer acceptance.

On the other hand, it has ten knowledge areas that cover the different aspects of project management (see Figure 2.8). They are:

1. **Project integration:** Ensuring the project elements are coordinated as well as integrated to achieve project goals.
2. **Scope:** Defining and monitoring what is included in the project and ensuring it meets project requirements.
3. **Time:** Developing and controlling project schedules.
4. **Cost:** Estimating, budgeting, and controlling project costs.
5. **Quality:** Ensuring deliverables meet customer requirements and expectations.
6. **Human resources:** Managing team members and interactions to achieve project objectives.
7. **Communications:** Managing team and stakeholder communication to ensure accurate flow of information.
8. **Risk:** Identifying, assessing, and managing project potential risks.
9. **Procurement:** Managing procurement processes for project goods and services.
10. **Stakeholder management:** Managing stakeholder engagement and communication throughout the project lifecycle to achieve project objectives.

The PMBOK framework leans on the importance of overall knowledge and experience in project management, and the need for specialists to continually develop their skills and knowledge. Other key pillars are communication, collaboration, and stakeholder engagement. Since this strategy is recognizable in the area of project management, many project managers obtain the PMI's Project Management Professional (PMP) certification.



Figure 2.8: PMBOK knowledge areas

2.1.3. Tools

Companies have a wide variety of tools to choose from that will ultimately guide and track their progress in a project efficiently, such as Jira [2], Asana [13], or Trello [3]. These facilitate collaboration among team members, track progress, and manage tasks. They are used to plan, organize, and manage resources in order to achieve specific goals and objectives. These tools offer a centralized platform for teams to communicate, collaborate, and track their progress, facilitating managing complex projects.

Some common features of project management tools include task assignment and tracking, time tracking, resource allocation, budgeting, issue tracking, and scheduling. Usually, they provide a dashboard view that makes it easier to visualize the project's goals and allows project managers to monitor progress.

The purpose of these tools is to organize and plan projects, improve collaboration and communication between team members, and increase efficiency and productivity.

Jira

Jira is a popular project management and issue tracking software tool developed by Atlassian and first released in 2002. Since then, over 65K companies globally have adopted this tool into their project management [2]. It is usually used for agile software development, but due to its flexibility and wide range of services, it can be used for other types of industries.

Jira provides a platform for teams to manage tasks, track issues and bugs, and collaborate on projects. It offers a wide range of features that meet the needs of agile software development. It offers the possibility of creating and customizing workflows that can suit the needs of each team, meaning that teams can use Jira in their preferred agile framework, whether that is Scrum, Kanban, or other methodologies.

Its main interface is a dashboard (see Figure 2.9) that provides a visual representation and overview of the current project's progress, including information on the project status, team workload, and issues or bugs that have been identified. From the dashboard, team members can access more detailed information, such as specific tasks or user stories that need to be completed. Jira also provides and encourages collaboration and communication between members, by allowing them to share information or updates, and assign tasks.

One of the key benefits of Jira is its flexibility, since it can be customized to meet the specific needs of a team or a project. For example, teams can create their own custom fields to categorize tasks, or workflows. Another benefit of Jira is that other tools and services can also be integrated, such as Confluence [14], which is a collaboration platform, or Bitbucket [15], a code hosting and collaboration platform. This is essential to keep the work centralized, making it easier and more efficient for team members to work on their tasks and keep the communication flowing.

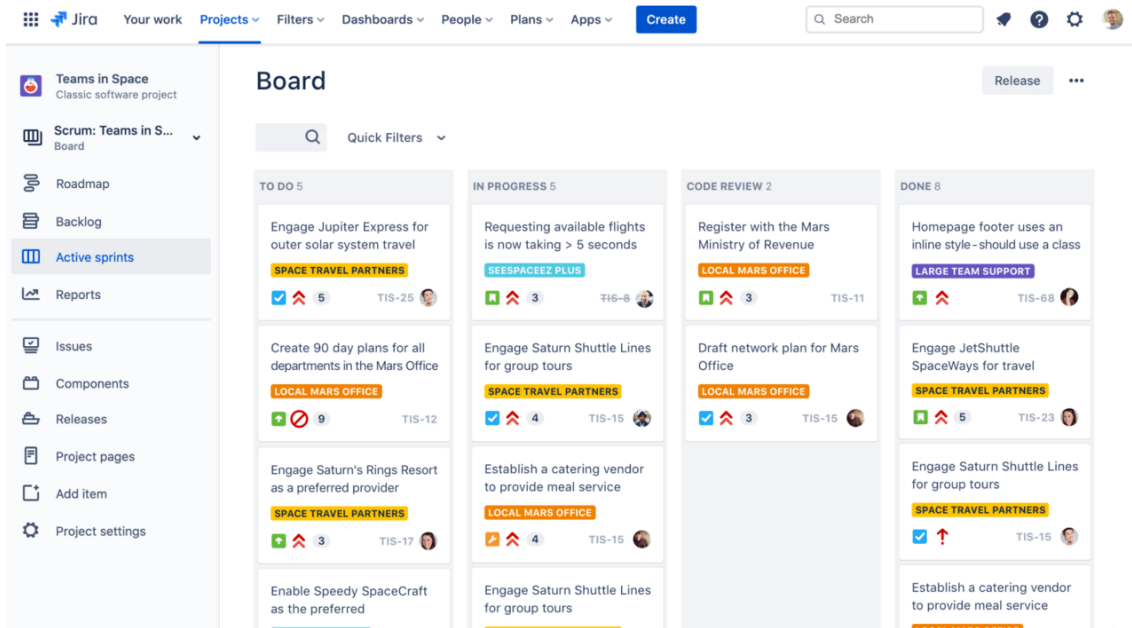


Figure 2.9: Jira dashboard

Trello

Trello is also a very popular management tool that allows users or teams to organize their projects and to-do lists in a very visual and intuitive way. It is based on the Kanban methodology, where, as explained in [Section 2.1.2: Methodologies](#), tasks are represented as cards or tickets, and moved across a board, from “To Do” to “In Progress” to “Done” (see Figure 2.10).

Trello is designed to be very flexible and adaptable for the user’s needs, allowing them to create their boards and cards. In addition, team collaboration can also be practiced, since members can share boards, assign tasks, and comment on cards.

Trello’s advantage or strength is its simplicity and intuitiveness. It has a clean interface that makes it easy and comfortable for users to get started and begin planning out their work. It is a good tool for beginners and smaller teams. In addition, it also offers a wide range of integrations, such as Google Drive [16], Github [17] or Slack [18], making it easy to incorporate Trello into an existing workflow.

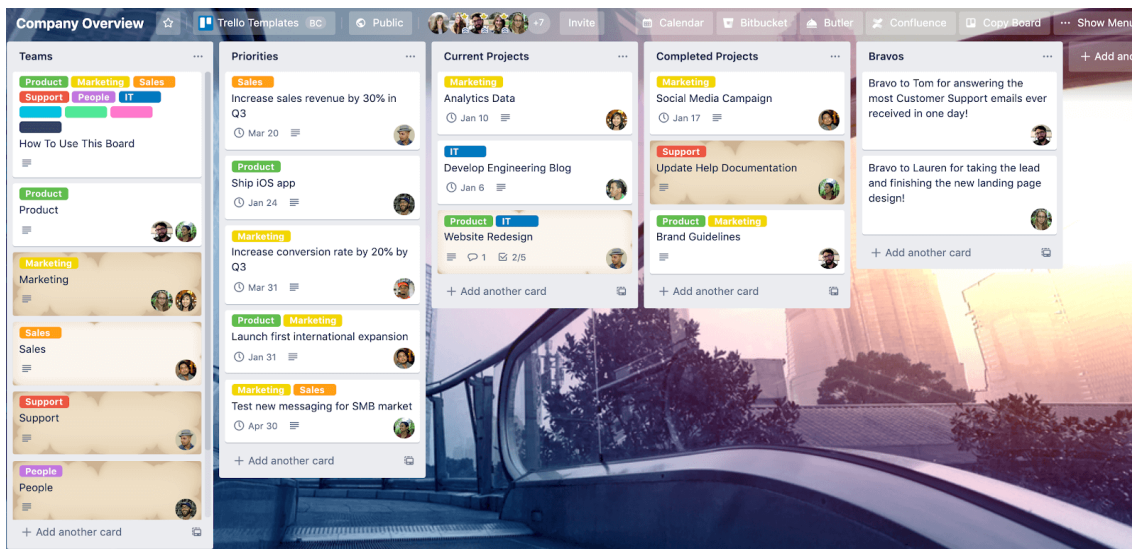


Figure 2.10: Trello dashboard

Asana

Asana is another project management application, developed by Dustin Moskovitz and Justin Rosenstein, former workers at Facebook and Google, and launched in 2008. It allows individuals and teams to plan, keep track, and manage their work. Using this tool, users can create tasks and assign them to team members, allowing them to monitor their progress. With features like comments, attachments, and the ability to mention others, the application enables good communication.

Asana offers a number of features to help teams in organizing their work more effectively. Users can, for instance, build up rules to automate work and utilize the calendar view to view all of their chores and projects at once. They can even design unique templates for repeating projects. Asana also works with a wide range of other applications, including file storage services like Dropbox [19] and Google Drive [16] and communication systems like Slack [18] and Microsoft Teams [20].

Asana's scalability and flexibility are among its advantages. Teams of various sizes, from tiny start-ups to enormous corporations, can use it. In addition to a free edition and subscription plans with more features and support, Asana offers a variety of price options.

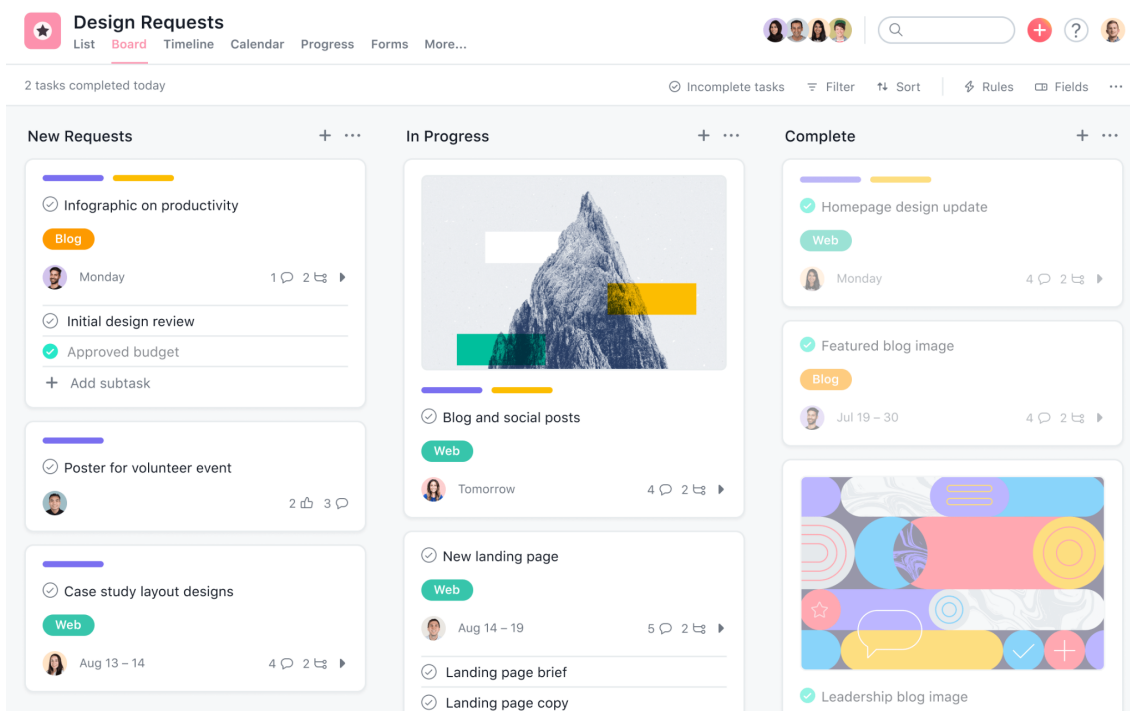


Figure 2.11: Asana dashboard

HacknPlan

HacknPlan is a project management application made especially for teams working on video games. It offers a number of features like asset tracking, milestone planning, and team collaboration that are specifically suited to the special requirements of game production.

HacknPlan's task management system, which enables users to create and assign tasks, define priorities, and monitor progress in real-time, is one of its standout features. The program also features a kanban-style board that enables users to see how their tasks are progressing and spot any bottlenecks or potential improvement areas.

HacknPlan also has tools for managing resources and assets, tracking bugs and issues, and producing reports to assess team performance and pinpoint problem areas. It can be integrated with other programs used frequently in the creation of video games, like Git [21], Unity [22], and Unreal Engine [23].

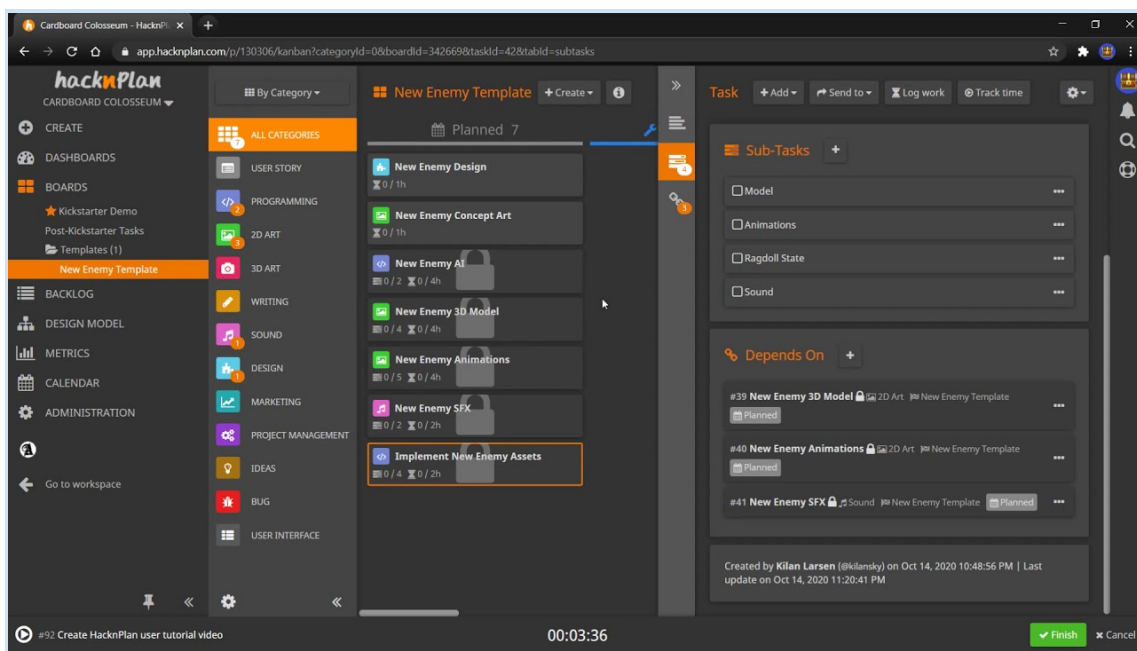


Figure 2.12: HacknPlan dashboard

2.2. Gamification

One of the most reliable and accepted definitions of Gamification is from Sebastian Deterding, a specialist from the field:

“The use of game-design elements in non-game contexts.” [24]

Gamification is based on the idea that people are more likely to engage in a specific activity if it is fun and rewarding. It has become increasingly popular in recent years, with companies using it to incentivize desired behaviors on their users, such as completing tasks, exercising, or learning new skills. It has been proven to be a successful strategy for companies, and, with the increasing growth and advancement of technology, gamification is expected to continue to play a significant role in many industries.

It wasn't until the early 21st century that gamification gained its popularity and has been considered a discipline, however, some aspects that are closely related and games outside the entertainment environment have dates starting in the early 20th century. Similar concepts started way back in 1908, when the Boy Scouts movement was founded in England. They used badges and achievements to motivate and recognize achievements of young boys that learned and performed various tasks.

The concept of gamification has been tied to the desire of increasing sales since the beginning. In the early 20th century, Cracker Jack [25], an American caramel-coated popcorn brand, started including a toy or a prize in each package, which became a very common marketing strategy for other snack foods brands. They began using games or other entertainment methods to increase sales. Either way, this falls far from the concept of “gamification” we have today. These examples are not considered directly gamification, but they are known to have contributed to its conceptualization.

Going back to the meaning of gamification, we have another example, this one coming from Marczweski, a well-known gamification expert:

“The use of game design metaphors to create more game-like and engaging experiences.” [69]

Directly citing from the Gamified UK's article about his definition of gamification where he breaks down the meaning of his definition:

“Game design metaphors: Many definitions talk about non game contexts. I talk about metaphors. We use game-like interface design in applications that are not games. We use games like narratives, in applications that are not games. We use the equivalent as a metaphor – we use these things in ways that are not literally applicable as games.

Game-like: Gamification is a very specific approach that does not actually involve creating games, it is about using ideas from the games, elements, and more.

Engaging experiences: This is key to gamification, engagement. I define engagement as *active and intrinsically motivated participation*. So with gamification we are trying to create experiences that promote this.

This is the core to my understanding and approach to gamification. It is one tool in a tool-kit designed to solve problems” [70]

Another definition we mention is from my university teacher, tutor for my thesis, and gamification expert, Joan Arnedo Moreno:

“Gamification, understood as the use of game design elements in other contexts for the purpose of engagement.” [71]

What we can extract from these definitions is that gamification is not the actual process of creating games. It is about engagement and the experiences, which relates it slightly to user experience conceptually.

Essentially, gamification uses game design techniques and elements to engage and motivate. It is part of the “game thinking” approach to problem-solving as it is about creating an experience to set a certain behavior. It tries to motivate specific volitional actions, chosen by the user and under their control.

2.2.1. Applications and Examples

Gamification has a wide range of applications across different fields. It has served useful in different areas and is being used more every day. The following are some applications where gamification is being used.

Education

One of the most recognizable applications of gamification is in education. It has emerged as a promising approach in order to improve student engagement and motivation in educational contexts.

Several studies have shown that gamification in education can positively impact students' attitudes, learning outcomes, and motivation. For example, a study by Lee and Hammer (2011) found that gamification improved students' participation and learning outcomes in a physics course [30]. Similarly, a study by Landers and Landers (2014) showed that gamification increased students' engagement and performance in a college-level statistics course [31].

Different elements can be applied in education to provide students with a fun and engaging way to learn and practice new skills. Badges and leaderboards can be used to incentivize and reward students for their performance and progress, and by adding a controlled competitive environment. Progress bars can help them keep track of their progress, and identify their goals.

Even though it can have many benefits, gamification should only be used thoughtfully. As Karl M. Kapp mentions in *The Gamification of Learning and Instruction* [32], gamification should not be viewed as a "silver bullet" solution to all educational problems. Instead, it should be used as part of a larger strategy to enhance student motivation and engagement.

One of the most famous gamified applications used in education is Duolingo [33]. It has been the most downloaded education app in 2022, with 98 million downloads [34]. Duolingo is a language-learning app that uses game elements such as points, levels and streaks to motivate users and engage them in its classes or courses. It also uses a hearts system that represents the lives of the player: users lose hearts if they make too many mistakes in a lesson, which helps add a sense of challenge and urgency to the learning experience. By adding these different gamification elements Duolingo makes the learning of a new language engaging, fun, and rewarding.

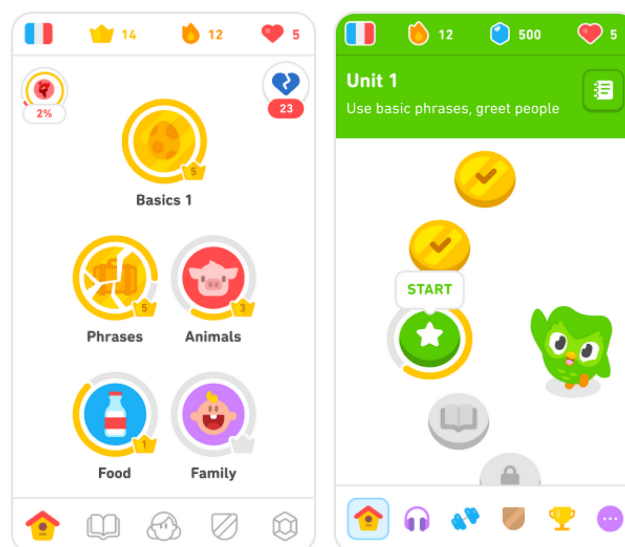


Figure 2.13: Duolingo interface

Another very recognizable application is Classcraft [35], an app with over 500K downloads [36], that is designed to promote student engagement and motivation in the classroom. Students are divided into teams and have the ability to create their own avatars, and embark on quests together. The app incorporates elements of role-playing games, such as earning experience points, leveling up, and completing quests and challenges, to incentivize students to engage with the school material and each other.

In addition, teachers can customize the content to align it with the classes and monitor the student's progress. Classcraft aims to create a more immersive and engaging learning experience for students.

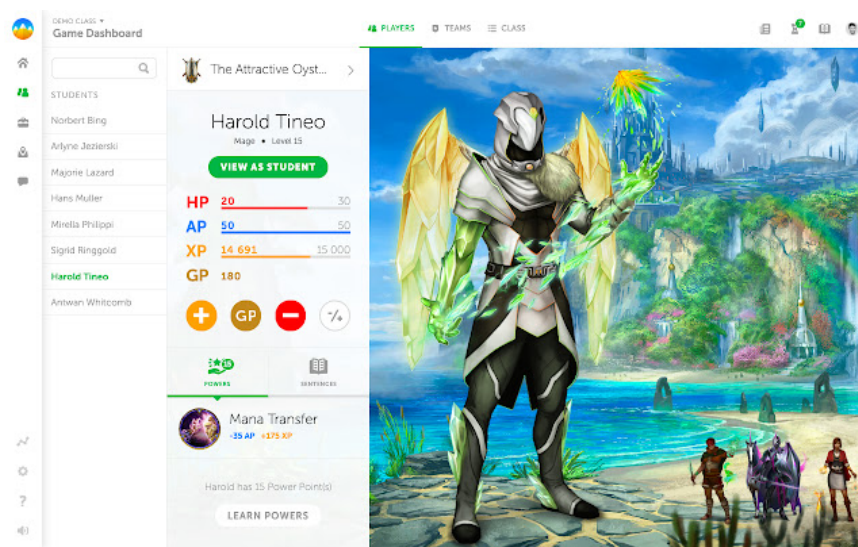


Figure 2.14: Classcraft interface

Health and Fitness

Gamification is also very popular in the area of health and fitness, in order to motivate people to adopt healthy lifestyles and behaviors. One of the core aspects of gamification in this sector is the use of rewards and incentives to encourage users to engage in healthy activities, such as physical activities, eating healthier foods, and keeping track of treatments and medication.

Studies have been made to prove that gamification can have a positive outcome into adopting healthy habits into users. There is a study published in the *Journal of Medical Internet Research* that mentions that the use of a gamified app that incorporates badges, points, and leaderboards, as well as the mechanic to set goals and get feedback, helped increase physical activity in obese and overweight adults [37].

The participants that used this app had a significant increase of physical activity levels than those who did not use it.

A different study, which was published in the *Journal of Diabetes Science and Technology*, discovered that a diabetes self-management system that was gamified helped improve blood glucose control in patients that had type 2 diabetes [38]. To do this, it used a virtual coach and rewards for completing tasks, such as monitoring their glucose levels.

Some examples of gamified applications that encourage health and fitness habits are *Zombies, Run!* [39], and *Nerd Fitness Journey* [40]. The first one, with over 1M downloads [41], is an application that encourages users to go for a run by giving them an immersive audio story with interval training in order to create an immersive experience where the user has to run away from zombies that are chasing them. The user gets rewarded and praised for their performance while giving them a fun and engaging experience.

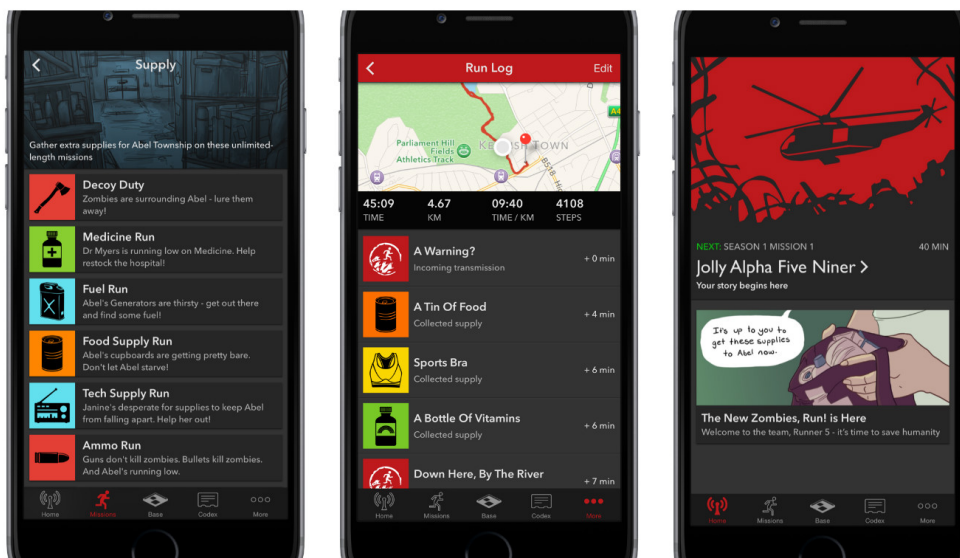


Figure 2.15: *Zombie, Run!* interface

On the other hand, *Nerd Fitness Journey* is a fitness platform and online community that helps people adopt healthy habits in order to transform their lives. It has over 10K downloads [42]. It is designed to provide an approach to fitness and health, with the help of guidance on exercise, nutrition, and mindset, by offering personalized workouts and nutrition plans. The platform features gamification elements such as quests and achievements, to help users stay motivated and engaged in their fitness journey.

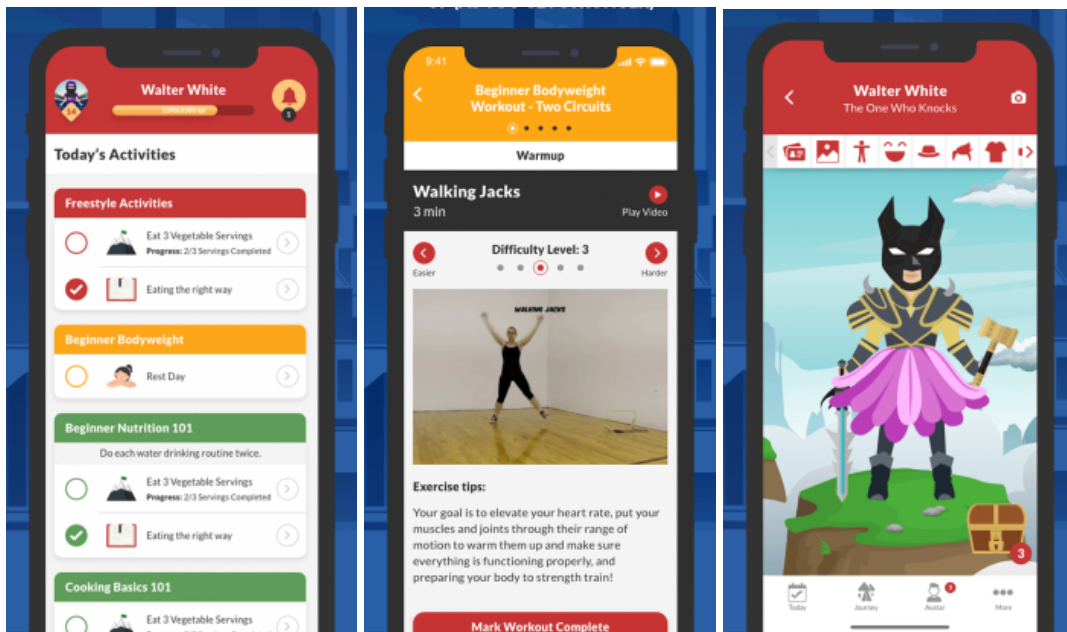


Figure 2.16: Nerd Fitness Journey interface

Productivity

Another field where gamification has a great impact is in productivity. By incorporating game-like elements into work processes, users are incentivized and motivated to complete their work and reach specific goals. It does not have to be only in a professional environment, there are plenty of applications that encourage productivity in one's day to day life, like Level Up Life [43].

Level Up Life is an application and website that allows users to keep track of their daily achievements and tasks in an RPG-style progression. All the tasks are designed to allow the user to grow as an individual, by exploring different areas and pushing their boundaries. As the user completes the tasks, they earn experience points (XP), which allows them to level up and unlock new achievements, which provides new experiences and challenges.

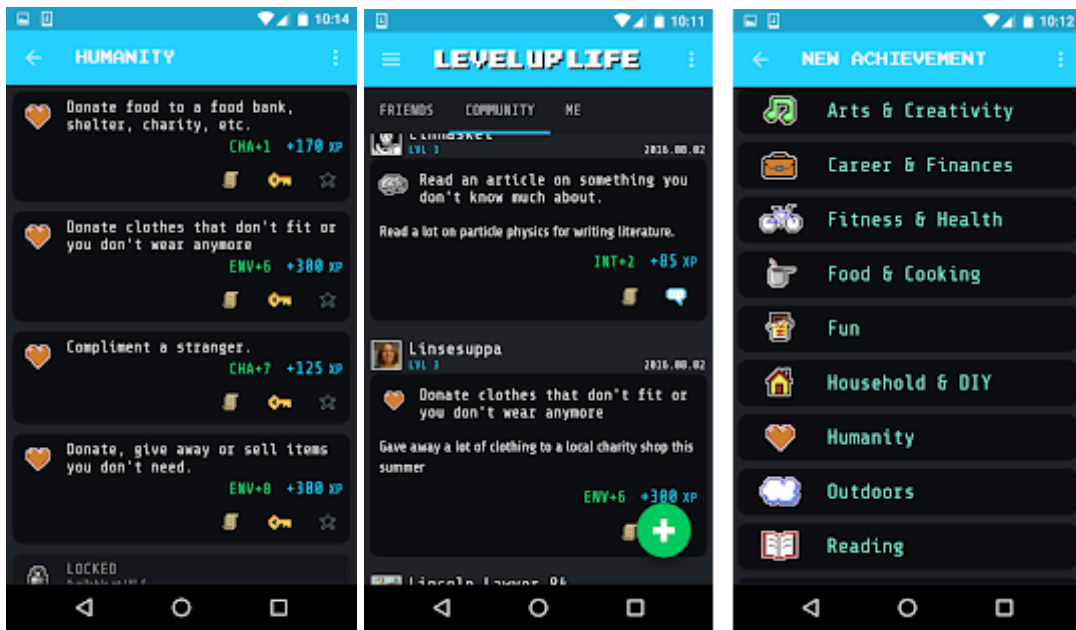


Figure 2.17: Level Up Life interface

Another example is the application Habitica [44], that allows users to set goals and complete tasks for rewards, like Level Up Life does. These applications encourage users to complete and achieve tasks that they want to include in their routines.

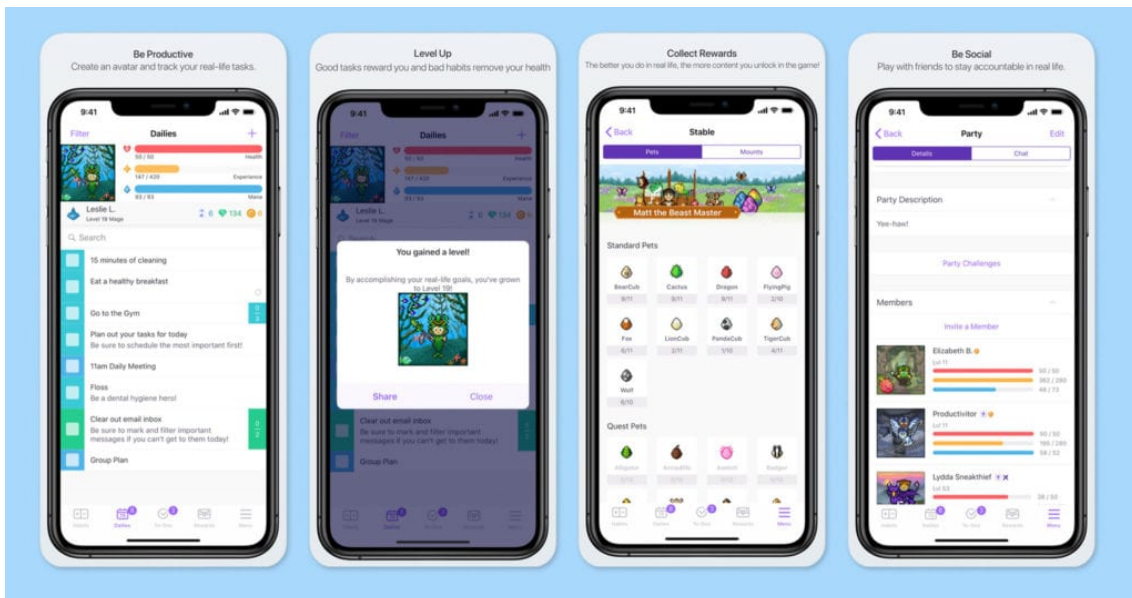


Figure 2.18: Habitica interface

2.2.3. Benefits and Drawbacks

Although it seems like gamification has a lot of benefits for its users, it is not designed for everyone. According to a study in the *Journal of Business Research* done by Hamari, Koivisto and Sarsa in *Does Gamification Work?* [45], gamification can lead to increased motivation, productivity and job satisfaction, although it can not be effective for everyone, and could lead to certain effects such as burnout if overused. Some people may find that gamification trivializes an activity or a goal or do not respond well with the use of game elements in a non-game context.

In a research article written by Juho Hamari, a Finish game researcher, called *Competition or Cooperation* [26], the differences between competition and cooperation in game design and how they affect player behavior and motivation is explored. He argues that competition and cooperation are not mutually exclusive. A well-designed gamification system can balance the elements and promote engagement and motivation. Hamari states that on one hand, competition helps by providing a sense of status, achievement and recognition, and on the other hand, cooperation fosters a sense of belongingness and connectedness with others.

Some of the drawbacks that have been identified in gamification is a superficial engagement rather than a true behavioral change, since the user is completing these tasks for the rewards but not to truly improve as a person. It is also thought that gamification can have issues in the long run as it is the adrenaline and engagement that users experience at the beginning that encourages them to use the applications.

This is why it is important to consider, when gamifying an application, the specific context and audience it is targeting. Studies and research have been conducted in different fields like education, health and productivity, but usually end up with mixed results.

2.2.4. Gamification Elements

Game elements are the building blocks of gamification, and are used to give a game-like experience to a user in a non-game related context, like work, education, or health. Some of the typical elements are points, levels, badges, leaderboards, challenges, rewards, and avatars [46, 47, 48]. In fact, according to Marczewski [56], there are 52 gamification elements which are actually organized in a periodic table scheme, that help classify them into the different user types [57], like shown in Figure 2.19.

Each color in the Figure represents a different user type, which helps gamification designers understand their audience better and therefore create gamification strategies that appeal to specific users.

The following is a Marczewski's user types which help classify the different gamification elements [27]:

1. **Socializers:** These players are motivated by *relatedness*. They want to interact with others and create social connections.
2. **Achievers:** These are motivated by *mastery*. They are looking to learn new things and improve themselves. They want challenges to overcome
3. **Free spirits:** These players are motivated by *autonomy and self-expression*. They want to create and explore.
4. **Philanthropists:** These players are motivated by *purpose and meaning*. This group are altruistic, wanting to give to the other people and enrich the lives of others in some way with no expectation of reward.
5. **Players:** These are motivated by *rewards*. They will do what is needed of them to collect rewards from a system. They are in it for themselves.
6. **Disruptors:** These players are motivated by *change*. In general, they want to disrupt the system, either directly or through other users to force positive or negative change.

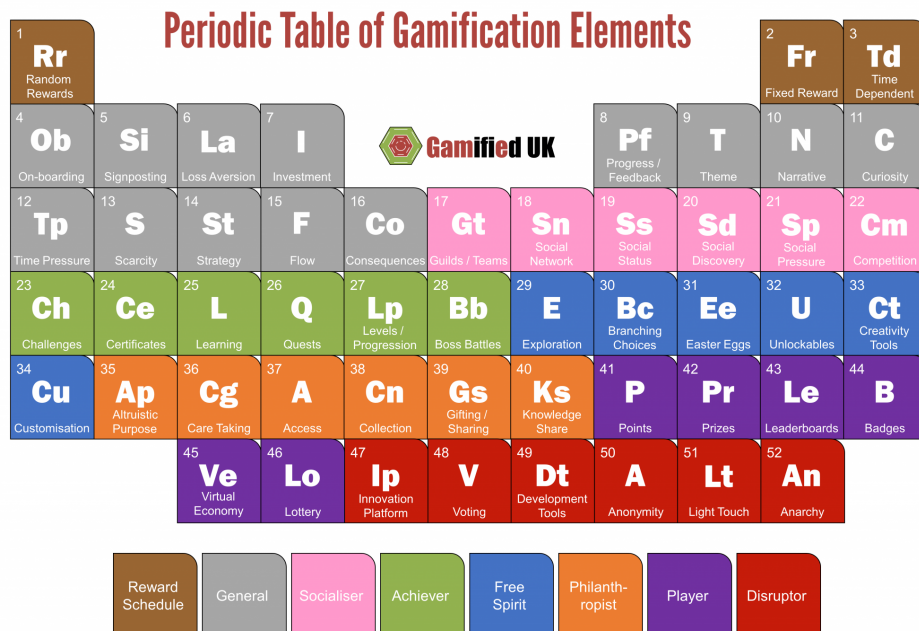


Figure 2.19: Periodic table of gamification elements

Points

Points are the most frequently used and fundamental element in games and gamification. They are a way to reward users for completing specific actions that designers want them to perform. These could be anything from completing a simple task, to even logging in daily. They help users feel a sense of accomplishment and progress, which can then motivate them to continue engaging with the app or game.

Points can be accumulated over time and can often be exchanged for some kind of reward, such as through virtual shops, new content or specific challenges. The accumulation of points can also be used to create a sense of competition among different users, which can further motivate them to engage with the system.

As represented in Figure 2.20, in Level Up Life, points represent the experience the player obtains when completing a specific task.

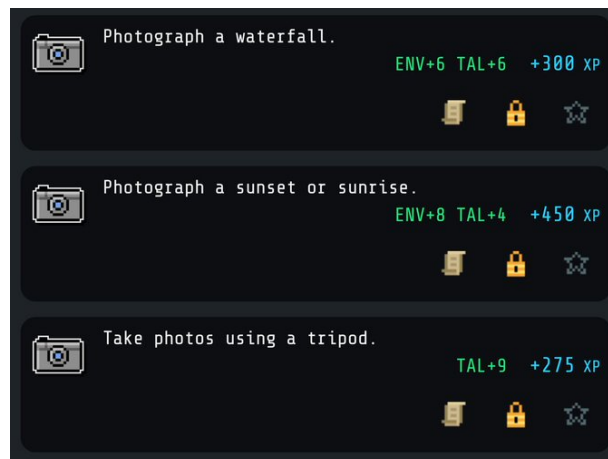


Figure 2.20: Level Up Life points

Levels

Levels are a common yet effective way that designers can structure the progress and engagement of a user inside a game or gamified app. They divide the overall experience into different stages or milestones that the user can work towards and complete. Usually, each level offers a progressively more challenging experience for the user, which helps them stay engaged and motivated to continue playing. They can often be used to provide a sense of accomplishment and progression, since they represent user growth and mastery in the game or app.

Users can usually see their progress as they move from one level to the next, which helps increase this sense of achievement.

In addition, levels are used to unlock new features, rewards or content for users, keeping the experience more engaging and less monotonous. As Figure 2.21 shows, in Duolingo levels are represented as different classes the user can take in order to learn a specific language. On the other hand, in Figure 2.22, in Fastic [28], a gamified application that helps develop healthy habits, levels represent the user's progress through their experience and time using the app.



Figure 2.21: Duolingo levels

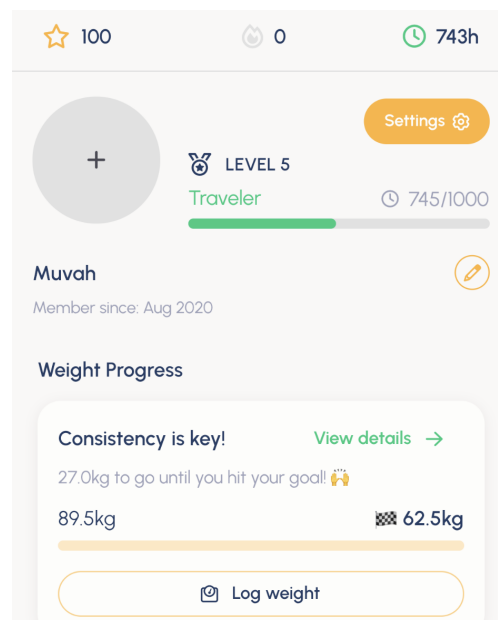


Figure 2.22: Fastic levels

Badges

In gamification, badges are a form of reward that visually represent an achievement or accomplishment. They are essentially visual symbols that can come with a title and description, and they are used to recognize and reward a user for completing a specific task.

These are based on the concept of social proof, which indicate that people are more likely to engage in certain behaviors if they see other users doing so. By displaying badges, users can showcase their achievements and status, which motivate them to continue engaging with the application. As seen in Figure 2.23, Khan Academy [29] used badges to represent and recognize learners for their accomplishment after doing specific tasks that are related to learning different topics.

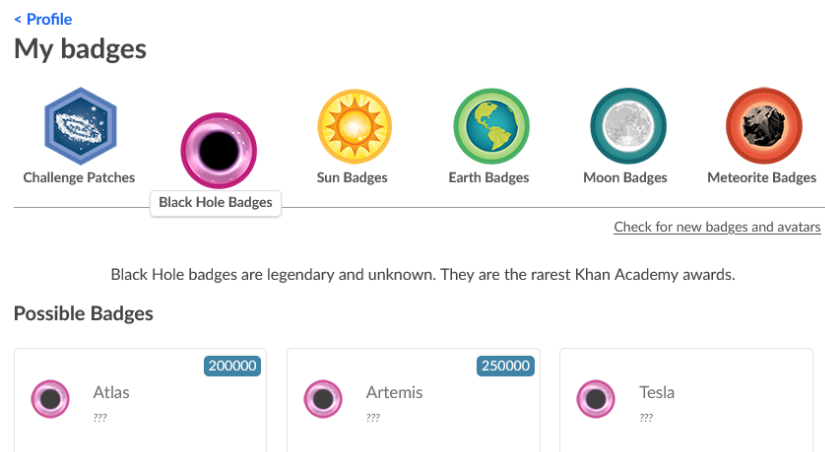


Figure 2.23: Khan Academy badges

Leaderboards

Leaderboards are another popular gamification element that are commonly used in competitive environments that motivate users to strive for achievement and progress. They display user data such as points, or scores, and compare it to other users in the system. These create a sense of competition and drive users to compete with each other to reach the top position.

They are also used to create a sense of community and connectedness among users and engage in friendly competition. However, it is important to note that they can also have negative effects, such as discouraging users who are consistently at the bottom of these rankings. Therefore, it is important to design leaderboards carefully and consider their impact on users.

Figure 2.24 is a visual representation of a leaderboard in the application Kahoot! [61], a game-based learning platform used to take quizzes and surveys in a fun way.

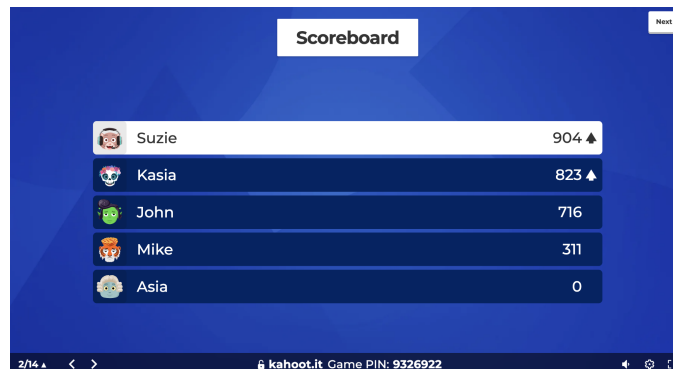


Figure 2.24: Kahoot leaderboards

Challenges

In gamification, challenges refer to a specific set of actions or goals that are presented to users, with usually a higher difficulty and higher rewards. They are designed to encourage the user to complete them and give them a sense of purpose and direction. They can also be used to guide the player or user through a game or application, providing a clear direction and goals to strive for. Likewise, they can help introduce new features and content for users, as a way of keeping them engaged. By completing them, they are often rewarded with badges, or points.

Figure 2.25 is an example of Fitbit's [62] challenges, a gamified health and fitness platform that tracks healthy habits.

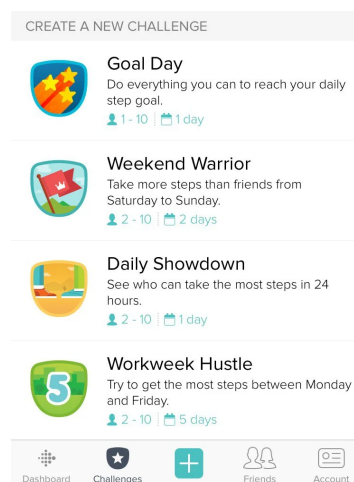


Figure 2.25: Fitbit challenges

Rewards

In addition, rewards are a fundamental component of gamification that provide users with a sense of progress and accomplishment. They are usually given to the player after completing a task, challenge or level, in order to motivate them. These rewards can be tangible or intangible items, such as points or badges.

Figure 2.26 is a representation of Starbucks [63] app rewards.

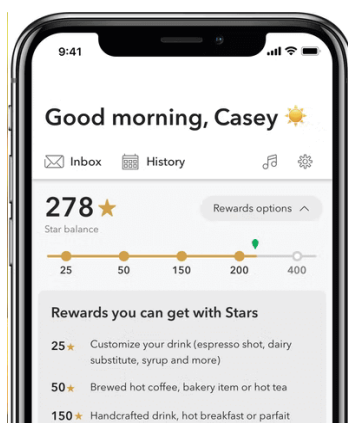


Figure 2.26: Starbucks rewards

Avatars

An avatar is a graphical representation of the user within the game or gamified tool. They represent their personality or preferences through customization. They help create a more immersive experience, as well as a sense of ownership and identity. Depending on the game or tool, they can also give a sense of accomplishment and progression, since most commonly customization items are unlocked as they progress through the gamification experience.

In addition, avatars can help create social interactions between users. It is likely that they can interact with each other through their avatars, whether it's through a chat or a game. They can give a sense of community.

Figure 2.27 is a compilation of Waze's [64] avatars, a gamified app mobile navigation app, and Figure 2.28 is Habitica's [44] avatars,



Figure 2.27: Waze avatars



Figure 2.28: Habitica avatars

Other Elements

The list of gamification elements go on and on. There is a group of elements suited for every kind of player type. The most relevant for this thesis, besides the ones mentioned earlier are the following:

- Tutorials
- Theme
- Narrative/story
- Time pressure
- Strategy
- Consequences
- Social network
- Competition
- Unlockable/rare content
- Voting/voice
- Virtual economy
- Game of chance

These will be further explained in [Section 5.3.2: Mastery Path](#), when the list of all of Beezy’s gamification elements is detailed, as well as their purpose and which kind of player type they are designed for.

2.2.5. Interactive Storytelling Games

As mentioned in [Section 1.4: Specific Objectives](#), a segment of Beezy will be dedicated to a game, where users can use points to play a social deduction game, so it was only fitting to reserve a section of the State of the Art for it.

Social Deduction Games

As Marjus Eger and Chirs Martens mention in *Keeping the Story Straight: A Comparison of Commitment Strategies for a Social Deduction Game*:

“The genre of social deduction games is typically characterized by games in which a group of players tries to deduce a subset of the group that is assigned to a stereotypically “evil” faction such as spies, criminals or mythical creatures.” [49]

The goal of the game is to uncover, as they mention, an “evil” by using logic and deductive reasoning. Commonly, these games make a separation of roles of good and bad people [50], so they end up naturally making teams.

An example of deduction video game is Among Us [51], a 2018 online multiplayer game, developed by Innersloth [52], that got insanely popular with over 300 million monthly active users in 2020 [53], where there are assigned roles of crewmates or impostors. Crewmates try to work together to complete tasks on a spaceship while trying to identify who the impostors are, while the impostors try to eliminate them sneakily.



Figure 2.29: Among Us

Another example is the card game Bang! [54], another social deduction game, designed by Emiliano Sciarra in 2002. This game is Western-themed, where different roles are assigned to the players and each role has their own objective. The idea of the game is to accomplish your role's objective before any other player does it first.



Figure 2.30: BANG!

Social deduction games have become increasingly popular over the years, possibly because of their social aspect. These types of games provide a platform where players can engage in social interaction and communication, while they try to convince other players that they are innocent or prove that others are guilty. This helps bring people together and gives a sense of community. Inside a company, this would encourage team building as it is an engaging activity that would bring employees together.

Social deduction games can be highly engaging and challenging as they require players to think strategically and logically. Playing these games can lead them to a sense of satisfaction and accomplishment, as they are working on team building.

Procedural Narrative

Procedural narrative is a technique that is used to dynamically generate narrative content based on actions or decisions. It is commonly used in the video game or interactive media industries with the purpose of making an experience more immersive and dynamic.

“One approach taken by several video games to improve variation and replayability is the procedural generation of content.” [54]

For Beezy, since there will be a section dedicated to a social deduction game made up of stories, I would like to further investigate procedural narrative.

2.4. Market Study

Nowadays, there are plenty of gamification apps as well as project management tools, but there are few tools that combine both. The project management tools that do involve gamification do not evolve around it too much. They use elements like points and badges to motivate users, but do not revolve around the concept of gamification and do not make use of its potential.

Most of these tools have some gamification elements to enhance the user experience, but do not take it to the next level.

Asana, for example, as seen in Figure 2.31, displays flying unicorns across the screen when a user completes specific goals. This helps with the feeling of accomplishment, but it does not go too deep into what gamification can do to an employee. In fact, this is considered playful design. Playful design and gamification have a lot in common and are heavily related, although the first one is a broader concept that englobes the use of playful and creative elements to design products or experiences.

It focuses on creating enjoyable and entertaining experiences in order to create a sense of curiosity and exploration and enabling the capacity of play outside ludic contexts. This can lead us to the question, is there a difference between gaming and playing? We can read from Deterding's passage from *The Gameful World: Approaches, Issues, Applications* [60]:

“Whereas ‘playing’ denotes a more freeform, expressive, improvisational, even ‘tumultuous’ recombination of behaviors and meanings, “gaming” captures playing structures by rules and competitive strife toward goals. However, in practice, it can be assumed that games often can, and will, give rise to playful behaviors and mindsets.”

This passage is important since it distinguishes “playing” and “gaming”, and their associated meanings. It points out the idea that playing is more open-ended and freeform, while gaming is structured by rules and competitions. This distinction is important to understand when designing games or applications for different contexts.

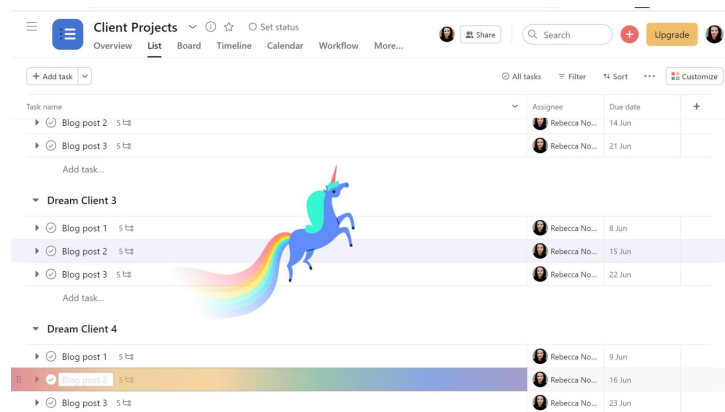


Figure 2.31: Asana gamification elements

Jira uses badges to increase Project engagement, but also seems to not be enough.

How to earn badges on the Atlassian Community



Figure 2.32: Atlassian badges

As it can be seen in Table 2.1, which is a representation of different gamification elements that some of the project management tools have in common compared to Beezy. Beezy excels immensely in the use of a wide variety of gamification elements to enhance the user experience and motivation. Beezy, as explained better in [Section 5.3: Design](#), relies heavily on the social aspect of gamification, since it features the multiplayer social deduction game *HoneyRush!*, giving a platform that socializers will love. On the other hand, since it also features a customizable Avatar, or Pet, free spirits will find comfort in this application. These two are explained in detail further ahead. Either way, it makes sure to use gamification elements from all the different user types to enrich the experiences for all players.

| Gamification Element | Beezy | Jira | Asana | Trello |
|---------------------------|-------|------|-------|--------|
| Points | X | | X | X |
| Badges | X | X | X | X |
| Rewards | X | | | |
| Levels | X | X | X | |
| Leaderboards | X | | | |
| Avatar/Pet | X | | | |
| Tutorials | X | X | X | X |
| Theme | X | | | |
| Narrative/Story | X | | | |
| Time Pressure | X | X | X | X |
| Strategy | X | | | |
| Consequences | X | | | |
| Social Network | X | | | |
| Competition | X | | | |
| Unlockable / Rare content | X | | | |
| Voting | X | | | X |
| Virtual Economy | X | | | |
| Game of Change | X | | | |

Table 2.1: Gamified PMT comparison

3. Project Management

The key for a project to be successful is its management, as it ensures that its goals are defined, resources are allocated properly, timelines are established, risks are defined, and progress is monitored. This section will describe the plan for this project.

3.1. Tools and Procedure

Like in any project, a series of tools and procedures must be used and followed for its management and monitorization in order to ensure it is completed successfully. A well-defined project management process helps ensure that the objectives are met, the risks are managed, and the resources are allocated efficiently. In order to do this, I use Jira to manage my project's tasks, which are defined below.

3.1.1. Gantt

In order to plan and keep track of my progress, I use a Gantt diagram to visually represent the start and finish of the project. Taking into account that I am currently working a part-time job, as well as having three university classes per week, the amount of hours I can invest in this project are a maximum of 16 hours per week. Taking into consideration that the project's duration is 5 months, that means that the total amount of hours would be 320.

The following is a list of all the stages in the process that need to be completed in order to successfully deliver the project. They make up the different stages in Amy Jo Kim's procedure in *Game Thinking*. The first three make it into the development section of the thesis since they focus on designing the application. The fourth stage serves as the validation of the project as it revolves around playtesting to validate the results. Lastly, the fifth stage is included in the conclusion's future lines, as it focuses on the next steps into reshaping and refining the product.

Stage 1: Hypothesize

1. **MVP canvas:** Creating a Minimum Viable Products (MVP) canvas that helps define the target audience, their needs, and the core experience of the product.
2. **Product brief:** Creating a brief that defines the target audience, the problem that is being solved, its key features, and its unique selling proposition.

Stage 2: Empathize

3. **Superfan screener:** Identifying the most passionate and enthusiastic members of the target audience in order to test and provide feedback on the product.
4. **Speed interviews:** Conducting quick and focused interviews with potential users to gather feedback and insights on the product.
5. **Job stories:** Creating narrative descriptions of user behavior and motivations in order to identify areas where the product provides value to its users.

Stage 3: Design

6. **The PMT:** Designing Beezy's project management tool and all the different elements that will help teams manage their projects successfully.
7. **HoneyRush!:** Designing a social deduction game about bees and wasps where players can have fun during their long days of work.
8. **Beebo:** Designing the avatar / pet users can interact with and customize with different items.
9. **Wireframes:** Designing different visual representations to outline the structure of the different elements for Beezy.
10. **Mastery Path:** Designing a process to guide users through the challenges and experiences that build mastery and engagement with the product.
11. **Learning Loop:** Designing a feedback loop that measures progress, provides feedback, and motivates users to engage with the product continuously.
12. **Social Action Matrix:** Designing a social system that incentivizes and rewards users for engaging or sharing the product with others.

Stage 4: Playtest

13. **Prototype*:** Creating a prototype of the product to test and iterate on its design and usability, which has been created by Irene Hernandez.
14. **Playtest:** Gathering and measuring feedback and insights from potential users after they played or tested to prototype.

Stage 5: Validate

15. **Update product brief:** Revising the product brief with new insights and feedback gathered after playtesting to refine and improve the product idea.
16. **Product roadmap:** Creating a plan that outlines the product vision, key features, and timeline of development and release.

* The prototype is being developed by my colleague Irene Hernandez as her Bachelor's Thesis [65].

Scope

Table 3.1 is the Gantt diagram that represents the different stages of the project. This is the preliminary version, meaning that as time progressed, it was updated with the final version of the project timeline. This is the initial version that was created before starting the development process of the thesis. An estimation of the weeks and hours was made.

Table 3.2 is the updated Gantt diagram after finalizing the project. This updated timeline reflects adjustments made due to various unforeseen events and challenges encountered throughout the process. In addition, I made a deliberate choice to extend the delivery timeline from June to September. This decision was driven by my personal commitment to deliver a higher quality thesis, as it became a goal of mine to do the best I could. The amount of total hours invested in this project increased from 320 to 367.

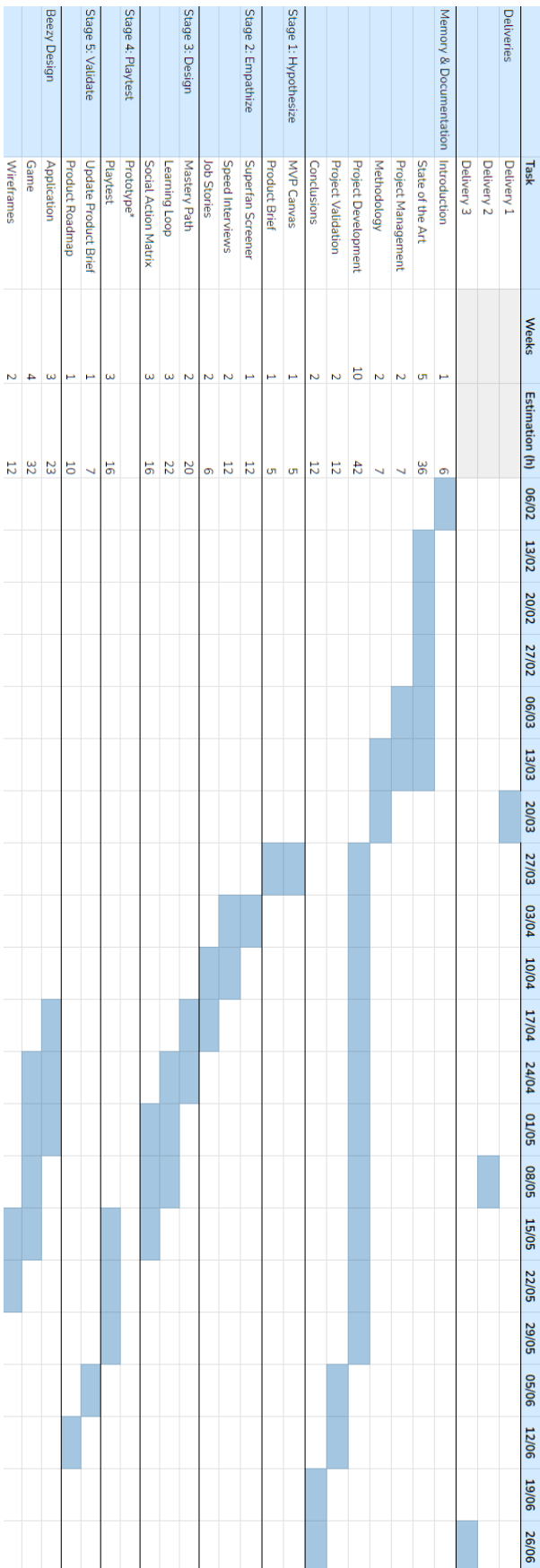


Table 3.1: Gantt chart (1st iteration)

| Task | Weeks | Estimation (h) | 06/02 | 13/02 | 20/02 | 27/02 | 06/03 | 13/03 | 20/03 | 27/03 | 03/04 | 10/04 | 17/04 | 24/04 | 01/05 | 08/05 | 15/05 | 22/05 | 29/05 |
|------------------------|----------------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Deliveries | Delivery 1 | | | | | | | | | | | | | | | | | | |
| | Delivery 2 | | | | | | | | | | | | | | | | | | |
| | Delivery 3 | | | | | | | | | | | | | | | | | | |
| Memory & Documentation | Introduction | 2 | 9 | | | | | | | | | | | | | | | | |
| | State of the Art | 6 | 47 | | | | | | | | | | | | | | | | |
| | Project Management | 3 | 12 | | | | | | | | | | | | | | | | |
| | Methodology | 4 | 15 | | | | | | | | | | | | | | | | |
| | Project Development | 6 | 60 | | | | | | | | | | | | | | | | |
| | Project Validation | 2 | 16 | | | | | | | | | | | | | | | | |
| | Conclusions | 2 | 10 | | | | | | | | | | | | | | | | |
| Stage 1: Hypothesize | MVP Canvas | 1 | 5 | | | | | | | | | | | | | | | | |
| | Product Brief | 1 | 5 | | | | | | | | | | | | | | | | |
| Stage 2: Empathize | Superfan Screener | 1 | 8 | | | | | | | | | | | | | | | | |
| | Speed Interviews | 1 | 10 | | | | | | | | | | | | | | | | |
| | Job Stories | 1 | 6 | | | | | | | | | | | | | | | | |
| Stage 3: Design | PMT | 3 | 16 | | | | | | | | | | | | | | | | |
| | HoneyRush! | 4 | 45 | | | | | | | | | | | | | | | | |
| | Avatar | 3 | 15 | | | | | | | | | | | | | | | | |
| | Wireframes | 2 | 16 | | | | | | | | | | | | | | | | |
| | Mastery Path | 2 | 28 | | | | | | | | | | | | | | | | |
| | Learning Loop | 3 | 16 | | | | | | | | | | | | | | | | |
| | Social Action Matrix | 3 | 14 | | | | | | | | | | | | | | | | |
| Stage 4: Playtest | Prototype* | | | | | | | | | | | | | | | | | | |
| | Playtest | 3 | 10 | | | | | | | | | | | | | | | | |
| Stage 5: Validate | Update Product Brief | 1 | 2 | | | | | | | | | | | | | | | | |
| | Product Roadmap | 1 | 2 | | | | | | | | | | | | | | | | |
| Task | Weeks | Estimation (h) | 05/06 | 12/06 | 19/06 | 26/06 | 03/07 | 10/07 | 17/07 | 24/07 | 31/07 | 07/08 | 14/08 | 21/08 | 28/08 | 04/09 | 11/09 | 15/09 | |
| Deliveries | Delivery 1 | | | | | | | | | | | | | | | | | | |
| | Delivery 2 | | | | | | | | | | | | | | | | | | |
| | Delivery 3 | | | | | | | | | | | | | | | | | | |
| Memory & Documentation | Introduction | | | | | | | | | | | | | | | | | | |
| | State of the Art | | | | | | | | | | | | | | | | | | |
| | Project Management | | | | | | | | | | | | | | | | | | |
| | Methodology | | | | | | | | | | | | | | | | | | |
| | Project Development | | | | | | | | | | | | | | | | | | |
| | Project Validation | | | | | | | | | | | | | | | | | | |
| | Conclusions | | | | | | | | | | | | | | | | | | |
| Stage 1: Hypothesize | MVP Canvas | | | | | | | | | | | | | | | | | | |
| | Product Brief | | | | | | | | | | | | | | | | | | |
| Stage 2: Empathize | Superfan Screener | | | | | | | | | | | | | | | | | | |
| | Speed Interviews | | | | | | | | | | | | | | | | | | |
| | Job Stories | | | | | | | | | | | | | | | | | | |
| Stage 3: Design | PMT | | | | | | | | | | | | | | | | | | |
| | HoneyRush! | | | | | | | | | | | | | | | | | | |
| | Avatar | | | | | | | | | | | | | | | | | | |
| | Wireframes | | | | | | | | | | | | | | | | | | |
| | Mastery Path | | | | | | | | | | | | | | | | | | |
| | Learning Loop | | | | | | | | | | | | | | | | | | |
| | Social Action Matrix | | | | | | | | | | | | | | | | | | |
| Stage 4: Playtest | Prototype* | | | | | | | | | | | | | | | | | | |
| | Playtest | | | | | | | | | | | | | | | | | | |
| Stage 5: Validate | Update Product Brief | | | | | | | | | | | | | | | | | | |
| | Product Roadmap | | | | | | | | | | | | | | | | | | |

Table 3.2: Updated Gantt chart

3.1.2. JIRA

Throughout the development of this thesis, I used Jira [2] to identify and manage the workload effectively. It helped me organize the different tasks to make this project happen.

Figure 3.1 is a screenshot of the backlog where I have a compilation of tasks that needed to be completed towards the final delivery.

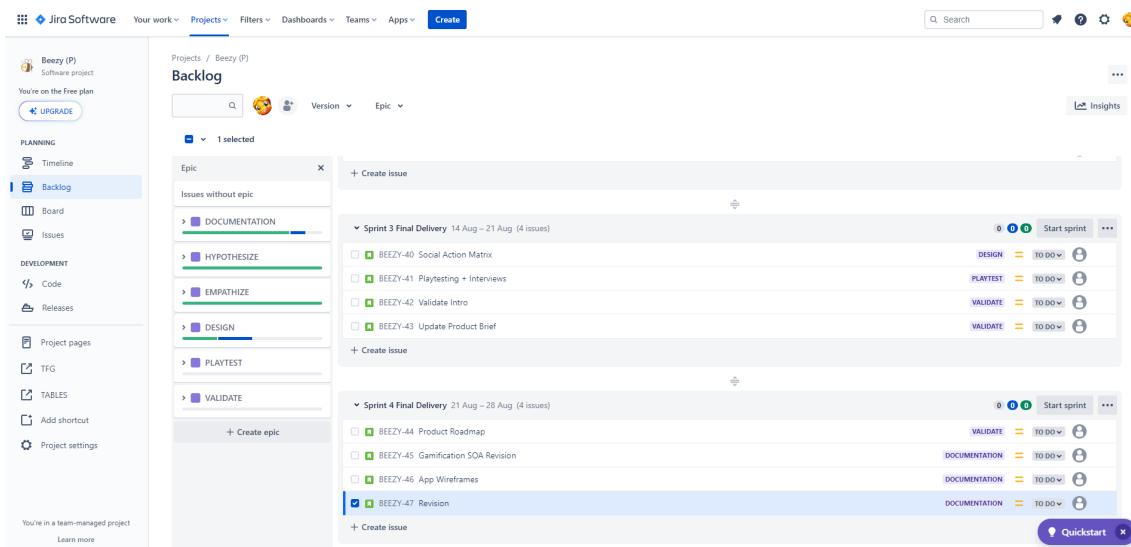


Figure 3.1: Jira planification

3.2. Validation Tools

In order to validate the functionality and objectives of the project, a series of interviews and surveys were made to a local indie video game company, as well as university colleagues and family members.

Throughout the development process of the thesis, there were a series of surveys and interviews made that help validate the project's goals and concepts:

1. Superfan screener, found in [Section 5.2.1: Superfan Screener](#).
2. Speed Interviews, found in [Section 5.2.2: Speed Interviews](#).
3. Warm-up interviews, found in [Section 6.1.2: Testing](#).
4. Playtesting session, found in Section [6.1.2: Testing](#).
5. Post-playtesting interviews, found in Section [6.1.2: Testing](#).

These questionnaires and interviews give insight and feedback on Beezy, and helped identify any problems with its design or functionality. They are part of the process of developing the product in Amy Jo Kim's book and serve as validation tools. These are essential when creating a product because they provide a structured approach to testing and validating assumptions, ideas, and prototypes. They help identify and fix problems as well as increasing the chances of success by creating a product that meets the needs and expectations of the target audience or potential customers.

3.1. SWOT Analysis

The SWOT analysis is a very useful tool that businesses and organizations use to help identify internally their strengths and weaknesses, as well as externally their opportunities and threats. This method allows companies to find potential areas of improvements and determine the best strategy to pursue their objectives. It can also help them identify risks or challenges that may come along the way. In case of this project, this is the analysis made:

| | Strengths | Weaknesses |
|----------|---|--|
| Internal | <p>I am currently working as a Junior Producer in a video game company. I am becoming an expert in project management, and I have insight on how a video game company works.</p> <p>I have studied in university video game design as well as gamification.</p> <p>My colleague Irene Hernandez is making a prototype for Beezy, which will be helpful to test and visualize the design I will be making.</p> | <p>I have many time constraints, the scope of this project can be scaled into a large one very easily, and it is important that I define well what needs to be done on a timeline.</p> <p>The topic of project management with gamification is a new topic for me, so a lot of investigation will be needed.</p> |
| | Opportunities | Threats |
| External | <p>The problem that I am addressing is real. Employees suffering from burnout is very common, so Beezy has a clear purpose.</p> <p>There are not many gamified project management tools in the market.</p> <p>Beezy is a tool that will be flexible and does not depend on gamification. It's playful side will be optional to use, being adaptable to those teams or employees that prefer to keep it aside.</p> | <p>There are a lot of project management tools in the market.</p> <p>I might have trouble making it scalable for larger companies since it is so heavily dependant on team collaboration and team building.</p> <p>I don't want it to give additional work for the teams, its gamified aspect should be fully automatic, but configurable.</p> <p>The concept of fun at work is a sensitive topic, limitations will need to be made.</p> |

Table 3.3: SWOT analysis

3.2. Risks & Contingency Plan

This section is an analysis of all the potential risks that could negatively impact the project. Its purpose is to identify these risks and provide a plan of action, or solution, that will help manage or mitigate them.

| Risk | Priority | Action Plan |
|---|----------|---|
| Lack of time | High | A project timeline has been defined. The project is meant to be finished a few weeks before the final delivery, having that extra time should anything go wrong. In addition, the objectives that I want to meet are prioritized. The project's scope can be reduced without major negative impact. |
| Negative or mixed opinions on the interviews | High | <p>One of my ideas is to interview some of my colleagues at work and university. Part of my study of the product is to gather feedback and insight on my proposal. If I receive negative feedback, or mixed opinions, I will have to redirect or reevaluate my proposal. This can be risky and affect directly on the project's scope.</p> <p>To prevent this, I will not wait to have the project in its final stages to gather feedback. I will be doing more rounds of feedback through the different stages, since it will help me shape the project the best way possible.</p> |
| Project's scope and topics can be too broad | Medium | <p>Since I am trying to design a tool that covers so many aspects (project management, gamification, game design with procedural narrative, etc.), it is important that I have everything I want to cover on display, and prioritized.</p> <p>This issue is related to the lack of time. The timeline made will serve me as a guide to not over extend on these topics, and try to cover the whole concept of Beezy.</p> |
| Not having a prototype to test in time | Medium | One of my advantages is that my colleague Irene is making a prototype of Beezy. It can be used for my interviews and testing to show how its functionality and help me vision what I am designing. A problem that could emerge is that the prototype could not be ready for playtesting. If it is the case, the playtesting will be done differently, like using slides that represent each section of Beezy. It would be a simplified version of the interface. |
| Having to adapt my project to a basic prototype | Low | <p>I don't want to limit my design on what can be prototyped in these few months. For this, I will try to keep focus on what I can do these months, and help Irene prioritize these features for what she can do.</p> <p>Seeing it visually can help me identify areas of improvement, but the design itself does not have to be adjusted to Irene's time constraints. We need to keep in mind that they are two different projects.</p> |

Table 3.4: Risk and contingency analysis

3.3. Initial Cost Analysis

This section is about analyzing the necessary budget for this project. According to studies [55], the average salary in Barcelona is around 15.63€ per hour, Taking this into account, the following is a table of the average cost of each part of the project:

| Section | Task | Estimated Hours (h) | Price/Hour (€/h) | Total Price (€) |
|------------------------|----------------------|---------------------|------------------|-----------------|
| Memory & Documentation | Introduction | 6 | €15.63 | €93.78 |
| | State of the Art | 36 | €15.63 | €562.68 |
| | Project Management | 7 | €15.63 | €109.41 |
| | Methodology | 7 | €15.63 | €109.41 |
| | Project Development | 42 | €15.63 | €656.46 |
| | Project Validation | 12 | €15.63 | €187.56 |
| | Conclusions | 12 | €15.63 | €187.56 |
| Stage 1: Hypothesize | MVP Canvas | 5 | €15.63 | €78.15 |
| | Product Brief | 5 | €15.63 | €78.15 |
| Stage 2: Empathize | Superfan Screener | 12 | €15.63 | €187.56 |
| | Speed Interviews | 12 | €15.63 | €187.56 |
| | Job Stories | 6 | €15.63 | €93.78 |
| Stage 3: Design | Mastery Path | 20 | €15.63 | €312.60 |
| | Learning Loop | 22 | €15.63 | €343.86 |
| | Social Action Matrix | 16 | €15.63 | €250.08 |
| Stage 4: Playtest | Prototype | | | |
| | Playtest | 16 | €15.63 | €250.08 |
| Stage 5: Validate | Update Product Brief | 7 | €15.63 | €109.41 |
| | Product Roadmap | 10 | €15.63 | €156.30 |
| Beezy Design | Application | 23 | €15.63 | €359.49 |
| | Game | 32 | €15.63 | €500.16 |
| | Wireframes | 12 | €15.63 | €187.56 |
| TOTAL | | 320 | | €5,001.60 |

Table 3.5: Cost for each milestone

| | Type | Subject | Price | Type | Amortization (yr) | Total Price |
|----------------|-------------|---------------|-----------|--------------|-------------------|-------------|
| Direct Costs | Personal | Salary / Time | €5,001.60 | Total | | €5,001.60 |
| | Equipment | Computer | €1,500.00 | Amortization | 5 | €300.00 |
| | | Monitor | €120.00 | Amortization | 5 | €24.00 |
| | | Mouse | €90.00 | Amortization | 4 | €22.50 |
| | | Keyboard | €110.00 | Amortization | 4 | €27.50 |
| | | Chair | €90.00 | Amortization | 4 | €22.50 |
| | | Desk | €100.00 | Amortization | 4 | €25.00 |
| | Consumables | Notebook | €5.00 | Unique | | €5.00 |
| | | Pens | €6.00 | Unique | | €6.00 |
| | Software | Google* | €0.00 | Monthly | | €0.00 |
| Jira | | €0.00 | Monthly | | €0.00 | |
| Indirect Costs | Maintenance | Electricity | €20.00 | Monthly | | €100.00 |
| | | Water | €14.00 | Monthly | | €70.00 |
| | | Internet | €20.00 | Monthly | | €100.00 |
| TOTAL | | | | | | €5,704.10 |

Table 3.6: Cost analysis

* Google applications such as Google Drive, Google Sheets, Google Forms, Google Slides, Gmail

Update

After the first half of the development has been made, the budget of the project has been slightly altered due to the time delays and project timeline updates mentioned in [Section 3.1.1: Gantt](#). This update mentioned would recalculate the salary cost from €5,001.60 to €5,736.21, a difference of €734.61. This makes sense for a salary of €15.63 per hour. Consequently, the total budget of the project has been increased to €6,438.71.

Please see Figure 3.7 and 3.8 for updated tables on the calculations.

| Section | Task | Estimated Hours (h) | Price/Hour (€/h) | Total Price (€) |
|------------------------|----------------------|---------------------|------------------|------------------|
| Memory & Documentation | Introduction | 9 | €15.63 | €140.67 |
| | State of the Art | 47 | €15.63 | €734.61 |
| | Project Management | 12 | €15.63 | €187.56 |
| | Methodology | 15 | €15.63 | €234.45 |
| | Project Development | 60 | €15.63 | €937.80 |
| | Project Validation | 16 | €15.63 | €250.08 |
| | Conclusions | 10 | €15.63 | €156.30 |
| Stage 1: Hypothesize | MVP Canvas | 5 | €15.63 | €78.15 |
| | Product Brief | 5 | €15.63 | €78.15 |
| Stage 2: Empathize | Superfan Screener | 8 | €15.63 | €125.04 |
| | Speed Interviews | 10 | €15.63 | €156.30 |
| | Job Stories | 6 | €15.63 | €93.78 |
| Stage 3: Design | PMT | 16 | €15.63 | €250.08 |
| | HoneyRush! | 45 | €15.63 | €703.35 |
| | Avatar | 15 | €15.63 | €234.45 |
| | Wireframes | 16 | €15.63 | €250.08 |
| | Mastery Path | 28 | €15.63 | €437.64 |
| | Learning Loop | 16 | €15.63 | €250.08 |
| | Social Action Matrix | 14 | €15.63 | €218.82 |
| Stage 4: Playtest | Prototype | | | |
| | Playtest | 10 | €15.63 | €156.30 |
| Stage 5: Validate | Update Product Brief | 2 | €15.63 | €31.26 |
| | Product Roadmap | 2 | €15.63 | €31.26 |
| TOTAL | | 367 | | €5,736.21 |

Table 3.7: Updated cost for each milestone

| | Type | Subject | Price | Type | Amortization (yr) | Total Price |
|----------------|-------------|---------------|-----------|--------------|-------------------|-------------|
| Direct Costs | Personal | Salary / Time | €5,736.21 | Total | | €5,736.21 |
| | Equipment | Computer | €1,500.00 | Amortization | 5 | €300.00 |
| | | Monitor | €120.00 | Amortization | 5 | €24.00 |
| | | Mouse | €90.00 | Amortization | 4 | €22.50 |
| | | Keyboard | €110.00 | Amortization | 4 | €27.50 |
| | | Chair | €90.00 | Amortization | 4 | €22.50 |
| | | Desk | €100.00 | Amortization | 4 | €25.00 |
| | Consumables | Notebook | €5.00 | Unique | | €5.00 |
| | | Pens | €6.00 | Unique | | €6.00 |
| | | Software | Google* | €0.00 | Monthly | |
| Jira | €0.00 | | Monthly | | €0.00 | |
| Indirect Costs | Maintenance | Electricity | €20.00 | Monthly | | €100.00 |
| | | Water | €14.00 | Monthly | | €70.00 |
| | | Internet | €20.00 | Monthly | | €100.00 |
| TOTAL | | | | | €6,438.71 | |

Table 3.8: Updated cost analysis

4. Methodology

For this project, I followed the methodology instructed by Amy Jo Kim in her book *Game Thinking* [7], where she does an extensive step-by-step system for developing products using game design techniques. She shows us how to build successful products on principles of agile/lean design and design thinking.

Amy Jo Kim's *Game Thinking* methodology offers a unique approach to designing gamified principles by combining the key aspects of game design, user experience, and behavioral psychology. One of the benefits from this methodology is that it focuses on a user-centric approach. Rather than starting with a set of game mechanics and trying to fit them for a user's need, she explains how designers should start by understanding the user's needs and goals, and then design game mechanics accordingly. This leads to a more meaningful gamified product that is crafter for the user's needs.

In addition, Amy Jo Kim is an expert game designer with over 25 years of experience in the industry, working with big-name companies such as Netflix, Rock Band, Electronic Arts, Happify, and more. Consequently, *Game Thinking* is based on years of research and experience in user experience and game design. where she had the chance to study how people interact with games and gamified products, making *Game Thinking's* methodology being based on proven design principles and the best practices. In her book, she combines knowledge in fields such as game design, lean startup, and design thinking in order to help innovators and entrepreneurs create their products. Through her work, she covers a range of disciplines, including user experience, game design, product design, behavioral economics, psychology, and business strategy, which are all consequently reflected in this thesis.

Her book is divided into five big stages, or sections: Hypothesize, Empathize, Design, Playtest, and Validate. In each one of them, she has subdivisions for different steps to build the product, with the following procedure:

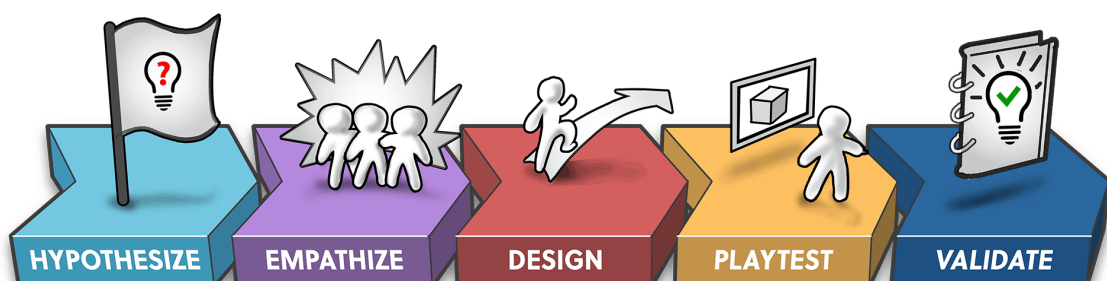


Figure 4.1: *Game Thinking* methodology

Hypothesize

In this section the focus is on formulating testable hypotheses based on insights made from user research. It helps clarify the product vision and direction, as well as reducing the risk of creating a product that does not correlate with the target audience.

The first step is to identify the key assumptions and risks that underlie the product vision, between them, the user needs, their motivations, and their pain points. By identifying and articulating these assumptions, an hypothesis can be developed and be tested for experimentation.

The next step would be to define the success criteria, in other words, what metrics or measures from the hypothesis can be tested in order to validate the idea. This helps by providing clarity and focus, as well as ensuring that the hypotheses are relevant and meaningful.

This is the definition stage, where an initial assumption about a viable solution is being made, and then it is refined by acquiring information from the prospective users.

Empathize

This is the first step in the development of the product. It focuses on making an analysis on a deeper level on the customer's needs, motivations and pain points. The goal of this section is to build empathy with the users by putting ourselves in their position while keeping an understanding and open minded perspective.

This involves conducting user research through different methods, such as interviews and surveys, to gain insights on their needs and behaviors. The information gathered can be helpful to create a product that not only meets their functional needs but also addresses their emotional needs, such as a sense of accomplishment or recognition. This is crucial to build a product that resonates with the users.

For this section, I use Google Forms [58] to make surveys that help me identify this key information, as well as in person interviews to some colleagues at work.

Design

This is the second step into the product development process, which focuses on creating a solution that meets the needs of the target audience which was identified previously. It involves synthesizing the research adhered and defining the product concept and its core features.

During this step, an initial visual representation of the product is made, such as wireframes and prototypes, that were used for the playtesting later on. The tool that has been for this section is Figma [59] in order to create the wireframes.

Playtest

This section is about testing the product with real users with a series of playtesting sessions or interviews. The purpose of this stage is to gather feedback, identify issues, and iterate on the design. It will help refine the product.

Based on the feedback gathered during this phase, the necessary changes to the product can be done, since iterating and refining is a key aspect of building a successful product.

For this section, interviews were conducted where the Prototype was first presented and users could playtest it, and were followed by a series of questions in order to gather insights. The interviews were directed to my colleagues at work and university. They were sessions that lasted an hour each.

Validate

This section is the last step, where I validate the product. One important aspect of future work for Beezy involves revisiting and refining the product based on Amy Jo Kim's principles, as outlined in her framework. Her approach emphasizes continuous iteration, and Beezy can benefit from this iterative process using the feedback gathered in the playtesting sessions.

5. Project Development

At this point, all the necessary initial research to understand the context of project management and gamification has been carried out. This section goes through the process of following *Game Thinking* in order to design Beezy.

In the writing of this section of the thesis, I have chosen to adopt a less formal writing style that suits the personal nature of my project. Rather than adopting a traditional professional and objective tone, I am writing in a more personal and subjective way that reflects my personal experiences and observations. My goal is to share my journey in a way that is both relatable and insightful, and I believe that a less formal writing style is the best way to achieve this.

According to Amy Jo Kim, *Game Thinking* is a methodology that applies game design principles to the process of product development. In the same way that game designers create captivating and immersive game experiences, it entails building user-centric and engaging products.

At its core is the concept of player-centered design. In order to develop a product that meets demands in an entertaining and engaging way, it stresses understanding the needs, goals, and motivations of the target audience.

This process involves conducting user research, creating hypotheses and prototypes, testing, and validating assumptions through experimentation and research. This procedure is used to iterate and improve the product in accordance with user feedback.

By incorporating game design principles, such as progress indicators, social engagement mechanics, and feedback loops, Amy Jo Kim guides us to create products that are not only functional but enjoyable to use. This process is ideal for designing products that require high user engagement, similar to games.

5.1. Hypothesize

The Hypothesize section of *Game Thinking* is a critical component in the game design process, which allows designers to test and validate different assumptions that they make about their game or application concept through experimentation. This segment involves formulating testable hypotheses that are based on different insights after user research, as well as defining their success criteria, and finally conducting experiments that help validate, or invalidate, the hypotheses.

The goal of this section is to reduce the risk of developing an application that does not resonate with the target audience. In order to do this, testing and validation need to be completed about all the different assumptions about the user's needs. The goal is to ensure that the product is player-centric and meets the desired objectives.

5.1.1. MVP Canvas

The first step into the process of finding the right customers and their unmet needs is creating the MVP Canvas, also known as the Minimum Viable Product (MVP), which is a tool that helps teams break down the product into its key components, as well as mapping out how these components will relate to the user experience. The canvas is a visual representation of the MVP, allowing teams to easily communicate and visualize their ideas. Figure 5.1 is a representation of the MVP Canvas as a template.

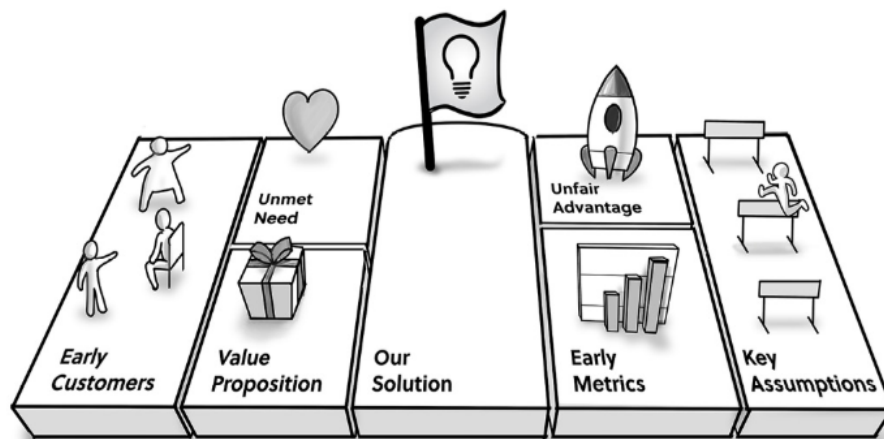


Figure 5.1: MVP Canvas template

It is crucial to first clarify the strategy by articulating a hypothesis. It can come from anecdotal observation or an idea, or a client that is asking for a solution to a specific problem. In this case, Beezy is an initial idea that was formed while coursing Gamification in university as well as starting to work in my company. These two experiences helped me identify a problem that is present in today's business world and find a solution that can address it.

These hypotheses start to get shaped in this section of the process. It is important to make assumptions which will then be verified after research, like with the use of surveys or interviews.

The MVP Canvas consists of seven key elements, each of which plays an important role in the definition of the product, and will be necessary in order to give sense and accomplish objectives for future steps. Figure 5.2 is a representation of Beezy’s MVP Canvas.








| | | | | |
|---|--|--|---|--|
| <p>EARLY CUSTOMERS </p> <p>Small indie video game companies that suffer from monotony and an unsatisfying workplace.</p> <p>Video game entrepreneurs building a small workplace that need a way to manage a team in a fun and engaging way.</p> | <p>UNMET NEEDS </p> <p>An engaging and motivating experience that will help with the work burnout.</p> <p>A fun and nourishing space where work can be managed in creative ways.</p> | <p>OUR SOLUTION </p> <p>A gamified project management tool that boosts employee motivation and incentivizes task accomplishment through engaging and rewarding gameplay.</p> | <p>UNFAIR ADVANTAGE </p> <p>Experience in the video game industry, while becoming an expert in project management and having studied gamification.</p> <p>Having a tutor that is an expert in the gamification field.</p> | <p>HIGH RISK ASSUMPTIONS </p> <p>Companies are willing to pay for this solution.</p> <p>People care about their job satisfaction and look for ways to improve it.</p> <p>People want to participate in team building activities.</p> |
| | <p>VALUE PROPOSITION </p> <p>A way to feel more motivated and accomplished at work without being less effective.</p> | | <p>EARLY METRICS </p> <p>Value: Willingness to pay for the product.</p> <p>NPS Score: Willingness to recommend it to others.</p> <p>Uptake: Willingness to use the product.</p> | <p>People are open-minded about fun and creative approaches to solve real and serious problems.</p> <p>Beezy is fun.</p> |

Figure 5.2: Beezy MVP Canvas

Early Customers

As Amy Jo Kim mentions in page 33,

“If you’re innovating, you need to find and delight a small early market before you target that larger segment.” [7]

She gives us a series of tips in order to find the first section of the MVP Canvas, the Early Customers. This section defines the target customers for our product, in other words, the audience that we need to understand their pain points, goals and motivations, in order to design a product that addresses their needs.

We can ask ourselves questions like: What group of people will need and want our offering first? What characteristics and behaviors will they have in common? [7]

In this case, we are focusing on, as early customers, small indie video game companies that suffer from monotony and an unsatisfying workplace, or video game entrepreneurs building a small workplace that need a way to manage a team in a fun and engaging way.

Unmet Need

This next section is about identifying the motivational problem our early customers are facing, in other words, what they need. By identifying these needs, we can ensure that the MVP is designed to solve real problems and provide real value to the users.

For this section, we can ask ourselves: What relevant needs do they have right now that we could potentially address? How are they currently getting those needs met? Why is that unsatisfying? [7]

After investigation, we can say as my first hypothesis that small indie video game companies that suffer from monotony and an unsatisfying workplace **need** an engaging and motivating experience that will help with their work burnout.

My second hypothesis is that video game entrepreneurs that are building a small workplace and need a way to manage their team in a fun and engaging way **need** a fun and nourishing space or environment where work can be managed in creative ways.

On another note, in page 37 Amy Jo Kim, asks us to identify whether our product makes more sense as a “Product Extension” or a “Major New Feature”. This refers to designing a new feature into an already existing product, like adding an extension to Jira that will give a solution to our early customers. It is an interesting topic to think about, which was also brought up by my tutor on several occasions. Why build a new product? What would it offer that an extension to an existing one would not?

After thinking it over and over again, I was able to make a series of advantages and disadvantages for both approaches, as shown in Table 5.1. This helped me lay out all of the reasons that could affect the decision and choose what fits best for Beezy.

| | Advantages | Disadvantages |
|-------------------------------|---|--|
| Extension of existing product | <ul style="list-style-type: none"> Being able to work over an already existing product, which will give me more time to focus on the gamified experience. Having an already existing audience, making it easier to give visibility to the extension. Reducing the risk of making a product that could fail. | <ul style="list-style-type: none"> No sense of ownership over the project being done. Stuck with the existing product's theme and limitations. No freedom into changing already existing functionalities to shape the product better. Thorough investigation needed to understand the product's limitations. |
| Beezy | <ul style="list-style-type: none"> A centralized application that will cover all the different customer needs. A consistent and unique theme throughout the tool: Bees. An innovative solution that is not shallow and truly understands the needs and goals of the users. Freedom to design a PMT that fits the target audience. | <ul style="list-style-type: none"> The PMT section is not original. An ambitious project with time limitations. |

Table 5.1: Unique product vs extension

After a lot of meditation, I decided on designing Beezy as a new product rather than making an extension to an already existing one. The most important reason is that I want to make sure all the different aspects of the application make sense and are coherent to the user's needs, including the project management side of it. Having the liberty and freedom to design it from the base is inspiring and motivating. It is important that Beezy, with all its parts, is coherent and targets a specific type of audience, which, as mentioned before, are small indie video game companies that need to find a creative way to make their experiences at work more fun.

Value Proposition

The next step is defining the value proposition. It is the statement that describes the value that a product or service provides to its target customers. It outlines the benefits and features that make it different from other products on the market, and explains why customers should choose it over competitors. A strong value proposition is essential in order to attract and retain customers.

For this step, we can answer questions like: How does my solution address my customer's unmet needs? From their point of view, what unique value proposition are we offering? What makes our solution different from everything else out there? [7]

In relation to game thinking, this value proposition should understand the players motivations and needs. By identifying what can drive the player into engaging with the product, we can craft a value proposition that resonates with the player.

For Beezy, the value proposition would be giving users a way to feel more motivated and accomplished at work, which will improve overall job satisfaction, without making them feel or be less effective.

Our Solution

This section of the MVP Canvas is closely related to the value proposition. The value proposition addresses how the unmet needs of the users can be fixed by giving them a solution. On the contrary, the solution itself is what service or product is being proposed to address the value proposition to help with customer's unmet needs.

“Your value proposition exists in solution space – it's the connective tissue between your solution and your customer's needs.” [7]

In the case of Beezy, it is a gamified project management tool that boosts employee motivation and incentivizes task accomplishment through engaging and rewarding gameplay.

Unfair Advantage

The following section refers to a unique advantage or asset that a team or a product possesses that gives them an edge over the competitors. It could be anything from a team's specialized skills and expertise to a unique technology or intellectual property. Also, it could be a tangible element, like having a loyal fan base or good brand reputation.

This unfair advantage helps a product or a team succeed by providing them with an element that is difficult for others to possess, replicate or overcome. Identifying the unfair advantage is critical for developing a successful product strategy. By capitalizing on what makes it unique, teams can differentiate themselves from others.

As Amy Jo Kim mentions, we can ask ourselves the following questions: What am I passionate about? What are we the best in the world at? Why should someone believe in this team and project? [7]

To answer these questions we can reference the SWOT analysis previously made on [Section 3.1: SWOT Analysis](#), where the *Strengths* and *Opportunities* were stated. In addition, having a tutor expert in gamification is a plus for the project.

Early Metrics

The early metrics identify indicators that will be used to measure the success of the MVP. These metrics should be specific and measurable, and should be aligned with the goals of the MVP.

As Amy Jo Kim mentions, these metrics can be subjective, and they have to be connected to the product goals.

For Beezy, it would make sense to keep track of the willingness to pay for the product, recommend it to others, and to use the product. These will be tested throughout interviews and surveys in future steps.

High Risk Assumptions

The final step of the MVP Canvas is to identify the high risk assumptions, which are those assumptions that pose the greatest risk to the success of the product. They are usually related to the user's needs, behaviors and motivations, as well as the market and competition. The MVP Canvas helps to identify and prioritize them, so they can be tested and validated through experimentation and customer feedback. By validating these assumptions, teams can reduce the risk of failure.

For this section we can ask ourselves questions like: Which assumptions am I least sure about? Which ones would devastate my project if they turned out to be false?

For Beezy, we can say the following high risk assumptions that will need to be tested out eventually:

1. Companies are willing to pay for this solution.
2. People care about their job satisfaction and look for ways to improve it.
3. People want to participate in team building activities.
4. People are open-minded about fun and creative approaches to solve real and serious problems.
5. Beezy is fun.

5.1.2. Product Brief

In Amy Jo Kim's *Game Thinking*, the product brief is a key component of the development process, as it is a concise document that outlines the high-level vision for the product, including the target audience, value proposition, and key features.

This document is created after clarifying the product strategy in the MVP Canvas, and serves as a reference document that tells the story of what the product is, who it is for, and who will test the ideas. It is divided into three sections:

1. **Product strategy:** What we are building.
2. **Customer insights:** What we are learning.
3. **Pivot or persevere:** What to build next.

Product Strategy

In this first section, it is important to outline the current product strategy. A great way to do so is by elaborating an elevator pitch, which is a clear and concise statement of what is being created, who it is for and why it is valuable to them.

We are building Beezy, a gamified project management tool for employees who suffer from work burnout so they can have an engaging space that improves their motivation, rewards their hard work, and strengthens their sense of unity within the team.

Customer Insights

In this section, the Superfan Funnel is introduced, see Figure 5.3. It is a three-stage process that accelerates the product fit. These stages are defined after research in [Section 5.2: Empathize](#). The first iteration of the customer insights is about planning the research, focusing on the questions like: Who will we bring in first for testing? How will we find them? Which assumptions will we be testing first? Why? Can we start right away, or is there a “gating event” for getting started? Will we talk to people online, by phone, or in person? Or a mix? [7]

The purpose of these questions is to make a first iteration on the experimentation rounds.

For the case of Beezy, the research plan consists of the following:

WHO: employees working in indie video game companies.

WHAT: surveys designed to test their need for a motivation boost.

WHEN: after identifying potential subjects.

WHERE: online, through Google Forms surveys.

WHY: to test the overall direction and target customer assumptions.

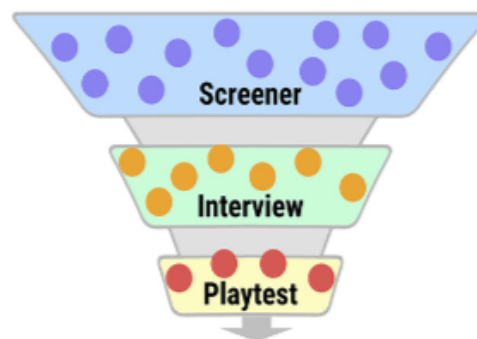


Figure 5.3: Superfan funnel

After testing these assumptions, these insights will be used to update the product strategy and design in order to decide what to do next. A series of key patterns can be identified. These patterns indicate specific habits, needs or ideas that can help shape the product. Some patterns can be built by identifying what the subjects like, what they believe, what they wish they could have, what they are willing to pay, or what other products they have used before.

For now, they are hypotheses which will need to be tested. The following are some assumption-based hypotheses for Beezy.

Pattern 1: Subjects believe it is a great idea but are not sure it will work for them or their company.

Pattern 2: Subjects are worried that the game can interfere with work, which can be problematic with one's performance.

Pattern 3: Subjects are interested and would love to try it, but would not want to pay for it.

Pivot or Persevere

This is the last section of the product brief which is all about making data-driven decisions to either pivot, which means changing the direction and adjusting the product strategy based on the new information, or persevere, which means to continue with the existing product strategy if the data indicates that it is working well.

This phase is in charge of collecting and analyzing the data on how users interact with the product being built, and is used to make informed decisions.

At this early stage though, it is used to sketch out what the test would look like. Once it is validated with the customer collected data, the information will be updated and iterated to test again. For this thesis, the prototype created will serve as an Alpha version of the product that will be tested.

The following plan is the Alpha research plan that will be carried out.

WHO: employees working in indie video game companies.

WHAT: a 20 minute Alpha test designed to test the assumptions made.

WHEN: during the first week of June.

WHERE: in-person according to the availability of the subject, otherwise, online through GoogleMeet.

WHY: to get feedback on the core systems and features.

5.2. Empathize

The Empathize section in Amy Jo Kim's *Game Thinking* is the initial phase of the product development process, where the focus is on understanding the target users and their needs, motivations, and pain points. This involves conducting user research through methods such as surveys, interviews, and observation to gather insight on user behaviors and needs.

This section is crucial since it is about validating the assumptions previously made in the Hypothesize section and allowing the design and development of a product that closely aligns with the user's expectations. Amy Jo Kim teaches us a proven system for empathizing with the product's hot-core customers, which are the ones that will help us refine the hypotheses and increase the odds of success.

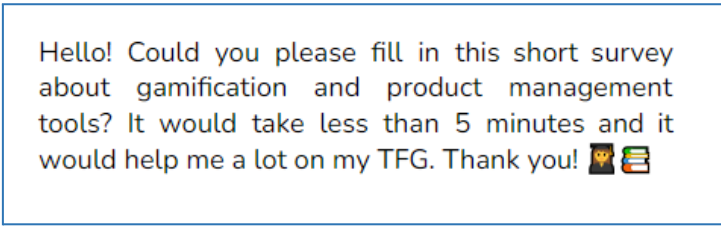
5.2.1. Superfan Screener

The first step in the Empathize section is to find the right early customers. These people can playtest the early versions of the prototype, give feedback on the systems and features, or help bring the core social aspects to life. The superfans, as Amy Jo Kim describes them, are people that **have** and are **conscious** of the problem that the product is trying to solve, they're **trying to solve** it but are **dissatisfied** with the options available for them.

“I call these people superfans. That’s shorthand for high-need, high-value early customers. High-need because they have a burning need or desire for what you’re creating, perhaps for reasons you don’t yet understand. High-value because they’re articulate, observant, and have the motivation and energy to help you bring your product to life. In other words, they would be excellent alpha testers.” [7]

Recruiting Message

In order to find these superfans, Amy Jo Kim suggests writing a recruiting message and choosing through which channels the message is going to be sent. For my case, the amount of people I can reach is limited, so I sent a simplified recruiting message asking for my coworkers and classmates to help me with my thesis research. I decided to write the recruiting message in a more informal and friendly style because my target consists of friends and coworkers with whom I have a close relationship. The casual tone helps maintain familiarity and engagement, making my request more approachable and also gives it a personal touch. Being informal and concise makes it easier for those who have busy schedules whilst still conveying the essential information. The recruiting message sent can be seen in Figure 5.4.:



Hello! Could you please fill in this short survey about gamification and product management tools? It would take less than 5 minutes and it would help me a lot on my TFG. Thank you! 🙏📄

Figure 5.4: Informal recruiting message

If I were to send the recruiting message to a wider audience, I would be using social media platforms such as LinkedIn to spread the message. The recruiting hypothetical message can be seen in Figure 5.5:

Hey! We are looking for video game lovers who are working in the industry to participate in a research study for a new gamified project management tool.

We appreciate your interest and time. To apply for the study, take this quick screener:

<link to screener>

Thank you! We look forward to hearing from you soon.

Sincerely, Paula Hitz

Figure 5.5: Formal recruiting message

Screener Survey

This takes us to the next step which is designing the survey to identify early customers. As Amy suggests, for more responses it is best to write shorter surveys, with around 3 multiple choice questions and 3 long answer questions. For this step, I was able to formulate the following questions and send it to my colleagues at work and university through Google Forms.

1. What is your age range?
2. Have you had any experience using project management tools such as Jira, Trello, or Asana?
3. Gamification is using game-like features to motivate people in non-game situations. Have you ever used gamified apps such as Duolingo, Habitica, or Fitbit?
4. How many days per week do you play games, whether it is a board game, card game, or a video game?
5. Do you actively search for alternatives or tools to improve and make your work a better experience? If so, which ones?
6. How do you feel about gamified apps? Do you believe that they can effectively motivate users?
7. Would participating in fun team-building activities improve your overall work satisfaction? If so, what type of activities would you enjoy?

It is important to identify specific behaviors and characteristics of the superfans, and the multiple choice questions help us filter and identify them. The long answer questions help us understand their opinions and behaviors to topics that are related to Beezy, and helps validate certain assumptions, in this case, the assumption made about people not caring about team-building activities or people not caring about ways to improve their working experience.

The recruiting message was sent through four different WhatsApp groups as well as my work chat through GoogleChat with the link to the survey. It reached 110 people, 65 colleagues from work and 45 friends and colleagues from university. The first group of people, my colleagues at work, are a good representation of my target audience since they are employees from a local small indie video game company, so they have first-hand experience of what the industry is like and what the needs are at the moment. Their feedback is really valuable for the proposal of this thesis. As for my colleagues and friends at university, most of them do not have experience working yet, but they truly understand what video games are and how beneficial they can be for people.

A total of 52 people replied to my survey. The data gathered helped filter and identify patterns that could help shape Beezy.

The following are the results of the different questions:

1. What is your age range?

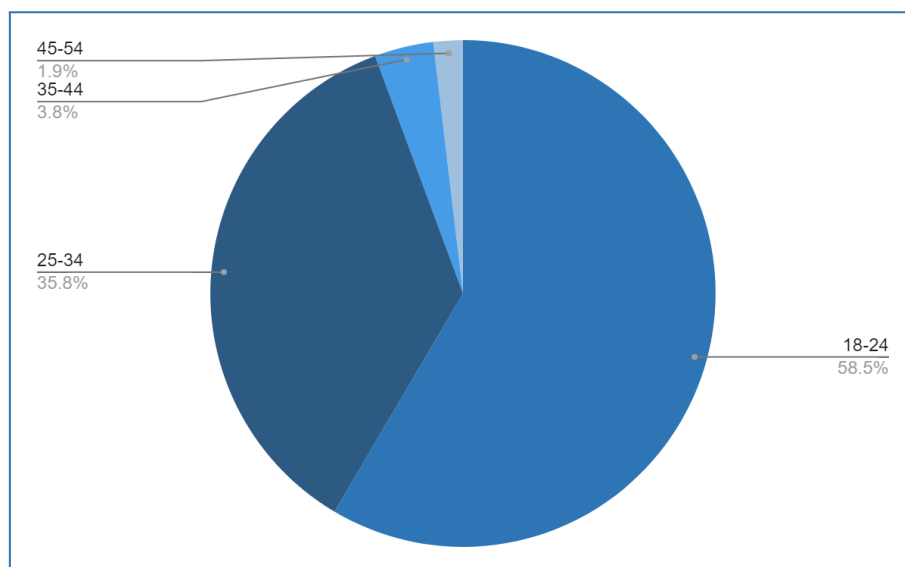


Figure 5.6: Age range interview result

As expected, since I was aware of who the survey was directed to and I was not expecting it to reach a wider audience, the majority of the demographic were young adults from the ages of 18-24 years old. A significant amount of my work colleagues are young adults who have recently finished their studies and most of my friends and colleagues from university are around that age, so it is a value that makes sense.

A young demographic of 18-35 years is a good demographic for Beezy since they are people who tend to be more open-minded when it comes to innovative solutions that involve games and have an easier time changing their habits, trying out new products and learning how to use them if they had to start using Beezy.

2. Have you had any experience using project management tools such as Jira, Trello, or Asana?

This question was also one whose answer I was expecting. The majority of the subjects, specifically 92.3%, answered Yes, they do have experience with project management tools, which is beneficial for Beezy since they already know and understand how they work. They have a clear understanding on what to expect when it comes to that side of the product, and they also know a tool that they can compare it to.

3. Gamification is using game-like features to motivate people in non-game situations. Have you ever used gamified apps such as Duolingo, Habitica, or Fitbit?

88.5% of the people who took this survey do have experience with gamification apps, which was surprising to me as I was expecting a lower quantity of people. I even believed it was necessary to include a definition that will help give the subject context of the topic I was addressing. Again, good news, the people that replied to the survey, at least most of them, have experience using gamified applications, so it will make it easier for them to give beneficial feedback for Beezy.

4. How many days per week do you play games, whether it is a board game, card game, or a video game?

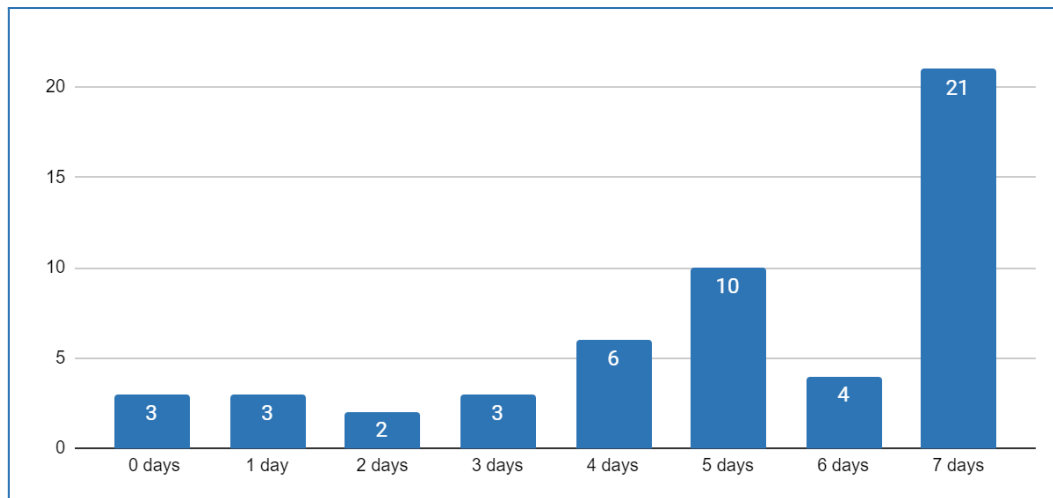


Figure 5.7: Gaming frequency interview result

The purpose of this question was to understand how often did the subjects play video if they even played at all. To my surprise, most people play daily, which is a good sign since that means that they are very familiar with games.

5. Do you actively search for alternatives or tools to improve and make your work a better experience? If so, which ones? Some examples are mindfulness apps, employee wellness programs, spending more time with colleagues, using music as a way to concentrate, creating habits, etc.

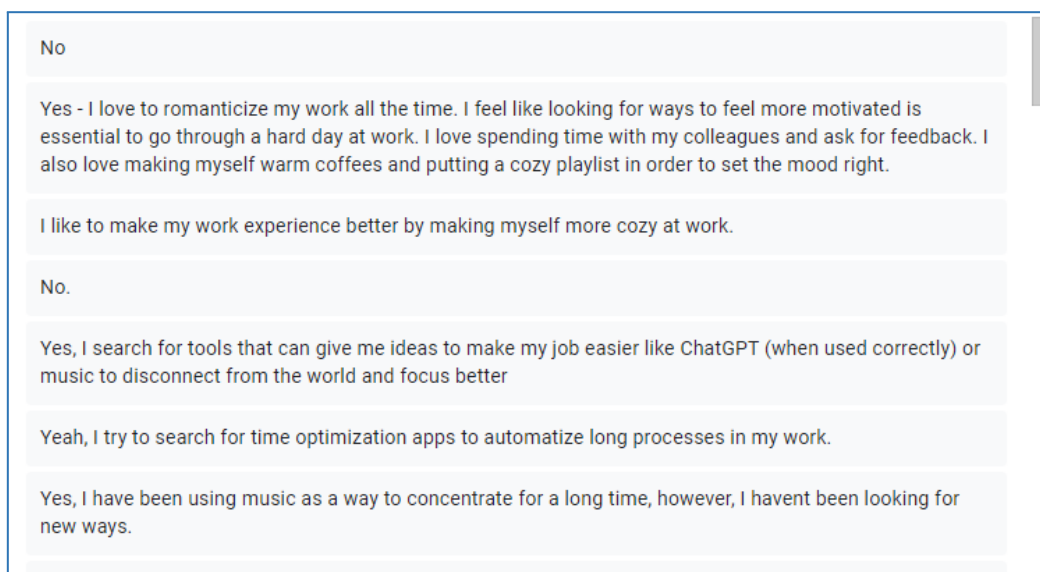


Figure 5.8: Job satisfaction interview result

This question is one of the most important ones in the survey. Its purpose is to verify one of the assumptions made in the MVP Canvas, that states that people do care about their job satisfaction and find ways to improve it. I made sure to include some ways that the working experience can be increased. This is because, before sending or even creating the survey, my first approach to the Superfan Screener was by doing in-person interviews. The interviews had the same type of questions, and as I was talking to different people, I kept on getting stuck on this one. When I first asked the question people would reply with a bland “no”, which I didn’t fully understand. In my opinion, job satisfaction is very important, and I try to do as much as I can to make my experience as I am working better. Like everyone, there are days when it is harder to find motivation to work no matter the reason, so I have different ways I can help myself to put me in the right mindset and make my tasks a little bit easier to manage. Some of the ways I do this is by making sure my work area is tidy, I make myself a coffee, put my earphones on with a relaxing playlist, and I make myself to do lists on my iPad to make sure I keep organized and have everything that I need to complete in my mind. These tiny changes help me improve my mood heavily and make my work significantly more enjoyable. As I was hearing the different people answer with a “no” I immediately believed that they didn’t fully understand the question, so I gave them examples on ways that people tend to make their work more enjoyable, and that’s when they started truly answering the question. I made sure I gave some examples on the survey so this would not happen again.

As for the results, I was surprised to see so many varied answers. The following chart, Figure 5.10, is a representation of the answers. Please note that the overall votes do not add up to the number of people who answered the survey, but many of them replied with different solutions.

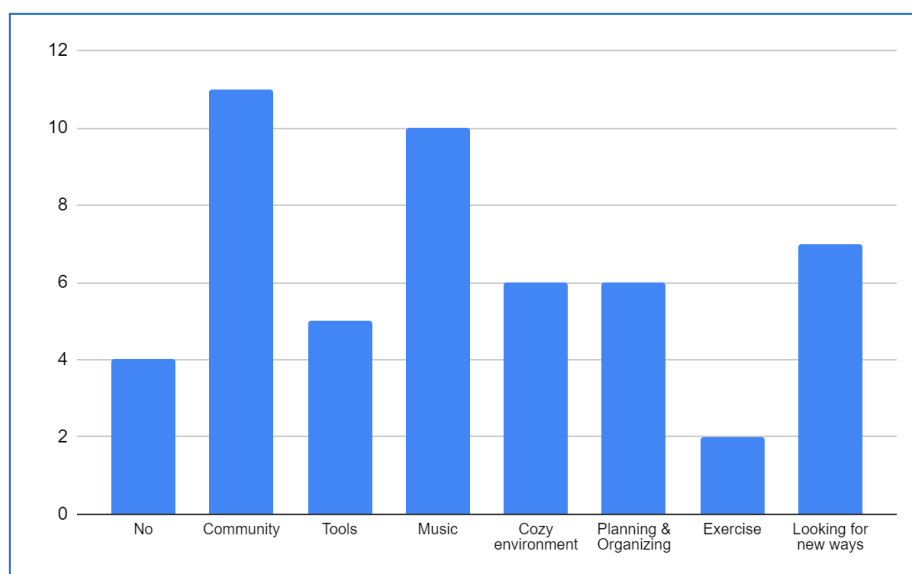
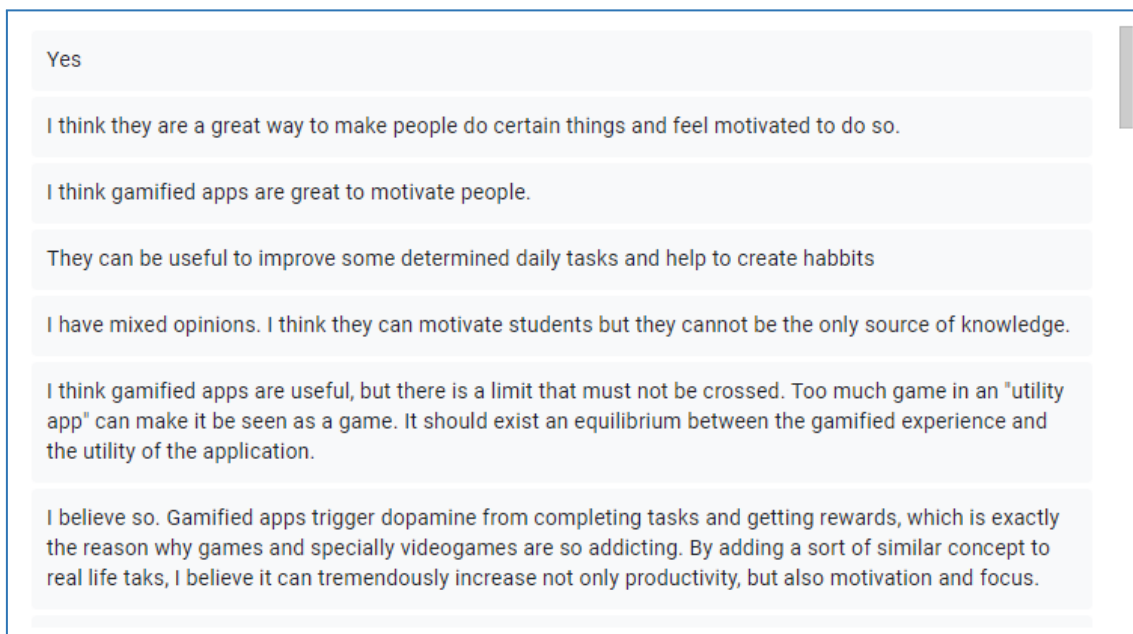


Figure 5.9: Job satisfaction graph

I was delighted to see that the majority of people rely on their teammates to improve satisfaction. At the end of the day, Beezy works a lot around team building and looking forward to sharing and spending fun moments with colleagues, so the fact that these answers gravitate towards the community is great news. As well, a lot of people replied saying that they were looking for new ways to improve their job satisfaction. That is a clear confirmation of the need Beezy is addressing. It is confirmed that there are people that need a way to make their work a better experience, and they are looking for it.

6. How do you feel about gamified apps? Do you believe that they can effectively motivate users?



Yes

I think they are a great way to make people do certain things and feel motivated to do so.

I think gamified apps are great to motivate people.

They can be useful to improve some determined daily tasks and help to create habits

I have mixed opinions. I think they can motivate students but they cannot be the only source of knowledge.

I think gamified apps are useful, but there is a limit that must not be crossed. Too much game in an "utility app" can make it be seen as a game. It should exist an equilibrium between the gamified experience and the utility of the application.

I believe so. Gamified apps trigger dopamine from completing tasks and getting rewards, which is exactly the reason why games and specially videogames are so addicting. By adding a sort of similar concept to real life taks, I believe it can tremendously increase not only productivity, but also motivation and focus.

Figure 5.10: Gamification interview result

This question helped me identify whether people believe in gamification. At the end of the day, Beezy is trying to solve a problem with the use of gamification, so people's opinion on the matter is significantly important. Figure 5.12 is a pie chart showing the different results that answer the second question, whether they believe gamified applications have the power to motivate users.

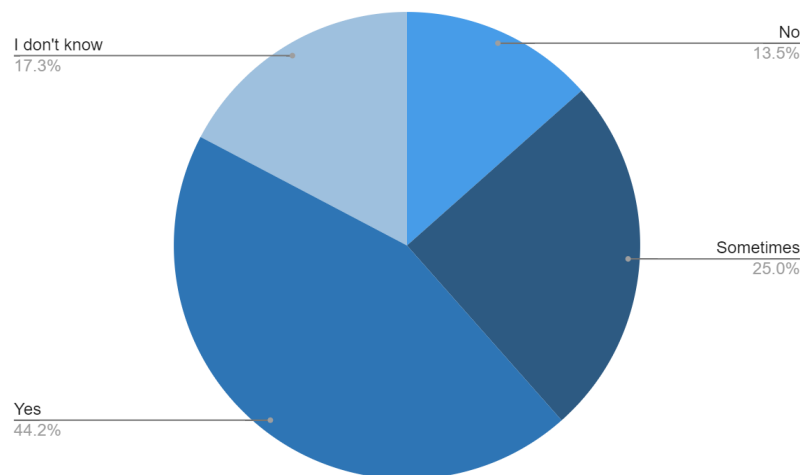


Figure 5.11: Gamification and motivation pie chart

The majority of people replied with Yes, meaning that they do believe a gamified app can motivate users. After reading all the replies, it is important to point out that a lot of people believe that it depends on how well the application is made and if it suits the right audience. These people were placed in the *Sometimes* category. It is true that it is important when building a product, addressing it to the correct audience and iterating its design through playtesting in order to ensure the best results and make sure it suits the target audience's needs well.

7. Would participating in fun team-building activities improve your overall work satisfaction? If so, what type of activities would you enjoy?

100% yes, if every now and then, we were to do a planned group activity, i would be motivated to keep working, because it would also help with knowing the team.
Any Activities, if planned correctly, would be appreciated. table top games i think are a great way to bring dynamism and quick thinking to a group.

Yes, videogames

No lo tengo claro

Yes, board games, group contests...

Yes, making strong bonds with the team helps the overall satisfaction. I would enjoy making activities outside the work place and help me know better other employees, such as sports.

Yes i would like to participate in some sport.

If it's a small team, then sure, getting to know your coworkers would help increase work productivity and satisfaction. However, in bigger teams, I don't believe it would be important to know from sectors you're

Figure 5.12: Team building interview result

This last question was made specifically to test one of the MVP Canvas's key assumptions: people want to participate in team building activities. This is another key aspect of Beezy since the game that is designed relies so heavily on team building. It is the key factor that makes task completion motivating, and if subjects answered No, clearly Beezy would be needing a reformulation. Figure 5.13 is a representation of the answers.

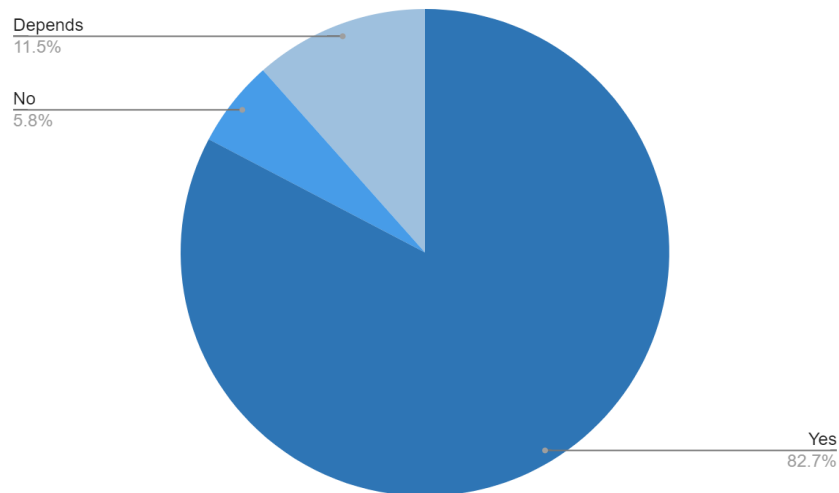


Figure 5.13: Team building activities pie chart

The results of this question helped validate the assumption made. Around 83% of people believe that team building activities can improve their work satisfaction. From the 43 people that replied saying Yes, 23 of them stated that they would enjoy activities related to games.

Overall, this survey helped not only “recruiting” potential super fans who can be highly engaged and passionate about the product, but also better understand the needs, preferences, and motivations of the audience. This valuable feedback and insights on the topics that relate so closely to the project helps it shape the product and ensure the product built targets the customer’s needs by validating certain assumptions and understanding their opinions on the topics.

5.2.2. Speed Interviews

The focus of this section is to use the technique of Speed Interviews to help quickly gather insights from a group of people, using a structured approach that focuses on asking the right questions. It involves conducting brief, one-to-one interviews with users to gather their thoughts, feelings, and needs regarding the product.

As Amy Jo Kim suggests, the interviews should typically last for a few minutes and they are conducted in rapid-fire style with the use of a structured set of questions to guide the conversation.

These questions are focused on understanding the user, their motivations and goals, as well as their pain points and frustrations, which will help in improving the product.

The first step into making these interviews is to plan them. We can answer the following questions:

WHERE: meeting in person.

WHEN: a small talk of around five minutes.

WHAT: having scripted questions and letting the conversation flow.

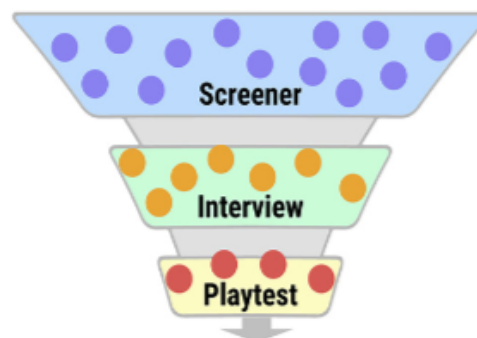


Figure 5.3: Superfan funnel

Screener Follow-up Letter

This interview is directed to the superfan screeners that gave the most relevant answers to the open-ended questions. We must gather these people again in order to interview them with the following message [7] seen in Figure 5.14:

Dear [recipient],

Thanks for taking our survey. We got a tremendous response - more than we expected - and your answers were among the best. Now we need to select 10 people for our few rounds of testing. We're conducting 5-10 minute screen interviews in-person, and we're excited to speak with you and see if you're a good fit.

This will be quick and convenient. Please book a time in the calendar that works for you: <link to scheduling tool>

Thanks! We look forward to speaking with you soon.

Sincerely,
Paula Hitz

Figure 5.14: Screener follow-up letter

The next step is to identify which questions are going to be asked during the interviews. This step is key since we are trying to go on a deeper level than the Superfan Screener and craft an interview that will give us the insights we are looking for. The idea of this step is to finish confirming the assumptions and hypothesis, and get insight on opinions and behaviors that are related to them.

Using Amy Jo Kim's recommendations on making clear and concise questions, I was able to formulate the following questions:

1. Are you motivated at work? Do you feel the need for a change? Would you be open to trying new tools or methods if they told you they will help you feel more motivated?
2. Do you personally feel more motivated when you use gamified applications? What are your experiences with these? Can you identify any pros and cons?
3. Do you consider yourself a competitive person by nature? What about in games, or at work?
4. What are your experiences with social deduction games, such as the wolf, Among Us, or Deceit? Do you like them? Do you believe you would enjoy playing this type of game with your colleagues at work?

For these interviews, I decided to conduct them on 10 different people. The following is a list of the subjects with their age, their profession, and years of experience in their field.

SUBJECT 1: 28 year old project manager with 3 years of experience.

SUBJECT 2: 25 year old 3D modeler with 3 years of experience, and university student.

SUBJECT 3: 55 year old general director with 29 years of experience.

SUBJECT 4: 22 year old video game programmer with 1 year of experience, and university student.

SUBJECT 5: 22 year old 3D modeler with 1 year of experience, and university student.

SUBJECT 6: 25 year old video game producer with 4 years of experience.

SUBJECT 7: 26 year old video game programmer with 4 years of experience.

SUBJECT 8: 24 year old 3D animator with 3 years of experience.

SUBJECT 9: 23 year old game designer with 1 year of experience, and university student.

SUBJECT 10: 22 year old video game programmer with 1 year of experience, and university student.

Interview Analysis

After conducting the interviews, I was able to gather the following conclusions. Please check the [Section 9.1 Appendix 1](#) to see the detailed answers to the questions by each subject.

Based on the responses, it can be concluded that the level of motivation at work varies among individuals and is affected by the nature of their tasks. Some subjects expressed being highly motivated and fulfilled by their work, while others admitted to feeling bored, stressed, and lacking a sense of accomplishment. However, most respondents expressed openness to trying out new tools and methods to enhance their motivation levels. Suggestions for improving motivation included having engaging tasks, recognizing employee achievements, and receiving support from colleagues. It appears that finding ways to enhance motivation and engagement at work is an important aspect of employee satisfaction and well-being.

About the second question, there is a mixed range of experiences with this type of app. Some subjects reported feeling more motivated when using these apps, while others found them monotonous and repetitive. One common positive aspect of gamification apps mentioned by several subjects is that they help with motivation in an engaging way, making certain habits easier to do and providing a sense of accomplishment. Some also appreciate the clear indications of what to do and the incentivization to complete specific tasks. However, the repetition of rewards and the potential for boredom were identified as potential drawbacks. Some respondents also noted that the effectiveness of these apps depends on how well they are designed.

On the other hand, based on the responses on question three, the majority of the subjects (7 out of 10) consider themselves to be competitive to some extent. Some mentioned that they are highly competitive both in their personal life and at work, finding it fun and motivating to compete with others at the same level of knowledge and motivation. Others mentioned that they are somewhat competitive depending on the context or with friends, but always in a healthy and fun way. One subject mentioned being competitive at work in order to be the best at what they do, but not in a negative way, and another subject mentioned not being competitive at all.

Overall, the responses suggest that competitiveness is a common trait among the subjects, but varies in degree and context.

Finally, there seemed to be a mixed opinion about social deduction games. Most respondents enjoy playing these games with friends or colleagues, since they find them entertaining and believe that they can be beneficial for team building. On the other hand, others think these games can get repetitive, but still enjoy them due to the socializing factor. There are also subjects who have not played these games before, but are interested in trying them out. In conclusion, social deduction games seem to have a positive impact on building relationships and bonding within groups.

This interview has been immensely helpful in providing valuable insights and feedback on the relevant topics related to Beezy. The different responses help understand the varying attitudes and the preferences of individuals towards these types of topics. This information is extremely helpful in shaping the product to better meet the needs and expectations of the target audience.

5.2.3. Job Stories

The next step into the Empathize section is creating the job stories with all the understanding of the motivations and behaviors of the target audience in relation to the product gathered in the Superfan Screener and the Speed Interviews.

A job story is a simple yet powerful narrative that describes a situation where a person has a specific goal, motivation or need that they want to achieve or overcome, and they use the product to accomplish it.

The first step into creating a job story is identifying the different types of people who might need the product, and then, creating a series of job stories for each user persona, that describes a specific situation where they might need the product. As Amy Jo Kim explains, each job story should follow a simple format that includes a trigger, an action, and a desired outcome. The trigger describes the situation that prompts the user to use the product, the actions are the specific steps that are taken to achieve the goal, and the desired outcome is the outcome they hope to achieve.

The purpose of the job stories is to gain a deeper understanding of the target audience and ultimately identify areas where the product can be improved to better meet their needs. Figure 5.15 is a template for a job story.

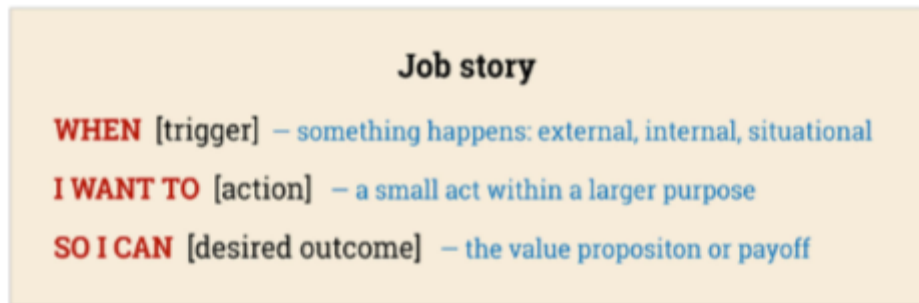


Figure 5.15: Job story template

For the case of Beezy we could create the following job stories:

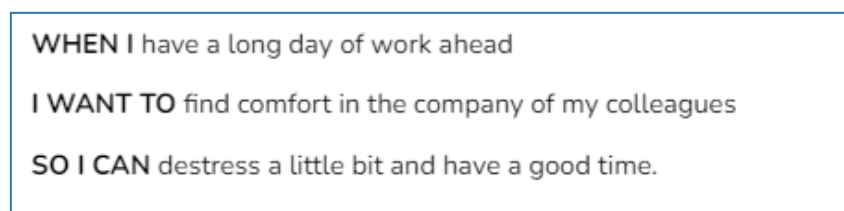


Figure 5.16: Beezy job story 1

WHEN I feel unmotivated to work
I WANT TO keep track of my achievements
SO I CAN be determined to continue even on the hardest days.

Figure 5.17: Beezy job story 2

As Amy Jo Kim says in page 138,

“They express the problem and desired outcome without specifying the solution”, referring to the job stories. “Job stories give you a bridge from problem space to solution space. To build that bridge, make sure your research-based stories are expressed in problem space.” [7]

All this information gathered in this Empathize section provides a valuable framework for gaining a deep understanding of the target audience. By using the techniques of Superfan Screener and the Speed Interviews, I was able to create job stories that help build a product that truly resonates with the audience.

5.3. Design

Amy Jo Kim's Design section in *Game Thinking* offers a unique and valuable perspective on the process of designing successful and engaging games. Through her emphasis on understanding and meeting the needs of players, as well as iterative design, she provides insights and tools that can be applied to the development of the application and its gamified systems. This section of the thesis will explore and analyze the principles and methods outlined in Kim's Design section.

This stage is divided into three subsections: Mastery Path, Learning Loop, and Social Action Matrix. Each of these plays a key role in the development of the product. The first one helps the user progress through a series of challenges and accomplishments. On the other hand, the second one encourages ongoing engagement and skill development. Finally, the Social Action Matrix covers the sense of community and social interactions among the users. Together, they provide a comprehensive framework for designing engaging and effective gamified experiences.

5.3.1. Beezy

The first step before going into the definition of the user's Mastery Path, the Learning Loop, and Social Action Matrix, is defining what Beezy is about. This section offers a detailed explanation of the application and all of its parts, beginning with the general overview of the platform. Then, it dives into its different parts, including the project management tool, its game **HoneyRush!**, and lastly the companion **Beebo**.

Please note that all of the screen designs presented in the following sections were developed by me, using free icons from FlatIcon [66] and free font *Metamorphous* [67]. These screens serve as general representations of the ideas created for the application, they do not contain much detail since it is not the focus of the thesis. They were crafted to create a better understanding of my vision of Beezy, not only in the design of the application itself but also the art direction I would like for it to have.

Landing Page and Registration

Beezy is its own website, featuring a landing page where users can click anywhere to login or, if they are new to the platform, sign up for an account. The following Figure 5.18 is a representation of the landing page, and Figure 5.19 the login screen:



Figure 5.18: Beezy landing page

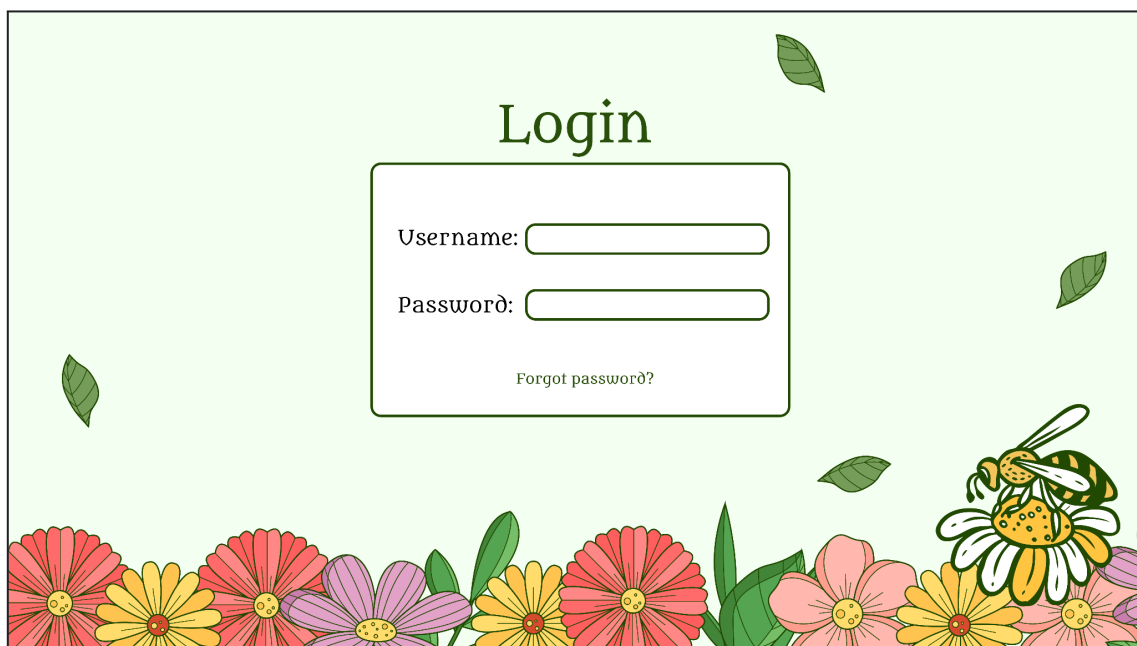


Figure 5.19: Beezy login screen

Employee Sheet

After completing the registration process, users are greeted with the Employee Sheet, a vital component of their Beezy experience. This sheet is a compilation of questions strategically made for **HoneyRush!**, the heart of Beezy. The Employee Sheet's purpose is helping identify and differentiate participants within the game, laying the foundation for the strategic deduction game players can dive into. A further explanation will be provided in the following sections. For a visual reference to the Employee Sheet, please consult Figure 5.20.




The Employee Sheet form is titled "Employee Sheet" and is designed for Paula Hitz. It features a decorative header with a bee on a flower. The form includes fields for Name (Paula Hitz), Birthdate (10/06/98), and Department (Production). Below these are four categories: Zodiac Sign (Pisces), Blood Group (A), Favorite Color (Purple), and Dominant Hand (Left). The form also asks for 3 things you love and 3 things you hate, with handwritten answers provided in the input fields. The bottom of the form is decorated with a row of colorful flowers.

Name:

Birthdate:

Department:

Zodiac Sign: 

Blood Group:

Favorite Color: 

Dominant Hand:

3 things you love:

-
-
-

3 things you hate:

-
-
-

Figure 5.20: Employee sheet

The PMT

The project management tool section covers the basic needs for every project. It has the following subsections: the Board, the Backlog, and the Issues. These three sections help manage the project's tasks effectively.

Tasks

A task is a representation of a chunk of work that needs to be done. They are used to track and manage work items within a project. A task has the following characteristics:

- **Title:** A brief summary or description of the task being tracked. It should be clear and concise to accurately reflect the content and purpose of it.
- **Description:** A more detailed explanation or information about the task. It may include steps to reproduce or details about a feature that needs to be implemented. Descriptions can include screenshots, links, or attached documents in order to facilitate information to other members.
- **Time estimation:** This is a representation of the time estimated to complete a task. It is usually represented in hours or days.
- **Honey Drops:** This is a representation of the worth of the task to be completed. It is related to the time estimation, but project managers can edit it if they see fitting. When the task is completed, the assignee will obtain the points as a reward.
- **Priority:** This field indicates the importance of the task relative to others. It helps determine the level of urgency. The levels vary between lowest, low, medium, high, and highest.
- **Assignee:** The person who is responsible for completing the task.
- **Reporter:** The person who initially created the task.
- **Type:** An indication of the kind of task, such as user story, task, subtask, or bug.
- **Tag:** A label or keyword that helps categorize tasks by groups.

When a task is completed, the assignee is rewarded with the **Honey Drops** assigned to that task. **Honey Drops** is a currency that users are rewarded with when they complete tasks. They can be used in different parts of the app, explained more in the following sections.

Board

The Board section serves as a visual representation of the state of the project. It provides an overview of the status of the tasks in a Kanban style board, which allows teams to manage them effectively. Each column represents a stage in the progress of the task, usually being *To Do*, *In Progress*, and *Done*.

In Beezy, project managers can create their own columns to define what kind of workflow works best for them. They can edit the name of these columns and choose which one will be the **Key** column, which is the column that gives the users their **Honey Drops** when the task reaches that stage. By default, it is assigned as the *Done* column. Either way, project managers have the freedom to change this if they see fit.

A case where it would be fitting to change the **Key** column would be for a 3D modeling department, for example, where project managers can create a column that represents that the work is completed, but not yet integrated into the game engine. This column could be named *Waiting For Merge*, or *Merge Pending*. It would be beneficial to identify this column as the **Key** column, since it is when the 3D modelers would have finished their task. The reason why this was designed is because it is important to reward the players immediately after their action or else the feeling of accomplishment can be lost easily.

Figure 5.21 is a representation of the Board screen. As it can be seen, the Board is divided into the three columns with the sprint's tasks. When clicking on a task, a popup appears with more detailed information of the selected task. To change the tasks status, users can drag and drop the task to the corresponding column.

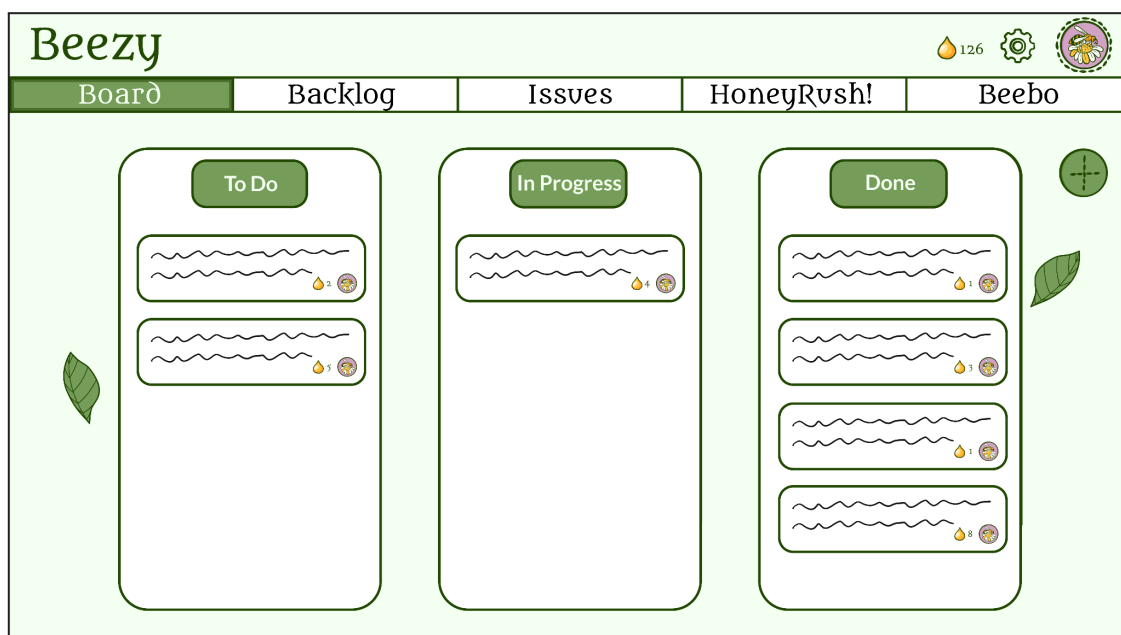


Figure 5.21: Beezy Board

Backlog

The next tab in Beezy is the Backlog, a prioritized list of tasks that the team plans out to work in the future sprints. In this tab, project managers can prioritize their list of items, essentially creating a to-do list for the project's objectives. This prioritization is key in ensuring that the team focuses their efforts on the most critical tasks first.

In practical terms, the Backlog helps project managers to map out the following sprints effectively. By having a clear and accessible Backlog, teams can lay out which tasks should be addressed in each sprint.

Please see Figure 5.22 for a representation of the Backlog screen. As it can be seen, the screen has an example of the *Current Sprint* featuring a couple of tasks, and the actual *Backlog* with the remaining tasks planned out. Tasks in this screen should essentially show the most relevant information, such as the *Name*, *Honey Drops*, *Estimated Time*, *Priority*, and *Assignee*. When clicking on a task, a popup appears with more detailed information of the task.

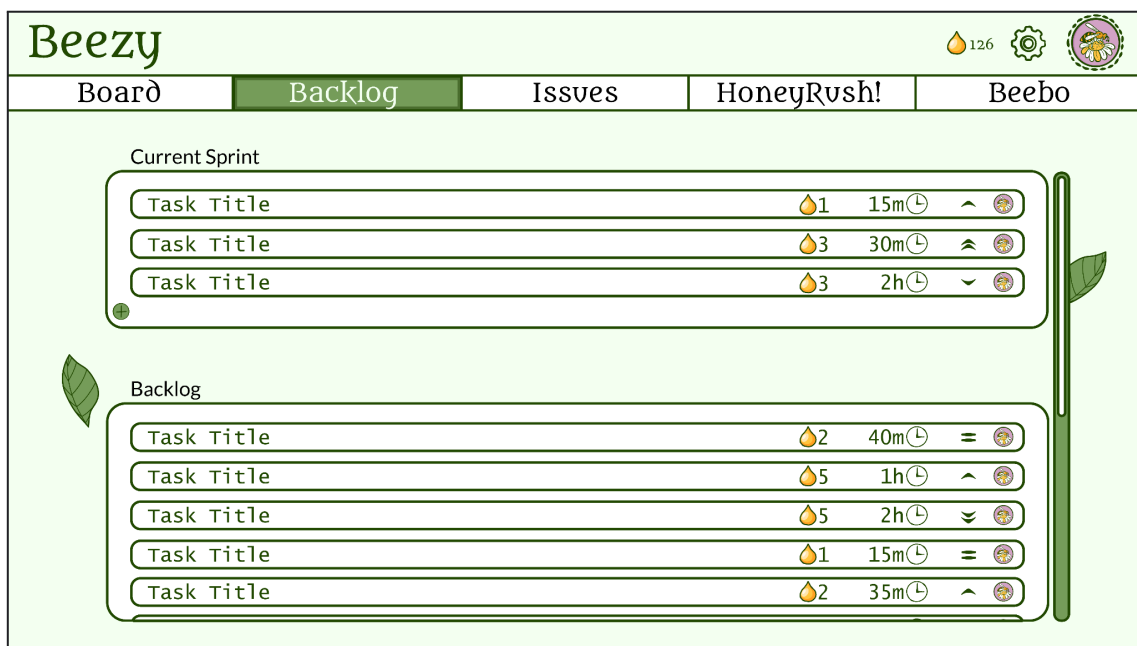


Figure 5.22: Beezy Backlog

Issues

This section is a central place where all the tasks, bugs, and stories ever created can be found. It is a space where teams can view and manage tasks as they move through the different stages of development.

This section serves as a space where teams can filter out the tasks by their different properties in order to locate and manage them as they see fit. Please see Figure 5.23 for the Issues representation.

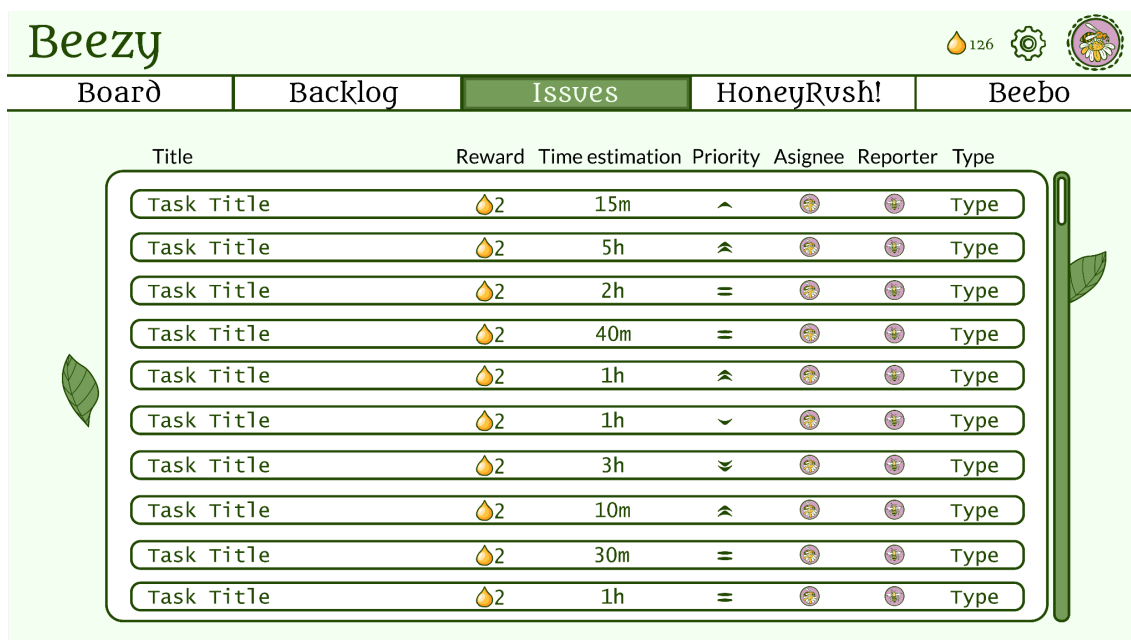


Figure 5.23: Beezy Issues

HoneyRush!

The pages that follow are dedicated to Beezy's innovative social deduction game, *HoneyRush!*. This section contains a rule book with an in-depth explanation of the game's mechanics.

On a general note, *HoneyRush!* is an engaging multiplayer card game that immerses players in the vibrant world of a bee colony. Players are randomly assigned one of two roles: Bees or Wasps. Bees work diligently to gather honey and fill their hive, striving to completely fill their hive before their next milestone ends. Meanwhile, Wasps aim to sabotage the Bees' efforts and take control of the hive during this period of time. With elements such as AI generated stories, unique time phases with their own mechanics, and a voting system, *HoneyRush!* offers players an immersive, fun, and unpredictable game to play with their colleagues at work.

HoneyRush!

- Introduction -

Welcome to the captivating world of *HoneyRush!*, a compelling multiplayer card game where players are assigned one of two roles: **Bees** or **Wasps**. As the game unfolds, players are sent into the heart of a bustling hive, where teamwork, strategy, and cunning tactics will determine the fate of their colony. Will the diligent **Bees** successfully fill their hive with sweet honey, or will the mischievous **Wasps** outwit them and seize control?

- Objective -

In *HoneyRush!*, players are randomly assigned roles as either a **Bee** or a **Wasp** at the start of each game. **Bees** have the purpose of collecting honey within their hive before the players' current milestone ends, while **Wasps** aim to sabotage the **Bees'** efforts and assert dominance over their hive.

- Setup -

The following section represents what elements are in HoneyRush!'s interface.

Components

- **Bee** deck
- **Wasp** deck
- **Dice**
- Resources indicators
- **Story Fragment** pad
- **Bee diary** pad / **Wasp chat** pad
- Player list pad
- Day and night phase indicator
- Hive

Board

Figure 5.24 is a representation of what the game looks like.

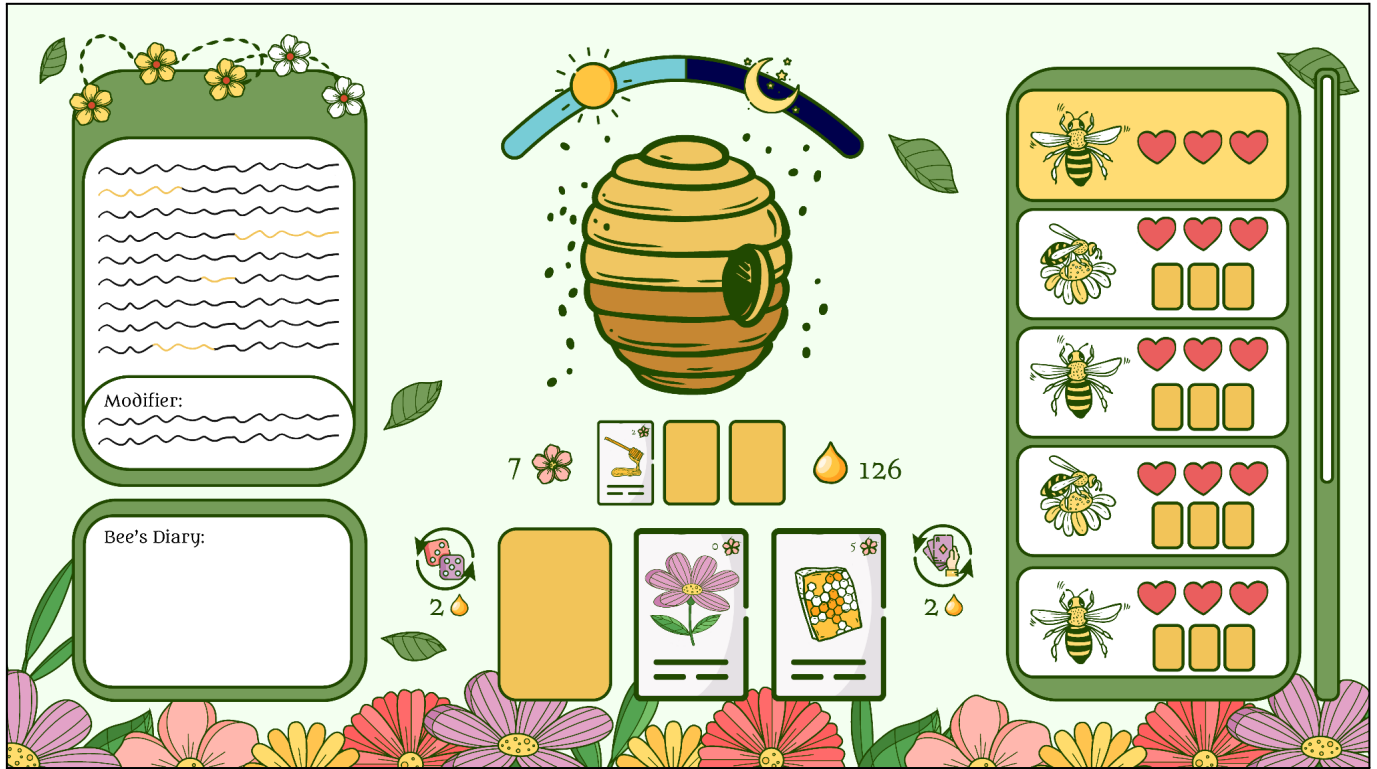


Figure 5.24: HoneyRush!

Player Count

Approximately 80% of players take on the role of Bees, while the remaining 20% become Wasps to maintain game balance. The game automatically assigns roles keeping this ratio into account.

Figure 5.25 is a representation of the player list in the match with their Beebo avatar, their health points, and their cards played, all elements that are further explained in the following subsections.

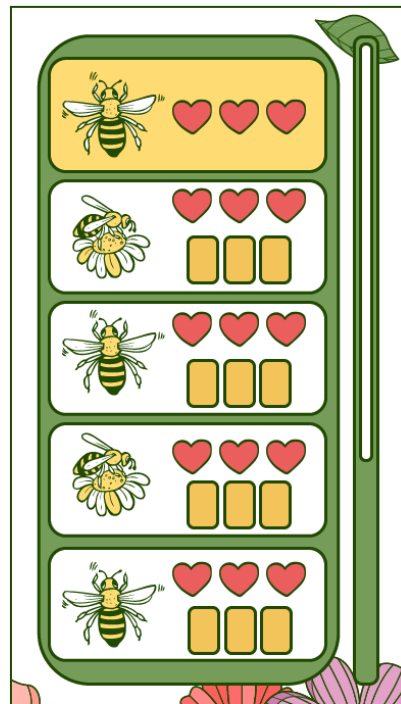


Figure 5.25: HoneyRush! player list

- Gameplay Overview -

The following is a list of general gameplay components that make up *HoneyRush!*

Roles

Players are assigned anonymous roles as either **Bees** or **Wasps** at the beginning of the game. Only the **Wasps** know who everyone's role is.

Figure 5.26 is a representation of the player's avatar, Beebo, and their health points. If the player's role is a **Wasp**, their Beebo's eyes glow bright red. This indicates to the player that they are **Wasp** without being too obvious to other coworkers that might be roaming around the office and could potentially take a peek.

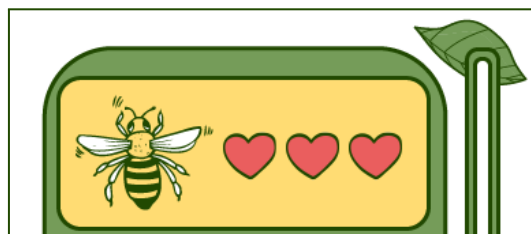


Figure 5.26: HoneyRush! player

Cells

Each match corresponds to a project milestone with a set duration. When the game starts, the game duration will be adjusted to the current milestone and will be further subdivided into **Cells**.

Cells represent shorter time intervals, approximately equivalent to a week, which feature **Story Fragments**. The **Story Fragments** are segments of a larger story that unfolds uniquely each game, focusing on the lives of bees and wasps. These stories are not written by humans, they are dynamically created by OpenAI's artificial intelligence. OpenAI's API is integrated into Beezy, allowing it to use the power of GPT-3 models. This technology offers players an engaging narrative that immerses them in the game world. Each story is distinct because it is regenerated each game.

These narratives revolve around the daily experiences of the hive and the adventures of the **Bees**. They add depth to the game by describing the hive's activities, interactions, and challenges, therefore creating a backdrop for players to enjoy.

Figure 5.27 is the **Story Fragment pad** which contains the story for the current **Cell**. The flowers on the top indicate the **Cell** they are at. In the case for this Figure, it would mean that players are in the third **Cell** out of five.

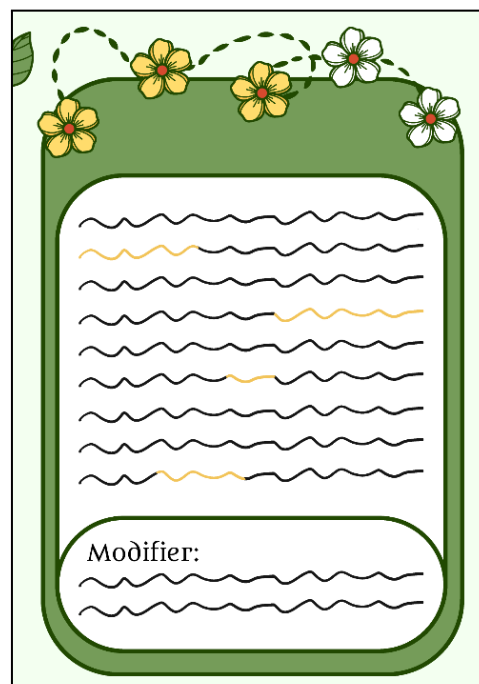


Figure 5.27: HoneyRush! Story Fragment pad

Story Clues

Each **Cell's Story Fragment** provides clues about the identity of the **Wasps** that will be extracted from their Employee Sheet.

As mentioned earlier, the Employee Sheet is a series of questions that Beezy users can fill in order to participate in this game. These questions will be used to create clues to help **Bees** identify **Wasps** each **Cell**.

These clues will be reflected in the **Story Fragment** like so:

“One of the bees managed to take a closer look at one of the evil wasps flying around the flower patch. *It appears that the wasp has a liking for the color red.* The bee, after noticing, buzzed its way to the hive to tell its friends.”

In order to progress through the different **Cells** and gain more knowledge on who the **Wasps** are through the **Story Fragments**, Bees must fill the hive with enough **Honey** (resource explained below).

Note: Only players with filled-out Employee Sheets can participate in the game.

In the previous Figure 5.27, clues are highlighted in yellow in the text, for players to identify them quicker, which makes it easier for them.

Story Modifiers

Depending on the **Story Fragment** of each **Cell**, there is a chance of a **Modifier** to happen. A **Modifier** has an effect in the gameplay for the duration of the **Cell**, giving more dynamism to the gameplay. Some examples are:

- All **Nectar** gained is doubled.
- All **Honey** generated is doubled, but **Wasps** can eliminate two **Bees** per night.
- **Honey** is more scarce, do not let it go to waste.
- **Honey** cards are more limited, the more **Honey** filled the hive is, the scarcer they are!

These modifiers will be reflected in the **Story Fragment** like so:

“The bees struck luck as they stumbled upon a huge garden filled with blooming flowers. Oh, the sweet smell of spring! *All **Nectar** gained is doubled.*”

Figure 5.28 is a representation on where the **Modifier** will be explained.

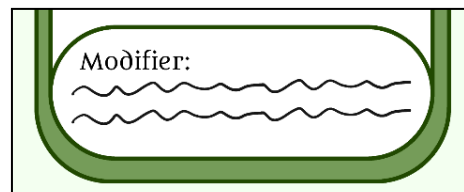


Figure 5.28: HoneyRush! Story Modifier

Hive Thresholds

The hive is physically divided into thresholds corresponding to the **Cells**. **Bees** must fill the hive with **Honey** to progress through thresholds and gather information about the **Wasps**. Once the **Bees** reach a threshold, the amount of **Honey** in the hive cannot decrease under that specific threshold. **Honey** can decrease generally by **Wasp** sabotages inside a threshold.

Figure 5.29 is a representation of the hive. As players complete the thresholds, the **Honey** will visibly rise until reaching the top. In the figure it is indicated as a darker tone of yellow. This representation of the players' progression is also linked to the flowers mentioned previously in the **Story Fragment** pad, which can also be seen in Figure 5.30. Ideally, and not represented with the use of these icons, the hive has the same number of divisions as flowers, since they both represent the same concept, **Cells** and thresholds.



Figure 5.29: HoneyRush! hive

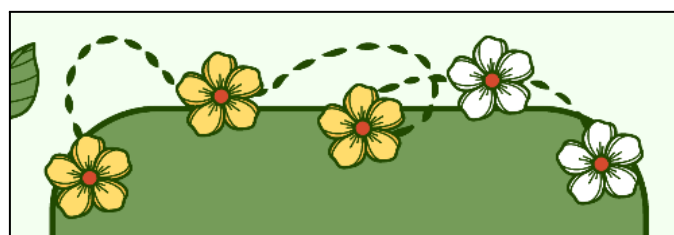


Figure 5.30: HoneyRush! nodes

Diary and Chat

In addition, players have a special pad for their role. **Bees** have a pad where they can freely write down annotations, similar to a notepad. On the other hand, in this same space, **Wasps** have a chat, where they can privately communicate with other **Wasps** to coordinate and plan their moves.

Figure 5.31 is a representation of this pad that changes depending on the player's role.



Figure 5.31: HoneyRush! diary/chat

Health Points

As it can be seen in Figure 5.26, **Bees** have a maximum of three health points. **Wasps** have the ability to deduct health points from the **Bees** with the use of specific cards. Once a **Bee** reaches zero health points, it is eliminated, and they will not be able to play their cards until the next **Cell**. When they reach the next **Cell**, all player's health will go back to three.

In addition, **Wasps** have three fake health points that will help them disguise themselves as **Bees**. **Bees** have to guess who the **Wasps** are in order to suppress their sabotages.

Tip: **Wasps** have self damage cards that will trick the **Bees** into thinking they are innocent **Bees** being harmed by the evil **Wasps**.

When a Bee is eliminated, their actions are limited. Limitations explained below. In addition, when a player is eliminated, their role will not be revealed, since they will return to play as regular once the punishment is over.

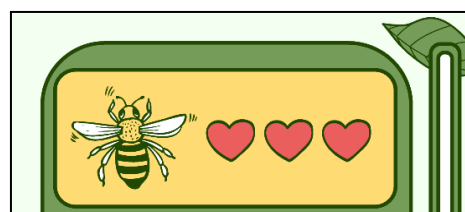


Figure 5.26: HoneyRush! player

Win Conditions

In order to win, **Bees** must make it to the last **Cell** and completely fill up the hive with **Honey** before the milestone ends. **Wasps** need to do their best to delay this from happening. If **Bees** fail, **Wasps** take over the hive and win.

- Game Elements -

The following is a list of game elements that are key in *HoneyRush!*

Honey: The primary resource **Bees** gather to fill the hive is **Honey**. This is the **Bees'** main focus. When gathered, the **Honey** in the hive seen in Figure 5.29 increases.

Cards: Players use **Cards** to perform various actions. The **Cards** are divided into two decks: the **Bees'** deck, and the **Wasps'** deck. These cards will help **Bees** generate **Honey**, and **Wasps** sabotage the hive.

Each **Card** has a **Nectar** cost associated. **Card Nectar** cost depends on the card's power.

Figure 5.32 is a representation of how the cards will appear on the board.

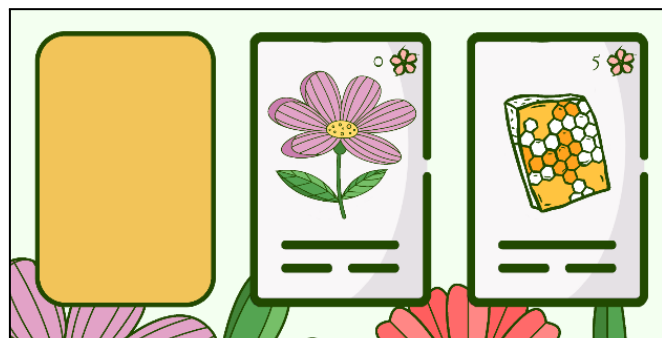


Figure 5.32: HoneyRush! cards

Nectar: The resource required to play cards is **Nectar**. The flower icon in the following Figure 5.33 represents Nectar.

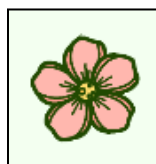


Figure 5.33: HoneyRush! Nectar

Dice: Each player has a digital **Dice** that they can roll to determine their daily **Nectar** availability.

- Phases and Voting -

HoneyRush! is divided into two distinct phases: **Day** and **Night**. Both **Bee** and **Wasp** decks have cards that are specific for each phase. Figure 5.34 represents how the phases will appear on the board. During the **Day**, the moon will not appear, and, reversely during the **Night**, the sun will not appear. Figure 5.34 is a representation of the phases.

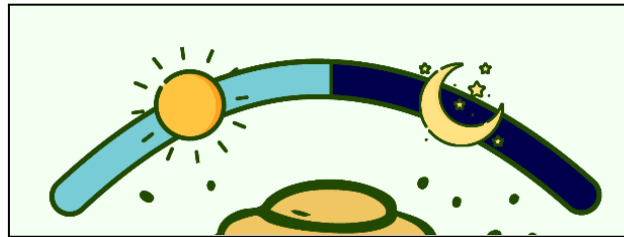


Figure 5.34: HoneyRush! phases

Day Phase

The **Day Phase** by default begins at 8AM and concludes around 3PM, just after lunch. However, these timings are adjustable to better suit the preferences of each project manager or company.

During the **Day Phase**, all players have the option to partake in a voting process. They can collectively decide who they suspect might be the **Wasps**. Each day, only one player can be voted out, determined by majority agreement.

Figure 5.35 is a representation of the voting screen.



Figure 5.35: HoneyRush! voting screen

The player selected, regardless of their role, will be punished with **Honey Fever**. A player with **Honey Fever** has limited actions, similar to being eliminated. Limitations explained below.

In addition, when a player is voted on, their role will not be revealed, since they will return to play as regular once the punishment is over.

During this time of the day, all card plays are visible to everyone, allowing all players to observe the actions and choices of others. This transparency creates a platform for interactive gameplay. However, for the **Wasps'** sake of staying hidden, their cards are designed to camouflage as **Bee** cards. Explained below in the **Card** section.

Night Phase

As the **Day Phase** comes to a close, the **Night Phase** steps in and lasts until 10PM.

Similar to the **Day Phase**, the **Night Phase** also has specific cards that can be played. Throughout the **Night Phase**, player actions remain concealed from the rest of the group, providing an opportunity for **Wasps** to manipulate the **Bees'** efforts discreetly.

- Cards -

As explained above, **Cards** are used by players to perform various actions that lead them towards their objective. There are two decks: the **Bees'** deck and the **Wasps'** deck.

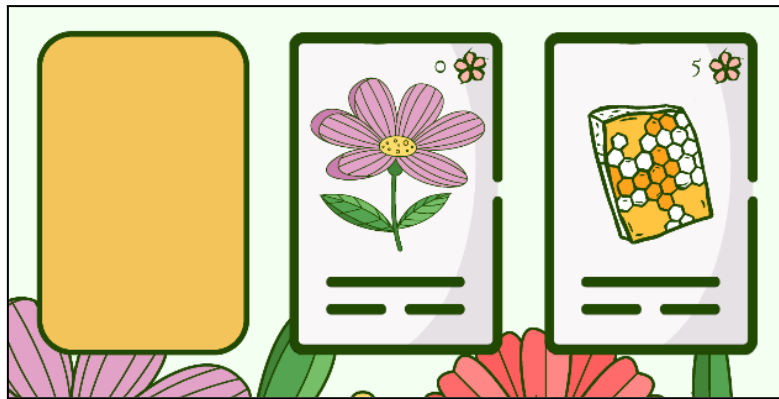


Figure 5.32: HoneyRush! cards

In general, the **Bees'** deck allows **Bees** to generate and buff their obtention of **Honey** as well as protecting themselves or their allies. On the contrary, the **Wasps'** deck is divided into cards that allow them to disguise themselves as **Bees** as well as cards to sabotage them.

As mentioned earlier, both decks are divided into two types of **Cards**: **Day Cards** and **Night Cards**. In addition, both decks feature special cards called **Lucky Cards** that have a fun twist to them.

Day Cards

Day Cards are usable exclusively during the **Day Phase**. As explained previously, the use of these **Cards** will be visible to every player. In the case of **Bees**, these **Cards** are generally designed to generate **Honey** and increase their **Nectar** resources. On the other hand, for **Wasps**, these cards allow them to mimic **Bee** actions, such as *pretending* to produce **Honey**, helping in their role disguise.

Note: All **Honey** produced by **Wasps** using these cards vanish during the **Night Phase** as they cannot collaborate with the **Bees**.

Night Cards

Night Cards come into play exclusively during the **Night Phase**, as they are designed to operate sneakily in the shadows. For **Bees**, these **Cards** serve as a means of self-defense and clue gathering. They can use **Night Cards** to shield themselves or their allies from potential sabotage, as well as to gain insights into the identities of the **Wasps**.

On the contrary, for **Wasps**, these **Cards** are tools of disruption. They enable **Wasps** to hinder the **Bees** in various ways, from reducing their **Honey** collection to inflicting damage or even eliminating **Bees**. Since **Night Cards** can only be played during the **Night Phase**, they keep the **Wasps'** intentions shrouded from the **Bees**, as their actions are hidden from all players except other **Wasps**.

In short: **Wasps** tend to use **Day Cards** during the **Day Phase** to blend in as **Bees**, capitalizing on the transparency of their actions, while **Bees** focus on generating **Honey**. On the contrary, **Night Cards** come into play during the **Night Phase**, allowing **Wasps** to engage in stealthy tactics that disrupt the **Bees'** progress without revealing their identity, while **Bees** try to protect themselves and allies.

Lucky Cards

In both the **Bees** and **Wasps** decks, there are special cards called **Lucky Cards**. These cards are exceptionally powerful compared to the others but come with an additional requirement. To use a **Lucky Card**, a player needs not only the required amount of **Nectar** but also a specific **Lucky Number**.

When playing a **Lucky Card**, a dice will appear on screen, and the player must roll it and obtain a result that is at least equal to the **Lucky Number** specified on the card. In other words, they have to get lucky with their **Dice** roll to play the card.

Luck: On a general note, **Cards** with more power, and therefore a higher **Nectar** cost, are more rare than the others. There are several elements that give this game a factor of luck:

- **Cards** not being in the decks the same amount of times.
- At the start of each day, players are given three random cards.
- Lucky Cards require a specific number to be rolled in the dice.

These factors add to making every match different from others in addition to the AI generated **Story Fragments**, keeping players engaged and on their toes.

- Game Flow -

At the start of each day, except the first day of the match, players partake in the voting process to vote out who they suspect a **Wasp** is. Then, players are given a digital **Dice**. Players need to roll the **Dice** to determine the amount of **Nectar** available for the day, which determines which or how many **Cards** the player can play, since **Cards** have a **Nectar** cost associated with them. Figure 5.36 represents how it would look like to roll the dice.



Figure 5.36: HoneyRush! reroll

The first **Dice** roll is free, but it is possible to pay with **Honey Drops** to get more rerolls. As explained before, **Honey Drops** is Beezy's currency that players earn while completing tasks. They can buy an infinite amount of rerolls but will remain with the number they last rolled on the **Dice**.

After rolling the **Dice**, they will be given three randomly selected **Cards** from their deck. Some **Cards** are very common, while others are very rare, and their **Nectar** cost is related to their overall power.

Additionally, players can also redraw their **Cards** at the cost of **Honey Drops**, just like with the **Dice**, allowing them to get a new set of cards. The player can only redraw their **Cards** before playing any of them. Figure 5.37 is a representation of what it would look like.

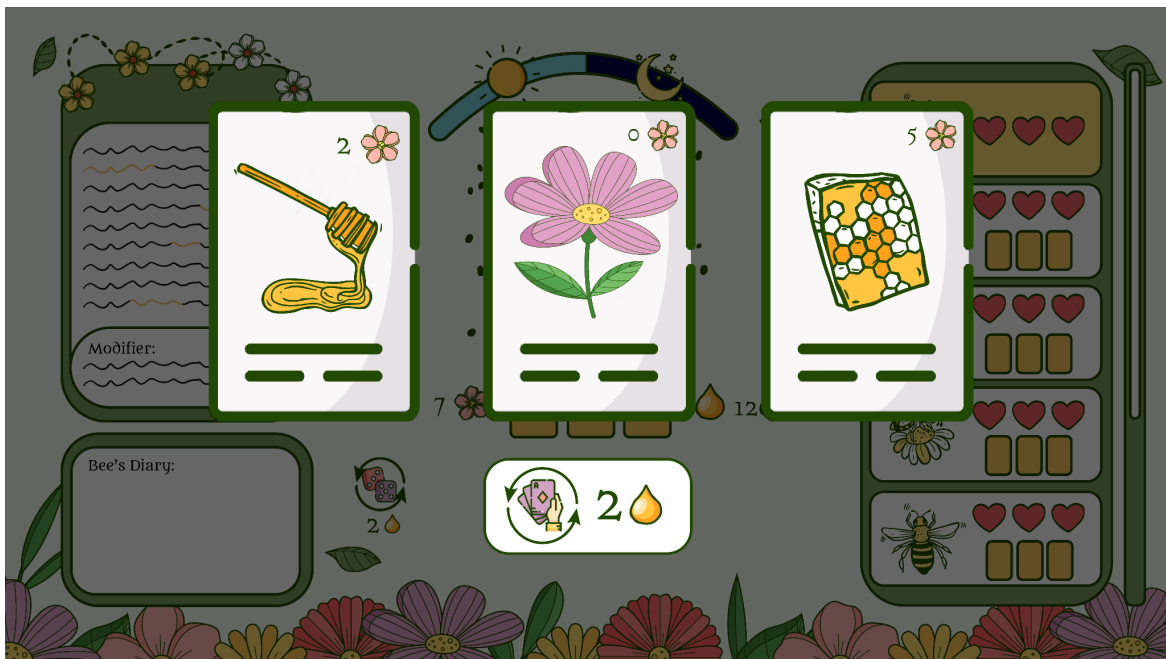


Figure 5.37: HoneyRush! reroll

Players can choose to save their **Nectar** from one day to the next, and accumulate all they want in order to use more powerful cards later on. When they roll the **Dice** the next day, the **Nectar** obtained will be added to the remaining **Nectar** from the previous day. When a **Cell** is completed, the **Nectar** amount that each player has does not reset, it will only reset at the start of each match.

- Player States -

As mentioned earlier, players can have several states, such as **Healthy**, which is their regular state, with **Honey Fever**, or **Eliminated**. When players are **Healthy**, they can play regularly as explained in this rule book. However, when they have one of the other two states, they experience some limitations or debuffs.

When a player is voted as a potential **Wasp** they end up with **Honey Fever** no matter their role. This means they are unable to use their cards for a span of two days.

On the other hand, while eliminated, not only are they unable to play their cards but also they cannot participate in the voting. This effect lasts for the whole duration of the **Cell**, unlike **Honey Fever** which only lasts two days.

Players with either **Honey Fever** or the **Eliminated** state, although they cannot use their cards during this time, will be able to use their rerolls and redraws in order to save their best **Cards** for when their penalty is over.

The following chart, Table 5.2, is a recap of the actions players can do in each state:

| Player States | | | |
|----------------------------------|---------|----------------------------|-------------------------------|
| Actions | Healthy | Honey Fever (lasts 2 days) | Eliminated (lasts whole Cell) |
| Use Cards | X | | |
| Roll Dice | X | X | X |
| Reroll Dice | X | X | X |
| Redraw Cards | X | X | X |
| Check other players' actions | X | X | X |
| Vote | X | X | |
| Use Chat (Wasps only) | X | X | X |
| Use Bee Diary (Bees only) | X | X | X |

Table 5.2: HoneyRush! player states

- Decks -

Table 5.3 is a list of all the different cards that **Bees** can obtain:

| Bee Cards | | | | |
|--------------------|--------|-------|------------|--|
| Name | Nectar | Phase | Type | Description |
| Nectar | 0 | Day | Normal | Your Nectar is increased by 1 . |
| Honeycomb | 0 | Day | Normal | Your Nectar is increased by 2 . |
| Honey Stash | 0 | Day | Normal | Your Nectar is increased by 3 . |
| Nectar Rush | 0 | Day | Normal | Your Nectar is increased by 5 this round, but you get exhausted and are unable to play the next day. |
| Pollen | 1 | Day | Generate | Generate 1 Honey . |
| Flower Patch | 2 | Day | Generate | Generate 2 Honey . |
| Pollen Pouch | 2 | Night | Generate | Give a pouch containing 2 Honey to another player. They get notified by this gift. |
| Flower Field | 3 | Day | Generate | Generate 3 Honey . |
| Large Pollen Pouch | 3 | Night | Generate | Give a pouch containing 3 Honey to another player. They get notified by this gift. |
| Queen Bee | 3 | Night | Protection | Protects a player from any effects from the Wasps for 1 day. |
| Protective Shield | 3 | Night | Protection | Protect yourself from any effects from the Wasps for 2 days. |
| Worker Bee | 4 | Night | Protection | Protect a player from any effects from the Wasps for 2 days. |
| Resource Boost | 4 | Day | Boost | Double the amount of Honey generated by you for 1 day. |
| Pollen Swirl | 4 | Day | Generate | Generate 5 Honey , but then you must discard one card of your choice. |

| | | | | |
|---------------------|----|-------|--------------------|---|
| Trading Expert | 4 | Night | Normal | Swap one random card with a chosen player. |
| Sabotager Bee | 4 | Night | Normal | Discard one random card from a random Wasp. You do not get notified who it was. |
| Honey Potion | 5 | Day | Heal | Grant 1 HP to yourself or another injured player. |
| Sabotage Blocker | 5 | Day | Protection | Cancel the effect of one sabotage card. |
| Bee Guardian | 6 | Night | Protection | Summon a Bee Guardian to protect 3 players from sabotage for the next 3 turns. |
| Build a Tent | 6 | Night | Protection | Build a tent for you to sleep through the night. You can't be targeted by Wasps during night time for the day. |
| Splash Honey Potion | 7 | Day | Heal + Lucky | Grant 1 HP to yourself or up to other 3 injured bees. |
| Build a Shelter | 8 | Night | Protection + Lucky | Build a shelter for you to sleep through the night. You can't be targeted by Wasps during night time until the next Cell. |
| Hive Rush | 8 | Day | Boost | Doubles the amount of Honey generated by everyone for 2 days. |
| Good Rest | 10 | Night | Generate + Lucky | Build a shelter for you to sleep through the night. You sleep extremely well. You generate triple the amount of Honey the next day. |
| Find Friends | 11 | Night | Lucky | You feel lost in the night. You find a fellow Bee friend. You find out a random player is a Bee. |
| Drone Bee | 12 | Night | Lucky | Investigate the role of another player. They do not get notified of this. |

Table 5.3: HoneyRush! bee cards

Table 5.4 is a list of all the different cards that **Wasps** can obtain:

| Wasp Cards | | | | |
|-------------------|-------------|-------|----------|---|
| Name | Nectar Cost | Phase | Type | Description |
| Nectar | 0 | Day | Normal | Your Nectar is increased by 1 . |
| Honeycomb | 0 | Day | Normal | Your Nectar is increased by 2 . |
| Honey Stash | 0 | Day | Normal | Your Nectar is increased by 3 . |
| Nectar Rush | 0 | Day | Normal | Your Nectar is increased by 5 this round, but you get exhausted and are unable to play the next day. |
| Fake Pollen | 1 | Day | Disguise | Pretend to generate 1 Honey . |
| Fake Flower Patch | 2 | Day | Disguise | Pretend to generate 2 Honey . |
| Pollinator Attack | 2 | Day | Sabotage | Forces a player to discard one of their cards randomly. This card goes undetected. |
| Fake Flower Field | 3 | Day | Disguise | Pretend to generate 3 Honey . |
| Honey Pot | 3 | Day | Disguise | Steals one random card from 1 player. You can pretend to play the stolen card without any real effects. This card goes undetected. |
| Mind Control | 3 | Day | Sabotage | Force a Bee to use a sabotage card on another player. Everyone can see they used it. This card goes undetected. |
| Large Honey Pot | 3 | Day | Disguise | Steals one random card from 2 players. You can pretend to play the stolen card without any real effect. This card goes undetected. |
| Sacrifice | 4 | Night | Disguise | Injure yourself 1 HP to make it seem like you were targeted during the night by a Wasp. |
| Fake Honey Potion | 4 | Day | Disguise | Grant 1 HP to yourself or another injured player. |
| Sabotage | 4 | Night | Sabotage | Destroy and block all resources gathered by 1 player for today. They get notified they got sabotaged. |
| Hindered | 4 | Night | Sabotage | Destroy and block all resources gathered by 2 players for today. They get notified they got sabotaged. |

| | | | | |
|-----------------|----|-------|------------------|--|
| Paralyze | 4 | Night | Sabotage | Paralyze a chosen Bee, preventing them from rerolling the next day. |
| Nectar Glitch | 5 | Night | Sabotage | All Bees have 1 less Nectar the next day. |
| Petrified | 5 | Night | Sabotage | Paralyze a chosen Bee, preventing them from rerolling for 2 days. |
| Pollen Storm | 6 | Night | Lucky + Sabotage | Causes a storm of pollen to sweep across the hive, forcing all players to discard 1 card randomly the next day. |
| Poison | 6 | Night | Sabotage | Secretly poison another player for 2 turns, causing them to regress the Honey count instead of adding to it. |
| Infestation | 7 | Night | Lucky + Sabotage | Infest the beehive, causing Bees to lose Honey over time until the infestation is dealt with. The Bees have to each use 2 Nectar . |
| Venom Injection | 8 | Night | Sabotage | Inject venom into a Bee. They can either take damage for 1 HP and keep on playing, or take a break for 2 days and stay healthy. |
| Backstab | 8 | Night | Sabotage | Choose a player. Whenever they try to use a card on someone, nullify the card effect and injure the target instead by 1 HP . |
| Hive Collapse | 10 | Night | Lucky + Sabotage | All players generated 1 less Honey today. |
| Sabotage Frenzy | 11 | Night | Lucky + Sabotage | Blocks all Honey from being gathered for one day. |
| Sting Attack | 12 | Day | Lucky + Sabotage | Launch a surprise attack on a Bee, eliminating them. Everyone will get notified by this, but won't know who it was. This card goes undetected. |

Table 5.4: HoneyRush! wasp cards

- Conclusion -

HoneyRush! is a richly strategic card game that intertwines deduction, collaboration, and deception within the captivating narrative of **Bees** and **Wasps** striving for dominance. Master the art of resource management, card selection, and social manipulation to ensure the hive's prosperity or the **Wasps'** triumph. The fate of the hive rests in your hands – are you ready to rise as a victorious **Bee** or seize control as a cunning **Wasp**?

Beebo

This section displays the user's avatar and pet, called **Beebo**, a small bubbly bee that fits with Beezy's bee theme. As mentioned in [Section 1.4.2: The Avatar](#), the user is able to take care of **Beebo** like a pet. In addition, **Beebo** is the user's avatar, giving them a visual representation and allowing them to create a sense of identity and ownership. They can personalize their experience through it.

Like any other pet, **Beebo** has some needs that have to be fulfilled in order to be happy. Players have the opportunity to take care of **Beebo** not only for the fun of having a little friendly companion thriving and joyful, but also to earn the benefits of having it nourished.



Figure 5.38: Beebo

Store and Benefits

Players have access to a virtual store, where they can buy food and toys for **Beebo**, as well as an inventory to store these goods that will help take care of it. In order to buy from the store, players will have to spend their **Honey Drops**. As explained before, **Honey Drops** is Beezy's currency that players earn when completing tasks.

When players spend their valuable **Honey Drops** to buy items to nourish **Beebo**, they earn benefits in *HoneyRush!*. Having **Beebo** well-nourished increases the player's luck in the game by 10%, meaning that they have 10% more chance of getting more powerful cards on their daily draw, and 10% more chance of rolling a higher number in their dice. As explained in *HoneyRush!* game rules, luck is an important factor since so many different aspects of the game depend on it. Even though players who spend **Honey Drops** have essentially less currency to reroll or redraw in the game, it is another type of investment that helps them win.

Instead of having better **Cards** by redrawing, or more chances of using their **Cards** by rerolling the **Dice**, players are investing in better luck when playing.

It is a matter of preference, or strategy, to invest in better luck or redrawing and rerolling.

Nourishing

Beebo has different necessities: hunger, entertainment, hygiene, and sleep. As time goes by, these necessities will grow stronger and stronger. The player has different methods to take care of the pet and address these needs.

These requirements are represented in the interface as bars with a scale from 0 to 100. When interacting with **Beebo**, the bars fill up progressively, meaning that the player has to invest a certain amount of time in order to fully satisfy **Beebo's** needs. The time to fill up a bar from 0 to 100 will depend on every need.

Please refer to Table 5.5 that details information about **Beebo's** requirements.

| Beebo's Needs | | | | |
|----------------------|---|---------|---|---|
| Type | Description | Payment | Interaction | Time to Satisfy |
| Hunger | Your pet is hungry. Buy food from the store and feed it as soon as possible! <i>Consumes the food when used.</i> | Paid | Click to select food. Click and hold to drag food to the pet. | Beebo's fullness depends on the type of food provided. The more elaborate and costly the meal, the more satisfied Beebo becomes. |
| Entertainment | Your pet is bored. Make sure you spend some quality time with it by playing with it! <i>Reusable toys.</i> | Free | Click to select a toy. Click and hold to drag it over the pet. Move the mouse to play with it. | 6 seconds. |
| Hygiene | Your pet is stinky... It needs an urgent shower. <i>Reusable soap.</i> | Free | Click to select the soap. Click and drag to use it over the pet. Scrub by moving the mouse until clean. | 6 seconds. |
| Sleep | Your pet is so tired, it needs to sleep. It's time to turn the lights off. | Free | Click on the window curtains to shut them off. | 1 hour. |

Table 5.5: Beebo's needs

The following Figure 5.39 is a visual representation of the interface.

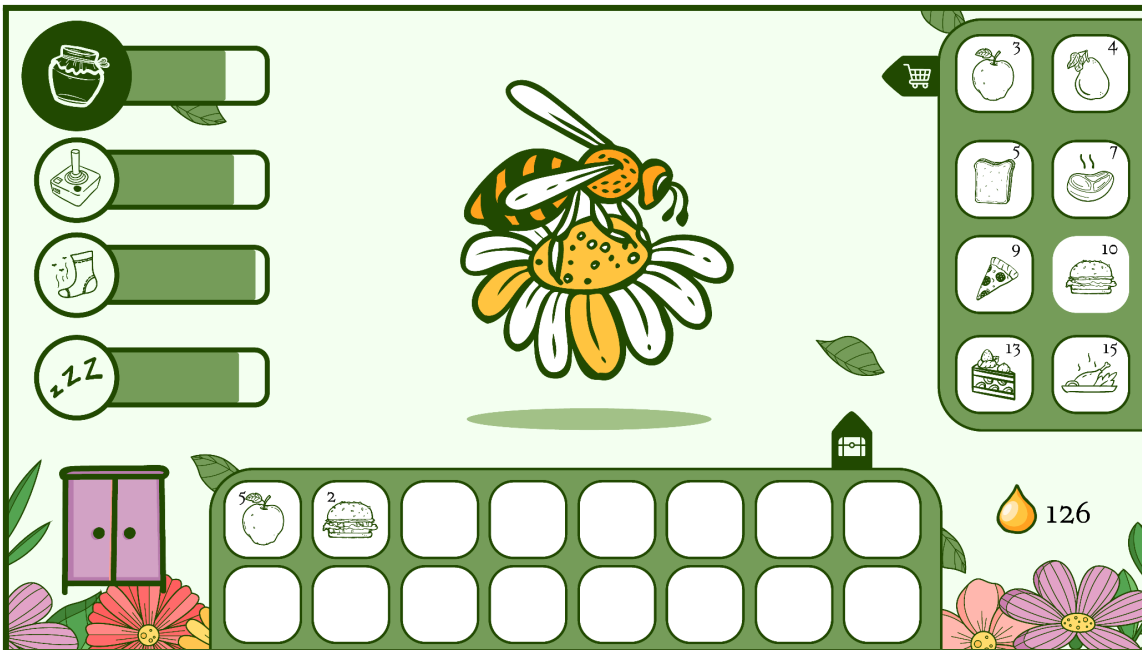


Figure 5.39: Beebo's needs menu

Needs

On the left side of the interface, you will find various bars representing Beebo's needs. As can be seen in Figure 5.40, from top to bottom, these bars represent **Hunger**, **Entertainment**, **Hygiene**, and **Sleep**. As players interact with **Beebo** to meet these needs, the bars gradually fill up. Furthermore, **Beebo's** facial expression changes to reflect its satisfaction level. When the bars are low, **Beebo** appears sad, but as they fill up, **Beebo's** mood transforms into a happier one.

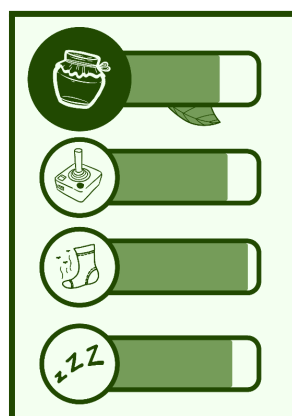


Figure 5.40: Beebo's needs

Store

The interface's right panel represents the store, providing players with the opportunity to spend their **Honey Drops** for purchasing items for **Beebo**.

The store, seen in Figure 5.41, has two distinct categories: one for food and another for toys. On another note, hygiene products do not require purchasing, as soap is provided to cover the need and does not diminish upon use. In contrast, food is consumed upon usage, while toys are one-time acquisitions and do not deplete.



Figure 5.41: Beebo's store

Inventory

The bottom segment of the interface represents the player's inventory, a storage space for all the items purchased from the store, seen in Figure 5.42. This inventory space is where players can efficiently organize and manage their collection of items, ensuring that everything they have purchased is accessible for use whenever needed.

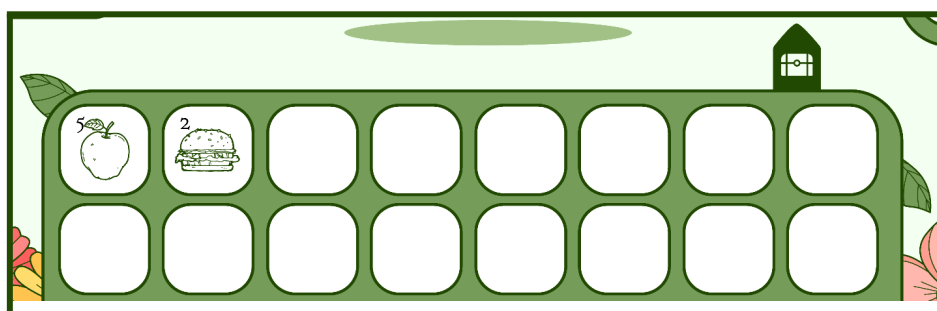


Figure 5.42: Beebo's inventory

Wardrobe

The icon at the bottom left represents a wardrobe, seen in Figure 5.43. It provides players access to the personalization menu where they can customize **Beebo's** appearance. When clicking this icon, the interface seamlessly transitions to the wardrobe interface.

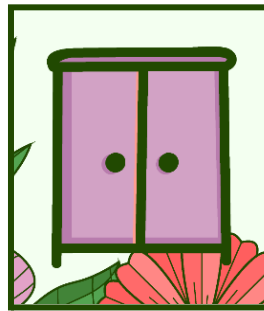


Figure 5.43: Beebo's wardrobe icon

Wardrobe Interface

As explained above, the wardrobe interface is a space where players can customize **Beebo's** appearance. In addition to the store, players can spend their **Honey Drops** to buy different personalization items to customize **Beebo**. This addition is great for free spirits who value the freedom of self-representation and autonomy.

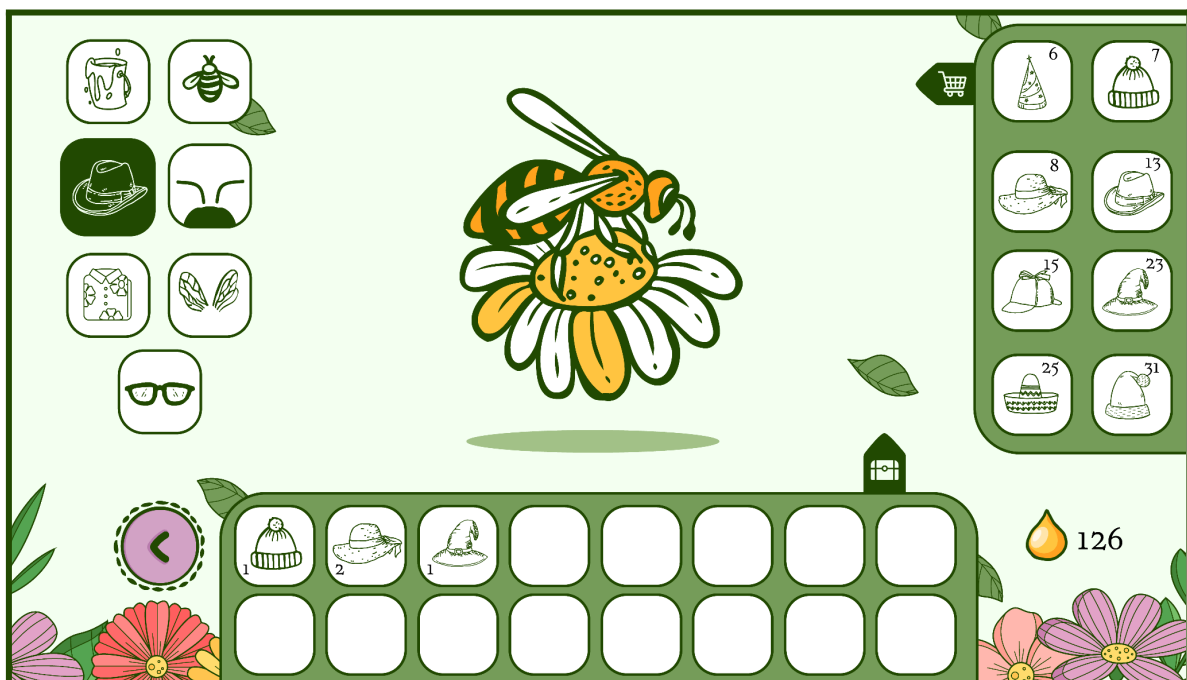


Figure 5.44: Beebo's wardrobe menu

Customization Categories

Displayed as icons along the left side of the interface, players can explore various customization options. These options allow players to craft a truly unique and personalized look for **Beebo**.

Here is a breakdown of the available customization elements:

- **Bee color:** Players can select from a wide spectrum of colors to define **Beebo's** color palette.
- **Bee pose:** Beebo's pose isn't just a static stance: it is a way to express its personality. Players can choose from a selection of poses that define **Beebo**, from playful and mischievous, to calm and thoughtful.
- **Head Accessory:** **Beebo** can sport various head accessories, from hats to crowns and diadems.
- **Antennas:** Customize **Beebo's** antennas, whether they are curly or straight, or adorned with unique shapes.
- **Body Clothes:** **Beebo** can dress in a range of outfits, allowing players to tailor its clothes to suit their preferences.
- **Wings:** **Beebo's** wings can be personalized as well.
- **Glasses:** Give **Beebo** a stylish eyewear makeover.

Each of these customization elements comes with its own distinct price tag, making some more valuable and challenging to obtain than others. This diversity is a great addition for achievers, since their goal is to obtain the different elements given by the game by overcoming challenges.

Furthermore, *HoneyRush!* offers an additional incentive for players. Exclusive customization items can be earned as rewards through gameplay, enriching the customization experience with unique items that are a testament to a player's success and achievements in the game.

Figure 5.45 is a representation with icons of the different customization categories:

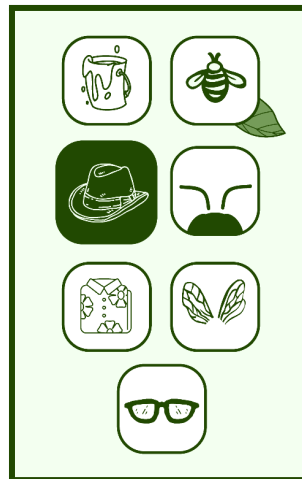


Figure 5.45: Beebo's customization items

The remaining panels within the customization interface follow a similar layout as the previous one. They feature an inventory at the bottom section, a store for purchasing customization items on the right, and instead of a wardrobe icon in the lower left corner, there's an arrow that allows players to easily navigate back to the previous screen.

HoneyRush! Identity

Furthermore, **Beebo** takes on a significant role beyond aesthetics; it serves as a distinct identifier of the player, or avatar, within the *HoneyRush!* community. This unique aspect carries a particular appeal for socializers, players who relish the opportunity to connect, collaborate, and engage in various activities with fellow players.

In the world of *HoneyRush!*, the avatar becomes the player's virtual calling card, a representation of their identity and persona in the game. It sets them apart and allows them to leave a memorable impression on other players. As players interact with the community, the avatar becomes a symbol of their achievements, their style, and their in-game journey.

For socializers, this is a key feature. It opens up ways to form friendships. Whether it's teaming up with others to tackle challenging milestones or simply showcasing their unique avatar, **Beebo** becomes a means of self-expression and connection.

5.3.2. Mastery Path

In the evolving landscape of digital products and applications, engaging and retaining users is key. The following section in Amy Jo Kim's book is the Mastery Path, a critical concept within the Design segment. It is a framework that helps design and structure a product to attract and retain users effectively.

Taking inspiration from game design and the concept of leveling up, the Mastery Path is based on guiding users through different stages that gradually increase in complexity, challenge, and reward. Each step in this process is crucial in the development of the user within the application or product.

Amy Jo Kim englobes this concept as "From Customer to Hero", as it is the transformative journey that users can experience when engaging with a gamified product and transitioning from a customer or user, to a hero or expert.

"The Mastery Path tool is designed to help you create an unfolding experience that adds up to a coherent and satisfying whole." [7]

To create this meaningful progression, Amy Jo Kim advises us to identify the evolving skills users acquire and the relationships they form when using the product. This involves questions such as [7]:

- What can my customers get better at that they care about?
- What skills do they develop when they engage with my product over time?
- What metric are they improving, and what makes that metric meaningful to them?
- What new powers, access, and privileges will open up as they progress?

After interviewing potential Beezy users in the previous section, it becomes evident that the target users seek to build meaningful workplace relationships and stay motivated to complete tasks. When they use Beezy, they develop skills in socializing, efficiency, and motivation, which enhance their overall productivity. Users can measure their progress by realizing they are using their time more efficiently and productivity in the company is higher. By interacting in Beezy, such as playing *HoneyRush!*, completing tasks, or taking care of Beebo, users not only engage with coworkers but also earn special rewards for their hard work and accomplishments. These rewards, which are more detailed in the following sections, serve as tangible indicators of their journey from customers to heroes within the gamified world of Beezy.

Going back to the stages in the Mastery Path, we can identify four: **Discovery**, **Onboarding**, **Habit-building**, and **Mastery**. Figure 5.46 is a visual representation of these steps.

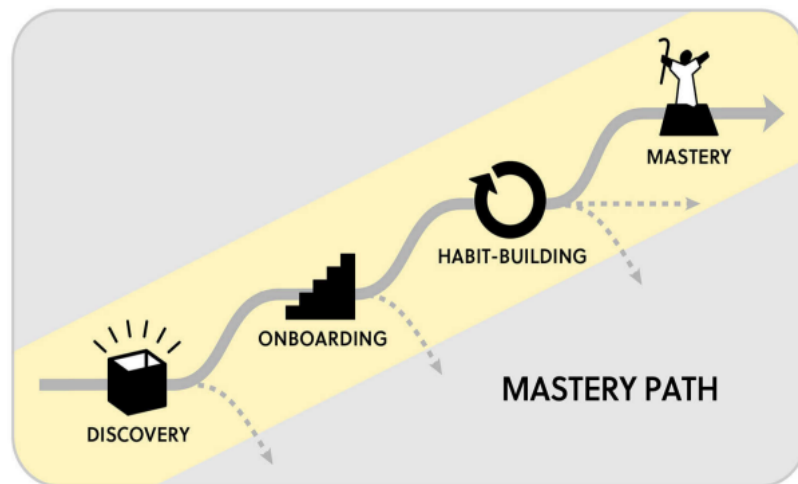


Figure 5.46: Mastery path

Discovery

In the Mastery Path framework, the Discovery stage is the initial phase in the user's journey within the product. In this stage, they are introduced to the application and begin to explore its basic features and functionalities. They encounter the product for the first time, often through recommendations or marketing, and are initially exposed to what the product is and how it might address their needs or interests. This is the stage where their journey begins, as they embark on a path to become proficient users.

A key aspect of the Discovery stage is exploration. Users have the chance to experiment with the product's interface, content, and features, in order to comprehend its functionalities and capabilities. They are introduced with the first steps, which can include creating an account, setting their preferences, or undergoing the product's initial tutorial. All these steps are important to get used to the product's functionalities.

As users continue to explore, they progressively get more familiarized with the product's layout and navigation. They are able to identify areas of interest or features that align with their needs and goals.

Amy Jo Kim helps us find what Beezy visitors are interested in by suggesting to answer questions like: Is this for me? Is this worth my time? What problems does it solve for me? [7]. She encourages readers to write what she calls a discovery story, which captures the hypothesis of how my early market will discover, value, and check the product.

Figure 5.47 is a template for the discovery story.

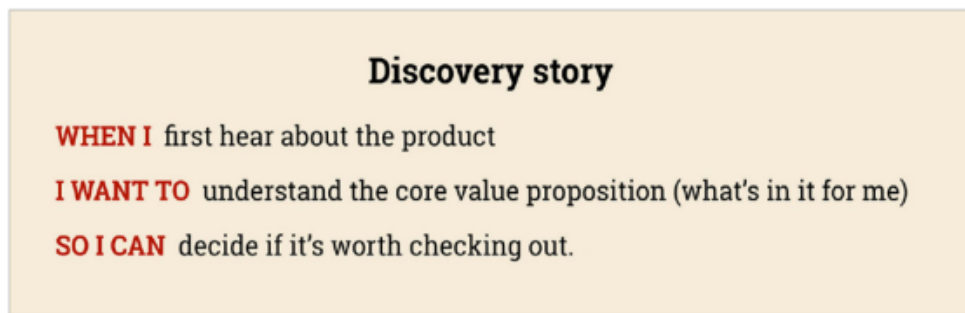


Figure 5.47: Discovery story template

For the case of Beezy we could create the following discovery stories seen in Figures 5.48 and 5.49:

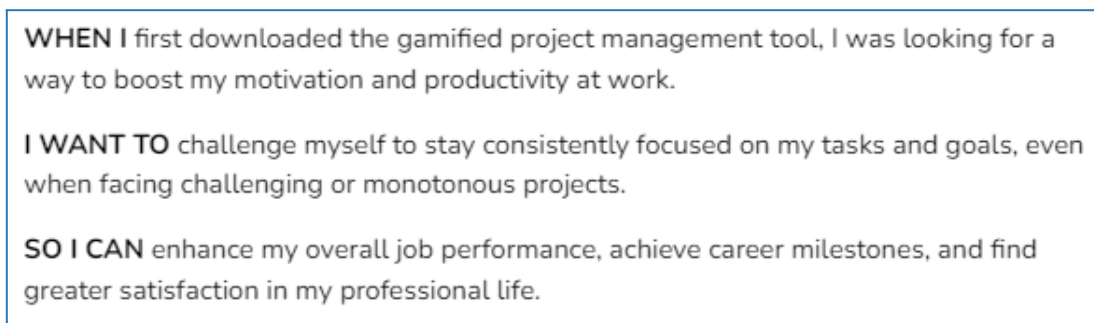


Figure 5.48: Beezy discovery story 1

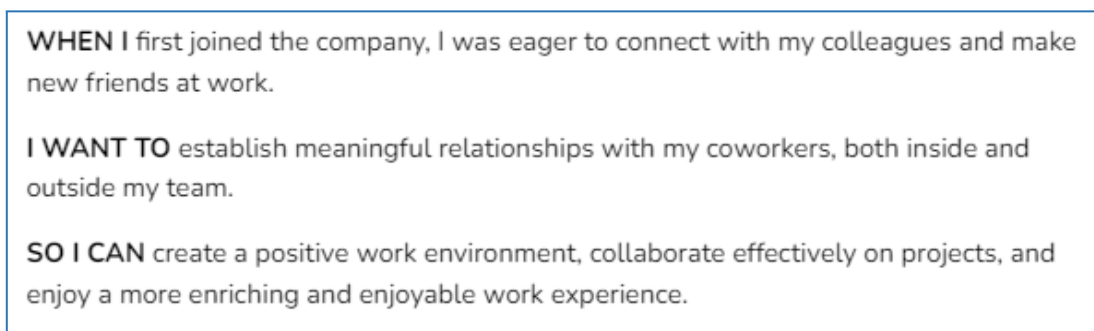


Figure 5.49: Beezy discovery story 2

Onboarding

The Onboarding stage in the Mastery Path represents a transition phase in the user journey from their initial introduction to the product to becoming an active participant in it. During this phase, users are introduced to the fundamental skills, features, and functionalities of the product, where they can gain a deeper understanding on how it works and its core capabilities, which sets the stage for more advanced interactions.

User guidance plays an important role during Onboarding, where designers often provide tutorials and step-by-step instructions to help users become more familiar with the product. These guides are specifically designed to ease the learning curve and boost user confidence, which helps users transition smoothly into using the application.

The overall objective of this stage is to ensure that users become proficient with the product's basics and feel motivated to continue their journey. A successful Onboarding experience helps users to progress into the following phases of the Mastery Path, where they will be able to continue developing their skills, and work toward mastery within the gamified product.

In the case for this stage, Amy Jo Kim suggests answering questions like: How do things work here? How do I learn the ropes and start getting value? What's in this for me? Why should I invest my time? [7]. So she made a template to write our hypotheses into what she calls the onboarding stories. Figure 5.50 is the template for the onboarding story.

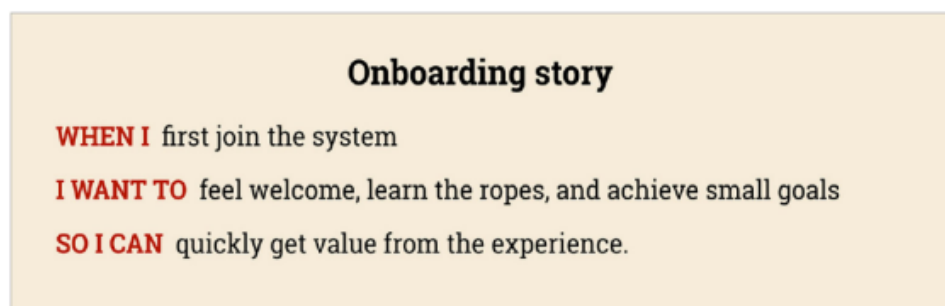


Figure 5.50: Onboarding story template

For Beezy, I created the following onboarding stories in Figures 5.51 and 5.52:

WHEN I first logged in into Beezy, I was greeted by an interface that immediately sparked my curiosity. The vibrant design and interactive tutorials caught my eye, and I was eager to dive into the experience.

I WANT TO feel a sense of excitement and purpose in my daily tasks, which is something that had been missing for a while. Using Beezy, I aim to discover a new way of approaching my day to day, one that keeps me engaged and motivated.

SO I CAN not only meet project deadlines with ease, but also transform the way my team and I approach our tasks. I hope to see increased productivity, a boost in team morale, and a sense of fulfillment in my professional life.

Figure 5.51: Beezy onboarding story 1

WHEN I first logged into Beezy, I was excited about the idea of making new friends at work. I was struck by the lively and welcoming interface. The platform seemed to buzz with activity, and I could not wait to explore its features. I found a vibrant community and a platform that offered various discussion boards, group chats, and even fun icebreaker games.

I WANT TO experience connecting with coworkers in a natural and enjoyable way. With Beezy, I aim to break down barriers of formal office relationships and establish friendships.

SO I CAN create a warm and inclusive work environment, where we are not just colleagues, but friends who rely on each other, with the purpose of enhancing teamwork, boosting morale, and ultimately, making every day at work an enjoyable experience.

Figure 5.52: Beezy onboarding story 2

These narratives emphasize the significance of effective Onboarding in not only familiarizing users with the application but also igniting motivation and meeting their needs. Through well-designed tutorials, feedback mechanics, and immediate rewards, users are not only introduced to Beezy but are also incentivized to explore further.

When a user embarks their journey in Beezy, they are greeted by a colorful and lively interface with the title of the application and the option to sign in or make an account.

As they navigate through the initial steps into Beezy, including the sign-up process and the completion of their Employee Sheet, they will be greeted with clear and concise step by step indications on how to proceed through the application. The tutorial takes a gradual approach, introducing different sections of Beezy as users progress through the platform. Key sections such as the PMT pages, HoneyRush!, and Beebo are explained, but only when users decide to navigate to those pages. This ensures that users are not overwhelmed with information.

On another note, these tutorial steps are designed to be skippable for those who prefer to explore and discover the application's functionalities independently. These guidance elements help users become familiar with the app and provide a deeper understanding of the features.

By presenting a user-friendly introduction in the onboarding process, Beezy empowers users to take their initial steps with confidence, whether they are eager to explore all the parts of the application immediately, or prefer to uncover them at their own pace. This thoughtful approach ensures that users are well-equipped to explore the full potential of Beezy while respecting their individual preferences.

Habit-building

The following step in the framework is the Habit-building stage. Following the initial Discovery and Onboarding stages, this one focuses on reinforcing user behavior that leads to the formation of sustainable habits. The goal of this stage is to create habits where users engage with the product regularly and consistently, essentially making it part of their daily routines.

One of the most important elements in this stage is the emphasis on repetition and consistency. In order to encourage users to return to the application regularly, designers must employ various strategies to incentivize these repeated interactions. Some elements like daily challenges, streaks, and rewards, play an important role in ensuring that users stay consistent.

Continuous engagement is also a key aspect of Habit-building, where gamified products introduce new challenges, content or levels in order to prevent boredom and maintain interest.

Amy Jo Kim suggests us to think about these questions: What existing need and/or habit could drive customers to use my product? What skill or competency will they build using my product? Is there uncertainty or anxiety attached to NOT having that skill? [7]. These questions help me answer her habit story templates, seen in Figure 5.53.

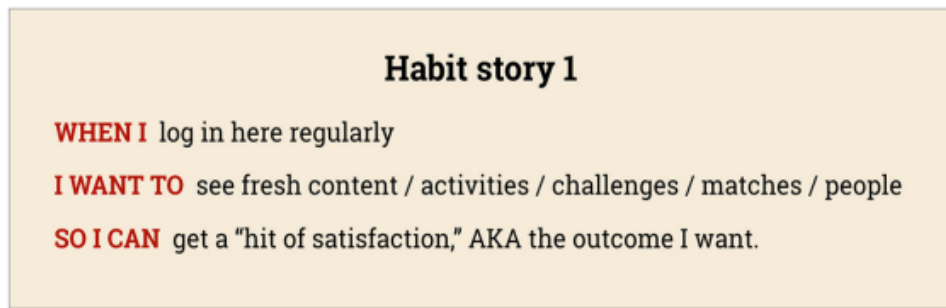


Figure 5.53: Habit story template

For Beezy, I created the following habit stories seen in Figures 5.54 and 5.55:

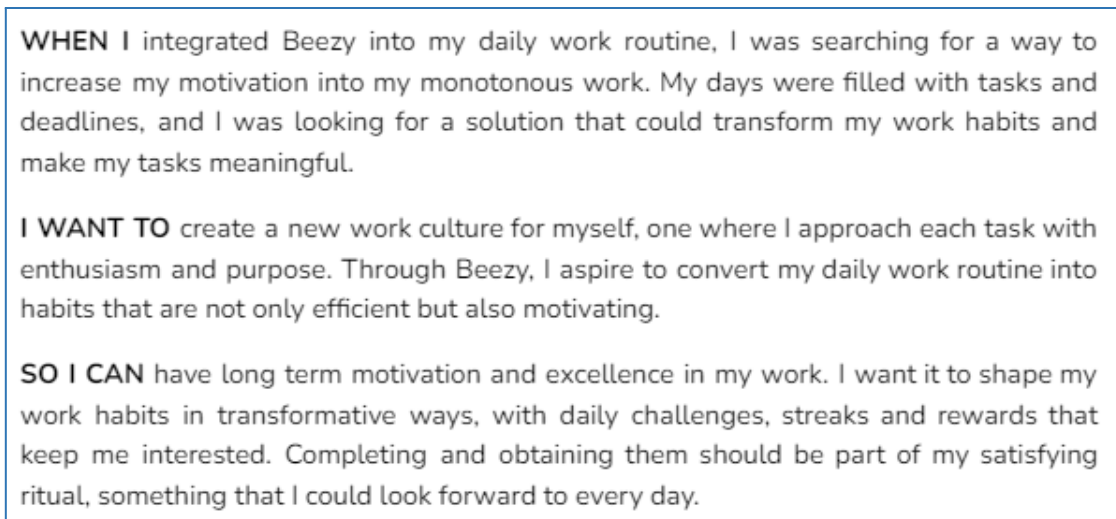


Figure 5.54: Beezy habit story 1

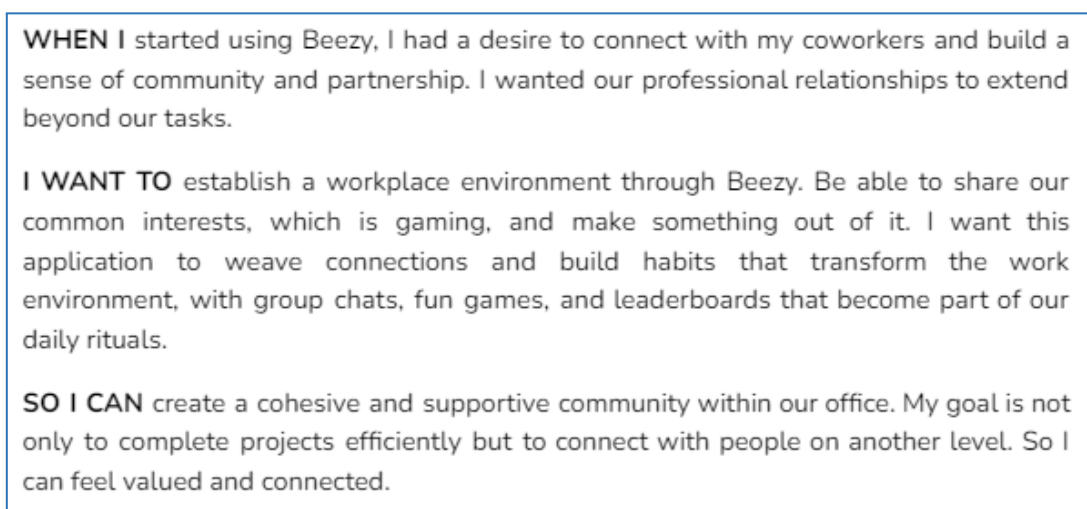


Figure 5.55: Beezy habit story 1

Gamification Elements in Beezy

Beezy's user-centric design is crafted to incentivize habits in the users by integrating a range of gamification elements. Not only does HoneyRush! and Beebo deliver an enjoyable and captivating experience that makes players want to return the following day, but they also incentivize task completion in order to earn the benefits of spending Honey Drops.

All across the application, a wide variety of gamification elements are being used. The following lists are all the different elements used across Beezy.

General/PMT

1. Theme

Refers to the overall visual style, narrative or aesthetic that defines the look and feel of the experience, which helps immerse players in an environment.

In the case for Beezy, all across the application the theme is Bees.

2. Virtual economy

Involves the use of a currency or resource that players can earn and spend in the application or game. It provides a sense of achievement and progression, which enhances engagement and investment.

In Beezy, the currency used is Honey Drops. It is used all across the application, in the PMT part as a reward for completing tasks, in HoneyRush! as a currency that boosts players' chances of winning, and in Beebo as a currency to buy from the virtual store.

3. Points

Refers to a numerical value that tracks a player's accomplishments or progress which gives feedback on their performance. It can motivate players by fostering competition or offering recognition for their efforts.

In Beezy, Honey Drops are also used as points, since they give value to the tasks, giving players the sense of accomplishment when completed.

4. Leaderboards

Used as a ranking system that displays players' performance in a game or application. It fosters competition and offers recognition for their efforts.

In Beezy, there are two leaderboards implemented: one for task completion, and one for HoneyRush! matches won. The desire to outperform peers motivates users to engage with the platform regularly, forming a habit of participation.

5. Badges

Represents virtual rewards or an achievement for completing a specific objective or milestone. It provides a sense of progress, recognition, and encouragement to pursue other badges.

In Beezy, badges will be rewarded to players for different kinds of actions. There will be three categories: one for the PMT, one for HoneyRush!, and one for Beebo. Some examples are:

PMT

- Completing X amount of tasks
- Finishing a task before the estimated time
- Completing a task that is worth X amount of Honey Drops

HoneyRush!

- Winning a X amount of matches
- Killing X amount of Bees
- Surviving X Wasp attacks
- Generating X amount of Honey

Beebo

- Obtaining X amount of customization items
- Maintaining Beebo happy for a X weeks
- Changing Beebo's outfits X times

6. Certificates

It is a formal recognition of a player's achievements or expertise on a specific subject. It validates accomplishments and boosts the player's confidence, which encourages them to pursue further mastery.

In Beezy, certificates will be rewarded to players for different kinds of accomplishments, such as mastering customization, mastering HoneyRush!, excelling in training juniors, etc.

7. Challenges

Refers to specific tasks or objectives players are encouraged to complete within the application or game, giving players clear goals and a sense of accomplishment when achieving them.

In Beezy there are daily challenges. By encouraging users to tackle these daily tasks for virtual rewards such as extra Honey Drops or badges, Beezy can establish a habit of daily engagement. Users will be motivated to log in consistently to complete these challenges and obtain the rewards or recognition.

8. Streaks

Involves tracking consecutive actions or achievements by players. They can create a fear of breaking the streak, which encourages players to stay consistent and engaged, reinforcing a sense of habit and commitment.

Beezy has a streak system that rewards users who consistently complete all of their daily challenges. The fear of breaking a streak can be a compelling incentive for users to maintain their daily interaction with the platform, ultimately turning it into a habit.

9. Rewards

Refers to a tangible element that is given to a player that achieves a specific goal. The immediate gratification given motivates players by giving them a sense of accomplishment and value to their objective.

In Beezy, Honey Drops are also a reward whose value is reflected on the task. In addition, winning HoneyRush! matches give players rewards, such as badges and being featured in the leaderboard. In the case of Beebo, the player is rewarded when keeping Beebo happy, as it gives players benefits in HoneyRush!, as well as badges.

HoneyRush!

1. Levels

Signifies a progression system where players can advance through different stages with increased difficulty, giving them a clear goal and sense of accomplishment. It sustains engagement as players strive for higher levels.

In HoneyRush!, levels are represented as the different cells in the match. As players progress through the match, cell completion complexity increases as Wasps unlock more powerful cards. This increase of difficulty helps players avoid boredom and keep them engaged in the game.

2. Narrative/Story

Involves the integration of a storyline into the application or game, which immerses players in an engaging and relatable world. It gives context to their actions and motivates emotional investment.

In HoneyRush! this element is represented through the Story Fragments.

3. Time pressure

This element introduces constraints or a deadline in the application or game, giving players a sense of urgency to act and quickly decide their actions. This enhances focus and fosters a competitive environment.

In HoneyRush!, Bee players have the time pressure of filling their hive with Honey before their milestone is over.

4. Strategy

Encourages players to think and execute plans or tactics to achieve their objectives within the game. It stimulates critical thinking, problem-solving skills, and great satisfaction when overcoming the challenge, and therefore an increase in motivation and engagement.

HoneyRush! is essentially a strategy game since it requires players to make tactical decisions, adapt to changing circumstances, and coordinate with their teammates in order to win.

5. Social Network

Involves the integration of social interactions between players and users, such as communication or collaboration. It encourages a sense of belonging and community.

HoneyRush! is designed for players to form teams and collaborate with each other to achieve common goals as Bees or Wasps.

6. Competition

Encourages players to outperform others by achieving higher scores or obtaining specific goals. This fuels their desire to excel and prove their skills, which enhances their engagement in the game.

HoneyRush! pits players against each other, Bees versus Wasps, which fosters a spirit of rivalry.

7. Voting

Allows players to make decisions and express their preference through a voting mechanism. It gives players a sense of agency and decision-making. This essentially motivates them to play since it gives them the opportunity to influence the outcome of the game.

In HoneyRush! players are able to vote and therefore make a collective decision to choose who they believe the Wasp might be. This decision shapes the game's progression and provides them with a sense of agency.

8. Game of Chance

Involves random and unpredictable outcomes within the application or game. It adds an element of excitement and surprise, which enhances engagement.

HoneyRush! incorporates elements of chance through the use of the dice, which randomly selects a number between one and six, the random cards given to players, and the element of luck.

9. Guild/teams

Encourages the formation of player groups within the game, which fosters collaboration and a sense of belonging. Similar to the social network, it helps reinforce connections and camaraderie between players.

In HoneyRush!, every match two different teams are created: Bees and Wasps.

Beebo

1. Avatar

Represents a digital character that players can control or customize within the application or game. They help create a more immersive experience, as well as a sense of ownership and identity.

Beebo is Beezy's avatar, giving players a way they can express themselves through their little companion, and customize it as they please.

2. Collection

Involves acquiring and accumulating a list of items or collectibles within the game or application. It motivates players by providing a sense of press and completion, as well as satisfaction when obtaining rare items.

In Beebo, players have an inventory where they keep the items bought from the store, which include food, toys, and customization items for their bee.

3. Rare/unlockable content

Refers to exclusive and hard-to-obtain items or features that motivate players who earn this content by creating a sense of accomplishment and exclusivity. It enhances engagement and dedication to the game, as they get the desire to unlock and showcase these items.

In Beebo, certain customization items will be rare and obtained after completing hard challenges, such as winning a match in HoneyRush!, or gaining a special badge, for example.

4. Customization

This element allows players to modify and personalize certain aspects of their in-game experience, which offer a sense of ownership, uniqueness, and creativity.

In the case of Beezy, Beebo is an avatar that can be customized by the player in many different ways.

The following Table 5.6 is a representation of these different elements used across Beezy. As can be seen, each element is linked to a user type that, as explained in [Section 2.4.4: Gamification Elements](#), is a representation of a user that helps designers define their audience better and then create gamification strategies that appeal to these specific users.

| Gamification Element | User Type | PMT | HoneyRush! | Beebo |
|-------------------------|-----------------|-----|------------|-------|
| Theme | General | X | X | X |
| Virtual economy | Player | X | X | X |
| Points | Player | X | | |
| Leaderboards | Player | X | X | |
| Badges | Player | X | X | X |
| Certificates | Achiever | X | X | X |
| Challenges | Achiever | X | X | X |
| Streaks | Achiever | X | X | X |
| Rewards | Reward Schedule | X | X | X |
| Levels | Achiever | | X | |
| Narrative/story | General | | X | |
| Time pressure | General | | X | |
| Strategy | General | | X | |
| Social network | Socializer | | X | X |
| Competition | Socializer | | X | |
| Voting | Disruptor | | X | |
| Game of chance | Player | | X | |
| Guild/teams | Socializer | | X | |
| Avatar | Socializer | | | X |
| Collection | Achiever | | | X |
| Rare/unlockable content | Free spirit | | | X |
| Customization | Free spirit | | | X |

Table 5.6: Beezy's gamification elements

Beezy's comprehensive gamification strategy effectively transforms users into habitual participants. This approach combines elements of fun, challenge, and social interaction to encourage users to return consistently and actively engage with the platform.

Mastery

The Mastery section is the fourth and final phase in the Mastery Path framework where users have acquired a profound level of expertise and mastery in the application. This phase is characterized by advanced skill development with users who have sharpened their abilities to navigate the application's complexities, understand its features deeply, and achieve their goals efficiently.

Intrinsic motivation is the most important element during the Mastery phase, since users are mostly driven by internal motivations rather than external ones, such as rewards. The application has become an integral part of their daily routines, giving them value that significantly tackles their needs. The engagement is self-driven and self-sustained.

In this phase, users often unleash their creativity. Having acquired an advanced level of proficiency, they often explore uncharted territory within the application, by pushing its boundaries and coming up with ways to put to use its capabilities. In addition, many users with this level of mastery naturally transition into roles of leadership, taking on responsibilities such as guidance or mentorship, that help newcomers in navigating and achieving their personal goals.

Continuous improvement is the driving force for users in this stage. They are committed to refine their skills and set new personal objectives. This section symbolizes the highest point of the user's journey, where they have evolved from novices to experts, driven by internal motivation.

Amy Jo Kim encourages us to write a mastery story, a narrative that describes the advanced goals and experiences of expert users within the gamified application. Figure 5.56 is the template she provides:

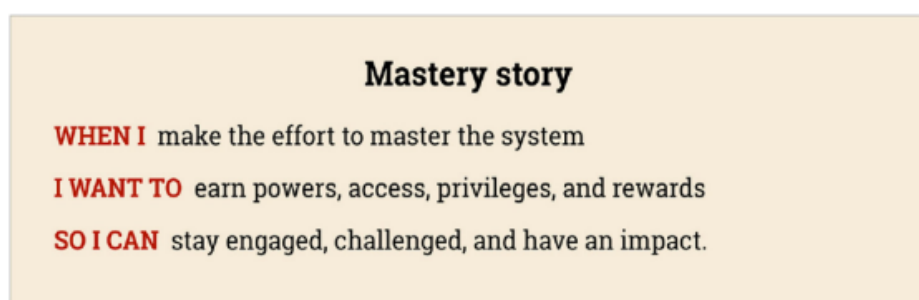


Figure 5.56: Mastery story template

For Beezy, I created the following mastery stories seen in Figures 5.57 and 5.58::

WHEN I reach mastery in Beezy

I WANT TO find a series of mastery elements that keep me engaged, by introducing me to new challenges, new rewards, and discovering new ways to interact with the application. I want to be able to help or mentor less experienced team members, fostering a sense of leadership.

SO I CAN not only meet project goals consistently and stay engaged, but also inspire my team and maintain a high level of enthusiasm in our work.

Figure 5.57: Beezy mastery story 1

WHEN I became a community manager in Beezy, I had already established meaningful connections and contributed to a thriving workplace.

I WANT TO take my role as a community leader to the next level and face new challenges, as well as mentoring and guiding my team to strive for the same.

SO I CAN not only foster a sense of belonging among my team but also inspire a culture of support and cooperation.

Figure 5.58: Beezy mastery story 2

Creating a profound sense of mastery within Beezy has been approached through its different parts. The most simple way is by a certification system that plays an important role in acknowledging and celebrating users' expertise. In order to tackle the importance of recognition in the journey towards mastery, Beezy grants certifications and badges to users who attain a high level of proficiency. These tangible symbols not only boost their confidence but also serve as a source of inspiration for others, incentivizing them to embark on their own path towards mastery.

In the context of Beebo, the concept of mastery manifests in a different way. Expert users are likely to own a vast collection of customization items for their virtual pet, showcasing their adeptness in personalizing their Beebo. These customized Beebos become emblematic of the owner's mastery, reflecting not only their commitment but also their creativity. In addition, those users that achieve the mastery level will be awarded with exclusive customization items to showcase their expertise and incentivize others to want to earn them.

On the other hand, HoneyRush!, characterized by its cyclical gameplay, takes a different approach to mastery. While the game mechanics can be easily grasped in just a few rounds, becoming an expert is beyond mastering the rules alone. True expertise in HoneyRush! is defined by a player's adeptness in assuming their role efficiently, whether as a Bee or a Wasp. The essence of expertise lies in one's capacity to convincingly deceive their team if they are a Wasp, or skillfully identify a Wasp if they are a Bee. Similar to the dynamics of social deduction games, HoneyRush! expertise flourishes within the community. It lays on the players ability to deduce the identities of others and their skill in concealing their own role as the "bad guy".

5.3.3. Learning Loop

The next step in Amy Jo Kim's Design section is finding and understanding the users Learning Loop. The Learning Loop is a framework that outlines the different phases that users overcome when engaging with the product in the aspect of creating habits and engaging experiences. It is designed to understand and enhance user engagement.

"The most successful product creators I know always kickoff a new project by building, iterating and tuning the core activity chain, or what I call the core learning loop." [7]

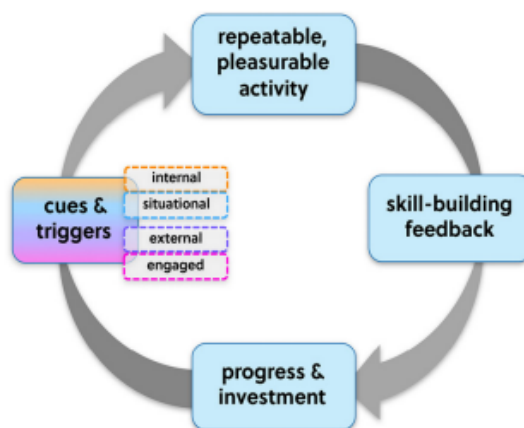


Figure 5.59: Learning Loop

As can be seen by Figure 5.59, the Learning Loop is divided into four phases:

1. **Cues and triggers:** This is the initial phase where users are incentivized to start interacting with the product. It involves some type of stimulus, internal or external, that encourages users to take action.

2. **Repeatable, pleasurable activity:** This is the second step in the loop, where users are already ready to act and the app offers a pleasurable experience or activity. This is the core experience that makes users want to engage with the application regularly since they find the experience enjoyable. This activity has to be easy to repeat and satisfying.
3. **Skill-building feedback:** The third phase in the loop is where users receive feedback from the application on their actions and/or performance. This feedback can vary from rewards, progress indicators, or badges. Essentially, it helps users understand their progress and encourages them to improve their skills.
4. **Progress and investment:** When users reach the last stage, they have made progress and invested their effort and time into the application. In this phase, their achievements are acknowledged, which creates a sense of accomplishment and encourages them to repeat the cycle.

The Learning Loop is a continuous cycle where users can shift through these phases repeatedly as they interact with the application. Its ultimate goal is to create an experience that keeps them motivated and wanting to come back for more.

Amy Jo Kim suggests us to find what triggers, activities, feedback, and drive does our application have. In the case of Beezy, I have identified and designed the following Learning Loops:

Example 1: PMT

Cues and triggers

- **Cue:** Users receive a notification or reminder to update their ongoing tasks within Beezy or to start a new one if they have completed their previous one.
- **Trigger:** The cues incentivize users to open Beezy and check their task list or project updates.

Repeatable, pleasurable activity

- **Activity:** When users are done with their task, they move their task from the “In Progress” column to “Done”.
- **Satisfaction:** The act of completing the task and moving it to the “Done” column is satisfying for users as they reach their work objectives.

Skill-building feedback

- **Feedback:** When a task is completed, users are rewarded with Honey Drops which can be then used in various ways. In addition, Beezy provides other feedback such as task completion notifications.
- **Skill-building:** Users receive constructive feedback on their task performance depending on their time completion and the original estimated time, helping them understand their progress and areas of improvement.

Progress and investment

- **Progress:** As users continue to use Beezy, they accumulate Honey Drops and completed tasks, which helps them to achieve higher productivity levels.
- **Investment:** Users invest time and effort in managing their work through Beezy. They accumulate virtual assets, Honey Drops, or rewards within the platform.

Example 2: HoneyRush!

Cues and triggers

- **Cue:** Users are done with a task and move it to the **Key** column. When doing so, they receive Honey Drops for their efforts.
- **Trigger:** These cues prompt users to open HoneyRush!.

Repeatable, pleasurable activity

- **Activity:** When users have Honey Drops to spend, they go into HoneyRush! to buy rerolls or redraws, and play the game.
- **Satisfaction:** The game offers a competitive and exciting experience. Winning matches and outsmarting their opponents provide a sense of satisfaction.

Skill-building feedback

- **Feedback:** After each HoneyRush! match, players receive feedback on their performance, such as match statistics (who won), rewards (badges), and rankings (leaderboard).
- **Skill-building:** This feedback helps users improve their social deduction skills and overall strategy. Players learn from successes and failures, which essentially enhance their abilities for the following matches.

Progress and investment

- **Progress:** Users can track their progress by earning badges and a place in the leaderboard ranking. They aim to become top players.
- **Investment:** Users invest time and effort in mastering HoneyRush!.

Example 3: Beebo

Cues and triggers

- **Cue:** Users are done with a task and move it to the **Key** column. When doing so, they receive Honey Drops for their efforts.
- **Trigger:** These cues prompt users to check on Beebo!.

Repeatable, pleasurable activity

- **Activity:** In Beebo, users interact and nurture their pets, ensuring they are happy and entertained.
- **Satisfaction:** Beebo offers a relaxing and positive experience to players as they take care of their pet, with rewards in HoneyRush! for effective care.

Skill-building feedback

- **Feedback:** Users receive feedback on their Beebo's well-being through Beebo's mood.
- **Skill-building:** Feedback guides players to understand its needs, helping them become experts in taking care of Beebo.

Progress and investment

- **Progress:** Users can track Beebo's happiness as well as obtaining the wide variety of customization items available.
- **Investment:** Users invest time and effort in their Beebo, personalizing and customizing its appearance, and nurturing it.

Overall, the Learning Loop is a critical part of creating a gamified experience within an application like Beezy, as it helps guide the design process, ensuring that the product offers an engaging and habit-forming experience for users. For Beezy, and other similar platforms, sustaining user engagement is a priority. This framework helps designers understand the user journey within the app, from the initial cues to the creation of long lasting habits.

Making habits is a goal for gamified applications. It is key to incorporate elements that encourage players to perform repeatable and pleasurable activities. This not only ensures that users find value within the product, but also to the success of the product itself.

5.3.4. Social Action Matrix

The last step in Amy Jo Kim's Design section is defining the Social Action Matrix, which is a framework that defines and structures the various social interactions that users can take within the app. It essentially helps designers create engaging social-driven experiences that suit the target users.

As can be seen in Figure 5.60, this framework, inspired by Bartle's player types, takes the form of a grid that is divided by four arrows, creating four quadrants:

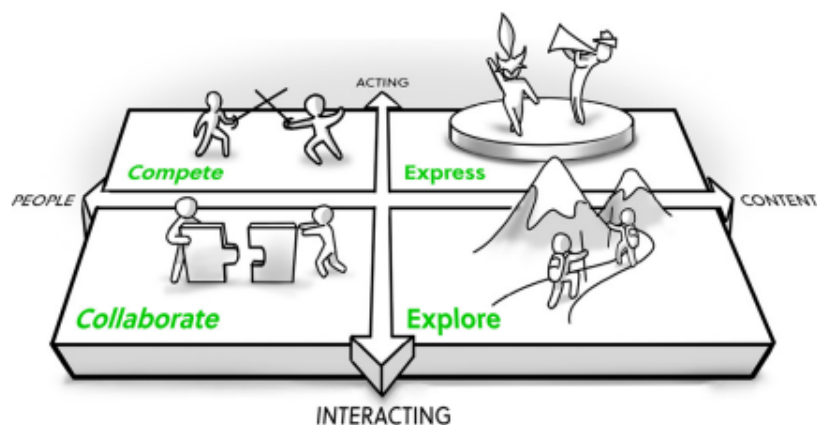


Figure 5.60: Social Action Matrix

As can be seen, there are four divisions in the matrix:

- 1. Acting:** This refers to the behaviors or actions users perform within the application. It involves different activities such as completing tasks, challenges, or games, highlighting the user's active engagement with the product's features.
- 2. Content:** This refers to the user-generated content that can be available through the application. It often revolves around the opportunity users have to create, personalize, or customize their profiles or avatars within the product, which allow them to create and showcase their personalities.
- 3. Interacting:** This refers to the social engagement and exploration users can experience within the app. It often includes social networking elements or activities, which aim to create a dynamic and rich interactable environment.

- 4. People:** This refers to the social interactions and collaboration made within the app. Users are usually incentivized to connect with others, by forming relationships or working together to achieve common goals. Activities can include cooperative gameplay or chats. This aims building a sense of community and teamwork.

When putting these elements in a grid, four different quadrants are created, each representing different dimensions of social interactions within the application. As can be seen in Figure 5.60, the following is a list of the quadrants:

- 1. Compete:** This quadrant is a result of combining “People” and “Acting”. It focuses on the competition among users, where they are encouraged in activities, striving to outperform others and achieve higher scores to climb to the top of leaderboards. The goal is to create a competitive environment where users seek recognition and rewards through their performance.
- 2. Express:** This quadrant, being a result of the combination between “Acting” and “Content”, emphasizes on the user-generated content and self-expression. Users are given the opportunity to customize and personalize their avatars with the ultimate goal of expressing their individuality and creativity.
- 3. Collaborate:** This quadrant is the combination of “Interacting” and “People”, where the emphasis is on teamwork and collaboration. Here, users are incentivized to work together to achieve common goals. Activities such as team challenges and cooperative gameplay are usually used to foster this collaboration, which help build a sense of community.
- 4. Explore:** As a result of combining “Content” and “Interacting”, this quadrant encourages social interactions and discovery. Users are incentivized to discover and explore the different features and functionalities within the app. It often includes social networking elements, such as group activities and shared experiences. Users are encouraged to interact with each other when navigating through the app, which creates a dynamic and socially rich environment.

Amy Jo Kim suggests creating Beezy’s own Social Action Matrix to assess the alignment between what I want to build and what my customers really care about through the use of her template, Figure 5.61. She instructs us to write in each quadrant the actions for the different elements in the grid.

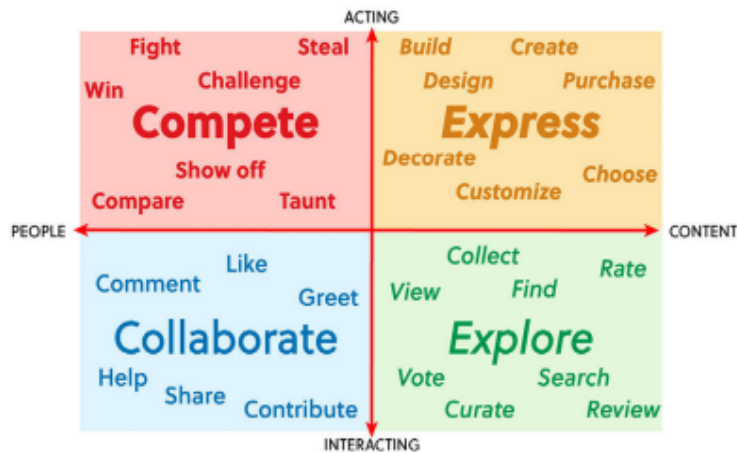


Figure 5.61: Social Action Matrix example

The following 5.62 is Beezy’s Social Action Matrix with the most important social actions divided into the four quadrants:

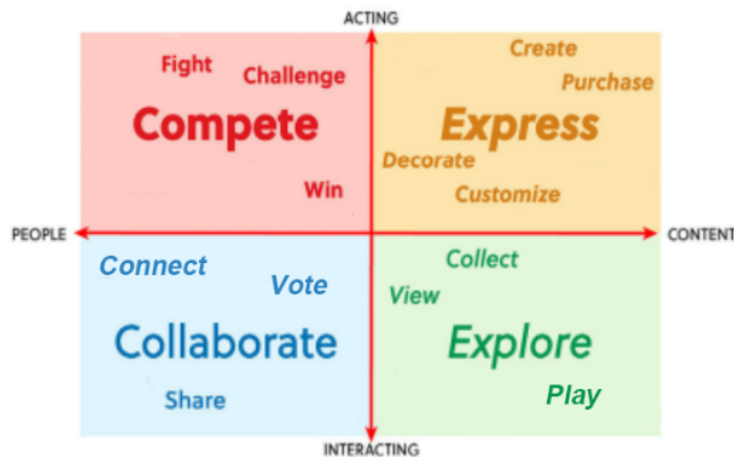


Figure 5.62: Beezy’s Social Action Matrix

As can be seen by Figure 5.62, Beezy’s social interactions are well balanced across the different quadrants, effectively meeting the needs for the user’s different social aspects. It ensures a comprehensive and engaging experience across the different parts of user interaction. Whether a player seeks competition and recognition, strives for self-expression, collaborative opportunities or social exploration, Beezy delivers a blend of features that adapts to the wide range of user preferences and motivations.

6. Project Validation

In this project validation section of the thesis, I delve into the crucial process of assessing the effectiveness and viability of Beezy. Through a series of carefully designed playtesting sessions, I aim to understand how Beezy's design resonates with the objective of my thesis, which is motivating users, enhancing project management, and fostering collaboration with the goal of improving job satisfaction. The findings and conclusions from these validation sessions offer guidance and feedback for future development of Beezy.

For this section of the project, I have decided to follow the final segments of Amy Jo Kim's *Game Thinking*, where she guides readers to effectively plan out and perform playtesting sessions and validate the project's ideas.

This section of my thesis is divided into two subsections: Playtest, and Validate. The first one revolves around testing the product with real users through a series of playtesting sessions and interviews in order to gather feedback that will help refine the product. The second, and final step, is where the project is validated, using this feedback gathered, and updated with any necessary changes.

6.1. Playtest

This section Amy Jo Kim presents in *Game Thinking* is Playtest. It is an essential step in optimizing and refining the gamified product, which involves presenting it to users to observe and analyze their interaction, experiences, and feedback. The goal is to validate and refine the design of the application's core mechanics and user engagement strategy. Kim emphasizes in her book that playtesting is an ongoing part of the development process and not a one-time event.

“Now comes the payoff – the stage where you leverage all your hard work and run product experiments with hot-core early customers. In this section, you'll learn how to create the right artifact or prototype for testing, and run high-value playtests that answer your questions and guide your team towards success.” [7]

This section is divided into two subsections: Prototype, and Testing. The first one focuses on the importance of prototyping in game design. Kim highlights that prototyping is a critical tool that is based on real user interactions and feedback. The second one focuses on identifying and engaging with a group of people called “hot-core customers”, who are passionate and highly engaged early adopters for the application. This chapter highlights the importance of recognizing and engaging with these users as they can be key in shaping the success of the gamified application.

As previously discussed in my risk analysis of the project, one of the identified risks was the absence of a prototype designed in time. My colleague, Irene, as mentioned earlier, opted to create for her bachelor's thesis a prototype of my Beezy design [65]. However, due to time constraints and technical limitations, her prototype is constrained to simulating a five-day Beezy experience for a single user. While this prototype provides a feel and look into Beezy's potential, it lacks the functionality required for a comprehensive playtesting session for a group of potential users. In order to gain a deeper understanding of the application's purpose and functionalities, especially within HoneyRush!, playtesters need the ability to engage in social interactions against each other. Unfortunately, this feature is not currently implemented in the current prototype due to its high complexity of integration.

Therefore, for this section of my thesis, I have followed Amy Jo Kim's guidelines on prototyping and designing a playtesting session. As a result, I was able to plan two distinct playtesting sessions; an ideal one that allows social interaction and competition, which is a core aspect of Beezy, and a limited session using the existing prototype and using a presentation to showcase Beezy's design concepts.

After designing these two playtesting sessions, my colleague Irene and I got together to conduct the second one to 8 different subjects with the purpose of validating each of our projects. You can find this session more detailed in the following subsections as well as the results and conclusions.

6.1.1. Prototype

In this chapter, Amy Jo Kim encourages us to plan out the first section of the playtesting session, which is clarifying the goals, choosing the prototype format, and planning the prototype itself. This has been used in the interview and playtesting session to gather feedback from the users. She stresses the importance of prototyping in early stages of the development, as prototypes serve as tangible representations of the ideas and mechanics of the application or game. It becomes a bridge between the abstract design ideas and the real player experience.

In this chapter, she clearly distinguishes between two types of prototypes: functional and experiential. The first ones focus on showing how the mechanics work, using placeholder assets and very simplified gameplay. On the other hand, experiential prototypes provide users with an overall game experience, even if some mechanics are not fully developed. Amy Jo Kim advises to use both types of prototypes throughout the development process.

“If you develop a habit of testing early and often, with the right people, you’ll avoid this costly mistake and save yourself time in the long run.”
[7]

Ultimately, prototyping is about learning what users need and want, and not about creating a polished final product. It helps designers learn and adapt to the user’s feedback and refine the product.

In this section, she encourages readers to choose the right artifact to test, as an effective prototype can take many forms. Some examples she gives are:

- A **competitor’s product** that you want to understand better.
- A **scenario walk-through**, illustrated with sketches, mock-ups, or wireframes.
- **Clickable mock-ups** (built with a prototyping tool) with which someone interacts.
- A **simple working prototype**, website, or crude early version of the game.
- A **hardware prototype** that your subjects can touch and interact with. [7]

Each of these formats comes with their own set of benefits and drawbacks. The key lies in understanding the stage of development the product is currently in and the clarity of the underlying ideas.

The following two subsections are the design of the **ideal Beezy prototype**, and the **actual Beezy prototype**:

Ideal Beezy Prototype

1. Clarify the playtest goals

Beezy’s playtest goals should encompass the different aspects of the gamified project management tool. The following is a list of potential playtest goals:

- **Usability assessment:** Evaluating how easily users understand how to navigate through Beezy’s interface, perform common tasks, and access the different features.
- **Engagement metrics:** Measuring user engagement with Beezy, including login times, time spent using the tool, and the level of participation in HoneyRush! and Beebo. Another important aspect is measuring how these gamified elements can distract users from their actual work
- **Task management effectiveness:** Evaluating the product’s task management capabilities when it comes to creating tasks, tracking, prioritizing, and completing, to test the overall effectiveness of project management.

- **Game mechanics evaluation:** Assessing the appeal and effectiveness of the gamification elements implemented, such as leaderboards, badges and rewards to determine if they motivate users and enhance their experience.
- **Community building:** Testing Beezy's ability to create a sense of community among users by evaluating whether users make connections with others through the gamified interactions.
- **Onboarding:** Evaluating how well new users can onboard in the application by assessing the effectiveness of the tutorials and introductions.
- **Motivation and productivity:** Assessing the impact of Beezy's gamified elements on the user's motivation and productivity levels by analyzing if the tool encourages users to complete tasks.

2. Choose a prototype format

In a perfect scenario and given the nature of Beezy as a gamified project management tool, ideally the playtesting would be with a functional prototype. This format allows users to interact with the functionalities and evaluate the actual gameplay mechanics that Beezy has to offer.

Since Beezy has gamification elements such as HoneyRush! and Beebo, a functional prototype will provide a better understanding and more immersive experience for playtesters. However, it is important to note that making this prototype requires more development resources compared to an experiential prototype.

3. Plan the prototype

The prototype to be presented will be a functional web application that will simulate the core aspects of Beezy. The following is a brief description of the elements implemented and how it will be built:

1. **Landing page:** The first screen page will be an introduction to the application with the title "Beezy".
2. **User registration:** Once users interact with the landing page by clicking anywhere, the prototype will allow users to register their accounts by introducing a username and a password.
3. **Dashboard:** After registration, users will access the dashboard resembling Beezy's interface, featuring different tabs for the different sections of the app.
4. **Task management:** Users will have access to three different tabs, the Kanban board, the backlog, and the issues database. Users can create, assign, prioritize, and complete tasks within the prototype.

5. **HoneyRush!:** A simplified version of the game will be integrated into the prototype. Users will be able to participate in matches with limited cards, and complete a whole match in a reduced time instead of a complete milestone.
6. **Beebo:** Users will be able to interact with their virtual Beebo, although the interaction will be limited compared to the full version. The amount of interactions will be the same, meaning that its needs will be in the prototype, but the amount of collectibles will be limited to a couple.
7. **Gamification elements:** Badges, leaderboards, and other elements will be included to simulate the real experience, but the variety and amount of these will be limited.

In order to build the prototype, it will be developed using Flutter, like my colleague did for her thesis, for the frontend, and Firebase for the backend. The goal of the prototype is to provide users with an interactive experience that will closely mirror Beezy's key features. Although not every aspect in the actual design is replicated, it will still offer valuable insights into the usability, engagement, and effectiveness of the gamification elements.

Actual Beezy Prototype

1. Clarify the playtest goals

The objectives of the actual playtesting session of Beezy also englobes the different parts of the application. The goals previously outlined for the ideal Beezy prototype remain consistent for this session.

2. Choose a prototype format

As mentioned previously, due to the lack of time and for technical reasons, the limited prototype is used to give a general feel of what Beezy has to offer, accompanied by a presentation of the different elements that make up the application.

This presentation has the three key aspects of Beezy: the PMT, HoneyRush!, and Beebo. Each part is explained to the testers so they get a deep understanding on what the functionalities are as well as their purpose. The actual presentation used for this session can be found in the [Section 9.2 Appendix 2](#).

3. Plan the prototype

An informative presentation is first held offering a comprehensive overview of the different components and functionalities within Beezy. This initial briefing serves to familiarize testers with the details of the application.

In addition, testers have the chance to navigate, explore, and interact with my colleague's prototype. It is essential that they understand that this prototype represents the first iteration of the product, and its limitations are transparently communicated to them.

The prototype made by my colleague is presented which include the following parts:

1. **The kanban board:** This critical component allows users to visualize and manage their project tasks effectively.
2. **The backlog:** A repository for organizing and prioritizing tasks.
3. **The issues database:** A feature for tracking and filtering all the tasks of the project.
4. **HoneyRush!:** The card game within Beezy, which provides a competitive and engaging environment.
5. **Beebo:** The virtual companion and avatar that adds a playful and interactive element to Beezy.

By exposing testers to these essential aspects of Beezy, I aimed to gather valuable insight into the design of the application, including the usability, functionality, and initial user impressions.

6.1.2. Testing

In this section of Amy Jo Kim's book, she provides a guide on how to plan strategically playtesting sessions, considering critical factors that can significantly make the testing process more effective. She prompts us to think about questions like:

- Is the playtesting session going to be paid or unpaid?

She encourages designers to reflect whether these sessions are compensated or voluntary. This decision influences the pool of testers that can be attracted and the level of commitment to that session. Generally, paid sessions may attract more dedicated individuals. On the other hand, unpaid sessions may appeal to passionate users.

- Is it going to be solo testers or by pairs?

The author highlights the importance of selecting an appropriate group size for the specific goals. Although solo testers can offer a more focused and individualized prospecting, pairs or groups could reveal more valuable insights to the collaborative aspects of the product.

- Is the session going to be local or remote?

This decision can influence the diversity of the test group and how the sessions are going to be organized. Local testing usually allows for more control and in-person interactions, while remote offers a wider demographic but requires some online infrastructure.

These questions are important in designing the playtesting sessions in a way that aligns with the requirements of the product. She then introduces her three-step guide to refine the process:

- 1. Warm-up:** This initial phase sets the tone for the playtesting and involves making a comfortable and welcoming environment for testers. It is a great opportunity to clarify expectations and prepare the testers for the goals of the session.
- 2. Test:** This is the actual testing of the product and the core of the session. This phase has structured tasks and scenarios that testers will navigate through. They will give their insights and feedback on their experience. Designers must observe and collect data.
- 3. Debrief:** After the testing phase, this step allows for discussions with testers. It is important to delve into the tester's opinions, thoughts, reactions, and suggestions.

In this section, I outlined the **ideal Beezy playtesting session** and followed it with the **actual Beezy playtesting session**, similar to the previous section.

Ideal Beezy Playtesting Session

1. Warm-up interview script

“Hello! Welcome to the Beezy playtesting session. We are so excited to have you here today with us! Before we begin, let's start with a brief warm-up interview to get to know you and ensure you feel comfortable during the session. Please remember that there are no wrong or right answers. We value your honest feedback!

The following is a list of questions to get to know you better. Starting off with some introductory questions:

1. Can you please introduce yourself? Tell us a bit about your background and hobbies.
2. Have you used project management tools or gamified apps before? If so, which ones?
3. How did you first hear about Beezy? What motivated you to be here with us today?
4. How familiar are you, on a scale from 1 to 10, with Beezy's concept and features?
5. What are your expectations for today's session? Is there anything that you are specifically hoping to learn or experience?

Moving on to work practices and gamification:

6. Can you briefly describe your typical work or project management practices? Are you familiarized with managing tasks?
7. Do you often collaborate with colleagues or coworkers on projects?
8. Have you ever used gamified apps in your work? If so, which ones?
9. What do you find most appealing or engaging about gamification in applications?

Lastly:

10. Do you have any concerns or preferences you want us to be aware of before starting?
11. Is there anything you would like to add before we begin the session?

Thank you for answering these questions. We will get on with the playtesting right away!"

2. Session plan

The playtesting sessions would consist of individual interviews conducted at the same time to different testers, simulating a team environment as they would be engaging and interacting with each other. These sessions would be conducted remotely, and participants would be compensated for their contributions.

3. Playtesting script

Session goal: The primary goal or objective of this playtesting session would be to gather valuable user feedback on Beezy's functionality, usability and user experience. By observing and interacting with our testers, we aim to identify and tackle potential areas for improvement.

Session overview:

1. Introduction (10 minutes)

- Greet participants and introductions.
- Explain session goals.
- Provide an overview or agenda of the session.

2. Warm-up interview (10 minutes)

- Conduct the interview to get to know the participants.
- Emphasize the importance of honest feedback.

3. Presentation (10 minutes)

- Provide an explanation of Beezy, explaining its features and functionalities.
- Share the session's guidelines.

4. Testing (30 minutes)

- Give access to Beezy and allow them to perform specific tasks such as:
 - Creating their account
 - Navigating through Beezy
 - Creating tasks
 - Interacting with HoneyRush!
 - Interacting with Beebo

5. Debrief and feedback (10 minutes)

- Ask questions about their experience and ask for feedback.
- Address any specific questions participants may have.

6. Thank you (5 minutes)

- Express gratitude.
- Provide information about future updates.

Session notes: Participants would sign a consent form for participation and recording. The session would be recorded for research and analysis purposes only. Participant's privacy and data would be respected throughout the session.

Actual Beezy Playtesting Session

1. Warm-up interview script

This script is similar to the one outlined in the **Ideal Beezy Prototype**.

“Hello! Welcome to the Beezy playtesting session. We are very excited to have you here today! Before we begin, let’s start with a brief warm-up interview to get to know you and ensure you feel comfortable during the session. Please remember that there are no wrong or right answers. Your feedback is always valuable!

The following is a list of questions to get to know you better. Let’s begin:

1. Can you please introduce yourself? Tell me a bit about your background.
2. Have you used project management tools or gamified apps before? If so, which ones? Was it for personal or professional purposes?
3. If the previous answer was yes, what do you find most appealing or engaging about gamification in applications?
4. Do you often collaborate with colleagues or coworkers on projects?
5. Do you believe gamification elements could be used to incentivize positive work behaviors?

Thank you for answering these questions. We will get on with the playtesting right away!”

2. Session plan

The playtesting sessions consist of individual interviews conducted to 8 different testers. These sessions were conducted locally, and participants were not compensated for their contributions as their feedback was destined for our bachelor theses.

3. Playtesting script

Session goal: The goal of this playtesting session and interview was to gather feedback on Beezy’s design and concept for my thesis, and feedback on the prototype for Irene’s thesis. By observing and interacting with the testers, we aim to identify and tackle potential areas for improvement.

Session overview:

1. Introduction (3 minutes)

- Greet participants and introductions
- Explain session goals
- Provide an overview or agenda of the session

2. Warm-up interview (5 minutes)

- Conduct the interview to get to know the participants
- Emphasize the importance of honest feedback.

3. Paula's presentation (15 minutes)

- Provide an explanation of Beezy, explaining its features and functionalities.

4. Irene's presentation (5 minutes)

- Provide an explanation on the prototype, explaining its features and adaptation.

5. Testing (10 minutes)

- Give access to Beezy and allow them to perform specific tasks such as:
 - Creating their account
 - Navigating through Beezy
 - Creating tasks
 - Interacting with HoneyRush!
 - Interacting with Beebo

7. Post-playtesting interview (20 minutes)

- Paula asks questions about the concept and design, and asks for feedback.
- Irene asks questions about the prototype, and asks for feedback.

8. Thank you (2 minutes)

- Express gratitude.
- Provide information about future updates.

Post-playtesting interview

After the session, a series of questions were asked as a form of an interview to gather their feedback on Beezy:

1. Overall, what do you think about Beezy as a concept?
2. Were there any specific features that stood out to you as particularly enjoyable or useful?
3. Were there any aspects that you found confusing or challenging?
4. Do you see yourself feeling motivated and engaged to use Beezy? If so, what aspects do you think can contribute to this motivation?
5. What are your thoughts on HoneyRush! and Beebo? Do you believe they can enhance the user experience?
6. How would you describe your experience with Beezy in terms of user-friendliness?
7. Can you share any suggestions or improvements for Beezy?
8. How would you rate Beezy's effectiveness in fostering team collaboration?
9. From 1 to 10, how can you rate Beezy's effectiveness in improving work satisfaction?
10. Would you be interested in using Beezy in your work? Why or why not?

Playtesting Session Results

The playtesting session has been imparted to 8 different subjects following the structure mentioned earlier.

In the [Section 9.3 Appendix 3](#), you will be able to find the answers to the questions for the Warm-up interview, and in [Section 9.4 Appendix 4](#), the answers for the Post-playtesting interview.

After the Warm-up interview, I was able to make the following analysis on each of the subjects with their responses with the goal of identifying how valid their feedback is for this thesis, taking into consideration several elements like their studies, their knowledge of project management, and gamification:

- **Subject 1:** This participant has a strong background in UX and the video game industry, making them a valuable tester to evaluate Beezy's user experience and gamification elements. Their understanding of motivation in a younger audience can provide insights into how Beezy's gamification elements resonate with different age groups.

- **Subject 2:** This participant has experience with different project management tools and gamified apps. Their knowledge of Jira and Trello, as well as Duolingo and Fabulous, makes them a potential expert user. Their personal experience as a person with ADHD can also give valuable insights into how well Beezy can enhance focus and engagement.
- **Subject 3:** This person is a recent graduate of the Video Game Design and Development degree, making them valuable for evaluating Beezy's gamified elements. They have a strong liking for organization and planning, so they align with the project management side of Beezy. This makes them a well-rounded evaluator.
- **Subject 4:** Although this person is not highly experienced with project management, they are very exposed to gamified apps. Their perspective as someone who has used gamified apps for personal reasons can help with testing Beezy's motivational elements.
- **Subject 5:** This participant is currently using Jira in a professional context, making them a very valuable tester. Their experience with gamified apps also makes them valuable for evaluating Beezy's potential for blending project management with gamification effectively.
- **Subject 6:** As a computer science professional, this participant can give valuable insights from a technical perspective. Their knowledge on apps like Trello and Duolingo suggests some awareness of Beezy's principles.
- **Subject 7:** With some experience using project management for university projects like Trello or HacknPlan, this participant's input could be valuable. Also, their use of Forest aligns with Beezy's motivational and productivity goals.
- **Subject 8:** This participant's experience in both project management tools and gamified apps, along with their liking for games and art, makes them a potentially good tester for Beezy. They have explored a good variety of gamified apps as well.

Overall, the subjects selected are a diverse group of people, each with their own expertise and backgrounds, who can provide valuable insights into Beezy.

After the presentations and the testing session, the post-playtesting interview was held for each participant. The following is an analysis on the feedback gathered for every question:

1. Overall, what do you think about Beezy as a concept?

In general, the responses to this question about what the participants thought about the concept of Beezy are positive and reflect enthusiasm. I was able to highlight the following key points:

- **Motivation and team building:** Many participants saw Beezy's potential to motivate employees as well as improving team collaboration.
- **Innovation and uniqueness:** Both Subject 3 and Subject 4 highlight the unique and innovative elements of Beezy within the game elements, currency/points system, and social deduction game aspect. They find these features appealing.
- **Positive impressions:** Subject 5 expresses being "blown away" by Beezy's potential, especially for small companies that could be struggling with employee morale. However, they have concerns about the scalability of the product and how it could add workload for managers in bigger companies.
- **Scalability:** A couple of Subjects had the impression that the application is not very suitable for larger companies.

In general, the participants show a positive attitude toward Beezy. They recognize its potential to introduce a fun and innovative layer to the workplace. While there are concerns about scalability and the balance between being productive and having fun, the general opinion is that it has the potential to positively impact employee engagement and satisfaction.

2. Were there any specific features that stood out to you as particularly enjoyable or useful?

The participants highlight several elements that they find enjoyable or useful. They are in general drawn to the innovative aspects of Beezy. Subjects were impressed on how well balanced the gamification and productivity elements are, acknowledging that it can motivate employees while improving productivity and efficiency.

Beezy's innovative elements, such as procedural narrative and gamification, add a unique look to project management tools. Also, participants were impressed by the clever gamification strategies, which go beyond simple points-based rewards. While some participants were concerned by its scalability, they were able to see Beezy as a solution for smaller companies.

Other specific features that stood out was Beezy's light and engaging gameplay, the procedural narrative, and the use of meaningful rewards.

3. Were there any aspects that you found confusing or challenging?

This question was meant to highlight areas of potential improvement in Beezy. Subject 1 and 8 pointed out that the game might require a tutorial or comprehensive explanation, suggesting that its intuitiveness could be improved.

Subject 3 mentioned how they would have liked to see visual representations of other gamification elements, like leaderboards and tutorials, to get a better understanding.

Overall, even though there were minor areas of confusion identified, the participants' feedback suggested these issues could be addressed through improved onboarding and guidance, especially to new users.

4. Do you see yourself feeling motivated and engaged to use Beezy? If so, what aspects do you think can contribute to this motivation?

Generally, the subjects' responses indicated different degrees of interest and motivation towards using Beezy in their work. While some participants showed strong enthusiasm, specifically driven by the social aspects and customization features, others had doubts.

Overall, individual preferences, work environment, and specific interests within Beezy played a significant role in influencing their motivation. The potential for Beezy to enhance team collaboration and work satisfaction was generally acknowledged, but concerns about potential challenges and the need for adaptability to different company cultures were also evident.

5. What are your thoughts on HoneyRush! and Beebo? Do you believe they can enhance the user experience?

On a general note, participants had positive opinions on HoneyRush! and Beebo, believing that these elements enhance the user experience.

Participants appreciated the uniqueness of Beezy's approach to gamified project management, emphasizing that it goes beyond traditional leaderboards and points as it includes more unique elements. They believed that these elements could contribute positively to user engagement, collaboration, and satisfaction, particularly for employees in small video game companies.

Overall, HoneyRush! and Beebo were considered well-designed components with the potential to improve the overall Beezy experience.

6. How would you describe your experience with Beezy in terms of user-friendliness?

Participants, in general, found Beezy to be a user-friendly application. They appreciated its intuitive interface, with Subject 1 noting that some elements might require initial explanation but became clear with understanding. Subject 2, while liking the cute design, suggested improvements for accessibility, such as color palette adjustments and font size customization. Overall, the aesthetics were pleasing.

Subject 5 recommended a slight redesign to make the Beebo and HoneyRush! tabs less visible, ensuring that the primary focus remains on the work and minimizing distractions.

Overall, participants had a good impression of Beezy's user-friendliness, with some offering suggestions for minor improvements related to accessibility and design.

7. Can you share any suggestions or improvements for Beezy?

Participants offered a variety of suggestions and improvements for Beezy, for example addressing potential challenges in larger companies especially towards employees who have worked there for longer since the game can become repetitive.

Other suggestions include introducing more app customization, like unique color palettes, or adding more variety and mechanics in the card game. Some participants expressed satisfaction with the current state of Beezy, while others emphasized the importance of preventing the application from becoming repetitive and focusing on user feedback to enhance the overall experience.

8. How would you rate Beezy's effectiveness in fostering team collaboration?

Participants had generally positive views of Beezy's effectiveness in fostering team collaboration. They recognized it as a valuable tool for bringing people together, providing topics for discussion, and potentially enhancing collaboration and teamwork.

Overall, Beezy was seen as a good solution for increasing interaction and collaboration among coworkers, although its effectiveness could vary depending on the company's type and size.

9. From 1 to 10, how can you rate Beezy's effectiveness in improving work satisfaction?

Participants generally rated Beezy positively for its potential to improve work satisfaction, with ratings ranging from 6 to 10. Most participants believed that Beezy had the potential to positively impact work satisfaction, especially when used in the right context, which is small indie video game companies.

10. Would you be interested in using Beezy in your work? Why or why not?

Participants showed varying degrees of interest in using Beezy in their work. Some expressed strong interest, while others were open to trying Beezy but had reservations based on factors such as company size or work environment.

Overall, the participants showed that there was interest in using Beezy.

Conclusion

The playtesting session provided valuable insights into the participants' perceptions and opinion of Beezy as a concept and its different features. Overall, the feedback was positive. The subjects saw Beezy's potential to motivate employees and enhance team collaboration. They were very happy about its innovative approach to project management, and saw the potential in boosting employee morale and fostering collaboration between coworkers.

Beezy's unique features, such as its procedural narrative, gamification elements, and social deduction game, stood out to participants the most. They found these extremely appealing and believed that they could differentiate Beezy from traditional project management tools.

Many participants expressed their positive impressions towards Beezy, acknowledging how it can introduce a fun and innovative layer to the workplace, as it can enhance employee satisfaction and engagement.

While Beezy was generally perceived as user-friendly, some participants suggested improvements related to the onboarding and guidance, with visual elements or tutorials.

Participants provided helpful suggestions or improvements, such as addressing challenges in larger companies, introducing more app customization options, and preventing it from becoming too repetitive.

In summary, the playtesting session revealed that Beezy's innovative approach to project management and gamification elements had positive feedback from participants. While there were concerns about scalability and potential challenges, the overall opinion was that Beezy had the potential to positively influence employee motivation, collaboration, and work satisfaction, especially in smaller, more adaptable work environments, which proves this thesis' hypothesis.

7. Conclusions

As this thesis comes to an end, this final section is a summary of the accomplishments in fulfilling the objectives set, as well as exploring the future work for Beezy, and expressing some closing remarks on this journey.

7.1. Achieved Objectives

The main objective of this thesis was to design Beezy, a gamified project management tool, and investigate its visibility within the gaming industry. More specifically, my goal was to create a solid project management tool with gamification elements and conduct a comprehensive study following the framework outlined in Amy Jo Kim's *Game Thinking*.

General Objectives

My aim was to develop Beezy as a multifaceted solution. First, I wanted to design a tool capable of planning, tracking, and managing tasks within a project in an efficient way. Secondly, I aimed to incorporate gamification elements into this tool to address specific problems commonly encountered in project management.

My study aimed to deeply delve into the product's potential and effectiveness. Following *Game Thinking*, I engaged in a four-step process: Hypothesize, Empathize, Design, and Validate. These steps allowed me to analyze the needs and motivations of the target audience, purpose a comprehensive design solution, and validate the design through testing.

Specific Objectives

The specific objectives focus on the development of Beezy. The goal was to extensively define and design the following sections of Beezy:

1. Project management tool (PMT)
2. HoneyRush!
3. Beebo

Through the development of Beezy applying the game thinking framework, I have achieved the objectives set for this thesis. Beezy became a successful blend of project management and gamification, offering users a tool to enhance productivity and engagement. The study provided valuable insights into user needs, allowing for refinement and continuous improvement of the application. In conclusion, this thesis has met the objectives of creating a practical and innovative solution for small video game companies.

7.2. Future Work

As the journey of developing Beezy continues, the path ahead is filled with opportunities for growth and improvement. The foundation of Beezy has been laid. While Beezy has given significant ways in revolutionizing the work experience, it is crucial to recognize that there are areas that can be further worked on.

7.2.1. Amy Jo Kim's Validate

One important aspect of future work for Beezy involves revisiting and refining the product based on Amy Jo Kim's principles, as outlined in her framework. Her approach emphasizes continuous iteration, and Beezy can benefit from this iterative process. In particular, she mentioned the following steps:

- 1. Updating the Product Brief:** As Beezy evolves and gains more user feedback and data, it is essential to revisit the Product Brief, initially outlined in [Section 5.1.2: Product Brief](#). This consists of reassessing the target audience, their needs, and any other changes. By keeping the Product Brief up-to-date after gathering the user feedback, Beezy can remain aligned with the user expectations and market.
- 2. Creating a Roadmap:** Developing product roadmap would be the next step in shaping Beezy's progress. This roadmap should outline the planned features, improvements, and updates over time. It is a guiding document to ensure that Beezy continues its growth and stays competitive.

7.2.2. Balancing

Another aspect that in the future would be needed is finding the right balance within HoneyRush! and Beebo. There are several aspects that would need balancing:

HoneyRush!

1. **Match times:** The duration of each HoneyRush! match as well as the Cell duration to ensure they are neither too short, leaving players feeling unsatisfied, nor excessively long, potentially causing frustration.
2. **Cards:** Balancing the variety, power, Nectar cost, and effects of cards. Each card should contribute to an engaging gameplay experience without creating situations where certain cards dominate, making the game less enjoyable.
3. **Rerolls and redraws:** The cost of these actions should be balanced since they have an important impact on the game and are linked to completing tasks. There might be a need for capping the amount of times a player can do these actions.
4. **Clues given:** Balancing the number and quality of the clues given to players is important to maintain the game challenging and exciting. Too many clues can make it too easy, while too few can lead to confusion and frustration.

Beebo

1. **Cost of items:** The cost of customizable items as well as items to fulfill Beebo's needs should be balanced. Ensuring that items are reasonably priced in relation to the amount of Honey Drops that can be obtained through tasks is important.
2. **Satisfying Beebo:** Keeping Beebo's needs in check is important as well. The rate in which these needs change has to be balanced as well as how many items or interactions are needed to completely satisfy Beebo.
3. **Rare unlockables:** As players interact with Beebo and play HoneyRush! games, their chances of obtaining rare customization items increases. Balancing the rarity and attainability of these items ensures that players remain engaged and excited to achieve them.

7.2.3. New Features

In the future, updates can include new features that would make Beezy's HoneyRush! more exciting. The following are a couple of elements that would be nice to have:

1. **Adding new cards:** To keep the game engaging and dynamic, adding new cards is an option. These cards can bring new strategies, interactions, and challenges to the game.

- 2. Game masters:** The concept of game masters introduces a new element to Beezy's social deduction game. Game masters are individuals who oversee and moderate the game, ensuring fair play, providing clues or hints, and adding an extra layer of unpredictability. A game master that controls HoneyRush! instead of having an AI that manages the stories and the clues is an interesting concept that might have potential to make Beezy more unique and fun for players.

These two ideas were considered when designing HoneyRush! but ended up being discarded due to their complexity and the scope of the project. Nevertheless, I believe they would be great additions to the currently designed game.

7.3. Final Words

This thesis journey has been a transformative experience both professionally and personally for me. It began with a spark of curiosity and a desire to explore the territory of combining project management with gamification. The motivation behind it came from my belief that work could be not just productive, but also engaging and fun.

Through the extensive research in the State of the Art section, I deepened my knowledge and understanding of project management methodologies and tools, as well as the psychology behind gamification. This exploration opened my eyes to the potential of project management tools when mixed with gamification elements.

The development of Beezy, guided by Amy Jo Kim's game thinking framework from her book *Game Thinking*, was a rewarding challenge. It asked for a seamless blend of creativity, empathy, and user-centered design. As Beezy took shape, I was able to understand the power of innovative thinking and the importance of iterative development.

During the playtesting phase, where Beezy was put to the test by real users, I learned that user feedback is crucial for any successful product. It also highlighted the need for adaptability and continuous improvement in the search for meaningful solutions for today's problems, like employee burnout and a decrease in morality in the workplace.

In the end, Beezy's journey, starting off from its concept all the way to validation, was not just an academic exercise; it became a deep learning experience for me. It confirmed my belief in the potential for technology to transform work culture in a positive way. It showed me the importance of listening to users, the importance of interdisciplinary knowledge, and the rewards of pushing boundaries in creative ways. This thesis was not just about research and development, it was about growth and discovery, leaving me with the knowledge that innovation knows no bounds when passion and purpose are guiding it.

8. Bibliography

- [1] Alejandro Ávila & Telmo Beroiz. (n.d.). Dune: Dune Special Spice Ops. Retrieved March 24, 2023, from <https://dsso-website.vercel.app/>
- [2] Atlassian. (n.d.). Jira: Issue & project tracking software. Atlassian. Retrieved March 24, 2023, from <https://www.atlassian.com/software/jira>
- [3] Trello brings all your tasks, teammates, and tools together. Trello. (n.d.). Retrieved March 24, 2023, from <https://trello.com/home>
- [4] Saltz, J., Shamshurin, I., & Crowston, K. (2017, January 4). Comparing Data Science Project Management Methodologies via a controlled experiment. Experts@Syracuse. Retrieved March 24, 2023, from <https://experts.syr.edu/en/publications/comparing-data-science-project-management-methodologies-via-a-con>
- [5] Tamagotchi. (n.d.). Retrieved March 23, 2023, from <https://tamagotchi.com/>
- [6] Google. (n.d.). Pou - apps on Google Play. Google. Retrieved March 24, 2023, from <https://play.google.com/store/apps/details?id=me.pou.app&hl=en&gl=US>
- [7] Kim, A. J., ,Koster, R., & Kim, S. (2018). Game thinking: Innovate smarter & drive deep engagement with design techniques from hit games. Gamethinking.io.
- [8] Morris, P. W. G. (2011). A Brief History of Project Management. In P. W. G. Morris, J. Pinto, & J. Söderlund (Eds.), *The Oxford Handbook of Project Management* (online ed.). Oxford Academic. <https://doi.org/10.1093/oxfordhb/9780199563142.003.0002>
- [9] Woolf, L. S., Taylor, F. W., Scott, W. D., & Goldmark, J. (1912). The Principles of Scientific Management; Scientific Management: Tuck School Conference, Dartmouth College. *The Economic Journal*, 22(87), 471–475. <https://doi.org/10.2307/2221959>
- [10] Principles behind the Agile Manifesto. (n.d.). Retrieved March 24, 2023, from <https://agilemanifesto.org/principles.html>
- [11] Comparing Data Science project management methodologies via a ... (n.d.). Retrieved March 23, 2023, from <https://scholarspace.manoa.hawaii.edu/bitstream/10125/41273/1/paper0124.pdf>
- [12] The 7 principles, themes and processes of PRINCE2. The 7 principles, themes and processes of PRINCE2 USA. (n.d.). Retrieved March 24, 2023, from <https://www.prince2.com/eur/blog/the-7-principles-themes-and-processes-of-prince2>
- [13] Asana. (n.d.). Gestiona en línea el trabajo, Los Proyectos y las tareas de tu equipo • asana. Asana. Retrieved March 24, 2023, from <https://asana.com/es>
- [14] Atlassian. (n.d.). Confluence: Your remote-friendly team workspace. Atlassian. Retrieved March 24, 2023, from <https://www.atlassian.com/software/confluence>
- [15] Atlassian. (n.d.). Git solution for teams using jira. Bitbucket. Retrieved March 24, 2023, from <https://bitbucket.org/product>
- [16] Google. (n.d.). Personal Cloud Storage & File sharing platform. Google. Retrieved March 24, 2023, from <https://www.google.com/drive/>

- [17] GitHub. (n.d.). Let's build from here. GitHub. Retrieved March 24, 2023, from <https://github.com/>
- [18] Slack. (n.d.). Slack is your productivity platform. Slack. Retrieved March 24, 2023, from <https://slack.com/>
- [19] Dropbox.com. Dropbox. (n.d.). Retrieved March 24, 2023, from <https://www.dropbox.com/>
- [20] Microsoft Teams. (n.d.). Log In | Microsoft Teams. Retrieved March 24, 2023, from <https://www.microsoft.com/en-us/microsoft-teams/log-in>
- [21] Git. (n.d.). Retrieved March 24, 2023, from <https://git-scm.com/>
- [22] Unity Real-Time Development Platform | 3D, 2D, VR & AR Engine. (n.d.). Imaginecreatetrowdo Moreimaginewith Unity. Retrieved March 24, 2023, from <https://unity.com/>
- [23] The most powerful real-time 3D creation tool. Unreal Engine. (n.d.). Retrieved March 24, 2023, from <https://www.unrealengine.com/>
- [24] Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011, September). From game design elements to gamefulness: defining "gamification". In Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments (pp. 9-15). (Accessed in March 16, 2023)
- [25] Cracker Jack. (n.d.). Retrieved March 24, 2023, from <https://crackerjack.com/>
- [26] Morschheuser, B., Hamari, J., & Maedche, A. (2018). Cooperation or Competition – When do people contribute more? A field experiment on gamification of crowdsourcing. *International Journal of Human-Computer Studies*. <https://doi.org/10.1016/j.ijhcs.2018.10.001>
- [27] Marczewski, A. (2015). User Types. In *Even Ninja Monkeys Like to Play: Gamification, Game Thinking and Motivational Design* (pp. 65-80).
- [28] Fastic Fasting Website. (2023, April 26). Get The Best intermittent Fasting App for Free. <https://fastic.com/>
- [29] Khan Academy. (n.d.). <https://www.khanacademy.org/>
- [30] Lee, J. J., & Hammer, J. (1970, January 1). Gamification in Education: What, how, why bother? *Academic Exchange Quarterly*. Retrieved March 24, 2023, from <https://www.semanticscholar.org/paper/Gamification-in-Education:-What,-How,-Why-Bother-Lee-Hammer/dac4c0074b6d0d86977313664a7da98e577a898a>
- [31] Landers, R. N., & Landers, A. K. (2014, December 9). An empirical test of the theory of gamified learning: The effect of leaderboards on time-on-task and academic performance. *Experts@Minnesota*. Retrieved March 24, 2023, from <https://experts.umn.edu/en/publications/an-empirical-test-of-the-theory-of-gamified-learning-the-effect-o>
- [32] Kapp, K. M., Blair, L., & Mesch, R. (2013). *The gamification of learning and instruction Fieldbook. ideas into practice*. Wiley.
- [33] Duolingo. (n.d.). Learn a language for free. Retrieved March 24, 2023, from <https://www.duolingo.com/>
- [34] Bevan, J. (2023, January 11). Duolingo revenue and usage statistics (2023). *Mobile Marketing Reads*. [https://mobilemarketingreads.com/duolingo-revenue-and-usage-statistics-2020/#:~:text=Duolingo%20Usage%20%26%20Download%20Statistics%20\(2023,app%20downloads%20throughout%20the%20year.](https://mobilemarketingreads.com/duolingo-revenue-and-usage-statistics-2020/#:~:text=Duolingo%20Usage%20%26%20Download%20Statistics%20(2023,app%20downloads%20throughout%20the%20year.)

- [35] Classcraft. (n.d.). Relationships are everything. <https://www.classcraft.com/>
- [36] Google. (n.d.). Classcraft - apps on Google Play. Google. <https://play.google.com/store/apps/details?id=com.classcraft.android&hl=en&gl=US>
- [37] Rahman, M. H. A., Ismail, D., Noor, A. Z. B. M., & Salleh, N. S. B. M. (2019, March 4). Gamification elements and their impacts on teaching and learning – A Review. SSRN. Retrieved March 24, 2023, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3333587
- [38] Authors, A., & Schöbel, S. M. (2019, November 17). Capturing the complexity of gamification elements: A holistic approach for analyzing existing and deriving novel gamification designs. Taylor & Francis. <https://www.tandfonline.com/doi/full/10.1080/0960085X.2020.1796531>
- [39] Effectiveness of gamification elements in blended learning environments. (n.d.). Retrieved March 24, 2023, from <https://files.eric.ed.gov/fulltext/EJ1221468.pdf>
- [40] Nerd Fitness. (2023, May 8). Retrieved from <https://www.nerdfitness.com/>
- [41] Google. (n.d.). Zombies, Run! 11 – apps on Google Play. Retrieved March 24, 2023, from https://play.google.com/store/apps/details?id=com.sixtostart.zombiesrunclient&hl=en_GB
- [42] Google. (n.d.-b). Nerd Fitness Journey - apps on Google Play. Retrieved from <https://play.google.com/store/apps/details?id=com.nfumobileapp&hl=en&gl=US>
- [43] Level Up Life. (n.d.). Retrieved March 24, 2023, from <https://lvluplife.com/>
- [44] Google. (n.d.). Habitica: Gamify your tasks - apps on Google Play. Retrieved March 24, 2023, from <https://play.google.com/store/apps/details?id=com.habitrpg.android.habitica>
- [45] Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? A literature review of empirical studies on gamification. In 47th Hawaii International Conference on System Sciences, Hawaii, HI, 6-9 January 2014 (pp. 3025-3034). References - Scientific Research Publishing. Retrieved from <https://www.scirp.org/reference/referencespapers.aspx?referenceid=2598250>
- [46] Rahman, M. H. A., Ismail, D., Noor, A. Z. B. M., & Salleh, N. S. B. M. (2019, March 4). Gamification elements and their impacts on teaching and learning – A Review. SSRN. Retrieved March 24, 2023, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3333587
- [47] Authors, A., & Schöbel, S. M. (2019, November 17). Capturing the complexity of gamification elements: A holistic approach for analyzing existing and deriving novel gamification designs. Taylor & Francis. <https://www.tandfonline.com/doi/full/10.1080/0960085X.2020.1796531>
- [48] Effectiveness of gamification elements in blended learning environments. (n.d.). Retrieved March 24, 2023, from <https://files.eric.ed.gov/fulltext/EJ1221468.pdf>
- [49] Eger, M., & Martens, C. (n.d.). Keeping the story straight: A comparison of commitment strategies for a social deduction game. Proceedings of the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment. Retrieved March 24, 2023, from <https://ojs.aaai.org/index.php/AIIDE/article/view/13015>
- [50] Farber, M. (1AD, January 1). Global Perspectives on gameful and playful teaching and learning. IGI Global. Retrieved March 24, 2023, from <https://www.igi-global.com/book/global-perspectives-gameful-playful-teaching/235397>
- [51] Google. (n.d.). Among us - apps on Google Play. Google. Retrieved March 24, 2023, from <https://play.google.com/store/apps/details?id=com.innersloth.spacemafia>

- [52] Home: Innersloth - creators of among us and the henry stickmin collection! Innersloth. (2023, February 28). Retrieved March 24, 2023, from <https://www.innersloth.com/>
- [53] Among us revenue and usage statistics (2023). Business of Apps. (2023, January 9). Retrieved March 24, 2023, from <https://www.businessofapps.com/data/among-us-statistics/>
- [54] Bang! The Wild West Card Game 4th edition by Davinci Games. (n.d.). Retrieved March 24, 2023, from <https://www.amazon.com/Bang-Wild-West-DaVinci-Games/dp/B001Q4XWB8>
- [55] The Complete Guide to the average salary in Spain (2022). HousingAnywhere. (n.d.). Retrieved March 24, 2023, from <https://housinganywhere.com/Spain/average-salary-spain>
- [56] Marczewski, A. (2017, April 9). The Periodic Table of Gamification Elements. Gamified UK - #Gamification Expert. Retrieved from <https://www.gamified.uk/2017/04/03/periodic-table-gamification-elements/>
- [57] Burmester, N. (n.d.). The bartle test of gamer psychology - gamer types. Make a Video Game in Minutes Not Months. Retrieved from <https://www.gamify.com/gamification-blog/the-make-up-of-gamers-the-bartle-test-of-gamer-psychology>
- [58] Google. (n.d.). Google Forms. Retrieved from <https://www.google.com/forms/about/>
- [59] Figma. (n.d.). Retrieved from <https://www.figma.com>
- [60] Walz, S. P., & Deterding, S. (2015). The Gameful world: Approaches, issues, applications. MIT Press.
- [61] Kahoot!. (2022, November 1). Retrieved from <https://kahoot.com/>
- [62] Fitbit. (n.d.). Retrieved from <https://www.fitbit.com/global/es/home>
- [63] Starbucks®. (n.d.). Retrieved from <https://app.starbucks.com/>
- [64] Waze. (n.d.). Retrieved from <https://www.waze.com/es/live-map/>
- [65] Irene Hernandez's Bachelor Thesis - Work in progress in September 2023.
- [66] Freepik Company S.L.. Flaticon. Retrieved from <https://www.flaticon.com/>
- [67] Metamorphous. (n.d.). Google Fonts. <https://fonts.google.com/specimen/Metamorphous>
- [68] HacknPlan. (2023, May 23). Project management for game development - HacknPlan <https://hacknplan.com/>
- [69] Marczewski (2014)
- [70] [Updated] what gamification is to me - My definition. (2014, October 13). Gamified UK - #Gamification Expert. <https://www.gamified.uk/2014/04/08/gamification-definition/>
- [71] Mora, Alberto & Riera, Daniel & González González, Carina & Arnedo-Moreno, Joan. (2015). A Literature Review of Gamification Design Frameworks. 10.1109/VS-GAMES.2015.7295760.

9. Appendices

9.1. Appendix 1: Speed Interviews

The following are the answers to the interviews conducted to ten different subjects in the Speed Interviews during the development of the project in [Section 5.2.2: Speed Interviews](#):

- 1. Are you motivated at work? Do you feel the need for a change? Would you be open to trying new tools or methods if they told you they will help you feel more motivated?**

SUBJECT 1: Yes I do feel motivated since I am working on something that I like and I am good at. In addition, I can see how my work is changing the company, which helps me get even more motivated. Nonetheless, I have two types of tasks, the first ones being more strategic therefore more fun, and the second one more operational. The operational ones tend to be more boring and repetitive, since I have to do reports and follow-ups with stakeholders, so maybe a way to make these more engaging would be nice!

SUBJECT 2: I have to admit that my motivation depends a lot on the task I am doing, it has its ups and downs. So, if they were to offer me a solution to this, I would not mind trying it. I feel like when I complete tasks, I don't really see any results. I do not feel rewarded or accomplished.

SUBJECT 3: In my case, I do feel very motivated. I love my work. Either way, I believe there are practices that companies can do to motivate employees, such as identifying the employee of the month. This small action is a good way of recognizing the job well done, which has a good impact on the community.

SUBJECT 4: I don't really think I am motivated, so yes, I would be open to trying out new methods or tools. Sometimes I feel like I am very stressed.

SUBJECT 5: I think I am pretty motivated, but it might have to do with the fact that I do a part-time job. I believe that I might start losing a bit of motivation once I start full-time, so I would be open to trying a tool or a method that could help me feel more engaged.

SUBJECT 6: Generally I am motivated, but I cannot deny that there are some days where I wish I could find the energy or the will to do certain things. My colleagues really help me because they know what I am going through. I feel like I would be open for a change but I cannot really imagine what it could be.

SUBJECT 7: I am motivated to work but wouldn't mind trying something new.

SUBJECT 8: I guess like everyone else, we all have our ups and downs in everything including work. Some days I wake up and I feel super motivated, but other times not so much. I wouldn't mind trying things out if it would make the experience better.

SUBJECT 9: Well, I have got to say that sometimes I don't feel the most motivated. I guess it depends on the day. I wouldn't mind trying out new things but I guess it would depend on what it is.

SUBJECT 10: I don't really know how to answer this question. I guess so? I don't really think much of it.

**2. Do you personally feel more motivated when you use gamified applications?
What are your experiences with these? Can you identify any pros and cons?**

SUBJECT 1: Personally, I do not use many gamification apps on my day to day. The closest app I can think about is a habit tracker that I use. It makes me feel more accomplished when I complete the tasks that I have to use that day, and it is fun to keep streaks. So maybe it is gamification. The other one I can think of is Kahoot!. I sometimes use it at my work, but I believe that it can only be used on certain occasions, like when introducing a new topic at work. I believe that their target audience has to be well defined since it is so limited. Personally I only have fun when I use it with people I know, or my team at work. Another app that I know is Strava. My company used it to promote a healthier lifestyle amongst employees. The idea is that you earn points and then get a reward. It was a hot topic at work.

SUBJECT 2: I really do like gamification apps. They give me a clear indication on what to do, and at the same time they incentivize me to complete certain things and keep me coming back. I've heard some people get bored though, and I think it is usually due to the progression of the app. This also occurs in video games. When you reach an objective they give you a reward, which gives you dopamine. If the app or the game keeps giving you the same type of reward, you expect the dopamine and it is not as exciting. Rewards stop feeling rewarding, we get used to them. I think that a good game or a good gamified app, the more you progress, the more aspects you unlock, to avoid making it monotonous.

SUBJECT 3: I love gamification apps. I use them all the time to learn, lose weight and walk. They help me get motivated. The only negative side I can think of is that they don't pay me to use them. Well, actually, there is one I am currently using which is Macadam. It's supposed to pay me when I reach a certain number of steps. Generally, gamification apps make certain habits way easier to do. I feel more accomplished in general.

SUBJECT 4: Yes, I think gamification apps are great to keep me motivated. Generally, I love LevelUpLife and The Forest to keep me staying on track on my habits and things I want to complete. I guess that for pros it's that they help with motivation in an engaging way, and as con maybe that they can get boring and repetitive.

SUBJECT 5: I have little experience with gamified apps. I have tried LevelUpLife and a paid one I don't remember the name of. Generally, a gamified app that would work for me is one that is very accessible and easy to use. I would want it to compliment my day, where I would notice the rewards and not so much the tasks I need to complete.

SUBJECT 6: I do not have experience with gamification apps. The only one I have tried is Duolingo. I usually download it a week before going on a trip somewhere so I can get basic knowledge of the country's language, but I always end up uninstalling it. Generally, I don't use gamification apps but not for a specific reason. I just never came across one that stuck to me. But I can imagine why they can work for some people. I believe they can be addicting because of how good it can feel to complete certain tasks.

SUBJECT 7: For sure gamified apps make me feel more motivated. I feel like I am winning something when I use them. They give me overall positive experiences. I believe that they give fun, reward and compromise, even though they can sometimes be monotonous and rutinary.

SUBJECT 8: I think gamification apps are cool. I really like games so seeing game-like features in "ordinary" apps is so interesting and fun to me. I think that it is good that other practices take notes from video games and try to apply what works well in them. At the end of the day, games are designed to keep players doing certain actions in a space. Other industries can apply video game knowledge and it is so cool. I use a couple of them, the more common ones I guess, Duolingo and Habitica sometimes. I find it so rewarding when I complete challenges and get points.

SUBJECT 9: I am not really a super fan of gamification. I guess it really depends on what type of person you are. For me, it gets to a point that it gets boring and too repetitive. It has to be well designed in order to keep the user active and engaged throughout the process. I understand it is hard to design a game that wants to keep making the user come back, but I guess that is the beauty of it. I haven't really tried many gamified apps so I cannot really tell what I would change about them, other than making it less monotonous.

SUBJECT 10: I have personally never used one but I understand why people like them. For me, they never stuck because they require a lot of effort and commitment. I don't really have much experience so I don't know what I would change from them.

3. Do you consider yourself a competitive person by nature? What about in games, or at work?

SUBJECT 1: Yes, very. In my personal life and at work. I find it makes everything more fun since you are able to meet people at your same level of knowledge and motivation, making a healthy rivalry. I believe I can learn more and work better like this.

SUBJECT 2: Yes, I am a very competitive person.

SUBJECT 3: Yes I am competitive.

SUBJECT 4: Yes, I am pretty competitive.

SUBJECT 5: Yes, in general.

SUBJECT 6: Not really no. Maybe at work sometimes, but always in a healthy way.

SUBJECT 7: Yes, I am reasonably competitive.

SUBJECT 8: I am somewhat competitive depending on the context. Generally, I feel like I am most competitive when I am with friends because of the rivalry that is created. It is fun to win over them.

SUBJECT 9: I think I am pretty competitive, but not as much as other people. I am generally competitive at work, because I try to be the best at what I do, but not in a negative way, I love to learn from others.

SUBJECT 10: I don't think so.

4. What are your experiences with social deduction games, such as the wolf, Among Us, or Deceit? Do you like them? Do you believe you would enjoy playing this type of game with your colleagues at work?

SUBJECT 1: I believe this type of games are fun when played with people that you know. I wouldn't mind playing them with my colleagues at work. It can be beneficial for team building.

SUBJECT 2: I find these games entertaining and fun at first, but in my opinion, they can get repetitive. Having the same rules over and over again make them too repetitive. And I ask myself, why are these games so popular? I believe it's due to their socializing factor. People that are the "bad" guys like to be mischievous and find it amusing, and those who are the "good" ones like to be the detectives and feel good when uncovering the "bad" guys. I like playing these games with friends.

SUBJECT 3: I generally do not like them, maybe because I don't really have experience with them. I prefer action games. From what I understand, those types of games are very social. If I had a group of friends or colleagues to play with, I would probably enjoy it to win over them.

SUBJECT 4: I really like social deduction games. I have played a lot of Cluedo (I don't know if it counts) as well as the wolf. They are a great way to make team building, and just have fun in general with a group of friends.

SUBJECT 5: I absolutely love these types of games. I think they are great group activities, easy to do and very accessible. You don't really need to know or have a connection with people previously. Recently, at my work we played the wolf as a team building activity, and I have never seen my boss so excited. We had so much fun, and all the interaction and jokes that came out from that experience were amazing.

SUBJECT 6: I love Among Us. Well, when it made the boom during Covid. I remember everyone was downloading it because we were all stuck at home and it was a great way to socialize from a distance. I think these games are so fun, and no matter how repetitive they can get, I think that what truly makes the experience is the people, not the game itself. Look at Among Us, it is actually such a dumb game but so fun at the same time. I would love to play things like these with my colleagues.

SUBJECT 7: I have never played these games but they sound like a lot of fun. They can develop different skills such as observation, patience and empathy. I can imagine why they can be fun.

SUBJECT 8: I think these games are really fun. I have played Among Us in the past and the wolf when I was a kid. Generally, these games are made to be played with people and have fun with them. I would like to play them with my colleagues, yes.

SUBJECT 9: Social deduction games are really interesting. I love how simple mechanics, when put together and giving them to a community, can make such an impact on the gaming world. Like Among Us, I believe it was made by a group of university students. What really makes these games so special is what people make out of them when they are together. The relationships and bonds they create are spectacular. I would love playing them with my colleagues.

SUBJECT 10: I don't really have much experience playing these games apart from playing Among Us during Covid season. Some of my friends made me install it and it was actually pretty fun. I think these games are great to spend time with friends.

9.2. Appendix 2: Playtesting Presentation

The following images are the slides that make up the presentation made for the playtesting session in [Section 6.1.2: Testing](#):



Figure 9.1: Playtesting presentation

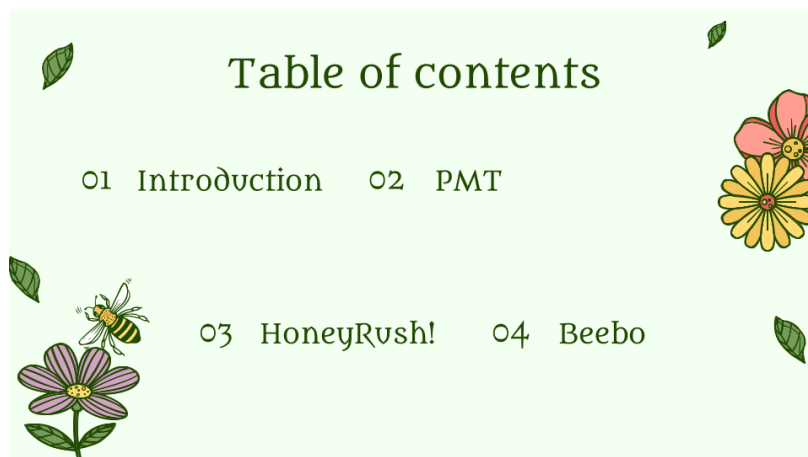


Figure 9.2: Playtesting presentation



Figure 9.3: Playtesting presentation

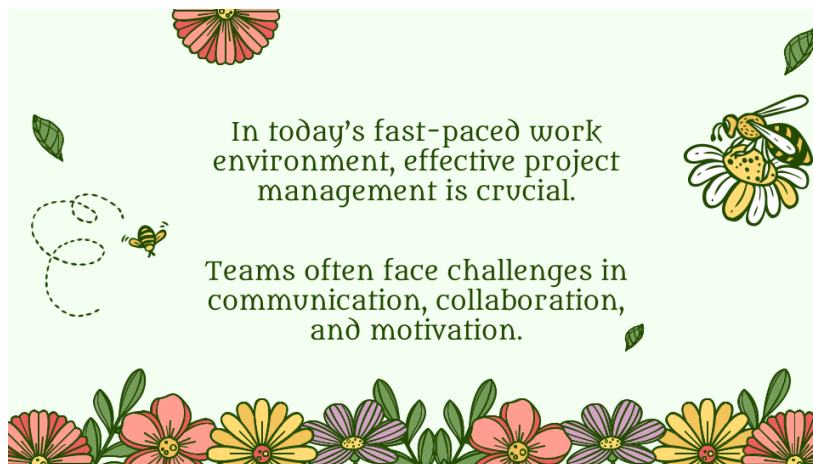


Figure 9.4: Playtesting presentation



Figure 9.5: Playtesting presentation



Figure 9.6: Playtesting presentation

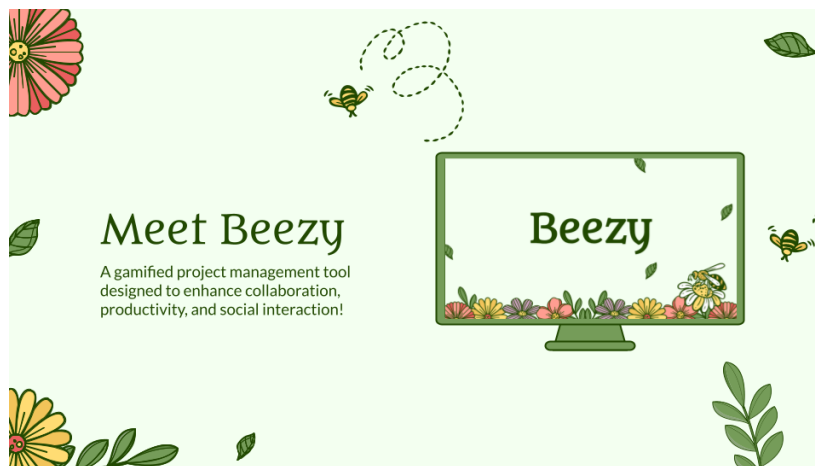


Figure 9.7: Playtesting presentation

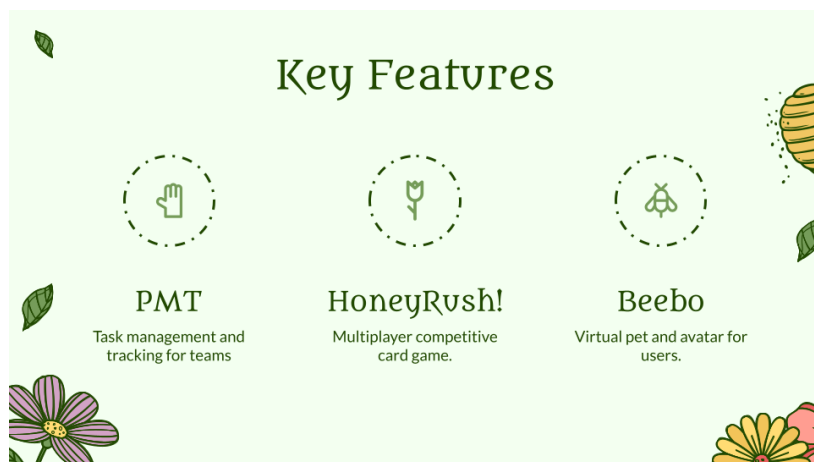


Figure 9.8: Playtesting presentation



Figure 9.9: Playtesting presentation

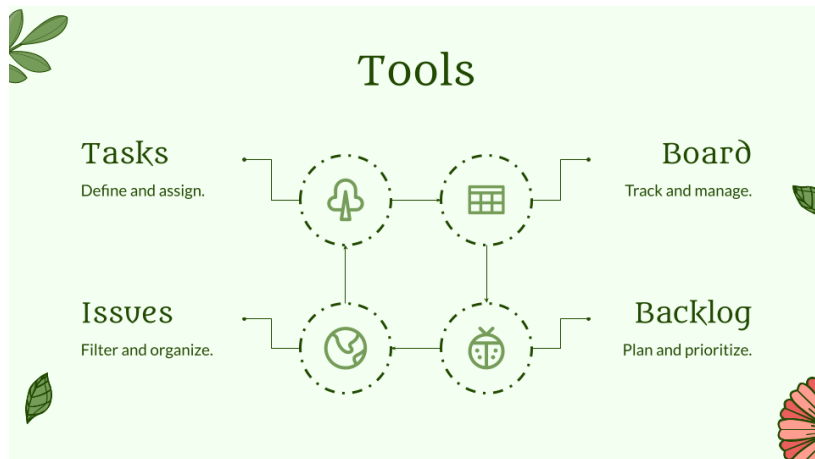


Figure 9.10: Playtesting presentation

A presentation slide titled 'Task' in a dark green, serif font. Below the title, there is a definition: 'A chunk of work that needs to be done!' and 'Used to track and manage a work item within a project.' To the right of the text is a mockup of a task card with a wavy line and a small bee icon. Below the definition is a list of characteristics: 'Title', 'Description', 'Time estimation', 'Honey Drops', 'Priority', 'Assignee', 'Reporter', 'Type', and 'Tag'. To the right of the list is a mockup of a task card header with a title field, a progress indicator, and a 'Type' dropdown menu. The slide is decorated with green leaves and flowers at the corners.

Figure 9.11: Playtesting presentation

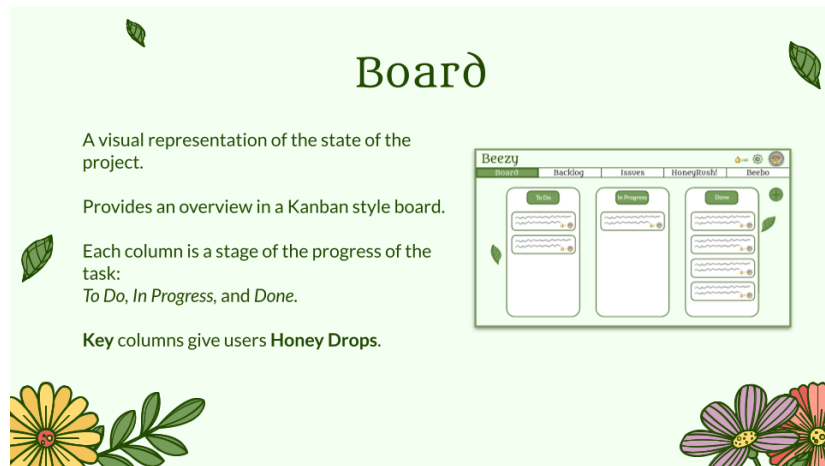


Figure 9.12: Playtesting presentation

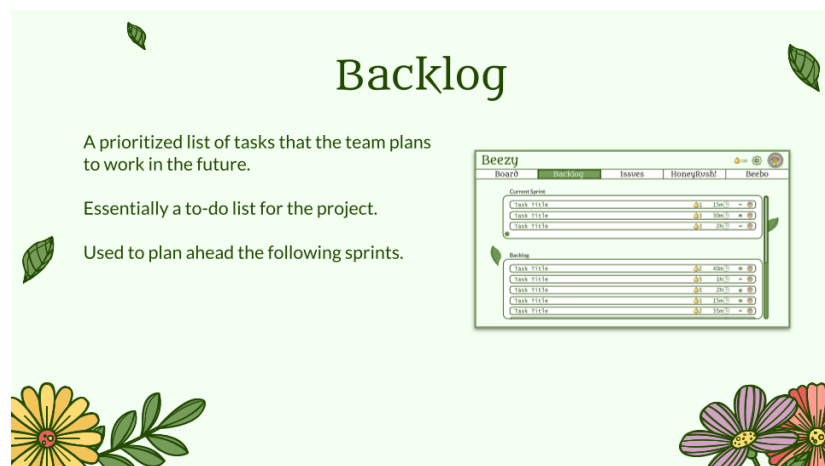


Figure 9.13: Playtesting presentation



Figure 9.14: Playtesting presentation



Figure 9.15: Playtesting presentation



Figure 9.16: Playtesting presentation



Figure 9.17: Playtesting presentation

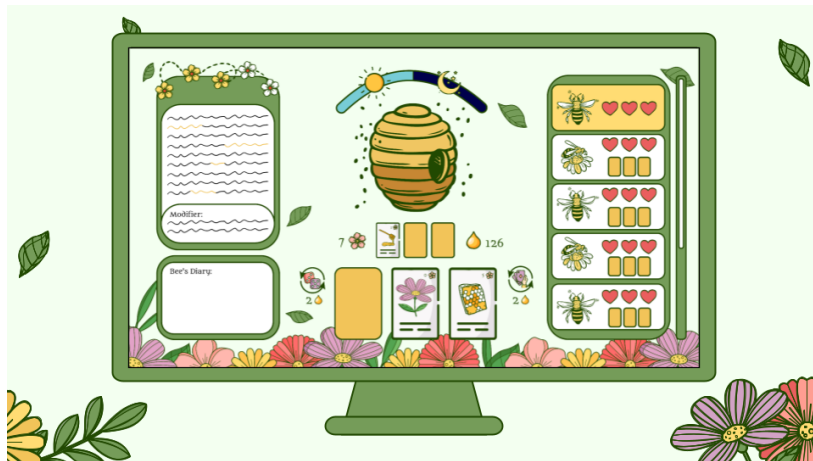


Figure 9.18: Playtesting presentation

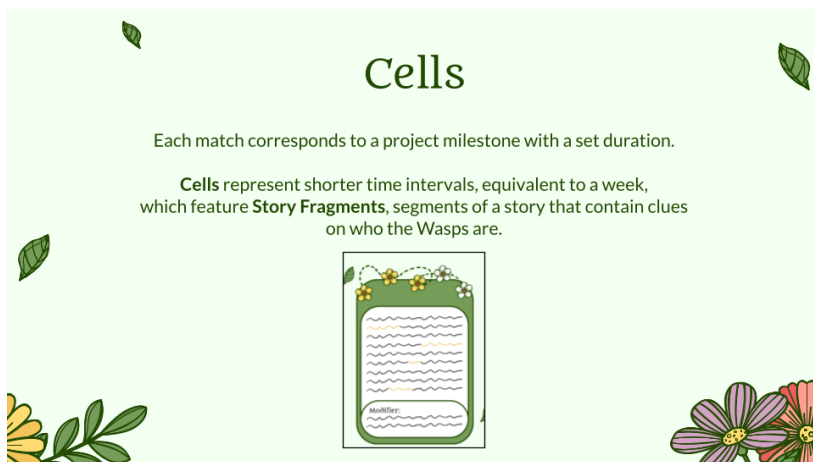


Figure 9.19: Playtesting presentation

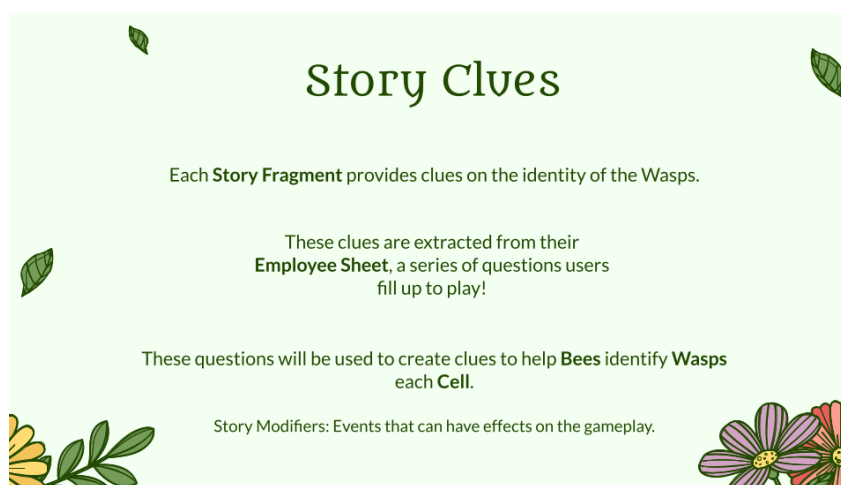


Figure 9.20: Playtesting presentation

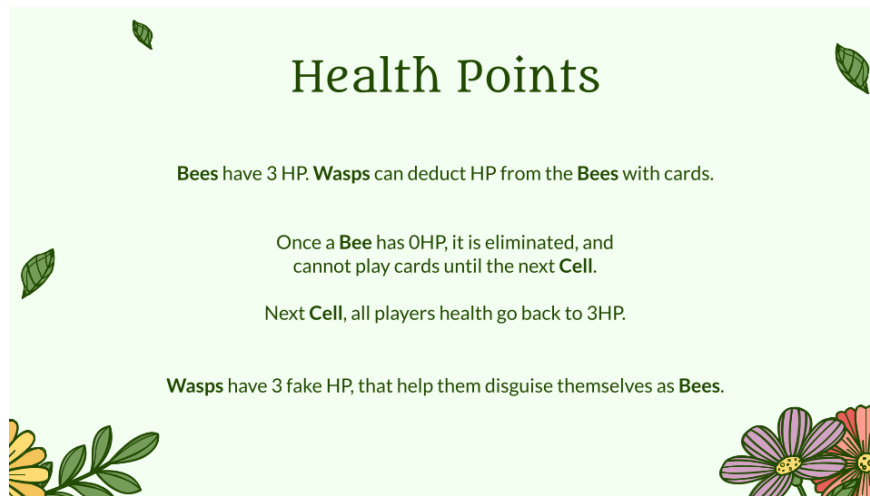


Figure 9.21: Playtesting presentation



Figure 9.22: Playtesting presentation

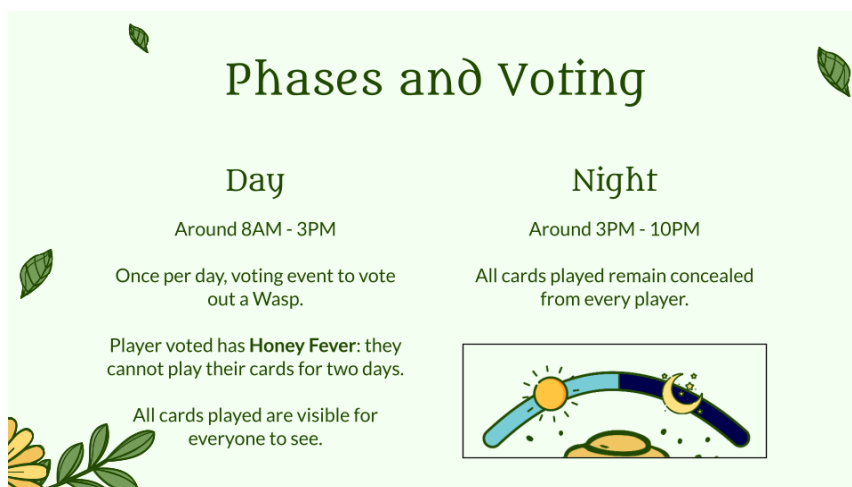


Figure 9.23: Playtesting presentation



Figure 9.24: Playtesting presentation

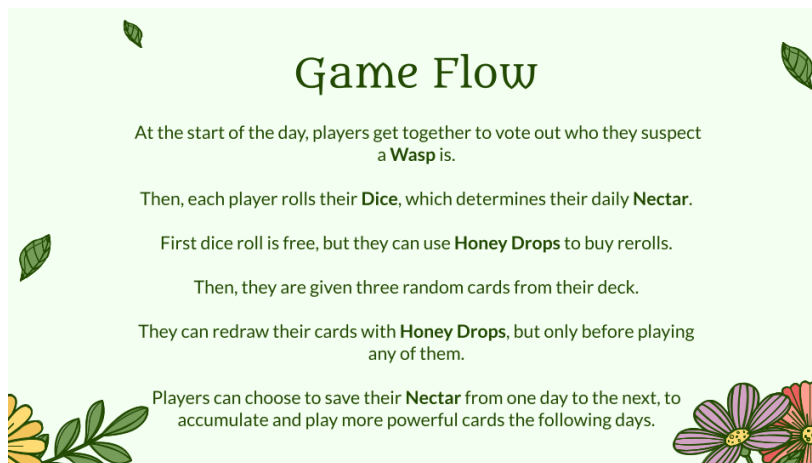


Figure 9.25: Playtesting presentation



Figure 9.26: Playtesting presentation



Figure 9.27: Playtesting presentation

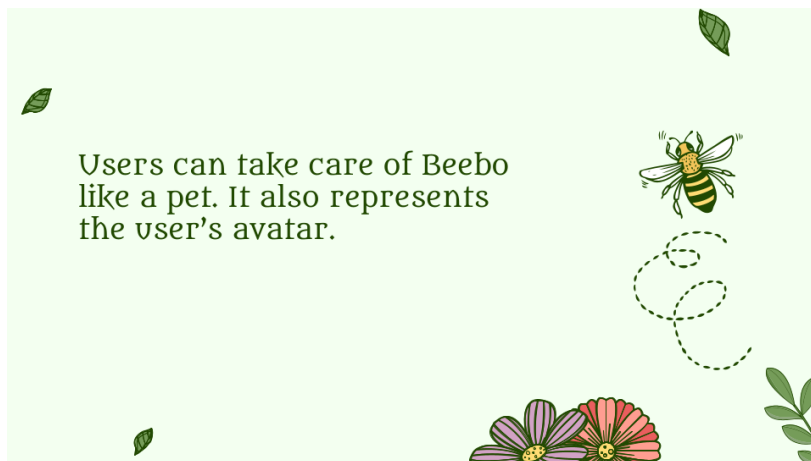


Figure 9.28: Playtesting presentation



Figure 9.29: Playtesting presentation

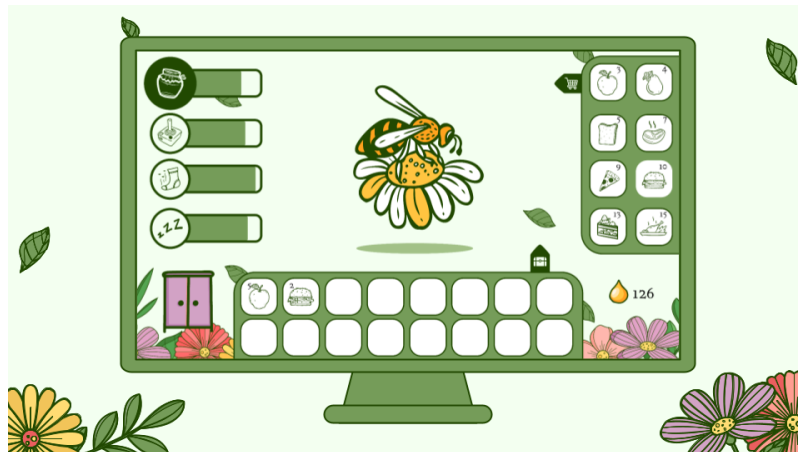


Figure 9.30: Playtesting presentation



Figure 9.31: Playtesting presentation

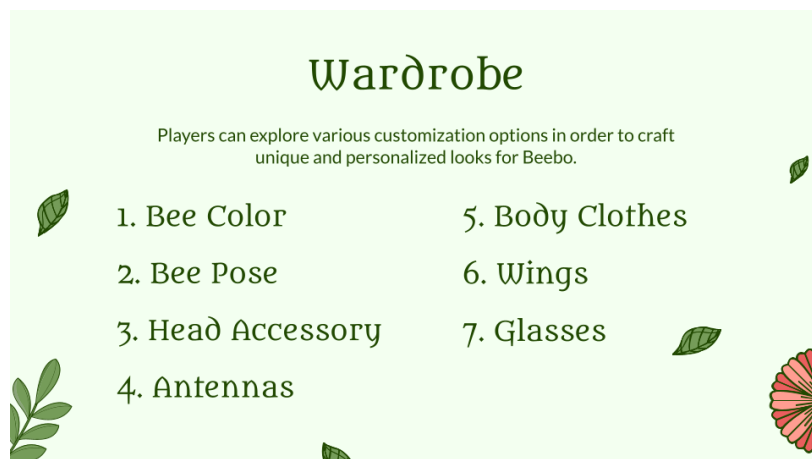


Figure 9.32: Playtesting presentation



Figure 9.33: Playtesting presentation

9.3. Appendix 3: Warm-up Interview

The following are the answers to the interviews conducted to six different subjects in the Playtesting section during the validation of the project in [Section 6.1.2: Testing](#):

Warm-up interview

1. Can you please introduce yourself? Tell me a bit about your background.

SUBJECT 1: I am a UX specialist, with a psychology degree. I have been working in a video game company for the past five years and I am looking to transition to game designer.

SUBJECT 2: I am 24 years old. I have done a bachelor in video games and a master. I really like reading, music, and cozy games.

SUBJECT 3: Hello. I am a 22 year old recent graduate from the Video Game Design and Development degree at CITM. I have a passion for video games and cooking.

SUBJECT 4: I'm 25 years old, and I live in Portugal. I have a masters degree in Design and Multimedia, and I like working with 3D related stuff.

SUBJECT 5: Hello, I am 25 years old. I studied marketing in Barcelona, but I have been working in the video game industry for 3 years now.

SUBJECT 6: Hi, I'm a 28 year old woman with a degree in computer science. I am currently working in a technology company in cybersecurity.

SUBJECT 7: Hello! I am 21 years old. I am currently studying Video Game Design and Development at CITM.

SUBJECT 8: Hey there. I am a recent graduate from the Video Game Design and Development degree, at CITM. I have a strong passion for art, games, and music. I lean towards the artistic side of video games.

2. Have you used project management tools or gamified apps before? If so, which ones? Was it for personal or professional purposes?

SUBJECT 1: Yes, in my company we use Jira. I know about gamification because I studied it in uni, but I have only tried SuperBetter. I know how much it can motivate people to reach their goals, especially a younger audience since they are more open to new technologies.

SUBJECT 2: Yes. I have used several. Professionally, I have used Jira and Monday.com. And personally, I've used Trello and Notion, and I used HacknPlan in a university project. As for gamified apps, I have a lot of experience with them. I have used Duolingo for over a year now, Forest, PlantNanny, Fabulous, and LevelUpLife, all personally.

SUBJECT 3: I have used a wide variety of project management tools, such as Jira, Hacknplan, Trello, and Notion (for project management purposes). I have always had a liking for organization and planning, so it has helped me a lot during my uni years. For gamification, I have used a couple of apps such as LevelUpLife, and Duolingo, but not much more.

SUBJECT 4: Project management tools I've never used. And some gamified apps, one that I can remember is Duolingo, and Fastic, or something like that. It's a fasting app. Both for personal reasons.

SUBJECT 5: Yes, I currently use Jira in my workplace as a daily habit. In fact, I am a producer, so I am really familiar with project management. On the other hand, I have used some gamification apps like Duolingo and Fabulous on a personal level.

SUBJECT 6: In my company, we use Trello to organize our work. About gamified applications, I don't really use them but I heard about some, like Duolingo.

SUBJECT 7: I have used project management tools for uni projects, like Trello and HacknPlan. Personally, I have used Forest, which is an app that helps you focus when studying, and I know about others like Duolingo or Kahoot!.

SUBJECT 8: Yes. Throughout my degree, I have used apps like Trello to organize my projects. Also, in Project III, we used HacknPlan to organize the work. About gamification, I studied the subject in uni, and I learned the potential it has in the world. I have tried many, like Habitica, SuperBetter, Duolingo, and many more.

3. If the previous answer was yes, what do you find most appealing or engaging about gamification in applications?

SUBJECT 1: The sense of accomplishment when reaching goals that these apps can give you are boosts of serotonin that really incentivize people.

SUBJECT 2: What I find most appealing about gamification is that they can make regular and ordinary things that usually are found boring more entertaining and fun. They are a really good tool to motivate and keep people's interest, especially those with ADHD like me haha.

SUBJECT 3: What I like about gamification is that it makes doing things easy. It attracts people by giving them incentives to do specific things, like rewards or other types of motivation.

SUBJECT 4: The way it keeps the users looking forward to something, and rewarding them for using the app. It's like a dopamine injection.

SUBJECT 5: I love how they help motivate users by making achieving their objectives fun.

SUBJECT 6: I don't know very much about gamification but I can understand the appeal. I think they can make daily tasks more fun.

SUBJECT 7: I think that what I like the most about gamification is that they make serious topics more engaging. They give purpose to ordinary things like studying.

SUBJECT 8: The most appealing part about gamified apps is the fact that users get rewarded for completing specific actions. This reward is addictive to these users, and incentivizes them to do them again. Also, they can motivate people to do things they usually find hard to do, like learning new things, completing boring tasks or doing exercise.

4. Do you often collaborate with colleagues or coworkers on projects?

SUBJECT 1: Yes, I work with other people daily, specially designers and UI scripters.

SUBJECT 2: Yes, I have worked in two different video game companies, and I collaborated with small teams in both of them. Also, I have more experience with bigger groups from my degree.

SUBJECT 3: I have experience collaborating with colleagues in uni projects. Throughout my degree, in most subjects, we have had the chance to do group projects.

SUBJECT 4: Only if I have to honestly. I prefer working on my own. Recently I haven't had to collaborate with people, my projects have been individual. For uni, when I did groups with my colleagues, we just kinda worked separately on our own, and only communicated when needed.

SUBJECT 5: All the time, we make games together. My job is to coordinate the different departments, like programming, or art, into making a complete video game. We work closely every day.

SUBJECT 6: Yes, in fact, I work as a project manager in my company. I organize my team towards our goals, so cooperation is always present.

SUBJECT 7: I have done several group projects for my classes like Project III, in which I had to collaborate with all my classmates to do a big project.

SUBJECT 8: I have a lot of experience working in groups, especially for university projects. I have worked in small groups, like pairs, but also in big groups, like the whole class.

5. Do you believe gamification elements could be used to incentivize positive work behaviors?

SUBJECT 1: I think it would be a nice fit to my company, since we all love video games and creating fun experiences. In our lunch break, we usually get together and play games, which help us bond and get to know each other well, and I believe makes us work better as a team.

SUBJECT 2: I think they could be a great tool, however, it would be hard to implement in big companies because there are a lot of different opinions.

SUBJECT 3: I think this is an interesting concept. I think it could work and companies could benefit a lot from this, but the apps have to be very well designed so they do not become repetitive and boring.

SUBJECT 4: Yeah I think so. If done properly, the mix between game elements and work or productivity can have a very good impact on companies and people. I think it also depends on each individual, and how much they're connected to the gaming world. But, to the right person, it could make it so that they are more incentivized to work and just more productive overall.

SUBJECT 5: Yes. Since I am very familiar with working with people, I know that introducing more fun elements could be very beneficial to improve people's behavior.

SUBJECT 6: Yes, I think they could be a great tool in the future. I believe we still need to transition to that, and it sounds quite tricky.

SUBJECT 7: I think they can help and I hope that in the future they are more present.

SUBJECT 8: Yes, I think that gamification can work in all contexts if it's done properly, and they should be used more often.

9.4. Appendix 4: Post-playtesting Interview

Post-playtesting interview

1. Overall, what do you think about Beezy as a concept?

SUBJECT 1: I think Beezy is a very great concept. At first, it looks tricky to balance. Something gamified in a work environment can be risky but I think Beezy does a good job of addressing this and giving all the fun without trivializing work. I think Beezy can be a real fun solution for a lot of companies, not only for video games. I would like to see it in a real company and how it goes. What would worry me about Beezy would be it becoming too repetitive, taking into account that some people could be 20 years in the same company so a weekly game can be too repetitive.

SUBJECT 2: In my opinion, I think this app has a lot of potential. It looks like a tool that can actually motivate employees to work, and also it looks great for team building. Overall, I think it is a good way to improve project management tools. It seems to have a good balance between working and having fun.

SUBJECT 3: I really like it. I think it's fun, innovative, and unique. I like all the different aspects of it. I also like the graphics, although it was mentioned that it is just a visual representation, nothing final. I also really like the name, Beezy, with the bee theme and being "busy" haha.

SUBJECT 4: I think that it has a lot of potential, and I like the way it has a game involved in it. I like how the currencies are shared between the different elements, and I think that actually linking that currency to tasks, I think it's a way for people that enjoy that system to keep on grinding those tasks, and to want to do more for the reward. I also like the variety of things you can use the currency on, and I also like that there is a social deduction game working with cards and RNG (random elements).

SUBJECT 5: Wow, I was impressed by this. When I heard these past months on what was being done for this thesis I wasn't really envisioning it, but after the explanation I was blown away. I can easily understand why this would work for small companies, and I think that it is a great way to introduce something new to a company that is struggling with employee morale. I still have some doubts on what would happen on a larger scale though, and it scares me that project managers or producers, like me, would have more work if we had to manage the gamification side of Beezy. Ideally, we wouldn't have to do more work.

SUBJECT 6: In my opinion, it sounds like a great idea for a small video game company. I can't really imagine it working for a company like mine, but if the target is correct, I can easily imagine it being part of the company.

SUBJECT 7: Seems like a cool concept. I am not very into project management so I don't really know about that, but the game part sounds fun.

SUBJECT 8: Sounds interesting. I imagine it is very hard to know where to put the line in the sense that you are trying to make something fun in a working environment, and this can be dangerous. I think it is something hard to imagine in a real life company, but I also think we should be open-minded about it.

2. Were there any specific features that stood out to you as particularly enjoyable or useful?

SUBJECT 1: I liked that the gameplay is light and fast enough for you to not get distracted but present enough that you will always have something to talk about with your colleagues.

SUBJECT 2: What really stood out to me was the concept of procedural narrative. I think it's very innovative for these kinds of games, deduction games, since it gives a really unique feel to each match. I also really like the fact that Beebo's happiness contributed to how well you can do in HoneyRush! with what you explained about luck.

SUBJECT 3: I love card games so that's already a plus. Also, what I think it's really nice is how well everything is tied together. Like, the PMT has the Honey Drops, and HoneyRush! and Beebo uses those, but also Beebo and HoneyRush! are linked in the luck thing and the avatar. I don't know, it just makes sense.

SUBJECT 4: Basically what I said in the previous answer.

SUBJECT 5: What stood out to me the most was how clever the solution is. It sounds very simple, just give people points and give them some type of reward. But this goes the extra mile, it seems like they are more than just points. I can imagine people actually wanting to receive these points for the rewards. It seems valuable.

SUBJECT 6: What stood out to me the most was the innovative twist that was given to typical social deduction games. I have previously played games like *Among Us* and *el lobo*, the Wolf, and the problem those games have is that they can get really repetitive. I like how the procedural narrative can make it exciting every time.

SUBJECT 7: The game part looks enjoyable and the project management useful I guess.

SUBJECT 8: What stood out to me the most is the simplicity in: okay, we have people that are frustrated at work that like video games, let's give them a game to play. By this I mean not that the solution is easy, but the way it was thought of impressed me. It doesn't seem like an ordinary app that just gives you points and that's it. I can see the fun in it.

3. Were there any aspects that you found confusing or challenging?

SUBJECT 1: I think the game needs a lot of previous explanation as I don't think it's intuitive enough to use it without a previous knowledge of how it works.

SUBJECT 2: Hm, I think the hearing about the concept of luck in HoneyRush! made me a bit confused. It was kinda tricky to understand how luck can affect so many different aspects, but I am sure that it's not something important once you are playing, it comes naturally.

SUBJECT 3: Not really. Maybe I needed some kind of visual representation of the other gamification elements that were mentioned in the presentation, like the leaderboards and tutorials and stuff. I understand that HoneyRush! and Beebo were the main focus, but seeing some kind of representation would have been nice just to imagine it better.

SUBJECT 4: I don't really think so actually. I think I understood the different parts of Beezy.

SUBJECT 5: As I mentioned earlier, I imagine the complication comes if you have to give this product to a larger audience. Who is going to control this? How is it going to be balanced?

SUBJECT 6: Not really. I just think that what can be challenging is defining when it is too much fun at work, but I guess that that could be measured after testing it in real companies for longer periods of time.

SUBJECT 7: Well, I didn't really get the project management part, like the backlog, issues and stuff. But I guess that that is more for project managers. The game part seemed understandable and enjoyable.

SUBJECT 8: In general I think HoneyRush! has too much to understand. Yes, by playing people will get used to it, but it doesn't seem beginner friendly and matches are very long. I guess it would require a good explanation or tutorial.

4. Do you see yourself feeling motivated and engaged to work using Beezy? If so, what aspects do you think can contribute to this motivation?

SUBJECT 1: Yes I think the best component is the narrative that emerges with your colleagues. I think that any other type of game that is not as social could do a worse job at motivating me, but I am personally a very extroverted person who in part comes to the office to make friends and talk to people, and this game facilitates just that.

SUBJECT 2: Yes, I feel like Beezy can give me something to look for after working. It would make me want to finish tasks earlier so I get enough points to either take care of Beebo, or just buy better cards.

SUBJECT 3: Yes actually, I see myself using this, but mainly because of HoneyRush! and Beebo. I don't really care about leaderboards and badges, it sounds too forced in my opinion. Like, I understand it can tackle some other types of people, but they're not for me.

SUBJECT 4: Mmm, I'm not sure. I like the idea of having a game included in it, but I think that after some time I would kind of get over it because what I look forward to in those types of games and apps is more of the competitive and completion aspect of it. If I can't see myself progressing in those aspects I lose interest.

SUBJECT 5: If it didn't mean more work for me as a producer to manage Beezy, yes, I actually see myself enjoying using this application. I am mostly excited about Beebo. I love collecting cute clothes for my avatars or characters when I play games and seeing so many customization options excites me. I would hope they integrate a lot of customization options, and that they are not too hard to get hehe.

SUBJECT 6: I don't really see myself or my company using an app like this because it doesn't really fit our style. But, as I mentioned earlier, I can see it fitting its target, which as was mentioned earlier, it's small indie video game companies. It just makes sense for that target.

SUBJECT 7: I think so. I really like games so including some type of game in my work seems like fun. I think it would also make my work more pleasant and easy to deal with.

SUBJECT 8: I don't really know. I think so, I guess? It has things I really like like card games and customizable avatars (I am not really into the nourishing part), so in general I think I would like it.

5. What are your thoughts on HoneyRush! and Beebo? Do you believe they can enhance the user experience?

SUBJECT 1: I think HoneyRush! is the main reason why I like it, and Beebo can become something of an afterthought for me, but it is a nice addition nonetheless.

SUBJECT 2: I think they are really well designed. You can see there has been a lot of work behind it, and every small detail has been thought of. And as I said before, I think they can really contribute to the user's experience by adding this top layer of engagement to the application.

SUBJECT 3: I really like it.. When I first heard "gamified project management tool" I got worried because what I thought it would be was just leaderboards and points, and I find those boring. I like the twist Beezy has, it's unique and made me excited!

SUBJECT 4: Yes, I think they only bring positive aspects to the experience. There's a lot of people that, well, like the customization and take care of their avatar (Tamagochi was huge for a reason). I also think Honeyrush! is gonna help people connect, even though it's something I tend to avoid. Those two things combined can kind of connect the bridges between different kinds of people.

SUBJECT 5: As I just mentioned, what excites me the most is Beebo. I have always been a fan of Pou and Tamagotchi. Something about having a little friend that you have to take care of warms my heart. And it's not only taking care of it, you can also customize it and have it as your avatar haha. I love it. I also think HoneyRush! is very nice. I like the Wolf game, so I see myself enjoying this game, although I am not a super fan of card games, especially online, but I would be willing to try.

SUBJECT 6: Yes, again, to the right target. Video game company employees, I imagine, are people who like video games, so using their free time to play sounds like a good plan. I think HoneyRush! is well designed in the sense that it shouldn't take up too much of working time, it sounds great for lunch breaks and so. And Beebo is just there passively. I think it's very well thought out.

SUBJECT 7: For sure, I think they are very well designed to make users get the best of working with colleagues. I think they are fun, especially HoneyRush!, and I like how well it's linked to the working routine with the phases and stuff.

SUBJECT 8: I think it can enhance it to some users. Not everyone is the same, so I don't expect everyone in a company to love it. Either way, it was mentioned that the target is small video game companies, so I can imagine that it would be received really well.

6. How would you describe your experience with Beezy in terms of user-friendliness?

SUBJECT 1: As I said, I think Nectar, Honey, etc, needs a previous explanation but I think that, with this explanation, it's not complicated enough for it to be a problem. Interface-wise, once you know what everything is, it's intuitive.

SUBJECT 2: I think in general it's very cute, however, I think that something that would maybe improve it would be some level of accessibility. with the application, like for example changing the color palette for colorblind people, or some kind of font size customization. However, I really think it's aesthetically pleasing and pleasant to look at.

SUBJECT 3: I think everything is pretty intuitive. I can't really really point out anything negative. Well, maybe that I imagine there would be a tutorial for HoneyRush! somewhere, or a guide, because there's a lot to the game.

SUBJECT 4: Hm, I think that the idea is easy to follow and the process is easy to execute. I think that overall it's very user friendly.

SUBJECT 5: I know you said the designs made are not final, and it's just an approximation of your vision of Beezy, but I would somehow "hide" more the Beebo and HoneyRush! tabs. You have to remember that the main focus is to work, and that those elements are additive to the experience. I would suggest adding the access to them somewhere else, a little bit more concealed, not so out there to not distract employees. The rest seems good.

SUBJECT 6: User-friendliness-wise it seems correct. I think that everything makes sense. What may be a little bit challenging is that there are a lot of elements: honey, nectar, honey drops, etc. I understand that could be confusing at first.

SUBJECT 7: Seems pretty good to me. I don't have much to say about this. Seems understandable and easy to navigate.

SUBJECT 8: It seems fine, it's understandable. I would work more on the design of the screens because it looks a bit bland, but I understand it wasn't the focus of the project.

7. Can you share any suggestions or improvements for Beezy?

SUBJECT 1: I can't find any problems for the scope that it's been created for, but just like the repetitiveness, I could think of some problems that might come with different environments, like if it's a bigger company, people have been there a long time, how many people are there, etc.

SUBJECT 2: As I said, the app customization would be a cool implementation to see. Also, maybe some kind of stats or something to have a little bit more competition between players.

SUBJECT 3: Mm, not really! I can't really think of much.

SUBJECT 4: I think that when it comes to card games, having more variety in general, and more mechanics, helps to keep the players interested.

SUBJECT 5: Just making sure to not cross the line of fun at work. Yes it is good to create a welcoming and comfortable environment for everyone, and yes it is good to incentivize workers, and gamification can be the solution. But you have to be careful to not cross the line, to not let the workers get too distracted or productivity levels will decrease. Gamifying work in general sounds scary. I think it would need some moderation.

SUBJECT 6: Can't think of any improvements to be honest.

SUBJECT 7: I think I would focus on things to not make it repetitive. I guess that could be a problem and defeat the purpose of the application.

SUBJECT 8: I would make sure the application has a lot of feedback so it enhances the user's experience a lot. I think that the important actions in the app have to feel good so it's like rewarding to use it.

8. How would you rate Beezy's effectiveness in fostering team collaboration?

SUBJECT 1: I think the social aspect of the game naturally brings people closer, but since the idea is to never be completely sure of who your enemies are, I don't think it's especially a team-boosting game.

Comparing it with the traditional wolf game, there is always a part where you are untrusting of everyone, which is part of the fun of the game, and is not a critique. I think it's even more entertaining this way.

SUBJECT 2: Very highly. I think it's a great tool to bring people together. They provide them with things to talk about, for both teams which haven't collaborated together or for experienced ones. Also, once you know someone isn't a wasp, it's a good form of collaboration trying to bring down the enemies.

SUBJECT 3: It sounds like that is the main focus of the application and I imagine it would do a great job in doing so.

SUBJECT 4: I think that it's going to help people to open up a little and to be more present in the company environment, therefore also helping them collaborate between themselves. However, I don't think it's going to help directly since there are no mechanics in Beezy that are directly affected by working together.

SUBJECT 5: I imagine 10/10. Agile already involves teams collaborating together in projects, so if you add the layer of gamification with multiplayer games and leaderboards and stuff, it is only going to add to the social aspect of working. I think this is great actually. It is always nice to bond with teammates.

SUBJECT 6: For the right company, I would rate it high. For a company like mine, I don't think it would be the right fit, but who knows, maybe it could work.

SUBJECT 7: I think it's very good. It seems like a good solution or way to make people interact with each other more.

SUBJECT 8: I think it would have a high rating since it is the main focus of the application. I think every aspect of it has the intention of fostering collaboration.

9. From 1 to 10, how can you rate Beezy's effectiveness in improving work satisfaction?

SUBJECT 1: I think so, especially in hybrid or on-site jobs, because it boosts social interactions and that is work environment satisfaction at its finest.

SUBJECT 2: 9

SUBJECT 3: 8.

SUBJECT 4: Between 8 and 10 depending on each person. To the right person, it could lead not only to more satisfaction but also more productivity.

SUBJECT 5: 10. But if it gives producers more work it would be lower haha.

SUBJECT 6: For the right company I would rate it a 7, because I don't think a game is going to fix all the problems in motivation and job satisfaction. Either way, I think it would still have a good impact on gaming companies if their employee happiness or efficiency is low.

SUBJECT 7: I don't have much experience but I would say 7 or 8. I think it targets the problem being analyzed and it gives a nice and innovative solution.

SUBJECT 8: I don't know because this would have to be tested more, but I imagine a 6? I don't really know. I believe it would improve it for sure. By how much I don't know.

10. Would you be interested in using Beezy in your work? Why or why not?

SUBJECT 1: I haven't worked in the target company, so in a bigger company, like I've worked in, it would be confusing and counterproductive.

SUBJECT 2: Yes. I think it would really motivate me to work on my tasks and finish goals. Also, I would like to maybe see a more individual version, where maybe you could make groups with your friends and, while each work on their own goals, play the game together.

SUBJECT 3: I am not sure 100% but I would for sure be willing to try it! I think it is worth investing a bit of time into trying to see if it suits me or the company I would be in.

SUBJECT 4: I would definitely be interested in trying because it's a very unique and cool concept that would directly or indirectly help with productivity, satisfaction, and socialization.

SUBJECT 5: Yes actually. I can imagine transitioning from what we are used to can be complicated, but at the end of the day most project management tools cover the same aspects, so I would not be too worried about it.

SUBJECT 6: I think it would be interesting trying it in a big technology company like mine, but if I am honest, I don't think it would work. It is a very serious environment, I can't really imagine working with Beezy here. Either way, I imagine it working really well for the right target.

SUBJECT 7: Yes. I see myself using Beezy in my future work. I would like something to break the routine a bit, because I think working in general can be boring if done every day for 8 hours a day. I think it is a great solution to keep people engaged with what they have to do.

SUBJECT 8: I would be interested in trying it, yes. I think it is worth the time.

9.5. Appendix 5: Infographic

An infographic of Beezy was made for this project as can be seen in the following Figure 9.34. It is a visual representation of the key aspects of the application.

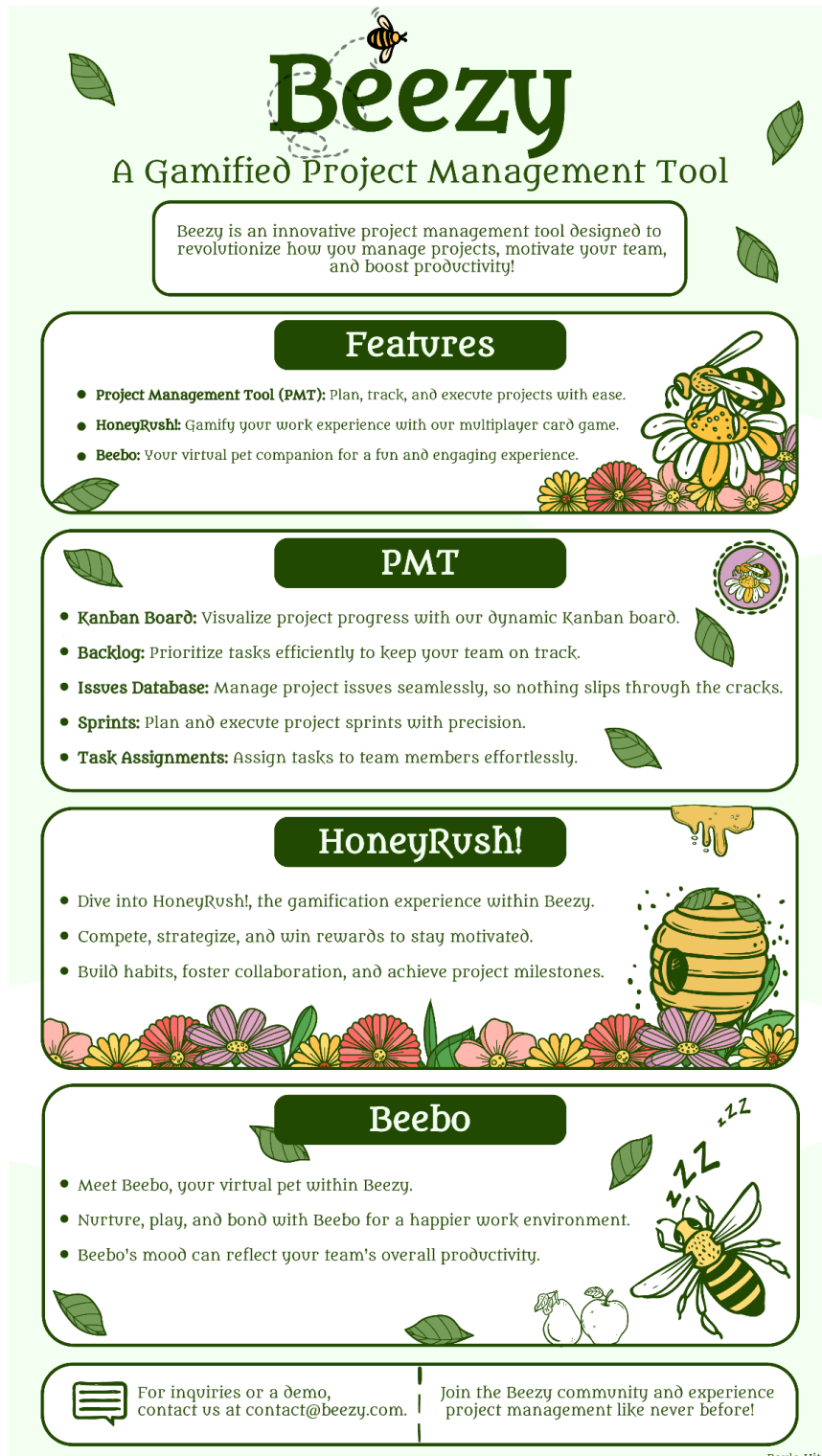


Figure 9.34: Beezy infographic