Abstract—Game can be used for entertainment purpose and can also be used for educational purpose, in the world of game development there are many positions or roles in a team commonly referred to as a developer, the roles in a developer team are, programmer, artist, product manager, game marketing, market research etc. Each position or role has its own responsibility for the success of a game that is in the development process, the market research position is one of the roles that is quite important for the success of a game product on the market, it does not mean other role do not play an important role in the success of a game product but the market research position is the main basis for making a game because this position will see directly to the market what trends are trending in the market or game genres that are in high demand by consumers, but after doing research on student related to game developing is very unfortunate very few students know about how to do market research and product validation. Here we will discuss how to do market research and product validation and a little bit about marketing game products in the market, in this journal will talk about how to make game step by step from doing market research, product validation and get to the point where developer get the data to make the game is demanded by the market. Result of this research is before we need to make any decision about the game we need to make sure its not just assumption but the idea have a proof, to get the proof for ideas we can make a survey or posting things to social media and wait for responds, after some time waiting we found that our marketing strategy is working best with Facebook Ads, with small amount of money like $10 we got 9500 reach with only five days of campaign.

Keywords—game, indie game, market research, product validation.

I. INTRODUCTION

In the 21st century, the game industry in Indonesia can be said to have grown quite large, the game itself is a medium or means used to entertain and can also be used as a medium for education.

People who develop and create games are usually called developers or game developers. In a developer team there are many roles available, namely programmer, artist, product manager, game marketing and market research and many more, each role has the same responsibility to determine success. games that will be developed later.

Role game marketing and market research are roles that can be said to be very important in each team developer because with this role game fans will be able to know and become interested in this game, and if this role does not do its job well, then make the game that will be released is becoming less known to the market or the wrong target market which will result in huge losses for the developer, therefore in this topic I will discuss methods that can be used to conduct market surveys for indie
II. METHOD

2.1 Game
A game is something that can be played with certain rules so that there are winners and losers, usually in a non-serious context, according to Greg Costikyan a game is an interactive structure with an endogenous meaning that requires players to fight to achieve their goals.[1]

According to Bernard Suit, playing a game means engaging in activity directed at manifesting certain circumstances, only by means of means permitted by certain rules, in which makeup means permitted by rules are more limited in scope than they would be in the absence of the rules, and where one the only reason to accept the restriction was to allow such activity.[2]

According to Roger Callois a fictitious, unpredictable and unproductive activity with rules, with time and space limits, and without obligation, and according to Eric Zimmerman a game is a voluntary interactive activity, in which one or more players follow rules that limit their behavior, imposing conflict artificial results that end in measurable results.[3]

2.2 Market
The term 'Market' comes from the Latin word 'marcatus' which means trade, merchandise, traffic or place of business, according to Chapman the term market refers "not to a place but to a commodity and buyers and sellers competing with each other. [4]

According to W.J Stanton, individuals or groups either individually or in organizations that have the potential to become connections can be categorized as markets.[5]

2.3 Research
The word research itself comes from the ancient French language, namely "rechercier" which means to search and search continuously, which literally conveys repeating the search for something and implicitly assumes that the previous search is incomplete, complete in the sense that there is still a gap or room for improvement. [6]

2.4 Market Research
Systematic and objective collection and interpretation of data to help reduce risk in decision making in marketing.[7]

2.5 Market Validation
Market Validation is a stage where the company finds out about a product or service to the market and whether the market needs the product or service.[8]

Market validation is the process of presenting the concept of a product to potential consumers and based on the responses obtained from consumers, the company will assess whether a product is worthy of being marketed.[9]

2.6 Startup
Startups are companies that are designed to grow quickly. Being newly established does not in itself make a startup company. startups also don't need to work on technology, or take on venture funding, or have some sort of "out". the only thing that matters is growth. everything else we associate with startups follows from growth.[10]

A startup is a nascent company that struggles for its existence. most are formed based on brilliant ideas and grow to success.[11]

A startup is a young company founded by one or more entrepreneurs to develop a unique product or service and bring it to market.[12]

2.7 Indie Game
Indie games are games that are consciously created in an alternative production and distribution structure outside of the mainstream game companies.[13]

Indie game development is the process of creating games by a small team or one
person without the financial support of a large publisher.[14]

2.8 Game Production Stage

In a video discussing the game market survey, Kris Antoni Hadiputra, who is the CEO of Toge Production, a game studio and game publisher, said that in general there are two methods of game development by developers, namely Product oriented and Market oriented.

1. Product Oriented

With this product oriented method, the developer usually focuses on developing the basic form of a project or game design that will be made, in this phase the game developer will focus on innovation and is usually experimental, this method is very often found in game developers who include the game to game development events, after the basic form of a game is deemed sufficient to represent their game, then developers enter the stage where they begin to think about the compatibility of their game with the existing market, each method has its advantages and disadvantages in each method. This is a mistake that often occurs when the developer does full scale development without conducting a market survey or market validation regarding their game.

2. Market Oriented

With this method, the developer will start by doing market research and usually related to trends in the market and competition in a game genre, after the target market has been found, then the developer thinks about games that are suitable and can be made by the existing team, some weaknesses from this system is that the developers get a good trend and have thought about the game to be made, but after the game will be released the trend that is followed has disappeared, the second is copying a game that is currently trending without making any meaningful differentiation for the identity of the game.

III. RESULTS AND DISCUSSION

3.1 Source of Data

The definition of data is a source of information obtained through research conducted by an institution or individual, the data that has been obtained will be processed so that it can become a source of data that can be used by readers and is expected to be useful information.

1. Primary Data Source

Primary data is data that is obtained directly from the source or respondents, by distributing questionnaires distributed to game lovers and students of UNIKA Soegijapranata majoring in game technology.

2. Secondary Data Source

Secondary data sources are data that are already available on the internet or libraries, and secondary data will later support primary data, this secondary data can be obtained from survey results of companies engaged in the game industry or official institutions that conduct surveys on market analysis and game product validation.

3.2 Data Collecting

1. Literature Study

Literature study is a data collection technique carried out by searching for written information and data such as journals, books or electronic written data on the internet.

2. Initial Research Questionnaire

This questionnaire is carried out by making a questionnaire on a Google Form and distributed to certain people who are considered qualified to be a resource person, the requirements to become a resource person for this questionnaire are...
students who are thought to have been able to make games and are judged to be ready to enter the world of work, resource persons who will The targets are students at the UNIKA Soegijapranata college in Semarang which focuses on the game technology department. the larger the sample from the size of the population, the better, but there is a minimum number that must be taken by researchers, namely as many as 30 samples [32] and obtained 30 student respondents and by using a closed questionnaire model and is a multiple choice, to support the formulation the first problem.

3. Product Feedback Questionnaire

Every game produced by the developer certainly has shortcomings and these shortcomings have been tried to be minimized by the developer, after all there must be bugs that the developer missed and that's where a survey of the game is also given to every player, in this survey not all players are forced to provide feedback for games, only those who are willing, this survey aims to find minor / major bugs that have been missed by developers with the aim of making the game better and adapting to market tastes.

At this stage the first thing to do is to create a presentable game, the presentable game itself is a basic form of the game that is considered good enough and can represent the mechanics of the game, after making the presentable game is complete, the developer will start to do internal testing, which aims to see if there is a game breaking bug or a fatal bug that can damage the player experience of the game, the next step is to publish the product, generally the initial publishing will be done in a place that does not ask for fees so as not to add expenses, usually the developers will release the initial product them at Itch.io or Gamejolt.com with simple marketing, only by posting in game lovers groups and several communities that can be reached, after publishing is complete, developers will select and consider feedback received from players and revise the product so that product can meet market demands without losing the essence of the developer.

![Game Research Flowchart](image)

**Figure 3.1 Game Research Flowchart**

**IV. RESULTS AND DISCUSSION**

4.1 RESULT

A game developer or game developer must know and know what is being wanted by the market so that the resulting product can be accepted by a broad market, there are several things that developers or developers can do to find out whether the game that has been or is being designed will be accepted by the market, namely by conducting market analysis and product validation, both of these activities are very important to do because without market analysis and product validation, the developer will find it difficult to determine and adjust the product to market desires, plus if these two activities are not carried out, there is a big risk for products that are not sold or not known by the market.

In this chapter the author will discuss the results of research that have been found, data collection is done by distributing
questionnaires to indie game players or connoisseurs and seeking information from the mass media engaged in market research, so that it is expected to provide precise and accurate information about the data collected, needed.

4.1.1 PC Platform Game Market Analysis

The analysis is carried out to obtain data regarding market conditions and trends that are currently in great demand by the market or users, the data will be used to adjust the product to be accepted by the market.

1. Analysis of Popular Games in the Market

The data obtained from the Statista website, a company originating from Germany which is a specialist in terms of market and user data, the data above is the most popular game genre in America which is also the target market that has been determined based on the trends above, this data shows that the most popular genres are action, shooter, role-playing game, sport and adventure.

![Figure 4.1 Popular Game Data Source: Statista.com](image)

After observing the Steam market, which is a well-known video game distributor, it was found that the adventure genre game is still in great demand by buyers and players, it can be seen from the picture above some games such as GRIS, Lost Ember and Journey which are games with the adventure genre and relaxing is still in the ranks of top sellers on Steam as shown below.

![Figure 4.2 Top Seller Game in Steam source: Steampowered.com](image)

2. Market Target Analysis Based on Keyword Trends

Market analysis based on trends is done by looking at the data provided by Google for free, with the keywords "Indie Game" and "Relaxing Game" in two countries, America and Indonesia, with the keyword "Indie Game" on the rise and spread to 80% of America, while in Indonesia searches on Google with the keyword "Indie Game" are also on the rise, but only on the island of Java.

Market analysis of the second trend is with the keyword "Relaxing Game" on the google search engine, based on these data, the keyword "Relaxing Game" is on the rise in America, while searches with the keyword "Relaxing Game" are experiencing a decline, based on the data it can be concluded that America is the right target market, because many people are searching for "Indie Games" and "Relaxing Games" which are booming in America.

3. Observation of Monetization Game

Quoted from the Meduim.com site there are 5 ways that can be done to get money from a game, namely[12]:
1. In-App Ads
   Players or players can access the game for free without being charged anything but along with the game, the player will get some ads that appear, the developer will get money from every ad seen by the player, the player will still benefit by seeing the ad, the player will get small prizes that can be used in the game and it is said that 47% of them remember the ad. Medium.com also stated that there was a study conducted by Ipsos, a company engaged in market research based in Paris, showing that 50% of application users stated that the ads they saw were quite satisfactory.

2. Determination of Game type
   Based on the observations of games on the market, it was decided to make a game titled Another Path with the adventure genre with monetization premium games that were deemed most suitable for the game model to be developed. According to Adam Sinicki, if the developer or developer is a new startup and the game to be made is a short-term game or the duration of the game does not exceed one week, the use of advertising will be ineffective.[13] according to Adam's statement monetization of games with free games, subscription games, and mixed monetization methods are not appropriate methods.

3. Market Research Stages
   1. Create a User Persona
      User persona is a fictional character who represents the ideal user of a product [14] after creating a user persona, game designers can more easily create games that can meet the needs and desires of customers, here is the user persona of the game Another Path.
   2. Create a Customer Journey
      The customer journey is a journey of user interaction with the company, product, or service provided, the customer journey itself is divided into 5 parts, namely awareness, consideration, purchase, service and loyalty. The five parts can be obtained by means of observation, surveys and interviews with users of products or services.
   3. Awareness
      The awareness stage is the stage of how users or buyers find the products we provide, for example, buyers find the products we provide from advertisements on TV or buyers find our products on Youtube ads and so on, from the survey that has been carried out it can be concluded that at this awareness stage, Most gamers of Another Path find this game from...
advertisements or game influencers who work on Youtube.

4. Consideration Stage
At this stage the buyer or user will consider buying or not buying the product or service offered, here prospective buyers will find out about the products or services we offer by looking at reviews on online blogs or Youtube, after potential buyers feel they are compatible with the product or services that we offer, potential buyers turn into potential buyers and are expected to become loyal buyers, in this Another Path game most buyers are attracted to this game because of the art style and the way to play in this Another Path game.

5. Purchase Stage
At this stage, buyers or service users who have considered buying or using available products or services by finding out in online media, if the results of the considerations are good and meet expectations, it is highly likely that users will buy the products or services provided.

6. Service Stage
After the buyer gets the product or service provided, the buyer will get support for the product or service that has been purchased, by providing customer service or support for the product or service, it is also hoped that the customer will give a good review of the product, which will make it easier for other customers to pass the stage. consideration, it would be better if the buyer could be a loyal buyer of the product or service provided.

7. Loyalty Stage
At this stage the customer has become a loyal customer, at this stage the company must also be able to retain customers by updating content on products or services, creating blogs, social media and sending newsletters to customers.

3. Competitor Analysis
At this stage of competitor analysis, game developers will compare the games being developed with games that are already on the market, developers will think about the games being developed that can compete in the market and will have more appeal when compared to other games that have similarities, in terms of genre and gameplay, the picture above is a competitor analysis table from the Another Path game, the Another Path game has features possessed by rival games and has one selling point, namely having meaning riding, the riding mechanic itself is a mechanic where evan (the main character) can ride Caleb (his pet).

4. Product Validation
Performing product validation is the stage where developers validate their products to the market, at this stage the developers will create success metrics, the success metrics themselves can be determined by the developer because the success metrics in the game world differ according to each developer studio, in terms of This Another Path is a game with a scope that is not too big, product validation will be carried out using social media such as Instagram and Twitter.

5. Design Game Another Path
1. Another Path Pengembang Developer
   Another Path is a game developed by 7 people in a small team from Semarang, Central Java, the author is a person who took part in the development of this game, the author is a game marketing and a 3D artist in the development of the Another Path game.

2. Game Design
   Another Path is a single player adventure and exploration game on a
deserted island and a mysterious world, this game tells the story of a little boy who got
lost in the forest on a deserted island and in a mysterious world who has the ultimate
goal of getting out of this mysterious island, on his adventure, to get out of the island
players will solve puzzles and players have the option to explore and collect artifacts
hidden in various places on this mysterious island.

![Figure. 4.3 Another Path Gameplay](image)

3. Character Design
In the Another Path game, there are two
characters that can be played by players,
namely Evan and Kaleb, evan is a brave
little boy who likes challenges and Kaleb is
a pet belonging to Evan's family, the picture
below is a character design from another
path game.

4. Asset Creation
Another path game is a 3D game
and the assets used in the game are assets
created by myself using Blender, a free 3D
modeling application developed by Ton
Roosendaal, the asset creation in this game
uses a stylized style, Another Path uses
music created by a member himself team
from MyHand studio.

5. Mechanic
Mechanics are formal elements that
lead to players (number, patterns, roles,
interactions), goals, procedures, rules,
conflicts, boundaries and results [29] that
are contained in the game and cannot be
disturbed by players, because mechanics
are the basic pillars of the game. from a
game that gives the game its respective
uses, in another path game itself there are
three main mechanics are Switch Between
Character, Wolf Riding and Grabbing
Object.

6. Another Path Marketing

1. Google ads
Advertising a game is certainly very
important, this activity is a form of effort to
attract and build user interest in a product
and producer, Another Path product
advertising is carried out in various forms,
namely advertising using Google Ads, Facebook Ads and social media.

2. Facebook ads
The next step made to attract
attention and make customers aware of the
existence of another path product is to
advertise through Facebook, advertising on
Facebook is not much different from
Google, namely by choosing what is the
goal of this campaign or advertising, both
customer awareness of the product,
consideration and convince potential buyers
of the product.

3. Press Release
Press release is the preaching or
dissemination of news about a product to
the media or the public, the dissemination
of this news is usually reported through
newspapers and magazines but along with
the times, press releases are now more often
using the internet as a medium, Another
Path also does press releases to websites
that make articles about games, one of
which is KotakGame.

4. Social Media Updates
Posts about developments, GIFs,
pictures and short videos to social media on
a regular basis is an effort to increase
awareness of another path product,
according to sweethome marketing, a
website engaged in media marketing that it
is very important to make regular posts on
social media with the aim of Provident
information and remind about the existence
of products on the market[31], efforts to increase player awareness of the existence of another path game product are carried out on Twitter and Instagram.

5. Advertising Results

Another Path was released in two different places with the intention of seeing the difference between the advertised product and the product that was only released without any advertising effort, as a result the advertised product got more downloads than the product that was not advertised. Another Path which was released on itch.io and in advertisements, you get 800+ downloads, while another path released on a rival website, Gamejolt, only gets 300+ downloads.

![Download and View Graph in Itch.io](image)

![Download and View Graph in Gamejolt](image)

IV. CONCLUSION

1. Conclusion

1. A product that is in accordance with the market demand is the key to a successful product in the market, if the resulting product does not match the expectations in the market, then it is very likely that the product will become a failed product and not get much attention from the market, therefore do market research and product validation to potential users is needed and must be done in order to obtain data regarding product suitability in the market, market research can be done by looking at market interest in existing products or product trends on the market, while product validation can This is done by making uploads about games in the form of screen shots or short videos about games and seeing the reactions of people who see the game.

2. Another Path game is developed using the agile method, the development of another Path game starts with making another path pillar design and then proceeds with making character designs, character designs, there are two main characters in Another Path, namely humans (Evan) and Animals (Caleb), in the making character, the artist will make a 2D design of the character and validate it to the market by uploading the character design to social media, if the feedback obtained looks good enough, it will be continued with the creation of a 3D model, if the feedback obtained is not satisfactory then screening will be carried out feedback and revision of the 2D model and will continue to repeat until you get satisfactory results. The next step is to create a level design, at this stage the level will be designed as well as possible and internal testing will be carried out to get feedback on the design level, at this stage it will also be carried out monitoring of game time, difficulty of a level and internal team satisfaction with the design of a level, if there is a budget that is directed to QA (Quality Assurance), the QA team will also be tasked with debugging.

3. Advertising efforts are carried out so that the product can be known by the market, advertising can be done in many ways, namely by making leaflets about the product, advertising through social media, in advertising another path the author gets a lesson in advertising, namely to adjust the
advertising target and daily budget so that advertising is not spread too widely to those who are not the target of advertising.

REFERENCES


