SWISS SCHOOL OF BUSINESS AND MANAGEMENT, GENEVA

THESIS

EVALUATION OF BUSINESS STRATEGIES OF MOBILE GAME PUBLISHERS IN INDIA

VENKAT CHANDAR

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EVALUATION OF BUSINESS STRATEGIES OF MOBILE GAME PUBLISHERS IN INDIA

by

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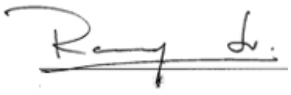

Dr. Ronny Lo, DBA, Committee Member

Dedication

This dissertation is dedicated to everyone passionate about making and playing games, and to those who have the determination and courage to pursue their dreams.

Failure may come, raids may wipe, but rezz, mana up, and try again.

Lok’tar Ogar!

Acknowledgements

There have been a lot of people in my life who have come and gone, and a few who have stayed through the high and lows. This dissertation would not have been possible without a lot of great people guiding and supporting me through the years.

My family is my biggest strength: my wife, Neha, and my children Aarya & Aarushi give me reason to continue to try to push myself.

To my parents, who gave me freedom to choose my path very early on, let me deal with challenges and consequences, while still always having my back when I needed them.

To my in-laws, who were the first people to support me when I started my first commercial venture and have had faith in us for close to two decades.

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To Sanjay Suryadevara who was one of my first mentors, a fount of knowledge both tech and business, and helped me through the years with refreshing honesty.

To MK, a true gentleman, and one whose actions showed me that being a good and kind human being costs nothing but can have tremendously positive impact on others' lives.

To Roby John, who showed me that sometimes all you need is faith and to give people a chance.

To Sreejit Jayanthan, who personifies self-control, and is a source of inspiration to show that any heights can be reached, no matter where you're from

To my friends, Eshan, Yogesh and Zaheer who've been each supporting me for two decades through the good and the bad.

To everyone else who have been helping me realize the good and bad parts of life, and that nothing is permanent.

And lastly, but definitely not the least, my guide and DBA mentor, DR. Ronny Lo who has been a constant source of guidance and inspiration,

Thank you. This would not have been possible without any of you.

ABSTRACT

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2022

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This research is being conducted to explore and understand how certain Indian game developers achieved success through profitability and sustainability. The central question posed is: What are the business strategies and practices of start-up companies to build a profitable business in the mobile game industry? The goal is to analyse data from interviews conducted with founders of Indian start-ups in the mobile game industry and create a theoretical framework for future entrepreneurs in the same space to increase the chances of their success.

The study used a qualitative research design by conducting semi-structured interviews over Zoom, Skype, email and face to face based on the life experience of the interviewees. Observation techniques and the interviewees responses were gathered to generate data from a target population of six candidates holding key positions in the business. Interviewees ranged from mid-senior to executive roles including owner-

promoters. All interviewees who participated in the study were from India and engaged in the business of mobile gaming. An abductive approach was applied to the study, and themes were formed after the data from the interviews was analysed.

The findings showed that the preferred business model for game development businesses in India is the free-to-play model. The primary problems for a business in the mobile games industry in India faced were personnel, capital, and lack of a support system, in that order. The major methods that these businesses achieved sustainability was through constantly building additional revenue sources, innovation and pivoting at the right time. The key learnings from operating a game development business in India were to gain a competitive advantage, work with the community and be metric focused.

The results of the study were compared to those of Klimas (2017), Waller (2015) and Baghbaniyazdi et. al (2017), and extended the findings and results of the same. The findings of this study may be used by existing and new businesses as a reference in their own journey towards being profitable and then sustainable. By doing so, they will be able to contribute to the country's economy by creating jobs, absorb talent, and potentially create India's first billion dollar pure-play game.

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CHAPTER I:

INTRODUCTION

This section will provide a high-level overview of the subject under study within the current knowledge set. A background of the subject along with key points will be provided, and the importance of the research will be underscored. Furthermore, the motivation and expected outcomes of the research will be outlined in this section, along with the justification of why the research is important, and why it must be performed. Next, the problem statement will be presented, and later used to propose research questions. Finally, this section will address the gap this research will fill in existing literature.

1.1 Research Background and Scope

This research delves into the reasons and actions that businesses have taken which their peers may or may not have and have achieved profitability being a mobile games developer or publisher in India. The observations made here in this research may be applied by other companies in the same space, regardless of their current size and scope to potentially minimize risks and jeopardies the future of their businesses.

After working in and observing the game industry for a decade in several roles ranging from mid, senior and founder roles, the data points to the conclusion that the mobile games industry is one of the hardest industries to achieve profitability. Not only has the capital costs increased dramatically over the past decade, the quality of these games and the user expectations have exponentially risen as well. As more businesses

enter this space, and with access to these games becoming easier each day with the advent and rise of mobile internet, the competition is only growing ever stiffer.

The mobile games industry has been growing at a tremendous pace in the past decade (Zackariasson, Wilson, 2010). The Google Play Store and Apple App Store ecosystems are worth an estimated USD 111B in 2020, and USD 270B by 2025. Of this, gaming applications form approximately 66% of revenue (SensorTower, 2021).

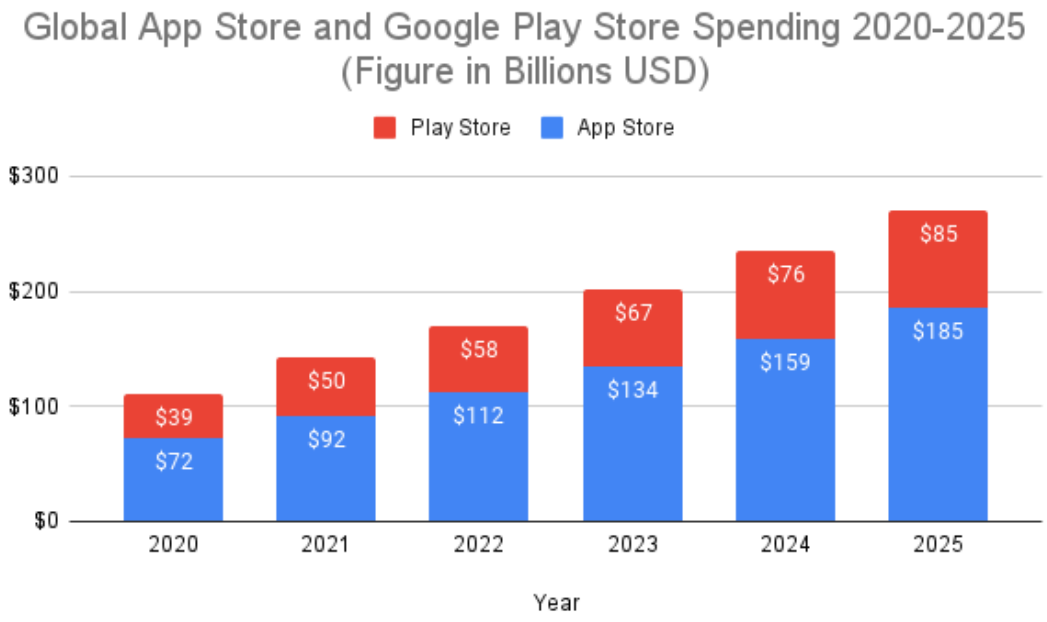

Figure 1.1
Global App Store and Google Play Store Spending 2020-2025

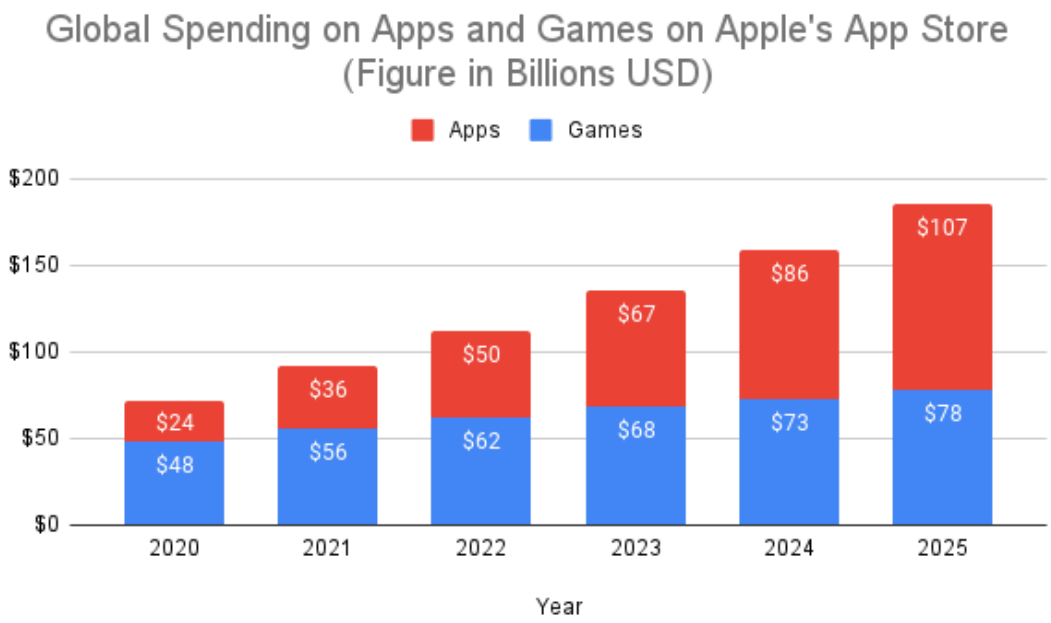

Figure 1.2
Global Spending on Apps and Games on Apple's App Store 2020-2025

A decade ago, mobile games were typically simple and developed by small teams. For example, in 2012, Imangi Studios revealed that their 2011 hit game *Temple Run* was made by 3 people. Over the years however, as smartphone hardware improved, we have begun to see higher quality games appear and take over the market. These higher quality games require larger teams and long development time frames. Supercell, the developers of the games *Clash of Clans*, *Clash Royale* and *Hay Day* reported in 2020 that they have over 300 employees. Developing products of this scale involve high capital, often in the millions of dollars and therefore have a high risk. However, these numbers also prove that there are opportunities for success, provided businesses can create high quality products and continue to sustain them.

The mobile games industry is one of the few industries where monetization has been pushed to the very end of a product's lifecycle rather than being at the forefront. For example, if you wished to watch a show on television, you would have to first purchase or rent a television, get a cable connection and then watch the shows you wanted. In this case, the monetization aspect of a product's lifecycle comes first.

In most mobile games, however, the initial product is available for free. A small portion of the user base (typically less than 2%) choose to make purchases in-game for virtual items that they can use in the game. These reasons, among others, make this industry much easier to fail in.

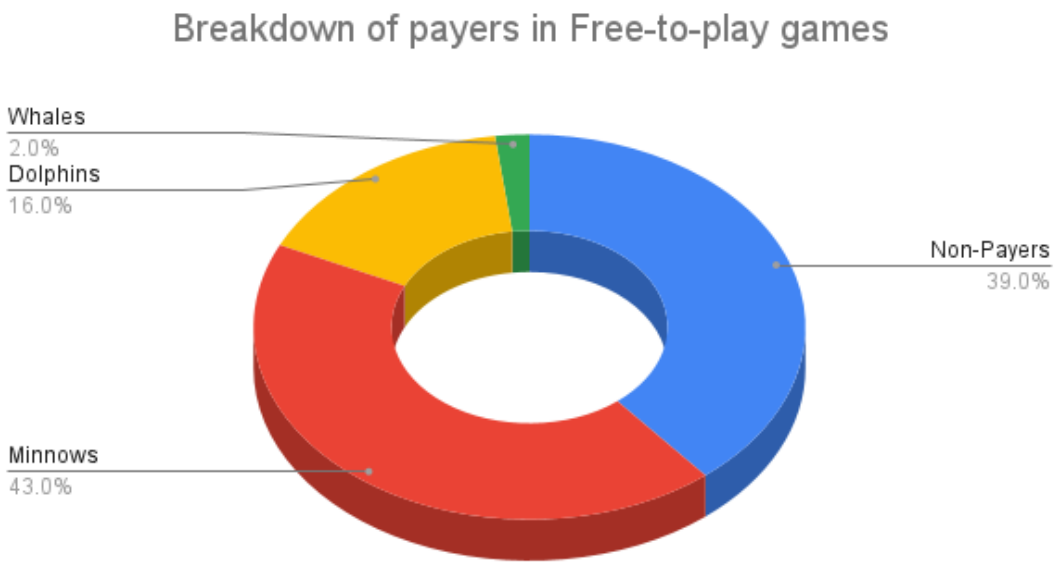

Figure 1.3
Breakdown of payers in a free-to-play game

The choice to conduct this research in India was deliberate. India is one of the largest ecosystems for mobile games, only behind the United States and China at the time of writing. A Pocketgamer article published in May 2021 revealed that 23 games have reached a lifetime revenue of over one billion dollars. However, there are still no billion-dollar pure-play games that have been developed in India.

Moreover, start-ups in India, in general, have a failure rate of 90% (Dwivedi, 2019). The closing of a start-up or company due to business losses is harsh on all parties involved, and with losses of time, money, and energy. In socio-centric societies commonly found in the East, the failure of a business is often considered a "death sentence" (Cotteril, 2012). In fact, studies have shown that the failure of a start-up requires coping mechanisms to come out of the grief (Cope, 2011; Jenkins, 2015)

This study looks to understand the business challenges faced by incumbents in the game development business in India, and the stratagems employed by these companies to reach profitability. By doing so, other businesses may be able to emulate them and reach for higher levels of success, while also avoiding the potential pitfalls that led to the early deaths of other businesses.

The study will focus on companies based in India, who may or may not service the global market. The outcome of the research will be to identify key metrics and to create a theoretical framework that can improve the chances of success for businesses through profitability and sustainability in the mobile games industry based in India. By doing so, the expectation will be to reduce the failure rate of entrepreneurs going into this business in India.

1.2 Research Problem

The failure rate of start-ups in the entrepreneurial ecosystem is extremely high (Kalyanasundaram, 2018). Around 40% of start-ups fail in the first 12 months of operations (Sambangi and Barua, 2017).

Although many start-ups are small, they generate a significant portion of employment due to the volume of small businesses. In 2015, Waller noted that small businesses were vital to the economy (Waller, 2015). Business failure has several consequences including loss of time, capital, effort and affects all parties involved. Failed businesses cannot generate employment or contribute to the nation's GDP through direct and indirect taxes.

It is therefore of importance to help ensuring a high success rate of start-ups. To do this, there requires to be information around what specifically helps them succeed.

While numerous studies have been performed on start-ups in general, and the factors of their success, there is not enough research available specifically about business practices of start-ups in the game development industry, and the reasons behind their success or failure.

Another key pillar for a business is sustainability. A business simply cannot be profitable; it needs to sustain and achieve growth by consistently generating higher profits. Without sustainability, businesses cannot thrive and may quickly fail after reaching initial profitability, leading to the same consequences as failing before achieving profitability, perhaps at a larger magnitude. Once again, while there are some studies concerning sustainability of a business in India in general, there are still fewer studies

that delve into reasons behind sustainability of profitable game development businesses in India.

One of the key reasons behind this apparent lack of research is that the mobile games industry is fairly new to the world, being around for only a decade, while other businesses with robust research are several decades old. This reason is only compounded in India, where the adoption and growth in mobile games has happened even more recently.

1.3 Research Aims

This research aims to gathering and collating existing knowledge from the life experiences of key people from various businesses involved in mobile game development in India, and then forming insights and drawing inferences on how best others can emulate or follow in incumbents' footsteps. Studies have indicated that by understanding which key decisions worked for existing businesses have drastically increased the chances of success for later entrants (Sambangi and Barua, 2017).

The aim of the study confirms the argument that start-ups are important to a nation, its economy and the people involved in the business (Waller, 2015). Furthermore, by reducing failure rates in these businesses, there is scope for a hugely commercially successful game being built in India for the world.

1.4 Research Objectives

The research looks to answer the following central question and sub-questions. For the purpose of this research, the term "success" when applied to a business is defined as a profitable business regardless of scale, age or vertical in the mobile games business.

Central Question:

What are the business strategies and practices of a start-up company to build a profitable business in the mobile games industry in India?

Sub-questions:

1. What are the primary challenges faced by the business before attaining profitability?
2. How is the business maintaining sustainability?
3. What are the key learnings that have been arrived at?
4. What are the specific markers in these companies that premeditated their success?

1.5 Purpose of Research

The purpose of this research is to generate a better understanding of the risks involved in the mobile games' development and/or mobile games publishing business in India. An in-depth understanding of these business verticals through the lens of existing successful ventures, ventures that have failed and those in-between will allow the researcher to gauge which steps were taken by businesses that have succeeded and those that were common in the businesses that failed.

Furthermore, the research will be critical to create a framework for other businesses to follow, regardless of whether they have just begun, or they are well into their journey. With the advent and penetration of mobile internet in several countries, including India, the mobile games business is becoming more interesting to several entrepreneurs and is attracting more talent and capital. By conducting this research now, we can expect to see a higher chance of success, and therefore more successful businesses in the mobile games business.

1.6 Significance of the Study

There are several challenges that an entrepreneur must overcome when they start a new business. Even after several challenges have been overcome, there is no guarantee that the business will succeed and remain sustainable. Furthermore, it only takes a minimal number of incorrect decisions to be made leading to a successful business's failure. Even with several studies that have been conducted in the past, it can be argued that each business is unique and therefore carries its own set of risks that only the entrepreneur is aware of.

This study looks to abstract away from the individual lens of each business and use the lowest common denominator of the mobile games industry to highlight the various pitfalls that new or incumbent businesses should be aware of.

Further, this research will contribute to the business practices of companies in this space by recommending certain strategies or by sharing insights that have been formed by observing and inferring from the experiences of other businesses in the same space.

1.7 Research Design

The primary source of information for this research was the life experience of the participants of the research, and their interpretations and views of the experience. Therefore, Merriam's interpretive-qualitative approach (Merriam, 2002) has been applied to this research to demonstrate its critical features. Furthermore, the researcher conducting the interviews must be the main instrument to obtain the data (Merriam, 2009).

The researcher used qualitative interviews to speak to six participants holding roles ranging from mid-senior to executive roles including owner-promoters. All participants were in the business of mobile games development or publishing based in India.

The research methodology section will show that the questions asked during the interview were designed to be probing and flexible. This probing nature of these questions led to various sub-questions that the researcher posed to the interviewee based on their responses. Such an approach encouraged the interviewees to recall, analyze and put forth their experiences and provided an invaluable source of information for the research. According to Merriam, such an approach helps ask further questions to obtain productive and useful information, insight and learning more (Merriam, 2009).

By applying Braun and Clarke's Thematic Data Analysis to analyze the qualitative data gathered, which encourages and inculcates the process of writing into the overall process, led to the research taking some interesting ideas being explored.

Lastly, the principles set down by Silverman were used in interpreting qualitative data (Silverman, 2011)

1.8 Structure of the Thesis

This thesis is divided into five (5) major chapters

Chapter One involves introduction to the research, which delves into the scope, background, and nature of the study. This chapter further defines the research problem, its purpose, objectives, significance and aims.

Chapter Two is a summary of the review of literature that the researcher studied as part of the research process. This section identifies major works that are relevant, highlights significant research and most importantly identifies the gap in existing literature. This research will try to reduce or close that gap.

Chapter Three deals with the approach taken for this research. It will cover the various theories of qualitative research and data gathering used in this research. The section will also provide insights into how the semi-structured interview questions were formed along with the nature of these questions.

Chapter Four lays out the high-level findings of the research and what steps businesses in the mobile game development space in India can take to leverage the results of this study.

Chapter Five provides the conclusion of this research. It contains the final findings, the caveats of the study, its limitations, practical applications, and recommendations for further research. The section will also compare and contrast with findings of other similar research by Klimas (2017), Waller (2015) and Baghbaniyazdi et. al (2017). Finally, the recommendations and conclusion for the research are presented.

CHAPTER II:

LITERATURE REVIEW

2.1 Introduction

To acquaint oneself with what research already has been performed, and what the perspectives of other studies are, the researcher spent time in gathering, reading and summarising existing publications, articles, papers and blogs.

The literature review conducted for this research lays out the current knowledge set available for the topic under scrutiny. By defining the boundaries of what is known, the identification of gaps in existing knowledge becomes possible. The literature review will also be used to identify existing material that supports the research topic in question. This chapter also looks to highlight important research that has been performed, and point out links between existing theories and practices.

The following topics were explored by the researcher will be exhaustively reviewed in this section

- The state of the games industry
- Existing business models
- Key challenges faced by start-ups
- Other considerations.

Section 2.2 provides a bird's eye view of the current state of the games industry and some background about its evolution from a fledgling industry to a behemoth that has overtaken several other sectors in entertainment.

Section 2.3 shifts focus from the overall games industry and focuses on just the mobile games sub-industry. This section explores the growth and explosion of this space, and how it has become the primary medium of gaming for the world at large.

Section 2.4 introduces Business models, provides a brief history of its creation and evolution and provides some insights on how business models have had a critical effect in the growth, profitability and sometimes even survival of businesses.

Section 2.5 explores the various existing business models in the mobile games industry, with each sub-section exploring each major business model in detail. This section also provides a comparative view of all major business models and a summary of the pros and cons of each business model.

Section 2.6 deals with only the free to play business model, and provides insight into its advent from a mostly ignored model to the preferred choice of business model for almost all developers and publishers in the mobile games industry

Section 2.7 details the various risks of the current, most popular business model: free-to-play. This section highlights the primary risks of incumbent and new entrants in the mobile games industry and forms part of the foundation of the research questions

Section 2.8 introduces at a high level the various challenges faced by start-ups in general. This section further explores those challenges which are also faced only by start-ups in the mobiles games development industry.

2.2 The current state of the games industry

The video games industry in its current avatar as a commercial business has a history that can be traced to at least back to the 1970s with the release of the "Pong" arcade machine. Prior to this, video games were mostly at small scales or at institutions, such as "Tennis for Two", credited to be the first video game, created by physicist William Higinbotham in 1958 (aps.org, 2008).

Early arcade hits such as Space Invaders and PAC-MAN paved the way for the fledgling industry and fueled growth through the 70s and 80s (usgamer, 2016). This was soon followed by home entertainment system, or consoles such as the Atari 2600 in 1977 (gamedeveloper, 2008). With personal computers entering homes in the 90s, games soon followed and began a popular form of entertainment. PCs became the medium of gaming for most people especially after the launch of the Steam platform, a game discovery, recommendation, and storefront owned and operated by Valve corporation.

This growth continued in the early 2000s, until the first smartphones launched, and mobile gaming became possible.

The games industry has seen an explosion in growth in the past decade. A study conducted in 2013 revealed that the games industry was worth around $44Bn. In 2021, Newzoo estimated that the games industry's worth will be around $218.7Bn by 2024. This is an approximate CAGR of 17.4%. In the decade prior, Zackariasson et. al. estimated that the industry had grown between 9% - 15% annually (Zackariasson, Wilson, 2010).

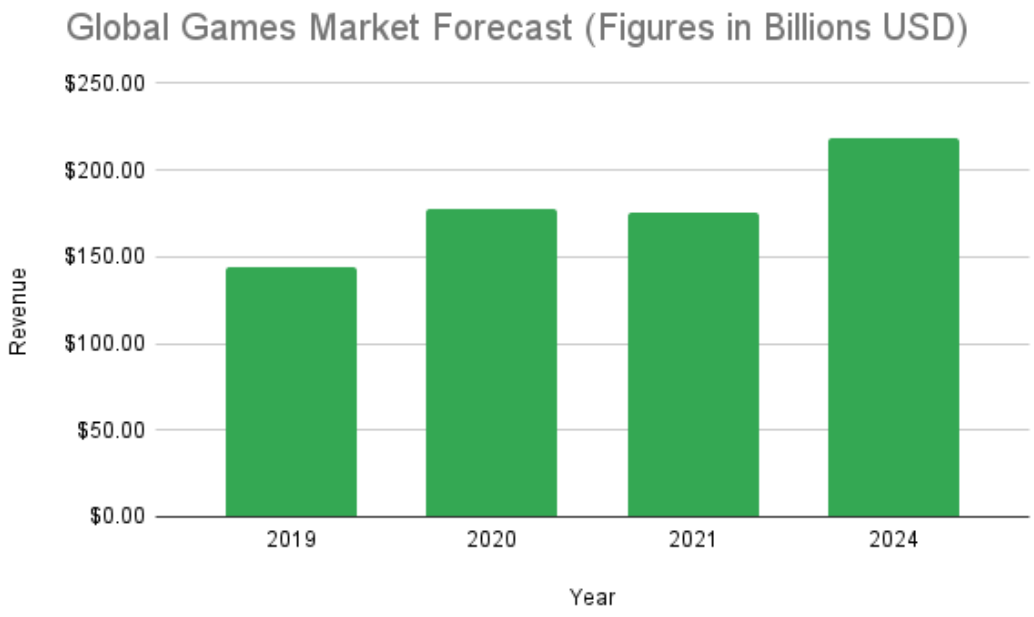

Figure 2.1
Global Games Market Forecast

This tremendous growth can be attributed to the advent and democratization of smartphone technologies, an increased willingness of consumers to spend money on the video game sector (Carpenter, Daidj, & Moreno, 2014). In 2014, Davidovici-Nora identified gaming as one of the most profitable areas of the media industry, and in 2020, the gaming industry was larger than Hollywood.

2.3 The current state of the mobile games industry

Early mobile games were developed for feature phones that had no touch screen and were typically equipped with a number pad. Games from the 80s and 90s on phones were limited to very simple gameplay, like the “Snake” game that Nokia phones often shipped with.

Games started getting better with the introduction of Java on feature phones. The J2ME platform allowed games such as “Galaxy on Fire” and “Might and Magic”, some of the best reviewed J2ME games (mobygames) to run of feature phones with colored screens. This era also saw the first time where intellectual properties (IPs) were used in mobile games. In India, for example, one of the most popular games “IPL T20” was developed by Indiagames Pvt. Ltd. in 2008 (phoneky.com). The IPL is the foremost club cricket franchise in India. The same developer has also worked with several other IP holders to create games related to movies (Race to Witch Mountain), TV shows (Sinchan: Double Trouble), Sports (Championship Cricket) and Racing (Ultimate Race) (phonekey.com). During this time, developers or publishers had to negotiate deals with phone manufacturers and carriers (among others) to release a game to their audience. The cost of these deals is not publicly available, but it is understood to have been an expensive affair to develop and launch a game.

The J2ME ecosystem of games were replaced in the early 2010s after the introduction of the iPhone and Android marketplaces. For the first time, users could interact with games using a touchscreen. Also, the hardware of smartphones was typically better than the feature phones of the era. Lastly, the marketplace democratized the development and release of games. Apple’s App Store had a yearly fee of $99 (developer.apple.com, 2021) while Android required a $25 one-time fee to sign up to create, upload and distribute (support.google.com, 2021). These prices have been stable since the initial launch of the marketplace programs.

Early games in the App Store (iOS) and Play Store (Android) mostly had premium games that required up-front payment. At this time, developers typically would offer a “Lite” or feature stripped version of their game and have a second, fully functional, paid version of the game. This meant that users would have to pay and download a new version of the game if they chose to make a purchase. This was not an ideal case, until Apple began supporting in-app purchases for free games on the App Store in 2009 (TechCrunch, 2009). With in-app purchases, developers could now ship a single version of their game, and lock features until the user chose to make a purchase and unlock all the features and content the game had to offer. This led to a paradigm shift in the industry.

In 2013, 61% of the industry’s revenue came from consoles, and 20% from mobile. (Marchand, Henning-Thurau, 2013), while in 2020, mobile games drove around 48% of this worth, and consoles slid to 28%.

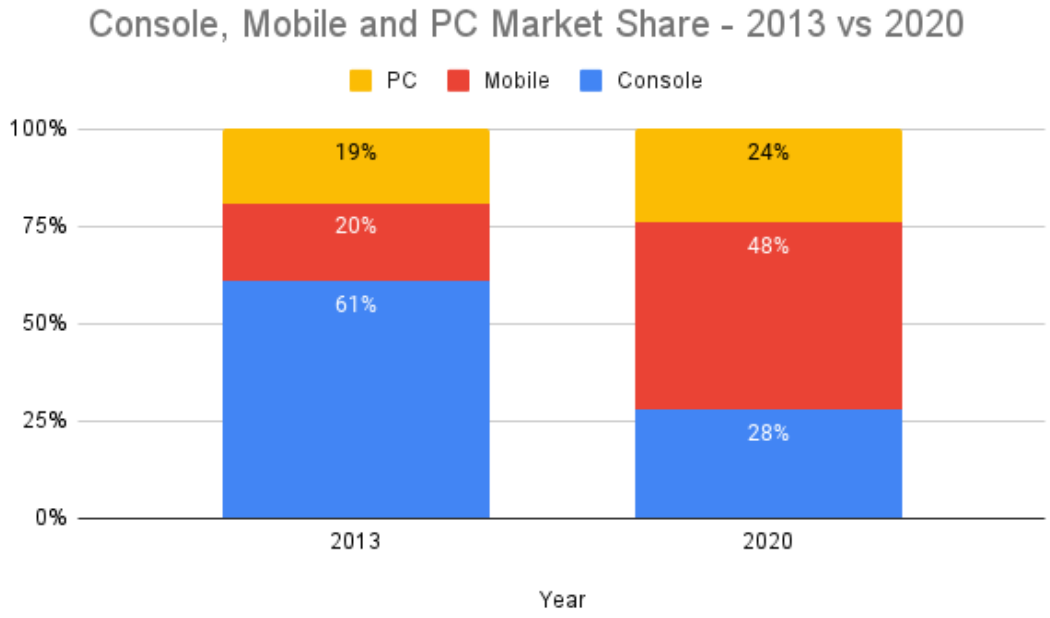

Figure 2.2
Console, Mobile & PC Market Share – 2013 vs 2020

In 2021, Activision Blizzard's mobile shooter game *Call of Duty: Mobile* reached a lifetime revenue of over $1Bn in 19 months (Pocketgamer, 2021). These figures would not have been possible without the App Store and in-app purchases.

Not all developers benefited equally, however from the Play Store and App Store. The above growth and revenue figures only apply to the very top developers across the world. In 2013, Apple reported more than 50 billion downloads of Apps and Games, of which the top 20 accounted for 80% of App Store revenue (Waller, 2015). This number has grown to 177 billion downloads in 2020, while the number of top grossing developers' share of revenue and downloads has increased even further to over 93% (SensorTower, 2019, 2020).

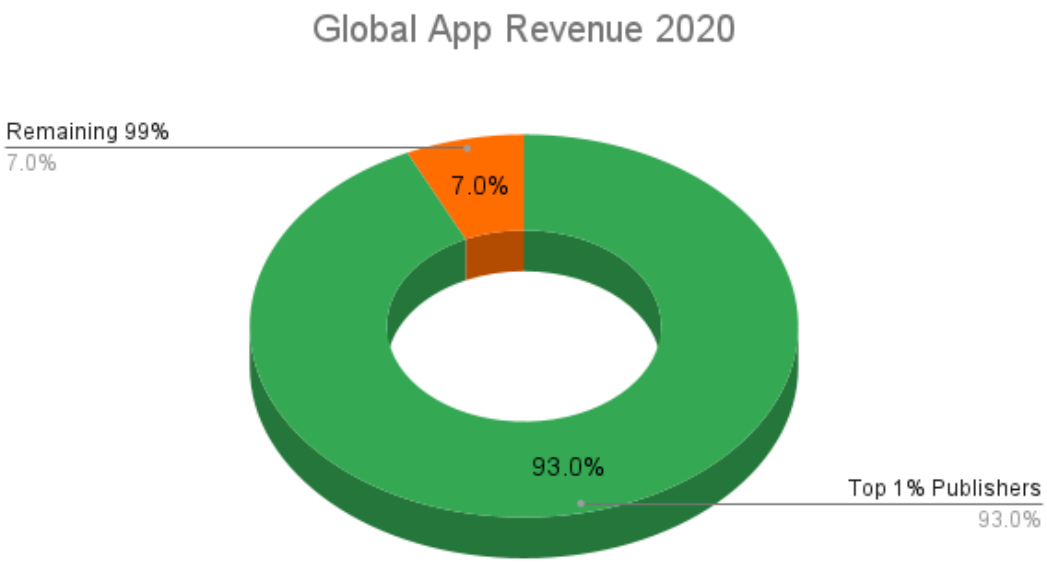

Figure 2.3
Global App Revenue 2020

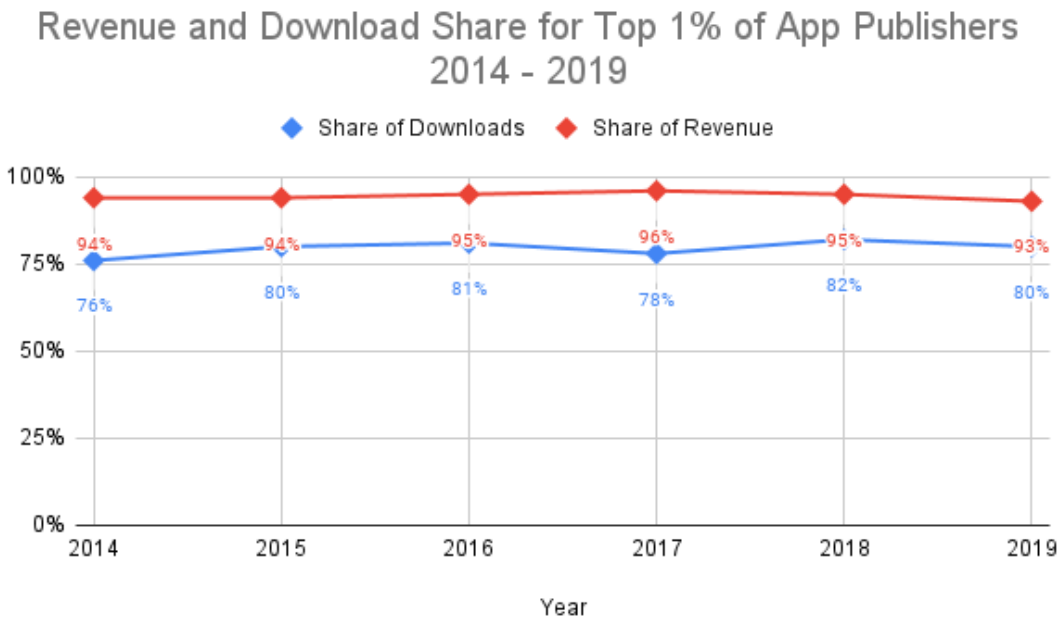

Figure 2.4
Revenue and Download Share for Top 1% of App publishers 2014 - 2019

2.4 Business models

Business frameworks have existed since the 1980s, when Porter authored the five-forces framework (Porter, 1980). Since then, there have been several iterations and additions to frameworks, such as the generic strategy framework (Porter, 1980), the generic building blocks framework by Hills & Jones in 2001, and the SWOT analysis framework. It was only in the early 2000s that the term "business model" started to surface, especially in context of the rise of the dot-com industry. One of the earliest references to business models is in a paper from 2002 by Magretta, who wrote about how the term "business model" became a buzzword in the dot-com boom. People threw around this phrase along with wild promises of high profits and poor planning (Magretta,

2002). However, the term has gained more acceptance, and is now extremely important to define properly to make sense of any business. The most concise definition is put forth by Teece in 2010; A business model is the story of a company explaining how the company works (Teece, 2010). Since the business model is an all-encompassing "story", it is expected that it is adapted to fit the company's goals. Furthermore, the "story" is continually modified to fit prevailing market conditions. Another description of a business model is that it defines the business logic of value creation by a business entity with respect to a product or service. Given the importance of a business model to its parent business, academic interest for this topic has been growing over the years. In 2015, Wirtz et.al found the number of scholarly articles related to business models in 2013 were 380, as compared to 51 in 2000, an increase of 650% (Wirtz et.al, 2015). The interest in the topic continues to grow, and for good reason.

There are several advantages of having a well-defined business model. In the information age, where market shifts happen constantly and value creation for users is paramount, a good business model helps a business entity make clear, concise decisions. A good business model also can be pivoted rather than being recreated to create better value and capture market share (Hacklin, Björkdahl, & Wallin, 2018). Furthermore, constant changes in technology can be augmented with an evolving business model to match customer needs or needs emerging directly from customers (Hienerth, Keinz, & Lettl, 2011).

There are several notable examples of successful pivots. Companies like YouTube, Flickr, Nintendo, Nokia, Discord and several others started their core businesses in other areas before honing on the business that made them successful.

Tiny Speck, the company that created Slack began as an internal messaging and file transfer tool to support the development of a game. The game itself failed, but the tool proved to be useful, and the business was pivoted to promote Slack, which went onto become a unicorn (Valuation >$1 Bn) in 2014, public in 2019, and was acquired by Salesforce in 2020 for $27.7Bn (New York Times, 2020).

Another notable example is Instagram, which began as an app named Burbn for check-ins, tagging and other social features. Burbn never took off and was pivoted to the photography-based app that became Instagram.

Another key characteristic of a business model is that it provides a competitive advantage for managers (Teece, 2010). For this to be valid, the business model should also be malleable from the inside of the business, through its stakeholders as well as flexible to suit external impetus, such as an emerging trend.

Spotify, one of the world's largest music streaming platforms relied heavily on ad revenue in the pre-pandemic world. In this model, Spotify generated revenue when their users listened to ads in between songs. When the COVID pandemic gripped the world, Spotify saw a surge in users. The expectation would have been to see an increase in revenue due to the increase in usage. However, the opposite happened because advertisers dramatically reduced their budgets. In response, Spotify launched original

content in the form of podcasts. Over 150,000 new podcasts were added in the first month, leading to a surge in revenue (HBR, 2020).

Since the early 2000s, there are several authors who have proposed business model frameworks. In 2008, Johnson et al suggested a framework with 4 elements: customer value proposition, profit formula, key resources, and key processes (Johnson et al, 2008). This framework supports general purpose business goals. Another framework proposed by Rayna and Striukova in 2014 is a value-centric framework comprised of: value proposition, value creation, value delivery, value capture and value communication in context of the video game industry. Ritter and Schanz in 2019 proposed another framework, specifically for the sharing economy and identified four segments: Singular transaction models, subscription-based models, commission-based platforms and unlimited platforms (Ritter M., Schanz H., 2019).

As can be seen, frameworks can be designed vastly differently based on the underlying philosophy. However, all of them tend to share similar traits. One such trait is the revenue model. At a simplistic level, a revenue model can be termed as the steps taken to earn revenue. A business may have several revenue models as part of their business model. For example, a business may sell a base software as a one-time purchase, then additionally sell priority support for the software (value added service), timely updates to the software through recurring subscriptions and finally upsell existing customers to a new version when released, at a discount. Revenue models often provide synergies to each other with the end goal of monetizing a customer for the longest period.

In a 2017 paper, Klimas noted that it was possible to exploit more than one monetization model under a specific revenue model. Further, he noted that several revenue streams could be exploited by a company, and these would co-create the revenue model.

In the gaming industry, revenue models and business models are often used interchangeably, and for good reason. Unlike in the earlier example, the primary revenue models in the gaming industry are often at odds with each other. This will be discussed in the next section. For this research, the terms “business model” and “revenue model” will be used interchangeably.

2.5 Business models in the gaming industry

A study about the most successful games in Iran identified 6 major business models These were free, premium, freemium, In-app purchase, In-app advertising, and combination. (Baghbaniyazdi, Ferdosara, 2017). The most recent entries to these models are the subscription model, the Play to Win model and the Play to Earn model, although these models do not command nearly the same level of acceptance of the Free to Play model.

The sub-sections below will delve into each business model in detail.

2.5.1 Free business model

The full game is made available to the player completely free of cost by the developer/publisher. This model does not have any mainstream use-cases and is largely ignored by most businesses. There is no monetary incentive driving the publisher in this

model; rather the end goal lies elsewhere. This business model is used by very small teams (<10 people) as a creative outlet, a showcase of skill (for example, a small business may create a completely free game to display its technical capabilities to potential customers) or other direct non-monetary driving factors. Other cases where the free business model is employed are games made as promotional material such as such as the reveal of a new car. One such example is “Toyota AR Showroom”, by Toyota Motors Europe to show off their vehicles in augmented reality. Another reason for completely free games is where publishers release their older titles for free to their users as a way to retain existing users and attract new ones. An example here is “Sonic CD Classic” by SEGA Corp. The free business model is the least popular business model but has been included here in this research to provide a holistic view of all available models that businesses can choose from.

2.5.2 Donationware business model

This business model is like the Free business model in almost every aspect. The game is made available in its entirety for free, with no direct monetization levers or ability. The one key difference is that users are given the *option* to pay the developer or publisher a one-time fee to support their work, ranging from a few cents to several dollars. Like the Free business model, Donationware is only used as a platform to showcase one’s work, to express self or for other non-monetary goals. Once again, this model is largely ignored by businesses, as it does not generate predictable or sustainable revenue. It is also often considered a poor decision to allow users to “pay what you

want", since this reduces the perceived value of the offering. However, this model is fairly popular with independent developers (also known as "indies") and hobbyists whose only goal is to share their work with others. Several games on the games distribution platform itch.io support the donationware mode.

2.5.3 Premium business model

In this model, the full game is made available to the player after paying a fixed, one-time, up-front charge. This model is the de-facto model in the PC and console industries but is not very popular anymore in the mobile games industry. When the App Store and Google Play store first opened to third party developers, developers could only list their games for free OR for a fixed, up-front price. It was during this time that the premium business model was popular. After the introduction of in-app purchases in 2009, the popularity of the premium model began to decline. As of December 2021, less than 3% of all apps on the Google Play Store and 6.3% of all apps on the Apple App Store are paid (Statista, 2021).

Under this model, it is not just the initial sale of the game that drives revenue. Additional content developed and released after the initial release may or may not be given to users free-of-charge. This additional content is now known as "Downloadable Content" or DLC (referring to their mode of delivery) or "Expansion Packs" (a more succinct description of the phenomenon). While DLC and Expansion Packs have both been widely adopted in the PC and Console industries, it is very rare for a mobile games publisher to sell additional content beyond the initial sale of the game. One notable exception to this

was the game “Monument Valley” by UsTwo Games. In 2016, UsTwo released a paid expansion pack for its hit title. This was met with severe criticism from several fronts, including reviewers and users. However, the decision quite literally paid off, with UsTwo reporting that close to 35% of their user base on iOS had purchased the expansion pack (Gamedeveloper.com, 2016).

Because this model directly ties revenue to projected sales, rather than a potential sale, it is considered the most stable of all revenue.

2.5.4 Freemium

A portion of the game is free for the player to try, and the rest of the game can be accessed by paying a fee. The fee may be one time or a recurring subscription. This model is colloquially known as “shareware” in the PC industry. This model evolved from a need for players to be able to try a premium game before committing to a purchase. Before the App Store and the Play Store supported in-app purchases, publishers had only two choices when they listed an app: free or paid. This forced publishers to list a “lite” version of the game with limited features, and a full-featured paid version.

While this model still exists, it is not applied as frequently as earlier, particularly after the rise of the internet. Potential customers now have the option to visit a website and watch videos, read reviews, and get peer opinions about their imminent purchase, thereby reducing the need to try the game before a purchase decision is made.

2.5.5 In-app purchase

In this model, the player is offered the option to pay to gain additional access, content or for virtual items that can be used in the game. The base game itself may or may not be free. This model was initially introduced to alleviate the key issue with the freemium model where publishers were forced to list two different versions of the same game, one free and one paid. Furthermore, this dual game system caused other issues such as users' progress not translating over to the paid version of the game from the free version.

With the in-app purchase system, users could now easily pay to unlock the full game, or for additional content without ever leaving the game. However, as the industry evolved, more and more games became completely free to play, a model where users had access to the entire game and could make optional purchases. The free to play model is discussed below.

Today, the in-app purchases are optional. Some examples of items offered include extra currency, extra attempts, and a boost to skip content. Because these items are optional and do not require all users to make purchases, the profitability of a product, and therefore the business is often determined by what percent of the user base the business is able to monetize, and to the extent of the monetization. There are several factors involved in estimating the return for games that use the in-app purchase model, including the duration of the game, pinch points for users, the popularity of the game and the psychology of the users, to name a few. This makes this model the most risk ridden, but with a potential for massive returns.

Furthermore, this model allows developers to continue to make new content and operate the game as a service (GaaS) and continue to monetize the product. This phenomenon is discussed in detail in the next section.

2.5.6 In-app advertising

Advertisements are shown to players in the game, and the publisher is paid a portion of revenue generated from the ad view. There are several formats of ads available, from small banners that are always displayed, to full screen video advertisements. Some ad formats also allow users to earn virtual currency they can use in-game. For example, a user may watch a *rewarded video* to earn some in-game gold. Another format known as an *offerwall* incentivizes users to try other games and applications by rewarding them with virtual currency.

The revenue that the publisher makes from ads is defined in a unit called eCPM, or "effective cost per mille". This figure is the amount of revenue the publisher earns for every 1000 ads shown to a user. For example, according to Appodeal, the average eCPM for ads shown in the US on iOS in December 2021 was $15.95 (Appodeal, 2022). This means that for every 1000 ads that the publisher showed to users who were using an iOS device (iPhone, iPad etc.) in the United States in December 2021, they earned $15.95. This figure varies tremendously on several factors including

- Country – Western nations have higher eCPMs
- Platform – Apple devices typically have higher eCPM
- Format – Rewarded videos have higher eCPMs than interstitials or banners

- Genre of the game – Ads shown in games in the casual genre have higher eCPMs than games in the hypercasual genre.
- How many ads the user has seen previously – eCPM reduces the more ads a single user watches.
- Several personalisation data points, such as age, gender, propensity to spend, interests etc.

On the other end of the spectrum are banner ads in developing nations like India, that have an eCPM of $0.06 on Android, that is 6 cents for every 1000 banners displayed to users in India on an Android device.

It becomes apparent that this model cannot be used for games with a large production value, because of these low returns. Most games that serve ads also use other models alongside, mostly the in-app purchase model. This model is detailed in the next section. There is, however, a sub-genre of games, known as “hypercasual games” that use ads as the primary mechanic to monetize. These games typically show several ads in a very short span of time and depend on scale to drive profits. The number of ads shown to a user in a hypercasual game is typically magnitudes higher than ads shown to users in other genres.

2.5.7 Combination/Free-to-play

A combination of the In-app purchase and In-app advertising models.

Of these business models, the *combination* business model, now popularly known as *Free to Play* or *F2P*, is the most prevalent (Alha et.al, 2014). The reasons for its rise in

popularity is discussed in the next section. In this model, the game can be acquired and played free of charge while players are encouraged to buy virtual goods during game play (Alha et.al, 2014). These are commonly known as *microtransactions*. Industry estimates put the percentage of paying users in a game at between 0.50% and 2% (Swvre, 2019).

The other component of F2P games is revenue earned from serving advertisements (specifically *Rewarded Videos*) to users in exchange for virtual currency. There may be other kinds of advertisements such as banner ads and interstitial ads alongside rewarded videos.

The free to play model uses the monetisation techniques of the in-app purchases and in-app advertising models. By combining the strengths of these models, businesses are able to monetise their games much longer and deeper.

Each game has a different ratio of revenue that is generated from in-app purchases and advertisements. While some games rely heavily on advertisements over in-app purchases, other games monetise in the reverse. The ratio may also differ depending on the geographies of the game's users. For example, a game that has a large user base in developed nations will rely more on in-app purchases, while games whose user base is in developing nations such as Brazil and India will rely on advertising revenue. It is important to note that these strategies can be applied within the same game as well. Furthermore, publishers often apply localised pricing to better reflect the value of items in local currency, and not just a currency conversion. For example, the lowest pricing tier for in-app purchases in USD is $0.99, while the lowest pricing tier in INR (Indian Rupees) is Rs. 10, or $0.13 (At INR 75/USD). This allows publishers to try to increase

revenue through achieving more volume (i.e. payer conversion) rather than trying to increase the average revenue per user (ARPU).

This model also somewhat alleviates the primary drawback of the in-app purchase model, i.e. all purchases are completely optional. By serving advertisements to all users, the business can monetise the entire user base and earn some revenue (rather than none).

Another lever that businesses operate in free-to-play is to offer users an option to turn off ads by making a purchase. Ads are often seen as intrusive (Taylor, 2009), annoying, and triggering avoidance behaviour (Yeu, M., Yoon, H., Taylor, C., & Lee, D, 2013). A SensorTower report in 2020 found that the median price of in-app purchases on iOS had reached $5.99 in the United States. To make the same amount of revenue, the game would need to serve nearly 500 advertisements, which is an unreasonably large number of advertisements from a single user. Allowing the user to make a purchase to turn off ad is often considered to a win-win situation, since the user is able to remove their source of annoyance, and the publisher was able to earn revenue equivalent to several hundred advertisements at once. There are several other factors that have contributed to the rise of free-to-play, and this is discussed in the next section.

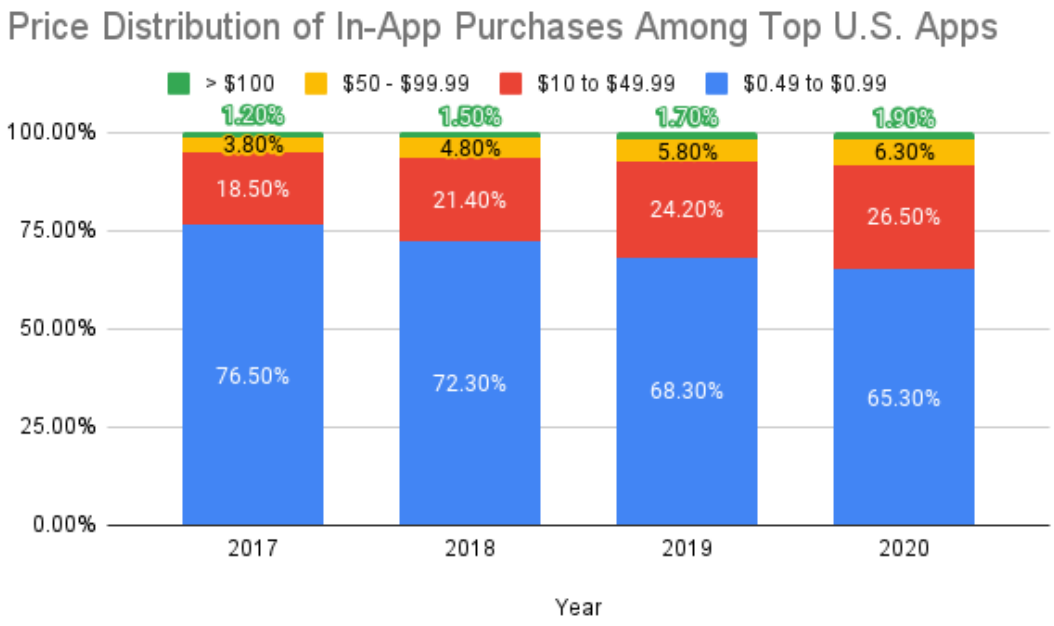

Figure 2.5
Price Distribution of In-App Purchases Among Top U.S. Apps, 2017 - 2020

2.5.8 Subscription

As the name suggests, this business model is centered around encouraging users to become paying customers by subscribing to a recurring service. Subscriptions offer users a variety of value, ranging from unlocking additional features (such as additional filters in a photo editing app), more utility (additional cloud storage for photos), and miscellaneous benefits (remove a watermark). Subscriptions have grown in popularity in several categories of apps, including games. A report by Sensortower in 2021 states that approximately 53 percent of apps that include in-app purchases also include subscriptions, up from 35% in 2017. Moreover, around 16% of these apps removed one-time purchases altogether and replaced them with subscriptions (Sensortower, 2021).

Another report from 2019 by Sensortower noted that U.S. Subscription revenue grew 21% in 2019 to $4.6 billion (Sensortower, 2019).

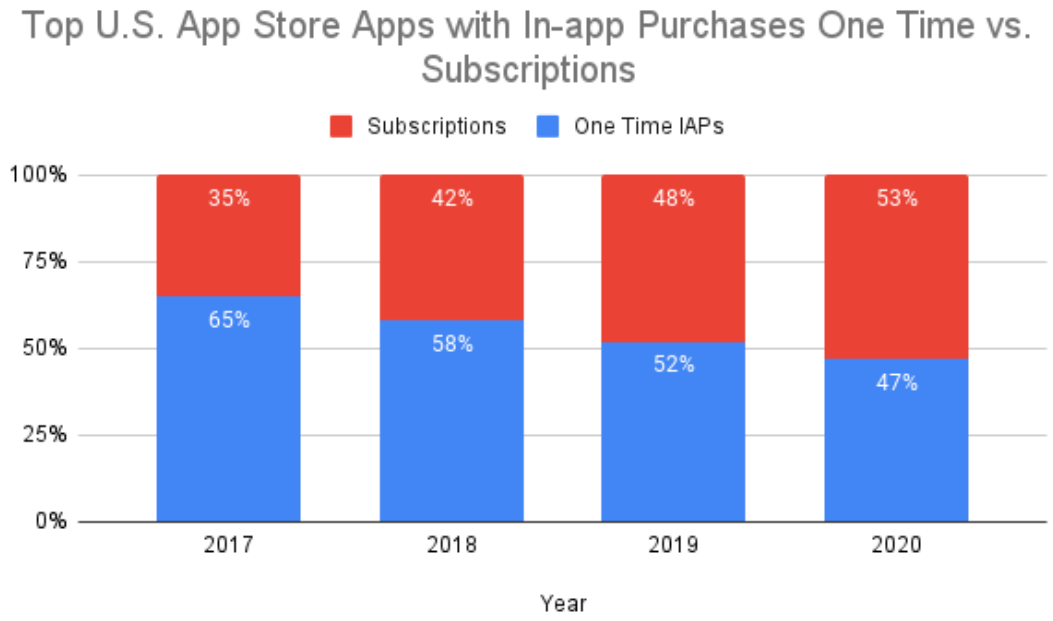

Figure 2.6
Top U.S. App Store Apps with In-app purchases One-Time vs Subscriptions, 2017 - 2020

While subscriptions are predominant in the photo and video apps category, with over 54% of apps in this category offering a subscription, subscriptions in games too have gained traction, though not at the same rate, with 11% of games offering subscriptions in 2017, and 18% in 2020. More important to note, is that several of the top grossing mobile games, such as Roblox, has now integrated a subscription into the product (Sensortower, 2021).

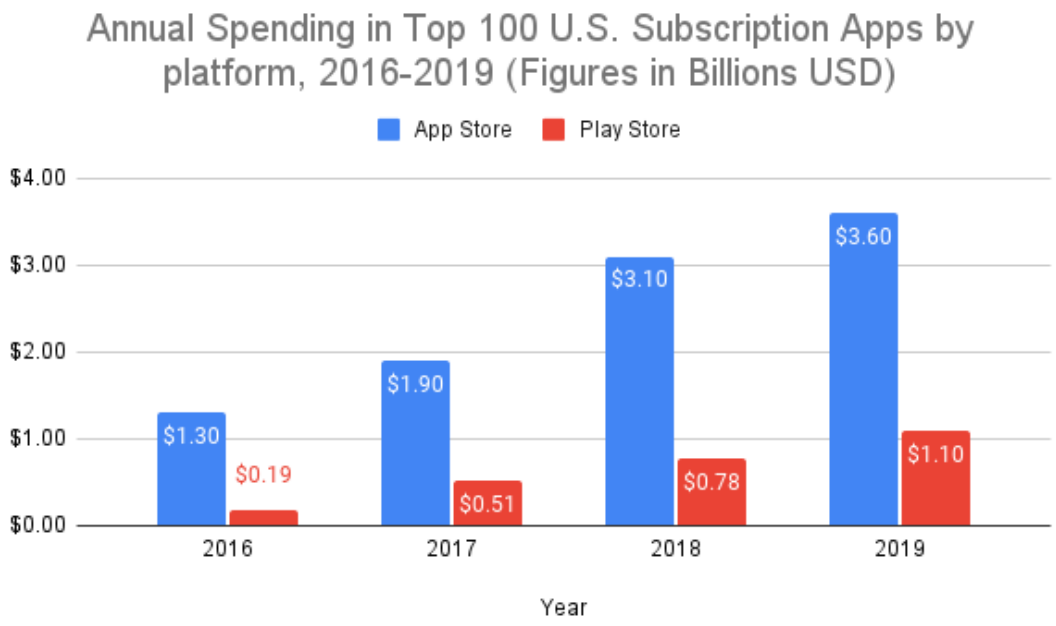

Figure 2.7
Annual Spending in Top 100 U.S. Subscription Apps by platform, 2016 – 2019

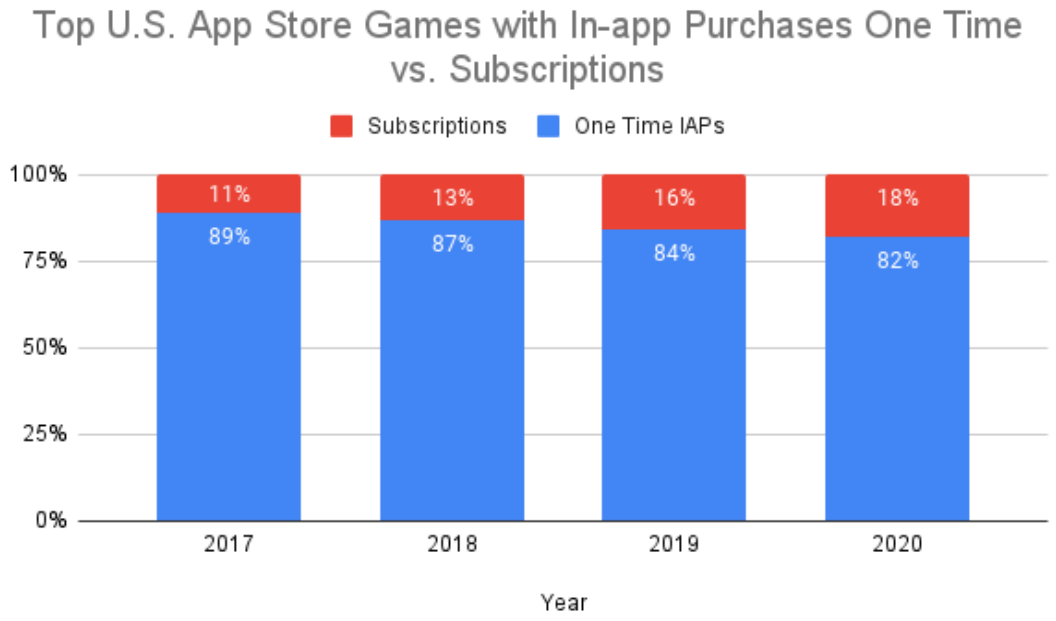

Figure 2.8
Top U.S. App Store Games with In-app purchases One-Time vs Subscriptions, 2017 - 2020

One of the challenges for the subscription model is the continued offer of value, at a price point that is deemed reasonable by the user. This value versus price comparison is easier to perform when the offering is related to the users' primary usage of the application (such as a pro subscription in a photo editing app for a photographer), or a large saving versus individual purchases (such as unlimited access to movies and TV shows on a streaming app like Netflix versus paying for each movie or episode individually).

This value attribution is harder for users to perform in a game, unless the subscription is directly related to access to the game itself, such as the monthly subscription to play World of Warcraft. Since most mobile games are free-to-play, the offering from the subscription must fulfil a burning need.

Subscriptions in games have both great examples, such as Roblox, which offers additional avatars, additional value for all purchases made while the subscription is active, the ability to trade, among other benefits (Roblox), and poor implementation, such as the Gold Pass in Mario Kart Tour, a $4.99 monthly fee to access several parts of the game (Polygon, 2019).

Another layer of subscription services has recently been introduced by the first party themselves, with Apple's Apple arcade and Google's Play Pass. These services offer players a large bouquet of games at a single price. Both services cost $4.99 a month at the time of writing. While the games available in these services are not the same as the free-to-play games available otherwise, it does pose an additional challenge for games that are not part of this service to drive home their value proposition. Because users now have a choice of playing multiple games at a single price, versus additional features and benefits

from a single game, not only does the benefit have to be very significant, but also users now need to be very involved with ONE specific game to continue to invest in the subscription. The subscription model though is being touted as a potential next step for in-app purchases.

2.5.9 Play to Win

In this model, users are incentivized to deposit money into a game, and play for a chance to win real money. The play-to-win model has two sub-types, namely chance-based games, and skill-based games.

In chance-based games, users play games to gain entry into a sweepstakes meta game in a chance to win the overall prize pool. Typically, the longer the user plays the game, the more entries they earn in the sweepstakes. Therefore, the user is incentivized to constantly engage with the game in the hope to win the big prize. A popular example of this type of game is “Coin pusher – Fruit Camp”. In this game, users play a coin pusher game to win entries into the sweepstakes. It is important to note most of these games do not offer consolation prizes or real money pay-outs for simply playing the game. Furthermore, the pay-outs to players have minimum thresholds that the user must cross before being paid, leading to long periods of engagement if the user wishes to cash out their winnings. For example, the threshold for pay-out is $100 in “Coin Pusher – Fruit Camp”.

The other kind of play-to-earn game are games of skill, where users can buy into a game and play against other players to win a prize pool. In these games, the skill of the user determines the outcome of the game, rather than chance. The game will typically offer

several levels of buy-in, ranging from a few cents to several dollars, with the winner taking all minus a cut for the publisher. One of the most popular play to win games in India is “Dream11” by Dream11 Pvt. Ltd. Dream11 is a fantasy cricket league, where users can create their own cricket teams with a certain budget. Users earn points based on the performance of the players chosen and the users with the highest scores win the prize pool. Dream11 is an example of a game where multiple users compete for the prize pool. Another example of a skill-based game is “Blackout Bingo” by Big Run Studios Inc. In Blackout Bingo, users are pitted in 1v1 games with the player with the most bingos at the end of a round taking the prize pool. Each round of bingo against other players involves a buy-in raging from a few cents to several dollars.

It is important to note that both Google and Apple do not allow games that offer real-money pay-outs on their respective platforms unless very specific terms are met (Google, 2021, Apple, 2021). Therefore, games in this genre are few and far in-between and publishers of games of this genre have to resort to “creative” ways to distribute their game through these stores. The researcher reached out to Big Run Studios and Coin Pusher Studio to understand how their games were listed on the App Store and Play Store but received no response.

2.5.10 Play to Earn

The Play to Earn model is fairly new, entering the industry less than five years ago. In this model, users play the game to earn currency that holds real world value. Typically, each game has its own currency, or “token” that is tradeable in an open market

where the value of the token is determined by supply and demand economics. This model is most often found in crypto-games, i.e., games built on a blockchain.

In the crypto implementation of this model, the in-game currency, commonly called a "token" is built on top of an existing blockchain and the blockchain's cryptocurrency. The token is often listed on a cryptocurrency exchange to allow users to buy and sell the token on demand.

The token's value is determined by the following factors

- The popularity of the game
- The value of the underlying cryptocurrency

The popularity of a game directly affects the value of the token used in the game. The more popular a game, the more the token of the game is traded on the open market. This phenomenon is known as liquidity. The other aspect affected by popularity is the frequency of trading. Popularity typically is directly proportional to the frequency of trading. A high liquidity, high frequency token has the highest value accrued over time. Tokens with low liquidity and low frequency do not normally gain value, and often lose value instead.

The second dimension of a token's value is the value of the underlying cryptocurrency. Because the token used in a game is tied to a cryptocurrency, the value of the token proportional to the value of the underlying cryptocurrency.

The third dimension of a token's value is the rate at which the token is introduced and removed from the market. The more often this happens, the more volatile its value becomes. Games which are able to persuade their users to lock-in their tokens into the

game's ecosystem through a variety of methods are able to increase the value of the token over time, benefiting all stakeholders, including the players.

It is interesting and quite important to note that the play to earn model is the ONLY model that currently exists that allows players to derive monetary value directly from playing the game, and without engaging in other ancillary activities such as streaming or reviewing games. Because of this, this business model has been garnering a lot of interest among publishers who look to grow their business alongside the community.

2.6 Popularity of the free-to-play model

Several studies by academia and the industry have concluded that free-to-play is the frontrunner among the various business models available today. Alha et. al commented F2P had become increasingly popular as far back as 2014 (Alha, Koskinen, Paavilainen, Hamari, Kinnunen, 2014). The same was confirmed in another paper by Hernández & Volter (2014). This has only become truer today, with over 95% of games available on the App Store being free-to-play. It must be stated, however, that this may change with the play-to-earn model.

There are several reasons for the rise in popularity of the free-to-play model. As discussed in the previous section, the game is made available for free. This allows publishers to reach a larger audience and potential customer base (Paavilainen et al., 2013). In a premium game, the reach is much smaller due to the up-front cost associated with the game. While buying decisions are easier these days with information from review sites, blogs and videos all made available easily for potential customers, it is still

magnitudes harder to convince users to spend their money up-front and convert them to paying customers.

Furthermore, by allowing users to make optional purchases for virtual goods, publishers can set flexible price points for players with varying propensities to spend and willingness to pay for these items (Paavilainen et al., 2013). In premium games, the revenue from all players is fixed. This gives F2P games a huge advantage. For example, an article in 2015 supposed that a player from *Clash of Clans* allegedly spent over $1 million on the game. (BusinessInsider, 2015). It is hard to fathom circumstances under which a commercially available game made for retail sale under the premium model can ever be sold at stratospherically high prices.

Also, the TAM for premium games is limited to only people who are willing to pay money upfront before experiencing the content offered in the game, while the TAM for free-to-play games is anyone who is willing to try the product out with no obligations to pay for it ever. This makes the top of the monetization funnel for free-to-play games magnitudes larger than premium games. Therefore free-to-play games another massive advantage because these products may be able to convert a small portion of a very large audience into paying customers.

Additionally, most free-to-play games are updated with new content, gameplay balances, security fixes regularly, while most premium games will only sporadically release new (and often paid) additional content. This games-as-a-service (GaaS) approach enables developers to iterate on the product to better address the goals of customer acquisition, retention, and monetization. (Hamari & Lehdonvirta, 2010; Hamari & Järvinen, 2011;

Hamari, 2011). In fact, Liu et al. states that free-to-play is not only a financial model but also a marketing approach at the same time.

Because of this constant evolution of the product, free-to-play games are able to quickly pivot and can capture value from seasonal content (such as content around holidays like Christmas), pop culture and current events. Premium games, on the other hand, typically have much longer-term plans and are unable to accommodate such changes fast enough.

2.7 Risks of the free-to-play business model

2.7.1 Revenue generation

Since free-to-play games do not charge users a fee to play the game and rely on optional purchases for in-game items with no tangible value, generating revenue is the largest challenge. Industry estimates put paying customers for free-to-play games between 0.5% to 2% across all games. This means that the business assumes a sizeable risk to develop, deploy, market, and maintain the game even before it has an opportunity to monetize. This is unlike other traditional business models where money exchanges hands at the time of sale. According to Davidovici-Nora, from the point of view of the consumer, there are three “phases” in the lifecycle of a game. Monetization (When the user purchases the game), Acquisition (When the user first begins playing) and Retention (When the player continues to play the game). In free-to-play, the monetization step is moved to the end, and is also optional, hence reducing the certainty of profitability. This leads to the main paradox of free-to-play where a game can be a hit without being profitable (Davidovici-Nora, 2014). This is very apparent in the App Stores today, with

games earning several million downloads, but still struggle to achieve profitability. In fact, most games rarely become profitable ever.

2.7.2 High failure rate

Continuing the previous point, only a fraction of games that follow the free-to-play model ever achieve profitability. In fact, the failure rate of a free-to-play is so high, it is surprising that the model has reached such a large-scale adoption among publishers. The only plausible reason for this level of adoption is the potential of a very high upside to a risky downside.

It is also understood in the game development industry that a single success at any level does not guarantee success in future products. Most businesses that have been able to produce a game that has reached a large audience along with a rich revenue stream has rarely been able to replicate its success, leading to them being ignomously referred to as "one-hit-wonder".

To reduce the risk of failure of a new game, publishers often soft-launch the game. A soft-launch is the process of releasing the game to a small sub-set of the target market, ideally in a geography where the lifestyle, language and purchasing power of players are similar (For example, titles that are meant for a US audience are often soft launched in Australia and New Zealand). During the soft-launch, businesses can monitor the behavior of the users in their game, make adjustments and validate their theories about the game. Only games that pass this soft-launch process are made available to everyone in the world, while the ones that fail are quickly sunset. This has caused soft-launches to

become veritable graveyards of games that were never meant to be. However, businesses prefer this route because it is quicker, cheaper, and less damaging when compared to launching a flawed product to the entire market and then facing failure at a much larger scale.

2.7.3 Recurring development costs

The cost of supporting a free-to-play game is usually higher than premium titles. Free-to-play games are often developed after launch and kept up to date. This process is termed *Live Operations* or *Live Ops* for short. A similar interest to continue to evolve premium titles is not necessarily there, since the business has already derived a profit from it. (Alha et. al, 2014). This development cycle requires the business to continue to burn money at a high rate while they try to recoup their initial investment. This dramatically increases the risk exposure of the business and can lead to potential failure if the business does not if it does not generate revenue at a pace that can support additional development.

This phenomenon is very visible in titles that have reached a level of success during some part of their lifecycle (such as AmongUs in 2020) followed by a drop in interest over time. During the peaks of customer interest, businesses invest additional time, money, and resources into their product often under the erroneous assumption that their current success will continue in the future as well. When this does not happen, publishers have to often risk-taking shortcuts by walking back statements made to the community about improvements and features.

2.7.4 Payer conversion

This leads to the next issue: Not only does the business have to generate revenue after the player has made the acquisition decision, but the business also requires doing this on a very small subset of paying customers. In 2011, Lovell created a taxonomy of players within a F2P environment, classifying users into four distinct buckets based on increasing lifetime value. These were: *non-payers*, *minnows*, *dolphins,* and *whales* (Lovell, 2011). These buckets represent the life time value (LTV) of users in increasing order, with non-payers contributing no revenue, and whales spending the highest per player. This does not mean that whales are the highest contributors to revenue as a cohort.

The ratio between these buckets varies from game to game. (Lovell, 2011), but whales form a tiny fraction of an already small percent of the player base. Although other buckets may generate more revenue overall, whales form the segment that influences revenue the most.

Any cohort except the non-payers can be the highest contributors to revenue, and this vastly differs for each product, and can differ within the same product based on its age. That said, because whales are the highest revenue generators, and businesses will often try to move as many players as possible from the other cohorts into the whale bucket. This forces businesses to encourage this small segment of users to continually spend increasingly larger amounts of money. This is commonly referred to as "*whaling*". This pattern has led to several players spending enormous amounts of money on games,

sometimes in cases where their disposable income may not be large enough to support such behavior. These tactics are often driving a core behavior tenet (such as fear of missing out, or FOMO) and are largely seen as predatory. In some cases, there have been discussions around monetization mechanics leading to addictions found typically in gambling. This is discussed more in the section below.

Regarding payer conversion, Hanner & Zarnekow made certain observations

- The probability of a user to convert to a paying customer will decrease with the time passed before the user starts playing.
- The probability of a users' retention will increase with every made purchase
- The amount of money that users are willing to spend on virtual items will increase with every purchase made

Of this, the first observation is most critical for free-to-play games. Businesses have a finite time window within which they require to convert users into paying customers. An industry report by Swrve in 2019, found that 25% of purchases in games took place within 40 minutes of installation (Swrve, 2019). Even after the first purchase is made, it gets exponentially harder to get customers to make additional purchases. Customers need to continue to see value in the game and the game needs to constantly encourage players to make additional purchases.

An interesting phenomenon to note here is that most free-to-play games do not have a spending cap by design. This, however, also leads to repeat customers to be disillusioned, as they are forced to chase the "next thing" constantly and are therefore less inclined to

make future purchases. Successful games using this business model have found methods to drive purchases without causing said disillusionment, thereby finding a “sweet spot” in the monetization curve.

2.7.5 Micro-economic considerations

Next, profitability in free-to-play games is not a direct function of installs but is based on the performances of individual item sales. Businesses must therefore be able to analyze the demand for each item they sell and adjust their strategy to maximize their profits. Items that are popular among users today may not be so in a few weeks or months. Because games are in-silo, it is hard for businesses to anticipate potential shifts using macroeconomic trends.

Further, pricing of items is arbitrary and vary between $0.99 and $99.99 in most games. This is because each game is a self-contained micro-economy as currencies between games are not transferable. Therefore, it is up to the business to determine what price points will be able to convince its users of the value of a purchase. Pricing items incorrectly will almost always result in users being unwilling to make purchases. Identifying issues related to pricing is also difficult because the volume of users making purchases is typically small, and therefore variation in sales is harder to attribute towards specific causes, including incorrect price-value combinations.

In fact, the micro-economics of gaming is a large topic in itself, and game monetization practices is a field in gaming economics that grows faster than the games themselves (Markopoulos et. al, 2020). In the past 5 years, there have been several businesses that

have created their business around monetization of games through the application of machine learning (ML) and artificial intelligence (AI). Other businesses exclusively focus on helping studios monetize their existing products more efficiently by providing insights that are derived from deep analyses of the competitive landscape.

2.7.6 Changing landscape and competition

The video game industry is one of the most grueling and toughest environments for companies to compete in; short time frames (Sotamaa & Karppi, 2010) and changing consumer demands (De Prato, Feijóo, & Simon, 2014). Furthermore, these changes can occur during the course of development of a game. Paradigm shifts happening could cause businesses to have to abandon products under development causing a complete loss of capital invested. The inherent risk is the nature of this sector. With developments occurring at a higher pace in the video game industry, industry life cycle changes have become a predominant factor to consider regarding the development of video games (Zackariasson & Wilson, 2010).

It is worthy to note that this risk is not just restricted to free-to-play games, as changing trends can mean the end of any product. However, free-to-play games are more adversely affected because they generate no revenue before completion, while products following other models may still be able to generate some revenue. Since free-to-play games often integrate current trends, a shift in the trend can completely stall or permanently end it.

2.7.7 Marketing challenges

Marketing and user acquisition are an additional challenge for free-to-play games. There is severe competition to acquire users for games. The cost to acquire a customer (customer acquisition cost, or CAC) usually ranges from a few cents to several dollars, depending on several factors including genre, geography, target age group and gender. Even though the games are themselves free, businesses often spend several thousands of dollars in acquiring users with the intention of converting them to paying customers soon after the acquisition is completed. This often means that the business begins this transaction with the user in a net-negative position, rather than a net-positive in the case of premium games.

There is a proven strong correlation between a game's revenue and its position in the top grossing charts on the App Store and the Play Store. The more revenue a game makes, the higher it is on the list, and is therefore more visible. This leads to an increase in downloads, which in turn generates even more revenue. This cycle is endless, and results in the list of top games being fairly stationary for several years! For example, Clash of Clans by SuperCell has consistently ranked in the top 10 since its release almost a decade ago. As Alha et al. noted in 2016, this makes it incredibly difficult for any new entrants to rise to the top (Alha, Koskiinen, Paavilainen & Hamari, 2016)

Critical reviews, which are a major influencing factor in purchasing decisions for PC and console gaming are ineffective for free-to-play. There are fewer free-to-play games reviewed by critics, and they tend to have lower scores than games with other monetization models even if they dominated the top grossing charts (Alha, Koskiinen,

Paavilainen & Hamari, 2016). It has also been fairly accepted that critical reviews are usually negative towards mobile free-to-play games.

This leads to the conclusion that the mobile games industry is a volume driven. To reach profitability, businesses need to acquire users at a low cost, and maximize their efforts to convert them to paying users. The inflection point is when lifetime value (LTV) of a user becomes higher than the customer acquisition cost (CAC, also known as CPI or Cost per Install). There are entire sub-industries that exist for the purpose of reducing and optimizing the cost of acquiring users. Ad companies have grown to billions of dollars in value by helping publishers find installs for a relatively low cost through the collection and parsing of personal data to serve hyper targeted ads.

2.7.8 Ethical and legal considerations

The largest criticism about free-to-play has been about the ability to spend large amounts of money to get an unfair advantage over non-spending players. This is often called *pay-to-win*. Successful developers have often combatted this by having an element of skill in the game. This ensures that a player's own skill determines the outcome more than the money they spent in game.

This relates back to whaling, around there have been active debates about the ethical ramifications, with some sides claiming it to be an addiction and others saying it was based on rational decisions (Sinclair, 2014).

Studies have found that people who have a median income over £90,000 per year rarely spent on microtransactions, while players in lower income groups spent the most

(Priceonomics, 2018). Encouraging whaling among lower income groups can be construed as exploitative and unethical. A player of the free-to-play game *Final Fantasy Brave Exvius* spent over $15,000 on the game over several weeks leading to severe debt (Polygon, 2018). Another player spent over $70,000 playing Sony's *Fate/Grand Order* (WSJ, 2018). There are several other documented examples of this behavior.

In recent years, microtransactions have come under legal scrutiny after the introduction of *Gacha* (short for gachapon, a traditional Japanese vending machine that doles out random prizes) or *Lootboxes*. These lootboxes contain random in-game rewards, and therefore its inherent value was variable while it's price in currency was fixed. A player can open a lootbox and get rewards ranging from mundane to exceptionally rare. This behavior has been analogized with gambling and there has been regulation ranging from oversight committees in parts of Western Europe to complete bans on lootboxes in Belgium and Netherlands (BBC, 2018)

2.8 Challenges faced by startups

This section covers broadly the various challenges that start-ups face. These problems apply to start-ups in general, not just businesses in the gaming industry.

2.8.1 Capital

Raising capital has become easier in the past decade but remains a key challenge faced by start-ups at any stage. For a start-up, inadequate financial capital has the most significant negative impact on its survival and performance (Matshekga & Urbvan,

2013). More so, it is important to not just raise capital, but also manage it through investments and spends judiciously. The utilization of capital is one of the most important decisions that a start-up promoter can make (Bruton et al., 2013). In 2016, Andaleeb et al. identified five phases of investments of a start-up: namely self-funded (also known as bootstrapping), friends and family, seed, growth (or early-stage) and expansion (Andaleeb & Singh, 2016).

The availability of capital and sources differ in each phase. Earlier phases such as the bootstrapped and friends and family stage typically have limited sources of capital and are often funded through the personal wealth of the founders and their well-wishers. This is due to a variety of factors ranging from lack of prior experience for the founders, the risk averseness of financial institutions to a new business, unproven business models among others.

Later phases open up funding sources such as private or government grants, angel investors, venture capitalists, incubators, bank loans etc.

Businesses often fail in the earlier phases due to the capital constraints. Simply put, most businesses run out of capital before they are able to become profitable.

2.8.2 Role of the government

Prior studies have identified that tech start-ups are heterogenous within emerging economies (Bruton et al., 2013). In North America and Europe, where nations have developed economies, the resources required, the operations and other considerations for a start-up tend to be vastly different than those of a start-up in an emerging economy.

This can be attributed to the scarcity of such resources in emerging markets, and this leads to start-ups in emerging markets to accumulate and deploy these resources differently (Bruton et al. 2013).

This is where the government plays a significant role. For example, in China, the venture capital industry is robust where the government plays a large role in infusing capital into the start-up economy through VC firms (Ahlstrom, Bruton & Yeh, 2007). In India, however, this is a relatively new concept, and the government has only recently begun taking steps to enable funding of start-ups through initiatives such as Startup India.

Furthermore, the lack of a developed capital market in India leads to a severe shortage of available capital for start-ups in the country. This can only be addressed through government initiatives that focus on alleviating this issue.

2.8.3 Competitive advantage

In 1984 Wernerfelt presented a theory where he described a firm as a "bundle of resources" which were critical for its performance and maintaining a competitive advantage (Wernerfelt, 1984). The "Resource-based view" theory, as it is called, has been adopted by several researchers to investigate the competitive advantage and performance of several firms. A firm can be deemed to have a competitive advantage if it is developing a product that is not being developed or duplicated by its current or potential competitors (Nason & Wiklund, 2018). To reach this lofty goal, a business must continually innovate. To achieve continuous innovation, businesses require to invest in

resources that are both tangible and intangible. One of the most important resources to consider, talent, is covered in the next section.

2.8.4 Talent

Businesses must continually aim to improve their access and use of talent available in the market. This is particularly true for technology-based start-ups, where acquiring skilled and experienced employees is critical to the growth of the business and maintaining its competitive advantage (Matshekga & Urban, 2013; Unger et al., 2011). It has been clearly identified that the quality of talent directly relates to the success of a start-up (Unger et al., 2011).

Talent, or lack thereof, is also often a by-product of the culture of a nation. Certain profiles are not viewed as "professions", instead seen as frivolous. The games industry in India is certainly faced with this issue, where the culture of the country focuses on producing engineers and doctors, leading to a starvation of talent in the creative fields. It is not an uncommon scenario in India for professionals in the games business to be questioned or summarily judged as less of a professional.

2.8.5 Network effect

The so-called "network effect" is a phenomenon that has become increasingly integral in the success of a start-up. Network effect, or social capital, can be defined as the network of connections that a business builds through its customers, vendors and partners. Several studies have clearly demonstrated that the network effect has a strong

co-relation to the success of a business, as they open up channels for talent, finance and other resources required to succeed (Baum et al., 2000, Shane & Cable, 2002). Particularly, it was found that networking with investors who have invested in start-ups was a significant prerequisite for the performance of a start-up (Hsu, 2007; Kerr & Nanda, 2009)

2.8.6 The team

Traditionally, businesses have been built in the top-down approach, where all the executive power was concentrated around one person, typically the CEO. This has been changing recently to distribute the responsibilities over multiple C-suite executives. This is also noted by academicians like Day et al., where it was opined that broadening the leadership would assist in the expansion of start-ups (Day et al., 2004). There are also documented examples by Pearce et al. where they suggest that a diverse leadership team leads to better innovation and creativity (Pearce et al., 2006). This leads to the conclusion that the founding/executive team has a large role to play in the success of the business and have been chosen after careful consideration

2.8.7 Prior experience

It is no surprise that founders/promoters with prior experience in running businesses is a huge advantage to any business. A founder with prior experience is aware of financial, technical, and talent constraints, and will be able to better raise, operate and deploy available resources than a founder with no experience (Frid, 2014; Hsu, 2007).

Furthermore, founders with prior experience will have larger networks comprised of providers, partners and sources of capital which they can tap into to fulfil the business' needs. It has also been documented by Seghers et al. that prior relationships between founders and service providers leans in favour of the founder due to the mitigation of information asymmetry (Seghers et al., 2012)

CHAPTER III:

METHODOLOGY

3.1 Introduction

This section will articulate the various aspects of how the research will be conducted, the guiding principles, the nature and philosophy of the research.

There are two main research designs used in academia, quantitative research design and qualitative research design. The quantitative design is primarily about examining the relationship between variables. It involves generating data from samples and analyzing them using statistical techniques and works well with the deductive approach. Qualitative research design, on the other hand, is used with the inductive and abductive approaches. This research design often involves interviewing people, asking probing questions and deriving insights. While quantitative research design involves examining the relationship between variables, qualitative research design involves examining the relationship between entities. The research being presented is a descriptive study and looks to properly explain the various phenomena around the success or failure of businesses. Therefore, qualitative research design will be employed.

The data collection process is summarized below

1. Create a screener survey for potential interviewees.
2. Create a set of probing questions to ask each interviewee. Each interview should last an estimated 45 – 60 minutes.
3. Fix a period for the interviews to be held

4. Reach out to potential interviewees through various channels such as LinkedIn, email, messaging services etc.
5. Ask each responding individual to complete the screener survey
6. Potential interviewees who meet the criteria of the survey will be shortlisted and an email will be sent to each of them introducing the research
7. Each interviewee will be sent the interview consent form and details of the study, along with an explanation of their rights
8. Each interviewee will be asked to sign and return the consent forms.
9. A date and time will be fixed with each interviewee for the interview
10. The interview will be conducted over a video conferencing tool such as Zoom, and will be recorded. Interviews will be conducted in English
11. A copy of the recording will be provided to the interviewee for fact checking and confirmation. The recording will be transcribed soon after the conclusion of the interview.
12. Each interviewee will be asked a series of probing, open ended questions to best capture their life experience.
13. The researcher will use observation techniques to ask deeper, more pointed questions based on the interviewee's answers
14. The core question and sub-questions of the research will be answered through an abductive approach.

The interview is constructed as a set of semi-structured questions presented to the interviewee in a set order. The researcher may choose to ask more pointed questions to obtain more details or gain more insights.

The participants for this research will be chosen carefully across mid to senior roles, including and up to co-founders and promoters. The potential candidates will be chosen from business of a variety of sizes, revenue, and age. Candidates chosen this way will provide a rounded and more accurate depiction of the various problems that their businesses had faced.

The interview questions are prepared well in advance, and the interviewee is made aware of the time and date of the interview beforehand so that they can best prepare for the process. Since this research involves discussion of potential business secrets, internal knowledge, and business health, it is important that the researcher gain the utmost confidence of the interviewee. This is done by explaining to the interviewee their rights and by explaining the interview consent form in detail. Furthermore, the researcher will remind the interviewee about their rights at the beginning and the end of the interview. During the interview, the researcher will not use detailed written notes, and rather record the entire exchange. The interview will be done over a videoconferencing app like Zoom, with video turned on for both the researcher and the interviewee. This is done so that the researcher can observe the interviewee's reactions to questions, and their body language while answering. The researcher may take short written notes to capture important pieces of information and to phrase proper follow up questions.

After the data collection process is completed, the researcher will codify all the important sections of each interview and use an abductive approach to identify one or many key metrics and business practices that occur commonly across these businesses that contributed to their success. As a result, the themes that emerge will be used to create a framework for aspiring businesses to adopt and increase their chances of success.

3.2 Research Questions

The purpose of this study is to understand why certain businesses in the mobile games industry in India are able to achieve profitability and sustainability. The participants chosen for this study were from the mobile games industry in India, and the target audience for the results are the same.

This research aims to answer the following central question and sub-questions

Central Question: What are the business strategies and practices of a start-up company to build a profitable business in the mobile games industry in India?

Sub Question 1: What are the primary challenges faced by the business before attaining profitability?

Sub Question 2: How is the business maintaining sustainability?

Sub Question 3: What are the key learnings that have been arrived at?

Sub Question 4: What are the specific markers in these companies that premeditated their success?

3.3 Research Design and Strategy

To answer the research questions proposed in the previous section, the researcher will apply qualitative research design. The researcher will use semi-structured interviews and ask open ended, probing questions. During the interview, the researcher will note several observations through the course of the interviews. The data obtained from these interviews will be codified by the researcher and will be used to form themes. These observations will then be used to formulate the most likely scenario or explanation for the phenomenon.

The investigation undertaken for this study will be of descriptive nature. The research will attempt to explore and explain the themes and provide additional insights into the business of games through the creation of a theoretical framework.

The strategy of research is method applied to study the nature of data to produce results in-line with the research objectives. Quantitative strategies are best applied to studies that involve mathematical, statistical, and fact-based approaches, while qualitative strategies are applied to studies that involve the life experiences of subjects.

This research will use a qualitative approach through the means of interviews and examination of the experiences and views of the subjects. Specifically, the interview questions will be designed to delve into the journey of the business, the “eureka” moments, roadblocks, and pivots.

3.4 Population and Sample

Although sampling is essential to the practice of qualitative approaches, it has received less attention than data gathering and analysis. Robinson in 2013 proposed a four-point method for sampling in qualitative interview-based research, which blends theory and process for the following (Robinson, 2013)

- Defining a sample universe by specifying inclusion and exclusion criteria for potential participants.
- Deciding a sample size by balancing epistemological and practical concerns
- Selecting a sampling strategy, such as random sampling, convenience sampling, stratified sampling, cell sampling, quota sampling, or a single-case selection strategy
- Sample sourcing, which includes matters of advertising, incentivizing, and locating potential participants.

The coherence, transparency and therefore the trustworthiness and acceptance of this research are directly related to the extent to which the above points are adhered to in this research.

According to Ziebland et al, the sampling technique in qualitative research is primarily intended to represent a wide range of opinions and experiences, rather than to mimic their frequency in the general population (Ziebland & McPherson, 2006). While the sample size is small, it can still be information and enable the researcher to obtain information that is meaningful, and derive useful perceptions from the interviewees (Creswell, 2003).

Further, because the sample size is small, it enables the interview method to shine, since it only requires a few participants to gather rich and detailed data (Genise, 2002).

Per Roberson, the sample in qualitative research is the result of a careful, complicated, and collaborative process. Sample selection is critical to the research because the sample itself is the data, and addresses the research problem (Roberson, 2005).

To reach a sample, the researcher must first set the criteria. According to Merriam in 1998, this criterion creates a list of important attributes that the sample must possess based on the purpose of the study and its theoretical lens (Merriam, 1998).

The criteria of the research are businesses that are involved in the gaming industry in India as a developer, publisher or both. More specifically, the businesses that will form the scope of the research will be involved in pure-play games for mobile. Businesses that are engaged in creating or publishing games of skill such as Rummy and platforms that allow for users to invest real money to play tournaments and win real money in return will be excluded from the study. The size of the business, both in terms of number of people employed and revenue generated will NOT be a factor for inclusion or exclusion. The interviewees for the study will hold key positions in the business and would have had a large influence in the success of the business.

While the number of businesses in the gaming industry in India is small, it would be impossible to accurately estimate how many such businesses exist. Therefore, voluntary sampling will be initially employed. Potential candidates will be invited to fill out a screener survey, passing which an interview will be conducted with the researcher. The interviews will be conducted online via a video conferencing application or in person,

and will be conducted in English. After successful interviews, interviewees will be offered to refer other potential candidates. This may lead to additional data and people to be interviewed, a core concept of theoretical sampling (Merriam, 1998; Taylor & Bogdan, 1998). The proposed starting sample size is 10 companies and will be increased until data saturation is reached.

3.5 Research Instrumentation

For this research, there were two instruments employed to ensure that the data being collected for the research was relevant, valuable and could potentially assist in the research. The first instrument was a screener survey that all potential interviewees completed to determine eligibility and was also used to plot additional data points for businesses that had not reached profitability yet. The second instrument was the semi-structured interviews that were conducted by the researcher. Details for each of the instruments are given below

3.5.1 Screener Survey

A screener survey was created for all potential interviewees to fill out. The survey was sent out to everyone who was contacted for the purpose of this research. The screener survey was designed after completing literature review, and authoring the core and sub questions to be answered for this research.

The screener survey was designed to achieve the following

- To filter out potentially irrelevant interviewees who may not have been helpful for the research; for example, employees of companies that engage in the business of real money gambling, companies that are not sustainable etc.
- To gain an additional set of data that would help assist the researcher ask pertinent questions.
- To use the data gained in further analyses in the research.

A copy of the screener survey can be found in Appendix B

3.5.2 The Interview

Per Merriam, "Interviewing is necessary when we cannot observe behavior, feelings, or how people interpret the world around them" (Merriam, 1998). Semi-structured interviews are more flexible and therefore allow interviewees to describe their life experience in their own words for the researcher to obtain data from (Creswell, 2014).

To collect data from the interviews, the following process was used

- Each interviewee individually confirmed their willingness to participate in the research
- The researcher had sent the interview questions beforehand to the interviewees, so they could recall relevant information for the interview.
- A date and time for the interview was mutually decided between the researcher and interviewee.

- Each interviewee was explained their rights with respect to this research, along with the details of the research
- Interviewees were asked to sign and date the consent form, found in Appendix G
- The interviews were conducted over Zoom, a video conferencing app and were recorded with the interviewees consent.
- The researcher proposed the interview questions, and asked pertinent, probing questions based on the interviewees responses.

At the beginning of the interview, the researcher introduced the various reasons this research was being conducted. After this, the researcher posed open-ended questions (See Appendix D for the full list of questions) to the interviewee. The researcher ensured to use neutral and non-leading language, so as to not influence or nudge the interviewee into answering questions in a biased manner.

Following are the open-ended questions asked to the interviewee. For the full list of questions asked during the process, please refer to Appendix D

1. Can you please describe what the key challenges you think exist to building a profitable game development business in India?
2. What were the biggest challenges you faced as a business when growing, and how did you overcome them?
3. Can you please tell me a little bit about your founding team, and what the team dynamics are? (Roles, responsibilities etc)

4. If you have raised funds, can you please tell me what your fundraising experience was like?
5. Can you please describe how you have built a profitable business?
6. Can you please describe how you have built a sustainable business?
7. Have there been times when you needed to pivot your business? If so, can you please describe these events?
8. How do you maintain a competitive advantage in your business?

3.6 Data Collection Procedures

Data for this research was collected from two sources, namely, primary and secondary. Primary data is typically defined as the first occurrence of a piece of work. For the purpose of this research, primary data is obtained from the interviewees from the semi-structured interviews. The recordings of these interviews are transcribed and codified by the researcher.

Secondary data is obtained from literature review, where the researcher has perused several articles, journals, papers and books to gain as much information as possible that is relevant to this research.

The researcher interviewed several mid to senior executives for this research. The questions were prepared in advance, and were shared with the interviewees, so they could better prepare for the process.

To codify and analyse the data collected, the researcher prepared by creating a system to assign each interviewee with a unique identifier, working on a framework to store and

retrieve data, building a table to store the frequency of certain key words to form themes, reducing redundancies and removing irrelevant data. By using these procedures, the researcher was able to reduce the data collected to only relevant data to be analysed.

3.7 Data Analysis

Data collection for qualitative research very often involve interviewing people who have lived experience to the research in question. Because the researcher makes decisions on who the relevant interviewees are, it is expected that the researcher also possess the relevant knowledge about the subject matter. This knowledge is obtained through the life experience of the researcher themselves, and the literature review that the researcher conducts to fully inform themselves of the topic under scrutiny. Furthermore, analyzing life experiences is both complex and time-consuming and is open to interpretation by the researcher. It is therefore imperative that the researcher spend time to develop a system to analyze, codify and interpret the data collected. According to Taylor-Powell et. al in 2003, this involves the following major steps (Taylor-Powell, Renner, 2003).

- "Get to know your data" – Understanding the data collected in imperative for good analysis. In qualitative analyses, the data to be analysed should be reviewed several times, so that the data and the context is well understood by the researcher. Further, recordings should be listened to several times and notes must be made by the researcher that may come useful through the rest of the process.

Additionally, the researcher must filter out less informative and potentially biased data.

- "Focus the analysis" – The researcher must first review what the goals of the research are and what they aim to find out. This can be done by focusing on the question or topic. Here, the researcher focuses on how the interviewees responded to the open-ended questions asked during the interview. The data is organised by question, to better identify the consistencies and divergences between the interviewees answers.
- "Categorise information" – In quantitative analysis, information can be categorised by applying numerical codes to variables, and use them in the research. In quantitative analysis, this approach does not work. Rather, the data is organised by themes, patterns and coherent categories. This is the most labour intensive part of the process, but is also the most important part of qualitative analysis. Data should be organised data in a concise way, since qualitative data can be cumbersome and complex. By doing so, data retrieval can be simplified and save the researcher's effort. Data should be categorised into themes by using abbreviations of the theme or themes being applied. During the process of categorisation, new, or emerging themes may arise, and should also be categorised. Furthermore, each category should have labels for relevant subcategories. The most common approach to categorising data is to begin with some themes and add emergent themes as the researcher delves deeper into the data.

- "Identifying patterns and connections" – As data is organised into themes and categories, patterns and connections will begin to emerge within and between categories. The researcher is now responsible for determining the importance of these patterns and attributing varying levels of relative importance based on their frequency and the context in which these patterns emerged. The relative importance of patterns can also be determined by mapping data the central and sub questions the research seeks to answer.
- "Interpretation" – Using the themes and connections formed in the previous steps, the researcher will attempt to explain the findings of the interview. During this phase, it is important to focus on interpreting the data correctly and concisely, and not get distracted by details and in-depth descriptions of the data. In other words, data interpretation is the process of attaching meaning and significance to the analysis. Here, the researcher will form a list of important points and findings through the categorisation and sorting of the data performed earlier. Forming questions such as "What are the major lessons?", "What new things were learned?" and "What will be the most useful results of this study?" will help guide the researcher in the process of interpreting the data in a useful, concise manner.

In summary, the researcher must follow the above steps, especially categorization of the data. To accomplish this, the researcher will first transcribe the video recordings of each interview into text, and then read each interview several times to get familiar with the data being worked with. Multiple readings are also required so that the context of each

answer is not missed or misinterpreted by the researcher, highlighting key passages and information that may have been overlooked in previous readings.

3.8 Coding and analysis

The researcher derived a coding process based on the work of Taylor-Powell (2003). The coding process used in this research was divided into the following phases

- The review phase – The researcher reviewed the interview transcriptions several times to get familiarised with the data. The researcher began with pre-set themes while reviewing the data. During the review phase, new themes began to emerge from the data which were noted by the researcher. Finally, the researcher marked the similarities and differences between the responses from the interviewees.
- The coding phase – The researcher coded the interviews by applying labels to each of the key phrases identified in the review phase. Labels are applied by using abbreviations of the pre-set and emergent themes identified by the researcher. It is during this phase that the researcher assigns relative importance to each theme identified based on their frequency and the value attributed by the interviewees to them.
- The analysis phase – Here the researcher uses the themes identified in the previous steps to explain the various phenomena that arise through the analysis. The researcher uses the patterns that emerged that emerged in the data analysis to highlight and discuss the reasoning behind the interview responses.

3.9 Methods of validation

The quality of a research depends on whether the research is able to withstand the test of reliability and validity. According to the work of Shoaib and Mujtaba in 2016, the research must address the components of dependability, transferability, credibility, and conformability (Shoaib, Mujtaba, 2016). In a qualitative analysis, the researcher achieves reliability and validity by ensuring that the data is trustworthy. This is done through transcript analysis, triangulation, and verification. The researcher analyzed each transcript of the interview several times, sent copies of the same to the interviewees and requested for them to verify the transcript. The researcher also allowed the interviewees to modify the conclusion that the researcher arrived at, thus ensuring that the answers provided were interpreted correctly by the researcher.

Reliability of a research can be defined as the likelihood of the results of similar research, using the same parameters would yield the same results. According to Fusch and Ness in 2015, triangulation is the use of many strategies such as interviews, observations, and literature to gain perspective of the same phenomena (Fusch, Ness, 2015). By using multiple data collection methods, the risk of a single approach is minimized. They further state that qualitative research analysis must use different viewpoints to understand the importance of the analysis. The researcher ensured that the questions asked during the interview were clear, concise, and understood by the interviewee before listening to their responses. After the interview, the researcher sent a copy of the interview recording to the interviewee to verify their responses. The researcher then transcribed the interview and

asked the interviewees to verify its contents. By doing so, the reliability of the study was ensured.

To ensure that the results of the research are trustworthy, the researcher must adhere to the principles of integrity, transferability, and reliability. According to Yin in 2015, the validity of a research is dependent on the quality of the research process, and therefore must not be impaired at any stage. Therefore, the validity of the research is a metric to measure the quality of the research.

Because qualitative analyses depend on the researcher's understanding and interpretation of the data, the results and findings of the researcher must be consistent and verifiable if they are to be contribute to existing knowledge and create additional proposals for research in the future.

3.10 Research Design Limitations

This research does have some limitations that may reduce the generalization of the findings. Since this was a study conducted using interviews, where the sample size was limited, and the interviewees were selected using random sampling and a screener survey, it may be the case that the experiences of these interviewees do not fully capture the experience of all businesses mobile games industry in India. That said, it is imperative to state that the size of the sample is less critical than the quality of the data being generated and analyzed through these interviews.

Furthermore, while the interviewees were given ample time to prepare for the interview, it is possible that they did not recall incidents as they actually happened and may have

missed details that would affect the outcome of the research. Additionally, a fundamental assumption of this study is that the interviewees had the relevant experience and were considered experts in their domain at the time of the interview.

Lastly, while the interviewees were informed and assured that their answers would be kept confidential, there is the possibility that their answers did not accurately depict their lived experience.

3.11 Conclusion

The researcher has explored both the qualitative and quantitative methods of research design. Qualitative research design is applicable when the phenomenon in question is related to the lived experiences of the people involved in the research. The research instruments used for this research were a screener survey to screen potential interviewees, and a semi-structured interview comprising of open-ended, probing questions.

The answers provided by the interviewees were the main source of data for this study, and the responses to the screener survey brought in context to some of the answers. The various procedures for data collection, coding and analysis used in this study were presented and discussed in the above sections. The coding techniques by Tayor-Powell were explained and used to transcribe the interviews, create relations with the data extracted and the findings of the research. Finally, the limitations of the research were stated and discussed.

CHAPTER IV:

RESULTS AND FINDINGS

4.1 Introduction

This chapter covers the results of the research and its major findings. This chapter is roughly divided into two parts: the first part covers the research case, where details about the study, its participants and context for the research is provided. The second part consists of the data analysis performed by the researcher after the interviews were conducted and the findings from each interview.

4.2 The Research Case

This section details the types of publishers and developers chosen for the study, the background of the participants and finally some context about the ecosystem of game development in India. It provides a lens through which the rest of the study can be viewed.

4.2.1 Types of publishers chosen the study

For this study, the researcher considered two approaches to the selection of publishers and developers. All participants that were interviewed passed the screener survey, but not all participants represented companies whose primary revenue model was free-to-play.

The researcher first considered to only interview those participants who represented companies that were engaged with the free-to-play business model. However, as the

research progressed, there were several examples of businesses where other business models had also reached profitability and sustainability. Therefore, the researcher chose to include all business models, as long as the business was profitable. A total of six participants were chosen for the interview process.

The following types of publishers and developers were considered during the interview. Please note that the total of each may not add up to exactly six. Several questions had options to choose multiple answers, therefore the same business may be counted in multiple rows.

Table 4.1
Breakdown of publishers by primary revenue model

Primary Revenue Model	**Number of businesses**
Free-to-play	4
Premium	2
Subscription	2

Next, the companies chosen were at various levels of revenue.

Table 4.2
Breakdown of publishers by yearly revenue

Profit level	**Number of businesses**
Below $250,000	1
$250,001 - $1,000,000	3
$1,000,001 - $5,000,000	0
$5,000,001 - $10,000,000	2

Another conscious choice made by the researcher was to include at least one publisher or developer who was completely independent. While independent (or "indie") developers are not found frequently to be profitable, there are some cases where it has happened. Further, the community of independent developers is large, and they too may benefit from the results of this research.

Table 4.3
Breakdown of publishers by type

Type of publisher	**Number of businesses**
Studios	4
Independent	2

Next, the size of the business was considered

Table 4.4
Breakdown of publishers by size

Size of studio	**Number of studios**
< 10 people	1
10 – 100 people	3
251 – 500 people	2

Finally, the researcher chose businesses with various levels of funding

Table 4.5 Breakdown of publishers by funding level

Funding level	**Number of businesses**
Bootstrapped	1
Seed	2
Series A	1
Series B and above	2

4.2.2 Participant details in the study

The survey was completed by twelve participants, out of which six participants were chosen. Participants were not chosen if they did not have the authority to speak for their company. At this point, two participants were removed.

Of the remaining ten participants, six were chosen based on the business they represented, the details of which are covered in the previous section.

The researcher attempted to interview participants with various levels of experience and exposure to ensure that the data is not skewed in any particular direction.

During the screener survey, participants were asked questions about their role, position, years of experience and how long they were engaged with the business they represented.

It is important to note that the sum total of participants in each table may not equal six. This is because participants could choose multiple answers to several questions.

First, the participants were asked to define all roles (not just primary) that they fulfilled at their current place of work. This was done to get a more holistic view of the participants and their viewpoints.

If participants were asked to choose only their primary role, the answers they provided during the interview may have not been as detailed.

Table 4.6
Breakdown of participants by role

Participant Role	**Number of participants**
Art	2
Design	2
Development	1
Executive	3
Management	3
Marketing	1
Producer	4
Product	4
Revenue	2

Next, the position of the participants was considered. Participants with a variety of roles were included, ranging from mid, to senior to founding members.

Table 4.7
Breakdown of participants by position

Participant position	**Number of participants**
Partner/Founder/CXO	3
Senior Level	2
Mid-Level	1

The experience level of each participant was carefully chosen as well to ensure that a wide range of experiences were considered in the research.

Table 4.8
Breakdown of participants by experience level

Experience Level	Number of participants
5 – 10 years	1
10 – 15 years	4
15+ years	1

The last consideration was the duration of employment with their current organization. This was deemed important because participants who have been associated with a business longer would have a better understanding of the nature of the company and its business. The exception made here is for founders who started their companies recently.

Table 4.9
Breakdown of participants by duration of current employ

Duration of current employ	Number of participants
< 1 year	1
1 – 5 years	2
5 – 10 years	3

The following table describes the length of each interview. Any personally identifiable data has been removed, and each participant has instead been assigned a unique ID that will be used in discussions and quotes. Each interview began with the researcher introducing the research, explaining the process, and ended with a script.

Table 4.10
Summary of participants in the research

ID	Duration	Interview Language	Primary Role
P01	55 minutes	English	Founder
P02	52 minutes	English	Product Manager
P03	55 minutes	English	Founder
P04	73 minutes	English	Management
P05	58 minutes	English/Hindi	Management
P06	61 minutes	English	Founder

4.2.3 The ecosystem of game development in India

To provide additional context to the research, this section has a summary of the game development industry and its growth in India over the past few years.

These figures were also used to provide talking points and context during the interview process, where the researcher and the participant discussed some of these facts.

India is touted as the world's largest democracy, with a population of 1.37 billion people (UIDAI, 2020). India has an urban population of 481 million people, and an urban percentage of 34.92% (Worldbank, 2020).

Economically, India's nominal GDP in 2022 is estimated to be $3.25 trillion (IMF, 2021) and has been growing at a rate of roughly 6-7% since 2011 (Worldbank, 2020) and per capita income is $2,313 (IMF, 2021).

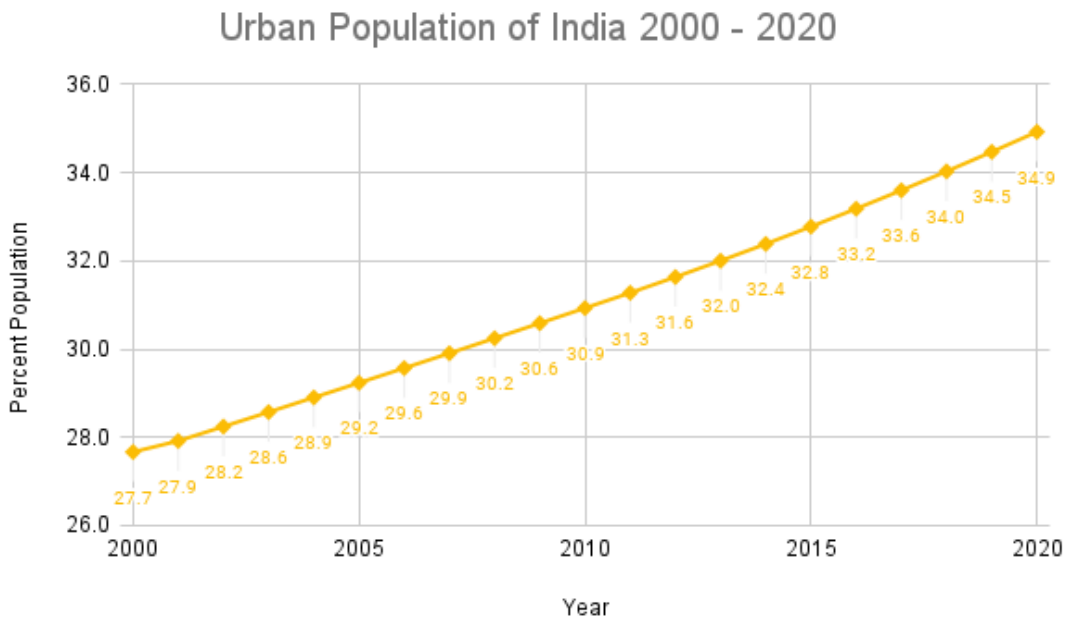

Figure 4.1
Urban population of India 2000 – 2020

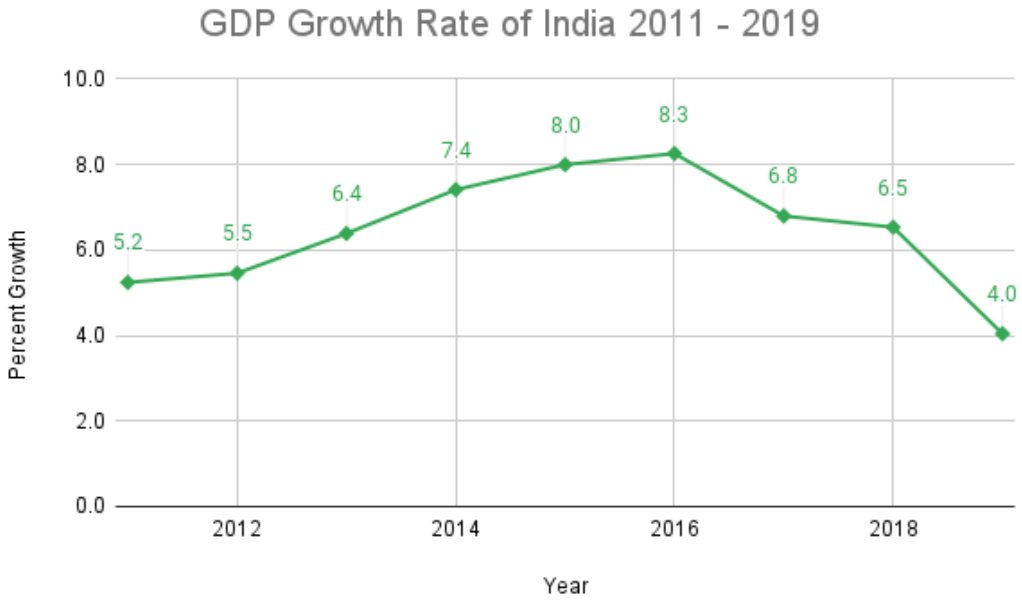

Figure 4.2
GDP Growth of India 2011 – 2019

In terms of labor force, the labor force participation rate (LPFR) was around 47.5% and an urban unemployment rate of 9.36% in 2021 (mospi.gov, 2021). The largest cities in India are Mumbai, Delhi-NCR, Bengaluru, Chennai and form a large portion of urban employment.

The information technology industry has been a large impetus to the growth of these cities since the early 1990s. Since then, the service industry in information technology has become a de-facto choice of urban employment for a large portion of the population. However, these were typically service-related jobs, and few products were created in India. Behemoths such as Infosys, TCS, Wipro and Cognizant all hire several thousand to hundreds of thousands of employees to fuel the service industry.

It was in the early 2000s that start-ups in the technology space began taking root in India. Around a decade later, the gaming industry, which had only a few businesses in the space in India, started to grow. Today, there are several well-established businesses in the game development and publishing industry.

However, talent is still not widely available in India, especially in the game development industry. According to Niti Aayog, the central body for education in India, almost half (48%) of the engineers that graduate are not employable due to lack of basic skills. Per a report on Statista, only 55% of engineering graduates were employed in 2021 (Statista, 2022).

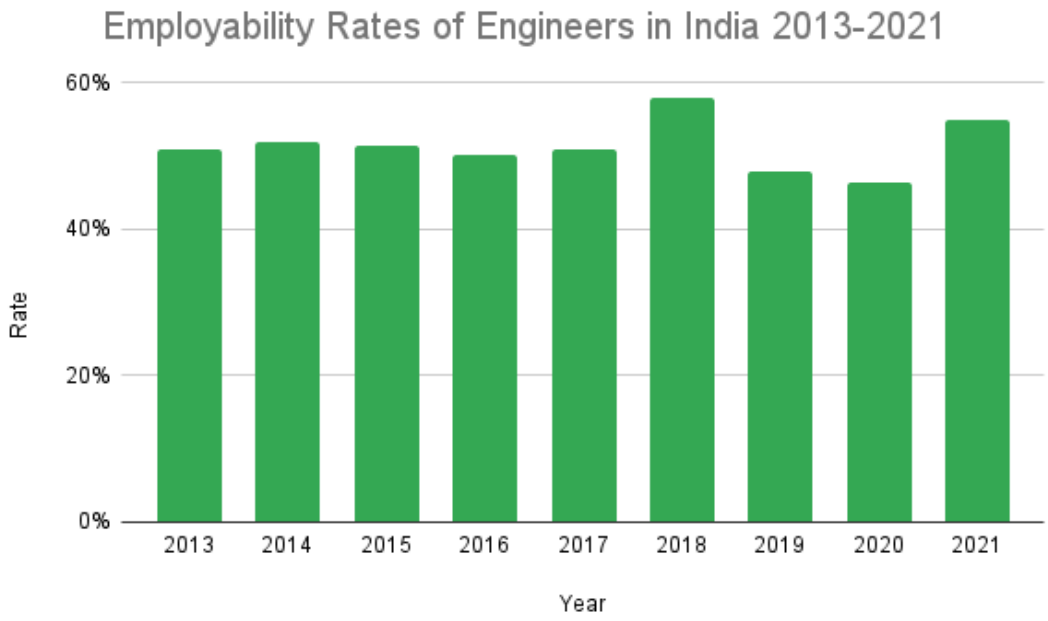

Figure 4.3
Employability Rates of Engineers in India 2013 – 2021

Companies are therefore turning to novel methods of recruiting and retaining employees. One such example is BharatPe, a Fintech company based in India with a value of over $4 Billion which began to give its new employees motorcycles as a joining bonus (Livemint, 2021).

Another adage in India is that perks are viewed in a very positive light. India does not have any laws that require employers to publicly declare the salary paid for a position, or any laws that stop employers from asking for a salary history from potential employees. Furthermore, most companies in India have a policy that restricts its employees from discussing their salaries with their colleagues. Finally, while discussions around pay do

happen among colleagues, it is often considered a taboo subject. Therefore, perks are often used as a proxy by individuals to showcase their career progression.

Regardless of this, the game development industry in India has been growing at a tremendous pace. According to a report by NASSCOM, India currently has over 430 million mobile gamers, and set to grow to 650 million by 2025. Furthermore, the gaming market in India is expected to triple by 2025 and touch a value of $3.9 billion (NASSCOM, 2021). There are more than forty thousand people employed by the industry (Statista, 2021). This number was just twenty-five thousand in 2017. Several large, multinational studios such as Ubisoft, Rockstar, EA, and Zynga have also established their presence in the country, lending more weight to the belief that India is becoming a global game development hub.

In 2022, during the annual budget, the central government of India announced several initiatives around gaming and animation, including the “Animation, Visual Effects, Gaming and Comics”, or AVGC task force, that will certainly boost the growth of the industry even further (BusinessInsider, 2022). Lastly, combine this with a large base of potential users with internet access, and it’s easy to see why India has been touted as the next big market.

4.3 Data Analysis

This section covers the analysis and findings from the screener surveys and interviews.

4.3.1 Coding system for interviewees

Each participant in the interview was assigned a unique code based on (a) the order in which they were interviewed, (b) their position, (c) their experience level, and (d) their core role.

For example, the third participant interviewed (P03), was an executive (E), with over 15 years of experience (III) and was a founder (F). Therefore, this participant's coded ID was P03-E-III-F.

Table 4.11
Coding system for interviewees

Type	Legend
Position	E: Executive, S: Senior, M: Mid-level
Experience Level	I: 5-10 Years,
	II: 10-15 Years,
	III: 15+ years
Core Role	F: Founder,
	M: Management,
	O: Other

Table 4.12
Coded IDs for all participants

ID	Primary Role	Coded ID
P01	Founder	P01-E-II-F
P02	Product Manager	P02-S-II-O
P03	Founder	P03-E-III-F
P04	Management	P04-S-II-M
P05	Management	P05-M-I-M
P06	Founder	P06-E-II-F

4.3.2 Findings from interviews

The six participants chosen for this research were first introduced to the research via email or an initial call with the researcher. Each participant was chosen with care to ensure that there was fair representation of the gaming industry in its current state in India. During the call, the researcher asked a series of open-ended questions to each participant, followed by deeper questions based on their responses. The questions asked during the interview is listed below.

Table 4.13
List of interview questions

S. No.	Research Question No	Question
1	All	Can you please give me a background about yourself, the company you represent and your current role?
2	All	Can you please tell me a little bit about your most successful product
3	1	Can you please describe what the key challenges you think exist to building a profitable game development business in India?
4	1	What were the biggest challenges you faced as a business when growing, and how did you overcome them
5	1,3,4	Can you please tell me a little bit about your founding team, and what the team dynamics are? (Roles, responsibilities etc.)
6	1,3	If you have raised funds, can you please tell me what your fundraising experience was like?
7	3,4	In case you have serial founders, can you please describe any impact that can be attributed to this?
8	1	Can you please describe how you have built a profitable business?

9	2	Can you please describe how you have built a sustainable business?
10	2,3,4	Have there been times when you needed to pivot your business? If so, can you please describe these events?
11	2,3	How do you maintain a competitive advantage in your business?
12	1	How important was the role of capital to your business?
13	1	How important was the role of government to your business?

4.3.2.1 Research Sub-Question 1 – Primary challenges faced before attaining profitability

The most commonly challenges referred to during the interview process were personnel, capital, and lack of a support system, in that order.

4.3.2.1.1 Personnel issues

In terms of personnel, there are a few key sub-issues.

Lack Of Belief

The first is the lack of belief in the profession as a society. India, as a country where only a few core professions are respected by society, such as being a doctor, or an engineer. Many other professions, including any creative profession such as game development is not easily accepted as a profession that has a strong and long career path.

In the words of P01-E-II-F, “Indian parents tend to have the mentality that there are few limited professions, and everything else is a failure”. While this is not prevalent everywhere in India, it is a common enough scenario that every interviewee spoke at length about how they had each worked with several people over the years who had faced this stigma, and still chosen to enter the gaming industry. The direct effect of this is a substantial reduction in potential great talents being relegated even before their careers begin. While some interviewees did opine that this was changing, especially with new government initiatives that are encouraging careers in this sector, full time courses that train candidates to be productive and a larger community that is growing over time, the other interviewees feel that enough is not being done, and that this will remain a problem for a substantial amount of time. This counter viewpoint was especially ascribed to developers and candidates from Tier II and Tier III cities in India, and with all interviewees agreeing that the situation in Metro and Tier I cities was much better, partially due to the presence of successful businesses in those cities and due to exposure to games from a young age.

Lack of knowledge and training

The second issue related to personnel is a lack of general knowledge and training in the game development industry. This ties back to the first problem of game development not being seen as a worthy career choice by a large population. Because there is little interest or demand for degrees or courses in the game development field, there are very few universities, colleges and institutes training a new set of candidates regularly. The few that do offer this form of education tend to be very expensive, in the

range of several tens of thousands of dollars. Furthermore, the training and education provided by institutes vastly vary. While some courses are short term, lasting a few months, others run for several years. While discussing this subject, three of the interviewees (P01-E-II-F, P03-E-III-F, P04-S-II-M) were of the opinion that this was a grassroot issue, and that more oversight by a government appointed body was needed to standardize coursework across degrees and institutes.

Furthermore, four interviewees (P01-E-II-F, P03-E-III-F, P04-S-II-M, P06-E-II-F) confirmed that the students who typically graduated from these courses were not "industry ready" and had to be further trained after being employed for several months so that they could reach the expected level of productivity. One interviewee (P05-M-I-M) talked about a time when their business was spending time training new graduates, only to have them leave soon for a competitor after they had learned the necessary skills at the workplace. Their opinion was that the situation could have been avoided if the graduates had been skilled in the first place.

Given that an education or training in the game development industry is expensive, aspiring developers turn to other sources of information and learning, such as online courses and video tutorials. All interviewees spoke at various lengths about these resources, but in general were of the opinion that these resources were not nearly enough to skill-up a person to be industry ready. Furthermore, it was found that an over-reliance of information from video tutorials led to more confusion among students who were learning. P02-S-II-O theorized that this confusion was likely because the materials available from such tutorials was rarely structured properly, and often lacked continuity.

For example, a student may learn some concepts from one video while another video explained it differently, or worse, completely change the understanding of the student. Also, once a set of videos was completed, the student would not have a natural next set of content to view and were often at a loss on what to learn next.

Lastly, P02-S-II-O & P04-S-II-M opined that video tutorials and short online courses almost never delved into the theory of game development, best practices, and foundation skills. Instead, they jumped straight to creating small games where the opportunity to learn was minimal. As P04-S-II-M put it, “It’s like teaching a beginner guitarist how to play a song before they know what notes and chords mean”.

4.3.2.1.2 Insufficient Capital Funding

The second largest problem for businesses was capital. Every interviewee spoke at length about the role of capital in their success, and gave several anecdotes about how they, or another business they knew came very close to failing due to a lack of timely availability of capital. There were also some cases where promising businesses had to close down due to the lack of capital. Out of the six interviewees, three (P03-E-III-F, P05-M-I-M, P06-E-II-F) had experienced a time when they had less than a month’s runway left to run their business.

Venture Capital and Private Equity funding in the Indian gaming industry was virtually non-existent a decade ago, and “did not exist even on paper”. Most of the interviewees started their businesses with their own and/or borrowed funds from close sources. This lack of funding is very conceivably a major hurdle that every business owner must face.

When talking to the interviewees about access to capital, they had similar opinions about funding options in the past, but divergent opinions about the same options today. Some were of the opinion that not much has changed in terms of early-stage funding, especially if the kind of games they were planning to create did not fit a certain genre. Others were of the opinion that funding is now widely available at every stage, and it was just a matter of talking to enough people before securing the right investors.

Funding at other stages and through other sources too are getting better, according to P05-M-I-M. According to them, getting debt funding especially is a lot easier than earlier because institutions such as banks are willing to provide them with short to medium term business loans that help scale businesses. There are also now several gaming focused VC funds that have made large investments in the past few years. “As recently as last year, Krafton pumped in close to $80 Million” (into gaming start-ups) P01-E-II-F said, and that “this is going to be the trend”.

4.3.2.1.3 Lack of Support System

The third major issue faced was a lack of a support system. In this context, the term “support system” refers to the ecosystem that often burgeons a fledgling business into a profitable one, including experienced mentors, quick access to funds through loans or grants, a large and active builder’s community, trade shows, expos, conferences, access to meetups or face-to-face with senior officials at other successful businesses, to name a few.

It has been seen several times over decades that a fully functional ecosystem of any industry heavily relies on the various support systems to exist and function optimally. However, in India, several of these factors were either missing or a very small scale when most of the interviewees began their businesses.

One interviewee, P03-E-III-F, talked to the researcher about an incident where they struggled to find mentors early on in their business. Most people they met were either not experienced enough in the industry or were too expensive to hire as an advisor. This led to several expensive mistakes being made at various stages that the business then had to come back from. Today, this interviewee spends time mentoring other businesses so that they may draw on existing experience and knowledge and avoid fatal pitfalls.

P05-M-I-M spoke about times when they had almost no access to quick capital. While Venture Capital and Private Equity funding have dramatically increased, these sources are not quick and have long-term ramifications. The preferred method to working capital is therefore grants (private or government) or awards. A decade ago, grants in India for game development were "virtually unheard of" and they had to turn to international bodies while searching for grants. Today, however, there are several small to medium sized grants operating in India that game developers can tap into quickly. One example is the Epic MegaGrant that is run by Epic Games, the developer of Unreal Engine, which is often considered a top tier game development engine. The Epic MegaGrant allows small businesses quick access to a small amount of funding that they can use to continue to build their product (UnrealEngine.com, 2022).

The support system also occupies the space of a large network. When professionals of the same industry are able to exchange ideas and network, new approaches, processes and products are often an outcome. Several of the interviewees commented on the growth of the role of NASSCOM and the IGDC (Indian Game Developer Conference) during their initial and growth phases. During the early part of the last decade, there were only a few hundred attendees a year, with a handful of sessions and speakers, while the 2021 edition had over 10,000 participants, over 150 speakers and over 100 sessions (Nasscom, 2021)

4.3.2.2 Research Sub-Question 2 – Maintaining sustainability

Sustaining a business is the next step to achieve after being profitable. Most interviewees agreed that sustaining proved to be a large challenge.

The major methods that these businesses achieved sustainability was through constantly building additional revenue sources, innovation and pivoting at the right time.

Businesses can build additional revenue sources through multiple means. The most commonly used route was to take up paid for projects from clients as a second revenue stream. This provided the businesses with additional revenue that acted as a buffer while they developed their main product line. One interviewee (P05-M-I-M) talked about how they spent several months bootstrapping with funds generated through such projects while they built their first few products. In their case, the first two products that were built failed. Without the revenue from the client projects, they would not have had the capital to continue to build their product line and would have very likely failed. This

business continues to use a portion of its workforce to serve other clients, developing new projects as well as continuing to support prior work done through maintenance contracts, and the revenue generated from these forms a significant portion of its topline. Working on paid for projects has other benefits beyond revenue generation, P04-S-II-M noted. Through these projects they gained exposure to other genres of games that they would normally have not built or have been able to build their own products in the future based on work they had done for their clients (where a non-compete clause did not apply). Furthermore, it allowed them to network extensively with other businesses and professionals who they could contact in the future for more work, advise and introductions.

The next step taken was constant innovation. Without innovation, businesses die quickly. Some of the businesses that were part of this study innovated their product line to be up to date with market demands. This allowed them to constantly get better and stay on top of current expectations, while at the same time continue to hold an advantage over their competitors. It was also observed that innovation could not be achieved by maintaining status quo internally in terms of the team and skill set. Businesses included in this study have spent time and resources to skill up their employees, and continually hire above their average.

Pivoting at the right time was also found to be key to sustainability. While innovation is a powerful mechanism, sometimes a product reaches the end of its lifecycle. When this happens, the business must pivot to a new model, product, or even reinvent itself entirely. One of the interviewees, P02-S-II-O, delved into this in detail. Their business was heavily

centered around a game called “Tambola”, an Indian version of Bingo. During the COVID restrictions, they saw a huge influx of users for the game. The revenue generated from Tambola increased several folds and fueled their growth during this period. The business looked to retain and grow this userbase to continue to drive profits. However, after the COVID restrictions were eased, they saw a degrowth in engagement, users, and overall revenue. The business recognized this quickly and pivoted to another one of their products, a poker game. According to the participant, this was a tough and risky decision, but it paid off because of the timing of the decision. Tambola games are smaller and have a niche audience, and therefore competition is not high, whereas Poker games are world famous and have fierce competition including several gigantic publishers worth billions of dollars. The business recognized this and innovated their take on Poker by introducing 3D gameplay and avatars which could be customized, which none of their competitors had. This allowed them to gain an audience at a relatively low cost when compared to their competitors. The business then continued to double down on their Poker product and are now in the top 10 card games in India.

Another participant, P06-E-II-F, talked about how they pivoted their model as they discovered other revenue models that better fit them. They initially began with only premium products. While this worked well for the studio, they discovered that including subscriptions for content helped increase their topline in a not insignificant fashion, and soon began to actively include it.

4.3.2.3 Research Sub-Question 3 – Key Learnings

During the interview, each participant was asked to speak about any key learnings they may have had in the process of building the business. Each interviewee had their own viewpoint on their key learnings, which they put forward to the researcher. These learnings were then grouped into similar themes and are presented below.

4.3.2.3.1 Competitive Advantage

The first learning discussed was gaining a competitive advantage. While it has been established that possessing a competitive advantage was imperative to a business' success, it is also important to continue to maintain the advantage if the business wanted to stay ahead of its competitors. As discussed previously, P02-S-II-O talked about how they gained a competitive advantage in their product by releasing a 3D version of a poker game, at a time when all their competitors were operating 2D games. They also understood that it was only a matter of time until their competitors understood the reasons behind the success of the game and followed suit. Therefore, they continued to innovate to stay ahead of their competitors. They did so by continuing to release more 3D content for users to customize their avatars, added social hooks and extended gameplay.

At this juncture, several of the participants also talked about competitive advantage not just about their product but of their team. P06-E-II-F was part of a small team talked about how they were able to create an award-winning game only because they had a team that was able to understand and execute the vision of the game. The synergies of a team can often be the decider of how efficiently a product is shipped, they said, and with a

small team on a tight budget, it was extremely important towards their survival. Another interviewee spoke about instances of how not having the right team hurt the progress the business was attempting to make, and that they lost contracts at an early stage of their business when revenue was critical.

4.3.2.3.2 Building With Community

The second learning was working with the community to build the product. Four of the participants (P01-E-II-F, P02-S-II-O, P03-E-III-F, P04-S-II-M) in the study commented on how building in the community, and the community in general helped them reach their business goals.

P06-E-II-F stated that the community is still small in India, and therefore requires experienced professionals to help build it. They further stated that community not just helps the people currently building games, but also helps encourage and onboard a new generation of young people who may then enter the games development business to pursue their career. They went onto state that these communities exist in other countries such as the United States and Finland, which made finding consultants for building their games easier and information was more readily accessible and flowed freely.

Another participant, P03-E-III-F, spoke about the time they had spent in building the community in India before starting their own journey as a developer. They were of the opinion that community building had helped them get multiple perspectives when they began building their product, but there was not much direct help or input from the community. They also opined that trying to build a community while also developing a

product was too challenging to accomplish, and that other developers too will need to make a choice between building the community and their own product.

A third interviewee (P01-E-II-F) talked about how it was not just the community that had to be built, but also the ecosystem. A community could help by providing feedback, insights, and support to an extent, but without an entire ecosystem ranging from consultants, venture funds, promoters, and professionals, it was difficult to be competitive at a worldwide scale.

4.3.2.3.3 Metric Focused

The last learning was to be metric focused. While not all interviewees brought this up as a key learning, the ones that did (P01-E-II-F, P02-S-II-O, P04-S-II-M) impressed on the researcher the importance of running a data driven business. Being a data driven organization allows for better decision making, P04-S-II-M said. For example, if they had two new features being designed, and had to decide which feature they should ship first, understanding which metric each feature affected, and being able to predict how much they could move each metric made the decision-making process easier. Extending the example, they said “If Feature A increases retention and Feature B increases monetization, and our focus as a business is to increase monetization, then we will ship Feature B”. Being data driven at all levels of a business helps boost its growth, they said, since it takes the emotional aspect of decision making along with personal biases are removed.

4.3.2.4 Research Sub-Question 4 – Markers that premeditated success

In the interviews, there was no stand-out or eureka moment for most businesses. Instead, they spent time and effort and the net effect was growth and profitability. There was only one case where an interviewee could potentially pinpoint a time in their journey where they knew they had succeeded before the fact, at least from a monetary perspective.

In this case, the interviewee (P06-E-II-F) won several awards, and were inducted into an accelerator program by Google, which also landed them a publishing deal with a notable publisher with a decade long history of hits.

While the studio was not yet successful when they received these accolades, mentoring and incubation, they correctly identified these as markers that would change the course of their studio for the better.

In other cases, interviewees pointed to smaller eureka moments, but they were already well on their way to profitability, or the result did not change the business tremendously.

4.4 Summary

This study's goal is to identify and evaluate how various businesses in the game development industry in India reached profitability and sustainability. Towards this goal, the researcher spoke to several participants and asked probing, open-ended questions to encourage them to share their life experiences and learnings.

In the above sections, the background of each of the interviewees was reviewed, with various cuts to better understand the type of participants involved in the study. The

rationale for screening participants, and the questions were discussed. Then, some context was provided about the game development business and ecosystem in India, to put into perspective some of the questions and potential responses.

Next, the responses to the questions asked were grouped by research sub-question and reviewed, along with key quotes where necessary. Each sub-question was thoroughly explored with views and counter views, with the researcher presenting them as close to the source as possible.

The next chapter will discuss the major findings, provide a precis of the researcher's interpretation, and provide some practical purposes for the results of the research and finally make recommendations for future research.

CHAPTER V:
DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

5.1 Introduction

The previous section detailed the results of the interviews conducted by the researcher, and the various relations between the themes being explored in this research. This section discusses the results in detail, along with recommendations for future research.

The primary objective of this study is to understand the reasons behind the success of mobile game developers or publishers based in India. Using this research, future entrepreneurs can increase the chances of success of their business.

The findings from the previous chapter demonstrate that the phenomena, opinions and lived experiences of entrepreneurs in the business of mobile game development are similar to those found in studies by Baghbaniyazdi et. al, Waller and Klimas.

By condensing the arguments and positions held by existing businesses, this chapter will look to compare and contrast versus other studies and provide a concise discussion of findings of the research.

5.2 Discussion of Results

This section will discuss the results of the interviews.

From the interviews the researcher identified several themes (a) Revenue Generation, (b) Recurring development costs, (c) Payer conversion, (d) Marketing Challenges, (e) Role

of capital, and (f) Talent. The background of these themes is discussed in Chapter II (Literature review), and will be summarized here, along with the results and discussion for each theme.

5.2.1 Revenue Generation

Revenue generation was the most important theme that emerged from the study. Since the prime goal of a business is to become profitable, this was discussed in length with each interviewee.

All interviewees who used the free-to-play or in-app purchases models spoke about the sizeable risk that they were taking on when making a game where the Monetization phase came at the end of the lifecycle rather than the beginning. This echoes the work of Davidovici-Nora in 2014 who stated that due to this phenomenon, it was possible for a game to be a hit but remain unprofitable. However, the interviewees also spoke about the significant risk to reward ratio of the free-to-play and in-app purchases models. According to P01-E-II-F, a business could spend several cycles of development making games that were interesting, and fun to play, but still fail commercially. However, it only took one hit game to achieve large amounts of revenue due to the potential size of the market. They gave examples of games such as Angry Birds, a blockbuster game from 2009 which generated (and continues to generate) billions of dollars in revenue for Rovio Entertainment, the developer of the game. Prior to Angry Birds, the developers had created 51 games, most of which were not commercial successes.

Consistent revenue generation is key to sustainability of the business. For businesses using the free-to-play and in-app purchases, this was harder to achieve, because micro-trends or the entrant of new players could suddenly change the revenue generated by a game. Interviewee P03-E-III-F spoke about how they had experienced this several times over their career, sometimes resulting in having to close the project down and build new games that had a higher opportunity cost and better risk to reward ratios. They said that this was especially true when the market gets crowded for a single type of game, leading to users being split across products from competing businesses to the point that none of them are profitable to run. In this case, they opined, it was better to quickly walk away rather than continue to burn money at a high rate with the hope of returns.

In the case of premium or subscription business models, however, both profitability and sustainability were relatively easier to achieve than free-to-play or in-app purchases, according to P06-E-II-F. They did however say that the quantum of revenue in these models were not large, and therefore better suited to smaller studios. While they believe that there is no cap to the revenue they could generate selling games for an upfront cost, it was unrealistic to expect premium games to generate the levels of revenue that free-to-play games could.

5.2.2 Recurring development costs

The second theme identified was recurring development costs. This was especially true for the participants who relied on the free-to-play or in-app purchases models. This theme was always identified as an extension of the theme about revenue

generation. According to P05-M-I-M, a majority of businesses do not appreciate or realize that recurring development costs are the larger risk and can pull the business under. Furthermore, it was not just enough to plan for recurring development costs, but also to factor in when the company needed to scale its operations to support the product. While a small team may be able to create the first version of the game, they said, it was often the case that a much larger team was needed to properly and efficiently support the game after launch. This did not mean that the game had reached profitability, only that the business had to burn more money, with the hope of revenue in the future.

P01-E-II-F had a similar viewpoint and said that it was important to understand the point at which the game could potentially become revenue positive. To reach that goal, the game first had to have a sufficiently large number of users, have a feature set and/or content that supported several weeks of playtime enough at least till the next update was ready, and a team of developers large enough to build updates at high speed. With more content and regular updates, users believe that the game is well supported, and user spending begins. During this time, the business gathers user analytics to determine which areas of the game need improvement, fixing and updating to best increase the chances of user spends. The business needs to survive until enough of their audience begins to spend money on their product. The longer the business takes to achieve this goal, the higher the risk of it going bankrupt. A business requires several months of runway at a greater scale after the launch of their game, they concluded.

This was not found to be the case in premium models, however. P06-E-II-F described that since they were able to price a product at full and charge a value upfront, they had a

clear picture of their top and bottom lines before the next development cycle. This also offered them the advantage of knowing how many resources and how much time they could reasonably devote to the continued support of the game. However, timing was important, they said. If a game gains popularity, it was in the developer's best interest to capitalize on it, and quickly build more content for the game. Waiting too long could cause users to lose interest, leading to a loss of potential revenue. To achieve this, developers had to be able to recognize these events as they happened and be ready to react. They spoke about the Among Us phenomena and how the team had to react when it surged in popularity. Among Us is a game by InnerSloth LLC and was released in 2018. The game was not initially popular, but during the lockdown, the game was discovered by some streamers on Twitch, and its popularity skyrocketed almost overnight. Before it gained popularity, it was a premium purchase available on the Google Play Store, the App Store and PCs. Seeing the rise in popularity, the developers had to not only quickly ship new features, but they also pivoted in their business model, making the game free-to-play. This allowed them to leverage their virality, and the game grew even more. P06-E-II-F added that during this time, InnerSloth was reported to have struggled to scale its operations. While this case may be an exception, they said, there are usually signs that a game is going to take off in popularity. One way to measure this was to have a target revenue for each month planned before launch. The target revenue can be gauged through sales volumes and interest levels. If a team sees their actual sales exceed the expected to a large degree, it is a clear indication of aggressive growth.

5.2.3 Payer conversion

Payer conversion was another important theme that emerged and was discussed at length. Once again, this was most important for businesses that relied on free-to-play or in-app-purchases. To recall, Lovell in 2011 had created a taxonomy of players based on their lifetime value (LTV). These were: non-payers, minnows, dolphins, and whales. Each business has its own definition of what constitutes a minnow, dolphin, or a whale. This may even vary across products, where whales in one game may be an LTV over $100, while it is $150 in another game. It is also important to understand that each business tries to maximize LTV by encouraging users to make frequent purchases of increasing value, so that they move towards being a whale.

In the figure below, this can be visualized as trying to move users from the bottom left quadrant to the top right quadrant, where the X-axis denotes the frequency of purchases, and the Y-axis denotes the value of each purchase.

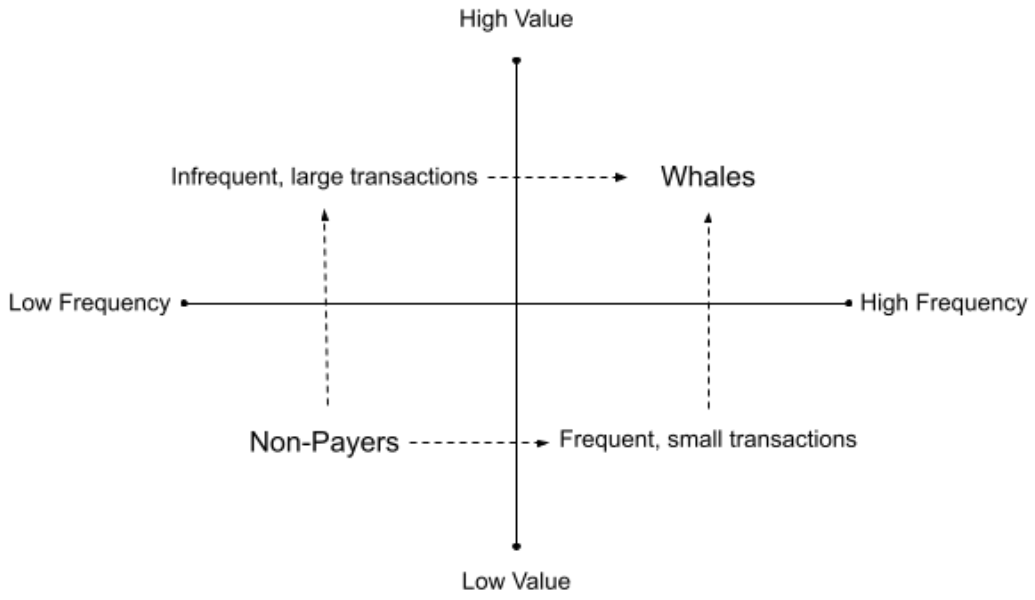

Figure 5.1
Converting non-payers to whales

According to P03-E-III-F, this movement between quadrants is one of the biggest challenges in free-to-play. However, it is one of the metrics that is clearly defined for each product and business, and therefore should be very high on priority as a tracked metric. Observing changes and deriving patterns in ratios of various cohorts, their contributions to revenue, the average revenue per user and overall revenue allows a business to quickly capitalize on a rising position and staunch losses almost immediately. Experience, according to them, is what helps business leaders recognize these patterns and make decisions that will either boost or correct the pattern.

P02-S-II-O commented about another aspect of transitioning users: personalizing purchases based on the user's activity. In their words, a user who has not spent any money in the game is highly unlikely to make a $100 purchase but may be likely to make

a $3 or $5 purchase. It was also important to get users to spend for the first time early in the game, to ensure that they now have a reason to continue to play the game (i.e., “skin in the game”). Also, it is imperative that each subsequent purchase is of higher monetary value. These are the same observations made by Hanner & Zarnekow.

P02-S-II-O continued to speak about how tailoring offers for users based on geography, device type, cost, age, and how long they have been playing among several other factors. This level of targeting users is very important to maximize revenue potential for each product. They further continued that users will not necessarily behave similarly or have similar spending patterns across products. This means that a business needs to constantly invest in obtaining and using this know-how. Also, the business requires to understand when to push users to make purchases, and when to simply ease them towards it. It is important which experiments to run and when to run them, since running experiments that too harshly push users to make a purchase could likely lead to fans complaining, leaving negative reviews and a drop in monetizable users

5.2.4 Marketing challenges

The next theme that emerged during the interviews was marketing and user acquisition challenges. Interestingly, unlike the other themes explored prior, marketing challenges were high for free-to-play and premium business models alike.

In the context of free-to-play and in-app purchases models, marketing a game was found to be of critical importance. Without marketing, a new game would be completely invisible to the general public since there are thousands of new games released every day.

In the free-to-play model, businesses often start with a net-negative position on the product rather than a net-positive because they often spend large sums of money to acquire users, with the hope to monetize them.

P02-S-II-O spoke about how they have a sizeable marketing budget for their game, that was aggressively deployed at launch. This was done to quickly gain users and climb the ranking charts on the Google Play Store and App Store. Without this, it would have been impossible to get the users they needed to reach the top, or at least close to it. According to them, users typically do not look beyond the first five or six titles, because that's the games that are shown to users in the category when they first see it. While the stores do have an option to see the extended list, it was far less likely that they would do so and discover the product.

They also talked about how quickly a marketing budget could be spent while promoting a game. While each ad typically costs less than a cent, they were displaying millions of ads per day. Further, not all ads are equally effective in converting users to install the game. Therefore, each ad campaign had to be closely monitored for its spend, conversion rate and install rate. Any campaign that was found to be underperforming was quickly closed and a new set of images and videos were trialed. This process is intensive, but required, they said. Even after they found sets of creatives that had a high conversion rate, they constantly tried new images and videos through A/B tests, to try to iteratively improve on the conversion metrics. By doing so, they were able to extend their marketing budget substantially. In their experience, it was important to set a small budget in a single geography to begin with, and slowly increase spends as they learned more about the

performance of their campaign. The same strategy was then applied to each successive geography they began expanding into. They also found that ads that worked in one geography didn't necessarily work in others, and it was often the case that they had to tailor ads to local trends and translate ads to ensure that they could maximize their conversion. Further, it was important to experiment with bids on ads. While they had information about what the general fair price for each ad was, they continued to optimize for cheaper bids for each cohort to stretch their ad budget even further.

P04-S-II-M echoed these steps of optimization and the necessity to advertise aggressively in key markets to ensure that they reached the top. They did this by the methods described above, and also through cross promotion from their other games and through direct deals with other publishers who would display ads for their games at a fixed cost, rather than the floating bids that are usually employed. They also added that it wasn't just enough to reach the top, it was equally important to stay at the top. To do this, the business used a strategy of constant acquisition for their product by spending a portion of their profits on advertising. If this constant advertising and acquisition was not followed, they found that their game started slipping in rank, and the inflow of new users reduced, ultimately leading to a loss in revenue, sometimes dramatically.

In the case of premium games, marketing is still important. While premium games did not have the disadvantage of starting at a net negative position on a per-user basis like free-to-play games did, they do require capital investment during the development of the game. P06-E-II-F spoke in detail about how they were able to work with a publisher who helped them getting exposure for the game and helped them optimize for maximum

conversion. It also helped that the publisher they worked with had a loyal audience who were willing to pay for games, and therefore were able to reach a pre-made, large audience quickly and cost-effectively.

5.2.5 Role of capital

Another very important theme that emerged was the role of capital in the success of a business. As discussed in the earlier sections, it was imperative that a business survive long enough not just to make a product, but also until it can recoup its initial investment to become profitable and continued spends to become sustainable.

Capital can be raised either through equity or debt funding. In equity funding, the promoters of the business dilute their shareholding through the issuance of new shares, which are awarded to venture capitalists, institutions, and investors in return for funding. Debt funding is where the business takes on a loan from another entity, such as a bank, and pays the entity back over time along with interest. This type of funding does not require dilution.

P05-M-I-M began their business with their own funds and bootstrapped their way to profitability. They did so by taking on work for hire while building their products alongside. However, there were times that they required funds, and they chose to go down the debt funding route, since this required no dilution of ownership. They ensured that the debts they accrued were paid off promptly, so that they could raise funds repeatedly when required. Access to debt funding was quite simple and straightforward, in their opinion, as long as the business was healthy, close to profitability and the

promoters had good credit scores. Borrowing from financial institutions without these properties, however, was found to be very difficult, if not impossible. If this is the case, then trying to get private equity or venture funding or borrowing against collateral was more viable.

Venture funding on the other hand, had other pros that could not be achieved through debt funding. According to P01-E-II-F & P03-E-III-F, while debt funding was the easier route, venture funding allowed for raising much higher amounts of capital up front, did not require payments to begin immediately, and came with other non-monetary advantages, such as access to the investors' network. Raising more capital allowed for a longer runway and being able to focus on building the product without distractions. This would not be possible in work for hire. Further, debt funding often involves repaying the loan and the payments start almost immediately. Servicing debt funding puts additional pressure on a business that is yet to be profitable and cannot be done if the product isn't ready or not yet monetizable, leaving only the option of work for hire to service the loans. Lastly, venture funding opened up investor networks, which allows business owners to interact with others in the same space, gives insights on current affairs, and to be able to reach out to people to get input and assistance to solve problems. More than the monetary benefits of venture funding, this was an important consideration. All participants who used venture funding stressed on how important it was to have the right set of investors who shared the promoters' vision. It was found that having investors who believed in the promoters, backed them, and ensured that they assisted the business in any way they could helped the business succeed.

It was also found that in the early stages, debt funding was potentially harder to secure than venture funding or bootstrapping, especially when the business was just beginning, and the promoters did not have a history. In these cases, interviewees opined that bootstrapping was the most preferable option, so that the business could raise funds at a later time under more preferable circumstances.

5.2.6 Talent

The final theme derived was talent. Specifically, readily available, trained, and experienced talent is not easily available in India.

It was found that this was a combination of various factors ranging from the outlook of society about being associated with the gaming industry, a lack of training, unavailability of good education institutes and fragmented learnings from online platforms.

This lack of talent was also found to be a current issue, and there were steps being taken at the highest levels by the government to provide an impetus for the gaming industry. With signals such as these, the gaming industry may become normalized and considered a mainstream profession and no longer considered frivolous.

Furthermore, it was found that while a part of the issue with talent is fragmented learning through short term courses or watching videos online, it has had an overall positive impact of the growth of the space, since these mediums of learning are cost effective or free, and therefore have democratized the space.

Next, it was found that the "product mindset" that was required to make games is building up consistently in India. The lack of this product mindset, according to several interviewees (P01-E-II-F, P03-E-III-F, P04-S-II-M & P06-E-II-F) can likely be attributed to a history of being the outsource industry that dominated the past few decades on Indian professionals. These roles did not require people to think creatively and were expected to execute a set of instructions consistently. Several examples of games were spoken about, where the game's design was done in a Western nation, and the game was only partially developed in India. There are now some studios that have begun developing games in India, and the outlook is overall positive.

5.3 Comparison to other studies

5.3.1 Comparison to findings of Baghbaniyazdi et. al

The study conducted in 2017 by Baghbaniyazdi et. al delved into the various business models that were popular in the Iranian App Stores at the time. This paper analyzed six mobile games that used various business models. These were: Combination, In-app purchase, Premium, Freemium, Free, and In-app advertising (Baghbaniyazdi et. al, 2017).

The games chosen for this study were considered widely successful in the Iranian App store, and ideally had a high App Store rating (Baghbaniyazdi et. al, 2017). The games were in the study were released between 2011 and 2015. The chosen games were

followed over a period of three months between 12/2015 and 02/2016 (Baghbaniyazdi et. al, 2017).

The games followed and analyzed in the study were as follows

Table 5.1
Games analyzed in study by Baghbaniyazdi et. al (2017)

Game	Release Date	Business Model	Downloads	Rating
Rooster Wars	2013	Combination	80,000	4.5
Pocket Army	2015	In-app purchase	40,000	4.6
Hados	2015	Premium	430	4.0
Viraj	2011	Freemium	70,000	4.6
Jealous Chickens	2015	Free	10,000	4.4
Pijamas	2015	In-app advertising	10,000	4.0

The study found that as of 2016 in Iran, the freemium (Viraj) and in-app purchase (Pocket Army) models were vastly more successful than the other models. Premium and Free were not as effective (Baghbaniyazdi et. al, 2017). It is interesting to note that the combination model was not considered the best model at the time of writing, although the authors did note that it was suitable as a complementary model when market saturation or a decrease in user adoption was reached (Baghbaniyazdi et. al, 2017).

This is certainly different from the wider opinion held by the participants, and the data points to the fact that the combination, or free-to-play model is the most favored business model for Indian developers today.

This difference can be due to a few factors. First, the study by Baghbaniyazdi is a few years old, when the mobile gaming market was not as saturated as it is today. Because of this market saturation, it is extremely difficult to acquire new customers for a game purely through organic channels. Also due to the same reason, the cost of acquiring new users has been skyrocketing. It then stands to reason that displaying ads to users in a game is also more lucrative than ever before.

Furthermore, the audience of the games in the Baghbaniyazdi et. al study was constrained to Iran, or at least can be reasonably assumed to be the case since it was an analysis of business models of the most popular games in Iran. India has now become a large consumer of games on mobile, and it is a reasonable assumption that a significant portion of users that businesses cater to are located in India. Users in India have a low tendency to spend money on games, but the volume of Indian users is typically large. Therefore, the other alternative for businesses that cater to a large Indian audience is to serve advertisements, which fits well in the free-to-play model.

5.3.2 Comparison to findings of Waller

Waller's study in 2015 was related to the various marketing strategies applied by mobile game developers in Northern California, who were profitable and currently in business. The study included 20 such participants, by which data saturation had been reached (Waller, 2015). The interview consisted of open-ended questions and focused on how these businesses used marketing techniques to help build a profitable business.

While Waller's study was not directly related to this thesis, it was interesting to compare and contrast the similarities and dissimilarities of marketing tools and techniques in context of the success of a mobile game development business.

For example, Waller's study had questions related to marketing challenges ("What are some marketing challenges that you experienced when launching your mobile application" Waller, 2015); the themes derived from the responses to this question could be compared to results of the question about challenges faced when trying to build a profitable business.

Waller found that 30% of participants thought that finding ways to market a game was a challenge, and 80% said that marketing was a major business problem (Waller, 2015). They also found that creating a good game, finding a target audience and being creative and innovative was crucial to the success of the game (Waller, 2015).

These same sentiments were echoed by the participants of this study. 100% of the participants in this study talked about how product innovation drove adoption and growth, and therefore positively affected revenue and profitability. Some participants narrated their experience about how achieving product-market fit was critical in their product roadmap, which involves identifying a target audience. For example, participant P02-S-II-O spoke about how they had trialed various ideas before settling on a 3D Poker game which resonated well with their target audience. Further, some participants talked about how good marketing and branding was the core to their success. It is not an understatement to say that standing out in this crowded market and getting new users for a game is a challenge of epic proportions. Even after obtaining users, retaining them is

also a major challenge. In the case of P06-E-II-F, this was achieved through a publishing deal with a major publisher, which helped them grow rapidly. Further, they were able to leverage the knowledge and feedback of the publisher to improve their product and retain their users for long periods of time.

Another example from Waller's study is the question "How have financing opportunities, or the lack of financing opportunities, affected how you market your mobile game application business?" (Waller, 2015). This can be compared to responses of interviewees from this study from a funding standpoint; after all, funding for marketing can be viewed as a subset as funding for the business as a whole.

Waller found that seven participants opined that businesses that have funds to spend have an increased chance of survival (Waller, 2015). All interviewees in this study agreed with this sentiment. According to P05-M-I-M, they built a long runway and kept extending it each time they could, since it allowed them to make more attempts to ship a product that could help them achieve profitability. In their case, they built a runway by doing work for hire not just in gaming, but other applications as well. They also commented that this bootstrapped approach allowed them to focus on building a profitable business from the beginning, and they had to rely less on investor money and the dilution of ownership that comes along with it.

Another interviewee (P04-S-II-M) echoed this sentiment, though the business they represented did not require spend very long to become profitable. They continue to have a portion of the business working on projects for other studios, which not only helps with

revenue generation and profitability, but also exposes them to new technologies, ideas and know-how.

Waller further found that marketing budgets for mobile game applications must be set to maximize returns on investments. This is excruciatingly true today. Around the time of Waller's study, mobile game marketing budgets were large, but today they are usually several times the cost of the development of the game itself. It is not uncommon for businesses to raise funding with the prime motivation of growth through marketing. Two interviewees in this study (P04-S-II-M and P02-S-II-O) spoke about how they had to manage their sizeable marketing budgets. They both had teams dedicated to making new marketing materials such as creatives, video ads and promotions and would constantly run experiments to see which of their creatives gave them the best returns on ad spend (ROAS). As one interviewee put it, "Getting to the top of charts and staying there involves spending large amounts of money".

5.3.3 Comparison to findings of Klimas

The study conducted by Klimas in 2017 was an exploratory research conducted to identify the prevalent business models used by the gaming industry as a whole at the time. The research was conducted only on Polish studios beginning in May 2016. The study included 11 developers and consisted of semi-structured interviews. The study included 1 micro, 4 small, 4 medium and 2 large developer studios (Klimas, 2017). The study also included secondary data sources such as industry reports from NewZoo,

SuperData, and deltaDNA, websites and YouTube channels that post videos about panel discussions and interviews with top game studios (Klimas, 2017).

The study identified some additional subsets to certain business models: under the premium category, games could be made for individual orders where the target audience was not the general public, but rather created for a special need, such as training for a recruitment company (Klimas, 2017). Another subset identified was under the free-to-play model, where they included the promotional category. This can be seen in games such as BMW M3 Challenge, which was a free-to-play game ordered to promote BMW sports cars (Klimas, 2017).

Table 5.2
Business models identified by Klimas (2017)

Aim	Business Model	Revenue Stream
Selling Paid Games	Paid game for order	Payment for a game made
	Premium	Multiple payments for a game
	Paid Mobile	Multiple payments for a game
	Subscription	Multiple seasonal or time-limited payments
Selling Free Games	Free-to-play	Multiple micropayments in in-app purchases and ad revenue
Selling IPR	Licensing	Single or multiple licenses for access to IPR

The study found that Polish developers traditionally used the premium model as their primary business model. This was seen not just in the businesses that made games for PC and console, where the premium model is still the de-facto standard, but also in the mobile industry. They noted that this was mostly seen in games that were from large, successful franchises such as “Hitman” (Klimas, 2017).

Out of the participants in this study, only one used the premium business model. The difference in the popularity of the premium model between Poland and India is possibly because India was not as active in game development during the pre-mobile era. Therefore, Polish developers would have had a natural transition from premium PC and console games to premium mobile games, at least for the larger studios and IPs.

Klimas also talks about the rise of free-to-play, and the effect it has had on the game development industry in Poland. Several developers had transitioned from premium or subscription models to adopt the free-to-play model, stating that almost 80% of games sold apply the free-to-play model (Klimas, 2017). They further state that around 8.4% of Polish gamers spent money in free-to-play games, with an Average Revenue Per Paying User (ARPPU) of $17.57. These numbers are substantially higher than the conversion rate that is seen across the world, where even 2% of the user base being payers is considered to be a success. As stated earlier, developers in India lean towards the combination model, since converting an audience to paying users is much harder to accomplish in markets like India.

5.4 Limitations

There are some limitations that exist with this study that may have affected the findings of this research. First, the sampling of interviewees for this study was limited to six participants, the point at which data saturation was reached. It is possible that there may have been other views that the researcher was unable to include in this study. Second, the participants were chosen to represent various business models prevalent in the industry (premium, free-to-play etc.), so interviewees may have had opposing viewpoints to some responses. Furthermore, this study only applies to the business models that were covered in the interview process, since some of the other models were either unprofitable (such as the Free or Donationware models) or too early to have learnings (such as the play-to-earn model).

Next, the study was limited geographically to India on purpose, and therefore some findings may not apply to other parts of the world. One example would be the social outlook of the field in the country. It is imperative that the context be applied before using this research in other geographies.

Finally, the research does not account for or differentiate the scale of profitability, or the age of the business, both of which may be considered important factors for future research.

5.5 Recommendations for Future Research

As covered in the previous section, there are some limitations to this study, which future researchers may wish to explore further.

A study on the new and upcoming business models such as play-to-earn would be very worthy to study, considering the paradigm shifts it is creating in the business. It may be the next big change for the industry, and scholarly literature on this will help the ecosystem.

A study that delves deeper into larger firms that have existed for several years or decades and drive millions in profits is another topic to pursue. This research may help smaller companies that have achieved profitability and sustainability at a smaller scale grow over time and continue.

Another study may cross reference the sociological similarities and differences between India (and similar countries) to other nations where the game development industry is well adopted, and its effects.

Lastly, a larger scale study of this research could be performed by a group of researchers to provide more data and conclusions.

5.6 Conclusion

This study began with the intention of understanding the various phenomena in the game development and publishing businesses in India, and how certain companies reached profitability. The researcher used key works by Klimas (2017), Waller (2015) and Baghbaniyazdi et. al (2017) as a starting point. The researcher then selected six candidates to interview from a larger pool of potential interviewees all of whom had completed a screener survey. These interviewees were then posed a series of open-ended deep questions to answer the central question of this study. The researcher then reviewed

the responses of the interviewees to produce this study. The results of the study are as follows: it identifies the various measures taken by businesses in the field of game development to achieve profitability in India, the challenges that were faced by the business promoters or owners and the various themes that emerged from the responses from the interviews. It also extends the findings of studies by Klimas and Baghbaniyazdi by providing additional information in a different geography from those studies, and the study by Waller from a games marketing standpoint.

Next, the research provided insights into the sociological factors behind the challenges of the game development industry in India, something that other studies have not yet explored.

Further, the literature review section covered the various challenges faced by businesses. The study also compares key findings with prior research by Klimas, Waller and Baghbaniyazdi et. al in their pertinent sections.

Moreover, the findings of the interviews were reported in previous sections. The results of the interviews and their implications were discussed. The key challenges faced, and their solutions were decoded and reviewed. Finally, the findings and their implications for a business in the game development space in India were discussed.

In this study, the phenomena found in the study by Baghbaniyazdi et. al (2017). were present, with some minor differences. The same can be said when this study is compared to that of Klimas (2017). The differences found between the studies previously conducted and the one in question can be attributed towards the time difference between the studies and perhaps some of the geographical and sociological differences.

The results of the research show that the free-to-play business model is the most preferred. To achieve success, a business must focus on personnel, ensure that they have enough capital by building a runway to stay afloat until they are profitable, and build a proper support system. This may be achieved by building and maintaining a competitive advantage, working with the community and being metric focused. To reach sustainability, businesses must build additional revenue sources, constantly innovate, and learn to pivot at opportune moments.

To conclude, these findings may be used by existing and new businesses as a reference in their own journey towards being profitable and then sustainable. By doing so, they will be able to contribute to the country's economy by creating jobs, absorb talent, and potentially create India's first billion dollar pure-play game. Therefore, the primary objective of this research may be considered achieved and the researcher hopes that the findings may be useful in a real-world context to those who are in this wonderful business that gives joy and brings communities together.

APPENDIX A:

SURVEY COVER LETTER

This letter was sent to all potential participants along with a link to the screener survey. The letter was sent through email, or via social platforms such as LinkedIn or Discord, depending on where the researcher made initial contact with the participant.

"I'm Venkat, a DBA scholar, and a Game Lead at SuperGaming. I'm conducting research into the business of gaming in India as part of my doctoral thesis. As part of this research, I'm talking to several industry experts to gain insights. The research interview process is fairly simple, and won't take more than 45-60 minutes to complete. Would you be interested in participating?"

If following this introduction, the potential participant agreed to be part of the study, the researcher then sent the following email.

Thanks very much for agreeing to participate in this research
Before we get into it, a brief introduction about myself, and why I'm doing this.

I'm currently a Game Lead at SuperGaming. I've been in the mobile games space in India for over a decade now.
I've worked in various sub-genres from e-learning, casino, casual and now mid-core.
Through this time, I've seen some phenomenal successes and other businesses that looked very promising, but failed.

My personal motivation is this: ***India has yet to create a billion dollar pure-play game.*** *This is from a country that has the third largest workforce in game development.*

I believe that the research I'm conducting will be beneficial not just to the participants, but to the industry as a whole.

If you're comfortable with answering these questions, please complete the screener survey at this link.
Furthermore, I have attached two more documents for you to review and sign.

- *An information sheet*
- *A consent form*

I request that you carefully read the entire information sheet. This document contains details about the nature of the research, what to expect from the interview, and your options.
After reading the information sheet, please enter your name, sign and date the ***last page.***

The interview consent form presents you with options on how the information you share is handled.
After reading the interview consent form, please select the appropriate level of consent for direct quotation, and please enter your name, sign and date the ***second page.***

After you have read and signed both documents, please send a soft copy of the same. You may also preserve a copy for your records.

The information sheet and consent form also has contact information for my doctorate guide, who you can reach out to directly if you have any concerns or wish to have clarifications

Thank you, and I hope we get to speak soon

APPENDIX B:

SCREENER SURVEY

Once the participant received the email, they were asked to complete the screener survey. The screener survey was hosted on Google Forms, and had a total of 16 questions, split into 3 sections. Each section had to be completed before moving onto the next question.

SECTION 1 – General

S. No.	Type	Question
1	Checkbox	This survey is entirely optional. Your responses will be recorded by the researcher. Your answers will be anonymized and aggregated when used in quotes. By filling out this survey, you indicate that you can represent your company. If you agree, please indicate this by selecting the checkbox below. If you disagree, please do not continue filling the survey.
2	Radio Button	The researcher may want to conduct an interview with you lasting between 45 - 60 minutes to discuss your responses. Do you consent? • Yes • No

SECTION 2 – About the participant

S. No.	Type	Question
3	Text	Name
4	Text	Email Address

5	Radio Button	How long have you been working in the gaming industry? • < 1 Year • 1 – 3 Years • 3 – 5 Years • 5 – 10 Years • 10 – 15 Years • 15+ Years
6	Multiple Choice	Which of these roles do you perform? Please select all that apply • Executive (Any CXO) • Management • Product • Producer • Project Management • Art • Design • Development • Marketing • Revenue • Other (Please fill)

SECTION 3 – About the business

S. No.	Type	Question
7	Text	Which company do you represent?

8	Text	Your position/role at the company you represent
9	Radio Button	How long have you been working with the company you currently represent? • < 1 Year • 1 – 3 Years • 3 – 5 Years • 5 – 10 Years • 10 – 15 Years • 15+ Years
10	Radio Button	What is the approximate yearly revenue of the company you represent? • < $50,000 • $50,001 to $100,000 • $100,001 to $250,000 • $250,001 to $1,000,000 • $1,000,001 to $2,500,000 • > $2,500,000
11	Radio Button	Is the company you represent profitable? • Yes • No
12	Radio Button	What stage is the company you represent at? Please select the closest option • Bootstrapped • Ideation • Pre-seed • Seed • Series A

		• Series B • Series C and above
13	Radio Button	If the company you represent is funded, what was the last valuation? • < $250,000 • $250,000 - $1,000,000 • $1,000,001 - $5,000,000 • $5,000,001 - $10,000,000 • $10,000,000 - $25,000,000 • > $25,000,000
14	Radio Button	What is the size of the company you represent. Please only include full time employees and contractors. • < 10 people • 10 - 50 people • 51 - 100 people • 101 - 250 people • 251 - 500 people • > 500 people
15	Multiple Choice	Which of these revenue models are employed in the company you represent? Please select all that apply. • In app purchases • Ad supported • Premium • Subscription • No Monetization applied • Other (Please fill)

APPENDIX C:

SCREENER SURVEY RESULTS

Respondent P01-E-II-F
SECTION 1 – General

S. No.	Question	Response
1	This survey is entirely optional. Your responses will be recorded by the researcher. Your answers will be anonymized and aggregated when used in quotes. By filling out this survey, you indicate that you can represent your company. If you agree, please indicate this by selecting the checkbox below. If you disagree, please do not continue filling the survey.	Yes
2	The researcher may want to conduct an interview with you lasting between 45 - 60 minutes to discuss your responses. Do you consent?	Yes

SECTION 2 – About the participant

S. No.	Question	Response
3	Name	HIDDEN
4	Email	HIDDEN
5	How long have you been working in the gaming industry?	10 – 15 Years

6	Which of these roles do you perform? Please select all that apply	Art, Design, Executive (Any CXO), Management, Marketing, Revenue

SECTION 3 – About the business

S. No.	Question	Response
7	Which company do you represent?	HIDDEN
8	Your position/role at the company you represent	Founder
9	How long have you been working with the company you currently represent?	< 1 Year
10	What is the approximate yearly revenue of the company you represent?	$250,001 - $1,000,000
11	Is the company you represent profitable?	Yes
12	What stage is the company you represent at? Please select the closest option	Seed
13	If the company you represent is funded, what was the last valuation?	$250,000 - $1,000,000
14	What is the size of the company you represent. Please only include full time employees and contractors.	10 - 100 people
15	Which of these revenue models are employed in the company you represent? Please select all that apply.	In app purchases, Ad supported

Respondent P02-S-II-O
SECTION 1 – General

S. No.	Question	Response
1	This survey is entirely optional. Your responses will be recorded by the researcher. Your answers will be anonymized and aggregated when used in quotes. By filling out this survey, you indicate that you can represent your company. If you agree, please indicate this by selecting the checkbox below. If you disagree, please do not continue filling the survey.	Yes
2	The researcher may want to conduct an interview with you lasting between 45 - 60 minutes to discuss your responses. Do you consent?	Yes

SECTION 2 – About the participant

S. No.	Question	Response
3	Name	HIDDEN
4	Email	HIDDEN
5	How long have you been working in the gaming industry?	10 - 15 Years
6	Which of these roles do you perform? Please select all that apply	Producer, Product

SECTION 3 – About the business

S. No.	Question	Response
7	Which company do you represent?	HIDDEN
8	Your position/role at the company you represent	Product Manager
9	How long have you been working with the company you currently represent?	1 – 5 Years
10	What is the approximate yearly revenue of the company you represent?	$5,000,001 - $10,000,000
11	Is the company you represent profitable?	Yes
12	What stage is the company you represent at? Please select the closest option	Series B and above
13	If the company you represent is funded, what was the last valuation?	> $25,000,000
14	What is the size of the company you represent. Please only include full time employees and contractors.	251 – 500 people
15	Which of these revenue models are employed in the company you represent? Please select all that apply.	In app purchases, Ad supported

Respondent P03-E-III-F
SECTION 1 – General

S. No.	Question	Response
1	This survey is entirely optional. Your responses will be recorded by the researcher. Your answers will be anonymized and aggregated when used in quotes. By filling out this survey, you indicate that you can represent your company. If you agree, please indicate this by selecting the checkbox below. If you disagree, please do not continue filling the survey.	Yes
2	The researcher may want to conduct an interview with you lasting between 45 - 60 minutes to discuss your responses. Do you consent?	Yes

SECTION 2 – About the participant

S. No.	Question	Response
3	Name	HIDDEN
4	Email	HIDDEN
5	How long have you been working in the gaming industry?	> 15 Years
6	Which of these roles do you perform? Please select all that apply	Executive (Any CXO), Management, Product

SECTION 3 – About the business

S. No.	Question	Response
7	Which company do you represent?	HIDDEN
8	Your position/role at the company you represent	Founder
9	How long have you been working with the company you currently represent?	1 – 5 Years
10	What is the approximate yearly revenue of the company you represent?	$250,001 - $1,000,000
11	Is the company you represent profitable?	Yes
12	What stage is the company you represent at? Please select the closest option	Seed
13	If the company you represent is funded, what was the last valuation?	$250,000 - $1,000,000
14	What is the size of the company you represent. Please only include full time employees and contractors.	10 - 100 people
15	Which of these revenue models are employed in the company you represent? Please select all that apply.	In app purchases, Ad supported

Respondent P04-S-II-M
SECTION 1 – General

S. No.	Question	Response
1	This survey is entirely optional. Your responses will be recorded by the researcher. Your answers will be anonymized and aggregated when used in quotes. By filling out this survey, you indicate that you can represent your company. If you agree, please indicate this by selecting the checkbox below. If you disagree, please do not continue filling the survey.	Yes
2	The researcher may want to conduct an interview with you lasting between 45 - 60 minutes to discuss your responses. Do you consent?	Yes

SECTION 2 – About the participant

S. No.	Question	Response
3	Name	HIDDEN
4	Email	HIDDEN
5	How long have you been working in the gaming industry?	10 - 15 Years
6	Which of these roles do you perform? Please select all that apply	Management, Producer, Product

SECTION 3 – About the business

S. No.	Question	Response
7	Which company do you represent?	HIDDEN
8	Your position/role at the company you represent	Management
9	How long have you been working with the company you currently represent?	5 – 10 Years
10	What is the approximate yearly revenue of the company you represent?	$5,000,001 - $10,000,000
11	Is the company you represent profitable?	Yes
12	What stage is the company you represent at? Please select the closest option	Series B and above
13	If the company you represent is funded, what was the last valuation?	> 25,000,000
14	What is the size of the company you represent. Please only include full time employees and contractors.	251 - 500 people
15	Which of these revenue models are employed in the company you represent? Please select all that apply.	In app purchases, Ad supported

Respondent P05-M-I-M
SECTION 1 – General

S. No.	Question	Response
1	This survey is entirely optional. Your responses will be recorded by the researcher. Your answers will be anonymized and aggregated when used in quotes. By filling out this survey, you indicate that you can represent your company. If you agree, please indicate this by selecting the checkbox below. If you disagree, please do not continue filling the survey.	Yes
2	The researcher may want to conduct an interview with you lasting between 45 - 60 minutes to discuss your responses. Do you consent?	Yes

SECTION 2 – About the participant

S. No.	Question	Response
3	Name	HIDDEN
4	Email	HIDDEN
5	How long have you been working in the gaming industry?	5 – 10 Years
6	Which of these roles do you perform? Please select all that apply	Art, Development, Producer, Revenue

SECTION 3 – About the business

S. No.	Question	Response
7	Which company do you represent?	HIDDEN
8	Your position/role at the company you represent	Management
9	How long have you been working with the company you currently represent?	5 – 10 Years
10	What is the approximate yearly revenue of the company you represent?	< $250,000
11	Is the company you represent profitable?	Yes
12	What stage is the company you represent at? Please select the closest option	Bootstrapped
13	If the company you represent is funded, what was the last valuation?	< $250,000
14	What is the size of the company you represent. Please only include full time employees and contractors.	< 10 people
15	Which of these revenue models are employed in the company you represent? Please select all that apply.	Premium, Subscription

Respondent P06-E-II-F
SECTION 1 – General

S. No.	Question	Response
1	This survey is entirely optional. Your responses will be recorded by the researcher. Your answers will be anonymized and aggregated when used in quotes. By filling out this survey, you indicate that you can represent your company. If you agree, please indicate this by selecting the checkbox below. If you disagree, please do not continue filling the survey.	Yes
2	The researcher may want to conduct an interview with you lasting between 45 - 60 minutes to discuss your responses. Do you consent?	Yes

SECTION 2 – About the participant

S. No.	Question	Response
3	Name	HIDDEN
4	Email	HIDDEN
5	How long have you been working in the gaming industry?	10 – 15 Years
6	Which of these roles do you perform? Please select all that apply	Design, Executive (Any CXO), Producer, Product

SECTION 3 – About the business

S. No.	Question	Response
7	Which company do you represent?	HIDDEN
8	Your position/role at the company you represent	Founder
9	How long have you been working with the company you currently represent?	5 – 10 Years
10	What is the approximate yearly revenue of the company you represent?	$250,001 - $1,000,000
11	Is the company you represent profitable?	Yes
12	What stage is the company you represent at? Please select the closest option	Series A
13	If the company you represent is funded, what was the last valuation?	$250,000 - $1,000,000
14	What is the size of the company you represent. Please only include full time employees and contractors.	10 - 100 people
15	Which of these revenue models are employed in the company you represent? Please select all that apply.	Premium, Subscription

APPENDIX D:

INTERVIEW QUESTIONS

After potential participants completed the screener survey (as shown in Appendix B), the researcher relegated any participants who did not meet the requirements for the study. These requirements were that the company be profitable, the participant was willing to speak about the business, and that the participant was able to represent the business. The researcher then scheduled a call that was convenient for both parties. During the call, the following questions were posed to the interviewee by the researcher.

1. Can you please give me a background about yourself, the company you represent and your current role?
2. Can you please tell me a little bit about <Most successful product>
3. Can you please describe what the key challenges you think exist to building a profitable game development business in India?
4. What were the biggest challenges you faced as a business when growing, and how did you overcome them? (1-2 scenarios)
5. Can you please tell me a little bit about your founding team, and what the team dynamics are? (Roles, responsibilities etc)
6. If you have raised funds, can you please tell me what your fundraising experience was like?
7. In case you have serial founders, can you please describe any impact that can be attributed to this?

8. Can you please describe how you have built a profitable business?
9. Can you please describe how you have built a sustainable business?
10. Have there been times when you needed to pivot your business? If so, can you please describe these events?
11. How do you maintain a competitive advantage in your business?
12. How important was the role of capital to your business?
13. How important was the role of government to your business? (Grants, tax sops etc)

APPENDIX E:

ETHICAL REVIEW APPLICATION FORM

Section 1: Applicant Details	
First Name	Venkat
Last Name	Chandar
Faculty	Choose an item.
Co-researcher Names (internal and external) Please include names, institutions and roles. If there are no co-researchers, please state N/A.	N/A
Is this application for a staff or a student?	Student
Student Course details	Postgraduate Research
Name of Director of Studies / Supervisor	Dr. Ronny Shu-Chung Lo
Comments from Director of Studies / Supervisor *For student applications, supervisors should ensure that all of the following are satisfied before the study begins:* • *The topic merits further research;* • *The student has the skills to carry out the research;* • *The participant information sheet is appropriate; and procedures for recruitment of research participants and obtained informed consent are appropriate.* *The supervisor must add comments here. Failure to do so will result in the application being returned*	
Click or tap here to enter text.	

Section 2: Project	
Section 2:1 Project details	
Full Project Title	
EVALUATION OF BUSINESS STRATEGIES OF MOBILE GAME PUBLISHERS IN INDIA	
Project Dates These are the dates for the overall project, which may be different to the dates of the field work and/or empirical work involving human participants.	
Project Start Date	01/04/2021
Project End Date	31/03/2023
Dates for work requiring ethical approval You must allow **at least 6 weeks** for an initial decision, plus additional time for any changes to be made.	
Start date for work requiring ethical approval	01/09/2021
End date for work requiring ethical approval	31/12/2021
How is the project funded? (e.g. externally, internally, self-funded, not funded – including scholarly activity) Please provide details.	
Self-funded	

Is external ethics approval needed for this research?	No

If Yes please provide the following:

For NHS Research please provide a copy of the letter from the HRA granting full approval for your project together with a copy of your IRAS form and supporting documentation, including reference numbers.

Where review has taken place elsewhere (e.g. via another university or institution), please provide a copy of your ethics application, supporting documentation and evidence of approval by the appropriate ethics committee.

Click or tap here to enter text.

Section 2:2 Project summary

Please provide a concise summary of the project, including its aims, objectives and background. (maximum 400 words)

Please describe in non-technical language what your research is about. Your summary should provide the committee with sufficient detail to understand the nature of the project, its rationale and ethical context.

This research aims to derive an understanding of the current business models used by game publishers in India, and their formulae for achieving commercial success and sustainability.

Similar academic research has not been performed and will therefore contribute to a deeper understanding of the nature of business in this vertical.

What are the research questions the project aims to answer? (maximum 200 words)	
The projects aims to answer the following - What are the primary challenges faced by founders before achieving profitability - How the business maintains sustainability - What are the key learnings arrived at - What are the specific markers that premeditated their success	
Please describe the research methodology for the project. (maximum 250 words)	
The research is a descriptive study that looks to explain the phenomena surrounding these businesses through qualitative analysis. After a screener survey of potential businesses obtained through voluntary sampling is completed, data collection will be done through interviews with the founders or promoters of businesses. The core and sub-questions will be answered using an abductive approach	
Section 3: Human Participants	
Does the project involve human participants or their data? *If not, please proceed to Section 5: Data Collection, Storage and Disposal, you do not need to complete sections 3-4.*	Yes
Section 3.1: Participant Selection	
Who are your participants?	
Founders, promoters and key decision makers of profitable pure-play developers and publishers in the gaming industry in India	
Will you be recruiting students as research participants who are from outside your faculty and/or from multiple faculties?	No

If you plan to recruit student participants from across UWE (rather than solely from your home faculty) your ethics application will be reviewed by UREC instead of the FREC.	
Please explain the steps you will take to select your participant sample.	
The researcher will send out a short survey using various professional, academic, and personal channels available. Interviewees completing the survey and meeting the criteria will then be shortlisted and interviews with consenting individuals will be arranged.	
Please explain how you will determine the sample size.	
Considering that it is impossible to determine an exact figure of businesses that meet the criteria, snowball sampling will be performed. The research will have a starting sample size of 10 businesses and increase until data saturation is reached	
Please tell us if any of the participants in your sample are vulnerable, or are potentially vulnerable and explain why they need to be included in your sample. NB: Please do not feel that including vulnerable, or potentially vulnerable participants will be a bar to gaining ethical approval. Although there may be some circumstances where it is inappropriate to include certain participants, there are many projects which need to include vulnerable or potentially vulnerable participants in order to gain valuable research information. This particularly applies to projects where the aim of the research is to improve quality of life for people in these groups.	

Vulnerable or potentially vulnerable participants that you **must** tell us about:

- Children under 18
- Adults who are unable to give informed consent
- Anyone who is seriously ill or has a terminal illness
- Anyone in an emergency or critical situation
- Anyone with a serious mental health issue that might impair their ability to consent, or cause the research to distress them
- Young offenders and prisoners
- Anyone with a relationship with the researcher(s)
- The elderly

N/A

Section 3.2: Participant Recruitment and Inclusion

How will you contact potential participants? Please select all that apply.

☐ Advertisement

☒ Emails

☒ Face-to-face approach

☐ Post

☒ Social media

☒ Telephone calls

☐ Other

If Other, please specify: Click or tap here to enter text.

What recruitment information will you give potential participants?

Please ensure that you include a copy of the initial information for participants with your application.

Please see the copy of the information sheet attached

How will you gain informed written consent from the participants? Please ensure that you include a copy of the participant information sheet and consent form with your application.
Please see the attached participant information sheet and consent form.
What arrangements are in place for participants to withdraw from the study?
Any participant can withdraw from the study at any point prior to the conclusion of the study by intimating the researcher in writing. Data that is pertinent to that participant will then be destroyed within 14 days, and the researcher will confirm this in writing to the participant. The participant will also be provided with the institute and mentor contact information, in case they do not wish to contact the researcher

Section 4: Human Tissue	
Does the project involve human tissue?	No
If you answer 'No' to the above question, please go to Section 5 Please describe the research methodology that you will use. This should include an explanation of why human tissue is required for the project and a description of the information that you and the research team will have access to about the participants/donors.	

Click or tap here to enter text.

Please describe how you propose to obtain/collect, process, securely store and dispose of the human tissue.

Click or tap here to enter text.

Please explain if and how samples will be anonymised.

Where samples are not anonymised, please explain how confidentiality will be maintained, including how this information will be securely and appropriately stored and disposed of.

Click or tap here to enter text.

Section 5: Data Collection, Storage and Disposal

Research undertaken at SSBM by staff and students must be GDPR compliant. guidance see

☒Please confirm that you have included the SSBM Privacy Notice with the Participant Information Sheet and Consent Form

☒ By ticking this box, I confirm that I have read the Data Protection Research Standard, understand my responsibilities as a researcher and that my project has been designed in accordance with the Standard.

Section 5.1 Data Collection and Analysis

Which of these data collection methods will you be using? Please select all that apply.

☒ Interviews

☒ Questionnaires/Survey

☐ Focus groups

☐ Observation

☒ Secondary sources

☐ Clinical measurement

☐ Digital media

☐ Sample collection

☐ Other

If Other, please specify: Click or tap here to enter text.

Please ensure that you include a copy of the questionnaire/survey with your application.

What type of data will you be collecting?

☐ Quantitative data

☒ Qualitative data

Please describe the data analysis and data anonymisation methods.

The survey responses will be aggregated. The interview will be transcribed and stored securely. Any quotations will be anonymised in the dissertation and statistical data will be presented in aggregates or ranges

Section 5.2 Data Storage, Access and Security

Where will you store the data? Please select all that apply.

□ H:\ drive on UWE network

□ Restricted folder on S:\ drive

□ Restricted folder on UWE OneDrive

☒ Other (including secure physical storage)

If Other, please specify: Data will be stored on the researcher's secured physical drive and a backup on a secured cloud drive

Please explain who will have access to the data.

Only the researcher and mentor will have access to the data. The interviewee will be provided a copy of only their interview for fact checking

Please describe how you will maintain the security of the data and, where applicable, how you will transfer data between co-researchers.

The data will be stored in a secured online cloud drive with two factor authentication enabled on the account. Any attempt at access will require a code from a device that only the researcher will possess.

Section 5.3 Data Disposal

Please explain when and how you will destroy personal data.

Personal data will be destroyed one year after the date of the interview or on request by the interviewee, whichever is earlier. The data stored on the researchers' local drive will be scrubbed. The data stored on the cloud will be permanently deleted.

Section 6: Other Ethical Issues

What risks, if any, do the participants (or donors, if your project involves human tissue) face in taking part in the project and how will you address these risks?

There are no physical risks to the participants. Participants in the research will self-declare that they are authorised to speak with the researcher about the subject.

Are there any potential risks to researchers and any other people as a consequence of undertaking this project that are greater than those encountered in normal day-to-day life?

None

How will the results of the project be reported and disseminated? Please select all that apply.

☐ Peer reviewed journal

☐ Conference presentation

☐ Internal report

☒ Dissertation/thesis

☐ Written feedback to participants

☐ Presentation to participants

☐ Report to funders

☐ Digital media

☐ Other

If Other, please specify: Click or tap here to enter text.

Does the project involve research that may be considered to be security sensitive? For further information	No
Please provide details of the research that may be considered to be security sensitive.	
Click or tap here to enter text.	
Does the project involve conducting research overseas?	No
Have you received approval from your Head of Department/Associate Dean (RKE) and is there sufficient insurance in place for your research overseas?	Not applicable
Please provide details of any ethical issues which may arise from conducting research overseas and how you will address these.	
N/A	

Section 7: Supporting Documentation

Please ensure that you provide copies of all relevant documentation, otherwise the review of your application will be delayed. Relevant documentation should include a copy of:

- The research proposal or project design.
- The participant information sheet and consent form, including a UWE privacy notice.

- The questionnaire/survey.
- External ethics approval and any supporting documentation.

Please clearly label each document - ensure you include the applicant's name, document type and version/date (e.g. Joe Bloggs - Questionnaire v1.5 191018).

Section 8: Declaration

☒ By ticking this box, I confirm that the information contained in this application, including any accompanying information is, to the best of my knowledge, complete and correct. I have attempted to identify all risks related to the research that may arise in conducting this research and acknowledge my obligations and the right of the participants.

Name: Venkat Chandar

Date: 10/08/2021

APPENDIX F:

INFORMATION SHEET

Title	*Evaluation of business strategies of mobile game publishers in India*
Coordinating Principal Investigator/	*Venkat Chandar*
Location	*India*

Part 1 What does my participation involve?

1 Introduction

You are invited to take part in this research project, which is called **Evaluation of business strategies of mobile game publishers in India**. You have been invited because you had indicated in the survey that you represent a profitable company in the mobile games business in India Your contact details were obtained from the screener survey, or from LinkedIn.

This Participant Information Sheet/Consent Form tells you about the research project. It explains the processes involved with taking part. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully. Ask questions about anything that you don't understand or want to know more about. Before deciding whether to take part, you might want to talk about it with a relative, friend or local health worker.

Participation in this research is voluntary. If you don't wish to take part, you don't have to.

If you decide you want to take part in the research project, you will be asked to sign the consent section. By signing it you are telling us that you:

• Understand what you have read

• Consent to take part in the research project

• Consent to be involved in the research described

• Consent to the use of your personal and health information as described.

You will be given a copy of this Participant Information and Consent Form to keep.

2 What is the purpose of this research?

This research is being conducted to bridge a knowledge gap that impedes businesses from attaining profitability and sustainability in the business of games.

The aim of the research is to create a framework for other businesses to follow to achieve what the company you represent has.

The results of this research will be published, and will be used the researcher, Venkat Chandar, to obtain a Doctorate in Business Administration degree

3 What does participation in this research involve?

If you decide to take part in the research project, you will first be given consent form to sign, and a questionnaire asking about yourself and the company you represent; this will determine if you are eligible to take part. Completing the questionnaire will take approximately 10 – 15 minutes.

If the screening questionnaire shows that you meet the requirements, then you will be able to start the research project. If the screening questionnaire shows that you cannot be in the research project, the researcher will discuss other options with you.

The interview with the researcher will be conducted over a video conferencing software like Zoom. The interview will last between 45 to 60 minutes at a time and date of your choosing. The interview will be conducted in English. If you are not comfortable speaking English, the researcher will arrange for a translator.
The interview will be recorded by the researcher with your consent and will be stored securely.
At the end of the interview, the researcher may request for additional time to ask any follow up questions or cover any unanswered questions.

During the interview, the researcher will ask you a series of questions about yourself, the business you represent and ask you to share your thoughts.
The questions posed will be open ended, with no right or wrong answers.

This research project has been designed to make sure the researcher interprets the results in a fair and appropriate way and avoids study doctors or participants jumping to conclusions.

There are no costs associated with participating in this research project, nor will you be paid.

4 Other relevant information about the research project

During the course of this research, the researcher will be speaking to around 10 people like yourself.

Each interview will be conducted separately, and the interview, their details, and results will be kept completely confidential.

This research has Venkat Chandar as the primary researcher and no assistant researchers.

5 Do I have to take part in this research project?

Participation in any research project is voluntary. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage.

If you do decide to take part, you will be given this Participant Information and Consent Form to sign and you will be given a copy to keep.

6 What are the possible benefits of taking part?

The researcher cannot guarantee or promise that you will receive any benefits from this research; however, after the research is published, you will have access to the paper, and may be able to derive additional insights that may help improve your business.

7 What are the possible risks and disadvantages of taking part?

You may feel that your interview and answers may be accessed by third parties; The researcher will store the interview on a secured local drive, and a backup copy of the interview on a cloud drive with two-factor authentication enabled. The interview recording can only be accessed by the researcher, their supervisor or yourself.

You may be averse to sharing information about the company you represent; The researcher will not discuss or reveal any information about you or your participation in this research (save for naming the company you represent) to other participants. Any data shared during the interview process will be aggregated in the research and all identities will be anonymized.

You may feel that some questions are stressful or upsetting; If you do not wish to answer a question, you may skip it and move to the next, or stop the interview immediately.

8 What if I withdraw from this research project?

If you do consent to participate, you may withdraw at any time. If you decide to withdraw from the project, please notify the researcher before you withdraw. The researcher will inform you if there are any special requirements linked to withdrawing. If you do withdraw, you will be asked to complete and sign a '**Withdrawal of Consent**' form; this will be provided to you by the researcher.

If you decide to leave the research project, the researcher will not collect additional personal information from you, although personal information already collected will be retained to ensure that the results of the research project can be measured properly and to comply with law. You should be aware that data collected up to the time you withdraw will form part of the research project results. If you do not want your data to be included, you must tell the researcher when you withdraw from the research project.

9 Could this research project be stopped unexpectedly?

The risk of this research project stopping is very low. However, some reasons may include:

- A lack of participants
- The researcher concludes that the work is unnecessary or invalid
- The research supervisor deems that the work is unnecessary or invalid
- Unforeseen circumstances

10 What happens when the research project ends?

After the research is concluded, the researcher will contact you via your preferred mode of communication and share a summary of the result.

You will also be given a chance to ask any follow up questions or request a copy of the dissertation from the researcher.

The research is scheduled to conclude around March 2022, and the researcher will complete the dissertation around March 2023.

Part 2 How is the research project being conducted?

11 What will happen to information about me?

By signing the consent form, you consent to the researcher collecting and using personal information about you for the research project. Any information obtained in connection with this research project that can identify you will remain confidential. The data collected is for the research in question ONLY and will not be shared or used in any future or parallel research. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

All personally identifiable data such as your name, title, contact information etc. that is shared with the researcher will be stored securely on a local drive and a backup copy of the same will be stored on a cloud drive with two factor authentication. The only people with access to the cloud drive will be the researcher and the research supervisor.

All information shared during the interview will be anonymized (if identifiable data) or presented as aggregates or ranges (if figures) in the dissertation.

It is anticipated that the results of this research project will be published and/or presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified, except with your express permission. Your confidentiality will be maintained by anonymizing your identity and the company you represent.

In accordance with the privacy laws of the EU and other relevant laws, you have the right to request access to the information about you that is collected and stored by the researcher. You also have the right to request that any information with which you disagree be corrected. Please inform the researcher named at the end of this document if you would like to access your information. The researcher will then provide a copy of the interview transcript for your perusal.

All data will be stored for a period of 1 (ONE) year from the date of the interview, or the date you wish to withdraw from the research, whichever is earlier.

At the end of the study, and the publication of the dissertation, the researcher will purge all local copies and securely erase the storage drive. The cloud backup will be permanently destroyed with no way to recover the data.

12 Complaints and compensation

If you have any concerns or complaints about the research or interview process, you may contact the research supervisor or the institute directly. This information is provided in the subsequent section

13 Who is organizing and funding the research?

This research is being self-funded by the researcher as part of the requirement toward a Doctorate in Business Administration. There are no financial benefits applicable for any parties involved in the research.

14 Who has reviewed the research project?

The ethical aspects of this research project have been approved by the Supervisor/Mentor of *SSBM Geneva*.
This statement has been developed to protect the interests of people who agree to participate in human research studies.

15 Further information and who to contact

The person you may need to contact will depend on the nature of your query. If you want any further information concerning this project or if you have any problems which may be related to your involvement in the project, you can contact the researcher on **+xx-xxx-xxx-xxx** or any of the following people:

Research contact person

Name	Venkat Chandar
Position	Primary Researcher
Telephone	
Email	

For matters relating to research at the site at which you are participating, the details of the local site complaints person are:

Complaints contact person

Name	
Position	
Telephone	
Email	

If you have any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general, then you may contact:

Reviewing Supervisor/Mentor name	
HREC Executive Officer	
Email	

Reviewing HREC approving this research and HREC Executive Officer details

APPENDIX G:

INTERVIEW CONSENT FORM

Research project title: ***Evaluation of business strategies on mobile game publishers in India***

Research investigator: Venkat Chandar

Research Participants name:

The interview will take between 45 – 60 minutes. We don't anticipate that there are any risks associated with your participation, but you have the right to stop the interview or withdraw from the research at any time.

Thank you for agreeing to be interviewed as part of the above research project. Ethical procedures for academic research require that interviewees explicitly agree to being interviewed and how the information contained in their interview will be used. This consent form is necessary for us to ensure that you understand the purpose of your involvement and that you agree to the conditions of your participation. Would you therefore read the accompanying **information sheet** and then sign this form to certify that you approve the following:

1) The interview will be recorded, and a transcript will be produced
2) You will be sent the transcript and given the opportunity to correct any factual errors
3) The transcript of the interview will be analysed by Venkat Chandar as research investigator
4) Access to the interview transcript will be limited to Venkat Chandar and academic colleagues and researchers with whom he might collaborate as part of the research process
5) Any summary interview content, or direct quotations from the interview, that are made available through academic publication or other academic outlets will be anonymized so that you cannot be identified, and care will be taken to ensure that other information in the interview that could identify yourself is not revealed
6) The actual recording will be kept
7) Any variation of the conditions above will only occur with your further explicit approval

Optional consent for direct quotation

If you wish to give explicit consent to the researcher to allow them to quote you directly, please initial next to any of the below statements. If all statements below are left unchecked, clause (5) from the previous section will apply.

	I wish to review the notes, transcripts, or other data collected during the research pertaining to my participation.
	I agree to be quoted directly.
	I agree to be quoted directly if my name is not published and a made-up name (pseudonym) is used.
	I agree that the researchers may publish documents that contain quotations by me.

All or part of the content of your interview may be used

1) In academic papers, policy papers or news articles
2) On our website and in other media that we may produce such as spoken presentations
3) On other feedback events
4) In an archive of the project as noted above

By signing this form, I agree that

1) I am voluntarily taking part in this project. I understand that I don't have to take part, and I can stop the interview at any time.
2) I have read the accompanying **information sheet**
3) The transcribed interview or extracts from it may be used as described above
4) I don't expect to receive any benefit or payment for my participation
5) I can request a copy of the transcript of my interview and may make edits I feel necessary to ensure the effectiveness of any agreement made about confidentiality
6) I have been able to ask any questions I might have, and I understand that I am free to contact the researcher with any questions I may have in the future.

APPENDIX H:

FORM FOR WITHDRAWAL OF PARTICIPATION

Title	*Evaluation of business strategies of mobile game publishers in India*
Coordinating Principal Investigator/	*Venkat Chandar*
Location	*India*

Declaration by Participant

I wish to withdraw from participation in the above research project and understand that such withdrawal will not affect my routine care, or my relationships with the researchers or Swiss School of Business and Management

Signature _____ Date _____

In the event that the participant's decision to withdraw is communicated verbally, the Senior Researcher must provide a description of the circumstances below.

Declaration by Researcher†

I have given a verbal explanation of the implications of withdrawal from the research project and I believe that the participant has understood that explanation.

Name of Researcher (please print) _____

Signature _____ Date _____

† An appropriately qualified member of the research team must provide information concerning withdrawal from the research project.

Note: All parties signing the consent section must date their own signature.

APPENDIX I:

PERSONAL EXPERIENCE AND GROWTH FROM THIS STUDY

When I started the DBA journey, it was surreal. I had graduated a decade earlier, completely out of the studying habit, and learning something new outside of the professional environment was a challenge on a monumental scale for me.

However, with the guidance of my mentor, and the support of well-wishers, I was able to get back into the groove faster than I expected, and was soon turning in parts of my thesis quickly. This was a huge morale boost.

As I got more familiar with the research process, a lot of the fear dissipated. “Research” in my head, was an obfuscated, very complicated methodology of study that was only doable by the intellectually brilliant few. Once the process became clear, it was no longer intimidating, but seemed like a worthy challenge.

My reading habit expanded. Before starting this journey, I was mostly reading blogs, newsletters, industry reports and some books to keep in touch with trends and gain knowledge. The DBA journey opened up scholarly articles, periodicals, journals and other theses as additional sources of knowledge!

I began to write consistently and concisely, a habit that I could never form before and had often been told was one of my biggest weaknesses. Being able to explain oneself through only words, where tone of voice and body language (which to me had always been a critical part of process) are completely absent turned out to be the most interesting challenge to overcome. I had to often re-read what I wrote to see if the essence of what I was trying to convey was penned down.

I met a lot of people in my industry, people who I barely knew, and had really deep conversations with them. I even made new colleagues at other businesses, who I would typically have no reason to talk to, or at the least, be very skeptical to have spoken to (as we were competitors). These conversations helped me realize that there are a lot of people who have similar challenges, and want the same things.

Finally, I learned to listen. The interviews I conducted through the process made me a much better listener because I HAD to quietly listen to the participants regardless of whether I agreed or not. This was a massive change for me, since throughout my career (and perhaps most of my life), I would turn a conversation of any kind into a debate.

There are other smaller things that I experienced during this journey, and have learned from, but the list is too exhaustive, or hard to express through secondhand experience. For something that most people do only once in their lives (including myself), this period will be one of the most memorable of my life!

REFERENCES

Apple.com, 2022. App Store Review Guidelines. Available at <https://developer.apple.com/app-store/review/guidelines/> [Accessed 24 January 2022]

Aps.org, 2008. This month in Physics, October 2008 (Volume 17, Number 9). Available at <https://www.aps.org/publications/apsnews/200810/physicshistory.cfm/> [Accessed 23 November 2021]

Appodeal.com, 2022. The Mobile eCPM Report: In-App Ad Monetization Worldwide. Available at <https://appodeal.com/blog/mobile-ecpm-report-app-ad-monetization-worldwide-performance/> [Accessed 23 January 2022]

BBC, 2019. Gaming loot boxes: What happened when Belgium banned them? Available at <https://www.bbc.com/news/newsbeat-49674333> [Accessed 3 May 2021]

Businessinsider.in, 2015. A Saudi player has spent more than $1 million in Clash of Clans. Available at <https://www.businessinsider.in/tech/gossip-a-saudi-player-has-spent-more-than-1-million-in-clash-of-clans/articleshow/49486351.cms> [Accessed 21 May 2021]

Businessinsider.in, 2022. The gaming industry lauds the governments decision to setup an Animation, Visual Effects, Gaming and Comics promotion task force. Available at <https://www.businessinsider.in/advertising/media/news/the-gaming-industry-lauds-the-governments-decision-to-set-up-an-animation-visual-effects-

gaming-and-comics-promotion-task-force/articleshow/89277729.cms/> [Accessed 24 January 2022]

Developer.apple.com. Choosing a membership. Available at <https://developer.apple.com/support/compare-memberships//> [Accessed 01 December 2021]

Gamedeveloper.com, 2008. A History of Gaming Platforms: Atari 2600 Video Computer System/VCS. Available at <https://www.gamedeveloper.com/design/a-history-of-gaming-platforms-atari-2600-video-computer-system-vcs/> [Accessed 24 November 2021]

Gamedeveloper.com, 2016. Monument Valley successfully sold its expansion pack to free users. Available at <https://www.gamedeveloper.com/business/-i-monument-valley-i-successfully-sold-its-expansion-pack-to-free-users/> [Accessed 23 January 2022]

Gamesbrief, 2011. Whales, Dolphins and Minnows: the Beating Heart of a Free-to-play game. Available at <https://www.gamesbrief.com/2011/11/whales-dolphins-and-minnows-the-beating-heart-of-a-free-to-play-game/> [Accessed 2 June 2021]

Gamesindustry.biz, 2014. Free-to-play whales more rational than assumed. Available at <https://www.gamesindustry.biz/articles/2014-04-01-free-to-play-whales-more-rational-than-assumed> [Accessed 21 May 2021]

Google.com, 2022. Real money Gambling, Games and Contests. Available at <https://support.google.com/googleplay/android-developer/answer/9877032?hl=en/> [Accessed 24 January 2022]

Google Play Store, 2022. Coin Pisher – Fruit Camp. Available at <https://play.google.com/store/apps/details?id=com.coin.pusher.dozer.lucky.carnival.free&hl=en_IN&gl=US/> [Accessed 24 January 2022]

HBR.org, 2020. How businesses have successfully pivoted during the pandemic Available at <https://hbr.org/2020/07/how-businesses-have-successfully-pivoted-during-the-pandemic> [Accessed 10 July 2021]

imf.org, 2021. World Economic Outlook Database: October 2021. Available at <https://www.imf.org/en/Publications/WEO/weo-database/2021/October/weo-report?c=534,&s=NGDP_R,NGDP_RPCH,NGDP,NGDPD,PPPGDP,NGDP_D,NGDPRPC,NGDPRPPPPC,NGDPPC,NGDPDPC,PPPPC,&sy=2019&ey=2026&ssm=0&scsm=1&scc=0&ssd=1&ssc=0&sic=0&sort=country&ds=.&br=1/> [Accessed 24 January 2022]

Livemint.com, 2021. Bharatpe starts giving BMW bikes to IT professionals as joining bonus, extends offer. Available at <https://www.livemint.com/companies/news/bharatpe-starts-giving-bmw-bikes-other-perks-to-it-professionals-extends-offer-11627559450874.html/> [Accessed 24 January 2022]

Mobygames.com. Best J2ME Games. Available at <https://www.mobygames.com/stats/top_games/k,by_platform/listType,1/p,-1/ssid,64/> [Accessed 01 December 2021]

Mospi.gov, 2021. Quarterly Bulletin, Periodic Labour Force Survey January – March 2021. Available at

<https://mospi.gov.in/documents/213904/301563/Quarterly%20Bulletin%20PLFS%20January%20March%2020211638269959091.pdf/7499e879-4323-78ac-b3cd-48aaa4b7567c /> [Accessed 24 January 2022]

Nasscom.in, 2021. Facilitating the development of mobile games in India & South-East Asia. Available at <https://community.nasscom.in/communities/mobile-web-development/facilitating-development-mobile-games-india-southeast-asia-0/> [Accessed 24 January 2022]

New York Times, 2020. Salesforce to acquire Slack for $27.7 billion. Available at <https://www.nytimes.com/2020/12/01/technology/salesforce-slack-deal.html> [Accessed 10 July 2021]

Newzoo.com, 2020. The World's 2.7 Billion Gamers Will Spend $159.3 Billion on Games in 2020; The Market Will Surpass $200 Billion by 2023. Available at <https://newzoo.com/insights/articles/newzoo-games-market-numbers-revenues-and-audience-2020-2023/> [Accessed 12 May 2021]

Phonekey.com. Games by Indiagames Pvt. Ltd. Available at <https://phoneky.com/games/?v=3&q=Indiagames/> [Accessed 01 December 2021]

Pocketgamer.biz, 2021. 23 mobile games that have generated +$1 billion in lifetime sales. Available at <https://www.pocketgamer.biz/feature/66339/mobile-games-billion-dollar-club/entry/1/> [Accessed 31 May 2021]

Pocketgamer.biz, 2021. Call of Duty: Mobile hits 500 million downloads, over a $1 billion revenue. Available at <https://www.pocketgamer.biz/news/76470/call-of-duty-mobile-500-million-downloads-1-billion-revenue/> [Accessed 31 May 2021]

Polygon.com, 2018. Players keep spending thousands of dollars on Final Fantasy Brave Exvius. Available at <https://www.polygon.com/features/2018/6/8/17435980/final-fantasy-brave-exvius-gambling-addiction-gacha> [Accessed 10 July 2021]

Polygon.com, 2019. Mario Kart Tour's $4.99 monthly subscription fee is out of touch with reality. Available at <https://www.polygon.com/2019/9/25/20883283/mario-kart-tour-gold-pass-features-price/> [Accessed 23 January 2022]

Priceonomics, 2018. Gender, Income & Education: Who Plays Video Games? Available at <https://priceonomics.com/gender-income-and-education-who-plays-video-games/> [Accessed 29 May 2021]

Roblox.com. Roblox Premium. Available at <https://www.roblox.com/premium/membership/> [Accessed 24 January 2022]

Sensortower.com, 2019. The Top 1% of App Publishers Generate 80% of All New Installs. Available at <https://sensortower.com/blog/top-one-percent-downloads> [Accessed 28 May 2021]

Sensortower.com, 2019. U.S. Subscription App Revenue Grew 21% in 2019 to $4.6 Billion. Available at <https://sensortower.com/blog/subscription-apps-revenue-2019/> [Accessed 23 January 2022]

Sensor Tower Blog, 2021. 5-Year Market Forecast: App Spending Will Climb to $270 Billion by 2025. Available at: <https://sensortower.com/blog/sensor-tower-app-market-forecast-2025> [Accessed 15 April 2021].

Swrve, 2019. Swrve 2019 Monetisation Report. Available at <https://cdn2.hubspot.net/hubfs/5516657/Monetization Report_final.pdf> [Accessed 2 May 2021]

Sensortower.com, 2021. The median price of In-App purchases has grown 50% since 2017 on iOS. Available at <https://sensortower.com/blog/app-store-iap-median-price/> [Accessed 23 January 2022]

Sensortower.com, 2021. 5 Takeaways from Sensor Tower's New Mobile App Industry Report. Available at <https://sensortower.com/blog/mobile-industry-trends-report-2021/> [Accessed 23 January 2022]

Statista.com, 2021. Distribution of free and paid apps in the Apple App Store and Google Play as of December 2021. Available at <https://www.statista.com/statistics/263797/number-of-applications-for-mobile-phones/> [Accessed 23 January 2022]

Statista.com, 2021. Employability among engineering graduates across India from 2014 to 2022. Available at <https://www.statista.com/statistics/738200/employability-among-engineering-graduates-india/> [Accessed 24 January 2022]

Statista.com, 2021. Number of employees in the gaming industry across India from 2013 to 2022. Available at <https://www.statista.com/statistics/806168/india-number-of-employees-in-the-gaming-industry/> [Accessed 24 January 2022]

Support.google.com. How to use Play Console. Available at <https://support.google.com/googleplay/android-developer/answer/6112435?hl=en/> [Accessed 01 December 2021]

Techcrunch.com. Apple announces in-app purchases for free iPhone applications. Available at <https://techcrunch.com/2009/10/15/apple-announces-in-app-purchases-for-free-iphone-applications//> [Accessed 01 December 2021]

UIDAI.gov.in, 2020. State Wise Aadhar Saturation. Available at <https://uidai.gov.in/images/state-wise-aadhaar-saturation.pdf/> [Accessed 24 January 2022]

Unity3D.com, 2020. The 2020 Mobile Game Monetization Report. Available at <https://images.response.unity3d.com/Web/Unity/%7B1970254c-fdb2-4ba2-bdef-f713bf452b27%7D_The_2020_Mobile_Game_Monetization_Report.pdf> [Accessed 2 May 2021]

Unrealengine.com, 2022. Epic MegaGrants. Available at <https://www.unrealengine.com/en-US/megagrants/> [Accessed 24 January 2022]

Usgamer.net, 2016. Top 10 Highest-Grossing Arcade Games of All Time. Available at <https://www.usgamer.net/articles/top-10-biggest-grossing-arcade-games-of-all-time/> [Accessed 24 November 2021]

Venture Beat, 2012. Temple Run developer shares a behind the scenes look at making a runaway hit iOS game. Available at <https://venturebeat.com/2012/02/06/temple-

run-developer-shares-a-behind-the-scenes-look-at-making-a-runaway-hit-ios-game/> [Accessed 26 May 2021]

Venture Beat, 2020. Supercell's off year: revenues of $1.56 billion and profits of $577 million. Available at <https://venturebeat.com/2020/02/11/supercells-off-year-revenues-of-1-56-billion-and-profits-of-577-million/> [Accessed 24 May 2021]

Worldbank.org, 2020. Urban population (% of total population). Available at <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=IN/> [Accessed 24 January 2022]

Worldbank.org, 2020. GDP Growth (Annual %) India. Available at <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2020&locations=IN&start=2006/> [Accessed 24 January 2022]

WSJ.com, 2018. Meet the man who's spent $70,000 playing a mobile game. Available at <https://www.wsj.com/articles/meet-the-man-whos-spent-70-000-playing-a-mobile-game-1521107255> [Accessed 10 July 2021]

Ahlstrom, D., Bruton, G. D., & Yeh, K. S. (2007). Venture capital in China: Past, present, and future. *Asia Pacific Journal of Management*, 24(3), 247–268.

Alha, K., Koskinen, E., Paavilainen, J., Hamari, J., Kinnunen, J. (2014) Free-to-Play Games: Professionals' Perspectives. Nordic DiGRA 2014.

Alha, K., Koskiinen E., Paavilainen, J., Hamari. J (2016) Critical acclaim and Commercial Success in Mobile Free-to-play Games 1st International Joint Conference of DiGRA and FDG

Almér, E and Eriksson, G. (2019). Understanding the business model in the video game industry

Andaleeb U., Singh, S.D, (2016). A study of financing sources for start-up companies in India. International Review of Business and Finance, 08(01), p.1-4

Baum, J. A. C., Calabrese, T., & Silverman, B. S. (2000). Don't go it alone: Alliance network composition and start-ups' performance in Canadian biotechnology. Strategic Management Journal, 21(3), 267–294.

Braun, V., and Clarke, V. (2006) 'Using Thematic Analysis in Psychology'. Qualitative Research in Psychology. 3(2), 77-101. [Online] Available at: http://eprints.uwe.ac.uk/ 11735.

Bruton, G. D., Ahlstrom, D., & Obloj, K. (2008). Entrepreneurship in emerging economies: Where are we today and where should the research go in the future. Entrepreneurship Theory and Practice, 32, 1–14.

Bruton, G. D., Filatotchev, I., SI, S., & Wright, M. (2013). Entrepreneurship and strategy in emerging economies. Strategic Entrepreneurship Journal, 7, 169–180.

Carpenter, M., Daidj, N., & Moreno, C. (2014). Game Console Manufacturers: the End of Sustainable Competitive Advantage? Digiworld Economic Journal, 39-60.

Creswell, J. W. (2003). Qualitative, quantitative, and mixed methods approaches, 2nd edition.

Cope, J. (2011) Entrepreneurial learning from failure: an interpretative phenomenological analysis, Journal of Business Venturing, 26(6), 604-623.

Cotterill, K. (2012) A comparative study of entrepreneurs' attitudes to failure in technology ventures, International Journal of Innovation Science, 4(2), 101-116.

Creswell, J.W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches, 4th edition. Sage Publications.

Davidovici-Nora, M. (2014). Paid and Free Digital Business Models - Innovations in the Video Game Industry. Digiworld Economic Journal, 83-102.

Day, D. V., Gronn, P. & Salas, E. (2004), Leadership capacity in teams, Leadership Quarterly, Elsevier, 15(6), 721-892

De Prato, G., Feijóo, C., & Simon, J.-P. (2014). Innovations in the Video Game Industry: Changing Global Markets. Digiworld Economic Journal, 17-38.

Dwivedi, R. (2019). Indian Startups : Analyzing Their Vulnerabilities & Prevailing Challenges.

Frid, C. J. (2014). Acquiring financial resources to form new ventures: The impact of personal characteristics on organizational emergence. Journal of Small Business and Entrepreneurship, 27 (3), 323–341.

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. The Qualitative Report, 20, 1408-1416.

Genise, P. 2002. ‘Usability Evaluation: Methods and Techniques’. Version 2. Technical Paper. University of Texas.

Hacklin, F., Björkdahl, J., & Wallin, M. W. (2018). Strategies for business model innovation: How firms reel in migrating value. Long Range Planning, 82-110.

Hamari, J. (2011) Perspectives from behavioral economics to analyzing game design patterns: Loss aversion in social games. Paper presented at the CHI2011 Social Games Workshop.

Hamari, J., & Järvinen, A. (2011) Building customer relationship through game mechanics in social games. In M. Cruz-Cunha, V. Carvalho & P. Tavares (Eds.), Business, Technological and Social Dimensions of Computer Games: Multidisciplinary Developments (pp. 348-365).

Hamari, J., & Lehdonvirta, V. (2010) Game design as marketing: How game mechanics create demand for virtual goods. International Journal of Business Science & Applied Management, 5(1), 14-29.

Hanner, N. Zarnekow, R. (2015) Purchasing Behavior in Free to Play Games: Concepts and Empirical Validation. 48th Hawaii International Conference on System Sciences 3326-3335

Hernández, M. G., & Volter, M. (2014). Incremental digital product Innovation in social mobile games: A case study of King Digital Entertainment. Department of informatics Master's program in IT Management.

Hsu, D. H. (2007). Experienced entrepreneurial founders, organizational capital, and venture capital funding. Research Policy, 36 (5), 722–741.

Jenkins, A.S., Wiklund, J. and Brundin, E. (2014) Individual responses to firm failure: appraisals, grief and the influence of prior failure experience, Journal of Business Venturing, 29(1), 17-33.

Johnson, M. W., Christensen, C. M., & Kagermann, H. (2008). Reinventing your business model. Harvard Business Review, 50-59.

Kalyanasundaram, G. (2018) Why Do Startups Fail? A Case Study Based Empirical Analysis in Bangalore. Asian Journal of Innovation and Policy.

Kerr, W. R., & Nanda, R. (2009). Financing constraints and entrepreneurship. National Bureau of Economic Research. Available at <https://www.nber.org/papers/w15498>

Klimas, P., 2017. Current Revenue (Monetisation) Models of Video Game Developers. Journal of Management and Financial Sciences, 10(28), pp.119-136.

Leavey, P. (2014) 'The Oxford Handbook of Qualitative Research'. Oxford University Press.

Liu, C., Au, Y., & Choi, H., (2012). An empirical study of the freemium strategy for mobile apps: Evidence from the Google play market. Proceedings of the 33rd International Conference on Information Systems.

Magretta, J. (2002). Why business models matter. Harvard business review, 80(4), 86-93.

Markopoulos, E., Markopoulos, P., Liumila, M., Almufti, Y., Aggarwal, V. (2020). Mapping the Monetization Challenge of Gaming in Various Domains

Matshekga, M., & Urban, B. (2013). The importance of the human capital attributes when accessing financial resources. Journal of Contemporary Management Issues, 10, 259–278

Merriam, S. (1998) 'Qualitative Research and Case Research Applications in Education'. San Francisco (USA): Jossey-Bass.

Merriam, S. B. (2002) ‘Introduction to Qualitative Research. In S. B. Merriam (Ed.), Qualitative Research in Practice: Examples for Discussion and Analysis (pp.317)’. San Francisco, California: Jossey-Bass.

Merriam, S.B. (2009) Qualitative Research: A Guide to Design and Implementation. San Francisco, California: Jossey-Bass.

Nason, R. S., & Wiklund, J. (2018). An assessment of resource-based theorizing on firm growth and suggestions for the future. Journal of Management, 44(1), 32–60.

Paavilainen, J., Hamari, J., Stenros, J. and Kinnunen, J. (2013). Social Network Games: Players’ Perspectives. Simulation & Gaming 44(6), pp. 794-820.

Pearce, C.L, Ensley, M. D., & Hmieleski K.M. (2006). The importance of vertical and shared leadership within new venture, Leadership Quarterly, Elsevier, 17(3),217-231

Rayna, T., & Striukova, L. (2014). 'Few to Many': Change of Business Model Paradigm in the Video Game Industry. Digiworld Economic Journal, 61-81.

Ritter, M., Schanz, H. (2019). The Sharing Economy: A comprehensive business model framework. Journal of Cleaner Production, 213, 320-331.

Roberson, D. N. (2005). Qualitative Research.

Robinson, O. (2013). Sampling in Interview-Based Qualitative Research: A Theoretical and Practical Guide. Available at <https://www.tandfonline.com/doi/abs/10.1080/14780887.2013.801543/>

Sambangi, S. and Barua, A., (2017). Why startups fail, how to detect a failing startup.

Seghers, A., Manigart, S., & Vanacker, T. (2012). The impact of human and social capital on entrepreneurs' knowledge of finance alternatives. Journal of Small Business Management, 50 (1), 63–86

Shane, S., & Cable, D. (2002). Network ties, reputation, and the financing of new ventures. Management Science, 48(3), 364–381.

Shoaib, S., & Mujtaba, B. G. (2016). Use it or lose it: prudently using case study as a research and educational strategy. American Journal of Education and Learning, 1(2), 81-91.

Silverman, D. (2011) Interpreting Qualitative Data. A Guide to the Principles of Qualitative Research

Sotamaa, O., & Karppi, T. (2010). Games as Services. Tampere: Department of Information Studies and Interactive Media.

Taylor, C. (2009). The Six Principles of Digital Advertising. International Journal of Advertising, 28(3), 411–418

Taylor, S. J. & Bogdan, R. (1998). Introduction to qualitative research methods: A guidebook and resource (3rd ed.). New York: John Wiley & Sons.

Taylor-Powell, E. & Renner, M. (2003). Analyzing Qualitative Data. University of Wisconsin Cooperative Extension.

Teece, D. J. (2010). Business models, business strategy and innovation. Long range planning, 43(2), 172- 194.

Unger, J. M., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. Journal of Business Venturing, 26(3), 341–358

Waller, T. (2015). Marketing Strategies of Mobile Game Application Entrepreneurs. DBA. Walden University.

Wernerfelt, B. (1984). A resource-based view of the firm. Strategic Management Journal, 5, 171–180.

Wirtz, B. W., Pistoia, A., Ullrich, S., & Göttel, V. (2015). Business models: Origin, development and future research perspectives. Long Range Planning, 1-19.

Yeu, M., Yoon, H., Taylor, C., & Lee, D. (2013). Are Banner Advertisements in Online Games Effective? Journal of Advertising, 42(2-3), 241–250

Yin, R. K. (2015). Qualitative research from start to finish (2nd ed.). New York, NY: Guilford Publications.

Yin, R. K. (2018). Case study research and application: Design and methods. Thousand Oaks, CA: Sage.

Zackariasson, P., & Wilson, T. L. (2010). Paradigm shifts in the video game industry. Competitiveness Review: An International Business Journal, 139-151.

Ziebland, S., McPherson, A. (2006). Making sense of qualitative data analysis: an introduction with illustrations from DIPEx. Medical Education, 40, 405–414.