Developing an alternate pricing model for mobile games

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Developing an alternative to the free-to-play pricing model

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Abstract

This goal of this research is to devise an alternate pricing model that addresses the shortcomings of the Free-to-play (F2P) pricing model prevalent in the mobile gaming industry. The research is conducted using the double diamond service design methodology concentrating on the core aspects of user experience.

The study starts with an introduction to the mobile gaming industry in general. We start with an overview of the current mobile software pricing models, how they evolved over time, and the need for an alternate pricing model. The user will be able to familiarize with the key concepts related to the mobile gaming industry that will serve as a foundation and help the reader in understanding the study better.

This is followed by a discussion of the various pricing models and concepts used in the software industry (drawing synergies with mobile software pricing models, where relevant) and the service design methods used for this research. We discuss the reasons for choosing the various service design tools and how they will help in the research process.

The next phase discusses the results and related findings from the service design methods used. We analyze the results obtained from the contextual interviews and the user research. We assimilate the information obtained, and map them into the service design methods chosen for research. This then leads to prototyping followed by a discussion on the implementation details of the alternate pricing model.

We then proceed to have a retrospective analysis of the alternate pricing model and how it differs from the current pricing model. We also discuss the learning from the research process, and introspect the value of the research to the mobile game industry in general.

We conclude the thesis by providing a summary of the research process; briefly discussing the tools and methodologies used in the research, the key findings, and the experiences gained during the research process as well as outlining the scope for future research.

Table of Contents

1 Introduction

The global adaptation to smartphones has been phenomenal during the past decade and the usage has been steadily increasing every year. According to MobiForge (2014), a leading mobile phone statistical data provider, there were 7 billion mobile subscribers worldwide as of May 2014 (approximately 95% of the world's population), a huge percentage of which are smartphone users.

With the advent of smartphones, it's usage for downloading various kinds of software apps for utility, productivity, and leisure have also increased. According to AppAnnie (2014), a leading statistical data provider for smartphone apps, there were around 250 million app downloads and nearly 150 million dollars paid for Apple and Google apps during Q1 2014 alone. According to Forbes (2013), the current statistics across app stores are as follows:

	GOOGLE	APPLE	MICROSOFT
Number of users (in millions)	900	600	12
Number of apps (in thousands)	800	1250	160
Number of developers (in thousands)	150	235	45
Number of downloads (in billions)	48	50	65
Paid to developers (in millions)	900	5000	100

Table 1: Global app usage statistics

Though the figures suggested are impressive, the vast majority of free apps make it incredibly hard for developers to make their apps noticeable, let alone enticing users to purchase them. On an average, an app developer makes around 0.1$/download, provided he gets noticed among the huge number of other apps. The app stores are getting competitive every day and it's hard to get noticed even when you are offering something amazing. The only exceptions are big firms that have huge marketing budgets to spend and get their apps noticed.

To add to this, a very small percentage of users actually purchase apps. A large percentage of users prefer to download the thousands of free applications instead of similar paid counterparts. This further makes it difficult for app developers to monetize their apps and hence, the need for a viable pricing model emerged.

1.1   Background

We discussed in the previous section that in spite of the vast influence of smartphones on to-day's generation and the opportunities that it presents (in the form of apps), the direct sales of apps contributes to only a small percentage of the total apps on the app store. This is part-ly due to the fact that a majority of the apps might either not exactly meet the needs of the consumer or are badly designed, both of which are undesirable.

Add to this, the fact that users can only know if an app satisfies their needs only after it is purchased. Even though app stores provide a mechanism to get back the money in case the user is not satisfied with the app, it is an extra step and sometimes time consuming. Hence many users don't prefer to take the risk of trying paid apps. All these problems led to the need for an innovative pricing model that mitigated the risks of the paid pricing model with-out compromising on monetization. Moreover, software piracy has always been a problem with most paid applications, and contributed to additional loss in revenue.

This led to the birth of a new pricing model called the Freemium pricing model (also knows as the Free to Play/F2P pricing model). The word Freemium is derived from two words – Free and Premium. It's a pricing model where you give away the core offering for free, but charge for premium features in the app. This pricing model is not unique to the mobile phone indus-try and is widely used in the software industry. In fact, a vast majority of software products these days adopt this pricing model. Noteworthy examples of software that use this pricing model are Skype, Dropbox, Evernote, etc.

According to the Peter Froberg (2014), the main aim of Freemium pricing model is to mone-tize well while making users happy. As of writing this thesis, more than 95% of app revenue is generated through in-app purchases in Apple and Google Play stores, which outlines the sig-nificance of in-app purchases. This also means that if an app is not adopting the Freemium model, then it is directly competing with it.

The key to using the Freemium pricing model successfully is to carefully balance free offer-ings while encouraging users to purchase premium content. It also requires frequent analysis and updates to tune its performance based on the changing behavior of end users. For in-stance, let's say that we have created a game that has 20 levels. The first 5 levels are free to play and the remaining ones are premium content. If we are not attracting enough new users, it might mean that our offering is not compelling enough or that we need to provide more features. On the other hand, if we are attracting users, but people are not willing to pay for the premium content, we might be offering too much for free. (Vineet Kumar, 2014)

Freemium is not to be confused with the free trial of the product or service. A trial version is a time bound fully functioning version of software that can only be used for a period of time after which the product needs to be purchased. A Freemium version is a fully functioning always-free version of the software in which, only the premium features or content is charged.

1.2 Need for an alternate pricing model

The previous section discussed the problems faced by the mobile gaming industry and the key reasons behind the popularity of the Freemium pricing model. Hence its no surprise that Free to play (Freemium) is one of the most prevalent and popular pricing models of this era.

However, it's not the perfect solution and a lot of concerns have risen over the ethical aspects and side effects of the free to play model in recent times. One of the main concerns stems from the fact that there is no upper price limit that one can pay in a game.

Mike Rose (2013) explains how people get sucked into a game, get addicted to it and end up spending huge amounts money in the game. There are many free-to-play games built around the concept of attracting vulnerable players, getting them addicted to seemingly monotonous activities that users feel compelled to spend large amounts of money on.

Jim Edwards (2015) tells us about of people spending large sums of money in a F2P game trying to get to the top of their league. The psychology behind the Freemium model is somewhat similar to gambling. Some games implement this model in such a way that users can pay to get through the ranks. Hence it is sometimes also called pay-to-progress model. There have even been instances of employee attribution because of the tactics some game companies use to entice the users into spending.

The following excerpt from Mike Rose (2013) stands testament to this fact - "I used to work at [company], and it paid well and advanced my career," the person told me. "But I recognize that [company]'s games cause great harm to people's lives. They are designed for addiction. [company] chooses what to add to their games based on metrics that maximize players' investments of time and money. [company]'s games find and exploit the right people, and then suck everything they can out of them, without giving much in return. It's not hard to see the parallels to the tobacco industry."

Moreover, only a small fraction of the total players pay for in game content. Most of the players are happy to play the game and slowly progress. The majority of the revenue is generated from the small percentage of big spenders, which in many games is substantial. So even

though you don't need to theoretically buy anything in F2P games, the addictive nature that compels users to buy due to frustration is a huge drawback and often heavily criticized.

Of course, not all F2P games are designed this way, but the majority of games are. Hence, there is a need for alternate pricing models that can address the shortcomings of the F2P model while enhancing user experience and monetization.

1.3   Research Objective

The objective of this research is to explore and design alternatives to the F2P model (as applicable to mobile games) that minimizes the drawbacks, improves user experience, and provides ample opportunities to monetize. In short, we try to address two key questions:

1. How to devise an alternate pricing model that addresses the shortcomings of the F2P pricing model?
2. How does the innovative pricing model help in monetizing the game and improve user experience?

We study how the Freemium model is implemented in current games and then use the double diamond process model and relevant service design tools to document findings and new insights about the alternate pricing model. Once this is done, the findings and results from the service design process are prototyped and tested. This research is carried out through the process of constructive research.

Polaine et al. (2013) highlights a key insight from the insurance sector that resonates with the game industry. Trust forms the most important aspect in the insurance sector and this is also applicable to the mobile gaming industry where there are hundreds of developers serving billions of users worldwide. Establishing a trustworthy relation between the developer and the end user proves to be mutually beneficial. Even fixing small glitches can have a big impact on trust and lead to a good relationship since it shows the game maker's commitment to serve quality content.

Given the vast amount of gamers across different geographies, its clearly evident that we cannot devise one pricing model that caters to the needs of everyone. Hence, the pricing model should both be flexible and easily adaptable, thereby creating a good UX experience (Hanington & Martin, 2012).

The pricing model that we intend to create should take into account, the ethnographic and cultural issues and should be easy to customize as well.

Once we have clearly understood the shortcomings of the current financial model and the intended characteristics of the target solution, we will use these as guiding points in devising the alternate pricing model.

1.4 Research approach and delimitations

As previously mentioned, we use the constructive research process for the purpose of this study.

Constructive research is a means of solving problems through the construction of plans, diagrams, and models. In other words, it is a research procedure for producing innovative constructions that are intended to solve real world problems and thereby, make contribute to the theory of the discipline to which it is applied. Constructions, in this context mean human artifacts like models, designs and systems. Hence, it is characteristic that they are researched and invented, and not discovered. The end product of the exercise is creating something new that and ceased to exist before (Kasanen et al., 1993, 243).

An example of constructive research in its purest form is artificial language (For example, morse code, braille, and computer languages). In the field of medicine, constructive research can be found in the in the development of new pharmaceuticals, or in finding a new cure or treatment for diseases (Kasanen et al., 1993).

1.4.1 The constructive research approach

The constructive research approach is derived from the pragmatist philosophy of science, that by a profound analysis of what works (or does not work) in practice, one can make a significant contribution to the theory (James.W, 1955).

The core features of the constructive research approach are summarized below.

. It focuses on relevant real-world problems that can be solved in practice.
. It attempts to solve the initial real-world problem by producing an innovative construction.
. It attempts to implement the developed construction and test its practical application.
. It facilitates the involvement and close co-operation between all involved stakeholders.
. It relates to related prior theoretical knowledge.
. It relates the empirical findings back to related theory (Lukka.K, 2000).

The constructive research approach seeks to find a construction (solution to an initial problem) by focusing on the practical relevance of the problem and solution, its functioning, connection to prior theory and the theoretical contribution of the study.
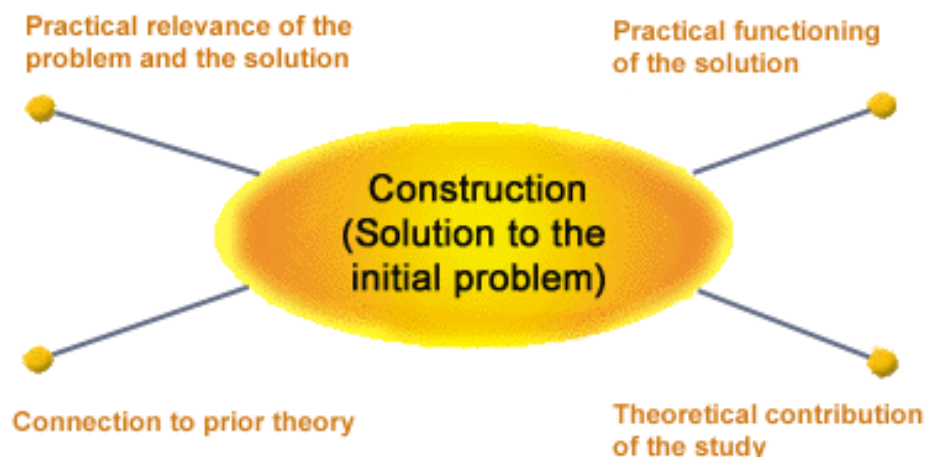
Figure 1: The central elements of the constructive research approach (Methodix)

1.4.2   Delimitations of the research

Developing an alternate pricing model requires time to implement, needs careful design and testing. Designing a mobile game is an inherently time and resource consuming process since it involves complex tasks such as creating audio & visual assets, creating a metagame, designing levels, prototyping, and integrating the various monetizing and analytical features into the game. In addition to this, to successfully validate the new financial model, it has to be tried on more than one game that has a substantial user base.

In this thesis, we study the pricing models used in software pricing and then look into the F2P pricing models and how it is implemented in games. We then use service design to devise alternatives to the F2P model. We accomplish this by conducting service design workshops with the relevant stakeholders and through contextual interviews with gamers and game designers. We also have a look at other monetization methods used in mobile games to see if they can help in modeling/complementing the alternate pricing model.

However testing the model on a large scale has been excluded since it is time consuming, resource intensive and technically challenging. It also requires a concerted effort and active involvement of many different stakeholders. Due to this fact, we also wont be able to do any performance measurements. This research also tries to look at service innovation within the gaming industry in general and not at the business challenges of a specific company.

1.5   Structure of the report

This research is comprised of two parts, a theoretical base comprised of the service design process/ service design tools used and an empirical part formulated from the service design workshops and interviews.

The first part consists of studying the theoretical framework about the different pricing models prevalent in the software industry. We investigate how the different pricing models have been traditionally used to price software and how they have evolved over time.

The second part builds upon the theoretical framework and we concentrate on gathering empirical data by conducting a design workshop with relevant stakeholders. We also have contextual interviews with gamers and with employees from the gaming industry, to take different perspectives into account while devising the alternate pricing model.

We then combine the findings and interpretations from the theoretical studies, workshops and user interviews gathered using the service design process and formulate an alternate pricing model. We will also analyze how consumers will experience the alternate pricing model in detail.
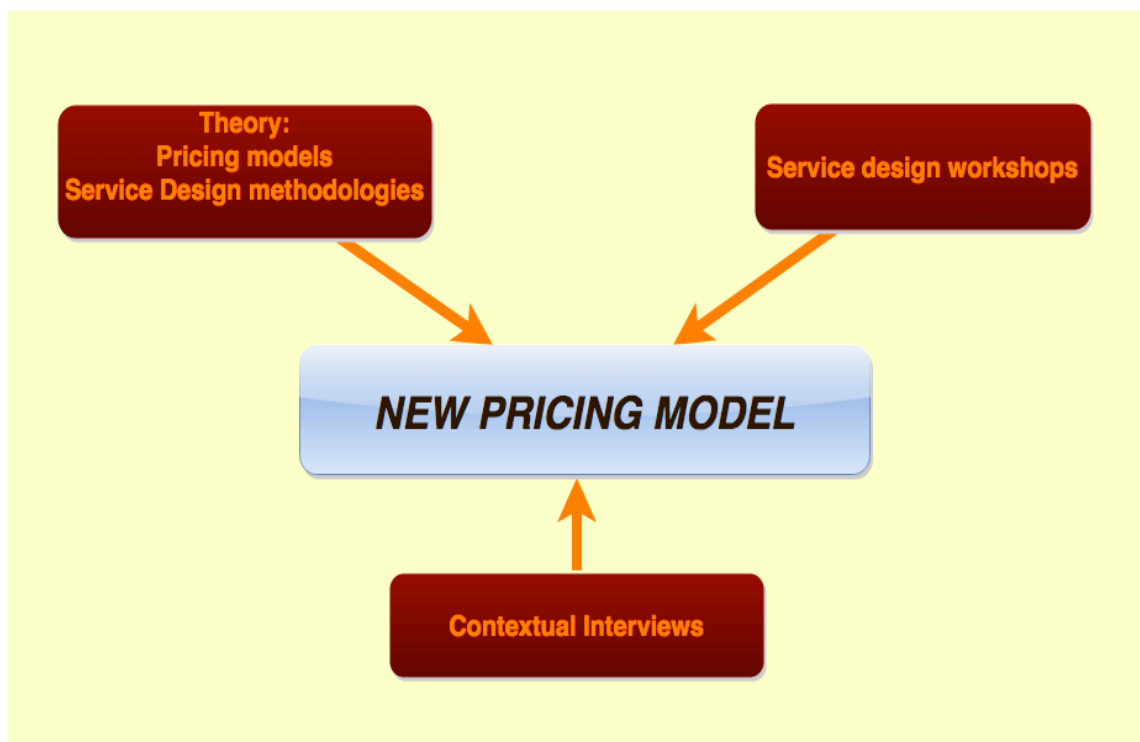

Figure 2: Structure of the thesis

2   Software pricing strategies and the Freemium pricing model

Pricing software products can be challenging and differs in many ways to pricing tangible products. While pricing tangible products can be based on production costs, market value, competition and marketing costs, the same logic cannot be applied to software products since the cost of duplicating software products is effectively zero. Software pricing is based on the perceived value of both the end users and the company. It is also influenced by the costs of producing the software, mainly the research and development costs and competition.

2.1   Software pricing

We noted in earlier sections that a large percentage of the games in app stores are free. Added to this, smartphones have evolved rapidly while their prices constantly drop, which has also contributed to their rapid adaptation. There are a few unique properties symbolic of a software product, which leads to some unusual pricing strategies. While the factors leading to these pricing strategies are often similar in nature, the actual task of pricing can be challenging.

Eran Galperin (2011) discusses the complexity of pricing software products. He notes that pricing software can be extremely tricky. He says that the complexity of setting a price is directly proportional to the price's criticality to the product's success. In other words, it's easier to gauge how much one is willing to pay for a software product, but the problem arises when we try to price our own software products.

Riding the demand curve is another thing Eran Galperin (2011) discusses. The goal while pricing a product is to maximize revenue, i.e. *"sales x price = highest possible value"*. Price elasticity of demand (PED), which is a measure used in economics to demonstrate responsiveness, suggests that price is indirectly proportional to sales. What this means is that as the price of a product increases, sales for the product drop and vice versa. This can be visualized by the demand curve shown below.
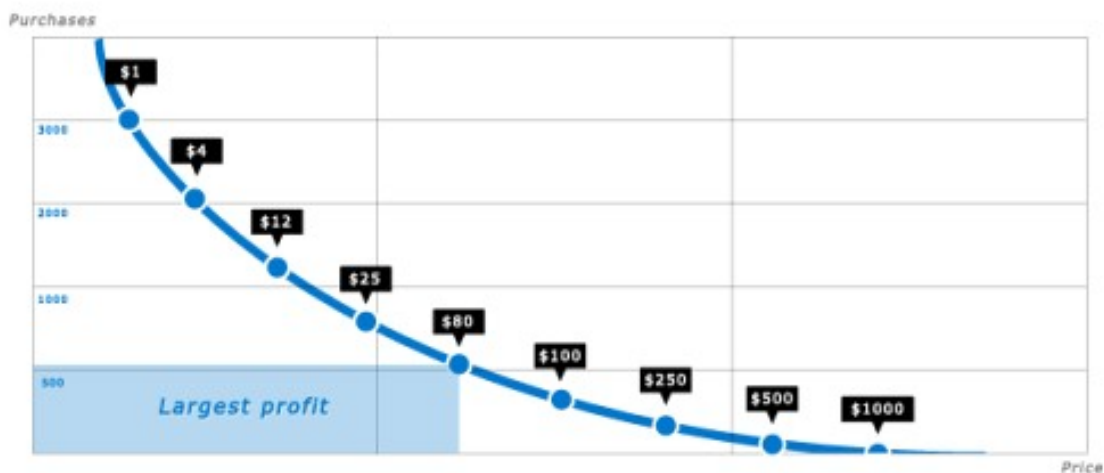
Figure 3: Demand curve (Eran Galpering 2011)

We can see from the demand curve that the largest profit is generated at the intersection or "sweet point" that forms the largest rectangle. This looks like a perfectly rational solution to devise the pricing strategy upon, but people don't always make rational decisions when it comes to buying. Consumers rather make decisions based on their own perceptions of a product rather than the intrinsic value of the product.

Neil Davidson (2009) emphasizes this fact further and says that you need to consider the value of the product to customers while deciding on a price. If the product you are planning to make saves a couple hours to the end customer and the cost of an hour is say 20$, then its appropriate to price the product at any price under 40$. This is the rational value, but most people make irrational decisions when it comes to buying products. Consumers also don't price their time, or calculate underlying costs and benefits of a product. They have a perceived value for the product that might or may not relate to its objective value.

This fact that the consumer's perceptions can be so different from the objective value shows that the sales can be affected in so many ways that are cannot be predicted in the demand curve. A classic example of this is branded products. When you buy a branded product, you pay a premium for the perceived value of the brand rather than the objective value of the product. This is also used as a strategy by many brands to sell more products at higher prices.

2.1.1   Pricing higher as a strategy

Neil Davidson (2009) notes that in order to affect the amount money consumers are willing to pay for a product, merely changing the product is not sufficient if does not change the consumer's perception of the product. Conversely, changing the user's perception of the product without changing the product (for example, using marketing) can result in increased value perception leading to higher pricing.

Eran Galperin (2011) also emphasizes this fact by highlighting that good marketing, killer demos, well-written testimonials and recommendations from partners can improve user perceptions about a product. A good visual design also helps differentiate products better and makes it stand out from the competition. Another important point to take into account when it comes to the app market is how we compete with free apps that do the same thing. He outlines four important ways to achieve higher user perception.

1. Demonstrating that our product is superior or has unique features compared to the competition.
2. Creating differentiators.
3. Better marketing.
4. Providing support.

While the first three scenarios help in creating visibility, highlighting value and selling the product better, providing support is an important differentiator that can help alleviate people's concern about after sales support. Good support can win over customers and build a relationship with them. It also helps build loyalty and the product receives free marketing through social media and word of mouth communication. The feedback provided is helpful in understanding the user's perspective about the product and the insights gathered can be used in the betterment of the product.

2.1.2   Profit Maximization

Another interesting concept when it comes to pricing is profit maximization. (Steven. E Landsburg, 2010) defines Profit Maximization as the process in which the company chooses price points and output levels with the intention of the greatest profit return. There are many approaches to achieve profit maximization. One of them concentrates on the difference between the total revenue and total cost and focuses on maximizing this difference. Another approach considers the difference between the marginal revenue and marginal cost and is based on the fact that total profit reaches its maximum point when the marginal revenue equals the marginal cost.
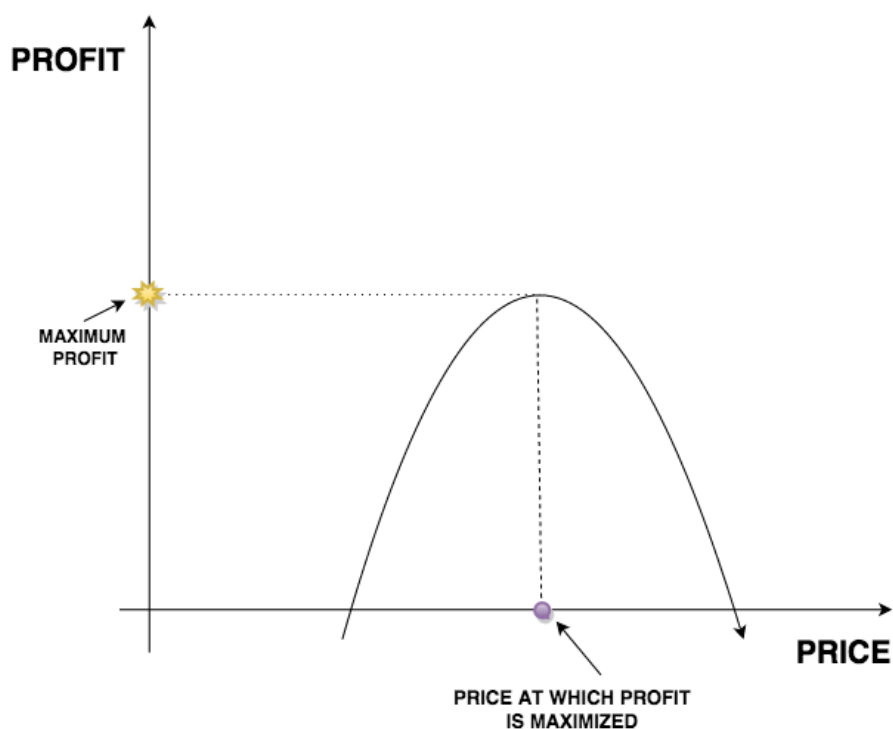
Figure 4: Profit Maximization curve.

The figure above plots a graph of the price vs the profit. We can see that at low costs or high costs (as applicable to the product being sold), the profits achieved are not optimal.
This can be explained by looking at an example. A game being sold at 0.99$ on the app store might not notice any difference in the number of new users if the price is increased to 2.99$. However, users might begin to drop if the price is further increased. So the price maximization could be understood to be optimal at about 2.99$.

2.1.3   Determining the price of new software

Neil Davidson (2009) highlights the importance of treating software as more than mere bits and bytes. The software is the whole package that includes support and documentation, support, assurance, familiarity and experience as a whole. Once the product is finalized, it's value to its customers needs to be estimated. The perceived value can be more than or less than the objective value of the product.

Lanze Thompson (2015) explains that consumer value is often inferred from quality. However he indicates that quality can also exist independent of consumer value. Quality, by itself is not a predictor of value. He tells that the key factors that determine consumer value is a

function of perceived benefits and objective value over the total cost (price, time, travel, risk, etc.), analyzed in the context of competitive choices.

For instance, the perceived value of lottery tickets is generally higher than it's objective value. Buying a $5 lottery ticket statistically yields around $3 on the long run (based on probability), but millions of people still buy them since it is perceived based on the money they would gain if they won the lottery (Neil Davidson, 2009).

The reverse of this situation is also true. People perceive paid versions of software to be generally better than it's free counterpart since people feel that companies that create paid software have a responsibility towards their users and will support it better. I know from personal experience that this is not always true. The reason for this is that most companies have a limited number of employees supporting its software. Compare this with open source free software that is supported by a community that spans across the globe, developed and used by thousands of people. The response to support queries is generally fast in open source software owing to the huge community that contributes to it.

Eran Galperin (2011) talks about running through this small exercise while pricing a new software product.

    i.   *Determining the product's objective value*

        In this phase, determine the cost rationally, assuming that people will make objective decisions while buying software. This calculation could be summarized as follows.

        (Hourly rate x Development time) - Price = Value.

        This will help us determine the value of the product if people made logical decisions. The rate and development time are variable depending on the developer's skills and experience, but the value is always a function of these two parameters.

    ii.   *Understanding the product's perceived value*

        Trying to gauge the perceived value of a product is tricky since it involves several variable parameters. One needs to consider the target audience, how it will help the end users (saves time, increases productivity, etc.), competition, etc.

        To answer these questions, a market research needs to be conducted. What other competing products exist in the market? What is the demand? How unique the product it? Is it difficult to develop the product? How much does it cost to develop it?

Primary data can be gathered by searching the app store, browsing reputed forums, or by searching the Internet. Going through this data should help in successfully assessing a product's perceived value.

iii. *Determining the value to be conveyed through the price*

A product that is priced at $0.99 conveys a very different message to users than one that is priced at $4.99. The conveyed value can differ by a huge margin. Lowering prices as a strategy to drive sales can convey a false message to consumers that the product is inferior or cheap.

After determining a product's perceived value and estimating an initial price for the product, it can be optimized in several ways.

iv. *Optimize the price*

We already discussed that the perceived value of the product has a directly effect on it's price. With creative marketing, the price can be increased by increasing the perceived value. Joel Spolsky (2006) says that frequently releasing new versions of software could help increase it's objective value and hence the price too. He stresses that revenue has undeniable increased with every new release of software.

Concentrating on the competing software's weakness and building on it is also a good way to increase the objective value (and price).

We discussed some of the basic concepts involved in pricing new products. While there is no absolute truth in pricing, the concepts discussed in this section provide a starting base to build upon. Seeking feedback from customers is something that should be done irrespective of the tactics used, since they give us valuable information of the user's perceived value.

2.1.4 Price discrimination

Price discrimination (also known as price differentiation) is a pricing strategy in which the same vendor sells similar goods or services at different prices in different markets. (Krugman P.R et al., 2003; p. 142, Robert Phillips, 2005; p.74).

It occurs due to the willingness of different customers to pay different prices for the same product based on several factors. The factors for price discrimination can differ based on demographics, customer segments, etc. For instance, the buying power of consumers can be different in different continents. A single price segment for all geographies would not be op-

timal in this situation. Selling products at prices that tend to maximize sales makes sense, provided the profit is acceptable. Another example of price discrimination would be selling products at cheaper prices for institutions. Since large institutions buy bulk licenses, the profits can be substantial. This is extremely applicable to software products since they have zero duplication cost.

Price arbitration is something to be aware of while implementing price discrimination. Arbitration happens when customers take advantage of the price difference and resell the product.

Price discrimination requires market segmentation and some kind of mechanism to discourage discount customers from becoming resellers and hence indirect competitors. Keeping the different price segments separate, obfuscating price comparisons, or controlling pricing information are tactical measures to negate arbitration. The virtual boundary set by firms to separate different price segments is also known as a rate fence. Due to these factors, price discrimination is normally common in goods or services where resale is not possible. (Wikipedia, 2012)

Price discrimination is sometimes also applied to products that are essentially identical. For instance, some so-called "premium products" have a price differential that cannot be supported by the cost of production (UCSC, 2015).

2.1.5 Versioning

Versioning is a form of second-degree price discrimination that is based on product features. Versioning is all about trying to sell the product to all consumers at the maximum price that they are willing to pay. It's a way to achieve customer segmentation based on the customer's willingness to pay. It works by grouping customers into different tiers and offering them different versions of the product at different prices (Neil Davidson, 2009).

Since versioning is a form of price discrimination, it can be implemented by differentiation based on demographics, geography, availability, features or industry. One needs to be aware of the dangers of versioning too. It's very important that the features we choose for each version appeal to the user segments we are targeting. For instance, if we introduce a 'lite' version of a product, we need to be sure that it does not provide any premium features that can deter users from buying the full version (Neil Davidson, 2009).

2.1.6 Bundling

Bundling is a way of giving customers better value by attracting them to buy bundled products at a lower price, thereby generating revenue. This is part psychology and works due to the fact that people love a bargain. Consumers generally find the idea of getting multiple products at a discounted price appealing compared to buying individual products (Neil Davidson, 2009).

A lot of 'small' information goods (music files, small apps, etc.) are sold in extremely large quantities. This is possible due to the fact that their variable costs of production are zero. Bakos and Brynjolfsson (1999, 2000) justify that the strategy of bundling information goods increases the revenue potential of each individual items.

Software can also be bundled in various forms. For instance, bundling different products and services from various suppliers (Bakos & Brynjolfsson 1999), or bundling new items into an existing product (Cusumano, 2007).

Bundling also increases the market capitalization capability of a firm and facilitates entry into different markets. It gives the providers higher power, thereby increasing the possibility of monopoly and should hence be carefully planned and executed.

2.1.7 Free pricing

Free is another form of pricing strategy. One might wonder where the strategy lies when you give away the product for free. Economists have proven that the cost of a product invariably approaches the marginal cost of production in any efficient market. This is due to the fact that the competition will drive the price lower and lower until it is at the lowest feasible price (Neil Davidson, 2009).

In March 2008, Wired published an article named "Free!: Why $0.00 is the Future of Business", and it drew focus to a popular trend where more and more software is being given away for free. This trend has sustained due to the fact that the marginal cost of the technologies powering the Internet like processing, storage and bandwidth are consistently getting lower. As a result, the cost of adding new users is almost negligible, partly due to which companies can afford to price their offerings this way (Michael Lurie et.al, 2008).

Chris Anderson (2008), the author of the Wired article, notes that "everything web technology touches starts down a path to gratis..." This trend has created a new way of looking at digital

media, information, software, and web services that companies must recognize in today's competitive market.

Of course, the fact lies that no organization can sustain by giving away their products for free. There are modified alternatives to the free pricing model that can prove effective and help companies aggregate customers and create value (Michael Lurie et.al, 2008).

- ***The subsidy model***

    In this model, the consumers buy a paid product along with a free product. The paid product subsidized the free product.

- ***The upgrade model***

    This model is based on the premise that some customers pay. Customers who pay for the premium product indirectly pay for the consumers who get the free product. This is also known as "Freemium" model and is discussed in depth in the next section.

- ***The advertising model***

    In this model, the advertisement provider pays for the user's attention. This is normally seen in scenarios where the number of users is large. Many mobile games and web-based applications use this model as the main monetization strategy.

2.2   The Freemium pricing model

2.2.1   Introduction

The Freemium business model has evolved from one of the popular software monetization model that came into being during the 1980s. The software model worked by providing limited features to consumers for free, while reserving premium features (like printing or saving) for paid consumers only. The software purchases could either be made as a single payment or through a periodically recurring subscription. The Freemium business model can be described as a mechanism where a product's basic functionality is given away for free when it has low costs of production and distribution (like software). Such Freemium products are easy to scale and provide additional functionality or premium features for a fee (Eric B. Seufert, 2014).

The Freemium or F2P model started gaining popularity during the dot-com boom of the 2000s where companies started to discover that the most valuable asset in the era of the Internet was the user and that free services attracted the biggest audience. The user engagement of

these consumers could then be turned into profits by advertising and selling premium services. These are the founding principles that gave birth to companies like Google, YouTube, Facebook and many others (Will Luton, 2013).

Smartphones have changed the way people spend time. Both organizations and consumers recognize the fact that smartphones and apps are here to stay. Smartphones usage has steadily increased every year since its inception during the early 2000's. The introduction of tablet computers has ensured that consumers are spending more of their free time on mobile apps, both at home and on the go. As consumers spend more and more time engaging with their phones and tablets, it is only natural that businesses will try to capitalize on this and more revenue will continually be generated by mobile applications (Dimitar Draganov, 2014).

It's no wonder that the Freemium model (or F2P model) dominates the mobile game industry and accounts for the majority of revenue generated. Popular games like Angry Birds, Candy Crush Saga and Clash of Clans are classic examples of F2P games that have maximized their revenue through in-app purchases facilitated using F2P dynamics.

In the following sections, we explore the economics, monetization and other components of the Freemium model in depth.

2.3   Components of the Freemium business model

According to Eric Seufert (2014), the main advantage of the Freemium business model over conventional software pricing models is that it eases massive distribution of a product and addresses large audiences (comprised of several potential spenders). The following key traits of consumers who use the Freemium product can provide more insight on how the model works.

1. The zero cost of entry (free) makes the product attractive and viable to a very large audience.

2. A large percentage of users will not engage in features of the product that lie beyond the free functionality.

3. If a section of users find the product appealing, and the product offers the functionality to make large or frequent purchases, that particular section of users may spend more money on the product than they would have if the product had a fixed cost.

Given these factors, the main challenge is to develop a Freemium product that can scale and appeal to potential users while maximizing paid engagement. The amount of paid revenue generated by this will ideally exceed the money users would have paid if the product were sold at a fixed price.

The Freemium model is not governed by a defined set of rules and is easy to misinterpret sometimes. Achieving the aforementioned features of the Freemium model is necessary to fully harness the true power of this model. Hence, the decision to adapt the Freemium model should be established early enough in the formative stages of the process and should be part of the design and development process. This whole process is an introspective exercise and the product that comes out from this exercise comes from answering key questions such as "Can the product succeed using the Freemium model" and " Can the Freemium model be successfully implemented in the product" (Eric Seufert, 2014)

The Freemium model can be thought about as a framework that is comprised of certain key components such as the ability to scale and address a large audience, provide critical insight about the end users, help in understanding user behavior, provide monetization, and expose potential areas of optimization.

We delve into the details of each of the F2P model's components in the next section and understand why they are critical in implementing the Freemium model.

2.3.1   Scale

The ability to scale is one of the most fundamental features the Freemium model is built upon. That does not mean that a Freemium product will only succeed if it is deployed on a massive scale. However the product must be extremely scalable to achieve the high level of adoption necessary to generate more revenue than it would if it was implemented using any other pricing model. It should also have low production, duplication and distribution costs. Software products can be distributed through various channels easily. Mostly, the cost for distributing a software product lies in the hosting expenses. Though these costs can be substantial at first, the marginal cost of adding additional copies is almost negligible. This is one of the fundamental premise upon which the Freemium model is built upon (Eric Seufert, 2014, 3).

According to Chris Anderson (2009, 224), scale is fundamental due to the fact that "more" is "different". To explain this with an example, while 1% of 100 students of a school volunteering to contribute to the yearbook may not be fruitful, 1% of all the visitors to Wikipedia contributing towards creating an entry will lead to a lot of information being created. It is clearly evident that scale can make a big difference in that it allows a small percentage to have a

huge impact. This is especially true of the Internet, which in itself is free and provides access to hundreds of millions of people around the world. Due to its enormous reach, it can work at a participation price that would not work in the traditional world with non-zero marginal costs. Only one in 1000 users on YouTube upload their videos, but since it has such a far-reaching audience, it works as a successful Freemium model. Even normal content creators can make a significant amount of money with the response rates of one in a thousand if the scale of audience is high enough.

As Vineet Kumar (2014) explains in his HBR article, free features provide a way to be used as an effective marketing tool. The model allows companies to scale up easily and can be used to attract more users without spending huge budgets on ad campaigns or marketing.

Based on these discussions, we can clearly see why scaling plays such an important role in the Freemium pricing model. Freemium products also often take the form of SaaS (Software as a service) or SaaP (Software as a platform), continuously evolving over time corresponding to changing user preferences and behavior.

Given the low duplication and distribution costs of the F2P model and its potential for scaling and facilitating enormous reach, the average costs to distribute the product over a large scale normalize to a level approaching $0 per unit.

2.3.2   Insight

According to Nicholas et al. (2012, 100), game companies can adapt to the transitioning market by following a few simple rules:

1. Frequent experimentation
2. Making the experiments survivable.
3. Learning from both failure and success.

This is further explained by drawing an analogy to how primeval organisms underwent mutation owing to the environment they lived in. They frequently experimented with several survival tactics in a bid to adapt to the surroundings. Some of these tactics failed with the resulting extinction of those protozoa (with a particular genetic makeup). The species however benefited by learning from this exercise and thrived as a whole, constantly adapting through the trial and error process outlined by Darwin.

It is clear from evolution that in order to successfully adapt, insight plays an important role. There is a common synergy that the F2P model draws from evolution and insight forms an in-

tegral part of the model. Insight is a methodical process of understanding user behavior within the context of a particular product. It can be gained by using a variety of tools, processes and procedures. These tools are specifically designed to track critical user interactions with the product and provide ways to optimize the product relative to a particular metric.

Eric Seufert (2014, 6) says – "Insight is a broad term that roughly describes a Freemium product's entire data supply chain, from collection to analysis". The product is designed to collect data and track key user interactions using several tools and mechanisms. The collected data can then be analyzed using popular big data crunching systems to get valuable information regarding user behavior. It also gives a better understanding of what the users like or dislike, which can then be used to improve the overall experience. It is composed of two equally important parts that are integral to the whole process.

1. The first part is concerned with data collection and the means to track and collect user interaction. This entire process involving data tracking, storing and access can be broadly termed *analytics*.

2. The second part of the insight deals with making sense of the data collected in the first part. This might involve detailed analysis of the key metrics collected. The reports generated and in general, the entire process of data crunching can be broadly described by the term "*Business intelligence*".

2.3.3 Monetization

Monetization is one of the primary goals of any business model. Even though the stipulated entry point in the Freemium pricing model is zero, monetization is in fact one of the primary concerns. In fact, the product features of the Freemium experience are designed to maximize monetization. The fundamental difference between monetization in a paid pricing model and Freemium model is the experience that transpires when a transaction occurs. In the paid pricing model, transactions are the gateway to the features of a product, which may or may not fully satisfy user expectations. In the Freemium model, the transactions are designed to deliver an enhanced user experience (Eric Seufert 2014, 7.)

Traditionally, games used to be sold as compact discs and that was the only "touchpoint" where monetization occurred. Similarly, in paid mobile games, the monetization only occurs at the point of purchase. However, the Freemium model involves a relative pricing strategy since the game itself is an important part of the monetization process. In other words, the Freemium model connects game design to the business (Will Luton 2013, 114).

Chris Anderson (2009, 209) explains how Google built one of the biggest corporations just by giving away products for free. They manage to do so by handing out a lot of products for free and making money from a select few. Their main source of revenue however is from the massive advertising network that can also be embedded on other websites (in which case, the revenue is shared with Google). New services that are created from such firms address questions such as "How useful would the new service be?" and "How cool would users perceive the service to be?" rather than prosaic questions like "How much money would this service make?" This makes a lot of sense for companies that operate purely in the digital domain where the cost of replicating products and services is marginal.

According to Eric Seufert (2014, 7), the paid pricing model presents an entry barrier with an associated cost before successful adoption. The conditions that facilitate paid pricing are met under two conditions:

1. When the user's perceived value of the product is more than the perceived cost of the product.
2. When the user's willingness and ability to spend is higher than or equal to the cost of the product.

The user base is also inversely proportional to the cost of the product, i.e. higher the price, lesser the users.

2.3.4 Optimization

Peter Froberg (2015) explains that the Freemium pricing model's popularity has increased only recently owing to the rapid success of many mobile games created in the recent years, resulting in a rapid adoption of the model. Due to F2P's immaturity, there is a death of extensive data on the best practices that in turn makes creating new Freemium products or services challenging. All of this makes Freemium pricing an ideal candidate for iterative development using lean startup principles.

We mentioned analytics in the "Insights" sections as a way to collectively refer to the data collected from user behavior, that is stored, parsed and analyzed. This is then used to modifying the behavior of the product to better the user experience. The faster this is done, the better it is for the company. Hence lean startup principles can be used to make faster decisions in this regard.
Eric Seufert (2014, 9) defines optimization as a process of converting data related to user behavior into feature improvements that can lead to an increase in a particular performance metric. Such improvements are generally implemented as an incremental process. It is particularly advantageous to use lean development methodology while implementing optimiza-

tion since improvements can be quickly implemented as opposed to the waterfall model where quick changes are not possible until the end of the development cycle. The entire process of optimization is delicate in nature since too much optimization can lead to either new product features or sidelining existing content whereas too little optimization can lead to underutilized performance tuning.

According to Nicholas et al. (2012, 103), patterns are essential in understanding our environment while helping us correlate and make connections between different entities. The key ingredients of a good experiment is to know the purpose of the test, document the testing process and defining how the results will be measured. Once this baseline is established, the tests can be run and verified against the set numbers. The results can be explained to a colleague to establish confirmation bias. Even negative tests can be run trying to disprove the results that can then serve as a way of validation.

A good thing about the Freemium pricing model is that it is conducive to this kind of optimization by rapid experimentation. This F2P pricing model is well suited to monetize games and also fits incredibly well within the ideologies of the lean startup and agile methodology. Hence using this technique, F2P games can be launched as minimum viable products and the data from analytics can serve in improving the overall user experience. This is the main reason why many successful F2P games soft-launch in a few countries, learn from the user experience of its users, modify the product and only then globally launch the product.

2.4   Freemium Economics

The mobile games industry is evolving at a rapid pace and game developers and publishers are refining their strategies as the Internet revolutionizes the way businesses function. This revolution brings with it, a fair amount of uncertainty as companies try to comprehend the related changes and adapt to it. The vast abundance and variety offered by current digital content can be attributed to this revolution, due to which, companies are forced to think of new strategies to remain both competitive and profitable.

However, the games industry can be considered to be lucky to undergo this revolution. The F2P model and its wide adoption in mobile games allows game companies to establish a relationship with its audience as gamers play the game for long duration of time. This allows companies to understand and analyze user behavior using analytics that can be used to improve the user experience. This also brings about a need for a new thinking about economics to answer questions such as - which markets the product addresses, what people buy, why some people spend a lot while many don't spend anything, and why its ok to operate in such a market with a limited number of spenders (Nicholas et.al. 2013, 35).

There is also another reason due to which F2P became the chosen monetization model in mobile games. In the past era of game development, the chosen channel to distribute games was through discs sold through retailers. Users generally purchased games based on magazine reviews, recommendations by friends, or word of mouth communication. Once the game was purchased, some were happy with the game, some were disappointed since it didn't meet their expectations and a third group of people didn't buy the game since they couldn't decide whether it was worth the money. In other words, the gaming company only exploited a portion of the market. All the consumers who purchased the product either feel that they paid less for it or too much depending on how they perceived the game. (Ben Holmes, 2014)

This is where F2P games have a clear advantage of targeting a large audience largely owing to the zero entry cost. Gamers don't have to pay upfront for the product and are free to play the game as much as they want without spending a dime. Once the consumer engages in playing the game, a small amount of money can be charged in the form of micro transactions based on the user's willingness to pay. Even non-spenders indirectly contribute to the success of the game by spreading word about the game and inherently boosting the games' ranking in the app store.

By doing this, it taps into a large segment of users who would never have played if the game were not free. Thereby the market reach for the game increases tremendously and purchases made by even a fraction of the users will lead to substantial revenue for the company. This is the basic economic premise on which the Freemium model is based upon. One of the core reasons why the Freemium model works is due to the fact that when the supply of a product increases, the demand for its complementary products increases. When the demand for mobile phones goes up, the demand for accessories such as chargers, data transfer cables and headphones go up too. This is why the logic of giving away the core product for free and making money through complementary products (in-app purchases) works for the F2P model. Of course, this model will not work with mobile phones or other tangible goods where manufacturing costs for a product are involved. However, for software products where the cost of duplication is practically zero, a massive scale will increase the probability of making a profit in the form of in-app purchases (Peter Froberg, 2015).

Though the adaptation of this model was popularized in the last decade, the opportunity that this model presents was recognized as early as the 1980's. Carl Shapiro (1983, 497) explains that consumers often tend to underestimate the value of a product, and hence, the optimal pricing would be to have a low introductory price that can then be increased as the consumer begins to realize the value of the product. Due to this reason, most consumers are reluctant to subscribe to services with long-term contracts or to prepay for products before trying them. Also, a low entry price confidently signals that the product will create value for the consumers.

Uzi Shmilovici (2011) gives an example of the different types of Freemium structures and strategies that can help you decide what to give for free vs. what to charge.

- True Freemium - The basic premise of this model is to give away the core offering for free and charge for other versions. There are two ways to implement this:

    - Value based – The more a consumer uses a product or service, the more the value derived from it and higher the switching costs. At some point, the only option is to upgrade. This is a very successful strategy used by companies like Dropbox and Evernote.

    - Characteristic based – Limiting the product or service to a specific amount of users, so that they need to pay to add more users. Collaboration based applications are a great example of this model.

- Free product for cross subsidy – This works by giving one product free and charging for complementary products. This is the model used in most F2P mobile games where the core product is given for free, and you need to buy in-app purchases to progress further or to enhance or modify relevant game content.

- Time based or free trial – Giving the full version of the software free to use for a particular time limit. The challenge here is understanding an optimal value for the time limit and creating a sense of urgency while making the consumer see the value of the product.

2.5   Freemium Monetization

As is the case with any pricing model, the ultimate goal of the Freemium model is to maximize monetization. As discussed in the previous sections, the main differences between F2P and other pricing models is the way in which they try to monetize and the zero entry cost of entry needed to try the product or service. The main objective here is to minimize the marketing costs while maximizing the user base. The following sections explain some of the important concepts needed to understand F2P monetization.

2.5.1 Continuous monetization curve

A vast majority of F2P users who pay for in-game items only make purchases when absolutely necessary. Their decision to purchase is based on their needs while using the product and at specific points of interaction. These two basic aspects namely "user needs" and "product appeal" together forms the foundation of a F2P concept called "Continuous monetization curve" (Eric Seufert 2014, 148).

The continuous monetization curve is based on the theoretical background that a product catalogue should offer a relevant and diverse set of purchasable items to the user at any given point during the interaction. These offerings should not only be static predefined items but dynamic in nature and customized to address the specific needs of the user (Eric Seufert 2014, 149).

Anderson et al. (1992) explain a similar phenomenon that occurred during the supermarket sector boom in the 1980s. They describe the importance of two catalysts that led to the rapid rise of the supermarket sector. The first factor was the diverse offerings that supermarkets offered to cater to specific needs of its consumers and "individualization", i.e. catering to the specific tastes of consumers within the context of brands, variety, etc. This meant that consumers could then shop all the products under one roof without compromising on their need for specific products.

This curve shows the possible boundaries within which, users of a F2P product can monetize. The graph is a depiction of the size and variety of purchasable items within the product's catalogue. Each point on the curve serves as a measurement of the percentage of users (depicted along the y-axis) reaching a particular lifetime customer value (depicted along the x-axis) as shown in figure 5 below (Eric Seufert 2014, 150).
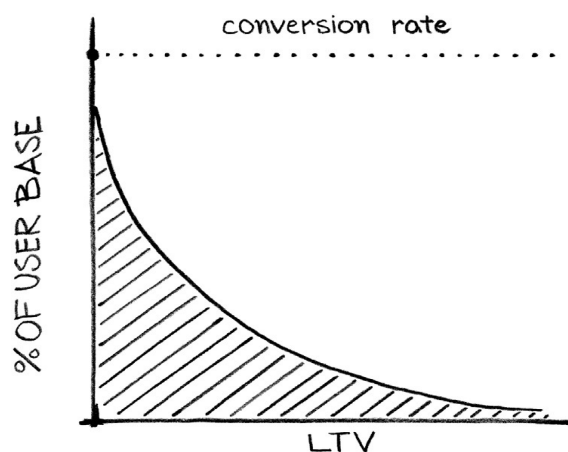

Figure 5: Continuous monetization curve (Eric Seufert 2014)

The area under the curve is the user base that spends money in the game. The y-axis below the conversion rate boundary represents less than 5% of the total consumer base. The curve shows that user base decreases as the Lifetime value (LTV) increases. LTV is a function of the user's spending behavior and lifetime for that game. In other words, the number of users who spend a significant amount in the game is fractional.

2.5.2   Core game monetization strategies and challenges

IAPs or "in-app purchases" are the core units of monetization in mobile games. The IAPs are micro transactions that a player makes in exchange for virtual items in the catalog for a particular game. The virtual items could be something like a bag of coins or gems, energy packs or virtual currency that enables a player to gain some kind of advantage while playing the game. The virtual items can either be single time usage items (also known as consumables) or items that persist throughout lifetime of the game. Proper balancing of these items can play a big role in maximizing monetization (Will Luton 2013, 119-120)

Will Luton (2013, 120) explains that IAPs let a player spend as much as they want instead of dictating how much should be paid. However, just placing IAPs in a game is not enough. It needs to enable highly repeatable purchases targeted towards players who like playing the game and don't mind spending more. Having an upper limit clearly limits the monetization limit from huge spenders and hampers potential monetization. It could also lead to a situation where players get demotivated to play the game thereby further reducing monetization. This is one of the primary reasons that games that have an upper spending limit cannot maximize monetization. Players of such games won't have a reason to return to the game and this translates to steadily decreasing monetization due to user attrition.

The main challenge in F2P games is getting players to make that first purchase. Once this is achieved, it is relatively easier to get players to make repeated purchases enabled through engaging and compelling gameplay. This is an extremely difficult task that is supported by the fact that less than 5% of users actually spend anything in a game. The inhibition to make the first purchase can be broadly attributed to two key reasons.

1. First time spending decisions are usually tricky for user since they need to decide on investing both money and time into the game and want to be sure that it is worth the effort.
2. The details of payment can be fuzzy at first. Once they understand the process and find the process to be relatively easy and trustworthy, it is much easier to overcome this barrier.

Will Luton (2013, 150) highlights three important aspects when it comes to increasing the conversion rate from free to paid users. They are user experience (UX), first purchase and social proof.

User Experience (UX)

User Experience is concerned with the study of the Human-computer interface. When users can effortlessly or intuitively navigate a system and completed a task, the UX design is considered to be good. In contrast, an inferior UX design leads to frustration due to improper aesthetics, cluttered controls or just bad design. Making the whole process of purchasing as effortless and easy as possible is one of the most important things when it comes to maximizing in-app purchases. This will reduce the possibility of users refraining from completing the transaction due to various complexities that might be involved while making the purchase.

First Purchase

The first purchase is generally a no-brainer IAP, generally sold at a cheap cost and grants a virtual item of great value. The virtual item is generally not a consumable (one time usage) but can be used over a period of time or unlocks some functionality of significant value within the game. The reason for placing a high-value but low-cost item is to encourage the user to overcome the barrier to make a first purchase. Once a user makes the first purchase, he has overcome the psychological barrier and is more likely to make more purchases in the game. It is also important to balance the value obtained by the first purchase. If it delivers a lot of value, the user may have no reason to make further purchases.

Social Proof

Social proof is a psychological process of training people that a given action is normal, given a particular situation. This is accomplished by exposing people to actions that endorse a particular behavior allowing it to be normalized. Most F2P games these days integrate social networks within the game that allow players to follow their friends' progress by logging into the social network in the game. Once a user learns about his or her friends' in-app purchases, it might encourage the user to make IAPs too. It basically plays on the psychological mindset of users since people generally have a tendency to view the actions of their friends and others in their social circle as an accepted practice.

2.6   IAP alternatives

Though in-app purchases are the main source of monetization in F2P games, there are alternatives to generate revenue. The most popular alternative to IAPs used in several games is advertisements. The reason there are alternatives to IAPs is due to the fact that F2P games need careful design, analytics, A/B testing and other tools that are both time consuming and resource rich. Independent developers and small studios can find this challenging due to tight budgets and resource constraints.

Advertising works by integrating third party software provided by various Ad networks into the game. The ad content provided by clients is pre-cached and the game can decide when to show the ads to the user. The ad network then monetizes these recordable actions. As a general rule, having users do something is more profitable than just getting the user to view content. There are different types of ads that can appear in a game:

- *"Banner ads"* that are placed either on top or bottom of the screen during gameplay.
- *"Interstitial ads"* are full screen ads displayed between levels of a game or just before the start of a new level.
- *"Video ads",* that can be part of an interstitial ad are used to grant temporary virtual items in exchange for watching the entire ad.

Apart from these straightforward techniques to display ads, you can also promote other products within a game by using cross promotion. Some games also provide an ad-free version of the game as an IAP. However, ads also have some negatives associated with it. Apart from the obvious frustration that users experience due to the deviation from the main game, it somehow associates a feeling of cheapness to the game. This is partly due to the fact that many users feel the main intention of such games is to display as many advertisements as possible. Moreover, the kind of ads displayed is not in the hands of the game developer. However proper placement and design can reduce the above mentioned disadvantages and prove beneficial.

3   Service design methodology used for research

This chapter looks to answer the main research questions by using service design methodologies. We use service design to involve users and co-create an alternate pricing model through a series of workshops. The design workshops concentrate on four main phases of Exploration, Creation, Reflection and Implementation to develop and implement a pricing model that aims to address the common needs of certain key sects of gamers.

Service design can be defined as the development of new services based on user-oriented research and analysis. Service design helps in identifying users' needs, while involving all the relevant stakeholders throughout the entire process, and carefully considering the interaction between services and users with an aim to achieve customer satisfaction and user engagement (Gummesson, E. 2006, 340 - 350).

Co-creation

Traditional research and studies have indicated that value creation has shifted from traditional firm based thinking and now identifies that the user plays a central part in creating value. Hence the consumer plays an integral part in co-creating the solution.

Stickdorn (2011, 25) mentions the importance of putting the end user at the center of a service design process. There is potentially more than just one customer group and each group possesses different needs and expectations.

According to Stephan Moritz (2005), co-creation involves active interaction between end-users and service designers during the entire service development process. It is also known as user-centered design and is a collaborative effort.

The value co-creation process consists of a set of tasks performed by the end-user to achieve a certain goal. The greater, the end users' access to information, and other resources, the more likely value is created for the consumer (Payne et al., 2008).

For the purpose of this thesis, all workshops involve end users and key stakeholders. Hence the solution (pricing model) that we aim to derive already has some validation from the consumers. Of course, the final solution will have to undergo a series of iterations to arrive at the optimal solution. We will try to address this using the design process described in the following sections.

3.1   Design flow of the research process

Stickdorn (2013, 125–134) explains that service design processes are structured and guides designers to diverge and converge their ideas. At first, the designers diverge in their thinking in order to get the big picture, concentrating on discovering and identifying user needs and the company's needs and insights. Once these critical insights are gathered, designers next try to make sense of the data gathered in an attempt to identify the most important problems and develop solutions to address those. The next step is to develop solutions, create prototypes, test the concept and iterate. Some of the key activities in this phase are brainstorming, creating prototypes, management, development and testing. The final step is the deliver

phase where the final service is provisioned and launched. This phase is iterative in nature and typically incorporates evaluation and feedback loops.

The divergent and convergent phases of the design process explained above constitute the double diamond model, one that was formulated by the British Design Council in 2005. This is illustrated in the diagram below.
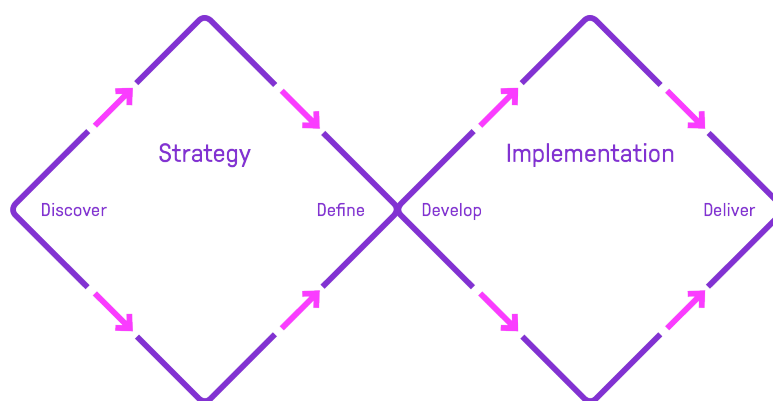
Fig 6: The double diamond model

As can be seen from the diagram, the double diamond model contains four distinct design phases called discover, define, develop, and deliver that diverge and converge. It maps the design process into points where scopes are intentionally broadened to explore and narrowed down to focus on distinct objectives. (Design Council 2005.)

 Stickdorn (2013, 122–124) maps the four phases of the double diamond process to exploration (discover), creation (define), reflection (develop), and implementation (deliver). For the purpose of this thesis, I have used Stickdorn's adaptation of the double diamond model due to its ease of application and iterative nature that I feel would be helpful in refining the solution.

Stickdorn (2013, 115–126) explains that the service design process is iterative in nature. This means that at each stage of the service design process, it is necessary to step back and introspect; and then continue (or start again). The intention of this exercise is to learn from past mistakes of the previous iteration. The iterative process defines a four-step approach to structure the design process as explained below.
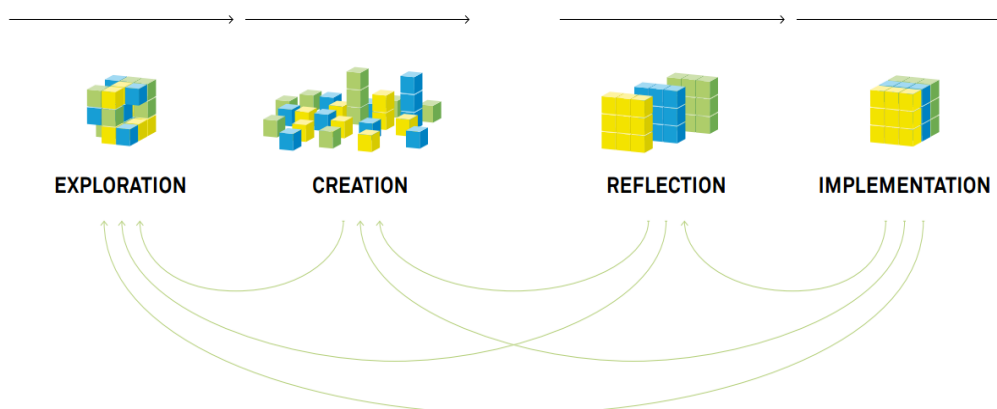
Fig 7: The iterative process of service design. (Source: Stickdorn 2011)

1. *Exploration*: The process starts with the customer in the middle of the design process. The designer needs to understand the underlying goals for a service. In this regard, gaining a clear insight on the needs and requirements of a service from a customer perspective is crucial for successful service design.

2. *Creation*: Once the customer insights are clearly established, its time to move to the next stage of testing/re-testing ideas and concepts. The goal of this exercise is not to avoid mistakes, but to rather explore and learn from the mistakes. It is important to fail early and learn from it, thereby formulating a solid understanding before moving to the implementation stage.

3. *Reflection*: Once we are done with ideating and concepting, it is time to prototype them. However, prototyping intangible services need a different approach to prototyping products. It is hard to explain services to the customer, as opposed to products, which can be readily shown. Generating a clear vision of the service concept in the customer's mind is the objective of this stage. Different tools like storyboarding, sequencing, etc. can be used to help the customer envision the service.

   It is important to prototype the services in an environment which is close to reality in order to elicit an accurate picture of the service, in the customer's mind.

4. *Implementation*: This stage concentrates on the process of change. All stakeholders should ideally have a clear vision of the concept and should aid in prototyping service touchpoints. There are several elements that can go wrong during the actual service provisioning and the management needs to support, identify and solve problems quickly and creatively. The change implementation is followed by an evaluation of

the progress. This is an inherently iterative process and encapsulates the idea of the "iterative process" in design thinking.

3.2   Discover Phase

As mentioned in the previous section, before starting a new project, it is important to gather insights, identify the needs of the user and develop initial plans. The discover phase is a divergent phase in which we look for inspirations and new ideas. In this initial phase, we use research and customer journey maps as a means to gather all information available to form a base from which, we can find alternatives.

3.2.1   User Research

John Creswell (2013, 3) notes that research approaches encompass a range of techniques from broad assumptions to meticulous methods in order to collect data, interpret and analyze the collected data. He mentions that selecting a research approach depends on the underlying research problem we are trying to address, the researcher's personal experience and also the target audience. There are two primary methods of research – qualitative and quantitative.

Isadore Newman et.al (1998, 10-11) defines qualitative research methods as those methods that focus on one particular topic or subject for a period of time where the focus is to get as much information as possible. They are generally used in the areas of case studies, ethnographic research, document studies, observational and interview studies, etc.

Quantitative research, on the other hand, concentrates on statistical or empirical data. Quantitative research is a popular method of research used for experimental studies and behavioral science. They have been a common research method when the results need to be statistically analyzed.

John Creswell (2013, 4) outlines another research method called mixed method research that is a combination of both qualitative and quantitative methods. He explains that the mixed method gives a holistic view of the research problem that is probably suited for our research purposes as well. Hence I have chosen the mixed method since I felt that it leads to a better understanding of the problem rather than using either of the research methods alone.

I started the research by conducting contextual interviews with three key segments of mobile gamers - non-spenders, spenders and whales (who spend a lot of money within the context of the game). I also talked to experts at a renowned game company to understand the current

trends and challenges in mobile game monetizing. I also read several renowned blog posts and journals about new innovations in game monetization to get an idea of the direction in which the current industry is moving. I learnt that less than 5% of the users actually spend money in the game and this number is fast going down due to the vast amount of games added every day. It was clearly evident that games can benefit from alternate pricing strategies since in some cases, the in app purchases were so low that it didn't even cover the development costs of the game.

3.2.2   Customer Journey Map

I used customer journey maps to visualize the user experience and the various monetization touchpoints presented in the game. Customer journey maps provide a structured visualization of the end user's service experience. The user's journey is constructed using touchpoints, i.e. whenever the user interacts with the service provider. The customer journey map tells the story of the user's overall perception at various stages of service provisioning.
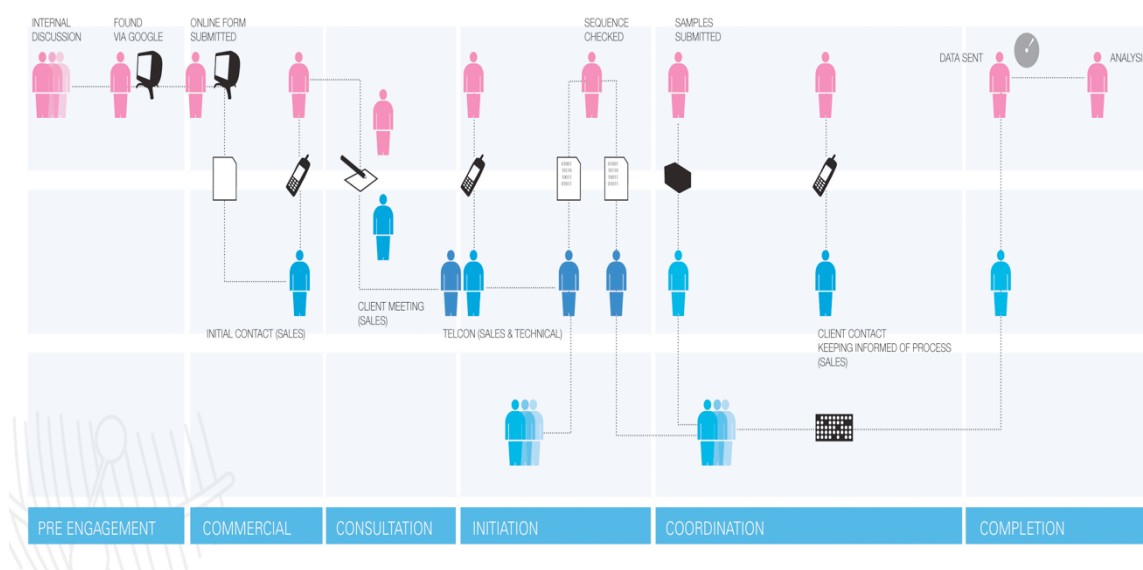
Fig 8: Customer journey maps (Source: www.servicedesigntools.org)

Stickdorn (2011, 151) outlines the importance of identifying touchpoints, or in other words, the interaction between users and the service. The goal of this tool is to generate user insights by outlining the various touchpoints. Touchpoints themselves can be physical or virtual. Once all the touchpoints have been identified, they can be connected in a visual representation of the whole service. This gives a holistic view of the service from the users point of view and it's easy to visualize and analyze the service, thereby generating valuable user insight.

It is also important to collect the stories that explain why the customer journey happened in a particular way, and the experiences that led to a particular experience rather than just visualizing the customer journey.

It's beneficial to group people into personas while doing the customer journey maps and consolidate the experience of different people within a persona. The whole idea behind this is to understand the various touchpoints involved in monetization, the user's experience, and their actions taken when they encounter such touchpoints. Once these crucial insights are known, it becomes easier to understand the challenges of the current monetization strategies and think of better alternatives.

3.3   Define Phase

In this phase, we convert the key insights gathered from the previous phase into actionable tasks. We convert the insights and findings of the discover phase into reduced set of challenges and problems to solve. The key objectives of this phase are:

- To analyze the findings and insights of the discover phase.
- Convert the findings into an actionable set of opportunities.

3.3.1   Brainstroming

Brainstorming is an ideation technique that is used to generate alternatives to an existing problem. The aim of an ideation technique is not to generate lots of solutions but a rather concise set of ideas that can be taken forward and further refined. In short, the desired outcome of brainstorming is to generate the most important set of ideas.

Brainstorming enables out of box thinking and breaking out of traditional thinking patterns. It helps us develop new ways of thinking. It is conducted as a group activity where all participants work together to create as many ideas as possible, quickly and without prejudice. The advantage of doing this activity in groups is that it can stimulate ideas in others and encourage collaborative learning where participants can build upon other's ideas.

Brainstorming starts with a facilitator, who structures the session and ensures a good discussion between the participants. The participants are briefed with the rules, mainly focusing on listing all ideas without prejudice, focus on the topic at hand and ensuring that all participants to contribute and build on the ideas.
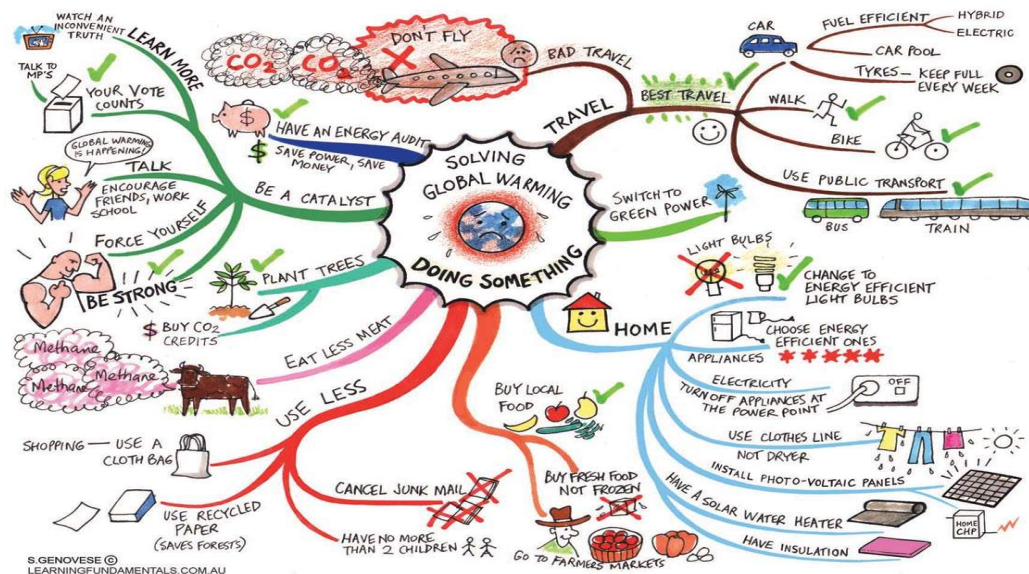
Fig 9: Brainstorming (Source: www.eslflow.com/brainstorming.html)

3.3.2   Personas

Personas are used to group users based on similar activities, attitude and behavior. They are based on real research data. Personas are fictional profiles representing a collective set of people that share the same interests or similar characteristics. Personas are normally created after thorough insight is gathered through interviews, research, etc. The insights gathered from these tools can be used to group similarities and thereby map them to a fictitious character that is close to reality. (For instance, a working mom would a good persona for a service that promotes concierge service)

Personas can serve as a useful reference in understanding the end users - the people for whom the service is being developed. Personas help tell the story of what life looks like for a customer currently and how they would like that to change in the future, thereby allowing us to explore possible solutions. It also helps us in focusing on the real end-users.

Based on extensive research carried out on mobile gamers, I consider three main personas for this thesis – non-spenders (who don't spend any money in the game), spenders (who spend little to moderate amounts of money in the game) and whales (who spend generously within the context of the game). We use these three segments to explore the challenges faced in monetizing and try to devise alternative pricing models that cater to a majority of users.

Fig 10: Personas (Source: www.businessdesigntools.com/2011/12/personas/)

3.4   Develop Phase

This stage builds on the insights and ideas of the previous section. Here we ideate, prototype and test, aiming to gain more insight through user validation. Mark Stickdorn (2011, 125) explains that end users need to visualize the whole service concept to understand how the service works. Hence it's important to prototype the concepts in a state close to reality.

3.4.1   Service Blueprint

Service blueprints are helpful in introspecting individual aspects of a service in detail. The blueprint is a visual schematic that outlines the perspectives of all the stakeholders involved (customers, provider and other relevant parties). It captures everything, from customer interactions to background process in detail. It is produced collaboratively, and it is a great way to bring different departments within an organization together to gain a common understanding.

Service blueprints are produced collaboratively. It is a great tool to involve all the stakeholders involved and to create a common understanding between all parties involved. It is held as a collaborative workshop that helps in co-creating the service with an aim to create a visual document of how the future service should be provisioned.
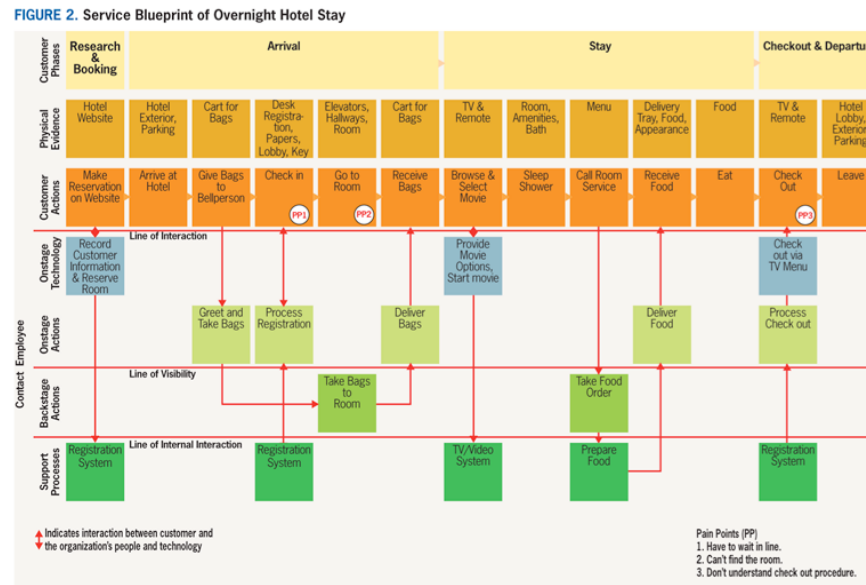
Fig 11: Service blueprinting (Source: educause.edu)

3.4.2   Rapid Prototyping

The next step is to prototype the ideas and insights gathered, carefully examining the touch-points. Creating prototypes is a good way of communicating and testing the user experience. All the stakeholders get an idea of how the service will look like and the design can be refined where appropriate. The prototypes themselves don't need to be refined and can be rough early models of the service.

One of the main requirements is that the prototype can be rapidly built, represents the service accurately, and can be iterated upon quickly. The prototypes can range from mere sketches to a fully blown service. Prototyping involves putting abstract ideas, plans and insights to create a tangible service. In other words, they are a rough representation of the design ideas and serve to iron out shortcomings and pitfalls with an aim to improve the solution before actual service provisioning.

The main goals to keep in mind during prototyping are:
- The process should be fast to implement and the prototype built should test all the interactions and touchpoints effectively.
- Check that the service addresses the user's needs and plan for improving non-functioning parts.

- Make sure that all stakeholders understand the benefits of the service.

- Gather feedback to improve during the next iteration.

The process of prototyping is iterative in nature illustrated in the figure below.
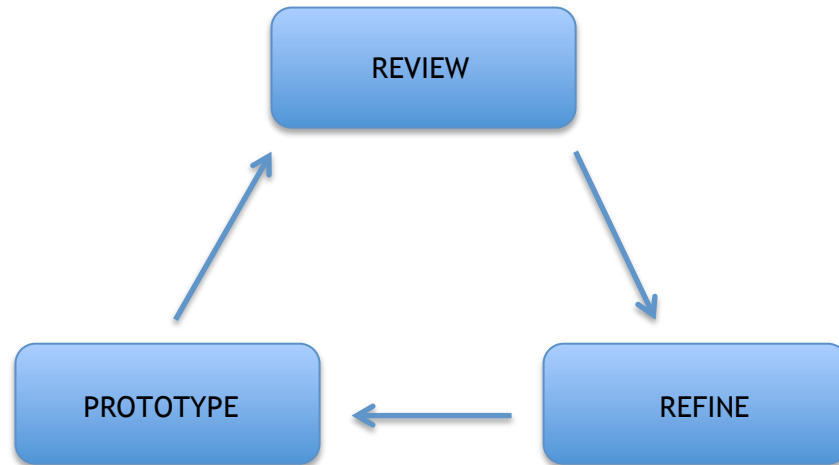
Fig 12: A single iteration cycle during rapid prototyping

3.4.3   Business model canvas

The business model canvas is a strategic management tool that can be used to analyze business models. The canvas is split into nine sections, each of which represents a block of the successful business model. It helps visualize and describe, the value proposition, customers, key partners and it's finances. It also assists organizations align their activities. The nine blocks that make up the Business model canvas according to Stickdorn (2011, 208) are as follows:

1. Key activities.
2. Key resources.
3. Partners.
4. Value proposition.
5. Customer segments.
6. Channels.
7. Customer relationship.
8. Cost structure.
9. Revenue streams.
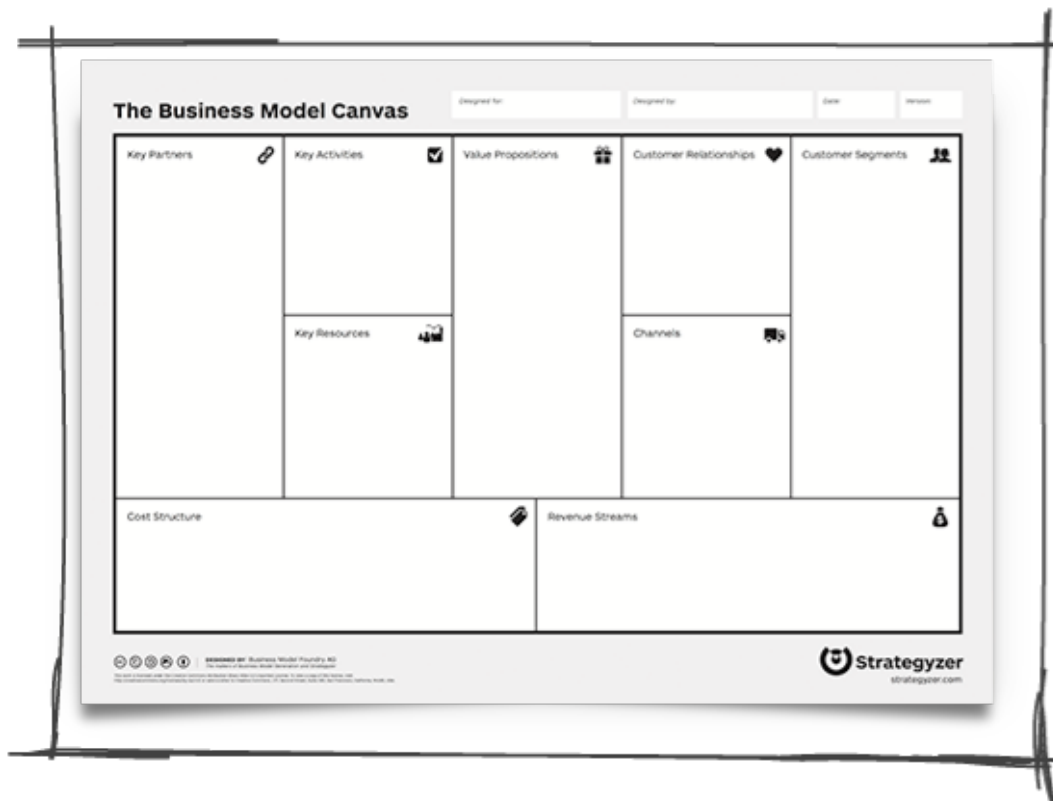
Fig 13: Business model canvas (Source: www.businessmodelgeneration.com)

The key benefit of business model canvas is that it brings clarity to the main goals of a service and identifies the strengths and weaknesses. It allows us to visualize a snapshot of how the service can be provisioned, the stakeholders involved and the partners involved. I use the business model canvas in this thesis to test the viability of the alternate pricing models developed. The Business Model Canvas serves as a template or a visual snapshot of the different factors the new solution needs to incorporate and documents all the stakeholders who have an impact on the final solution.

3.5   Deliver Phase

After the initial prototyping and iterations, we are ready to launch the final service. This involves all stakeholders and needs proper testing to ensure that the service addresses the needs that were identified earlier. In short, its time to test if the research question has been answered and the alternate pricing models actually work and are appealing to the user.

The three main objectives of this phase are:

- Making sure that the service is implemented with all insights gathered in previous phases.
- Gather feedback from all stakeholders.
- Use the feedback and lessons learnt for further improvement.

In this thesis, we try to test the final solution with a group of participants consisting of a mix of different player genres (spenders, non-spenders, etc.) and test a sample game mockup with all the alternate pricing model implemented in it. Hence we can check if the new monetizing strategies seem to work, the scenarios in which the strategies work better and scope for future improvements.

Due to the complexity of the implementation and the various external resources and stakeholders involved, we do not implement all parts of the service, but rather mockup parts of the service provisioning that are complex to implement and out of the research scope. We only try to concentrate on how the users perceive the alternate pricing models and interact with it.

This gives us a fairly good idea of which models can be taken to the next step by fully productizing it in games that cater to larger scales.

4 Findings, interpretation and results: An alternate pricing model

4.1 Overview of the entire design process

It is easier to understand the entire design journey process when it is presented visually. Hence in order to give the reader an overview of the entire service design process and the various stages involved, I have presented an overview as shown in the diagram below.

Like I mentioned in the previous section, I have used the double diamond process model for this thesis. The diagram below maps the various service design stages to the double diamond model. The upper row describes the objectives and learning from the respective stages of the double diamond model. The middle row shows the different workshops and service design tools used in different stages and the bottommost line shows the timeline of the process.
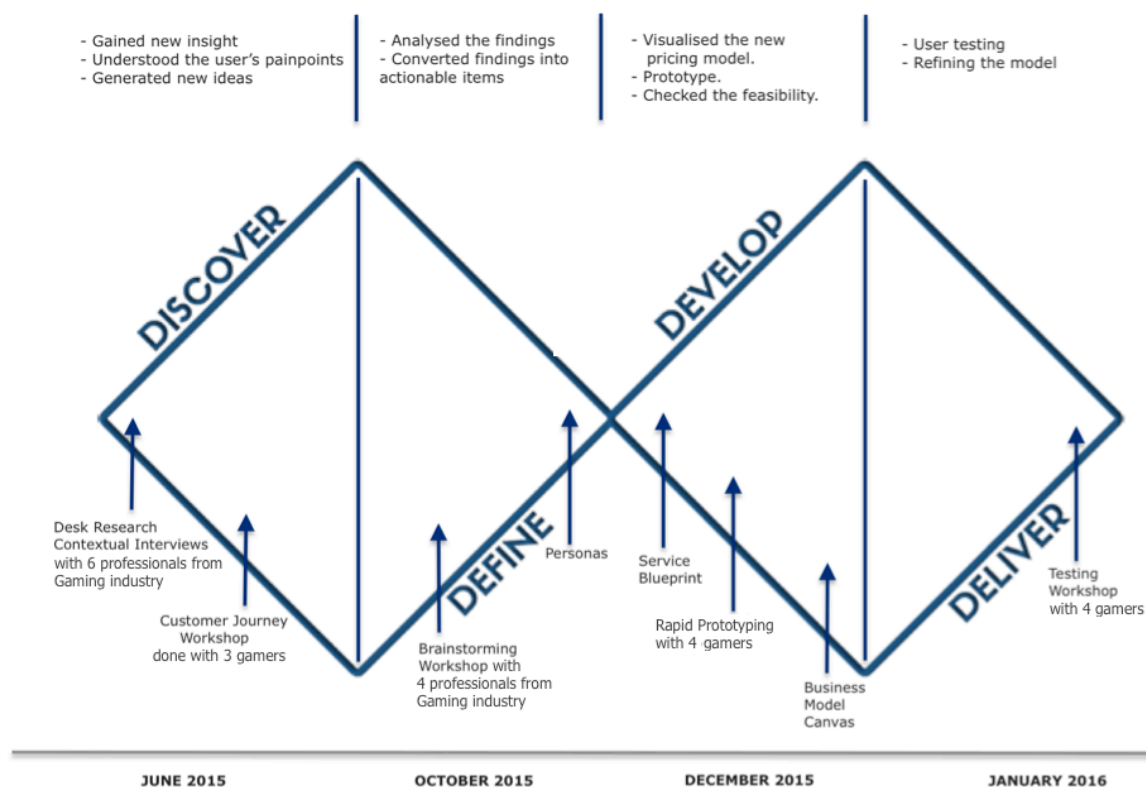
Figure 14: Service Design process overview

4.2   Findings from user research

Like I mentioned in the previous section, I chose the mixed research method for conducting user research. I interviewed four professionals from Rovio, a gaming company and two indie developers to understand the challenges faced during monetization. I also reviewed game industry reports that explained how the gaming industry was evolving to get an insight of how monetization might adapt to address the new challenges. To understand the user's side of the story and their perception of the current monetization model, I interviewed three different segments of gamers (spenders, non-spenders and grinders). The interviews were conducted using pen and paper. I also made short notes of their thoughts and experiences.

The first clear trend in mobile games that everyone seemed to agree upon is that free-to-play games generate more revenue than premium games due to the fact that there is no upfront cost for playing the game. However, it seems that once you get users to download and play your game, the monetization greatly depends on several factors like the core game play, how addictive and challenging the levels are, and how the end-users value the in-app purchases. The only other monetization strategy that exists in most mobile games apart from in-app purchases is advertisements.

On an average, less than 5 % of the users who play a game make in-app purchases. That does not generate enough revenue to sometimes even cover the development costs of the game. While advertisements add to the generated revenue, it only adds substantial revenue when the number of active users is high enough. The KPI for calculating advertisement revenue is CPM (Cost Per Mille). It is the revenue paid by the advertiser per 1000 views.

Lets say for instance, an ad provider has a CPM value of $5. If your game displays ads from that particular ad provider, you get 5$ for every 1000 views. So to make $1000, you need 200,000 active users (Assuming each of the users view one ad per day).

On the other side, many games design the gameplay such that you can win or get a substantial advantage over other gamers only by purchasing items within the game (known in gaming circles as pay-to-win games). These games are a huge deterrent to hardcore gamers who see this as an unethical practice to siphon off money from users.

Once the background research was done, I conducted interviews with 3 different segments of gamers to understand their perceptions of F2P. The three segments of gamers chosen for the interview were whales (gamers who spend a lot of money in the game), spenders (gamers who spend a moderate amount in a game) and non-spenders (also known as grinders - who normally don't buy anything, but rather prefer to play long sessions of game in order to achieve some kind of advantage). There were a lot of interesting insights gathered from the interviews. Many of the spenders and whales said that they buy items in the game due to the gameplay being addictive and that frustration (due to inability to progress) is one of the things that drive them to make in-app purchases.

F2P, when done badly, makes you pay to progress and all the gamers I interviewed really hated the "Pay to win/play on" strategy. In fact, some of the non-spenders never spend due to the fear that they might need to keep on spending once they start spending. Another drawback noted was that some games didn't balance grinders and whales. (No fair play)

It was also interesting to learn that gamers did not mind watching "incentivized advertisements" in the game when advertisements implemented in the right way. These ads are basically video advertisements that reward a user with an in-game item in return for watching them. These advertisements are generally optional and do not block the gameplay. They just offer an alternative to gain low value in-game items without spending money. However these videos are around 30 seconds in length and rewards are granted only after the user successful completes watching the entire video.
Hence the usage of this monetizing technique within a game is limited. Used wrongly, it can spoil the whole user experience and cause user attrition. Hence it needs to be balanced carefully without spamming the gamer.

It was quite clear from the background research that the F2P strategy had many shortcomings and that alternative monetization strategies were needed to address the gaps in the current monetizing models.

4.3   Customer journey maps : A gamer's perspective

Now that I had gathered some insight about gamers through research and interviews, I wanted to understand a typical monetization flow inside a game, through the eyes of gamers. To accomplish this, I used the customer journey maps with an aim to track the user's journey within the game, while documenting the important touchpoints with the current monetization strategies and their responses.

I interviewed three gamers and shadow documented their actions while they were playing a few sample games. Basically users were asked about the genre of games they like to play and asked to choose a F2P game of their choice from the app store. The users then picked a F2P game that pleased them and started playing it. The various touchpoints, processes and emotions were noted down during different stages of the game.

The main aim of the customer journey map exercise was to understand the following points:

- ➢ To properly validate the user's journey both in terms of process and touchpoints.
- ➢ To gain insight of the user's most important touchpoints.
- ➢ To identify points of displeasure for users.
- ➢ To understand the gaps in perception.

Like the previous exercise, the sample audience consisted of one non-spender, one spender, and one large spender (also known as whale). They were interviewed about the gaming experience with F2P games and we discussed about the things they liked and disliked with the model. The map outlines the processes involved, the user experience at each stage of the processes and the improvement ideas gathered from the user's perspective. It helped in recognizing the gaps in perception between game developers and it's users. This also shed many useful insights that were helpful in formulating our alternate monetizing model.

The users also mentioned specific actions at each touchpoint and their emotional responses at each of those touchpoints. This provided valuable insight on the different pain points in game design as well as the pleasure points. The journey map is shown in the diagram below.

PROCESS	USER INSTALLS THE GAME	USER PLAYS A FEW LEVELS	EVENTUALLY FAILS TO CLEAR A LEVEL	CONTINUES TO PLAY	BOMBARDED WITH ADS AND IN-APP PURCHASE OPTIONS	USER QUITS PLAYING
BACKGROUND PROCESS	USER SEARCHED THE GAME IN THE APP STORE	GAME PRE-CACHES ADS / PREPARES TO SHOW IAPS	SHOWS OPTION TO PURCHASE IAP THAT CAN HELP IN CLEARING THE LEVEL	PREPARES TO SHOW ADS	CACHES MORE ADS	USER UNINSTALLS THE GAME
USER EXPERIENCE						
IMPROVEMENT IDEAS	1. Make the game more appealing 2. Provide all information regarding IAPs before installing the game	Let the user play enough levels and try out the game before needing them to purchase.	Try to provide alternatives to purchases / ads.	Dont force the user to watch ads. Allow him to choose when he would want to choose ads (for uninterrupted playing)	Longer duration ads are annoying/ disenaging.	Ensure user engagement

Fig 15: Customer Journey map of a gamer in a typical F2P game

The journey starts by searching for a game on the app store and installing the game. Depending on the game logic, users typically enjoy the first few levels where there is no interruption. Once the F2P monetization kicks in, the experience starts to deteriorate. Many dialog's recommending an in-game item to be purchased were shown to the user. Some users chose to replay the level again and at that point in time, the advertisements started to appear.

Some of the advertisements were present in the top or bottom corner of the game (these ads are called banner ads) and obstructed the view of the game. All of this contributed to deviating the user's attention from the core gameplay and users eventually got annoyed with it. They could no longer enjoy the game without interruptions.

None of the games offered an alternate paying model and were forced to either make in-app purchases or watch badly designed advertisements that were annoying. Many of the users felt that if they were given an option to pay once and play on, they might have liked it better than having to continuously pay.

4.4   Learnings from brainstorming

Having understood the end user's insights, it was now time to convert the findings into actionable items. I now understood some of the pain points experienced by the users. These pain points had to be taken into consideration while devising the alternate pricing model. I had gathered lots of information from the service design workshops and needed a tool to crunch all that information in an attempt to come up with new ideas.

Brainstorming seemed like a great tool to do just that. I used it as a starting point in an attempt to gather as many ideas as possible from which I could narrow down a few plausible ideas to prototype. Many of the pain points discovered from the customer journey maps seemed to indicate user disengagement as one of the main reasons. The challenge was to devise an alternative pricing that monetized well and didn't hamper user engagement.

Keeping these in mind, I devised the main theme of the brainstorming exercise as – "Create an alternate pricing model that monetizes well while not disrupting user engagement". The workshop was conducted with four professionals from the mobile advertisement industry. The participants were briefed about the basic rules of brainstorming and about the problem we were trying to solve. We spent around 30 minutes generating ideas and around 15 minutes creating different themes around the ideas and exploring them further.

After pruning out some of the ideas, we arrived at a handful of ideas that could be prototyped. Some of the interesting ideas that originated out of the session are explained below:

- *Branded levels*: A game level could be entirely sponsored by a company. This means that certain artifacts within that level (such as a billboard, hoarding, signboard, etc.) would advertise the brand. These artifacts could either be interactive and part of the gameplay or just visuals that could replace advertisements. They could also be gamified, meaning that the user gets points for interacting with the branded creative.

- *Gamified ads*: This is similar to branded levels, except that these are generic ads that can be either part of the game or be displayed as plain visuals during the course of a game. Like branded levels, these could also provide some kind of reward (within the context of the game) for interaction. An example would be a game character that displays the ad (for instance, on the shirt of the character).

- *Cross promotion*: This is actually a user acquisition strategy where a game is advertised in other games thereby increasing visibility and bringing more users to the game. However this could also be used as a monetizing strategy by games that have a sizeable audience (by charging for cross promotion). This strategy is employed by many advertisement networks and can be found in several games.

- *Tangible goods*: The basic idea of this strategy is to grant in-game items with the purchase of a tangible product. The tangible product normally has a code that can be used to unlock/enable different levels or something similar in value.

- *Try for free but pay once*: This is a strategy similar to F2P except that you do not need to keep buying continuously. You pay once after playing the game for a certain period. This takes away the gripe of many F2P gamers that there is no end to spending in a F2P game. Careful design will ensure that not everyone is on the same level ground irrespective of his or her gaming skills (after the purchase). The game can pose challenges that need to be mastered and hence differentiate better gamers and ensure a competitive environment.

- *Different ad formats and strategies:* The current ad formats mostly consist of video ads, picture ads, banner ads that are shown at the top or bottom of a screen, often obstructing the view. This is one of the reasons that gamers find ads irritating and disengaging since it takes away focus from the game itself. One suggestion was to give the user several preferences to view the ad. For example, a user could be presented with say two options: view the ad before playing the game or view a couple of ads after playing a few levels, etc. Also using different ad formats like rich media ads (which can be interacted with and hence gamified) might improve the user's perception.

- *Feature/Level based charging*: This strategy involves paying for only for a part of the game (after freely trying out the game for a few levels). This is a bit similar to subscription model, except that the gamer is not bound to any kind of recurring payment. The user plays the game till a number of levels or a similar metric within the game. It's then left to the user to decide whether to level up and spend more for the next set of levels. Several different pricing strategies could be employed to make this model both attractive while being rewarding to the user at the same time.

4.5   Personas of the alternate pricing model

Based on spending patterns, gamers can be broadly categorized as whales (spend a lot), dolphins (spend moderately), minnows (spend the smallest amount possible), and freeloaders (also known as grinders - don't spend any money). We also discussed in earlier sections that in F2P model, whales generate significant revenue even though they form less than 5% of the total users for a particular game.

The new monetizing model we want to develop should not only monetize well, but also ensure good user engagement. Richard Bartle (2014) mentions four key segments of gamers in his blog:

1. Killers: These are a segment of gamers who are extremely competitive and focus on winning and their ranking. They are engaged by leaderboards and ranking and like to impose themselves upon competition in the context of the game. Some of the most skillful and competitive players belong to this category. They are generally a minority and form roughly about 1% of the total gamers.

2. Achievers: These gamers focus on achieving goals and preset targets in the game. They are driven by achievements. Achievers enjoy overcoming difficult challenges posed by different levels in the game. Their sense of achievement is directly proportional to the difficulty posed by the challenge. Achievers amount to about 10% of the total gaming population.

3. Socializers: They focus on socializing and are driven by developing a network of friends, both existing and new. They are engaged by news feeds, friend lists and chatting. Socializers like maintaining relationship with other players and are generally involved in the community aspect of the game (For example, role playing and guilds). A vast majority of gamers fall in this category.

4. Explorers: These gamers focus on exploring in an attempt to discover the unknown. They are experts and know a lot about games and know all the tricks, shortcuts, and shortcomings in a game. Explorers form about 10% of the gaming populace.

In the diagram shown below, the horizontal axis represents the propensity of players to interact with other players vs. interacting with the world and the vertical axis represents the player's preference for interacting *with* something vs. interacting *on* something. For instance, killers prefer to act on other players (by dominating others), while socializers prefer to interact with other players.

Fig 16: Bartle's player types

Based on this, I created personas that can be tested on these four main genres of gamers as shown below.

The "Socializer"

"Have you played Farmville ? I'm so addicted to that game right now!"

Julie likes to play social games once she finishes her house work so that she can connect with her friends in a fun way. It is something she looks forward to everyday and gives her a sense of accomplishment and allows her to connect with her friends living in other countries. She likes to help her friends in those social games and build guilds.

Age: 27

Occupation: Housewife

Location: Austin, Tx

Weekly Game Hours

1 2 3 4 5 6+

Tech Comfort Level

Low   High

Key Characteristics

• Learns about games primarily through friends and family

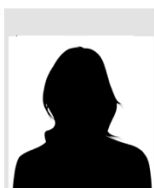• Enjoys playing games after finishing house work, before bed, and road trips

Motivations

• Wants a game that is quick and easy to learn

• Prefers games that are social

Julie's Goals

• Have fun, kill some time, and stay connected to friends

The "Explorer"

I love to deeply analyze different games and discover the finer mechanics of the game.

Suman likes to play different genres of games and reverse engineer games to understand how they work.

Age: 36

Occupation: Software Engr.

Location: Espoo

Weekly Game Hours

1 2 3 4 5 6+

Tech Comfort Level

Low   High

Key Characteristics

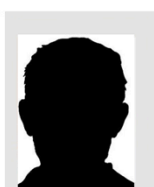Loves to look beyond the basic gameplay and explore the finer aspects of the game.

Motivations

Finds a sense of accomplishment when she discovers new game mechanics.

Suman's Goals

Finds a sense of accomplishment when they find a new shortcut, glitch or tricks.

The "Killer"

I love to play Call of duty and totally dominate the opposition !!!

Bryan is a hardcore gamer who spends a significant part of his time playing games. He plays daily and is immensely skilled at PvP(player vs player) based games. He loves to consistently be among the top gamers in the leaderboards and is highly competitive.

Age: 14

Occupation: Student

Location: Perth, Australia

Weekly Game Hours

1 2 3 4 5 6+

Tech Comfort Level

Low   High

Key Characteristics

- Enjoys playing highly competitive and top rated games
- Loves to dominate the opposition and seeks gratification in rankings

Motivations

- Loves to top the charts and prove dominance in PvP games

Bryan's Goals

- Consistently be among the best gamers.

The "Achiever"
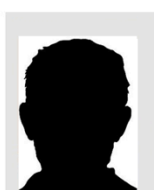
I love solving challenges and unlocking hidden items in a game !

Anil likes to play strategy based games that are difficult and challenging. He is happy when he can successfully complete difficult challenges posed in the game.

Age: 26

Occupation: Engineer

Location: Espoo

Weekly Game Hours

1 2 3 4 5 6+

Tech Comfort Level

Low   High

Key Characteristics

Loves games that pose several challenges.

Motivations

Tries to solve all challenges and puzzles in the game

Anil's Goals

A sense of accomplishment once the challenges are solved

Fig 17: Personas of the new monetization model that map into Bartle's player types

4.6   The service blueprint of the new monetizing model

Now that we had some new monetization ideas and the personas to test them against, I used service blueprints to ideate how the service would look like in the future. It was clear by now that there was no silver bullet to address the drawbacks of the F2P model and that the alternate pricing model rather needs to be a mixture of many solutions.

During brainstorming, we came up with the following alternatives:

1. Gamified advertisements.
2. One-time fee (charged after trying the game for free).
3. Cross-promoting other games.
4. Feature/stage based payment.
5. Branded levels.
6. Payment through other tangible goods (the game maker needs to have a partnership with a brand).
7. Rich media interactive advertisements.

Since we want to prototype and check the alternate pricing model as a combination of the above mentioned monetization models, I combined similar models into common options. The alternate pricing model thus created can be classified into two main models:

• Hard monetization (Payment based monetization)
• Soft monetization (Monetization based on ads revenue, cross-promotion, brands, etc.)

There are several possible options with these models and thorough testing is needed to validate the combinations that work well. The customer journey map shown above describes on of the possible flows.

Once the user has installed the game and plays enough levels to be considered engaged, a payment options screen is shown to the user. This is normally the place where the F2P mechanism starts showing up in a game. The options given to the user are:

1. Feature/Stage based payment/Subscription. (Hard monetization)
2. One-time payment/Tangible goods based. (Hard monetization)
3. Ads/Cross-promotion/Branded levels/Interactive ads based monetization (Soft monetization).
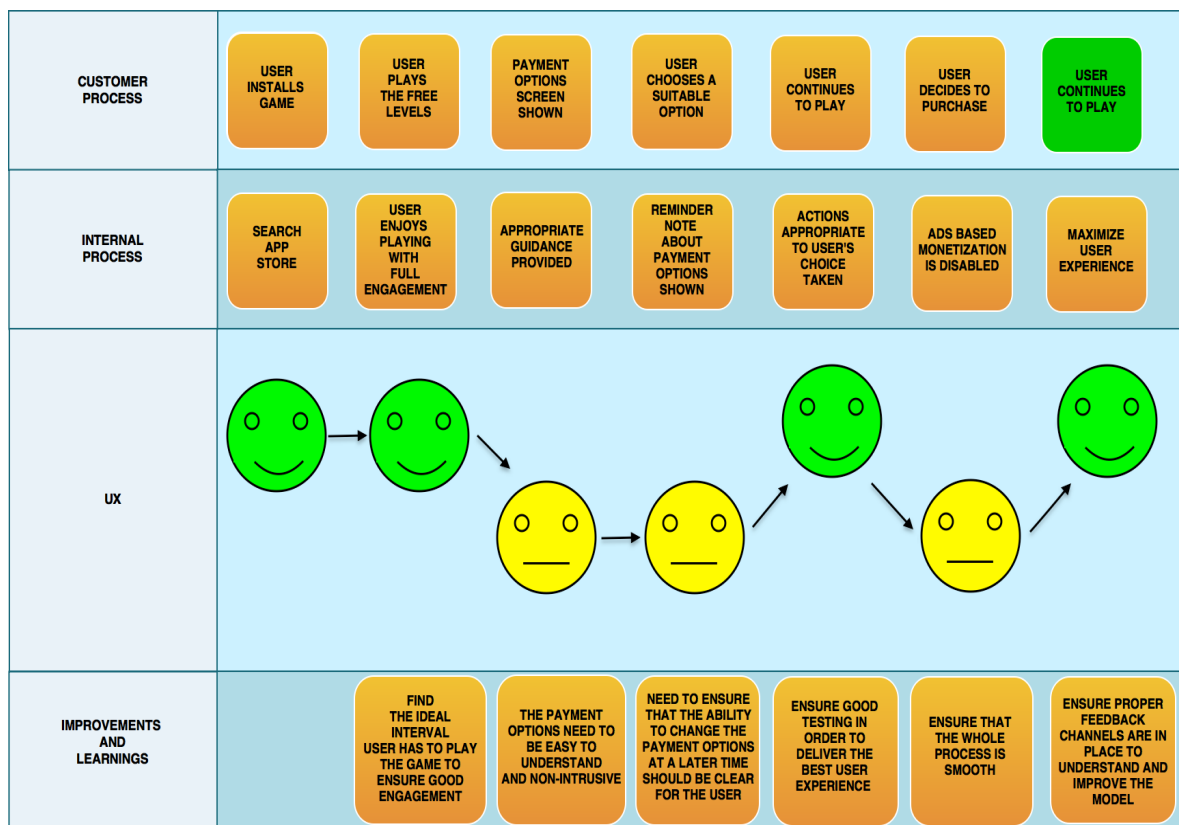
Fig 18: Service Blueprint of the new monetization model

If the user chose hard monetization, he is notified that the payment type can be changed at a later time (provided the user wishes to do that). The user then plays the game with the chosen option. Suppose the user initially chose ads based monetization (option 3) but started to like the game at one point, he can easily switch to hard monetization, thereby getting rid of ads from the game. On the other hand, if the user had chosen hard monetization (to a particular level) and does not want to spend money anymore (after the features/levels for which the user has paid), he can switch to option 3 and continue playing for free (with ads enabled).

With careful consideration, the advertisements can be intelligently integrated into the gameplay, thereby improving the user experience and engagement. Apart from this, integrating rich media interactive ads has the additional benefit of having the user interact with the advertisement as opposed to just viewing it. Hence such ads also present a good value proposition and higher eCPM.

4.7   Learning from rapid prototyping

In order to get a holistic picture of the alternate pricing model, I chose four participants, one each from the four key groups of gamers (Achievers, Explorers, Socializers and Killers). I also included a couple of casual gamers who like to play free games and never spent any money in IAPs. However, all the participants were familiar with the popular mobile games monetization strategies irrespective of their own game preferences.

At first, they were introduced to a mockup that served as the game prototype that incorporated the current F2P/Ads based monetization. Once they were familiar with the game, they were introduced to an alternate version of the game with the new monetization model in place of the F2P/Ads monetization model. This made sure that the focus remains on the monetization strategies than the game itself.

Most of the users were relatively happier using the alternate pricing model compared to F2P. Though they had different preferences, they all seemed to agree that having a choice (and a possibility of changing the choice at a later time) improved the overall experience.
There were still a few areas that had to be ironed out to make it work with the different game genres and economies, but the initial signs were encouraging. The fact that users had a choice to select the pricing models seemed to have a positive effect on the user's perception of the game.

Of course, the alternate pricing model is still in its infancy and has to be tried on a larger audience to get reliable information that can be used to further improve the model. Analytics and big data can really be helpful in this regard. It also needs careful design and relies on technicalities being in place to provision the model properly.

For the purpose of this thesis, we only focus on the learning from the first iteration. The next step is to further iterate different combinations of this model on different game genre combinations. It would need to be tested on a sizable audience and hence would have to be scaled and would need partnerships with major brands so that the integration within the game is implemented well.

The psychological impact of giving users a choice seems to strongly suggest that the future pricing model could well be a mixture of several different strategies.

4.8   The business model canvas of the alternate pricing model

Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
Brands	**Continuously develop branded levels**	**Value to brands** - Actively reach millions of people - Promote new products in innovative ways through the game.	**Acquire** - Free to download. - Cross promoted.	**Gamer segments** - Achievers. - Explorers. - Socialisers. - Killers.
Mobile Advertisers	**Promote new toys as ways of IAPs**		**Keep** - Engaging game. - Encourage user engagement. - Provide different options through which the game can be monetised	**Age groups** - Young audience. - Mid core gamers.
Toy manufacturers	**Continuously promote other games using rich media ads**	**Value to advertisers** - Cross promote other games to millions of other gamers - Provision rich media playable ads that increase conversion. - Provide business intelligence (about user behaviour and patterns)		
	Actively cross promote new games		**Grow** - Good reviews on App store and forums. - Word of mouth.	
	Gamified ads			
	Value to toy manufacturers		
	Key Resources	- Increase toy sales. - Provide visibility of new toys.	**Channels**	
	Developers		**App stores**	
	Graphic designers			
	Game studios and related resources			

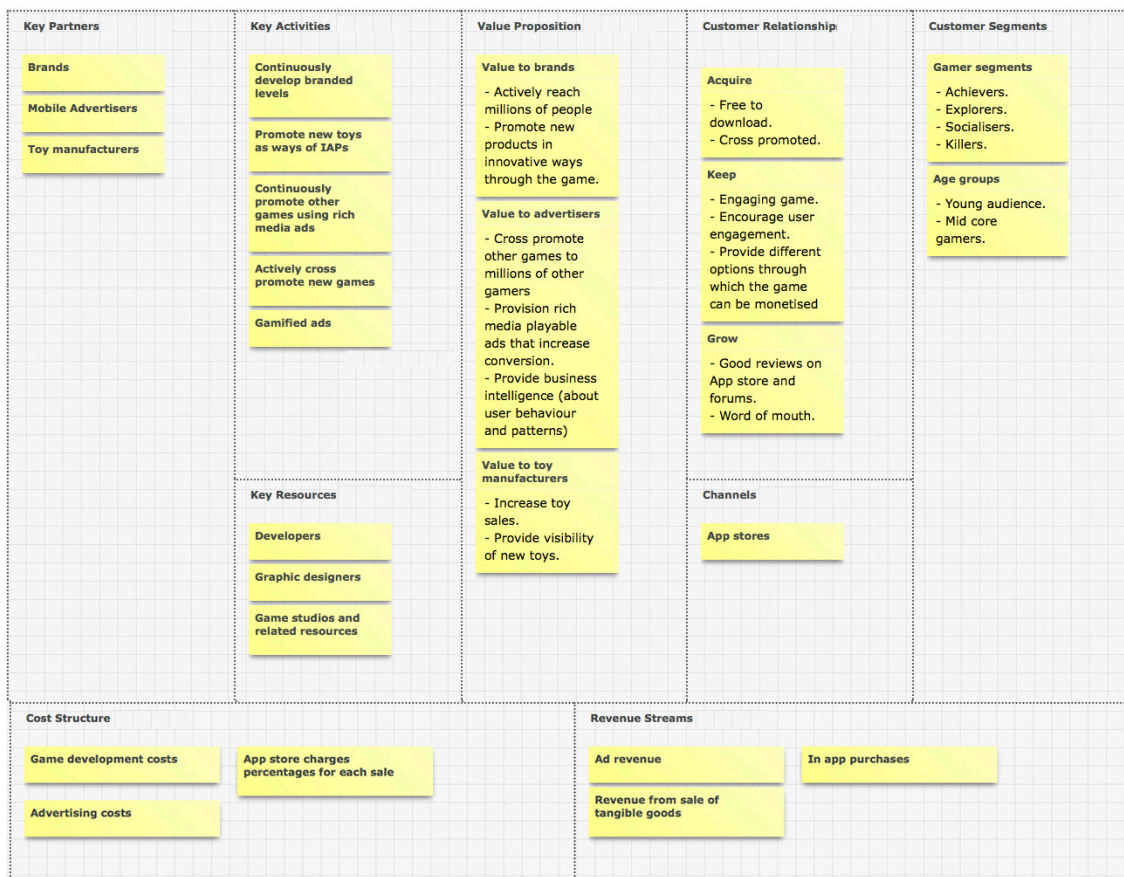| Cost Structure		Revenue Streams	
Game development costs	**App store charges percentages for each sale**	**Ad revenue**	**In app purchases**
Advertising costs		**Revenue from sale of tangible goods**	

Fig 19: Business model canvas of the new monetization model

The business model canvas for the new monetization model is as shown above. I have explained the different segments of the business model below:

- Customer segments - This segment defines the end user group that the solution wishes to address. For our monetization model, it's all the classes of gamers (explained in sections above) as well as young audience playing casual and mid-core games.

- Value propositions – This segment defines the core offering of the service. It describes the benefits and why the service is sought. Our product appeals to three key segments namely brands, advertisers and toy manufacturers by increasing the scope of their business.

- Channels – These are the means through which the service reaches the end users. Most mobile content is provisioned through their respective app stores. Since our monetization strategy is used within mobile games, the source of distribution remains the same (i.e. through app stores).

- Customer relationships – This segment describes the relationship that the service establishes with its users. In our case, it tends to acquire new users, keep them engaged and grow the business.

- Revenue streams – This defines the monetization from the business, basically what the users are prepared to pay for. In our case, we get revenue from advertisers (including brands), toy manufacturers and in app purchases (one time payment, level based payment, etc.).

- Key resources – Like the name says, this defines the resources needed to deliver the service. For our service, that would comprise of developers, designers and related resources in the broader sense.

- Key activities – These are the core activities that need to be accomplished. In our case, this would mean continual development of branded levels within the game, cross promoting other games, collaboration with new toy manufactures, gamifying ads, etc.

- Key partnerships – This defines the partnerships needed to run the service successfully. Key partnerships that are critical to the success of our model are advertisers, brands and toy makers.

- Cost structure – These are the operational costs incurred while running a business. In our case, the costs are incurred for incorporating the model into a game (i.e. Research & Development costs), and the percentage of sales that app stores and advertisers charge.

5   Discussion

5.1   The alternate monetization model compared to the existing models

We discussed in earlier sections that F2P games give away a good amount of game content for free after which the user normally needs to pay for in-game items such as gems, gold coins, pearls, etc. The users are allowed access to the fully functioning game, but are charged micro transactions for additional content in the game. This is in contrast to paid games where users need to pay upfront before playing the game. This key differentiator is one of the reasons for the popularity of the F2P model. Hence F2P model takes away the risk in trying out a game. A typical flow in a F2P game is as follows:

- The user installs the game and plays a few levels.
- The levels get more challenging and it gets difficult to progress.
- The user eventually needs to make an in-app purchase to progress further/speed up.
- The process repeats again.

The typical in-app purchases in the F2P model can be classified as either consumables or non-consumables. Consumables are items that are temporary and can help in accomplishing tasks only for a particular duration. Non-consumables are permanent and unlock certain game specific functionality without having any expiry period. There is no practical limit on the number of consumables that can be purchased. This is one of the major criticisms of the F2P model.

In addition to this, most F2P games also use ads for additional monetization, often luring the user to watch ads in exchange for a small in-game item given as reward. While this could be disengaging for some users, the degree of disengagement is also dependent on the overall design, placement and frequency of these ads. The term for such advertisements in the gaming industry is "Rewarded advertisements". These advertisements are normally videos ranging from 10 – 30 seconds and have to be watched until the end in order to claim the reward.

Apart from these, there are other kinds of advertisements that are also shown during a gaming session such as interstitials and banner advertisements. Interstitial ads can be skipped after a few seconds while banner advertisements are generally visible while traversing levels. Some badly designed games show banner advertisements while playing a game (banner advertisements show up as a thin strip either on top or bottom of the screen) and can be quite disturbing to the users.

Like I mentioned in previous sections, the new monetization model can be broadly classified into two main categories:

1. Hard monetization strategies (Payment based monetization)

The hard monetization strategy relies on incentivisation through payments. The difference from the F2P model is in the way, and frequency with which, the payments are made. Some of the different methods of hard monetization in the new monetization model are as follows:

a) Feature or stage based monetization: This strategy involves paying only for the desired features (or other relevant content) in the game. This system would only kick in after the user plays a few levels of the game (similar to the F2P model). Once the game is understood, the user can decide spend for a particular set of relevant content in the game. Of course, the user can opt to make a one-time payment at any point. Several different pricing strategies could be employed to make this model both attractive while being rewarding to the user at the same time.

b) Subscription based monetization: The subscription model involves a regular subscription price to have access to the entire game. This is applicable to games that regularly regular updates and features into a game. Since the development costs for introducing new content is high, the subscription option would help users to get full access to the game's features for a fixed subscription fee. Needless to say, this also increases the user retention.

c) One time payment: This monetization strategy is similar to F2P model, except that you only need to pay once. The user plays the game for a few levels and needs to only make a one-time payment once he decides to purchase the game. This also addresses on of the major complaints of the F2P model (that there is no end to spending in a F2P game). The game dynamics can be designed to pose challenges to differentiate better gamers and ensure a competitive environment.

d) Tangible goods based monetization: The idea behind this monetization model to get in-game content for free when you purchase tangible items (like a toy, board game, etc.) The product normally has a code that can be used to unlock/enable different levels or something similar in value. The tangible product can be advertised in the game so that users will know that buying the tangible item will also provide in-game content for free. There could be different advertisement campaigns to endorse products as well. Using analytics to understand the user who is playing the game (eg: gender, age, location, etc.) would help in advertising products that are relevant to the user and would increase the probability of purchases.

2. Soft monetization strategies (Monetization based on ads revenue, cross-promotion, brands, etc.)

Not all gamers are the same, and some casual gamers don't mind seeing minor interruptions (like advertisements) in exchange for playing a good game. The problem only occurs when the gamer is forced to watch disruptive advertisements that take the focus away from the game. The users also have an option to opt of advertisements at any time by switching to one of the hard monetization methods. This also helps in engaging the casual gamers who like to play the game without any strings attached.

Apart from advertisements, other kinds of monetization and user acquisition strategies like cross-promotion and brand integration can also prove beneficial. If carefully designed, branded levels can be part of the core gaming experience. As an example, consider a game level where the user travels from Point A to Point B defeating enemies along the way. The gamer collects a booster along the way that helps him or her run faster. This could be branded by let's say, a shoe company. While it endorses the brand, it also helps the user finish the level and becomes part of the core gaming experience. Of course, this needs to be carefully planned during game design so that different brands can be endorsed at different points in the game via a server configuration that is downloaded on the fly.

Care should also be taken to design the soft monetization methods so that they ensure good user engagement and don't start to annoy users. Using analytics to study user patterns will also help in fine-tuning the model and allow it to be closely bound to the core mechanics of the game.

We can see that the alternative to the F2P model is a collection of models rather than one single solution. The new model involves a mixture of both payments and indirect monetization using ads, etc. This model also prevents users from spending an indefinite amount of money in the game, either to progress or in order to gain an upper hand over other gamers. In other words, players cannot "pay-to-win" like the way it's possible with several F2P games. All paid players are on even keel and not segregated on the amount of money spent in the game. This increases the competitiveness of the game and ensures better engagement.

Not all the features of the alternate model are suitable for all game types and need to be tested using analytics and A/B testing to see which models work better for a particular game. Since user's behavior and preference constantly keeps changing, it might be prudent to customize the model as per the changing trends.

5.2   Learnings from the research process

The service design approach is empathetic in nature meaning the customer's feelings and emotions form a big part of the overall design. Compared to traditional design methods, the lean service design that we used takes focus away from process improvements and avoids an inward look within the organization. It rather tries to engage the customer and relies on customer feedback after using the service.

Instead of trying to analyze or predict things to improve, we try to co-create with the end user. In doing this, we increase the probability of success and don't just create a service using plain requirements hoping it will address users needs. By involving users in all stages of the service design, we ensured that our end product is constantly improved through its life cycle (through iterations), thereby also decreased the chances of unpleasant surprises at the end. This approach encouraged me, as a service designer, to co-create and co-produce the desired experience along with users.

Even though I professionally work for a gaming company, I could not consider myself the expert. It was highly probable that users could perceive the service differently. It was of paramount importance to involve the end user (and the involved stakeholders) through the entire process. In short, the service had to be co-created. We might know more of a product but unless we understand how is to be applied towards its actual usage (Service Dominant Logic), it would serve little purpose to its users.

Like I mentioned in earlier sections, I used the double diamond process model for this thesis. The convergent and divergent phases of the "double diamond" process provided a clear methodology to gather different ideas and formulate strategies out of them.

The four stages of the double diamond model resonated with the 4D model of appreciative Inquiry. Appreciative enquiry is an approach to personal change management and focuses on positives and strenghts rather than negatives and problems. It is applicable to both individuals and organisations. It has four stages similar to the double diamond process model that can be formulated as follows:

1. Discovery (Discover): The best of what is ?
2. Dream (Define): What could be?
3. Design (Develop): What should be?
4. Destiny (Deliver): What will be?

The service design process can be split into two main sections namely definition and execution. The definition phase concentrates on the overall strategy and planning and tries to answer the "why" and "how" part. The execution part tries to address the "what" part and aims to deliver the optimal solution through a series of iterations involving prototyping and testing. The different stages in the service design process are shown in the diagram below.
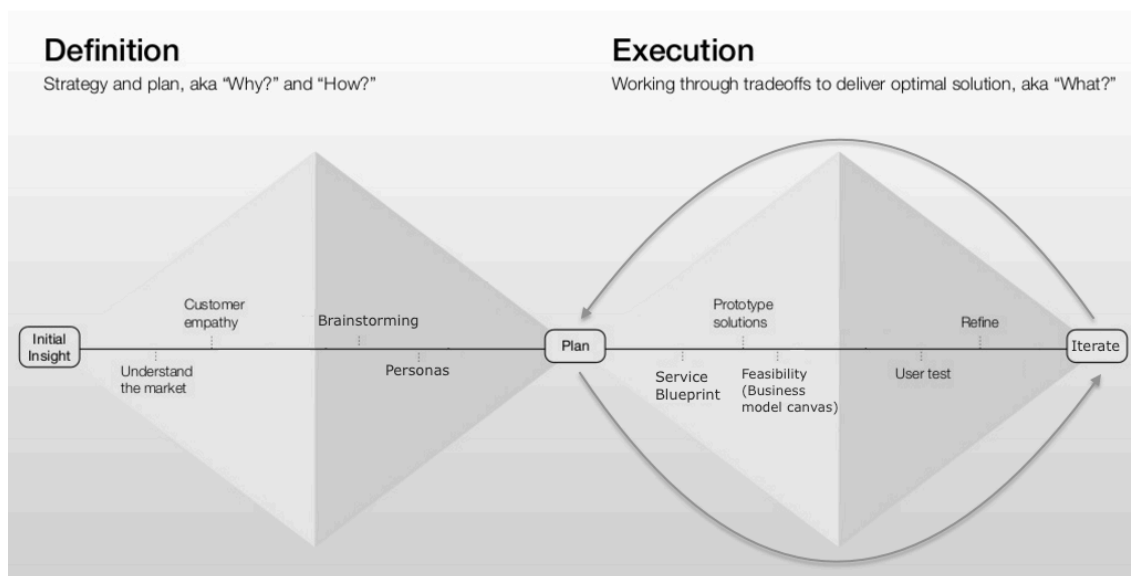
Fig 20: The service design process overview for the project

The process of divergence and convergence can be characterized by three key checkpoints:

1. Initial Insight – This was the first checkpoint in the double diamond process where I tried to understand the problem and challenges faced in the current monetization model. This process was divergent and the main aim was to assimilate a lot of information. I feel that the good thing about this phase is that you are encouraged to be open to all opportunities and don't start narrowing down solutions. It also helped in developing initial ideas on how the future service model would look like. The customer journey map also helped in empathizing with the user and understanding the problem from the customer's point of view. It helped in understanding the pain points in the current monetization model and gave an early insight into issues that needed to be addressed. The convergence phase helped in narrowing down solutions based on the information we had gathered and also categorize them to the different personas of gamers. Hence I had a pretty good understanding on how the model should look like and gave ideas on how it could be implemented.

2. Planning – The second key phase was the planning and testing phase where ideas gathered in the previous phase were formulated into actionable service models. The brainstorming exercise generated a lot of ideas that were filtered into a condensed set of ideas. These ideas were reformulated, so that they could be fit inside the alternate service model. We also made personas to check how the alternate model fit into the main classes of gamers.

   The service blueprint provided an overview of how the service would look like once it was provisioned and also gave a good understanding of the user's perception at various touchpoints. Knowing how the service gets provisioned is important for addressing the various pain points involved in the process. Even the simplest of services involve several systems, partners, and other people working together to deliver the service. I felt that the service blueprint minimizes and helps coordinating this complexity.

   The next step was prototyping the service and testing it. Prototyping helped in eliminating ambiguity and accurately implement the service, as it was intended to, and not according to the implementer's own understanding. It also helped in quickly demonstrating the key elements of the service without worrying about other parts in the ecosystem. In other words, it helped me check how the alternate monetization model works without having to worry about the game itself. These helped me in identifying the problems early on and correct them. Prototyping also made sure that I as a designer could exchange feedback with the gamers, who are the end-users. I consider this to be an important step in while trying to develop a solution, to make sure that it serves the purpose for which it was built.

   The feasibility study using a Business model canvas guided me to think through each of the key components needed for devising a successful business model. The blocks to the left of the canvas are the activities and stakeholders we need for running the business and the right side consists of the customer relationship, the channels of service delivery and many aspects that cannot be directly controlled. In the middle though, binding the two segments, is the Value Proposition. It defines the core purpose around which all other factors revolve. It is the reason why the business exists. Defining this gave me a clear idea of why and how the model would work in the real life.

3. Iteration/Ship – After all this, the end product needs to be tested repeatedly, and changed a number of times until all the defects of the model are ironed out. For the purpose of this thesis, I did a couple of iterations based on the feedback, but in real life, this is a continuous process that helps us keep the service up to date with the ever changing market conditions.

6   Conclusions

6.1   Summary

Mike Rose (2013) discusses the ethics of the F2P genre in his article *"Chasing the Whale: Examining the ethics of free-to-play games"*. He talks about a gamer's addiction to the game "Team Fortress 2" which makes him spend his birthday money, and any other money he could spare to purchase virtual items in the game. It discusses how Chris drained his bank account for 6 months until he didn't have any money left to spend. Such players who spend a lot of money in games are called whales. It makes one wonder if the people who spend a lot of money in these games are being manipulated and exploited by intentional design that addicts them to a banal yet compelling activity that makes them spend huge amounts of money on.

In this thesis, I used service design methodologies to find an alternate pricing model that addresses the shortcomings of the F2P pricing model while monetizing well. The double diamond design process model provides four distinct phases that handles different aspects of the design process. The service design tools used encouraged collaborative teamwork to address the various phases in the process. Involving all the stakeholders in all phases of service design helped in devising an alternate pricing model that addressed the shortcomings of the F2P model.

The alternate pricing model consisted of two monetization models – "Soft monetization" and "Hard monetization". Soft monetization involves monetizing through Gamified ads, branding, interactive advertisements, and cross promotion. Hard monetization on the other hand monetizes through direct payments (one time or subscription) made to play the game. Though some parts of both the soft and hard monetization methods exist in the current F2P model, the alternate pricing model does not force the users to keep paying while increasing the user experience, and therein lies the difference.

Most of revenue generated in a F2P game comes from about 4% of the total users. The majority of users playing a F2P game don't pay since there is always the possibility that users need to keep paying to play the game. There is also the possibility that the game is "pay-to-win", which gamers hate.

The alternate pricing model intends to address these shortcomings. The basic premise of the alternate model is to increase the paying user base. When this percentage increases, the monetization increases as well. With proper game design, different aspects of the alternate pricing model can help in monetizing well while maintaining good user retention and addressing the shortcomings of the F2P model.

6.2   Value of the research to the game industry

According to statista.com (2015), the number of smartphones in the world was close to 2 billion in 2015. Lower production costs of mobile phones have been driving the rapid adaptation of smartphones across the world. The feature set of smartphones has also been steadily increasing as mobile phones become more powerful. Christina Bonnington (2015) from wired magazine predicts that in a few years, smartphones would replace laptops. Recent innovations such as Raspberry Pi, a pocket sized computer that costs less than 50$ further reinforce a slow shift balance from conventional modes of computing.

It comes as no surprise that with the increase in smartphone usage, the number of games played on the mobile phone has also been steadily increasing. In fact, John Gaudiosi (2015) estimates that revenue from mobile games will overtake the revenue generated by console games soon. It's clear that there is tremendous monetization potential in the mobile segment, and that there is scope for innovation in mobile monetization methodologies as well.

We noted some of the shortcomings of the currently popular F2P model in earlier sections. Markus Persson (creator of the hugely popular game - Minecraft) publicly criticized the F2P model being employed in several games and even called them illegal and comparable them to drugs and gambling. Furthermore, some F2P games provide unfair advantage to paying users. Hence, even though theoretically the F2P model is free, it has a psychological effect on users of the game often tempting them to make purchases.

Colleen Roller (2011) explains the importance of choice and its effect on decision-making. Several studies have shown that people in general like to have choices as it tends to motivate users, increases their perception of control and improves satisfaction and happiness.

Sheena Iyengar (2011) explains that decision making involves three distinct mental tasks:

- Knowing what you want
- Understanding what options are available
- Making tradeoffs between the available options

People tend to feel confident about their decisions when they completely understand the options available to them. It also helps if the options are easily comprehensible and distinguishable. The complexity of making decisions is directly proportional to the number of options available to the user.

As the number of options increase, the evaluation process can also become difficult and making a choice will seem like it will need a lot of information. People generally feel that they

need to make the right decision irrespective of whether a right choice exists or not. This is since people want to justify their decisions both to themselves and to others (Colleen Roller, 2011).

The F2P model only offers in-app purchases as a means to continue playing the game, while the alternate pricing model gives the users many choices, thereby allowing them to pick a monetization model that matches their needs (and a possibility to switch between them at any point. The number of options given to the users needs to be refined to match the dynamics of the game and there is not one model that suits all the games.

The main value of the alternate pricing model comes from increasing the paid user audience (soft and hard monetizers) while maintaining good user retention. We discussed in earlier sections that F2P monetizes from roughly 4% of the total base. In other words most of the revenue generated in the game is from 4% of the users. The alternate pricing model intends to increase this percentage while not affecting the user experience (and hence improve the user retention). Also since whales only form a small part of the total paying users (maybe less than 1%), it might incentivize better on the long run if a larger percentage of users monetized even a small portion. It can serve as a complementary tool rather than a complete replacement for the F2P model.

6.3   Suggestions for future research

The alternate pricing model can be considered as a framework rather than a fixed solution. Certain aspects of the alternate model could fit into games while some may not. It is important to have several iterations of the model to further fine tune it and understand what works best for a particular game.

For the purpose of this thesis, only a small sample audience was used. This model has to be implemented on a larger audience to get further feedback that can be used to improve the model. We can also perform A/B testing and use analytics to check what works with certain game genres and audience.

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Tables

Appendices

Appendix 1:

List of interview questions asked during the user research phase

User interview:
=============
1. What genre of mobile games do you play?

2. Are any of them F2P games?

3. On an average, how long do you spend playing mobile games everyday and since when have you been playing mobile games?

4. What do you think of F2P as a monetization strategy? (Asked this question to both gamers and game developers to understand both users and the game maker's perspective)

5. Have you purchased fixed price games? How would you compare F2P games with fixed payment games?

6. Have you found problems with any of the F2P games you played? If so, what are they?

7. What changes in the current F2P model would you like to see?

8. On an average, how much money do you spend on in-app purchases?

9. How do you perceive in-game advertisements?

10. How would your ideal gaming experience be? If you had to change one thing in current games, what would it be?