

The Success of Free to Play Games and the Possibilities of Audio Monetization

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Bachelor's thesis
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Digital Sound and
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ABSTRACT

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Video games are a huge business – nearly four times greater than film and music business combined. Free to play is the fastest growing category in video gaming. Game audio is part of the development of every game having a direct correlation between the growth of gaming industry and the growth of gaming audio industry.

Games have inherently different goals for the players and the developers. Players are consumers seeking for entertainment. Developers are content producers trying to monetize their product. The success of monetization is measured through the total revenue generated. However, the games that are acclaimed typically sell more than the games receiving poor reviews. This is the basis for the common ground between players and developers. A motive exists for creating great games. Although game design is a creative and subjective art, few guidelines have been established for producing a ‘good game’.

F2P games are free to download and play, but developers and publishers are able to generate revenue through advertising and in-game sales. If the items sold in-game empower the players with gameplay advantages, the game is considered a pay to win-game. Games can be categorized by using the advantage of fiat money impact to the gameplay as a criterion. The most played and successful non-mobile F2P games are not pay to win games. The ‘pay to win’ –mindset is enforced by the publishers, more so in the mobile games. Although many monetization methods already exist, audio monetization is a relatively uncharted frontier, which can also offer fair monetization through extra customization options for the players, while generating extra revenue for the developers and publishers.

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GLOSSARY

- 3rd Person.....A camera perspective in video games from a fixed distance behind and often slightly above the player character.
- Achievement..... A tertiary objective (meta-goal) in a game. Also sometimes known as a trophy, badge, award, stamp, medal or challenge. Completing achievements will not affect gameplay directly, but instead grant players ‘bragging rights.’ Eg. Complete Chapter 1 of the game under 1 hour playtime.
- Boxed.....One time purchase of a game. Before digital distribution, games were sold in physical boxes that were available from a brick and mortar stores, and still are.
- Break even.....Point of balance between making either a profit or a loss.
- CAGR.....Compound Annual Growth Rate.
- Carousel advertisement.....Carousel ads are an ad format by which several images are displayed and rotated within the banner.
- CCG..... (Digital) Collectible Card Game. All occurrences in this thesis mean digital ones.
- CGI.....Computer Generated Imagery.
- Consumable..... An in-game item with limited uses. After uses are depleted, the item is gone forever.
- Cutscene.....In-game cinematic which typically advances the plot.
- DAW..... Digital Audio Workstation. Software where audio files are processed, plugins and instruments played. Operating system for the music software.

- De facto.....“In practice, but not officially established.”
- DLC.....Downloadable Content is additional content for a video game distributed through the Internet.
- Elo (rating).....The Elo rating system is a method for calculating the relative skill levels of players in 1vs1 games. All players have equal Elo rating before their first game. After player wins or loses, Elo rating points are increased or decreased depending of the match outcome. Eg. if Player #1 won against Player #2. Player #1 gains +10 Elo rating and Player #2 loses -10 Elo rating.
- Fiat money.....Money which derives its value from government regulation or law.
- F2P..... Free to Play (game).
- FPS..... First Person Shooter. A game genre in which players control characters from the view of the playable character, emulating real life point of view.
- Freemium..... Pricing strategy by which a product or service is provided free of charge, but money (premium) is charged for proprietary features, functionality or virtual goods.
- Freemium game..... A F2P game which heavily hinders the game experience for free players by offering core game content for a payment. Think these as “trial versions”.
- Gamerscore.....Microsoft’s achievement system that measures the number of achievement points accumulated by a user with a profile.
- Hard currency.....Premium currency in a free to play game. Can be bought with *fiat money*.

- Hype.....Extravagant or intensive publicity or promotion.
- in-app..... In Application. Very often refers to virtual content offers that are available for purchase through the software.
- IRC..... Internet Relayed Chat.
- K-1.....Kickboxing platform and martial arts brand well-known worldwide mainly for its heavyweight division fights.
- Loot.....“Private property taken from an enemy in war.”
A reward in a game from a slain enemy.
- LoL..... League of Legends. First commercial F2P *MOBA* hit.
- Micropayment.....Microtransaction.
- Microtransaction.....Small or miniscule payment. Common in F2P games.
Mikros = small in Greek language.
- Middleware.....Computer software that provides services to other software applications, beyond the capabilities of the operating system.
Middleware can be described as ‘software glue’.
- MOBA.....Multiplayer Online Battle Arena. A game genre.
Competitive, objective based team game. The most successful F2P games are MOBAs.
- Model.....Three dimensional, computer made object. The surfaces of the model are *textured*.
- MMO / MMOG.....Massively Multiplayer Online (Game).
- MMORPG..... Massively Multiplayer Online Roleplaying Game.

P2W.....pay to win (explanation below).

pay to winWidely used slang term for a game, typically F2P, where money can be used to purchase shortcuts or boosts to hasten game progress. Nearly all games are competitive and the pay to win term comes from “buying victory”.

Paymium.....A non-free game that has in-app purchases.

PC.....Personal Computer.

Playthrough.....The act of playing a game from start to finish or a recording of such gameplay, typically on video services like Youtube.

RTS.....Real Time Strategy. Genre of fast paced strategy games.

SFX.....Sound Effect(s).

Skin.....Premade appearance for player character. Skins are the models and textures that present the appearance of a character.

Soft currency.....In game money in a free to play game. It is quick to acquire by playing the game.

Subscription based pricing model.....Pricing strategy where a subscription payment is required to play the game. A subscription is typically a weekly or monthly fee to the game provider.

Texture / Texturing.....Method for adding detail, surface texture or color to a *model*.

User Interface (UI)..... Interface screens and controls to them.

User Experience (UX)..... How intuitive and enjoyable the user interface is.

Vanity (purchase)..... Cosmetic effect, item or an object, which has no impact on actual gameplay. Eg. pets, cloths, dyes, apparels, graphical effects and extra sound effects/music.

Virtual goods.....Anything virtual (no physical manifestation) that's being sold.

VoIP.....Voice over Internet Protocol. A way to convey voice from a Internet connected device to another. Eg. Skype, Mumble, TeamSpeak.

WoW..... World of Warcraft

1. INTRODUCTION

Video games are a massive business. The market sales are estimated to break 100 billion dollars by the end of 2014. To put in comparison, that is nearly four times more than the movie (\$10B) and music business (\$16.5B) combined (Rivera 2013; Orchard: 2013). During the past 15 years, free to play games have taken a major foothold in video game business and it is the fastest growing category in gaming (Sheppard 2014). The most played game in the world, League of Legends, is a free to play game with over 67 million unique players monthly (Gaudiosi 2012). Huge market translates to rapid evolving as new monetization methods are constantly being developed and deployed. Free to play market can be considered as the new Wild West in digital form, with *microtransactions* being in the centre of the gold rush (Makuch 2014).

This thesis has five main goals.

- To define what free to play games and the common F2P terminology are
- To rationalize what makes a good game
- To account player's perspective in the game design
- To present the current monetization areas in free to play games
- To discover new audio based monetization methods and possibilities

Most of the content is written as reflective rationalization as game design is a creative, subjective art with few absolute facts.

This publication will not focus on psychological motives, eg. "Why do we play games?"

Glossary terms are *italic* when used for the first time.

Released game titles are **bolded**.

2. TIME MANAGEMENT

Planning: 20 hours.

Researching: 80 hours.

Writing and editing: 80 hours.

Proof reading: 10 hours.

Acquiring the gaming knowledge: 25 years.

3. ABOUT THE AUTHOR

- 25 years of active gaming experience
- 20 years of composing experience
- Bachelor's degree in Applied Sciences in Information Technology
- 2007 – 2009, Assisting Gaming Journalist for eDome.fi
- 2010 – 2012, Freelance Gaming Journalist for KonsoliFIN.net
- 2013 – Present, Freelance Gaming Journalist for IGN Finland
- System Specialist
- Entrepreneur
- Tested thousands of iOS games & applications since 2010
- Alpha/Beta tester for dozens of MMORPGs
- Played over 100 different MMOGs past 10 years
- Game Development Assist on Crimsonland, top down shooter by 10tons

4. MAJOR MILESTONES OF FREE TO PLAY GAMES

In 2012 total video game market was \$78.87B. US share was \$63,4B of that. Estimations for 2013 and 2014 are \$93,28B and \$101,61B. In 2002-2007 a *CAGR* of the video game market was 9.1%. At the same time overall entertainment rate was 6.4%.

On 2013-2017 *CAGR* is expected to be reach 6.5%. (Rivera 2013; Orchard 2013.)

From 70s to 90s the growth of video game market was even faster. The vast amounts of money ‘in play’, combined to the quick growth of the market with evolving technology, lead to new monetization models in the end of 90s, including F2P and *subscription based pricing models*. (Wolf 2008: 103.)

RuneScape and **MapleStory** were the first major *MMOG* major successes to implement F2P payment method to video games (Jagex: 2008). Following their success, many successful *MMOGs* had implemented F2P microtransactions in them. Although decent subscription based *MMOGs* had existed since the late 90s (eg. **Ultima Online**), the payment method did not breakthrough until the *MMORPG* **World of Warcraft** was released in 2004. Following *WoW*’s success the boom of subscription based *MMOGs* started and during the next five years many major *MMOGs* were released eg. **Warhammer Online**, **Age of Conan** and **Everquest 2** (Wikipedia.org).

In October 2009, first huge F2P *MOBA* hit, **League of Legends**, was released. Although *LoL* was not the first *MOBA* (that was a **Warcraft 3**-mod called Defence of the Ancients) *LoL* was the first successful F2P *MOBA* with microtransactions. In 2012 *LoL* became the most played PC game in the world and it’s still holding the title (Gaudiosi 2012; Twurdy.com).

In early 2010s the influx of subscription based MMOGs tailed down. Title releases with subscription based payment model were far and between. MOBAs and mobile games brought F2P ideology back with more influence than ever. Today most of the mobile games include F2P *micropayments*. In 2010 the total revenue generated via F2P (\$1.3 billion) was greater than the total subscription-based market (\$1.1 billion) in the United States (MediaBuzz.com). In 2013 in-app purchases accounted for 76% of the application revenue in United States (Schoger 2013). The numbers in Asia are even higher, with 90% of the revenue came through in-app purchases (Hezemans 2014).

F2P games are currently in a ‘Wild West’ –state, which means that there is not a proven formula of success (Makuch 2014). Considering the vast abundance of F2P and *freemium* games on the market, there exists nearly as many monetizing methods as there are F2P game titles, although the main monetizing areas remain similar from game to game.

Audio is an essential piece for any successful video game (Boyette 2010). Audio industry greatly benefits from the growing game industry as new work opportunities arise. After all, audio production is part of video game development (Moore, Novak 2010: 25).

A *de facto* –standard exists for game audio contracts. Composers and sound designers usually sell the creative rights to the game developers (Decker 2014; Passman 1997: 396). This allows the developer to use and modify the audio as they choose. However, the usage of the audio is limited to the game in question, which prevents the developer from ‘recycling’ the particular sounds in their other projects. (Marks 2008: 55, 64, 105, 128; Douglass, Hempton, Piersall, Gates: 2014.)

5. MOTIVES

As established in the previous chapter, video games are a gigantic business. The most played video game in the world has been a F2P game since the year 2012 but still very few publications exist on the topic. Success and growth of the F2P games is worth researching. The loosely used terms about F2P games are not defined uniformly anywhere.

While the revenue of a game is the most common meter of success for the developer and business, it is something the players are not directly interested in. This work attempts to discover what is important for the players. What makes a good game? Does a common ground exist which the developer and the player share?

F2P games can be very good games in a competitive sense, but developers can also ruin a F2P title by turning it 'pay to win' while trying to maximize the revenue. Players greatly enjoy customizing their characters and accounts (Tadhg 2012). It is known that various monetization areas exist in which the developers can generate revenue without turning a F2P title to a 'pay to win' –game. This publication presents and categorizes the commonly known monetization areas.

Although F2P games have existed since late 1980s, game audio was monetized for the first time in June 2012 in a MOBA **DotA2**. Could audio offer new, fair monetization methods and possibilities that would benefit both the developer and the player?

6. FUNDAMENTALS OF A GOOD GAME

This chapter contains rationalized reflection. Game design is a subjective art in which very few absolute facts exist. “What is a good game?” is a question with endless answers. (Kultima 2007.)

Still, few basic guidelines exist.

6.1 Prologue – Path to Success

There are major differences between the reality and the games. In games the rules of the surrounding world change very quickly. This constant change is a key factor why the games have been so very successful.

Selling games or game content is not easy (Wikipedia.org: List of Commercial Failures in Video Gaming). The revenue of a game is the most common meter of success in gaming industry, but the players are rarely interested in the financial success of a game. Instead the players care about the subjective quality of the game, which from players’ perspective should be the main goal for any game development project. Typically this is a shared, common goal with the game developer.

Games that get poor reviews, seldom *break even*. *Hype*, trademark and the game release history of a developer can help with the pre-sales and sales of a game, but it is rarely enough to breakthrough a product that would not float on its own weight.

“A great game does not necessarily sell well, but if the game is not good, it does not probably sell at all” (Walker 2003: 16).

In the rare scenarios, where a poor quality game manages to break even, both the developer and the publisher will suffer negative publicity, adversely impacting the company imago and brand. The greater the hype and the expectations are toward an unreleased game, the more impactful the displeasing release will be. Although even a good product will not sell if no one knows about it. (Totilo, Keighley, Killian, Pachter 2010.)

Every game will be subject to countless of reviews. Some of these are concluded by journalists, some by bloggers and forum posters, but mostly by the players whom are actually playing the game.

Questions below are in the minds of every player trying out a new game.

“Do I like this game?” “Is this game good or not?”

Using the reflection as basis, a simple success –table can be formed.

A bad, unknown product = Failure.

A bad, but well known product that does not sell = Disaster.

A bad, but well known product that sells = Financial success, but with a permanent dent to the developer’s/publisher’s track record.

A good, unknown product = Failure, but possibly redeemable through advertising in the future.

A good and well known product that does not sell = Advertising failure.

A good and well known product that sells = Success!

Quality does matter. The main goal in the game design should be creating great, interesting games that the players love.

6.2 Gameplay: Logical to Play, Intuitive, Does not Annoy

Gameplay is often confused with the difficulty of the game (easy, medium, hard) or with the inner mechanics of the game (killing enemies provides players experience and *loot* in a RPG). However, gameplay does not include the plot of the game, characters, goals or the challenges presented to player. Single definition of gameplay does not exist.

Gameplay is not a singular entity but a combination of many elements consisting eg. controls, accessibility to them, *UI* and *UX*. Gameplay can be explained as a portion of the game in which the player is assisted in any way to achieve desired actions.

Eg. if a player wants to travel quickly to a point of interest A, which the player has previously explored, a fast travel option would be considered as good gameplay. (Rollings, Adams 2003.)

Intuitive controls are a core part of the gameplay experience. When the player attempts to do something, the game has to respond accordingly. If a player uses mouse for a ‘drag & drop’, the game has to respond. Same with button presses, whether it is an area of a touchpad, button or a gamepad, key on a keyboard or a mouse – the game responds.

Below are a few example questions that players might ask if a game has an unwanted gameplay experience.

”Why can’t I just identify all my items with one button?!”

”Why can’t I just skip this cinematic?”

”Do I really have to retrace my steps all the way back?”

In contra, good gameplay means that the annoyances do not exist.

The idea behind the gameplay is to keep the players focused to the game instead of questioning the game development choices.

6.3 Feedback and User Interface

Feedback is an extremely important part of the gameplay. Players need to be informed through graphics, sounds and physical interaction (a gamepad rumbling), to achieve the smoothest possible user experience.

User Interface (*UI*) = Screens and controls to them

User Experience (*UX*) = How intuitive and enjoyable the user interface is (Quintans 2013.)

It is vital for players to know what is happening in the game. This is conveyed to the player through the UI, which can always be found between the program code of the game and the controller to the game. Eg. if the player is taking damage from a source, the UI with the help of sound effects will relate this information to the player.

Players also need to know what their objective is in the game, unless the whole idea of the game is to find out exactly that. Lack of feedback can 'kill the fun' in a game, turning eg. an action game in to a mystery one, when the player becomes increasingly confused about what to do next. (Poh 2012.)

Example questions players might ask on a game with poor feedback or subpar user interface:

”What did just happen? Did I pick up something? Did I complete my objective? What am I supposed to do here? I have been running circles for 5 minutes!”

”Oh, I thought I still had ammo/health left.”

”Oh, I thought I could touch that without dying.”

”Oh, I thought that was a friendly guy, not an enemy.”

Depending of the genre and the game mechanics itself, too much feedback can also kill the fun.

”Why is this game telling me everything I have to do? This is the worst puzzle ever with that huge compass arrow showing the order in which I have to push these three buttons!”

”Is it necessary to show everything I am carrying on my character in the middle of the screen?!”

Arcade and casual games are quick paced and typically very simple. These games will not toss players to the deep end of the emotional pool, but instead present a clarified set of rules that the players can easily trust as the controls and the mechanics are easy to learn and straightforward. The faster the tempo of the game, the more important it is for the player to have all crucial information at hand at all times. (Boyes 2008.)

6.4 Immersion and Trust

“Suspension of disbelief is the literary term for a reader’s decision to accept what is presented in a story as a real event” (Woyach 2003).

Feedback is a major impact factor on the immersion. In a hyper realistic shooter (**ARMA 3**) or in an interactive drama (**The Walking Dead**) – the less the UI is shown to the players, the stronger the immersion will typically be.

Players need to be presented just enough on the UI, but the UX has to be enjoyable or the immersion will likely not. It is very hard to build a great UI+UX loved by everyone, as there are different kinds of people playing the games. Luckily options help as player can be given the choice to choose to disable or enable certain elements of the UI. This way the players have a freedom to customize the gaming experience to their liking.

Trust is another essential piece for building the immersion. Players build trust toward the game, as they find out the logic that the game works on. If the player has been taught how to jump over obstacles, the logic should not change unless the new rule set is specifically taught to the player. This means that when the player, rightfully, expects to accomplish something that has been shown to work, it also should progress the game, unless the player has been given some indication that the rules might have changed. Progress can also mean failing, but in a way that does not punish the player. Players tend to quit playing a game, because the game is too frustrating. Punishing the player for something he could not have known is terrible game design. (Weiller 2013.)

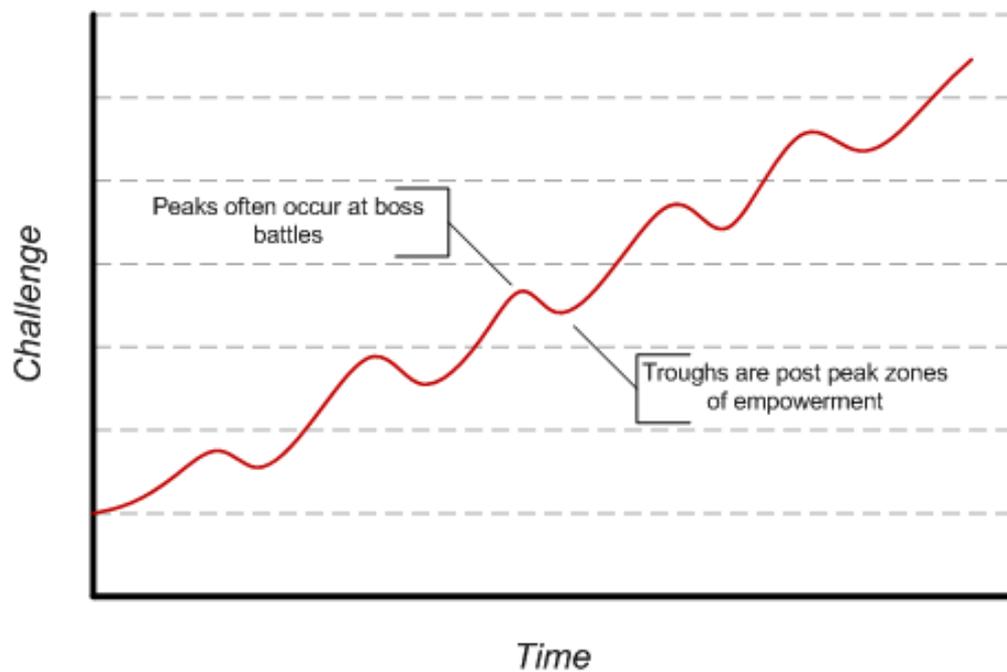
Immersion could be called as an extension to logic and it is much easier to break the immersion than build it. Not only you need an interesting game with great gameplay, but you also need to focus on the details that the target audience will know and expect. Eg. a graveyard cannot exist without any graves and it cannot be located next to an amusement park in a game that tries to be realistic. Common sense is one of the most useful tools a designer has (Johnston 2003).

6.5 Challenge and Difficulty

Games are a form of entertainment with a goal to keep the player interested and enjoying the gameplay experience. To achieve this, games have to be challenging enough, but minimize annoyances (gameplay & feedback) and at same time reward the player for successful actions.

For a game to be challenging through the whole *playthrough*, the difficulty level has to increase as the game progresses. As the players become better at playing the game, new gameplay mechanics need to be implemented to keep the players interested in the game. These mechanics often include eg. new skills, weapons, enemies, challenges, faster tempo and less time for thinking. Building a difficulty curve is one of the main challenges in game developing. This is the reason why many games offer multiple difficulty levels as the player skill is subjective to each player. (Brown 2010.)

A *RTS* game could be close to impossible to someone whom has not played *RTS* games before but at the same time the game could be even too easy to a veteran *RTS* player. This is the reason why difficulty levels are very common in modern, non-arcade video games. Arcade video games do not usually have difficulty options as the goal in the game is to achieve a high score. All players must stand equal for the scoring system to be competitive. Graph 1, on the next page, shows a typical planned difficulty curve. (Brown 2010.)



1. Planned Difficulty Curve in a Game (Brown 2010)

The challenge cannot be directly measured due to the variance in player skill, but the difficulty of the game can be presented as numbers.

Eg.

- How much time does the player have time to take action, eg. block, dodge or jump before failing?
- How much time does the player have available to complete a level, scenario or to complete a larger objective?
- How much damage does the enemies deal compared to the player health?
- How many enemies / health / ammo / recovery items are available?
- How many button presses are required to ideally overcome a boss?
- How many times can the player fail?

Players often feel cheated, if the difficulty level grants the enemies faster reaction times, higher damage, health or even worse – an instant death scenario, which cannot be avoided. This is considered to be an artificial way to increase game difficulty by changing the actual game mechanics. (Boutros 2008.)

Eg. in a *FPS* game higher difficulty level often translates to player character taking more damage from enemies, which also react faster on observing the player character.

Instead of that, the difficulty level should keep the game mechanics the same, but eg. add more enemies to the game to make the gameplay consistent.

From a player's view, the 'worst kind of difficulty' is an instant death/failure scenario on something that the players did not know to be deadly or game stopping (Boutros 2008). However, if loading times are quick and the checkpoints are close to each other, even failing can become part of the entertainment like in the 2D platformer **Super Meat Boy**.

So summarize - the metric of the challenge is difficulty, which should:

- Increase via spatial progression, which translates to harder levels and areas
- Increases as the game complexity increases through progression in game mechanics
- Not too easy, not too hard. "The porridge is just right."
- Games often provide difficulty options (easy, medium, hard) as player skill varies a lot

6.6 Progress

Player progress can be split to three, hierarchical groups.

1) Spatial progression

- After completing a level or an area, a new one is available
- New areas available for player

2) Passive character progression

- Presenting new game mechanics
- Enables spatial progress, eg. players learn a double jump which allows them to reach new areas

3) Active character progression

- Choices in all forms. Skill points, rewards, dialogue or path options etc.
- Enables both spatial and passive progress

Spatial progress means that after player completes a level, a new one is available, unless it was the final level of the game. On a strategy game, which are typically located on a single static map (eg. **Civilization**) the map itself does not change, but instead the players explore and exploit new areas and resources as the game progresses.

Passive character progress equals to the evolving gameplay options as new game mechanics are presented to the players. Ideally, when the players are about to get bored with the current game mechanics, new ones are implemented. Passive progress does not include player made decisions, but instead contain only linear upgrades that will always happen as the game progresses. This means that the rules of the game that the players are familiar with are changed in a logical manner, increasing game complexity. (Stout 2010.)

Eg. players are able to jump in the beginning of the game. As the game progresses, players will find the Boots of Jumping, which will allow higher jumps, changing the rules that were known to the players. Later on, players will find the Boots of Floating that will allow an additional floating effect after the jump. Eventually the players are able to fly with the legendary the Wings of Icarus –boots.

Active character choices add a complexity layer which can progress players both spatially and unlocking new game mechanics. The more the choices are available, the less predictable the outcome is. Making a choice will require interaction from the player, adding inherent complexity and rewards. Typical choices in games are skill or perk points, resource management, reward, purchase, unlock, upgrade, route and dialogue options. Choices become even more meaningful, when a choice made excludes other previously available choices. This adds tremendous replay value to the game as each playthrough of the game will likely be different from the previous one (Herman, McRae 2014).

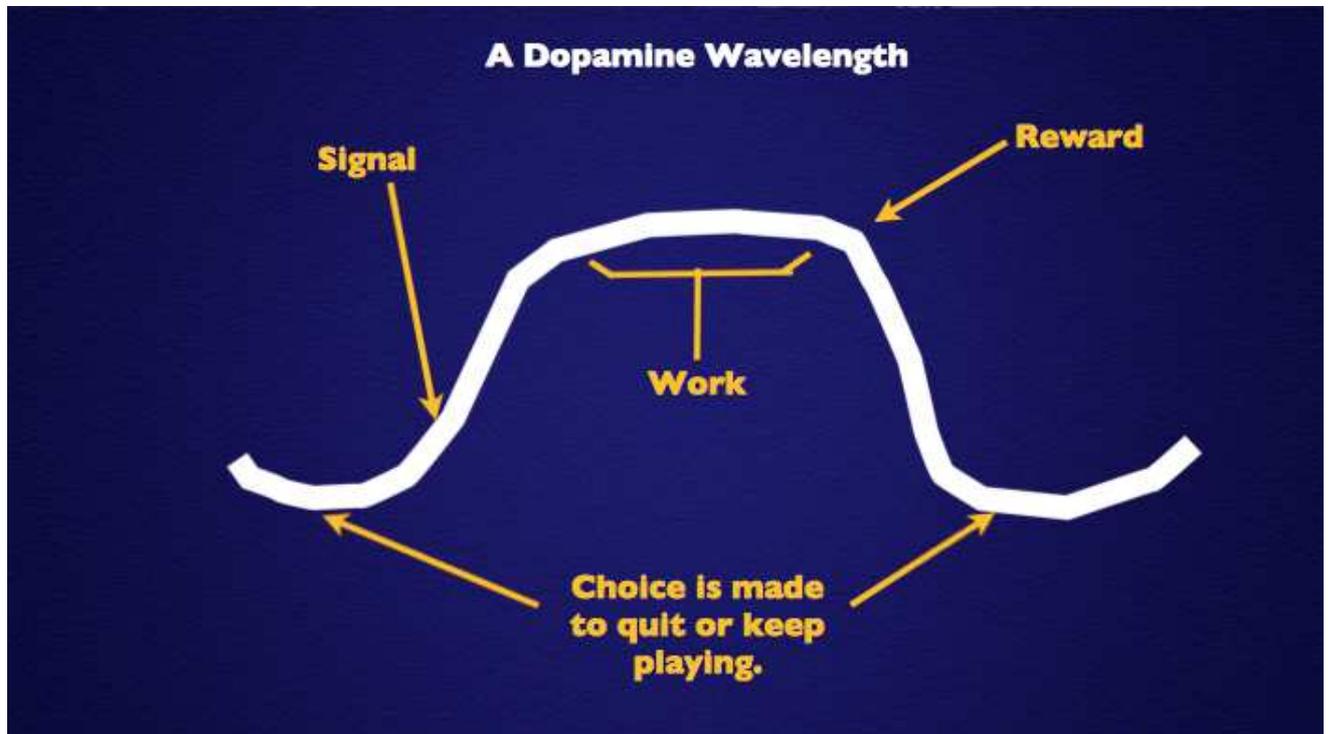
More information is available about player choice on chapter 6.8.

6.7 Rewarding

All human rewarding is based around a neurotransmitter called dopamine, whether the rewarding happens in real life or in a game.

“Dopamine is a neurotransmitter that helps control the brain’s reward and pleasure centers. Dopamine also helps regulate movement and emotional responses, and it enables us not only to see rewards, but to take action to move toward them” (Newton 2008).

The graph 3 below shows how a signal (challenge/goal) is presented to the player, which must be completed (work) to achieve the reward.



2. A Dopamine Wavelength cycle (Correa 2011)

In games, player rewarding can be split in to two main areas.

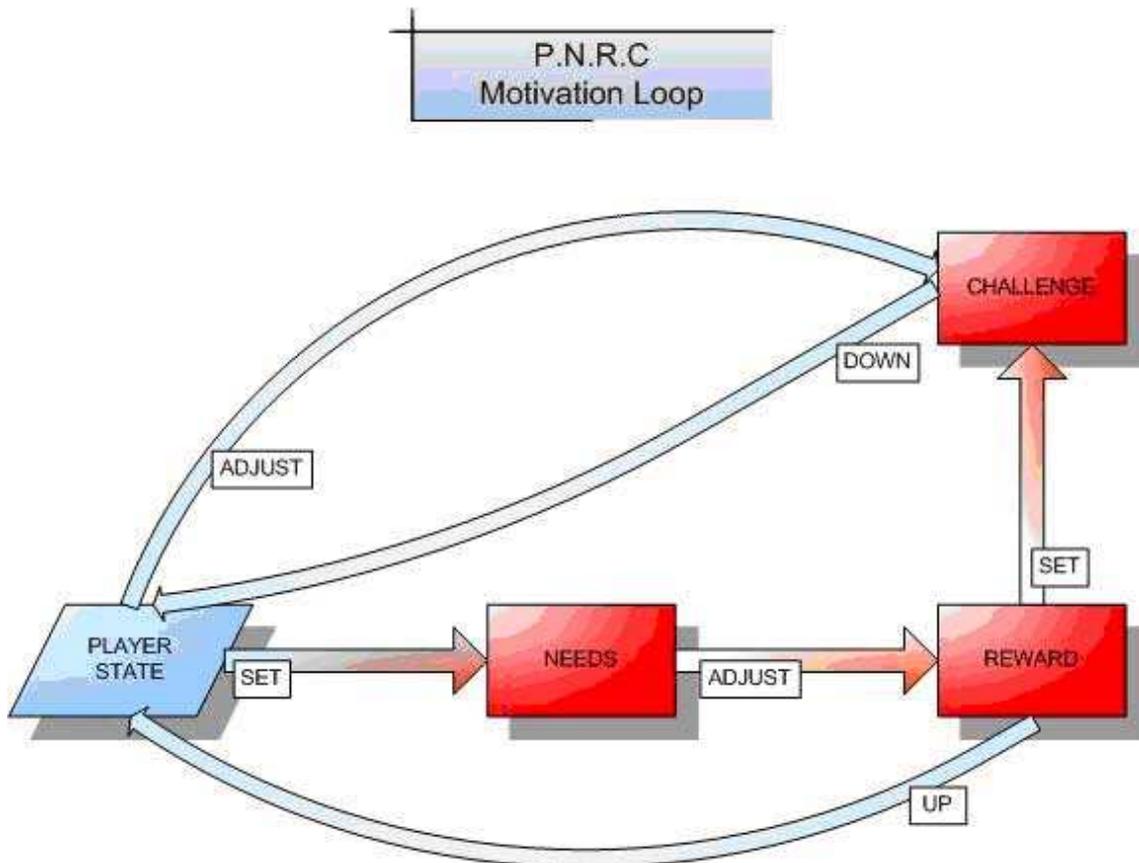
1) In game rewards

- Consist of score, currency, experience, gear etc.
- *Achievements*

2) Out of game rewards

- Feeling of success eg. "Wow! I finally beat the final boss!"
- Highly subjective

In game rewards exist in all of the games, to keep the player motivated (Ghozland 2007). Rewards will allow the players to feel more powerful, successful and help players to turn wishful thinking to in-game reality (Kremers 2010). This helps to build a connection between the player and the game, as a history emerges between the player and the game.



3. Motivation Loop (Ghozland 2007)

The feeling of success is subjective to each player. As the players vary, the meaningfulness of the feeling of success varies. Typically the feeling of success is present when a scenario looks dire or unbeatable to the player, but the player manages to overcome the challenge. **Dark Souls** is considered to be one of the most successful ‘out of game rewarding’ –titles in recent years. (Foster 2014.)

Part of the player base finds the feeling of success to be the grand motivator to play the games, while others enjoy more the inner workings and mechanics (in game rewards) of the game.

The latest additions to in game rewards are achievements, which were popularized by Microsoft's Xbox 360 *Gamerscore* –system in 2005.

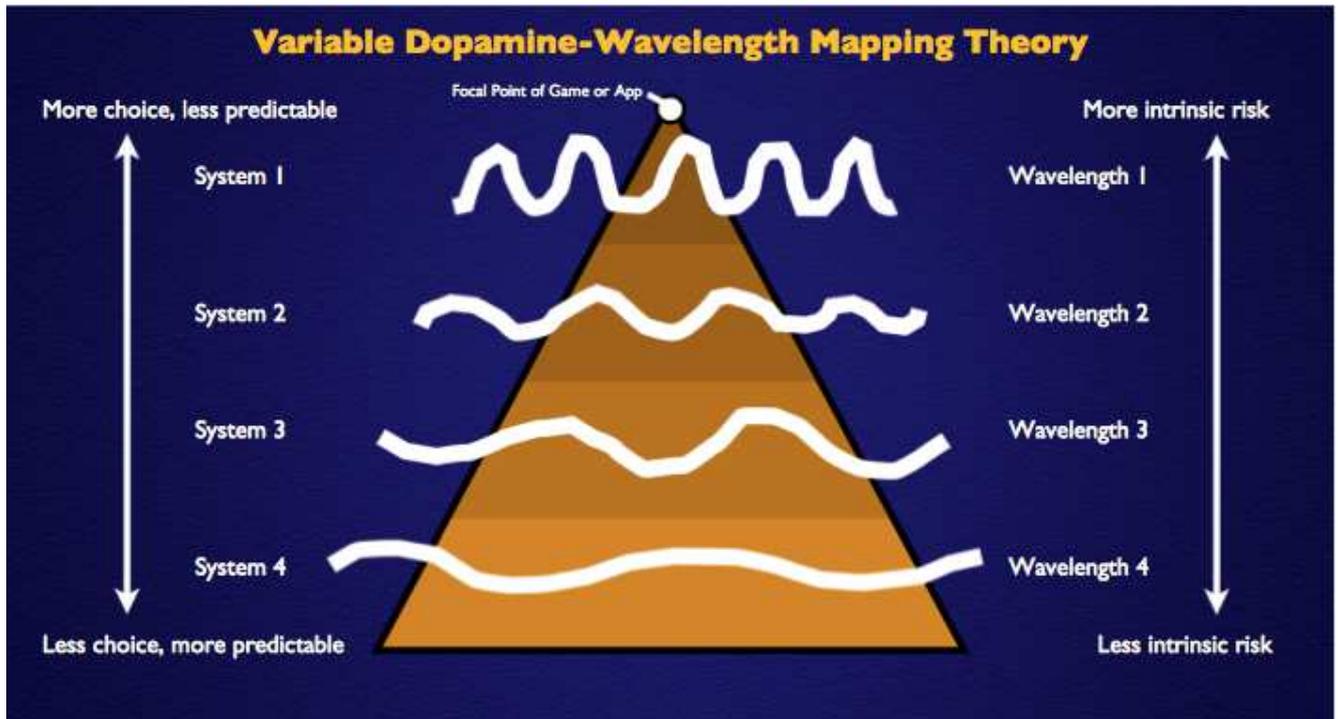
6.8 Player Choice

Player choice is a major source of replay value (Herman, McRae 2014). As the players are required to make impactful choices in the game, the next *playthrough* of the game would very likely lead to a different outcome and experience.

Player choice may have an impact on every aspect of the game, with various impacts (Graph 6). If the active character progression does not exist and the game is built around spatial and passive progression only, the gameplay experience will be completely linear. When combined with the very common trait of player progress slowing down as the game progresses (eg. experience required for a level up is higher than the requirement to a previous level up), problems may arise. Gameplay experience can turn to be very disappointing to the players with linear and passive upgrades. This can be avoided by presenting the player a reward of player's choice from a limited number of options. However, when the options and the possible option permutations increase, the gameplay balance is harder and harder to achieve as the gameplay turns less predictable.

Eg. Player chooses survivability options during the whole playthrough of the game and eventually cannot defeat a boss due to a too low damage in a given time.

The more there are choices available, the more intrinsic risk exists as the game becomes more and more complex. Complex games require more work from the player, but also reward them more often. This is the reason why linear games with no choice are often disliked by the players.



4. Variable Dopamine-Wavelength Mapping Theory (Correa 2011)



5. Decision Scale (Fullerton, Swain & Hoffman 2004)

7 FROM FREE TO “FREE”

A clear, definitive explanation on the terms ‘Free to Play’, ‘Pay to Win’, ‘Freemium’ and ‘Paymium’ does not exist. Game developers, producers, journalists and players are using the terms with very loose definitions.

This chapter will define the terms and present a system for categorizing games using the *fiat money* as impact factor.

7.1 Defining Free to Play (F2P)

Free to Play (F2P) is a wide generalization of all the games that are free to download and play but contain microtransactions. This includes both F2P and freemium games. The term seems to be very rarely used about games that are completely free (freeware). The main difference between a F2P and a freeware title is that freeware does not contain microtransactions. (Vankka 2014: 4-8.)

F2P game can also specifically mean a category 4 or 5 F2P game (See chapter 7.5).

7.2 Defining Freemium

Freemium is a pricing strategy by which a product or service is provided free of charge, but money (premium) is charged for proprietary features, functionality or virtual goods. Combines free and premium. (Kumar 2014.)

Freemium game is typically a category 1 to 3 F2P game (See chapter 7.5). These games contain moderate to extreme ‘pay to win’ elements. Most of the freemium games exist on mobile platforms (Hockenson 2013).

Freemium game can also mean a game that used to be *boxed* or which had a subscription payment plan, but which the developer or publisher transformed to a ‘trial type’ game instead as the revenue from the original monetization method diminished. In these ‘limited trial versions’, gameplay is hindered by the flagrant lack of core gameplay elements. Players whom want to fully enjoy the game are ‘forced’ to purchase eg. auction house and mail functionality (**Rift**) or additional quick bars and normal movement speed (**Star Wars: The Old Republic**) to play the game as it was originally meant.

The advertising method of a freemium game is very important. If a game developer or publisher advertises a game as a F2P title or convey the impression of a F2P title, but instead the game turns to be a freemium game, players are often very indignant. This will quickly lead to a negative impact on the company brand and imago which has happened to companies like EA with the release of **Dungeon Keeper** (iOS) and Gameloft with the release of **My Little Pony: Friendship is Magic**. (Sage 2014; Starr: 2012.)

To avoid negative publicity, freemium games with gameplay limitations should be advertised as *boxed* games. This way the players stay aware that they are ‘testing a trial version’ of the game and are required to pay for the full experience.

To summarize, freemium games can be split to two main groups.

- 1) Freemium games with one time, or subscribed payment, to unlock core functionality.
- 2) Freemium games that expect players to keep buying pay to win –consumables and currencies.

Group 2 is widely hated by the gaming community (Sterling 2014).

7.3 Defining Paymium

Paymium means any software, typically a game, that requires a payment on initial purchase, but which also has *in-app* offers. Paymium game may or may not be a pay to win game, depending on the in-app offers. *DLC* content is the most common form of paymium content. Paymium can also mean a freemium type game, but which in addition costs to purchase. (Counsell 2014.)

7.4 Defining pay to win (P2W)

‘Pay to win’ is a widely used slang term with two separate meanings.

- 1) A competitive game with score boards or match winners in which money can be used to purchase an advantage over the non-paying players. While P2W games are usually F2P, it does not have to be.

Eg. World of Tanks is a pay to win game as you can buy money only premium ammunition that deals higher damage than the normal ammunition.

- 2) A portion of a game where real money can be spent to purchase some sort of an advantage.

Eg. “You can play Hearthstone without having to resort to pay to win. You do not really need to buy the boosters.”

“ad·van·tage

any state, circumstance, opportunity, or means specially favorable to success, interest, or any desired end” (Dictionary.com).

The advantage can mean anything from a shortcut (eg. skip areas, gain extra money or experience), to a flat boost (eg. extra health or damage) to in-game currency or other gameplay effecting content like playable characters or cards in collectible card games. The etymology of ‘pay to win’ derives from ‘buying victory’ as the games are competitive. The purchasable content is always something that gives an advantage over non-paying players.

7.5 Categorizing Games Using Fiat Money as Impact Factor

The idea of the method is to categorize any F2P title by the impact of the fiat money to the actual gameplay experience from the player’s perspective.

Extremities in the categories are category 1 and category 5.

Money has massive impact to the gameplay in a category 1 game.

Money has no impact to the gameplay in a category 5 game.

7.5.1. Category 1 – “True pay to win”

In a ‘true pay to win’ game players can purchase exclusive, money only non-*vanity* content. This content has a direct impact to the gameplay. Players cannot get this content for free, no matter how much time or skill they invest to the game.

Eg. Money only exclusive characters, gear, skills, items, mounts/speed etc

Game examples:

World of Tanks as it was released. Money enabled players to purchase golden ammunition to tanks that dealt more damage than the normal ammunition. Later on they changed the system as it was very unbalanced. (Wargaming.net 2010.)

Star Wars: The Old Republic (SWToR) used to be a boxed game with subscription plan. As the revenue decreased the publishers, Electronic Arts and Lucasarts decided to transform the game to a freemium. Players could play the game for free but they would have severely limited movement capabilities and lack action bars on screen. (Tassi 2012.)

7.5.2. Category 2 – “Hard pay to win”

In a ‘hard pay to win’ game players can purchase gameplay affecting content, saving them huge amounts of time compared to non-paying players. The purchasable content is theoretically possible to unlock without paying, but only if players invest massive amounts of time to the game. However, as the vast time investment is required it translates to that players are forced to either pass or purchase the content. A game is not properly balanced nor skill based, when the time investment required for the unlockable content is too overwhelming. This hinders the free players compared to the paying ones.

Eg. A game has a 1 hour lasting *consumable* boost that gives players +20% damage, which costs 25 cents each. Free player has to play hours without one, to get enough in-game currency to purchase one. Ratio is terrible, example 10 hours without and 1 with.

Game example:

World of Tanks in the current status (26th of May 2014) of the game. Premium ammunition is available to be bought with in-game currency.

7.5.3. Category 3 – “Soft pay to win”

In a ‘soft pay to win’ game players can purchase content to save small to moderate amounts of time. Games in category 3 are considered balanced, as the paid time saving does not cause too severe inequality between players. Money acts as a shortcut, but unlike in category 2, it is not ‘required’ for the players to stay reasonably competitive.

Soft P2W games are considered as “fair play games”, although the money can provide players a small advantage. Most of the F2P games are category 3 games.

Game examples: **Hearthstone**, **Mechwarrior Online** and **League of Legends**

7.5.4. Category 4 – “Free to Play”

A game in this category has no competitive pay to win elements. Players can still purchase convenience items like extra stash or inventory space and vanity items like pets, cosmetics, apparels and other affairs that do not have a direct impact to the gameplay.

However, if the stash or inventory space is too limited on free players, the game should be categorized as 1 to 3 instead.

Game examples: **Path of Exile**

7.5.5. Category 5 – “True Free to Play”

This is the ‘true free to play’ category. A game in this category allows players to purchase only vanity items like pets, apparels and other affairs to customize their character or account.

Game examples: **Defence of the Ancients 2 (DotA 2)**

7.6 Example with Hearthstone: Heroes of Warcraft

Hearthstone is a free to play digital collectible card game developed by Blizzard Entertainment. Blizzard is considered to be one of the highest quality game studios in the world. The total revenue generated by their games was \$4,382B by the end of 2013 (Statisticbrain.com). They are the creators of the prestigious Warcraft, Starcraft and Diablo –series.

The goal in **Hearthstone** is to build a 30 card deck and beat opponents in 1 vs 1 matches. Few basic cards are available for deck building right away, but the monetization method lies within selling card boosters to players which allow players to expand their card library. Players can purchase five card booster packs for 100 gold or two packs for \$2.99. Boosters can also be bought in bulks with real money, which lowers the price up to 33%.

Players are awarded gold rewards as they win games, complete daily quests or manage winning more matches on arena than they lose. One round (game) lasts around 10 to 15 minutes. By winning three games players are awarded with 10 gold. That translates to 30 wins required to acquire the 100 gold which is the price of a card booster.

Games are *Elo* rated which means that the players are matched against opponents of their own skill level. This will lead to a scenario where nearly all players (except the very top and bottom) have around 50% win rate, which means that for every game won, players statistically also lose one.

Losing half the games translates to roughly 60 rounds of playtime, which means approx. 10-15 hours of playing to acquire enough gold to purchase a single five card booster. If this was the only way of gaining gold, **Hearthstone** would be categorized as category 2 “hard pay to win” game. This is because card acquisition for free players is too slow compared to the players whom buy the boosters with money.

Daily quests can be completed with few rounds of the game. The quests vary from eg. “win two games as paladin or rogue class” to “destroy 40 minions”. On completion, players are awarded with 40 or 60 gold. Players gain one new daily quest every 24 hours. The gold from daily quests allows players to purchase a booster every other day. The extra gold flow from daily quests nudges Hearthstone a step closer towards category 3.

In arenas, players battle each other with randomized decks as opposed to normal constructed decks. If players lose three times total, their arena run ends. Maximum number of wins players can reach is 12. The more wins players manage, the better their rewards are. Entrance fee is 150 gold, but players are guaranteed always a booster worth 100 gold as reward, even if they lose all their games. At 6 to 7 wins players gain their 150 gold back and at 12 wins players gain 300-400 gold on top of the guaranteed booster. As the cards pre-owned by the players do not help on the random arena at all, arena could be considered as category 5, true free to play. However, this only applies to the actual gameplay on the arena after the players have paid the hefty entrance fee.

In theory, players can acquire all of the cards without paying anything. Gold acquisition through winning games is very slow, but the daily quests and skill based arena hasten the process. Fiat money works as a time saving shortcut in **Hearthstone**, but it will not completely 'break the game' for non-paying players.

Hearthstone can be enjoyed, without paying for it, but the players whom are willing to spend money on the game have an advantage over the players playing the game for free. Statistically players will win more games, when they have more cards available than their opponents.

Imagine playing against yourself with two separate card pools. If the card pools are identical, the expected win rate is balanced.

Pool 1 = Pool 2; expected win rate = 0.5

Now, let's add some cards to card pool 1 (paying player) which pool 2 (free player) does not have access to. Now the odds favor pool 1 as pool 1 can generate permutations pool 2 cannot match.

Pool 1 > Pool 2; expected win rate > 0.5 for Pool 1

This causes a statistical significance which allows the paying player to have an upper hand. The scope of the statistical significance is only exactly known by the developers of the game with in-game statistics and details. This data is used for game balancing.

In conclusion **Hearthstone** is:

- A free to play game
- A freemium game
- Constructed deck play falls to category 3 as buying new cards allow moderate time save and advantage over non-paying players
- Arena is category 5 considering the actual game, but an entrance fee is required to play Arena
- Most of the game is constructed play, thus Hearthstone can be categorized as category 3, as a soft pay to win game

8. MONETIZATION IN FREE TO PLAY GAMES

In this context monetization means the methods in which free to play games generate revenue.

Various monetization methods have been seen during the past 15 years in F2P gaming. The following areas represent the overwhelming majority of those methods.

The monetization methods can be split to two main categories – advertising and in-game sales.

8.1 Advertising Based Revenue

In-game advertising is large and growing business. It is predicted that the in-game ad market will double from 2011's \$3.1B to \$7.2B by 2016 (DFC Intelligence 2011).

Advertising based revenue consists of two groups - direct advertising and affiliate marketing.

8.1.1 Advertising

Advertisements are much more common on mobile F2P titles than on PC or consoles games. These advertisements are typically shown on banners, *carousel ads* or lobby screen on main screen while the game is loading.

F2P advertising is easy to setup and will generate revenue effortlessly, but it will only attract advertisers if the game generates interest and traffic. The revenue generated through advertising is 0-20%.

Players tend to accept advertising in F2P games as they are aware that the developer has to generate revenue. A key design rule exists – ads should not interfere with the gaming experience itself. (Luban 2012.)

8.1.2 *Affiliate Marketing*

Affiliate marketing means providing players with *soft* or *hard currency* if they visit or register on the affiliated partnership site. Occasionally players need to watch an advertisement video to get paid. This method has been almost exclusive to mobile gaming and it represents 0 to 40 percent of the F2P revenue. (Luban 2012.)

8.2 In-game Virtual Goods Sales

In-game *virtual good* sales is the main revenue source for free to play games. The revenue generated is 50-90 percent. (Luban 2012.)

Free to play games have typically two parallel currencies. *Soft currency* is the normal in game money like gold. It is quick to acquire by playing the game. *Hard currency* is a premium currency which can be bought with *fiat money*. It is very slow or not obtainable at all by playing the game. Some F2P mobile titles also allow direct fiat money purchases, typically for one time unlocks. Eg. **Ski Safari** offers soft currency coin doubler for \$1.99 (iTunes.com).

Typically F2P games have premium items available which can only be obtained by using the hard currency. If those premium items affect gameplay, the game is considered to be a pay to win game. The greater the benefit gained through the premium items, the lower the category is. For more information on the categories, reference to chapter 6.5.

8.2.1 Microtransaction Based Monetization Formula

$$\text{Daily Monetization} = \text{DAU} * \text{Conversion} * \text{ARPPU}$$

DAU = Daily Active Users

Conversion = % of daily active users that pay for a microtransaction

ARPPU = Average Revenue Per Paying User

(Katkoff 2014)

League of Legends has 27 million daily active users. In March 2014 the ARPPU for LoL was \$1.32, calculated during the last 12 month period (Superdataresearch.com 2014). In 2013 LoL generated \$624 million in revenues through microtransactions (Borconi 2014).

Using the formula, it is possible to find out the conversion rate for LoL.

$$\text{DAU} = 27000000$$

$$\text{ARPPU} = 1.32$$

$$\text{Daily Monetization} = \$1709589 (\$624000000 / 365)$$

$$\text{Conversion} = X$$

$$\text{Conversion} = \text{Daily Monetization} / \text{DAU} / \text{ARPPU}$$

$$\text{Conversion} = 0,0479\dots$$

Out of the 27 million daily LoL players, **4.79%** concluded a daily microtransaction during the time period of March 2013 to March 2014.

8.2.2 *Virtual Goods Categories*

The in-game item selection can be split in to three categories.

1) One time purchases

One time purchases are permanent, typically core content unlocks or downloadable content (DLC). More information can be found from chapter 8.2.3.

In the mobile games, soft currency and experience multipliers are also very common eg. coin doubler.

2) Consumables

Consumables are limited use items. After consuming the item a boost is granted for certain duration. These affects are generally very noticeable and tend to break the game balance if the game is competitive.

Eg. +200% experience or double damage for 2 hours.

Consumables are considered to be a 'cheap way of milking money' out of players and the main reason why F2P games are called pay to win.

3) Premium time

Premium time is a duration based boost with lesser effect than consumables. These boosts rarely have effect on direct gameplay meaning that no eg. extra damage or health is gained. Instead the boosts offer extra rewards after finishing a round of the game, typically experience and/or soft currency.

8.2.3 Core Content Sales

Core content sales consists of selling the players new characters, units, cars, planes, cards or any other active playable element. Eg. in **Mechwarrior Online** players can use fiat money to purchase new mechs. In **Hearthstone** players can purchase cards and in the **League of Legends** new hero characters to play with.

Core content sales can also include other in game content. Mentionable are new areas, maps, dungeons or in game expansions, which often add new quests, challenges and game mechanics. The previously mentioned are typically considered as downloadable content (*DLC*) and are mostly found in *paymium* games instead of F2P games.

If the items sold are available only for hard or fiat currency and are better in terms of competitive gameplay than the soft currency options, the game is considered to be a pay to win game.

8.2.4 Commodities and Currency

Commodities are the resources required for various actions, eg. building, conscripting units, crafting or researching. In numerous F2P titles only the hard currency can be used to buy commodities to speed up the gameplay. Eg. in Supercell's mobile game **Boom Beach** players can spend hard currency gems to purchase wood, stone or gold resources which are required for units, building and upgrading.

Multiple F2P games allow exchanging hard currency to soft currency but not the other way around. Commodity selling is generally very common for mobile titles, but much less so for F2P *PC* or console games.

Commodities and currency are always obtainable through playing the game. The rate of which players gain these commodities is what determinates if the game is 'pay to win' -title or not.

8.2.5 Appearance Customization

Appearance customization options include *models*, *skins* and *textures* which affect the graphical appearance of the player character or the UI. Typical character examples are dyes, stamps, decals, haircut, clothes, jewelry or premade character skins. Eg. in **DotA 2** MOBA players can purchase various character skins, but also specific vanity gear eg. different looking weapon or shield for their hero.

UI customization consists of different UI layout or other graphical changes. Most common examples are player portraits, icons and badges.

Appearance customization changes are superficial and will not effect to the actual gameplay. Players greatly enjoy the customization options for the chance to look unique and for the fact that these changes will not turn game in to a pay to win game.

8.2.6 Animations and Graphical Effects

Like appearance customization, the animations and graphical effects are superficial vanity changes. These changes will not effect to the actual gameplay and thus will not be considered 'pay to win'.

The animations sold are commonly emotes, eg. new dances or other active animations for the player character.

Graphical effects vary from changing the colors of items, skills and spells to actual changes in effects and animations. Eg. in **Path of Exile** players can cast a town portal to quickly travel to a friendly town from wilderness. The graphical effect of the portal is blue, but players can purchase an orange cosmetic portal effect via the in-game store.

8.2.7 Audio: Music, Sound Effects and Dialogue

Game audio consists of three areas - music, sound effects and dialogue (Long 2011). When unlocked by a player, the new audio will replace the original audio files. The aural changes are similar to cosmetic vanity effects and will not directly affect the gameplay, unless the replacement audio allows players to gain competitive gameplay benefits.

8.3 Example: Audio Monetization in Smite

Smite is a 3rd person controlled MOBA developed by Hi-Rez Games. It is the second major F2P game that has monetized audio since the patch released on 1st of May in 2013 (Hi-Rez Studios 2013). In **Smite** two teams battle each other and attempt to kill the Minotaur controlled by the opposing team to win a round of the game. The two teams are composed of three or five players, depending of the play mode.

As a round starts, every player chooses (or gets randomly assigned) a god. Gods are playable characters which vary in active and passive skills, meaning no two gods are similar to play with. The gods have specific roles on the battlefield as well as unique appearance and character voice.

On top of the typical appearance customization options sold (skins), **Smite** offers voice packs for players to purchase. Players can communicate by typing in-game, but the fastest way is through premade voice messages that are activated by a keyboard shortcut combination. If a player has bought a voice pack for a specific god, it will replace the default announcer voice in the shortcut system to a god's specific voice, which all players will hear when the shortcut is activated by a player. These packs cost 200 gems (~3 euros) which are the hard currency of **Smite**. As of 26th of May, a maximum of one additional voice pack exists per god, but some gods have no voice packs implemented yet. New voice packs are being added as the game is patched weekly.

9 REFLECTION: POSSIBILITIES OF AUDIO MONETIZATION

Audio monetization is the latest frontier to be monetized in free to play games. It seems inevitable, that audio will be monetized in more and more F2P titles in the future.

Dawngate, a MOBA developed by Waystone Games, is the third major F2P title to implement audio monetization. However, **Dawngate** is not released yet and it is currently in *open beta* status as of 26th of May 2014. Similar to **DotA2**, players can unlock new announcer voice packs in **Dawngate** for a payment of few euros. Link to an example can be found below.

King of Masks | Announcer Pack Preview on Youtube

<https://www.youtube.com/watch?v=XXxxiy7l6TY>

What are the new areas that audio could be monetized from?

9.1 Voice and Sound Effect Packs

Although voice packs have already been monetized, it's likely that in the future voice and sound effect packs will be more and more common in F2P games.

Few reasons exist. Creating audio is reasonably cost effective compared to creating eg. video material or game features, which will require either a large team working or huge amount of quality assurance work.

Audio is triggered to playback and it's not directly being fed to the actual program code. The program code launches the audio files from a media as the files are being requested by the game engine. Furthermore, it is relatively easy to add more audio files to a game, after the initial programming code and audio engine has been finished. Integrity checked audio files cannot be the sole cause of bugs. Instead the bugs would most likely be located in the program code, typically audio engine.

Sound effect packs are replacement or extra audio for the non-dialogue audio elements. The sounds replaced by the sound effect pack can consist of any non-music audio. Sound effect packs could be also used to sell players higher quality (bitrate & sample rate) audio files.

9.2 Music

Overwhelming majority of the games contain music. Audio is typically handled through a *middleware* solution, eg. WWISE or FMOD.

In games, two main types of music exist.

1) Dynamic music

Dynamic music tracks are typically pieces of music which is played as patterns. These patterns can be transitioned to one another or the patterns can be played by using certain instruments only. The music is triggered through events in the game, eg. combat, stealth or player crossing a spatial location trigger.

The example 1 below simplifies how the audio engine can playback the dynamic music files. At the beginning the player is on level 1, enters combat, triumphs and continues the level 1 after the combat phase.

Example 1

Level1_Pattern1_PercussionOnly_Main.wav → Level1_Combat_Start.wav →
 Level1_Combat_Main.wav → Level1_Combat_Victory.wav →
 Level1_Pattern2_FullMix_Main.wav

In example 2 a variation 2 of main level music is played until the player enters stealth (a type of game mechanics). The player is detected and the combat starts. Player manages to escape and eventually normal level music continues playing.

Example 2

Level1_Pattern2_Normal.wav → Level1_Pattern1_Stealth.wav →
 Level1_Detected.wav → Level1_Pattern1_Combat.wav →
 Level1_Avoidance.wav → Level1_Pattern1_Normal.wav

2) Non-dynamic music

Non-dynamic music is linear music which is typically used in *CGI* videos and in the *cutscenes* (Gamessounds.com). It cannot follow the actions of the player in the game, but instead will play until the playback is stopped.

In instrument based music games, eg. **Guitar Hero** and **Rock Band**, DLC audio tracks have been sold for years. However, music has not been monetized in major F2P titles as of 26th of May, 2014.

Various possibilities for music based audio monetization methods exist. These include eg. selling separate songs, packaged albums, genre based ‘radio stations’ and ‘music passes’ which would grant the players access to live music which is streamed to the players through a live DJ. Many competitive games are played for hundreds, even thousands of hours and the players tend to disable the original music as soon as they get bored with it.

Similar to voice and sound packs, music is a cosmetic, aural effect which will not have direct impact to gameplay experience. Monetized music will not turn game in to a ‘pay to win’ –game.

9.3 Soundscapes & Ambiences

Soundscapes and ambiences are viable audio monetization areas, although specialty compared to voices, sound effects and music. These unlocks would suit best for single player games as the competitive multiplayer games have much more action on the screen than a relaxing, paced single player experience eg. **Journey**.

Unlockable soundscapes or ambience could eg. change the surrounding desert sound to a more eerie version. These aural changes should be enforced by graphical changes.

9.4 Team and Player Themes

Themes are ideal for competitive gaming. Professional gaming and live streaming is becoming more and more successful and it is already reaching more viewers during prime time than well-known US TV stations MTV, TNT and AMC (Siegal 2014).

There are currently no F2P games available that allow presenting the players and the teams with simple in-game tools, but upcoming game releases and patches to existing releases could quickly change that. The themes act as eg. entrance music or victory music, similar to the music in the beginning of eg. *K-1* matches. The music acts as an extra customization option, increasing the player and team uniqueness. Players are asked to pay a flat fee on uploading a pre-edited track (eg. 15 seconds with fades) of their choosing to the game server, which they then can use as a player or team presentation track.

However, copyright and performance rights could become an issue if the players can upload audio of their choosing. While scanning tools can be used to prevent this, this can be avoided by the game developer all together by licensing a set number of songs, which players would be allowed to unlock in the game.

9.5 VoIP Morphing

Communicating is a critical piece of competitive gaming, which most of the non-mobile F2P games are. Numerous games offer *VoIP* capabilities. Real time voice morphing is the act of changing the player's voice before it is transmitted to other players. This allows players to speak with the voice of various characters instead of their own voice, eg. aliens, robots, chipmunks and demons adding a new monetization method for an extra layer of customization.

9.6 Competitive Benefits

Audio can act as a competitive edge. If players are sold in-game audio, which eg. will generate a clear, pulsing, location based beeping sound from the direction of an opponent, players will be able to locate enemies they could not otherwise detect. This means that even the audio can be monetized to act as pay to win –content with impact on game mechanics.

10 FUTURE STUDIES

Further studies are required to gather statistical information on F2P and paymium games on mobile and non-mobile platforms, as the fiat money based categorizing on chapter 7.5 can be applied to any existing game. This data would confirm the hypothesis that mobile games, typically casual, have much more ‘pay to win’ –elements in them than console and PC games do. More research is also required to find out how ‘pay to win’ elements affect to the game sales and revenue and to player dissatisfaction.

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