

Analysis of the games-as-a-service business model through the lens of behavioral economics

Previous compulsory steps / Prior students' knowledge	None in particular.
Learning objectives	Learning about cognitive biases and how some game designs can take advantage of them.
Subjects	English as a foreign language, Economics, Social sciences, Media education
Recommended Age (10 – 14) or (15 - 18)	All
Material needed	Video display device
Sequence duration	60 minutes
Individual or group activity	Group activity
Skills developed (after learning objectives)	Critical thinking, Digital literacy
Tips for shorter duration	To make this sequence shorter you can simplify the figure analysis steps. Instead of having students analyse them, do it yourself or expose directly the result then explain how it was proved.

Tips to make the sequences more accessible or inclusive

The videos used in this sequence are in English with subtitles. You could also use the auto-translated subtitles for additional languages. To make this sequence as inclusive as possible you could consider explaining the videos to your students while showing them in class, or share the script of the videos with your students beforehand.

Step by step: how to implement the sequence

In this pedagogical sequence, we will compare 2 popular games in terms of profit and player base. In order to understand their comparative differences, we will analyse the in-game purchases design and strategies. We will see how they take advantage of cognitive bias known in the field of Behavioural economics.

- **Step 1 – Talking about in-game purchases (15 minutes)**

Ask your students if they know the games Fortnite and Player Unknown's Battleground (PUBG).

- Ask them if they play one of these games and what they like in playing it.
- Are these games free-to-play? (Fortnite is, PUBG is not except for the mobile app)
- What can they tell about the purchase system of these games?

Both Fortnite and PUBG use in-game currencies that can be bought with real money or earned by playing the game. These currencies can buy cosmetics items. The main difference between them is between Fortnite's Battle Pass and PUBG's crates. It is a type of loot box: it can be bought using the in-game currency or on an online marketplace to obtain random objects.

Present students the following charts and ask them to comment on them. Ask them which game is the more profitable. Which game attracts and retains more players? (The metrics used are from the years 2018-2019 because the covid pandemic has tremendously modified them. In 2020, Fortnite and PUBG earned a similar amount of money (around 5 billion dollars). However, the Chinese market accounts for 30 to 50% of PUBG's revenue while Fortnite makes almost no money in China (due to governmental restrictions). Thus, if considering non-Asian market, Fortnite makes a lot more money than PUBG while being a free-to-play game. Moreover, PUBG mobile accounts for most of PUBG's revenue, and for their business model they have copied Fortnite's Battle Pass).

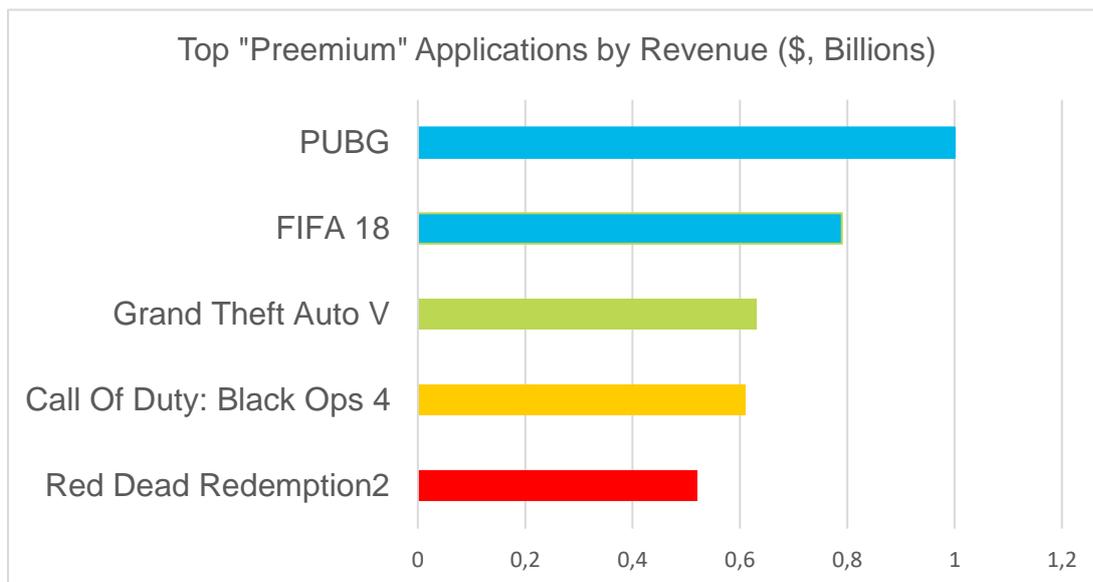
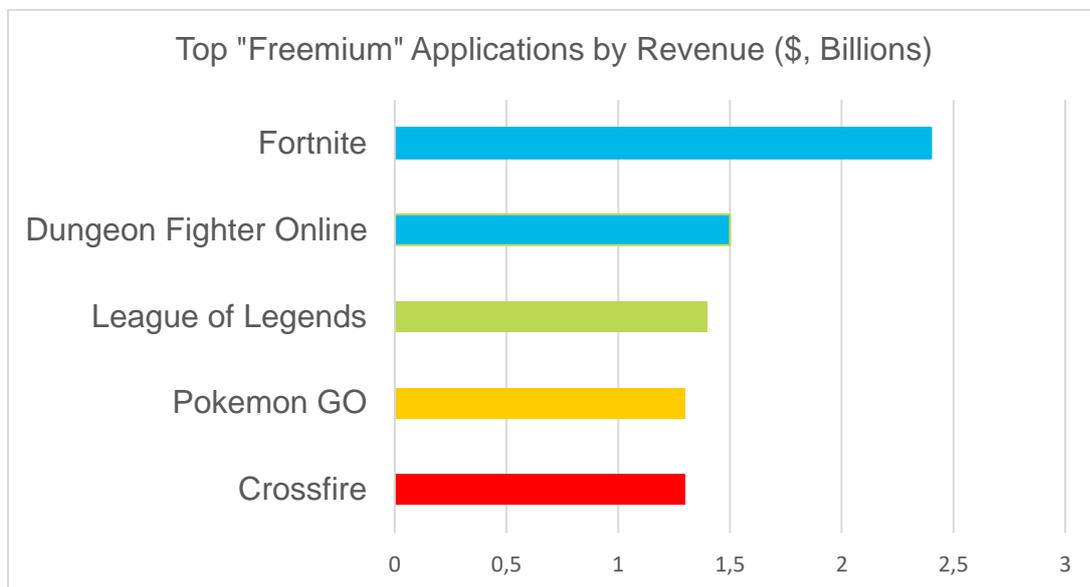


Figure1. Pagdiwala. (2019)

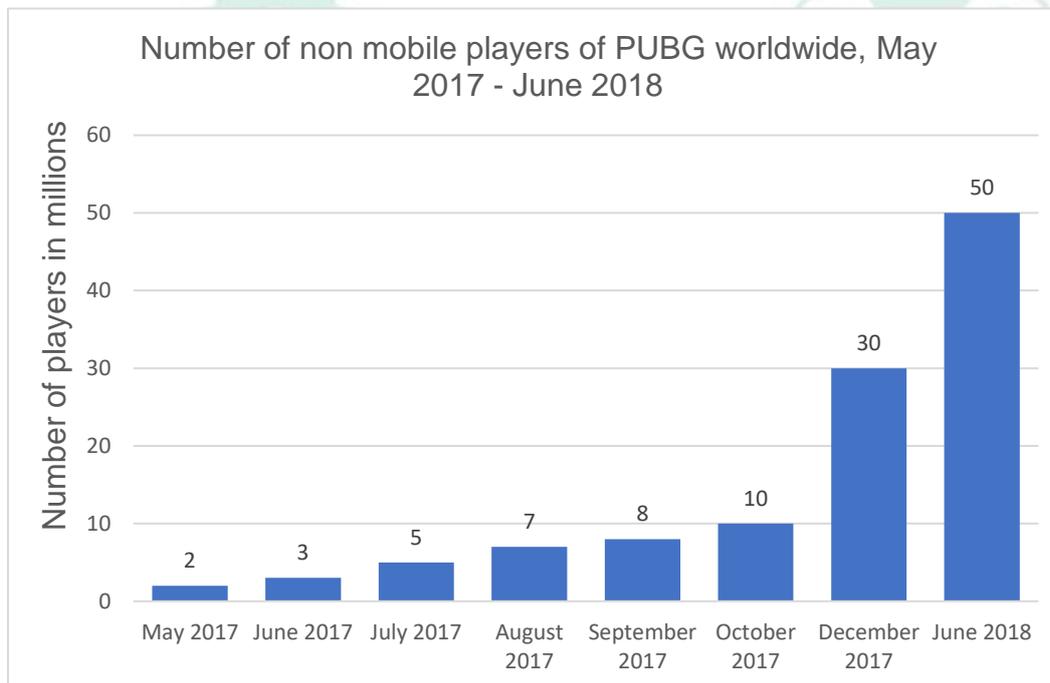
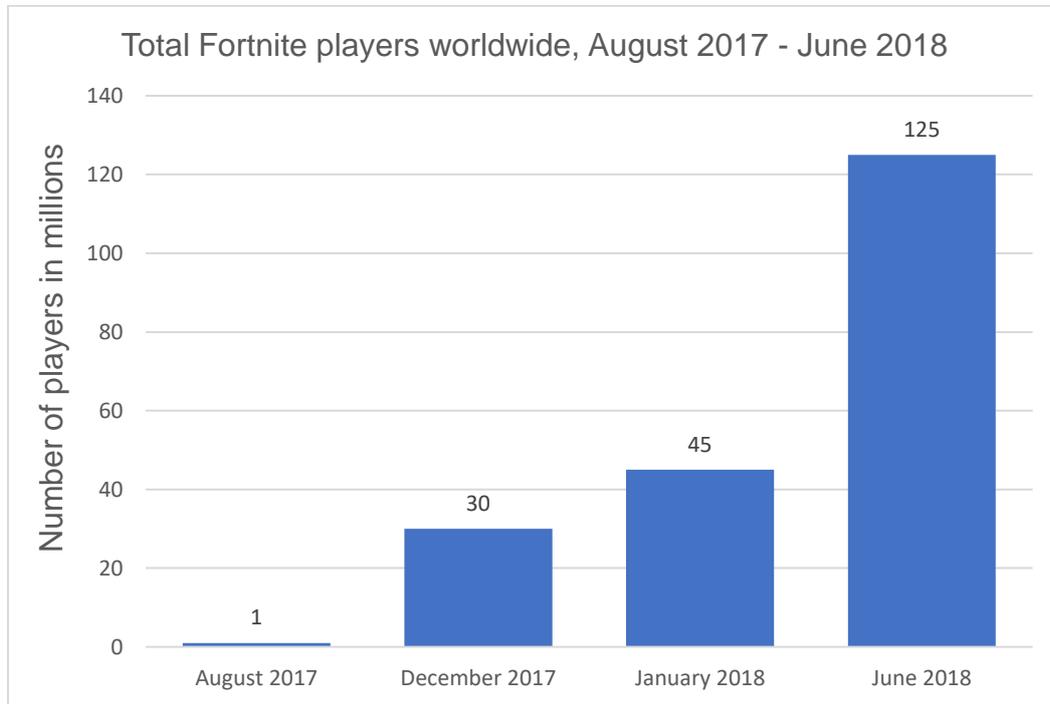


Figure 2. Pagdiwala. (2019)

Step 2 – Analysis of Battle Pass user interface (10 minutes)

Show your students Fortnite's Battle Pass interface:



Figure 3: Screenshot of Fortnite's BattlePass (Doc Geraud, 2018)

How can we describe this interface?

The key concepts to analyse:

- The battle pass looks like a progress bar going left to right with a separation between free (blue) and buying (gold) tiers.
- When you pay for the Battle Pass, you get rewards at every tier compared to the free version where you get rewards every now and then).

If you have students that play the game, ask them:

- Do you see the Battle Pass even if you don't pay for it? → Yes
- How do we progress through the tiers? → You must gain experience by playing to level up, every level gives you battle stars. Then, you unlock Battle Pass tiers when obtaining a certain amount of stars.
- What about the items in the previous level when you buy the Battle Pass? → you get them all retroactively

What effect do you think this interface produces on the player? → The player is compelled to notice everything they miss out by not paying

Show them this video on loss aversion:

💡 ['Loss aversion | Ethics defined'](#) by McCombs School of business, and ask them the previous question again.

Ask your students how they think loss aversion can be more acute with the Battle Pass than with random loot boxes. → In a loot box, the reward is random, thus you don't know its value until you open it. In the Battle Pass, you know exactly what you miss out.

- **Step 3 – Analysis of the seasonal organization of the game (10 minutes)**

Ask your students how the seasons work in the Fortnite game.

→ The game is organized in seasons (like tv shows) of 90 days. Each season brings variety by implementing new elements: gameplay mechanics, map modifications as well as unlockable items. These objects are season exclusive. Once the season is over, the items cannot be obtained anymore. However, you can carry items purchased during a season into the following ones.

Ask your students what they think about this seasonal organization in regard to loss aversion.

→ It reinforces loss aversion because after all your efforts to progress through the tiers, all it takes is to buy the Battle Pass to get all the items it proposes until your current tier otherwise you can behold everything you will lose forever. The closer to the end of the season the player gets, the harder it is to resist loss aversion.

💡 ['What is Effort Justification? \[Definition and Example\] - Understanding Cognitive Biases'](#) by My Cognitive Biases.

Ask them how effort justification could make the Battle Pass more engaging than loot boxes. → The Battle Pass shows all the items you could have because you worked hard to level up. While random items in a loot box do not provide that much of a feeling.

- **Step 4 – Analysis of the peer effect (15 minutes)**

Ask your students what a game lobby is and what they do in it → It is a virtual waiting room where players can socialize and observe each other before a match begins.

Ask your students if they think there can be a social pressure into buying cosmetic items.

Show this video to your students about peer effect:

💡 ['The Asch Experiment'](#) by HeroicImaginationTV.

Show this chart to your students:

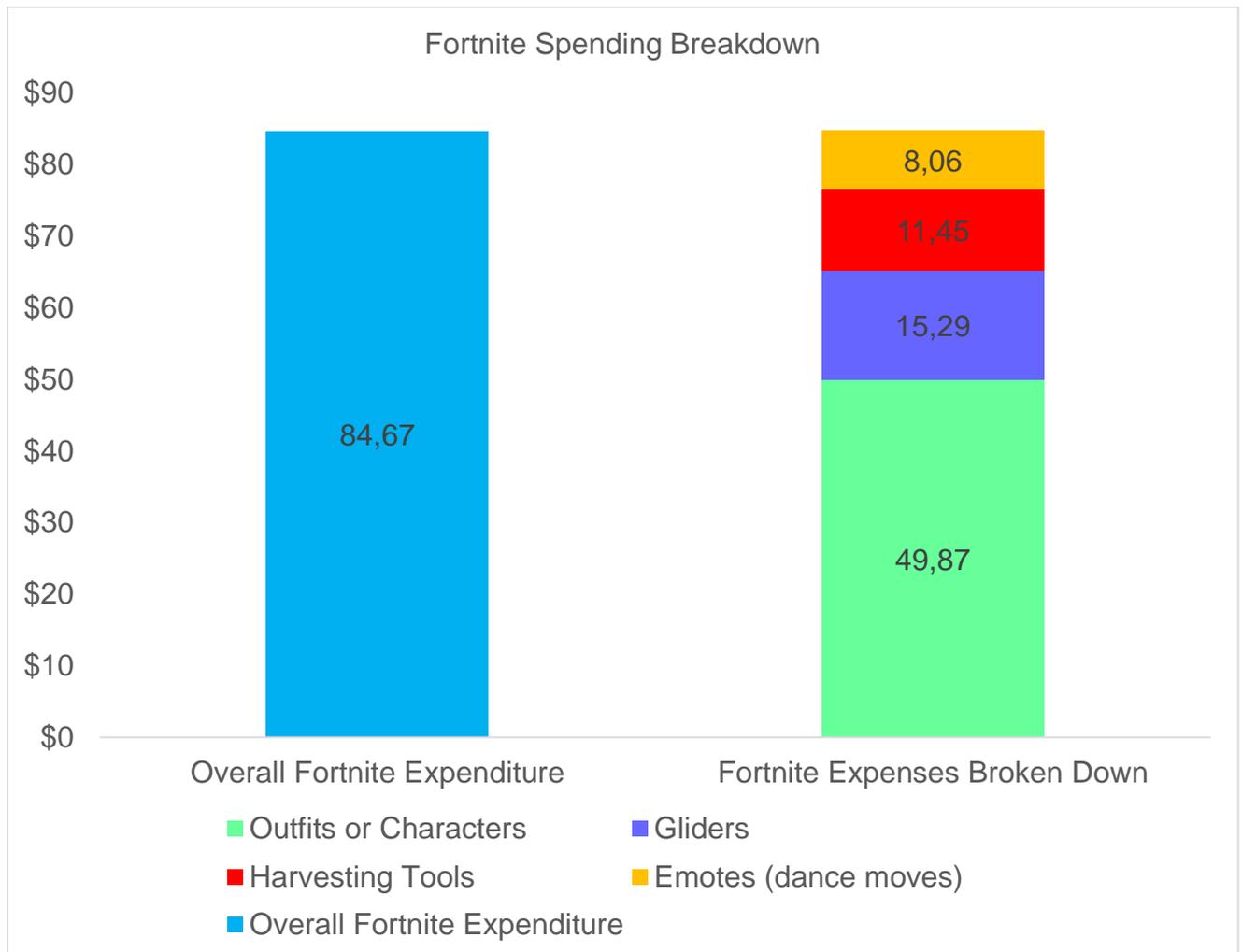


Figure 4. Pagdiwala. (2019)

- **Step 5 – Debriefing and a word of warning (10 minutes)**

The free-to-play model is not all bad. The core of the model is that it is possible to play for free. Battle royale games can be fun and their social and competitive nature makes them interesting in many ways. But like many things, it is a matter of balance. Leaving the player the choice to spend a bit of real money to cut through hours of repetitive gameplay maybe is not a bad thing. It becomes an issue when the game is designed to force players into buying these advantages.

Beware not to blame gamers for paying. Give them a golden bridge by acknowledging that games are designed very cautiously to influence their behaviour. There is no guilt to feel but it is important to be conscious of these mechanics. It can also be noted that sheer willpower can only be of limited help and the best option is to modify your environment in order to remove temptation (limited play time, locking systems, a dedicated gaming budget, etc).

References

[Doc Geraud]. (2018, June 18). 'Game Anatomy - Fortnite manipule votre cerveau ?' [Video File]. Retrieved from https://www.youtube.com/watch?v=_YnncJ8NTvA

[The Game Theorists]. (2018, November 1). 'How Fortnite TRICKS Your Brain! | The SCIENCE... of Fortnite Battle Royale' [Video File]. Retrieved from <https://www.youtube.com/watch?v=tqG74aI9t3Q>

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