DA24STO - Individual Project

Status	Backlog
Owner	 Gui Bracco
Completion	1
Summary	An analysis of the Fortnite Battle Royale Item Shop from the perspective of economic game design.

Item Store Analysis

Fortnite Battle Royale

About this project

Fortnite Battle Royale by Epic Games is one of the most successful games in the battle royale genre. Released in 2017, it has been a huge success, with over 350 million players worldwide. The game is free to play, but it has a monetization system based on the sale of cosmetic items, such as skins, emotes, pickaxes, gliders, etc. These items are sold in the Item Shop, which is updated daily with new items. The items are sold for V-Bucks, the in-game currency, which can be bought with real money.

What

An analysis of the Fortnite Battle Royale item shop from the perspective of economic game design.

This study intends to cover the availability and monetization of the items daily on sale for Fortnite Battle Royale.

How

By scraping, cleaning and organising the data available on a fandom website (https://fnbr.co/shop) and exploring availability, seasonality, price range, spending depth, etc. over time to gather insights and answer questions from the game development perspective.

Why

One of the common practices when designing and developing new games is to study the most successful games in that genre, the so called benchmarks, to get a better understanding of their monetization system and what is needed in the different stages of the game development and adoption.

Project tasks

Tasks

Aa Task name	Assignee	Due	Parent-task	Priority	Project	Status	Sub-tasks	Summary	Tags
data collection					DA24STO - Individual Project	Done			
data preparation					DA24STO - Individual Project	Done			
exploratory analysis					DA24STO - Individual Project	Done			
define main question					DA24STO - Individual Project	Done			
mid-way presentation					DA24STO - Individual Project	Done			
include season dates					DA24STO - Individual Project	Done			
stakeholder quiz					DA24STO - Individual Project	Done			
analysis					DA24STO - Individual Project	Done			
course goals					DA24STO - Individual Project	Done			
storytelling					DA24STO - Individual Project	Done			

Aa Task name	Assignee	Due	Parent-task	Priority	Project	Status	Sub-tasks	Summary	Tags
presentation					DA24STO - Individual Project	Done			

Questions

- How much content needs to be done over time? And for each season?
- How much content is actually new? How many is repeated? How often?
- How is the distribution of item types? And rarity?
- How did the distribution of item types change over time?
- What is the price range for each rarity over time?
- When did IPs get introduced?
- What is the spend depth (or store value) per day? Per season?
- How much value comes from new items? From repeated items?

Hypothesis

The item shop started smaller, with a few items and less variety, and grew over time to reach profitability.

Notes

Item Shop

https://fnbr.co/shop

Seasons

https://fortnite.fandom.com/wiki/Seasons

Latest numbers

https://www.demandsage.com/fortnite-statistics/

Diary

Week 1

Doing an analysis with a gaming dataset might be difficult, because there are not many official data out there. Datasets on Kaggle are flimsy and usually about leaderboards, matches and championships, player data basically. That's not the analysis i'm interested in.

After talking to some game designers, it seems that an analysis of the Fortnite Battle Royale Item Shop is a viable option and it's a relevant study from the economic design perspective. No official public data too though.

Time to draft that PDP…

Week 2

Still no good dataset available, but there are some good fandom websites:

- https://fnbr.co/shop
- https://fortnitetracker.com/site-api
- https://fortnite-api.com/
- https://fortnite.fandom.com

APIs seem to be more structured, but they're limited. Or limit access. Or are paid.

Fnbr.co has every day of the item Shop published on a different page, apparently!

Python has some libraries to do web scraping. No idea how to do it though.

It's better to first crawl over the webpages and save them locally, in case they go offline — or my IP get blocked.

I think requests.get(url) will do the trick if I can format the url for each day.

Yep, arrow package will do — thanks, Stack Overflow!

For next week:

- try to iterate for many days
- work on the parser — learn how to do it.

Week 3

For the record, I hate HTML. And I hate parsers.

Don't call your parser “parser.py” because python already has a parser named like that somewhere and you'll lose a day trying to understand *why* that shit doesn't work! Thank you.

2023-08-19 Viktor's 1st coaching call:

- Clear 1st question
- Good to have old data
- Look at the legendary skins

- Have a solid dataset
- Have a straightforward question to answer
- Branch out from that.

It seems to have worked, store.csv seem to be ok.

Week 4

Time to set up a repository and start exploring.

Ugh! Of course some names contain quotes, and double-quotes, and commas. I'm gonna use quotechar='*' when importing. Not gonna use the csv file on a spreadsheet anyway. Don't have any more time for this. Move on!

Did some EDA, but need to look into categories in more detail.

Things to do:

- Mark the first occurrence of an item
- How to differentiate new items from old items from very old items?

Found an interesting solution: a column 'first' with true/false; a column 'one' filled with '1'; a column 'occurrence' with the cumsum of 'one' — df must be ordered by date!

As suspected, the mean item price almost doesn't change over time and remains around USD 8 as a whole. But the amount of items available daily increases drastically.

Time to talk to the stakeholders again. What do I have to look for? Some questions:

- How much content needs to be done over time? And for each season?
- How much content is actually new? How many is repeated? How often?
- How is the distribution of item types? And rarity?
- How did the distribution of item types change over time?
- What is the price range for each rarity over time?
- When did IPs get introduced?
- What is the spend depth (or store value) per day? Per season?
- How much value comes from new items? From repeated items?

For next week:

- Explore visualizations
- Deepen the analysis

Week 5

I really need to look into seaborn because matplotlib alone is kinda ugly!

It's better to group IPs together as a category. It's unclear how the contracts involving their release works anyway. It probably has more to do with the movies calendar than the store, there's not enough data to analyze them.

Seaborn inside matplotlib is the way, I just need to find out how to do it…

2023-08-31 Viktor's 2nd coaching call:

Executive analysis:

- Present it as a story
- Key insights
- Focus on the stakeholders

Week 6

I'm gonna try grouping the analysis in 4 categories:

- Store overview
- Production
- Pacing
- Pricing

They started reintroducing old items over the years to increase the number of items available in the store, but outfits have always been the most introduced item available, with bundles getting traction in 2021.

For next week:

- Streamline down the analysis
- Organize the files
- Start working on the script

Week 7

Ok, so first we have to deliver (and present) C4 and then deliver C3. Wasn't expecting that.

I'm gonna include this last month in the data, since it's just running the scripts again to include the extra dates.

Need to group those visuals better.

C3 will focus on the analysis. C4 will focus on the process.

2023-09-15 Viktor's last coaching call:

- The building blocks are there
- Make sure to have a thread following through the presentation

Week 8

Putting things together…

Things to consider for the script:

- Context
- Focus on the key stuff
- Storytelling

Cool template for the slides: https://slidechef.net/templates/free-animated-fortnite-theme-template/