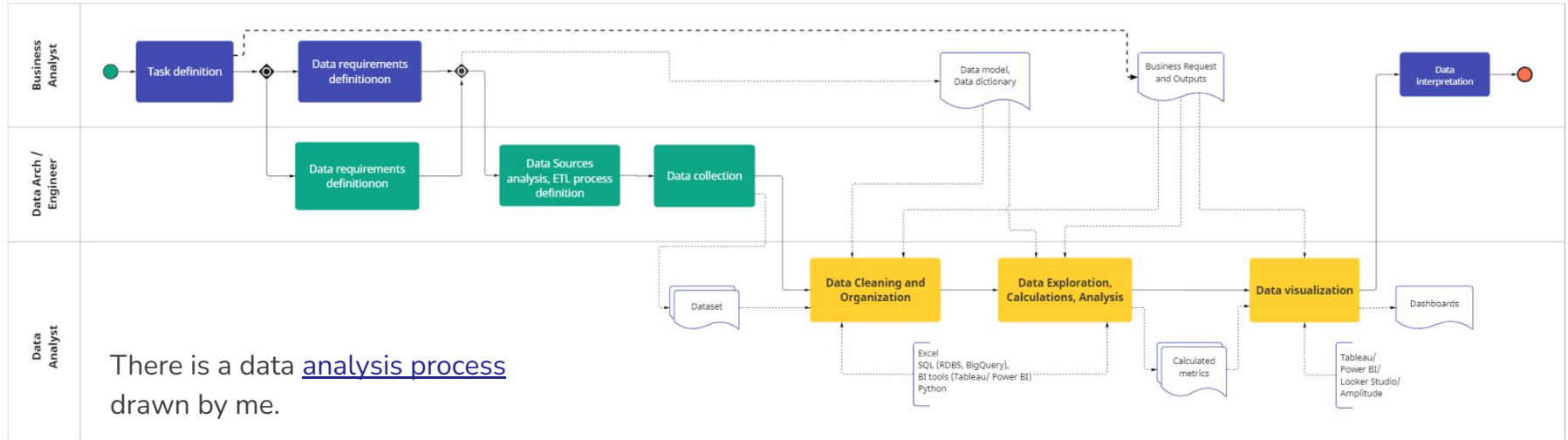


Facebook and Google ads analytics

by [Olena Petrova](#), Data Analyst



Scope of Case



The current case study includes tasks for the following steps:

[Task definition](#) (p.3), [Outputs requirements](#) (p.4), [Data cleaning and organization](#) (p.5), [Data Exploration](#) (p.6), [Data visualization](#) (p.7).



Business request

In order to assess the marketing efforts, to better distribute the marketing budget and to optimize the campaigns,

it is needed **to watch the main marketing financial and effectiveness metrics** - CTR, CPC, CPM, ROMI -

for the entire scope, as well as for particular campaign or a set of campaigns, for a platform and for a date range.

It is required to be able **to compare campaigns and platforms, to watch the dynamics** of changes in ads running, return on ads investment and spends. It would be also nice to see the return on investment **trend**.



Data Requirements and Output definition

- The raw data are in .csv files exported from ads platforms (Fb and Google)
- **Output A:** A report (dashboard) in Looker Studio with filters that allow to define scope of data.
- **Output B:** A report and visualizations should be performed with Python to be added to PowerPoint presentation.
 - Will be added later



Data Preparation and Organization

1. A database in **DBeaver** was created. **PostgreSQL** was used to perform the following tasks:
 - a. Four **.csv files** with ads data from Facebook Ads and Google Adverts **were imported** to the database.
 - b. **Three tables** from Facebook Ads **were joined** to achieve uniformity with Google table
 - c. Joint Facebook and Google **tables were united**, a parameter for source specification was added.
 - d. To be able to group records by date (as required by business request) ad_date **data were cased to date format** (from varchar).
 - e. To be able to group records by campaign (as required by business request) **campaign name was extracted from utm-parameter data**.



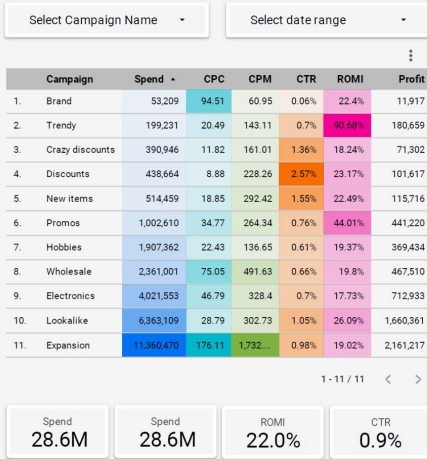
Data Exploration and Calculations

To prepare data for creating report in Looker Studio some **data cleaning and transformation** were performed in DBeaver with PostgreSQL:

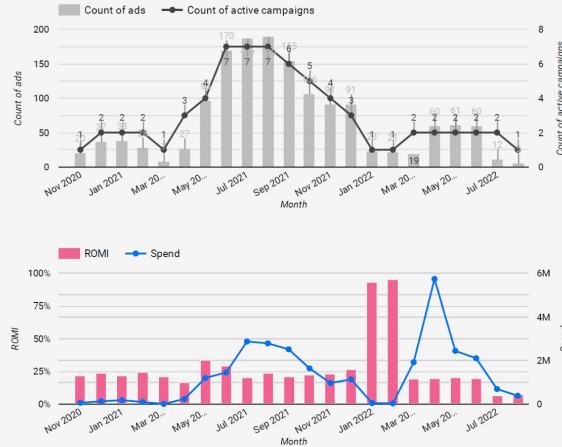
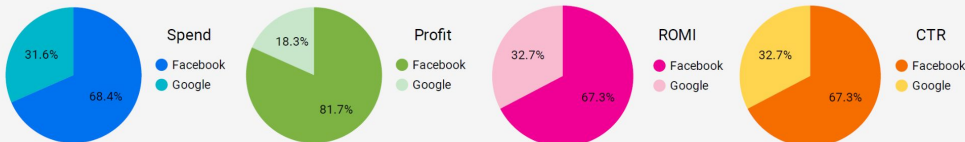
1. **The records were grouped** by date and campaign, totals for spend, impressions, clicks and value were **calculated**:
 - a. Replaced "nan" with Null for utm_campaign
 - b. Decoded cyrillic titles of utm-campaigns (used the third-party code)
 - c. Replaced Null with 0 for measurable data
 - d. Casting data types to enable calculations
2. To ensure correctness of marketing metrics (CTR, CPC, CPM, ROMI) **calculations** in Looker Studio were performed
 - a. Case expressions were used to avoid division by zero

Data visualization

Advertisement efforts analysis



Platforms effectiveness



- In Looker Studio added the DataSource - SQL script.
- Created additional measure for Profit calculation.
- The report was created in accordance with Business request and requirements to output:
 - Some calculations were performed for time series data
 - Some data transformation were performed to make the pie chart legend more readable