Case Study 2: Final Report

DSDA 300: Senior Sem Capstone

## Case Study 2:

# Analyzing Streaming Media Performance, Viewership and Demographics for Layers of Return on Investment

Report Compiled By:

Aaditya Joshi' 25 Quantitative Economics & Biochemistry Major, Minor in Finance

Yaksh Ujoodha' 25
Data Science & Computer Science Major

#### I. PROJECT OVERVIEW:

This case study analyzes the performance metrics and viewership demographics associated with the Client's Youtube channel to identify data-driven success stories and their implications for Return on Investment (ROI). Conducted under the supervision of Nicole Martin Consulting, this analysis will help clients evaluate and assess whether a principal funding partner should continue their investment, directly or indirectly influencing the operational & financial strategies of the channel's production.

#### II. KEY FINDINGS

The analysis of the Client's YouTube channel for the years 2021 and 2022 reveals several key findings pertinent to its performance and demographic engagement. The channel achieved an 18.5% year-over-year increase in estimated revenue, with impressions click-through rate (CTR) remaining steady at 0.44%. Total views amounted to 2,645, and the platform showed a decline of 1,261 unique viewers, demonstrating consistent engagement. Notably, there was a significant net gain in subscribers, increasing by 39.6%, highlighting the appeal of engaging content for long-term subscribers. The channel's primary traffic sources were identified as Browse Features and Suggested Videos, indicating effective algorithmic visibility. Additionally, demographic analysis revealed a higher engagement rate from male viewers, accounting for 72.6% and 46.2% of total interactions in 2021 and 2022 respectively. These findings show the importance of future strategies focusing on enhancing the channel's exposure through targeted marketing initiatives and leveraging its unique brand to expand viewership and engagement.

#### III. DATA EXPLORATION & ANALYSIS

#### A. DATA CLEANING

We were given two raw data files named "Traffic" and "TOTAL". These files contained Key Performance Indicators (KPIs) metrics for the year 2021 and 2022 across numerous variables.

Here is a quick summary of the data cleaning steps we took:

- 1. Renaming columns
- 2. Converting to Long Format (for merging the two data files)
- 3. Removing empty rows
- 4. Converting Back to Wide Format (for Tableau Visualization)
- 5. Plotting for exploration and presentation

(Attached is our Jupyter Notebook)

#### **B. DATA EXPLORATION**

To understand the broader aspect of the dataset, we explored variables such as: click through rate (CTR), total views, unique viewers, age demographics and gender demographics. (Attached is the Tableau file for more information).

#### IV. OUR KEY VARIABLES

#### A EXPOSURE STORY

When looking for opportunities of growth, exposure is often sought after. A channel with high exposure is one which targets a diverse demographic audience. Most importantly we wanted to understand what the traffic sources contributed to the first impressions of our viewers.

Traffic Sources such as YouTube Search and Channel Pages suggest that the new audience is actively seeking content related to the Client's Channel. On the other end, traffic sources such as Browse Features and Suggested Videos imply that the new audience tends to randomly encounter the Client's Channel content maybe by chance and Youtube's algorithms.

#### B. LOYALTY STORY

Measuring the loyalty of the channel gives a good indication of whether the content of the Channel leads to long term retention and eventually long term revenue growth. The most accurate metric we chose is the number of subscribers over time.

#### V. STORY OF SUCCESS

(Refer page number 4 for the Executive Summary)<sup>1</sup>

### VI. CONCLUSION AND FUTURE RECOMMENDATIONS

- 1. The channel is indeed bringing more revenue, especially converting more viewers to loyal customers. An area of improvement which requires funding, is to increase targeted marketing and exposure strategies.
- 2. We believe that our analysis might have been heavily biased due to COVID-19 Pandemic. For instance, due to lockdown people tend to spend more time scrolling over their mobile devices and also Youtube which led to an increase in the number of views/subscribers.
- 3. Balancing between transparency and persuasion/manipulation as an important topic that the Client needs to take into consideration when building trust with the funding Partner.
- 4. A better data collection process with more demographics and over more years could have been used to build a stronger case.

<sup>&</sup>lt;sup>1</sup> Cannot share due to copyright and confidentiality issues.