


# Final Project Presentation

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In today's digital landscape, understanding Subscriber behaviour is paramount for businesses, especially in the streaming industry.



What are we talking about?

# Subscriber Segmentation and Behaviour Analysis in a Streaming Platform



# Objective

The project **Subscriber Segmentation and Behavior Analysis in a Streaming Platform** aimed to gain actionable insights from user data to optimize strategies, enhance user experiences, and maximize revenue.



# Methodology

# Methodology

**Data Collection:** We collected a comprehensive dataset containing **user attributes**, **subscription details**, **engagement metrics**, and more.

**Subscriber Segmentation:** We applied **K-means clustering** to categorize users into distinct segments based on **demographic** and **engagement features** and utilized **Principal Component Analysis (PCA)** to reduce the data's dimensionality.

**Behaviour Analysis:** Explored **subscription preferences**, **monthly revenue**, **watch time**, and more within each user segment.

**Cohort Analysis:** Analysed user behaviour over time, focusing on **revenue trends**, and **churn** patterns within cohorts.

**Revenue analysis:** Investigated the revenue distribution within each cluster to identify potential opportunities for **revenue optimization**.

# Data Features

The dataset serves as a synthetic representation and does not reflect actual Streaming Platform subscriber data.

## User ID

A unique identifier for each user in the dataset

## Subscription Type

Represents the type of subscription the user has, categorized as Basic, Standard, or Premium.

## Monthly Revenue

Indicates monthly revenue generated from each user's subscription.

## Join Date

Represents the date when the user joined Netflix.

## Last Payment Date

Indicates the date of the user's last payment.

## Age

Represents the age of the user.

## Device

Represents the type of device used by the user, such as Smartphone, Smart TV, Laptop, Tablet, etc.

## Plan Duration

Indicates the duration of the user's subscription plan, such as 1 Month.

## Gender

Specifies the gender of the user.

## Feature Engineering

**User Tenure** (*Last Payment Date, Join Date*)

**Customer Lifetime Value** (*Monthly Revenue, User Tenure*)

**Spending Score** (*Monthly Revenue, Total Watch Time, Plan Duration*)

**Account Status** (*Last Payment Date*)





# Subscribers Segmentation

# Subscribers Segmentation

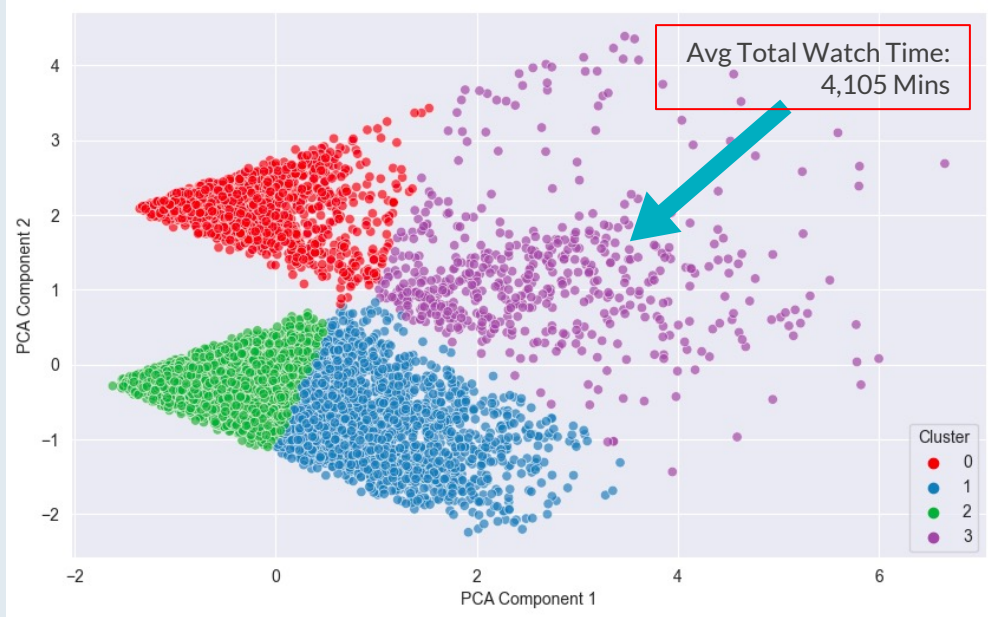
**Cluster 0:** Mid Revenue, Mid Watch Time

**Cluster 1:** High Revenue, Mid-Watch Time

**Cluster 2:** Low Revenue, Low Watch Time

**Cluster 3:** High Revenue, High Watch Time

Principal Component Analysis Chart





# Behaviour Analysis

## Behaviour Analysis

### Cluster 0:

Mid Revenue, Mid  
Watch Time

Number of Customers: **1,400**

Average Age: **33 years**

Predominant Gender: **Male**

Average Monthly Revenue: **\$15.09**

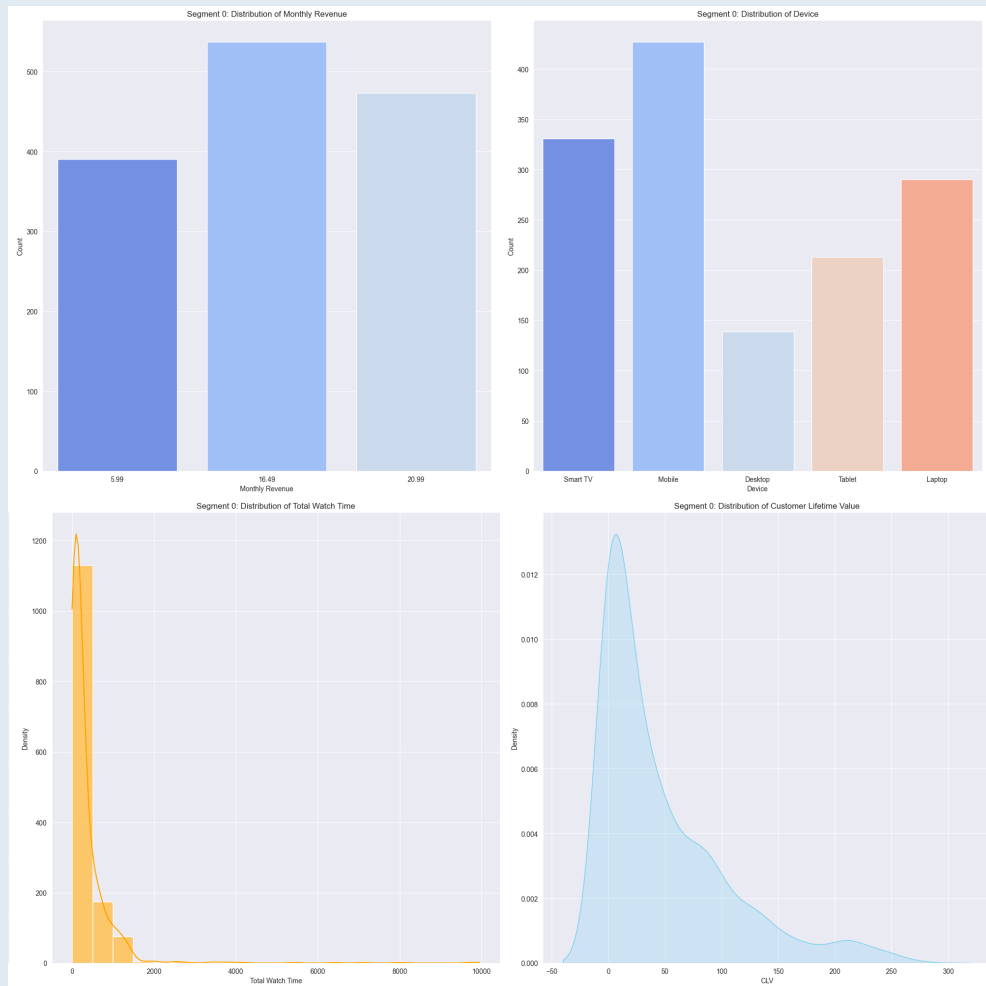
Average Spending Score: **\$54.14**

Average Total Watch Time: **323 mins**

Average User Tenure: **2 months**

Churn Rate: **100%**

Retention Rate: **0%**



## Behaviour Analysis

# Cluster 1:

## High Revenue, Mid Watch Time

Number of Customers: **2,354**

Average Age: **37 years**

Predominant Gender: **Male**

Average Monthly Revenue: **\$18.64**

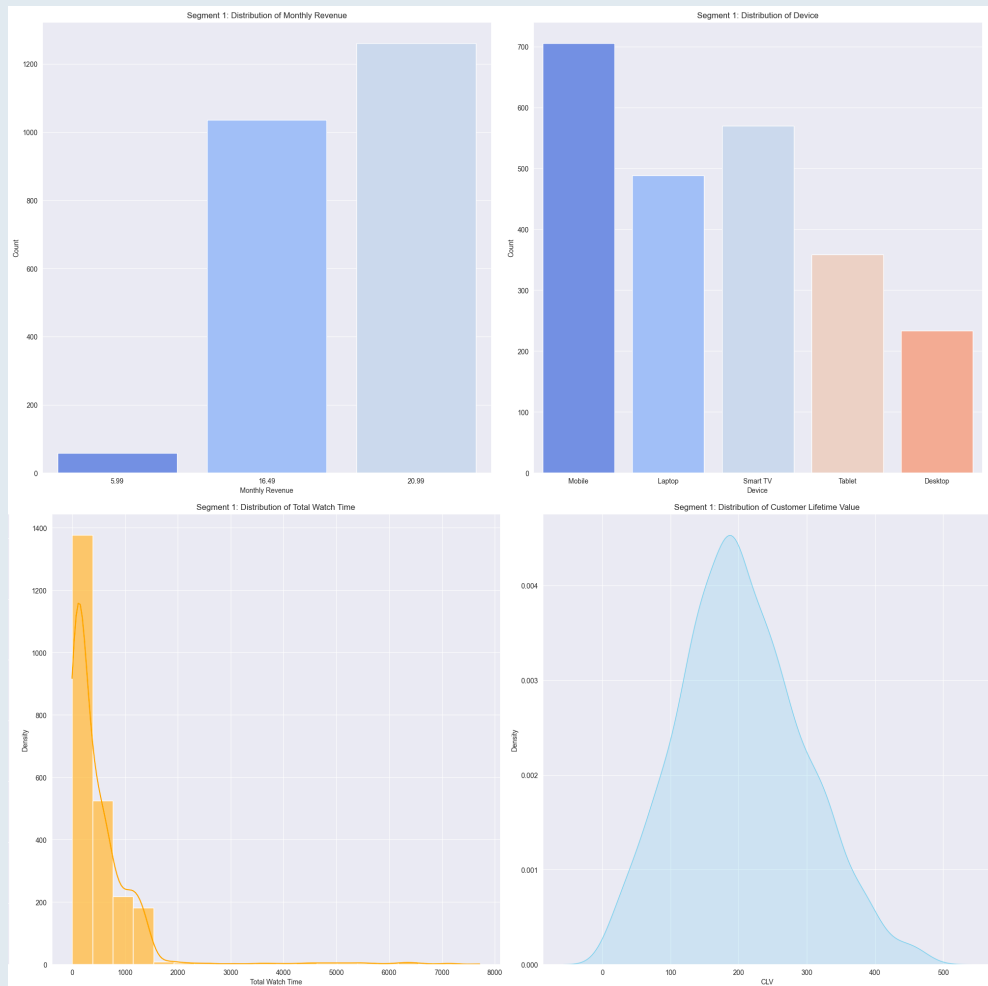
Average Spending Score: **\$68.40**

Average Total Watch Time: **497 mins**

Average User Tenure: **11 months**

Churn Rate: **0%**

Retention Rate: **100%**



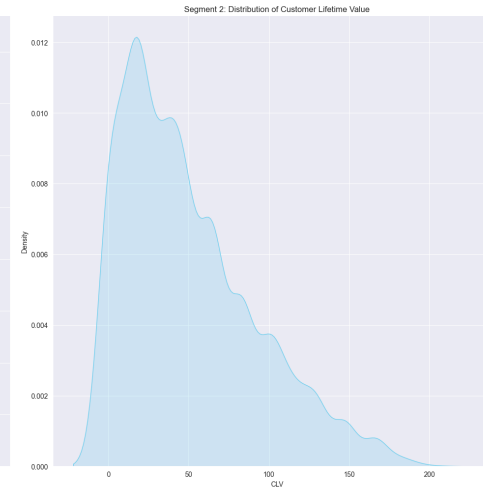
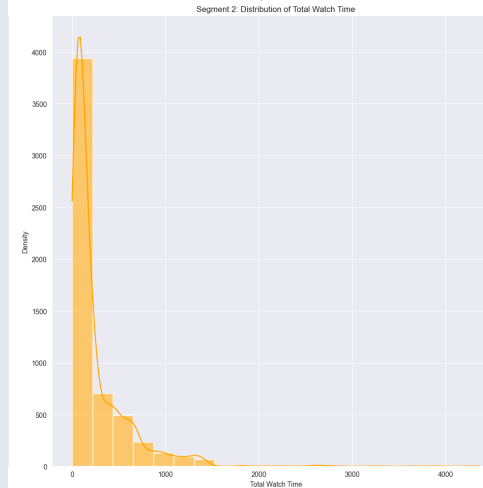
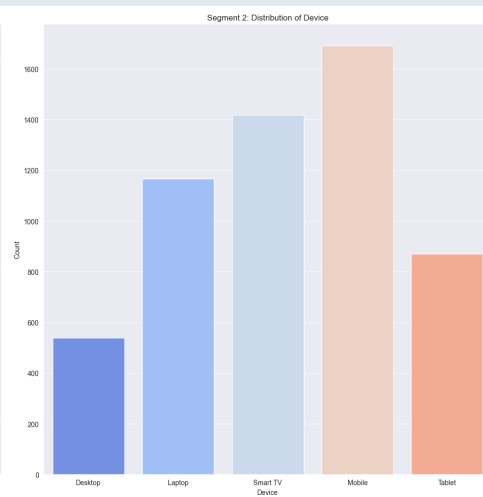
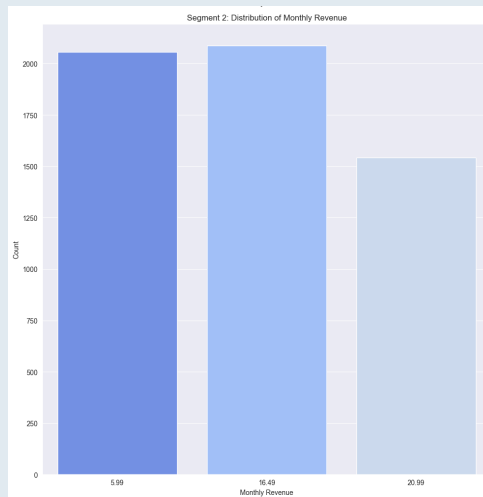
## Behaviour Analysis

# Cluster 2:

## Low Revenue, Low Watch Time

Number of Customers: **5,687**  
Average Age: **32 years**  
Predominant Gender: **Male**  
Average Monthly Revenue: **\$13.91**  
Average Spending Score: **\$37.17**  
Average Total Watch Time: **247 mins**  
Average User Tenure: **3 months**

Churn Rate: **0%**  
Retention Rate: **100%**



## Behaviour Analysis

# Cluster 3:

## High Revenue, High Watch Time

Number of Customers: **559**  
Average Age: **38 years**  
Predominant Gender: **Male**  
Average Monthly Revenue: **\$18.23**  
Average Spending Score: **\$227.80**  
Average Total Watch Time: **4,105 mins**  
Average User Tenure: **10 months**

Churn Rate: **45%**  
Retention Rate: **55%**





# Cohort Analysis



## Cohort Analysis

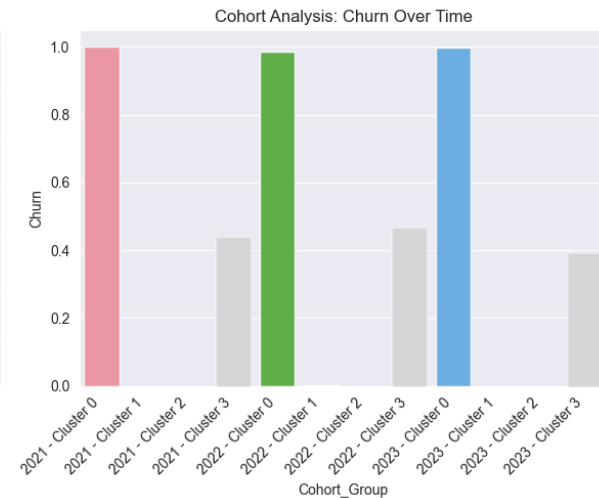
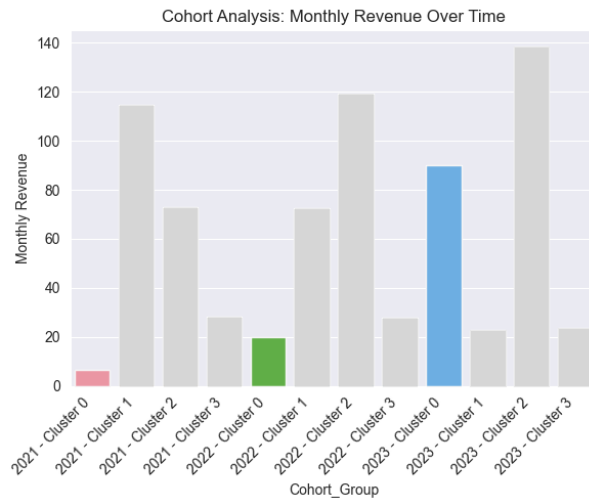
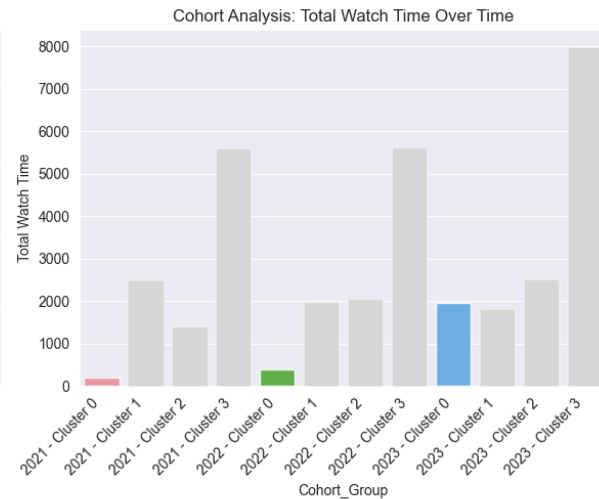
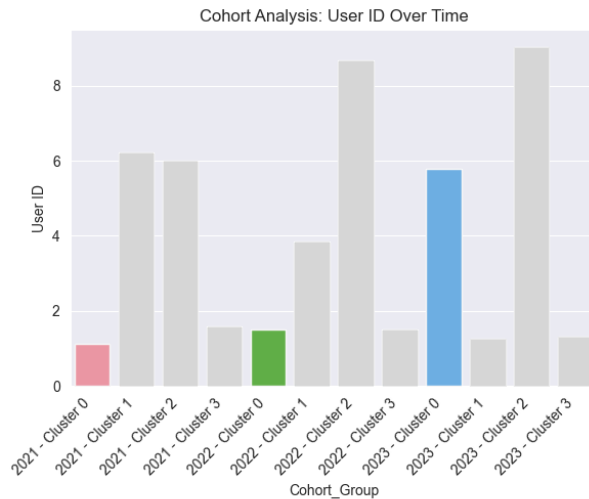
# Cluster 0:

## 2021-2023

Subscriber count surged from 19 to 1138, a remarkable growth of approximately 1178.95%.

This growth extended to Total Watch Time and Monthly Revenue, which increased by an impressive 11,155.80% and 15,506.82%, respectively.

However, there was a significant challenge during this period: a 100% churn rate, indicating substantial customer loss.



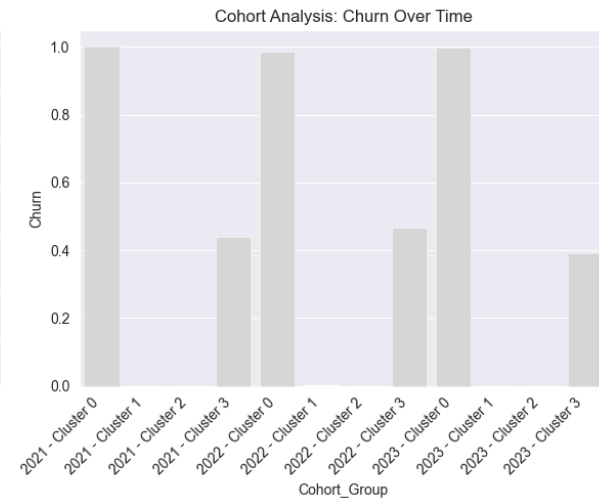
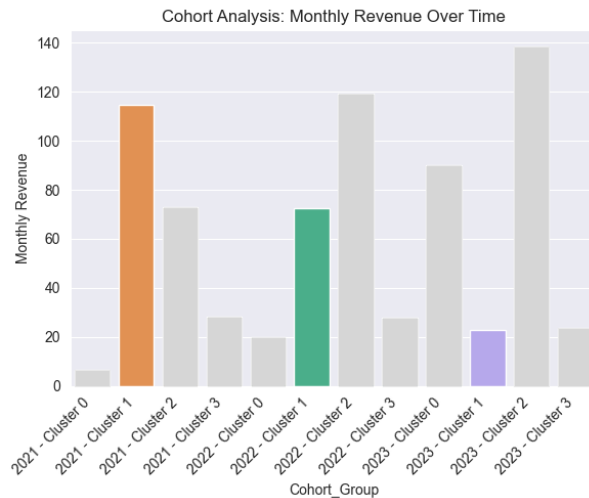
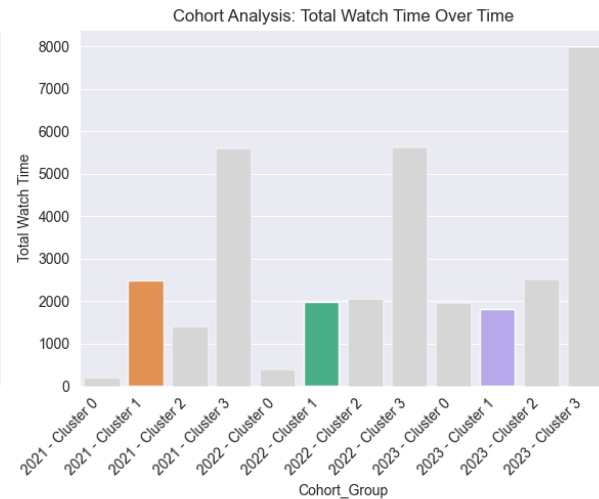
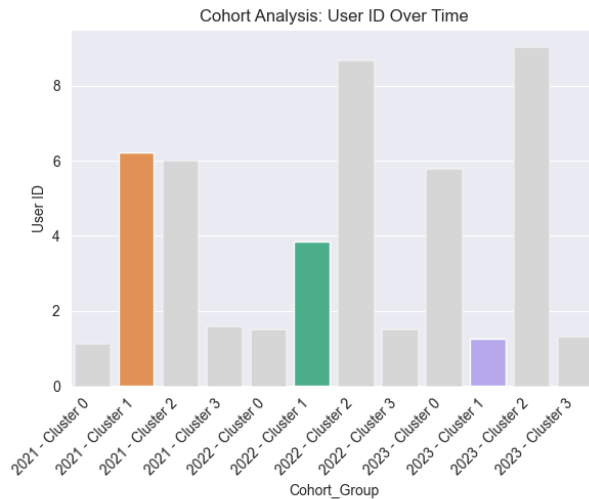
## Cohort Analysis

# Cluster 1: 2021-2023

The subscriber count dropped significantly, going from 963 to 75, a decrease of about 92%.

This decline in subscribers led to a roughly 72% reduction in Total Watch Time and a 92% decrease in Monthly Revenue.

Remarkably, during the same three-year period, the cluster achieved a 0% churn rate, demonstrating strong customer retention.



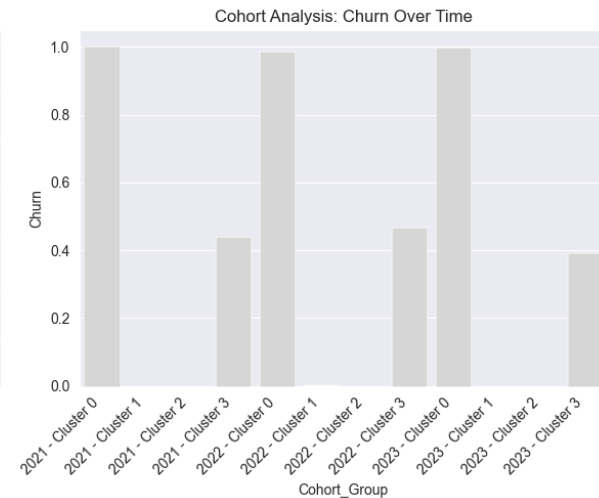
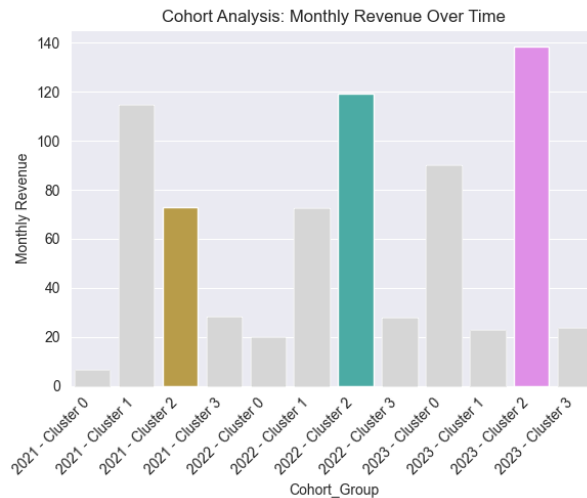
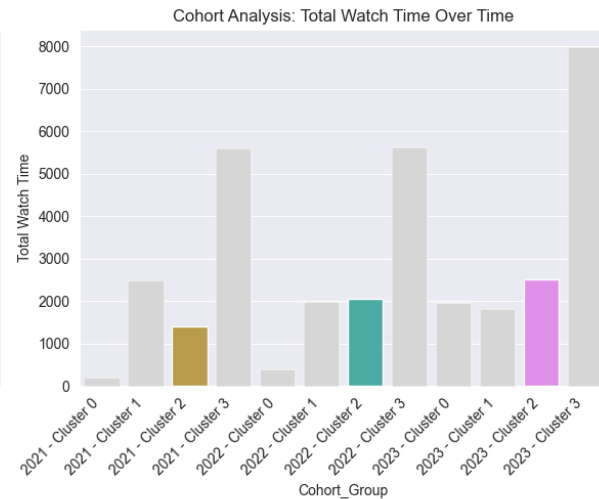
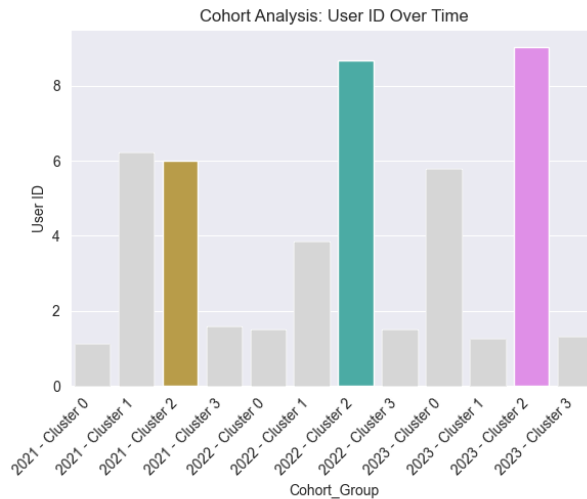
## Cohort Analysis

# Cluster 2: 2021-2023

The subscriber count showed substantial growth, rising from 931 to 1598, marking an increase of approximately 72%.

This surge in subscribers correspondingly resulted in a notable 107% boost in Total Watch Time and a significant 117% increase in Monthly Revenue.

Notably, over the same three-year timeframe, the cluster maintained a flawless 0% churn rate, showcasing exceptional customer retention.



## Cohort Analysis

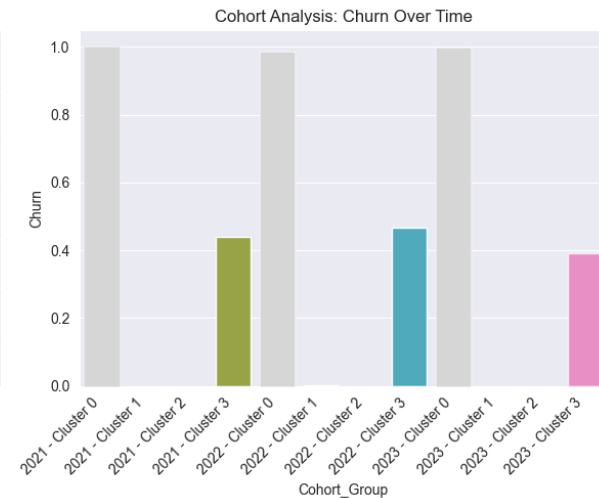
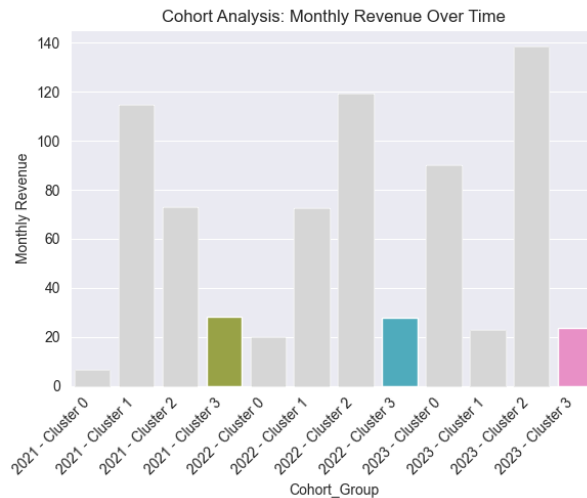
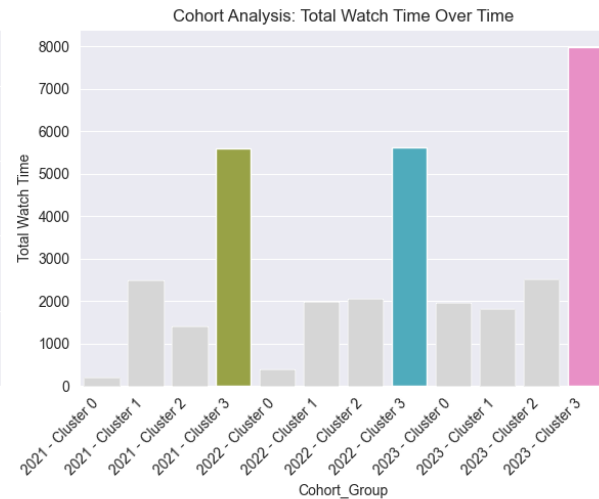
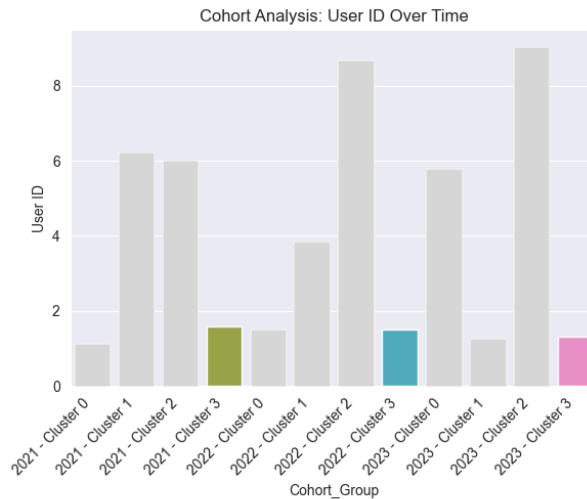
### Cluster 3:

### 2021-2023

The subscriber count saw a modest decrease, declining from 159 to 100, marking a reduction of approximately 37%.

Even with the decline in subscribers, Total Watch Time experienced a slight uptick of 10%, whereas Monthly Revenue decreased by 36%.

Meanwhile, the cluster exhibited notable growth, increasing from 17 to 30.17, representing a substantial rise of approximately 77.45% in churn rate.





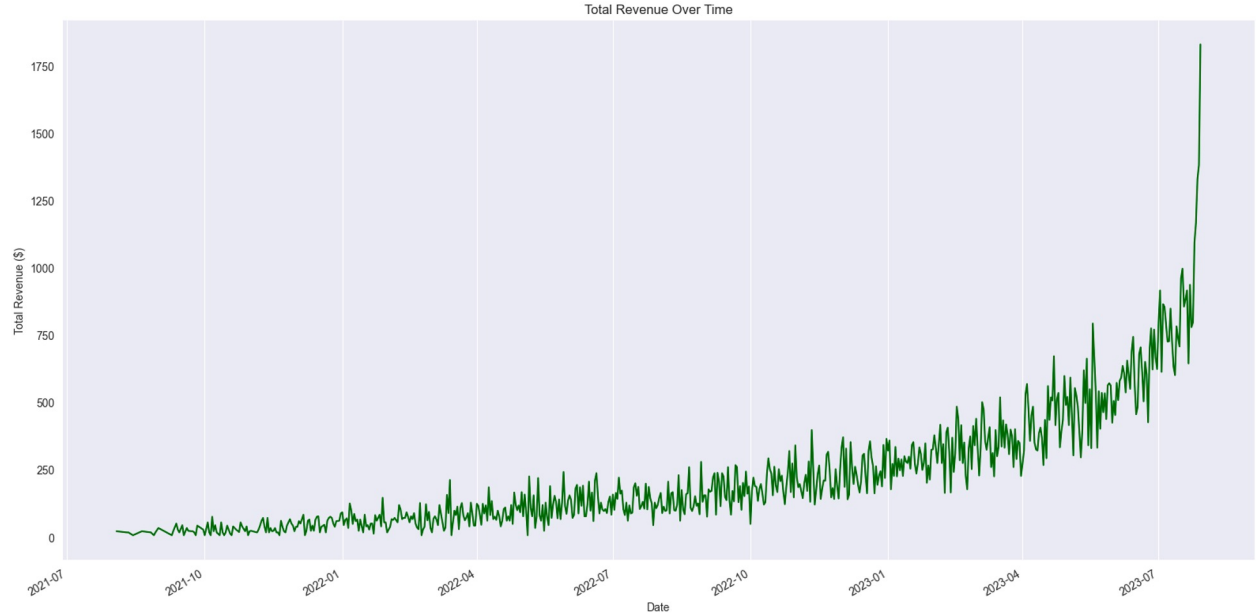
# Revenue Analysis

# Total Revenue Trend

## Revenue Growth

Revenue has steadily increased, driven by a combination of **higher subscription rates** and **improved user retention**.

The steady increase in revenue is a positive indicator of the streaming platform's financial health and its ability to provide value to users.



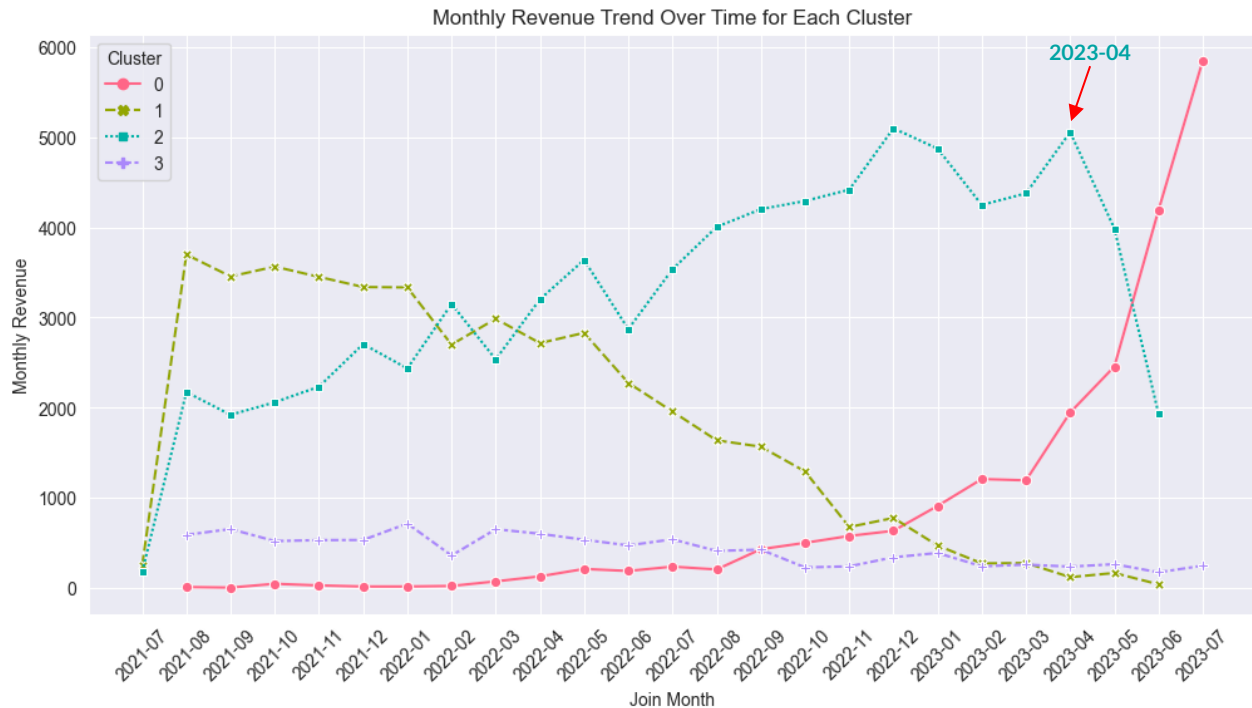
# Clusters: Revenue Trend

## Revenue Analysis Highlights

**Cluster 2** played a pivotal role, contributing **51%** of the total revenue, highlighting their substantial impact on the platform's financial well-being.

Meanwhile, **Cluster 0** and **Cluster 1** made contributions of **13.68%** and **28%**, respectively.

**Cluster 3**, on the other hand, had a more limited impact, accounting for only **7%** of the platform's overall performance.





# Insights and Recommendations



# Insights

1

The segmentation analysis enables **personalized marketing strategies** for each user group, optimizing **acquisition** and **revenue generation**.

2

Understanding cohort trends allows the platform to **refine strategies** for better **user retention** and **long-term revenue growth**.

3

A focus on **clusters** that are performing well could further boost **revenue** and **profitability**.

4

However, Implementing targeted initiatives to mitigate **churn** is vital for securing the platform's **financial health** and **maximizing long-term revenue**.

# Recommendations

- **Personalization:** Invest in personalized recommendations and content for different user segments to enhance user engagement and revenue.
- **Subscription Upselling:** Implement strategies to encourage free users to upgrade to premium subscriptions, further enhancing revenue.
- **Retention Initiatives:** Develop initiatives to maintain high retention rates observed in recent cohorts, ensuring sustained revenue growth.
- **Churn Management:** Implement proactive churn management strategies, including user engagement campaigns, improved customer support, and content optimization, to reduce subscriber churn.



# Conclusion

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The project offers valuable insights to improve user experiences, **boost revenue**, and ensure the platform's **long-term success**.

By grasping **subscriber segments**, **behaviour patterns**, and **revenue trends**, the platform can make data-driven decisions that **enhance** subscriber **satisfaction** and **financial performance**.

Thank you for your attention, and I welcome any questions or suggestions you may have at this stage.

September 6, 2023  
Toni Afani