Netflix Analytics Dashboard

Customer Engagement, Content Performance & Churn Analysis

---

1. Introduction

This report presents a Netflix-style streaming analytics dashboard built using Power BI. The objective of the project was to analyze subscriber engagement, content performance, device usage, and churn behavior using a single-page executive dashboard approach.

The project emphasizes both **technical accuracy** and **business storytelling**.

2. Data Overview

The analysis is based on:

- Public Netflix titles data

- Python-generated engagement metrics

The dataset includes:

- Shows and genres

- Countries and devices

- Watch hours

- Monthly active users

- Revenue estimates

- Churn indicators

3. Python-Based Data Generation

The original dataset lacked engagement-level facts required for analysis. To simulate a realistic streaming environment, Python was used to generate a centralized fact table.

Python enabled:

- Controlled data generation

- Realistic metric distributions

- Scalable fact table creation

Metrics generated:

- Total watch hours

- Monthly active users

- Average watch time

- Revenue

- Churn rate

The generated data was exported as CSV files and ingested into Power BI.

4. Data Preparation & Transformation

Using Power Query, the data was:

- Cleaned and standardized
- Normalized into dimension tables
- Enhanced with surrogate keys
- Prepared for analytical modeling

5. Data Model

A star schema was implemented consisting of:

- One fact table (`FactViewingDaily`)
- Supporting dimensions (Show, Genre, Date, Device, Country)

This structure ensures:

- Accurate aggregations
- Efficient filtering
- Reliable Top-N analysis

6. Key Metrics

The dashboard tracks:

- Total Subscribers (Latest)
- Monthly Active Users
- Total Watch Hours
- Average Watch Time per Viewer
- Monthly Revenue
- Churn Rate %

7. Dashboard Insights

Device Engagement:

- TV dominates total watch hours
- Mobile shows high user volume but lower engagement depth

Content Performance:

- Engagement is concentrated among a small number of genres
- Top shows drive disproportionate watch time

Growth Opportunities:

- Tablet usage is relatively low
- Opportunity exists for targeted engagement strategies

8. Business Implications

- Optimize TV-based viewing experiences
- Improve engagement on mobile platforms
- Focus content investment on high-performing genres
- Explore growth strategies for underutilized devices

9. Conclusion

This project demonstrates a complete analytics workflow, from data generation and modeling to visualization and insight generation. The final dashboard balances analytical depth with executive clarity, making it suitable for stakeholder review and portfolio presentation.

Disclaimer

All data used in this project is simulated or derived from public datasets and is intended strictly for educational and portfolio purposes.