

Summary Report

- **Analysis Approach**

- ◆ **Modules >> Data Reading /Cleaning >> Data Analysis >> Define Metrics**
- **Modules:** Pandas, NumPy, Seaborn, Matplotlib, Datetime, Sklearn.
 - Modules are used to analyze and visualize data and produce defined metrics to understand the correlation between multiple variables.
- **Data Reading:** To load the csv file and create a data frame
- **Data Cleaning:** To understand the data better, identify different data types and variables and check for duplicate, null and missing data.
- **Data Analysis:** Understanding the relationship between different variables, plotting graphs and how it could impact the key metrics to derive solutions.
- **Define Metrics:** Create and define key business metrics to analyze the data, derive insights and make business recommendations.
- **Plots/Graphs:** Mentioned visualizations through the jupyter notebook based on different metrics to highlight findings and insights.

- **Key Metrics**

- **Churned Data frame:** Data frame containing data of “Churned” Users.
- **Key Variables:** Reasons_for_Churn, Devices_Used, Subscription_Type, Monthly_Payment, Gender, Rating_Given, Genre, Monthly_Hours_Watched.
 - Analysis of the Streamflow Data frame to determine the relation between churned users and considered variables.
- **Business Metrics:** Mean_rating, Total_Monthly_Hours, Show_Rating_Metric, Device_Size, Price_Package.
 - Business metrics are created based on the key variables to analyze the churned data and provide key business recommendations, realize graphs, and interpret the data.

- **Findings and Insights**

- Data frame defined 754 null values (NaN) for Date of Churn and Reason for Churn as values are only defined for “Churned” users (246 Users)
- Total users churned: 24.6%
- Gender Distribution: 30.5: 34.6: 35 (Male: Female: Other)
- Price Increase: 68 Users (Highest Churn rate)
- Content Dissatisfaction: 52 Users (Lowest Churn rate)
- Reasons for Churn: Price Increase, Content Dissatisfaction, Personal Reasons and Better Service.
 - As per my analysis, we can determine the factors responsible for Price Increase and Content Dissatisfaction.

- ◆ **Business Metric 1: Show_Rating_Metric (Dissatisfied by Content)**

- Mean (Rating_Given) + Total (Monthly_Hours_Watched)
- Divided into 3 categories: Excellent, Moderate, Bad
- Show_Rating_Metric >> (2:23:27) and Churned >> (14:110:122)
- ♦ Business Metric 2: Price Package (Price Package)
- Devices_Used(Large/Small) + Subscription_Type(Basic, Standard/Premium)
- Divided into 3 categories: Reduce, Same Price, Same Basic Price
- Large: Small Ratio >> 19(TV+PC): 49(Mobile+Tablet) and Churned (71:175)

- **Recommendations to the Business**
 - Monthly Payment Based on Subscription Type (Price Decrease):
 - Based on the Metric for Price Package it can be determined that for larger devices the churned rate and for Price Increase users are 71.13% and 72.05%.
 - ♦ **Recommendation: Reduce the price of Standard and Premium package users having smaller devices by 20% to 11.99 and 15.99 respectively to bring in new users and incentivize non-churned basic package users to upgrade.**

 - **Show Rating Metric Enhancement (Leverage Show Recommendations):**
 - Based on the Metric for Show_Rating_Metric it can be determined that only 14 Excellent Show Choices were churned (Moderate:110, Bad:122) with an overall churn percentage of 5.7% and 2 Excellent Show Choices within content dissatisfaction customers (Moderate:23, Bad:27) with a churn percentage of 3.85%.
 - Based on the calculation for Churned Users, people that rated shows 3 or below consisted of 185 titles whereas shows rated equal and above 4 consisted of 61 titles.
 - ♦ **Recommendation: As per the business metrics Shows categorized within the Excellent Show Choice has an exceptionally low percentage of churn rate so the business should push Excellent Show Choices as per Favorite genre to users for better retention.**

- **Calculation**
 - Mean (Churned Users-Standard/Premium): \$14.5
 - Mean (Non-Churned Users-Standard/Premium): \$14.6
 - Mean (Total Users-Proposed Subscription Package): \$13.99
 - Calculation: $(14.5 - 13.99) * 126 = 64.26$; $(14.6 - 13.99) * 322 = 196.42$

- **Business Impact Estimate**
 - Reducing the prices for the Standard/Premium Package Users having a smaller device by 20% to \$11.99 and \$15.99 accounting for 126 churned users and 322 non-churned users thereby, targeting 448 Users (44.8%) of total users to potentially generate average of 13.99 subscription package to generate revenue of \$64.26 and \$196.42 monthly respectively (fractional differential cost of Total revenue).
 - If 6% of Users retained (60 Users * 13.99) generates \$838.4 revenue monthly.
 - If 5% of Users upgrade basic subscription (9.99 to 11.99) generates \$100(2*50) additional monthly revenue.