

1. Analysis Approach

To understand churn rates and identify potential contributing factors, exploratory data analysis (EDA), using Python libraries like pandas and matplotlib, was used. The customer data such as subscription types, age, usage patterns, content preferences, etc. was analysed and descriptive statistics were calculated to determine churn rates for different segments. Data visualizations like bar graphs and box plots were created to identify trends between churn rates and various other factors.

2. Key Metrics Used

- **Age:** Customer's age in years.
- **Dates:** Subscription start and cancellation dates (if applicable).
- **Subscription Type:** User's chosen subscription plan category.
- **Monthly Hours Watched:** Total hours a user has spent watching content.
- **Favourite Genre:** User's preferred content category.
- **Devices Used:** Types of devices used to access the service.
- **Average Session Length:** Average duration of a user's typical session.
- **Content ID:** Unique identifier for content items.
- **Rating Given:** Indicates if the user has rated any content.
- **Reason for Churn:** Reason provided for cancelling the subscription (if applicable).

3. Summary of Findings and Insights

A. Reason for Churn Analysis

- Users often downgrade to the 'Basic' tier from 'Standard' tier or leave the service entirely. This is probably due to the limited (only 8) additional content being offered. 'Standard' tier users end up paying significantly more for only a small increase in content.
- There are only 86 unique contents for 'Premium' users. This is less considering the price the users are paying and when compared to the 'Basic' (92) and 'Standard' (100) tier.
- Most users (68) have left the services with a reason for price increase and the least number of churned users (52) were dissatisfied with the content.

B. Churn Rate Analysis

- **Subscription Types:**
 - 'Basic' tier has a higher churn rate of 26.44% as compared to the 'Premium' tier (25.26%) despite being the most affordable.
- **Genres:**
 - Even though Documentaries and Sci-Fi genres have a similar number of contents (92 and 81 respectively), they show higher churn rates, 27.66% and 25.52% respectively, indicating users are more likely to leave if these are their preferred genres, despite the quantity of content.
- **Age Groups:**
 - 35–44-year-old user have the highest churn rate (32.98%), with their average usage 209 days before they churn.

C. Monthly Hours Watched and Average Session Lengths Analysis

- **Mobile Users:**
 - 131 users who use phones to watch the content have churned. This is a significant number compared to the churn in other devices.
 - They also tend to have shorter average session lengths (1.82 hours).
- **35–44 Age Group:**
 - Higher churn rate (32.98%) with 62 users who left the services and lower average session length of 1.59 hours.
 - 32 users in this age group use mobile devices, which is the highest number compared to other devices and age group.

D. Ratings Analysis

- **Content Satisfaction:**
 - Churned users have given lower average ratings (2.59) than the overall user base (3.03),

- Documentaries, despite having significant content (92 unique contents), suffer from high churn (27.66%) possibly due to low engagement quality reflected in their rating of 2.93.
- Sci-Fi genres show a similar trend with a rating of 2.95.
- **Subscription Types and Genre:**
 - Sci-Fi in Basic Tier: Highest churn rate (39.34%) and slightly above average ratings (3.03).
 - Documentary in Premium Tier: High churn rate (33.33%) with the lowest ratings (2.61) among Premium content.

4. Recommendations to Business

- **Addressing the Value Gap Between Tiers**
 - Ensure the number of unique contents matches the price per subscription tier. Considering that the 'Standard' tier offers little more than the 'Basic' but at a higher cost, a reassessment of pricing or the addition of more valuable features (e.g., exclusive access to new releases, additional scenes, deleted episodes, director's cuts etc.) may justify the price difference and reduce downgrades.
 - Focus on enhancing the value proposition by increasing the number of unique contents offered and exclusivity, particularly in the 'Premium' tier, which should significantly exceed the 'Basic' and 'Standard' tiers.
- **Understanding User Perception and Preferences**
 - Analyse user perception and consider plan adjustments for price-sensitive users, which sort of make up for most of the churned users.
- **Prioritizing Content Quality Over Quantity**
 - Analyse churn reasons alongside content ratings. Focus on acquiring or creating high-quality content in genres with higher churn rates and/or lower average ratings (e.g., Documentaries). Concentrate on content quality rather than quantity.
- **Optimizing Platform Experience Across Devices**
 - Improve platform experience across devices. Investing in more engaging and diverse content, perhaps with shorter episode lengths tailored for mobile viewership, aligning with insights from usage data can lead to more viewership and retention of customers.

5. Business Impact Estimate

- **Clearer Tier Distinction to Encourage Upgrades**
 - With a clearer distinction between tiers and added value in higher tiers, the likelihood of downgrades could decrease. More compelling and exclusive content with features in for higher tiers, potential to attract new customers and encourage existing ones to upgrade will increase and lead to an overall increase in revenue.
- **Optimizing Subscription Tiers and Pricing**
 - By understanding why price-sensitive users churn, their concerns can be address effectively and strategies can be developed to retain them while increasing customer satisfaction.
- **Content Quality and Churn Management**
 - Focusing on acquiring or creating high-quality content in poor performing genres directly addresses a key driver of churn and delivery of high-quality content establishes your platform as a reliable source for entertainment. This can improve brand perception and loyalty in the long run.
- **Improving Platform Experience for Increased Engagement**
 - Providing a user-friendly and engaging platform experience across devices can increase user satisfaction, average session length and improve brand perception
 - Engaged users spend more time on your platform, consuming more content and potentially lead to drive subscriptions to higher tiers.
- *Assuming the work on addressing the rating of Documentaries in the Premium tier leads to a 10% decrease in churn rate -*
 - Initial churn rate for Documentaries in Premium: 33.33%*
 - Improved Churn Rate: $33.33\% - 10\% = 23.33\%$*
 - Churned Customers Initially: $33 * 33.33\% \approx 11$*
 - Churned Customers After Improvement: $33 * 23.33\% \approx 8$*
 - Reduction in Churned Customers: $11 - 8 = 3$ customers*
 - Annual Revenue Saved: $3 \text{ customers} * \$19.99/\text{month} * 12 = \719.64*