

IDB ANALYTICS 2.0



SEENA THAANA 007

T Aravintha Kannan

N Raahul

Kriti Jain

## ABOUT XYZ TELECOMMUNICATION:

US-based Telecom company offering multiple services like phone, multiple lines, internet, online security, online backup, device protection, tech support, streaming TV, movies, and music with 6 month Revenue of **\$3,939K**

The company has a **Repeat User Rate** of around **65%** and **New User Acquisition Rate** of around **5%**

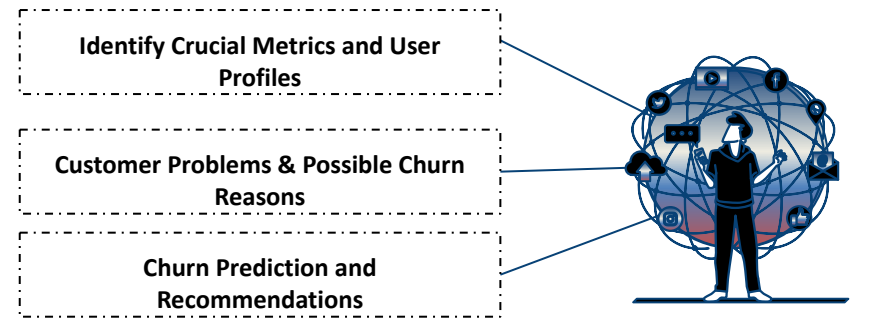
## PROBLEM OVERVIEW:

Due to Growing Competition with slightly better offerings, the churn rate has increased. This increase can hurt company's brand value and finances.

The **Churn Rate** is about **30%** for the company which is causing a **Revenue Churn Rate** of **19.5%**



## OUR GOAL





## DATASET PROVIDED

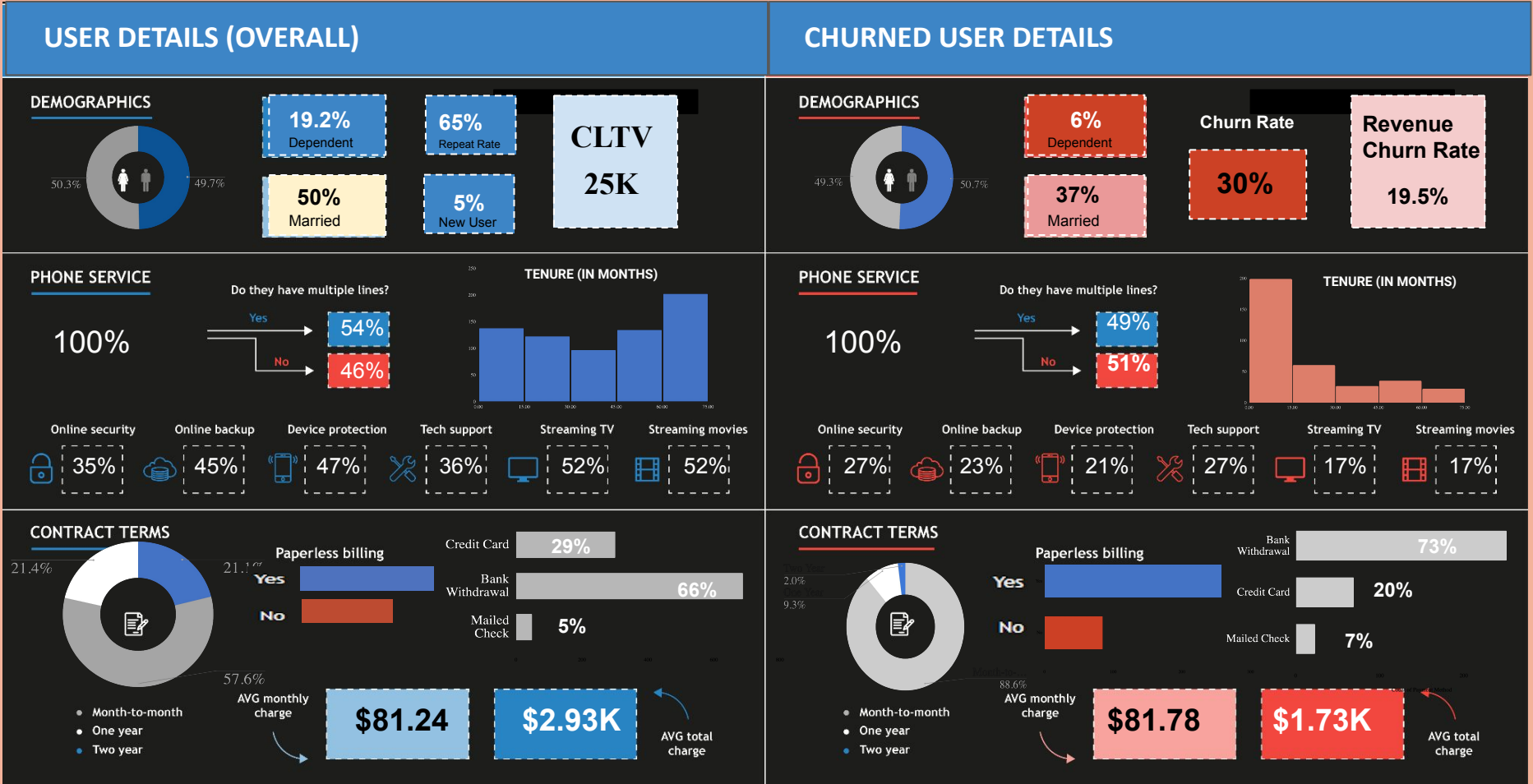
Dataset includes data of 1039 customers for last 2 quarters. It has information about user churn, repeat and new customers

**Service Info:** Services that each customer has signed-phone, multiple lines, internet, online security, online backup, device protection, tech support, streaming movies, TV, and music.

**Account Info:** customer tenure, contract, payment method, paperless billing, monthly charges, and total charges

**Demographics Info:** Gender, age, married and the number of dependents

**Other Info:** Number of Referrals, Offer availed, Internet type, reason for churn, etc.



### INSIGHTS FROM DASHBOARD

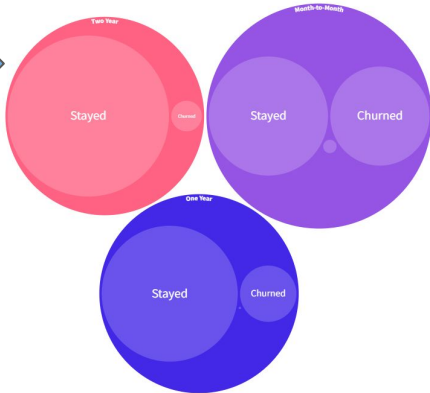
- Churn Rate is highest for low Month Contracts customers
- Tenure of Churned user is less than that of Not Churned
- Churn is High for High Cost Phone Service (Higher Monthly Charge)
- Churn in without dependent is higher than with dependent
- Churn Rate is high for customers having single line service than multi line service (51% vs 49%)
- New user % is very low in last 6 months (5%)

### RECOMMENDATIONS

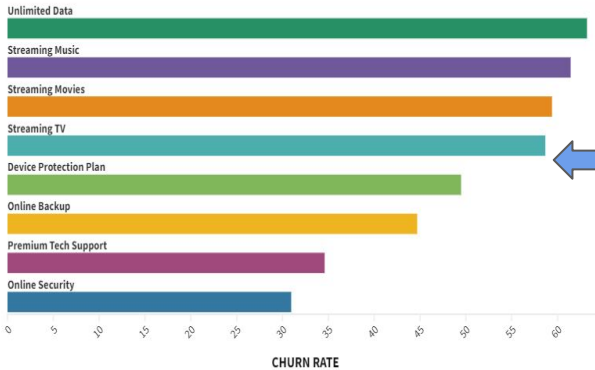
- Targeted Customer Promotion by Marketing Team
- Promotion of Long Term Contract
- Market More product as Combo (multi service) Offerings for married couples
- More lucrative offer plan non-dependent users
- Campaigns to onboard more new users (Referral +Paid)

Churn Rate was **highest for month to month contract** followed by one year, with the least being for two year contracts

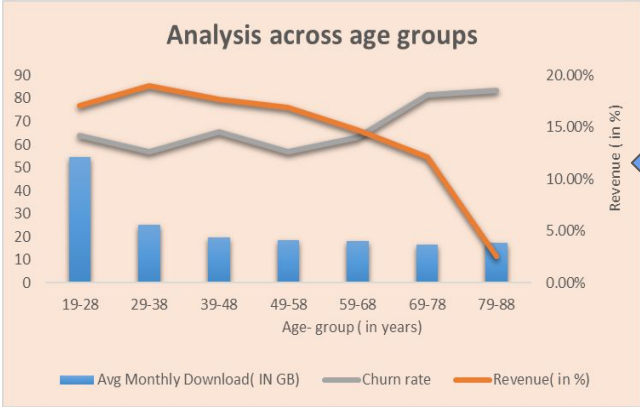
### CONTRACT BASED CHURN



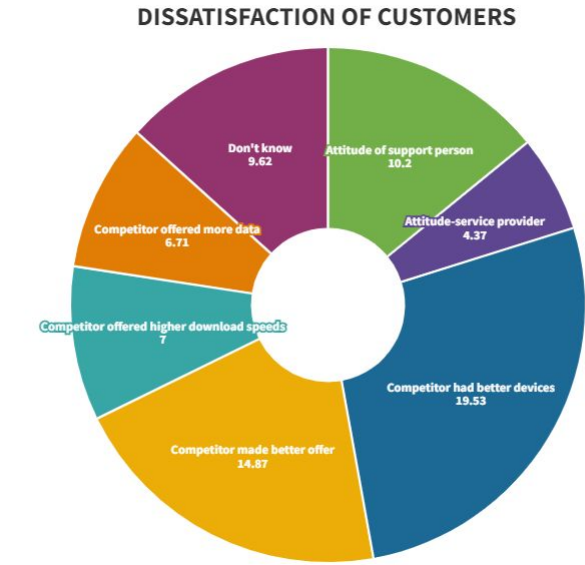
### COMPANY OFFERINGS



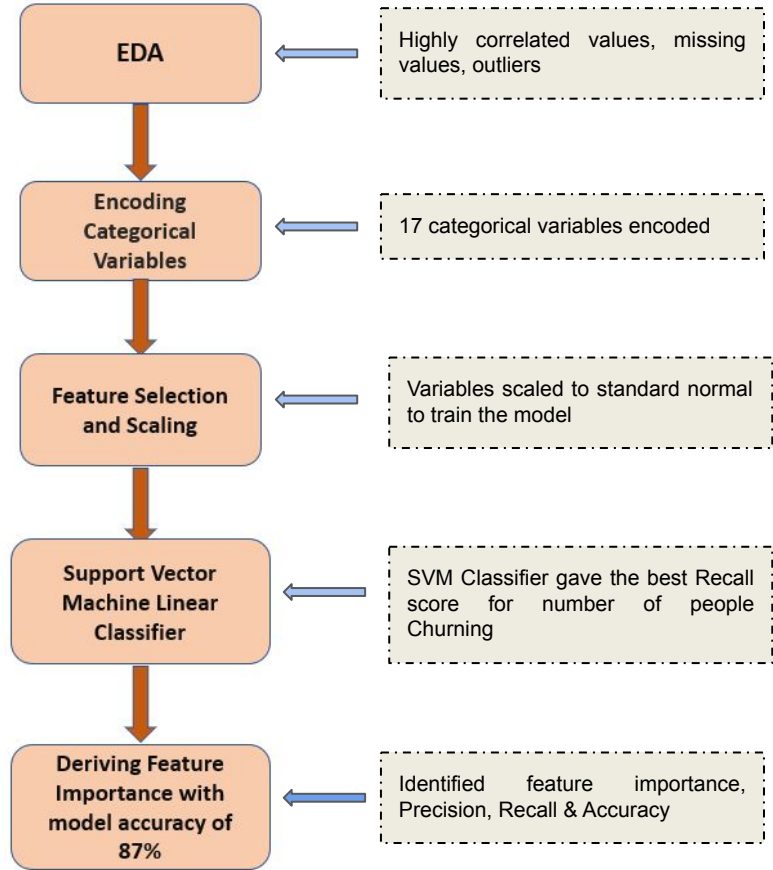
The Churn Rate across different offerings is not the same, the **best offerings by the company with respect to churn are Premium Tech Support and Online Security**



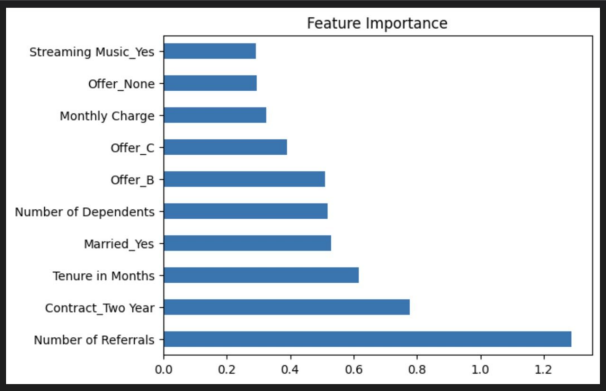
In each of these age buckets, **1/3rd of the revenue is coming from single and 2/3rd from married customers**. Youth are having higher downloads( nearly 3x compared to other age groups) with almost the same revenue contribution. Churn rate and revenue contribution (%) remains more or less the same for ages 19-68.



**Competitors making better offers,(including more data at higher speeds) providing better devices and the attitude of the support persons** were the primary reasons for customer dissatisfaction which eventually lead to their churn



CHURN PREDICTION MODEL



SVM is best Model based on

- **Lowest Cost** Of Misclassification
- **Highest Precision and Recall** (Logistic Regression has Precision same as SVM but it had lower Recall than SVM)



MODEL COMPARISON

Model	Cost Comparison	Accuracy	Precision	Recall	False Positive	False Negative
SVM	\$2,198	0.724	0.91	0.87	73	13
Random Forest	\$4,597	0.683	0.78	0.59	57	42
Logistic Regression	\$2,246	0.731	0.91	0.86	70	14
XGBoost	\$4.017	0.763	0.82	0.62	35	39

From 30 input variables, 10 significant variables identified using SVM like Number of Referrals, Contract Type, Tenure, etc

RECOMMENDATIONS

Misclassification Cost	Churned	Not Churned
Average Total Charges (A)	\$1,736.48	\$3,525.00
Average Tenure (B)	19.2	39.9
Average Monthly Charges (C = A/B)	\$90.44	\$88.35
Cost of False Positive (20% x C) (Assuming 20% discount given to retain customer)	NA	\$14.00
Cost of False Negative	\$90.44	NA

	<b>Customer Perspective</b>	Develop Pricing Strategy for customer keep in mind the quality and achieving price parity wrt to competitors	Referral Program to acquire more users and Loyalty Program for repeat customers
	<b>Special Campaigns</b>	Surprise Data Campaigns on weekend	Gamification on App, Like Spin the Wheel where the user can collect points on app daily to redeem for extra data
	<b>Service Improvement</b>	Fastrack R&D Team - To check and cope up with the new technology and launch products with new technologies	Introduction of Long Distance Plans and Discount Planning for about to churn customers
	<b>Learning &amp; Growth</b>	Training and behavioural workshops for Support Staff. Introduction of Customer Service Programs	Survey Campaigns via Whatsapp or Email to already churned customers to know about the possible reasons
	<b>Marketing &amp; App Changes</b>	On the basis of model, personalised communication journeys and offers	Increase in Customer Acquisition via Referrals and Paid Campaigns while maintaining CAC to CLV Ratio 1:3

# THANK YOU

[Link to Code](#)