Case Study Based Project

Project: - Customer Churn Prediction

Task Assigned: - Writing a case study based on your project or work experience

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INTRODUCTION

Customer Churn: What Is It?

When customers or subscribers stop doing business with a company or service, it is known as customer churn.

Project which I choose for writing this Case Study was an open-source project whose data I took from Kaggle. In this project, data of a telecom company was given from which we have to find the useful insights like the Churn Rate, which type of customer are Churn the most, which type of services they were using when they churn, etc.

For finding all these insights, my first step was to study the data. What type of data it, how much preprocessing will it take to give me the useful insights while analyzing and visualizing. Second step after understanding the data was to preprocess it, which is the most important step while working on data. If the pre-processing is not done properly, the results will not be accurate and can lead us to false decision taking. After pre-processing of the data, my last step was to analyze the data and find the insights from it.

After visualization, we get answers of many questions which will help in business. After analyzing I got the answers of many questions. These answers will be helpful in business.

SCOPE OF STUDY

This project was completely for business prospective, it will help the company in many ways. While sitting in company, we must know about the statistics of our new product. Which product is high in demand, which is the most popular product of company in the market at present, which product is failed in company and so on. But, with these information, we also know the root causes of all these statistics so that we can work on the faults and boost the sale of the hit product. It also tells how we can make a flop product to hit by knowing the root causes of its flop. By knowing the behavior of customers on the basis of their feedbacks, and the company data.

This project will help company to save their existing customer. Because it is significantly less expensive to maintain current customers than it is to attract new ones, customer turnover is an important indicator. In this fiercely competitive sector, the telecoms industry experiences an annual turnover rate of 15 to 25 percent. Customers in the telecom sector have a number of service providers to pick from and can actively switch between them. Because most businesses cannot afford to spend much time on each customer individually, individualized customer retention is difficult. A business could target its customer retention efforts solely on these "high risk" clients if it could foresee which clients are most likely to depart. The client itself is the key to success in this business.

Telecom businesses must identify the consumers who are most likely to leave in order to reduce customer turnover.

A comprehensive understanding of the customers and their interactions across a variety of channels, such as store/branch visits, product purchase histories, customer service calls, Web-based transactions, and social media interactions, to name a few, is necessary before one can identify early indicators of potential churn.

Because of this, these companies may not only maintain their market position through addressing churn but also expand and prosper. The higher the profit and the lower the cost of initiation are, the more consumers they have in their network. In order to succeed, the organisation must reduce client attrition and establish strong retention tactics.

OBJECTIVES

I have examined the information and attempt to respond to certain queries, such as:

1. What is the ratio of customers who leave and those who remain active users of services?
2. Exist any gender-based patterns in terms of customer churn?
3. Based on the kind of service offered, are there any trends or preferences in the number of customers who churn?
4. What are the most lucrative service categories?
5. What products and services are the most lucrative?
6. There will be a lot more inquiries during the analysis.

FINDINGS

Now, lets discuss about the findings. What all I have found from this dataset…

1. Total 26.6% of customers switched to another firm. Among which 49.5% customers are females and 50.5% customers are male.


Gender and Churn Distributions
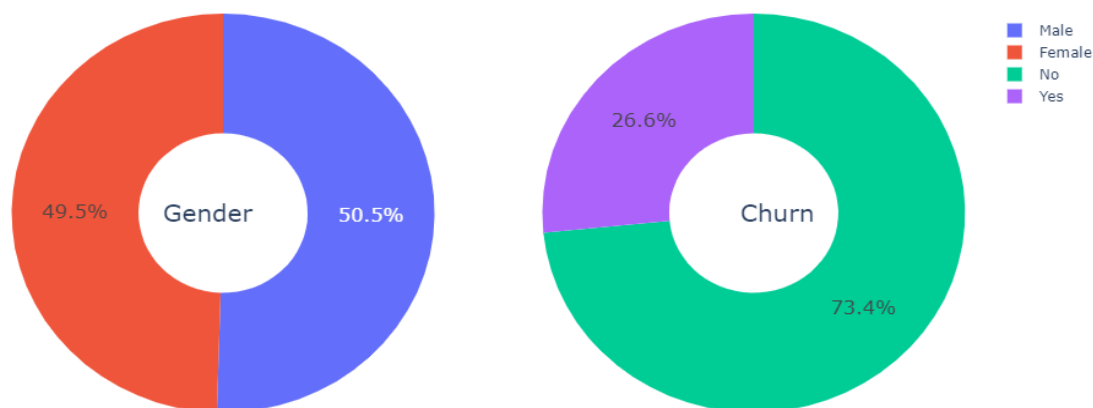
2. The percentage or number of customers who switched service providers differs only slightly. When it came to switching to a different service provider or firm, both genders exhibited similar behavior.
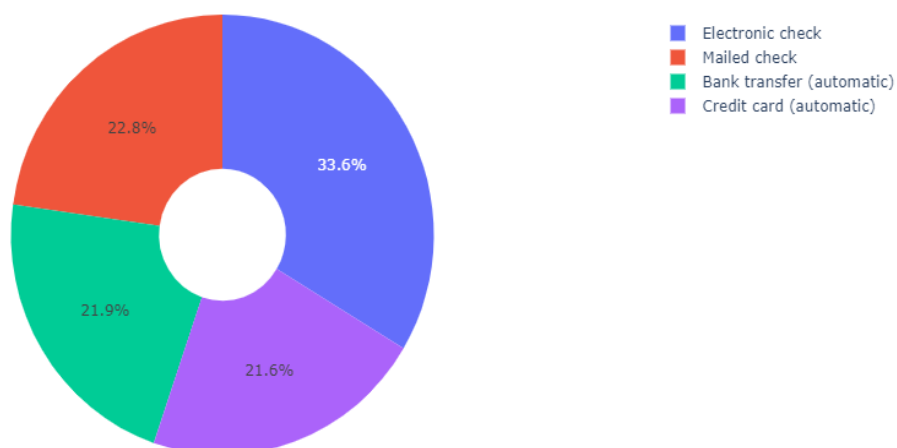
3. As opposed to 13% of customers with a one-year contract and 3% with a two-year contract, about 75% of customers with month-to-month contracts chose to leave.

Customer contract distribution
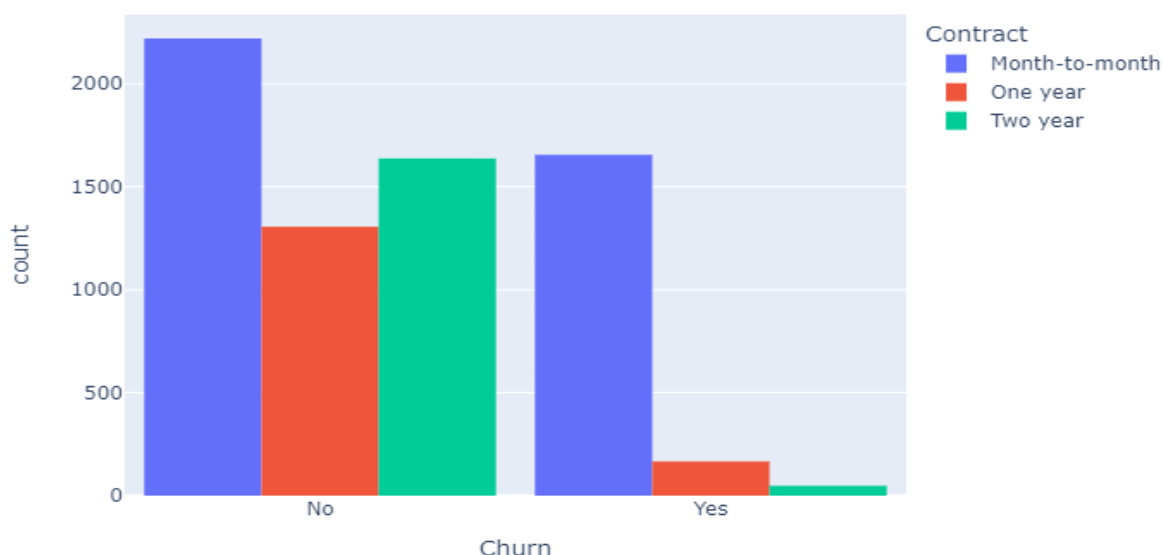
4. Electronic check payment method is used by majority of customers.

Payment Method Distribution

5. Major clients who departed used electronic checks as their preferred method of payment. Customers who selected mailed checks and automatic transfers from their credit cards or banks had a lower turnover rate.

## Customer Payment Method distribution w.r.t. Churn
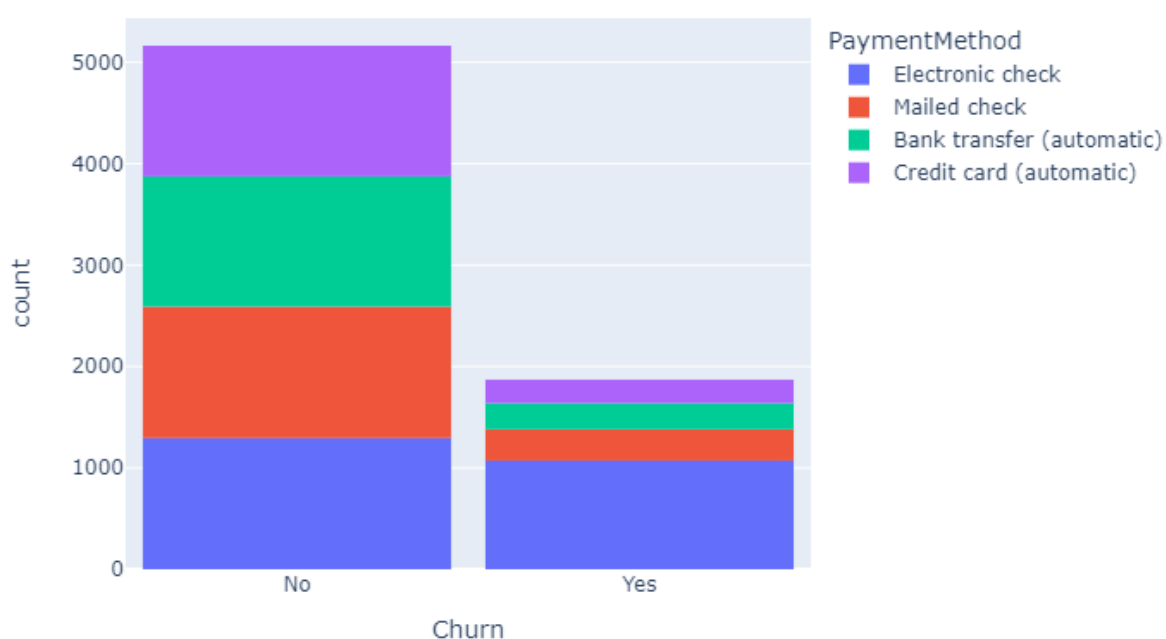
6. Numerous people pick the Fiber optic service, and it is also clear that these customers have a high turnover rate, which may indicate that they are not happy with this kind of internet service. The majority of customers have DSL service, which has a lower churn rate than fibre optic service.
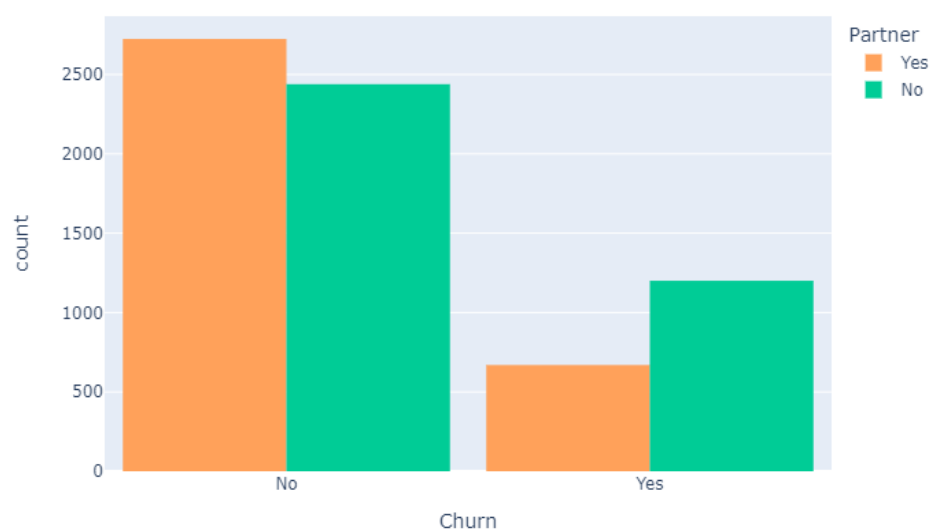
Churn Distribution w.r.t. Internet Service and Gender
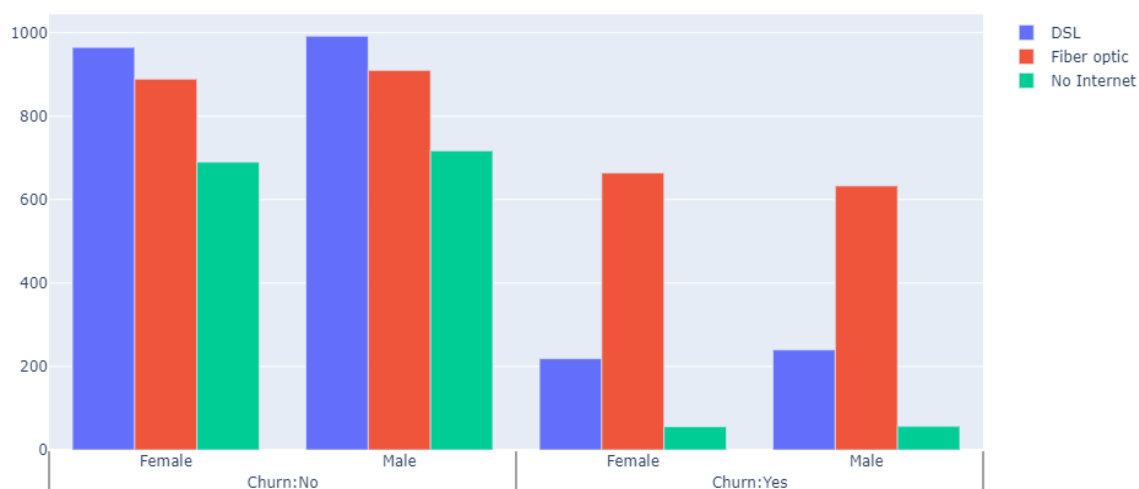
7. Customers with no children are more likely to churn.

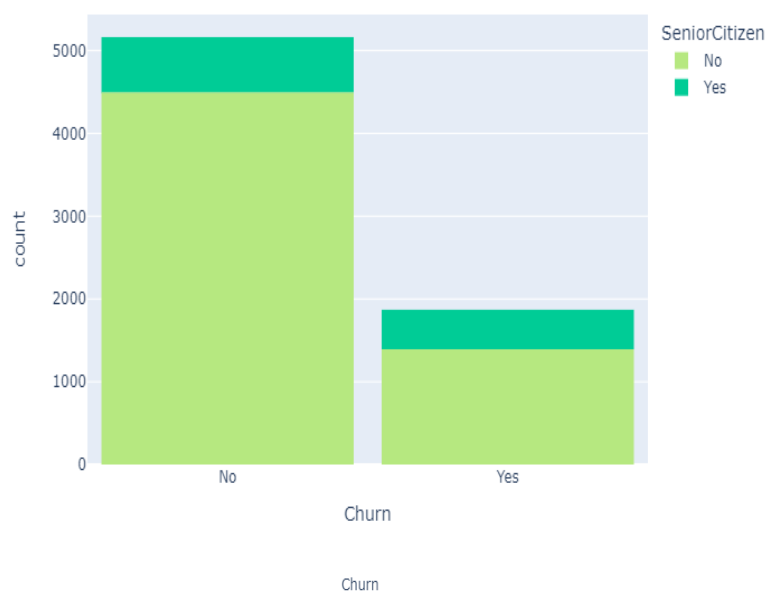## Dependents distribution
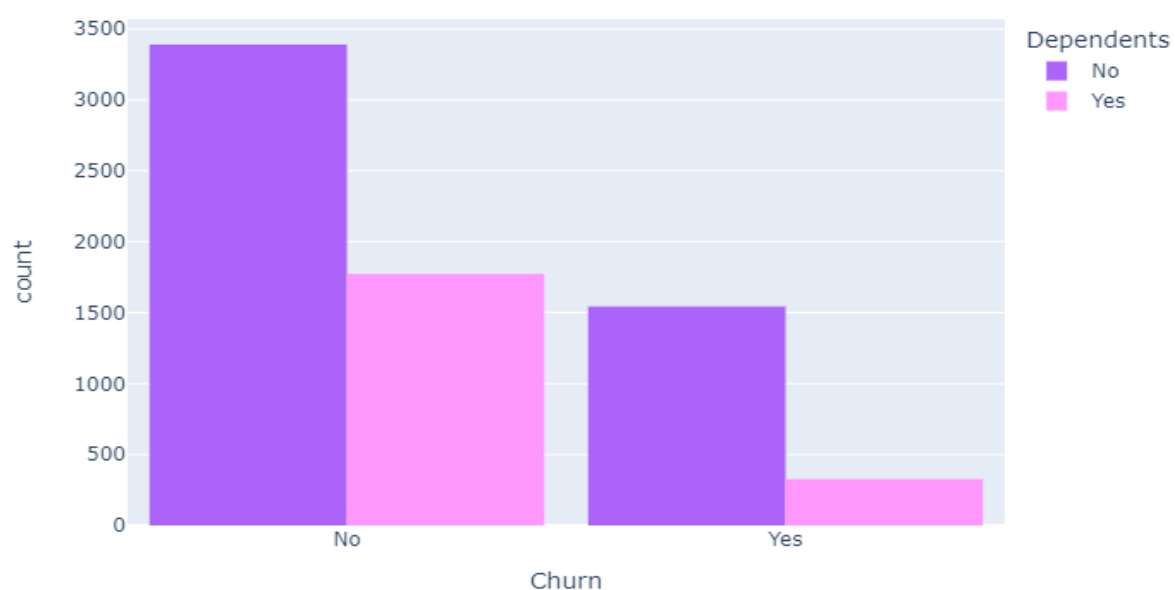
8. Customers who lack partners are more likely to churn.
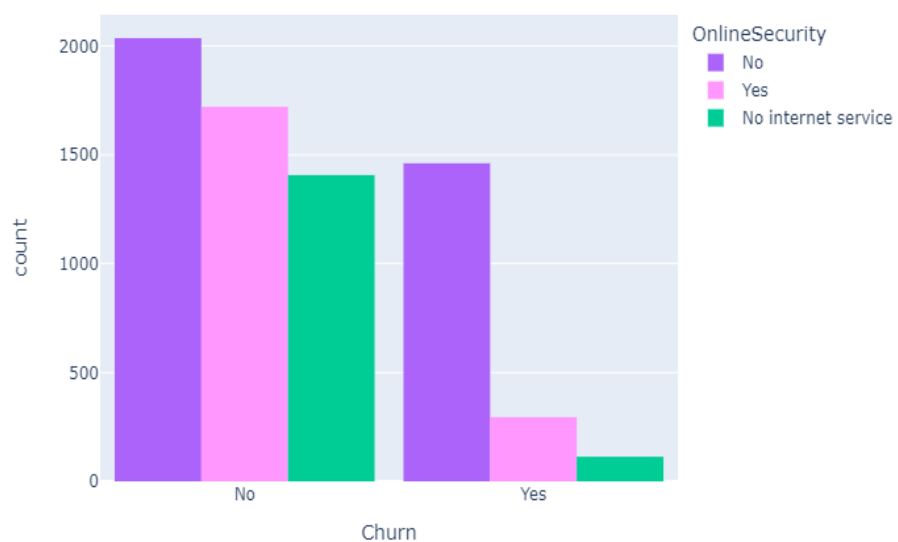
Chrun distribution w.r.t. Partners

9. Senior citizen representation is relatively low, as can be seen. The majority of elderly people churn
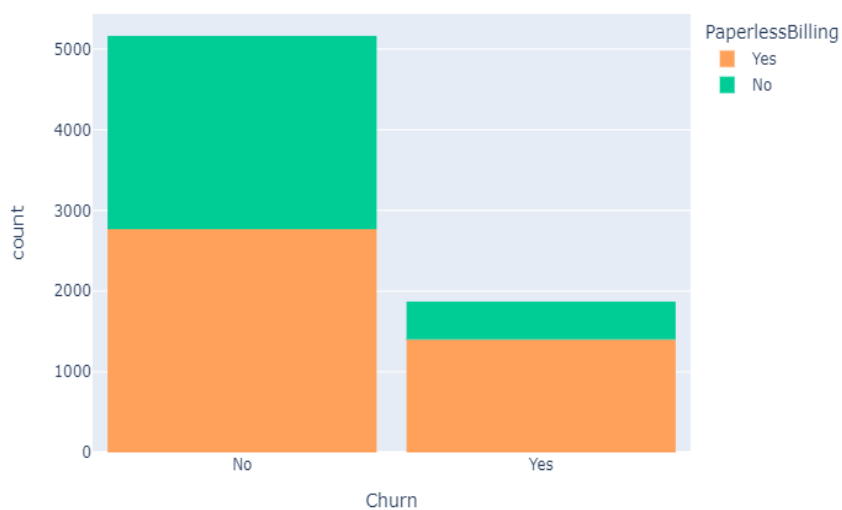
Chrun distribution w.r.t. Senior Citizen

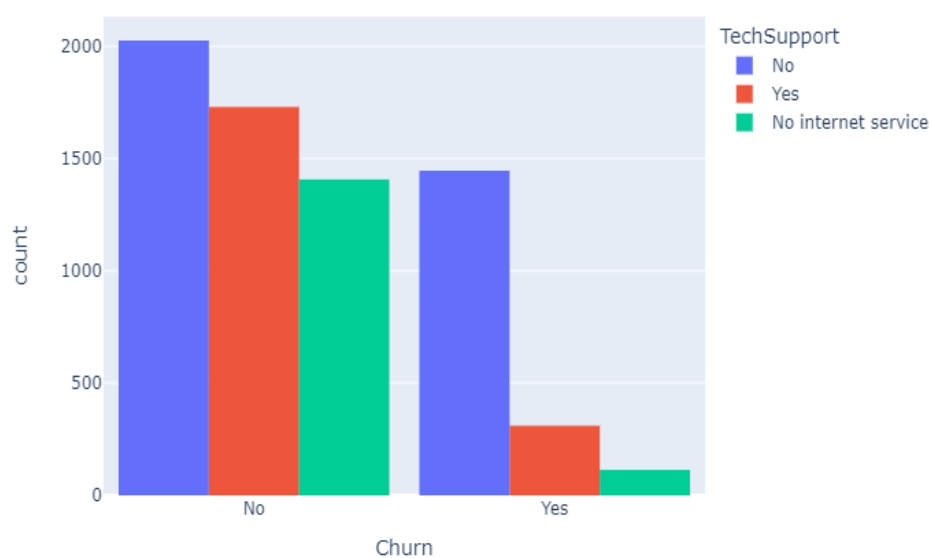10. Without internet security, the majority of clients leave.

Churn w.r.t Online Security

11. The majority of customers who use paperless billing most likely to churn.
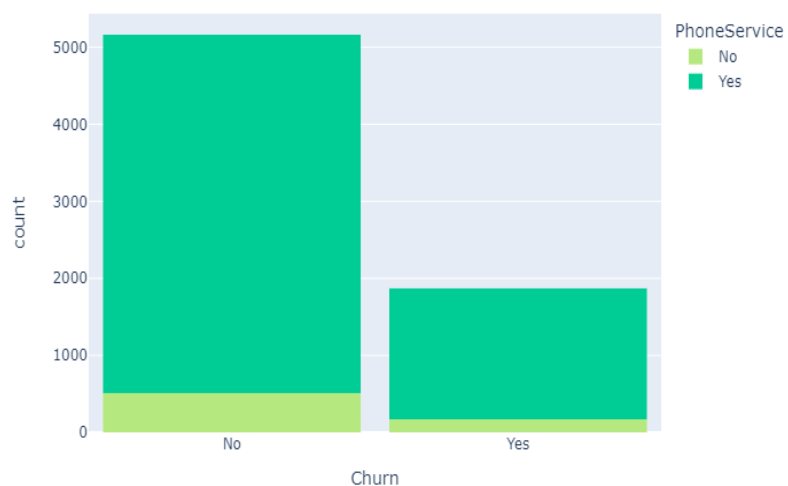
Chrun distribution w.r.t. Paperless Billing

12. Customers are more likely to switch service providers if they don't receive TechSupport.
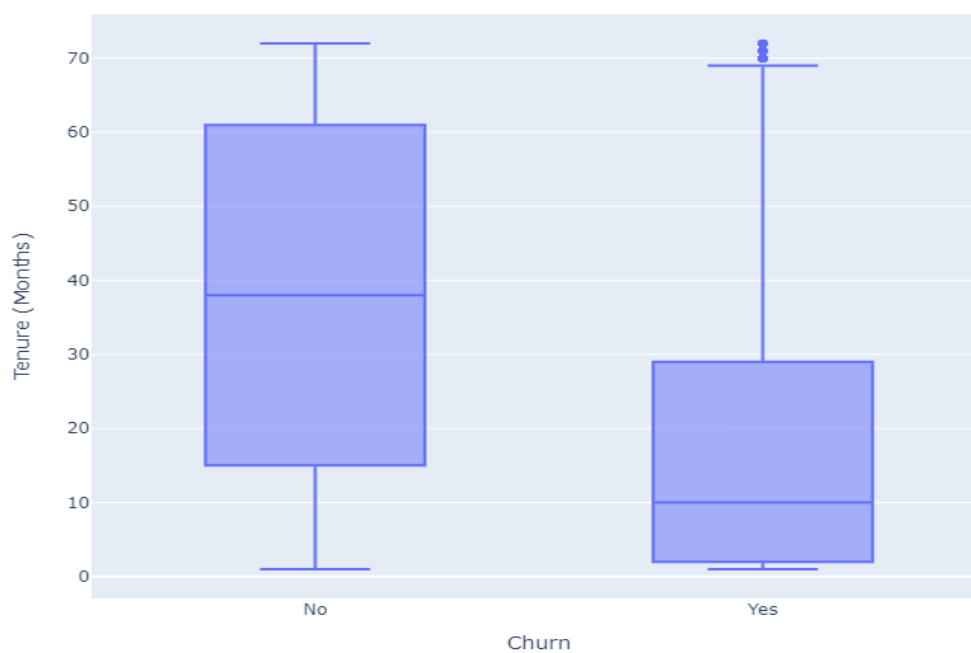
Chrun distribution w.r.t. TechSupport

13. Among the very small percentage of customers without phone service, one-third are more likely to leave.

**Chrun distribution w.r.t. Phone Service**

14. A very small percentage of customers don't have a phone service, and of those, one-third are more likely to leave.
15. New customers are more likely to churn.

Tenure vs Churn

16. There are a total of 1400+149=1549 real non-churn values, and the algorithm forecasts 1400 of them as non-churn and 149 of them as churn, according to the confusion matrix. While the algorithm predicts 237 of them as non-churn values and 324 of them as churn values, there are really 237+324=561 churn values.

FINAL CONFUSION MATRIX

	0	1
0	1400	149
1	237	324
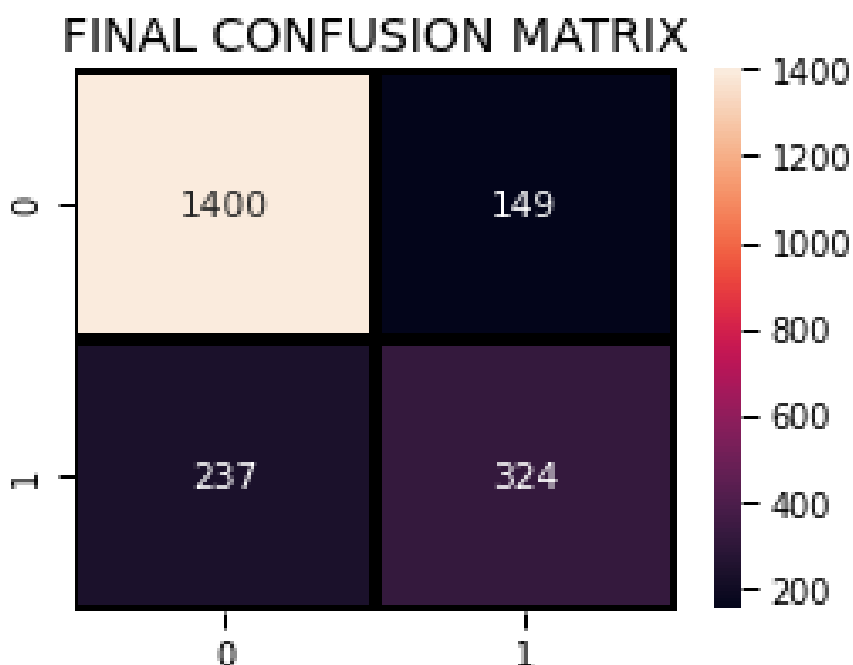
SUGGESTIONS TO COMPANY

1. 75% of clients who chose to leave had a month-to-month subscription. Make an effort to attract more clients who are interested in long-term plans, or concentrate more on marketing long-term plans.
2. Use electronic check payments less frequently. The majority of customers who leave are paying with this method.
3. Users of fibre optic services churn more frequently. Make a survey about this service to find out what the issue is with this approach. Identify the underlying cause.
4. Customers who do not have children or who do not have their parents present churn more frequently. They should have access to a modest, less expensive plan so that they won't cancel it even if they don't use it.
5. Don't use paperless billing. Costs will go up, but they won't compare to the loss resulting from customers leaving because they prefer paper billing.
6. Lack of technical help is leading to a large number of consumers leaving. Tech assistance needs to be enhanced.
7. Customers should be given a warm welcome so that they won't leave right away. and they'll stick around as clients.

CONCLUTION

Customer churn has a negative impact on a company's profitability. There are numerous tactics that can be used to reduce client churn. Knowing a company's customers well is the best strategy to prevent customer churn. This entails identifying clients who run the danger of leaving and making an effort to increase their contentment. Naturally, the primary priority for solving this problem is to improve customer service. Another tactic to lower customer churn is to increase customer loyalty through meaningful experiences and personalized service. In order to take proactive measures to prevent future customer churn, several companies conduct surveys of existing customers to learn why they left.