



Data Analytics Project

Telco Customer Churn

Presented by: Maithreyee B Bharadwaj
Email- maithreyee95@gmail.com
Date :

Problem Statement

I am a data analyst working for a telco company named FastInternet which provides internet and phone services. My manager has asked me to give a detailed report on why customers have left our company for the quarter Q3. My job is to use data to find out the reasons to why customers are leaving and give recommendations on how to reduce the customer churn.

What is Customer Churn

Customer Churn is the percentage of customers who have stopped purchasing your business products or services during a certain period.

Exploring the Database

Exploration of the database was split into two parts:-

- Analysing the Database
- Visualizations

Analysis of the database

- The database consists of 5 tables

Tables	Rows	Columns
CustomerDemographics	7043	9
CustomerLocation	7043	9
CustomerPopulation	1671	3
CustomerServices	7043	31
CustomerStatus	7043	12

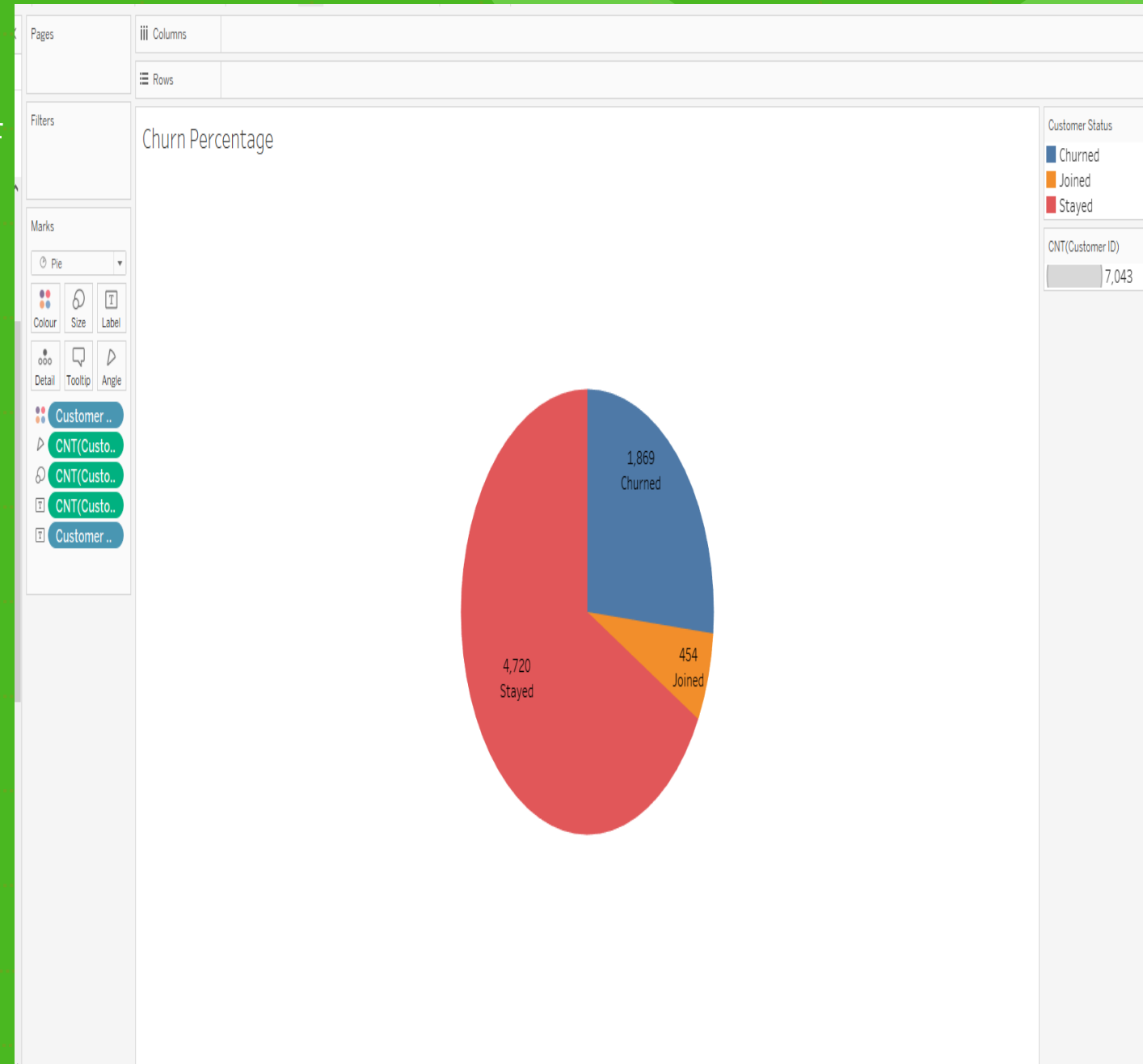
Visualizations

- The visualizations that will be presented today will be related to the various reasons as to why customer churn is happening.
- Certain visualizations are related to our company's products and services
- While the rest are related to customer demographics and the locations they reside in.

Percentage of Churn

The visualization represents the percentage of how many customers have churned, stayed and joined out company in the Quarter Q3.

- It can be observed that out of 7043 customers in our company, 1869 customers have churned for the Quarter Q3
- 26.54 % customers have churned in the quarter Q3.



Reasons for Churn

- Analyses of the database revealed certain patterns and trends for customer churn. The reason are listed below:

1.Contract

2. Region

3. Age

3. Customer Satisfaction Score of Churned Customers

4.Internet Type

5.Online Security

6.Tenure in Months

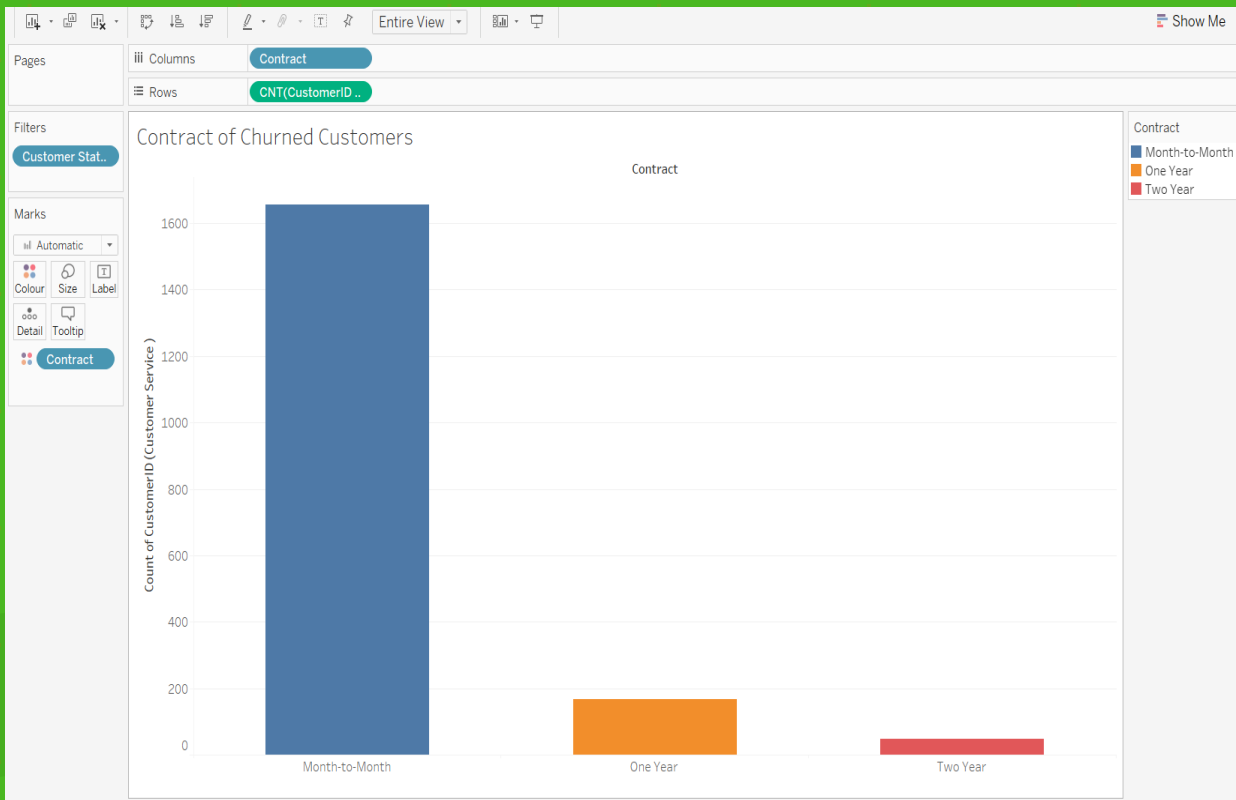
7. Internet Service

8.Phone Service

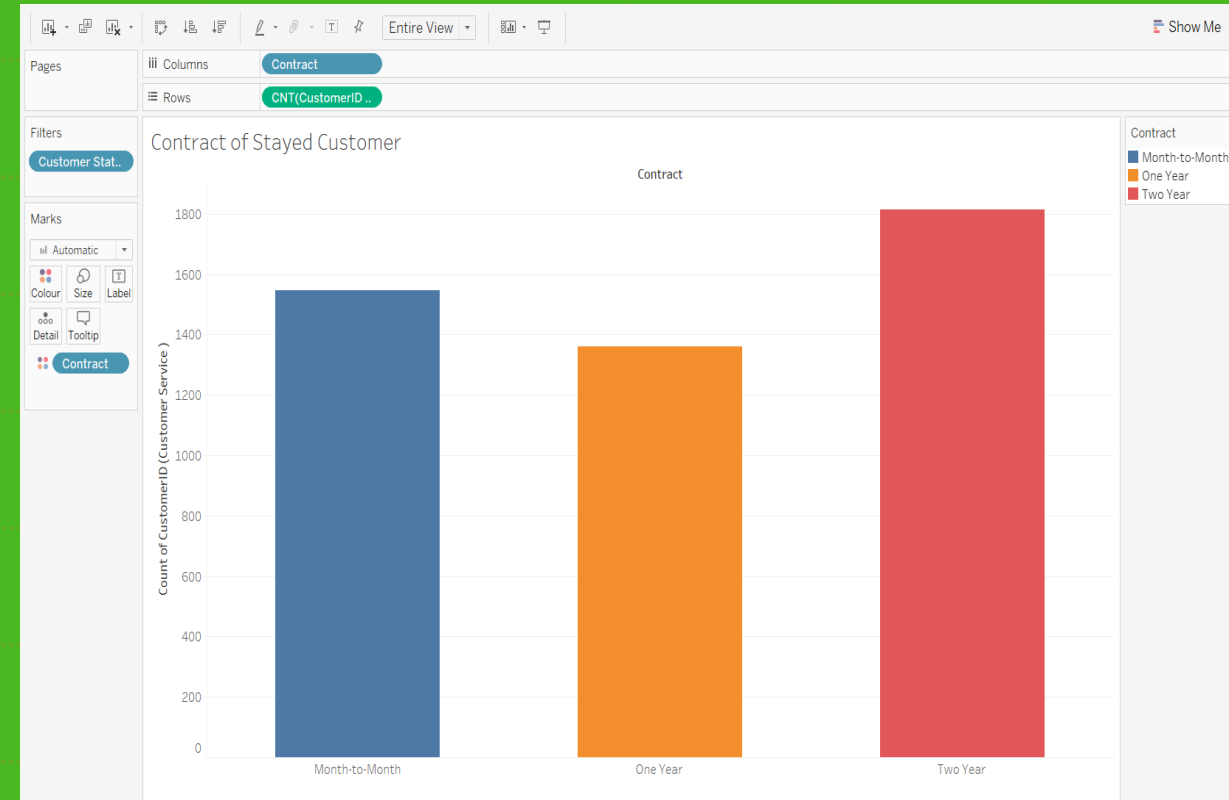
1. Contract

- There is trend that customers who have churned were more likely to be on a Month-to-Month contract.
- It can be implied that there is some relation between contract and the churn.
- Is it easier to break the monthly contract ?

Contract Of Churned Customers

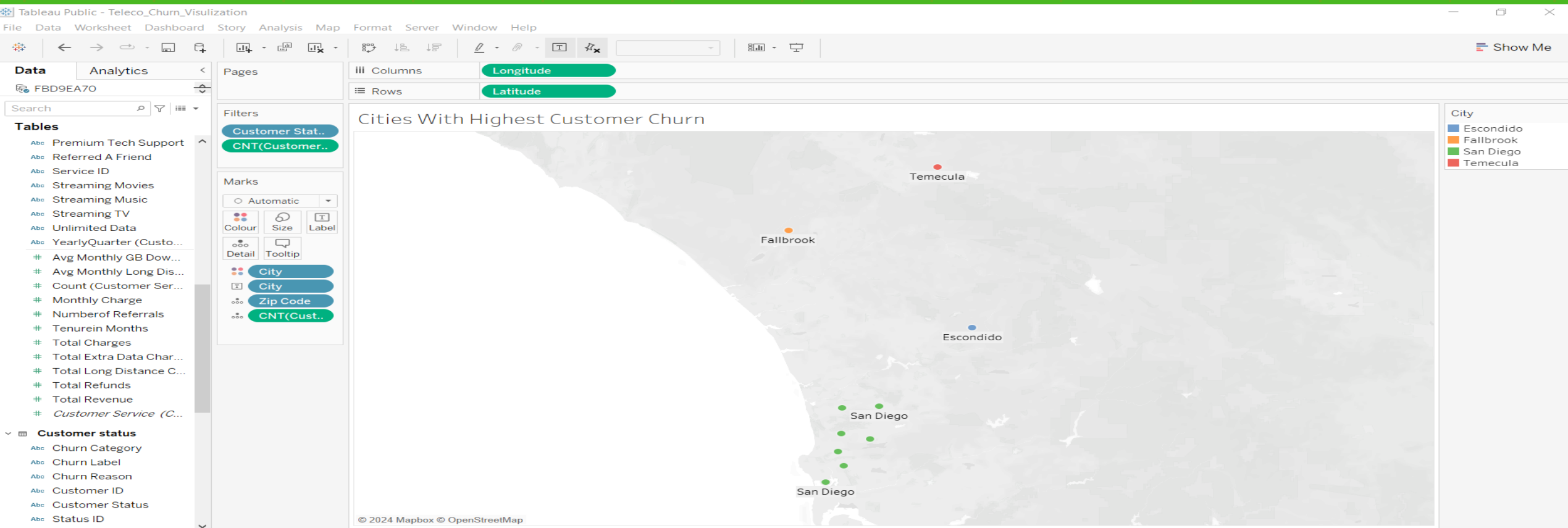


Contract Of Stayed Customers



Region

- It can be clearly observed from the visualization, that these are the top ten Zip Codes that clearly present the highest churn.
- All these Zip Codes are clustered in southern California in the San Diego area.
- Further analysis showed that most of the customers gave the churn reason to be competitor made a better offer.
- This implies that a new competitor has moved into the area

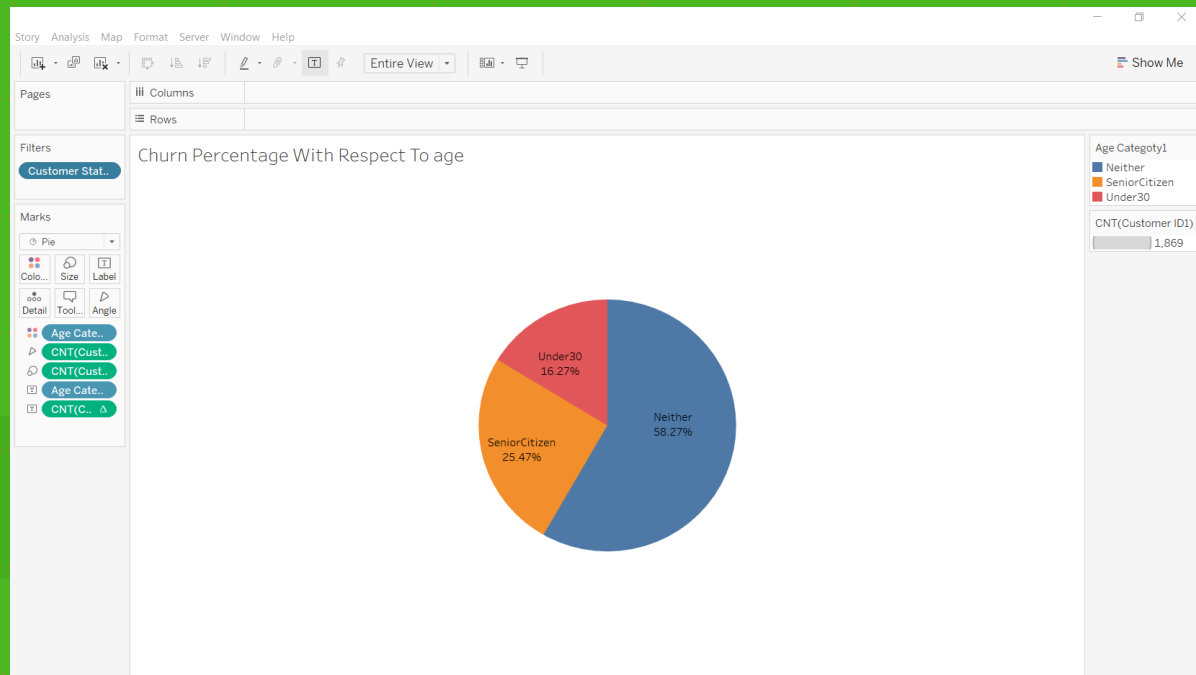


Churn Percentage with Respect to Age

- The customers are divided into three age categories which is **Under 30**, **Neither** and **Senior Citizen**
- The percentage of Senior Citizens who have churned is more the ones who have stayed by **12%**.

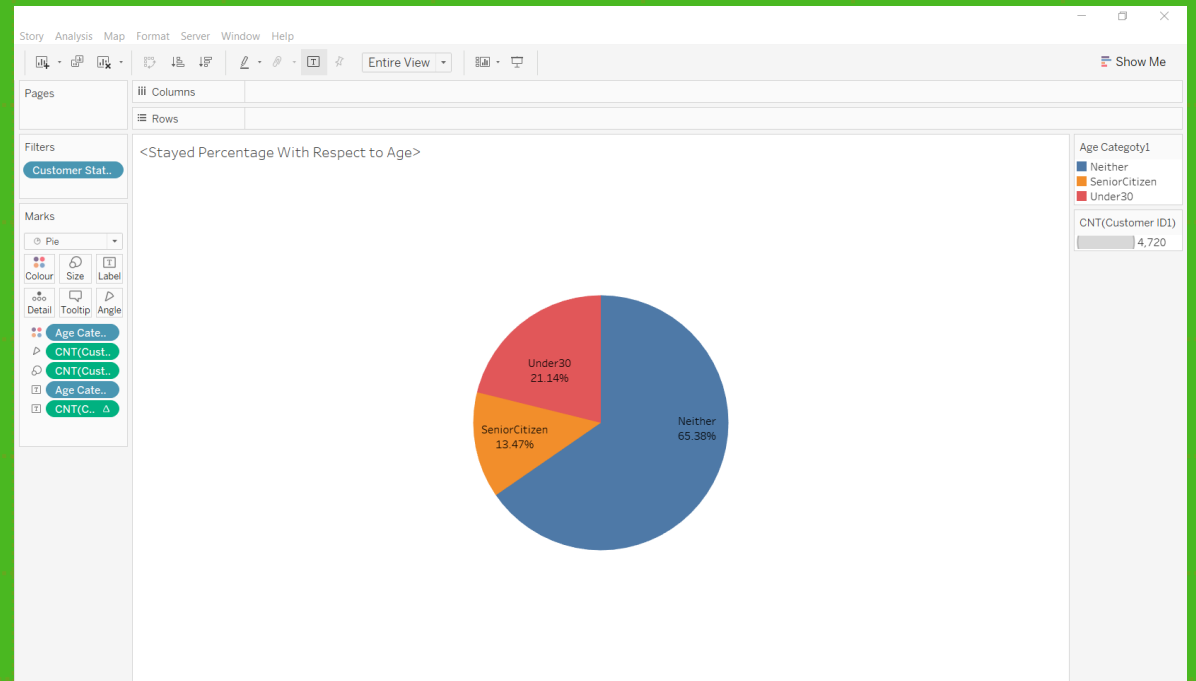
• Churned

Churn percentage with respect to age



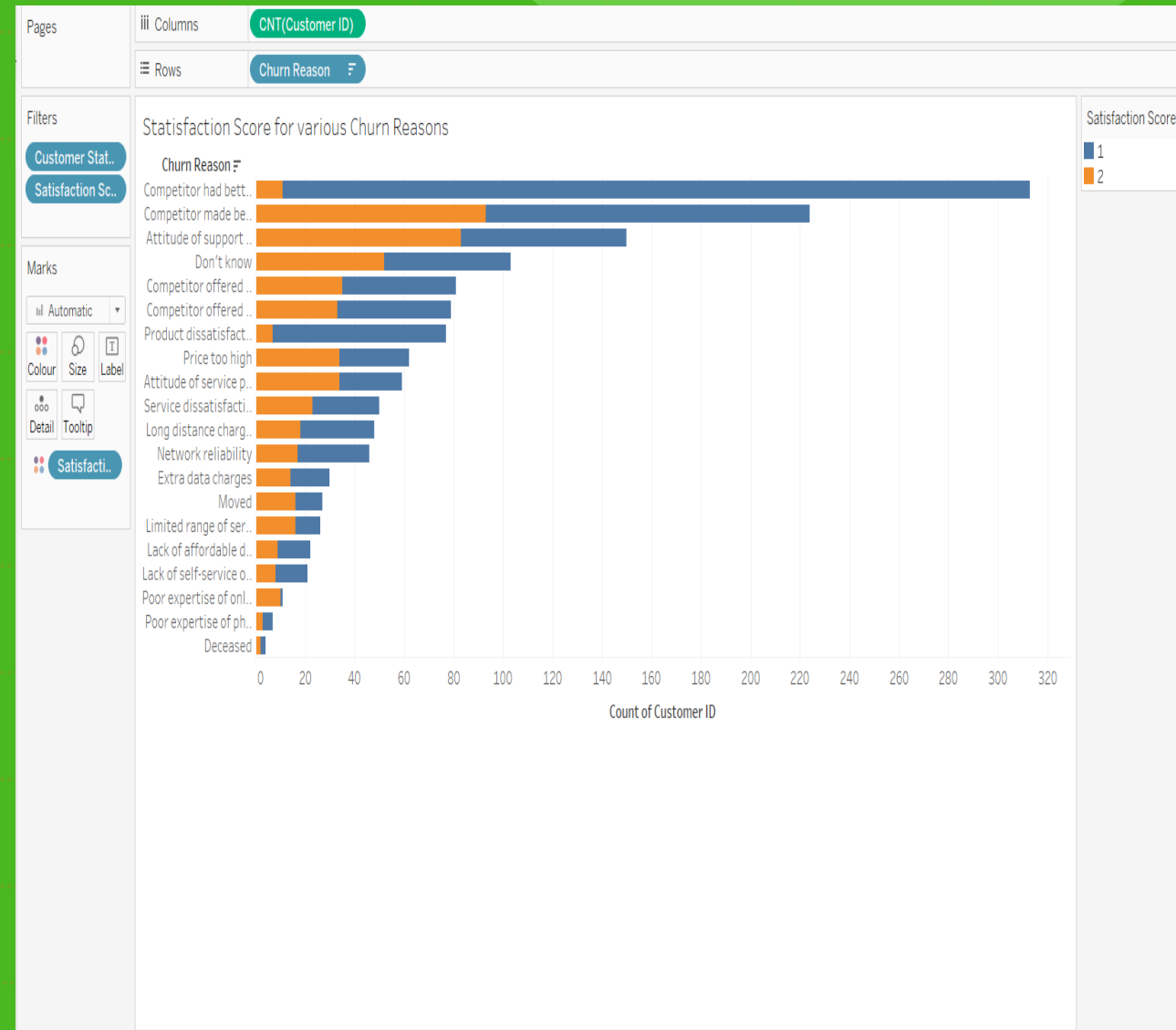
• Stayed

Percentage of customers who have stayed with respect to age.



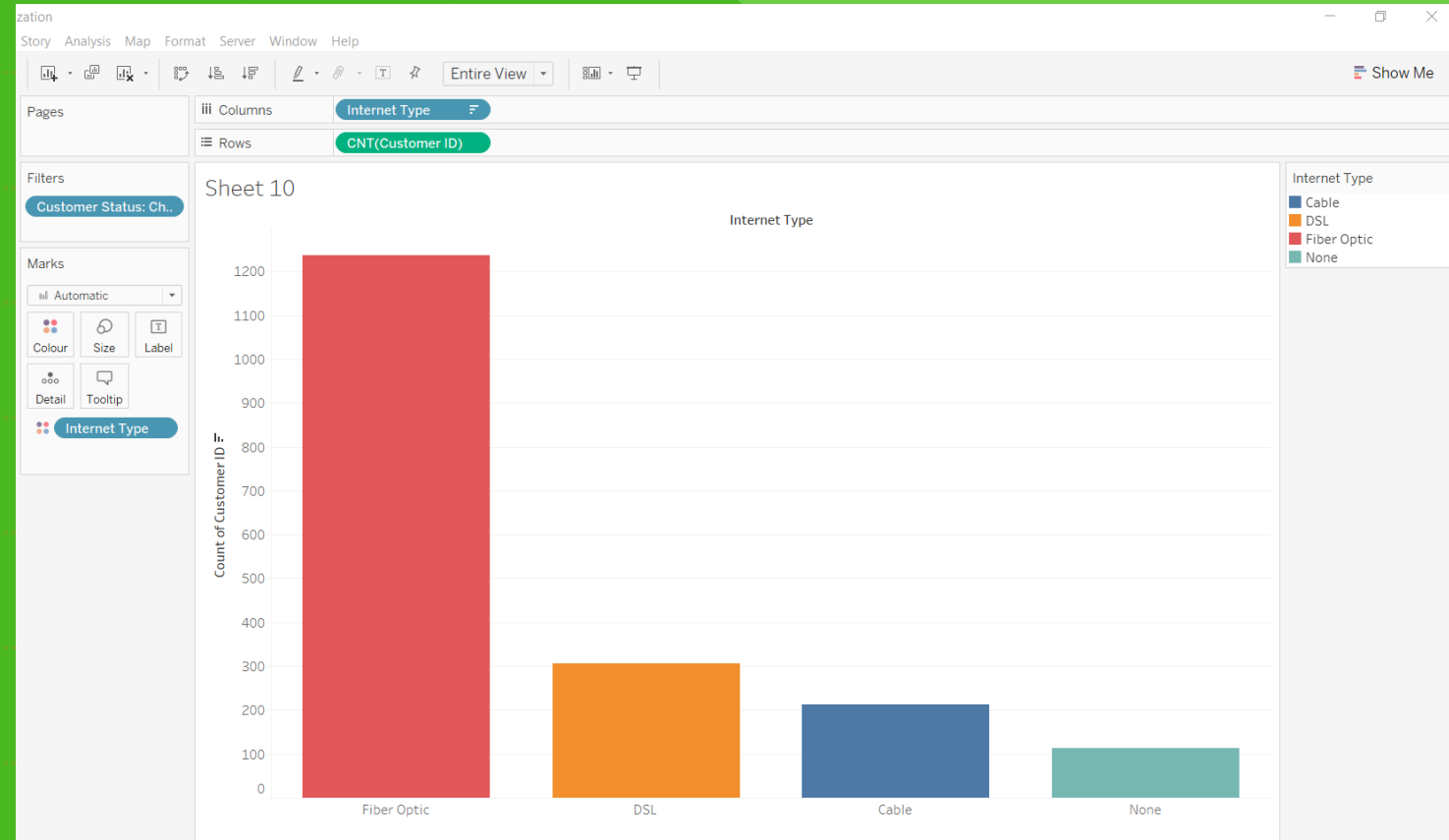
Satisfaction Score of Churned Customer

- The satisfaction score of churned are between 1 and 2.
- It can be observed that most number of customers who have given the satisfaction score as 1 the major reasons are :
 - 1.Competitor offered better devices
 2. Product dissatisfaction
- This implies that our company modems are an issue.
- Customers who have given a satisfaction score 2 the major reasons for churn are:
 1. Competitor offered better devices
 2. Attitude of the support person
- This can imply that our customer service personal are not treating our customers well.



Internet Type

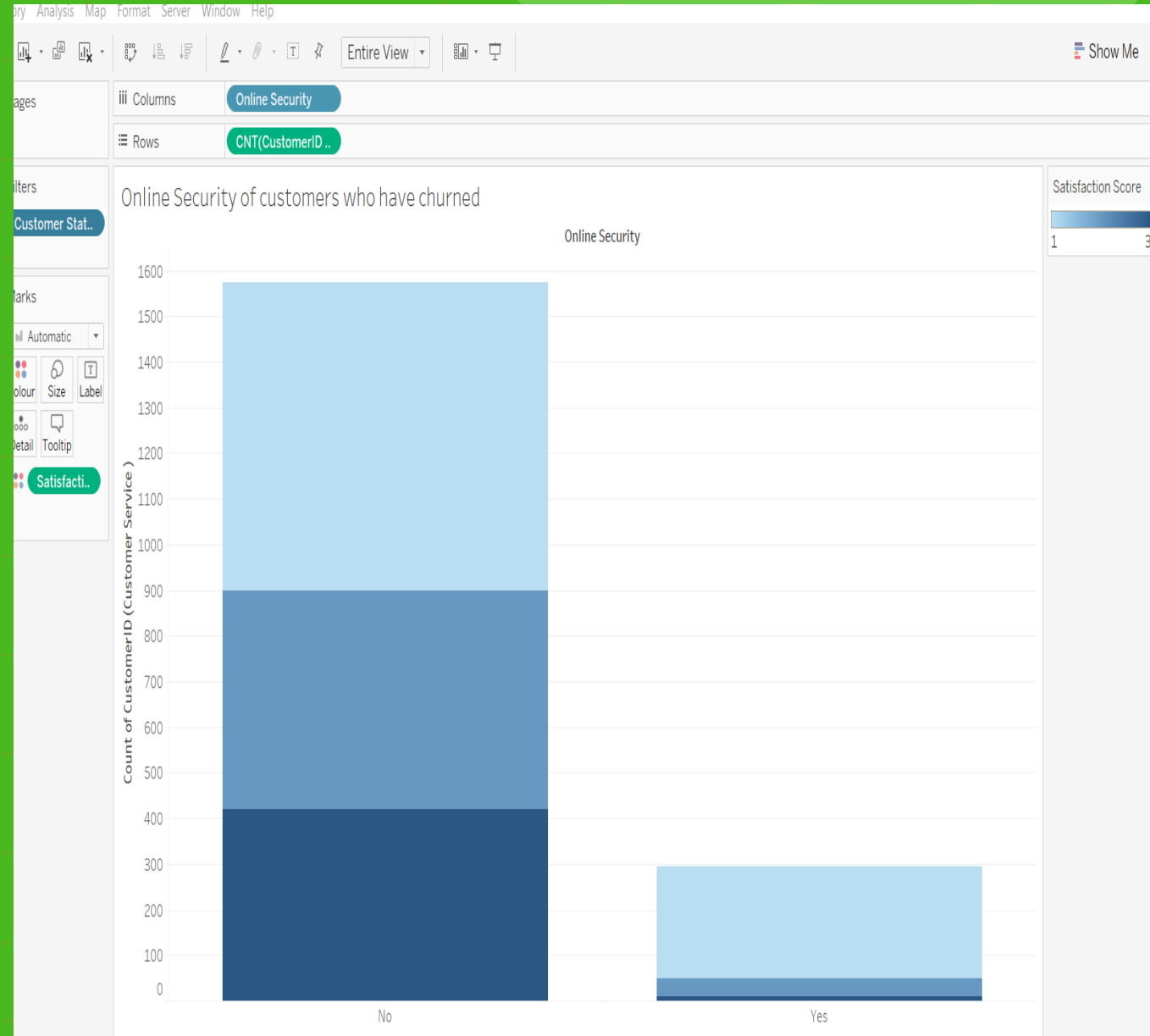
- Fiber Optics has the highest customer churn.
- Over 1200 customers alone have churned who have chose Fiber Optic as their internet type
- This implies that customers as not happy with our Fiber Optics service
- Further analysis shows that average GB used for download by customers using Fiber optics is 22.81.
- This is less compared to DSL whose average GB used for download is 26.52 for just 213 customers.



Online Security

Churned Customers

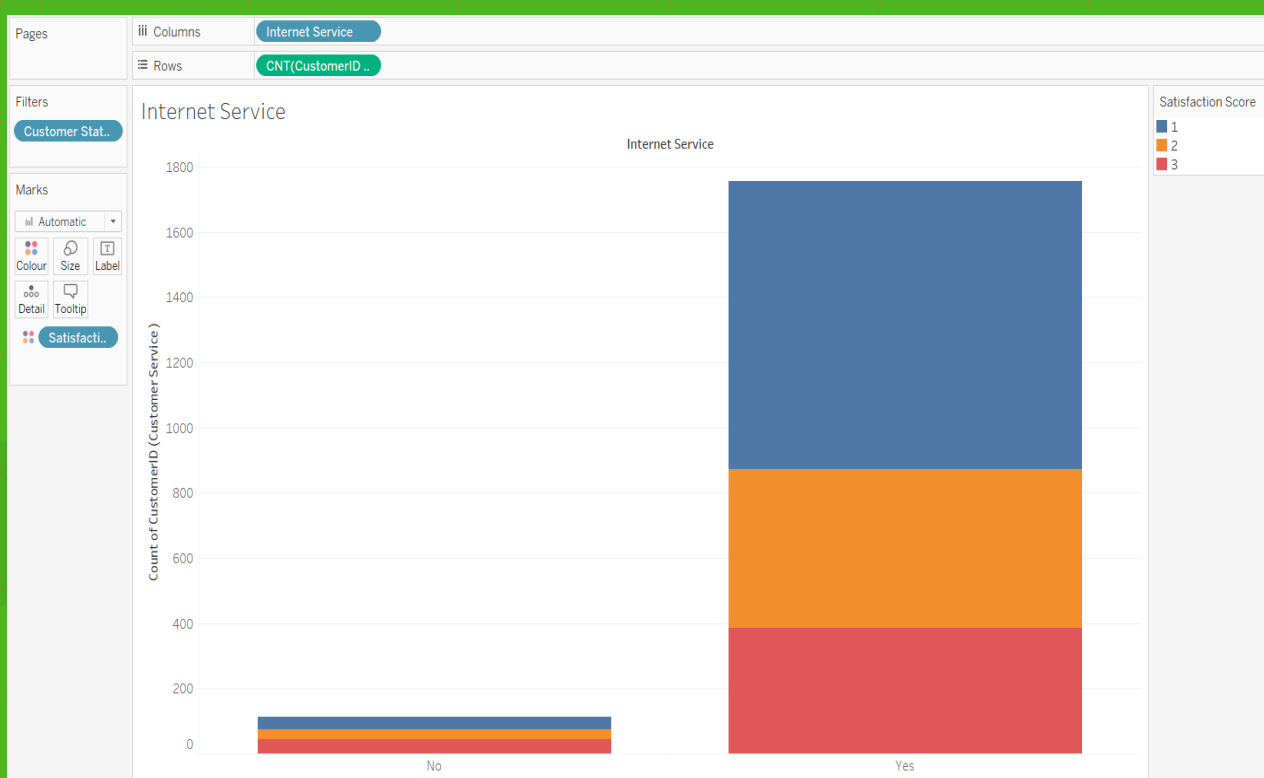
- Satisfaction score of customers who have churned and have subscribed to the service online security service have rated the service ranging from 1-3.
- This implies that the company's online security products or options were not up to the mark.



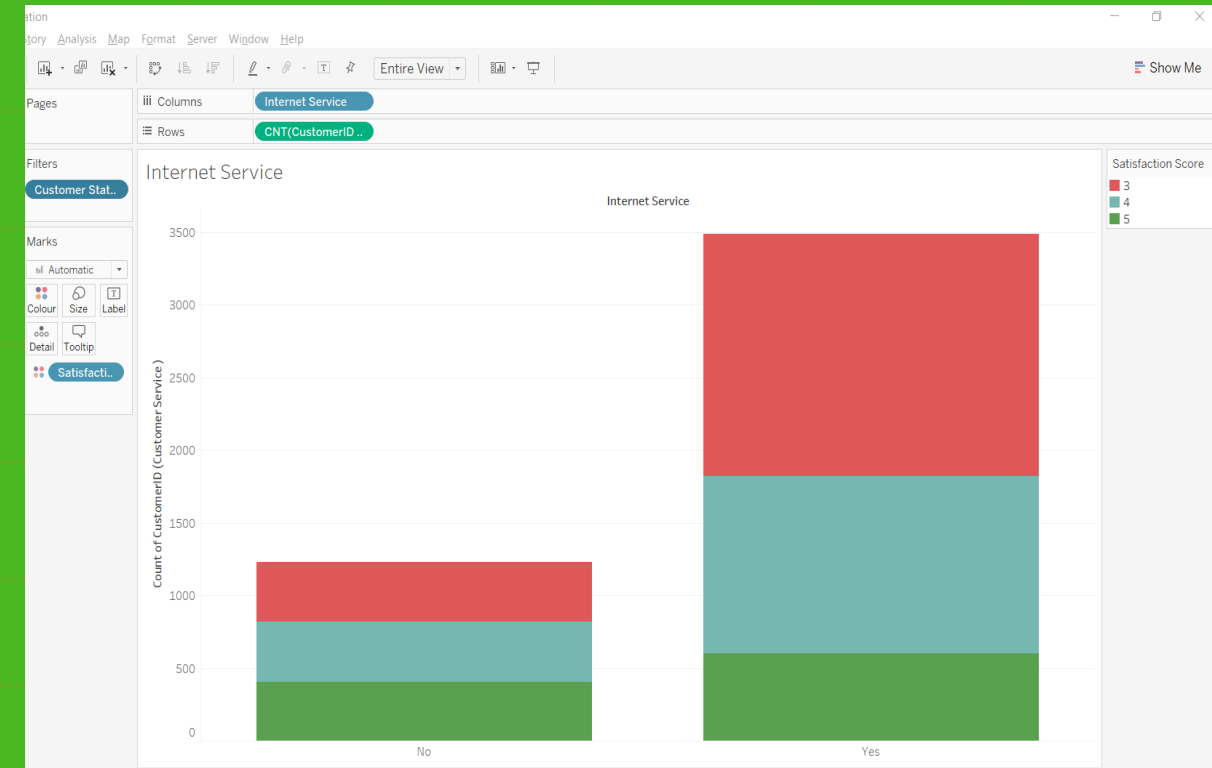
Internet Service

- Majority of the churned customers had subscribed to the internet service
- The satisfaction score for internet service is from 1 to 3.
- A deeper analysis provided insights to the reasons of Churn which are:
 1. Competitor offered better devices
 2. Competitor provided the services at a much better price
- This implies that we should improve our modems and think of ways to reduce the price for our various services.

Churned Customers

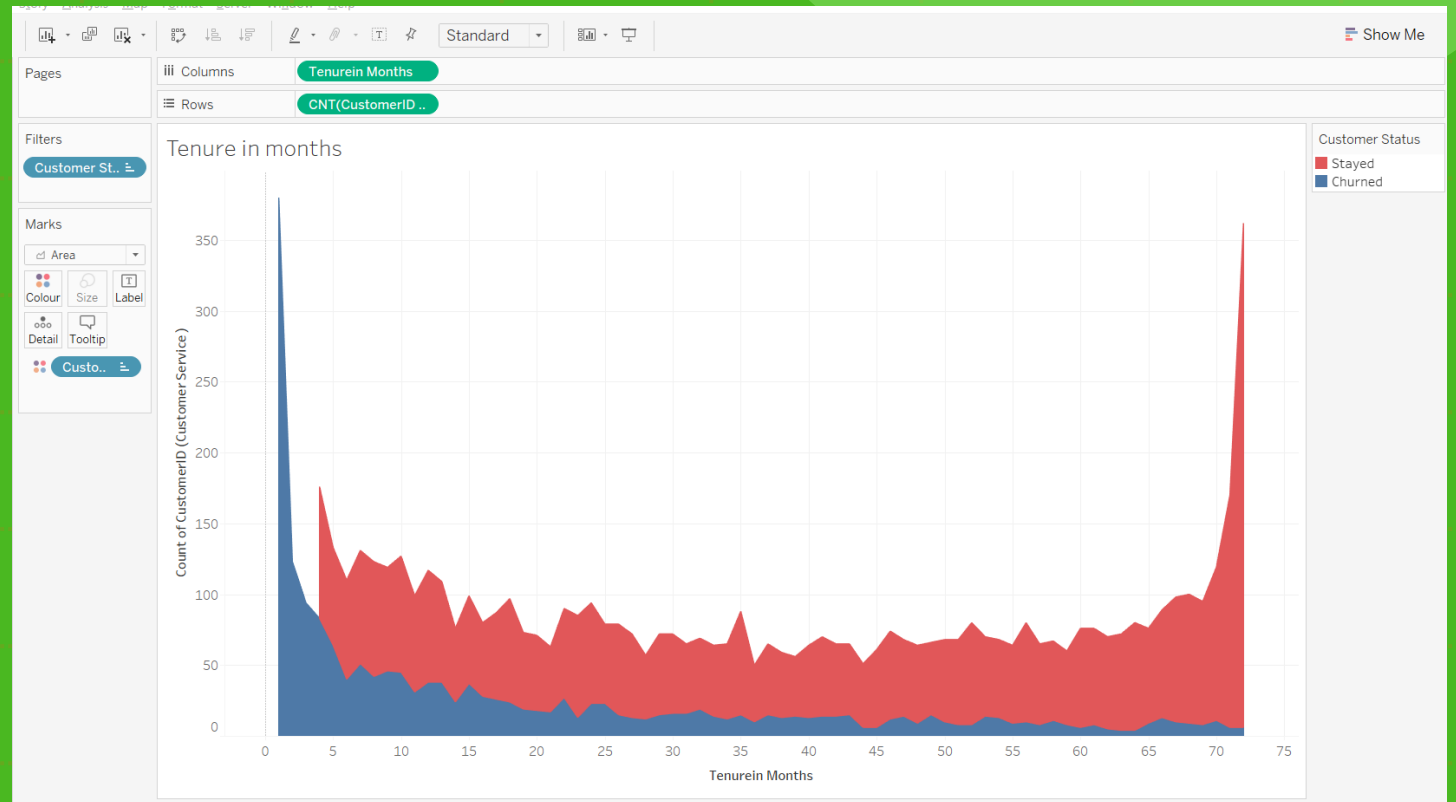


Stayed Customers



Tenure in Months

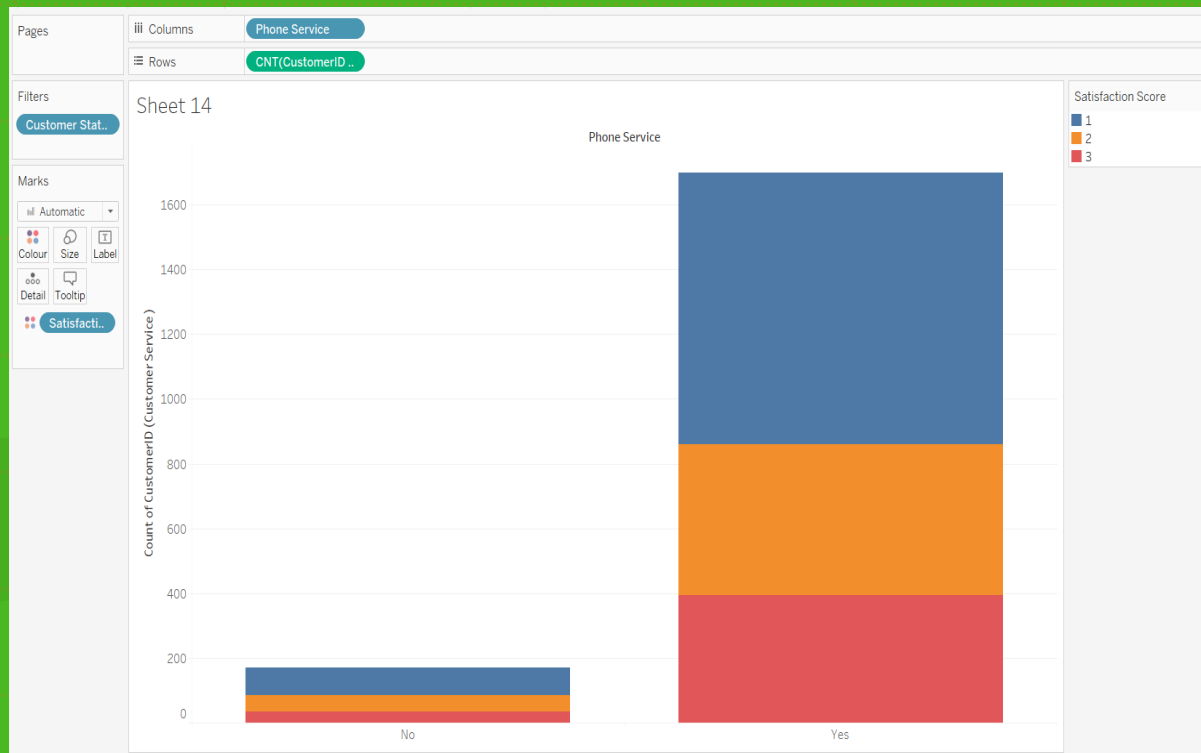
- The visualization on the right hand side reveals the tenure of both the stayed and the churned customers
- The blue signifies the churned customers while the red signifies the stayed customers
- The tenure of the churned customers drastically decreases after 5 months.
- This implies that we should take care of our new joined customers within the first 5 months by giving special offers and proactive customer support



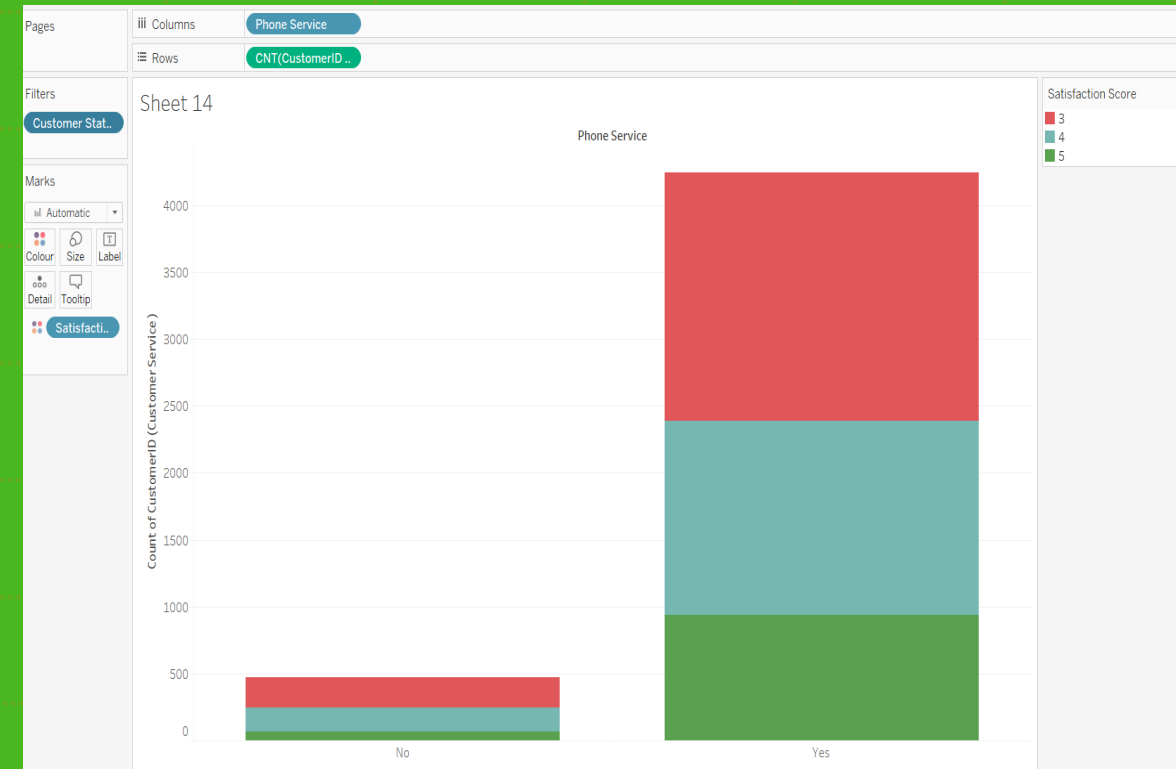
Phone Service

- From the graph it is very evident that majority of the customers who have churned have subscribed to phone service as well
- This implies that there is some correlation between the internet service and phone service
- Most the customers have cited competitor has better devices and product dissatisfaction as major churn reason.
- This may imply that customers were using DSL but they were not satisfied with the modems and switched to Fiber optics.
- They were not satisfied with our Fiber optics service as well hence they left our company.

Churned Customers



Stayed Customers



How To Avoid Customer Churn

Some ways we can reduce customer churn

- Addressing the top churn reason :
 - Competitor Comparison: Since a good number of customers have left due to competitors offering better devices and prices. An analysis should be done on our products and find ways to improve our products and offer better downloading speeds and prices.
 - Support Quality: The other most common reason for churn was related to the attitude of the support personal. Investing in customer service training program to improve support quality can reduce churn.
- Customer Feedback:
 - To adopt a systematic method for gathering and analysing customer feedback to better understand their pain points. By tackling issues like network reliability and product dissatisfaction, we can improve customer retention.
- Improving Transparency :
 - A good number of customers cited 'Don't Know' as their churn reason. This indicates a lack of clear communication or understanding of the service issues. Increasing the transparency can ensure customers understand the value and benefits of the services.
- Targeting Marketing and Offers:
 - For reasons related to competitors ,target marketing campaigns that emphasis on unique selling points and special offers might help retain customers who are consider switching

- Check the CLTV score:
 - We can even check for cltv score of our customers. The customers who have a score higher than 65 are likely to churn.
 - These customers we can ask them for feedback and get their inputs. With these inputs we make the changes. This way we can reduce the cltv score and reduce the number of customers from getting churned
- Service Customization:
 - Offering customizable service packages that address specific customer needs like better downloads/uploads speeds or affordable long-distance chargers ,can attract and retain a diverse customer base.
- Proactive Customers Service:
 - Implementing proactive customer service strategies such as regular check-in and surveys, can help identify and address potential issues before they lead to churn.

Code Snippets

```
select c.contract ,count(c.customerid) as totalcount
from customerservice3 c
join customerstatus1 cs on cs.customerid=c.customerid
where customerstatus='Churned'
group by contract
```

contract	totalcount
th-to-Month	1655
Year	166
Year	48

```
868 • select * from customerstatus;
869
870 • select customerstatus,count(customerstatus) as totalnumber
871 from customerstatus
872 group by customerstatus;
```

customerstatus	totalnumber
Stayed	4720
Churned	1869
Joined	454

```
1138 • with cte1 as
1139 (select lp.customerid,lp.city,lp.state,lp.zipcode,cs.churnscore,cs.churncategory,cs.churnreason,cs.cltv_range
1140 from customerstatus1 cs
1141 left join locationpopulation lp on lp.customerid=cs.customerid
1142 where customerstatus='churned'),
1143
1144 cte2 as
1145 (select zipcode,count(customerid) as totalcount,churncategory
1146 from cte1
1147 group by zipcode,churncategory
1148 order by totalcount DESC)
1149
1150 select distinct c.zipcode,c.totalcount,c.churncategory, lp.city,lp.population
1151 from cte2 c
1152 left join locationpopulation lp on c.zipcode=lp.zipcode
1153 order by c.totalcount DESC
1154 limit 10;
```

zipcode	totalcount	churncategory	city	population
92122	29	Competitor	San Diego	34902
92117	26	Competitor	San Diego	51213
92028	23	Competitor	Fallbrook	42239
92126	22	Competitor	San Diego	74232
92109	22	Competitor	San Diego	46086
92130	19	Competitor	San Diego	28201
92592	17	Competitor	Temecula	46171
92121	16	Competitor	San Diego	4258
92027	14	Competitor	Escondido	48690
92129	13	Competitor	San Diego	47224

```
1207
1208 • select churnreason,count(customerid) as total_count
1209 from customerstatus1
1210 where customerstatus='Churned' and statisfactionscore in(1,2)
1211 group by churnreason
1212 order by total_count DESC
1213
1214
1215
1216
```

churnreason	total_count
Competitor had better devices	313
Competitor made better offer	224
Attitude of support person	150
Don't know	103
Competitor offered more data	81
Competitor offered higher download speeds	79
Product dissatisfaction	77
Price too high	62
Attitude of service provider	59
Service dissatisfaction	50
Long distance charges	48
Network reliability	46

```
1215 • select c.internettype,count(c.customerid) as total_count
1216 from customerservice3 c
1217 join customerstatus1 cs on c.customerid=cs.customerid
1218 where customerstatus='Churned'
1219 group by c.internettype
1220
```

InternetType	total_count
Fiber Optic	1236
Cable	213
None	113
DSL	307

```
1
2 • select c.onlinesecurity,count(c.customerid) as total_count,cs.statisfactionscore
3 from customerservice3 c
4 join customerstatus1 cs on c.customerid=cs.customerid
5 where customerstatus='Churned'
6 group by c.onlinesecurity ,cs.statisfactionscore
7 order by c.onlinesecurity DESC;
8
9
```

OnlineSecurity	total_count	statisfactionscore
Yes	247	1
Yes	39	2
Yes	9	3
No	675	1
No	479	2
No	420	3

The background is a solid green color with a light green grid pattern. There are curved, semi-transparent green borders in the top-right and bottom-left corners.

Thank You