

# Telcom Customer Churn

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Dataset: <https://www.ibm.com/communities/analytics/watson-analytics-blog/guide-to-sample-datasets/>

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## Problems at Hand

*What is the problem I want to solve?*

The 21st century where entertainment and communication through various devices has become a necessity, each telecom company need to know how to attract new customers as well as retain customers. In an environment where competition is cut throat it is crucial to look at previous data and analyze it to find the trends and predictions to see how to reduce the customer churn rate.

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## Client and Purpose of Capstone

*Who is my client and why is this problem important to them? what will my client have to do or decide based on my analysis that they wouldn't have otherwise?*

The clients range from CEO's at various telemarketing companies who want maximum business for their company to marketing firms that want to know what factors to target in order to reduce churn rates in their new campaign. The purpose of this capstone would be to take the data provided by IBM and break it down to answer questions about clientele and what variables are likely to help retain a customer. Thus generating a loyal customer base which helps revenue.

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## Data

*What data will I use for this? How will this data be acquired?*

The data being used for this is generated by IBM for educational purposes about a telecom company which sells data plans as well as internet and television. This data is being used to evaluate which plans generate the most sales and also how and possibly if we can minimize customers from churning.

The dataset consists of 147,924 entries with 7044 rows and 21 columns. The column variables and their descriptions are:

Variable	Description
customerID	Customer ID

genderCustomer	Gender (female, male)
SeniorCitizen	Whether the customer is a senior citizen or not (1, 0)
PartnerWhether	The customer has a partner or not (Yes, No)
DependentsWhether	The customer has dependents or not (Yes, No)
tenure	Number of months the customer has stayed with the company
PhoneService	Whether the customer has a phone service or not (Yes, No)
MultipleLines	Whether the customer has multiple lines or not (Yes, No, No phone service)
InternetService	Customer's internet service provider (DSL, Fiber optic, No)
OnlineSecurity	Whether the customer has online security or not (Yes, No, No internet service)
OnlineBackup	Whether the customer has online backup or not (Yes, No, No internet service)
DeviceProtection	Whether the customer has device protection or not (Yes, No, No internet service)
TechSupport	Whether the customer has tech support or not (Yes, No, No internet service)
StreamingTV	Whether the customer has streaming TV or not (Yes, No, No internet service)
StreamingMovies	Whether the customer has streaming movies or not (Yes, No, No internet service)
Contract	The contract term of the customer (Month-to-month, One year, Two year)
PaperlessBilling	Whether the customer has paperless billing or not (Yes, No)
PaymentMethod	The customer's payment method (Electronic check, Mailed check, Bank transfer (automatic), Credit card (automatic))
MonthlyCharges	The amount charged to the customer monthly
TotalCharges	The total amount charged to the customer
ChurnWhether	The customer churned or not (Yes or No)

##	customerID	gender	SeniorCitizen	Partner	Dependents	tenure	PhoneService
## 1	7590-VHVEG	Female	0	Yes	No	1	No
## 2	5575-GNVDE	Male	0	No	No	34	Yes
## 3	3668-QPYBK	Male	0	No	No	2	Yes
## 4	7795-CFOCW	Male	0	No	No	45	No
## 5	9237-HQITU	Female	0	No	No	2	Yes
## 6	9305-CDSKC	Female	0	No	No	8	Yes
##	MultipleLines	InternetService	OnlineSecurity	OnlineBackup			
## 1	No phone service	DSL	No	Yes			
## 2	No	DSL	Yes	No			
## 3	No	DSL	Yes	Yes			
## 4	No phone service	DSL	Yes	No			
## 5	No	Fiber optic	No	No			

## 6	Yes	Fiber optic	No	No	
##	DeviceProtection	TechSupport	StreamingTV	StreamingMovies	Contract
## 1	No	No	No	No	Month-to-month
## 2	Yes	No	No	No	One year
## 3	No	No	No	No	Month-to-month
## 4	Yes	Yes	No	No	One year
## 5	No	No	No	No	Month-to-month
## 6	Yes	No	Yes	Yes	Month-to-month
##	PaperlessBilling		PaymentMethod	MonthlyCharges	TotalCharges
## 1	Yes		Electronic check	29.85	29.85
## 2	No		Mailed check	56.95	1889.50
## 3	Yes		Mailed check	53.85	108.15
## 4	No	Bank transfer (automatic)		42.30	1840.75
## 5	Yes		Electronic check	70.70	151.65
## 6	Yes		Electronic check	99.65	820.50
##	Churn				
## 1	No				
## 2	No				
## 3	Yes				
## 4	No				
## 5	Yes				
## 6	Yes				

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## Outline

- 1.Find Data on Customers
  - 2.Clean the data using dplyr and tidyr
  - 3.Analyze the data using statistics
  - 4.Add plots and graphs to make the data visually appealing and informative
  - 5.Use a predictive model to find if the customer is likely to churn based on the data
  - 6.Organize and notate your analysis into an easily understandable report
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## Deliverables

*What are your deliverables?*

My deliverables will consist of a report on my findings, a slide deck, and R code used to analyze the data.