Analyzing Customer Churn of Databel

For subscription-based businesses, reducing customer churn is a top priority. In this Power BI case study, we'll investigate a dataset from an example telecom company called Databel and analyze their churn rates. Analyzing churn doesn't just mean knowing what the churn rate is: it's also about figuring out why customers are churning at the rate they are, and how to reduce churn. We will answer these questions by creating measures and calculated columns, while simultaneously creating eye-catching report pages.

Let's open the dataset and create the metadata which will come handy later.

Metadata:

1. **Customer status:**

   Customer ID: The unique ID that identifies a customer

   Churn Label: Contains "Yes" or "No" to indicate if a customer churned

   Churn Reason: The particular reason why the customer ended the contract

   Churn Category: Groups multiple churn reasons together for analysis purposes
2. **Demographics**:

   Gender: The gender of the customer, indicated by "Male", "Female" or "Prefer not to say"

   Under 30: Indicates if the customer is under 30 with "Yes" or "No"

   Senior: Indicates if the customer is 65 or above with "Yes" or "No"

   Age: The age of the customer
3. **Contract information:**

   Number of customers in a group: Number of customers part of the group

   Group: Indicates if the customer is part of a group contract.
   A group contract offers advantages and is generally cheaper.
   Contains “Yes” or “No

   Phone Number: Phone number of the customer

   State: The code of the state where the customer lives

   Payment Method: Preferred payment method of the customer indicated with “Credit Card”, “Direct Debit” or “Paper Check

Contract Type: Contains “Month to Month”, “One Year” or “Two Year”

STEP 1— Data Check:
The first step in any analysis is doing a data check. First, we'll create two measures to check if the count of customer ids is equal to the count of unique customer ids.

This check is particularly important, because in case there are duplicate rows we might double-count costs later.

We create a table to store all the measures and we name it calc.

We will create two new measures and name them:

- Number of Customers using COUNT()
- Number of Unique Customers using DISTINCTCOUNT()

We found out that measures have the same values.

Step 2— Calculating Churns:
It will be extremely useful to have a measure that calculates churn before deep-diving into the analysis. There is a column called Churn Label that indicates "Yes" or "No", but this column isn't the easiest to work with.

We'll convert this column to a binomial column indicating if the customer churned or not. We will use that to calculate the churn rate.

We will create a new column and we name it churned.
The idea of the DAX is,
Churned = IF('Data'[Response] = "Yes", 1, IF('Data'[Response] = "No", 0, BLANK()))
We kept BLANK() just in case, if there is neither YES or NO.

We found out that almost 27% of customers are churning, so we need to do further investigation.

Step 3— Investigating Churn Reasons:
The logical next step is to investigate the different reasons why customers churned. Your job is to create a visualization listing the different reasons why customers churn.

We found out top 3 reasons are:

- Competitor made better offer
- Competitor had better devices
- Attitude of support Person

Step 4– Investigate Demographics
We already found some key insights. We know the average churn rate is around 27%, and that the main reason why customers churn is related to competitors. This could raise questions such

as "Is Databel competitive enough?". We also discovered that the churn rate in California is abnormally high at 63.24%, but it does sound a bit too early to make any general conclusions. We don't have a clear explanation yet for the relatively high churn rate of 27%, and there are still so many columns we need to analyze.

We started creating calculated fields from the get-go to measure the churn rate. This was a great start, but now that we're a bit deeper in the analysis we should make sure we have a holistic analysis plan. Looking at the metadata sheet it's easy to realize we only used a handful out of the 29 columns in the database so far. It's a good practice to have a structured approach to our analysis.

The metadata in the sheet is grouped in different categories, so let's follow that approach when analyzing the data. We can create different pages in Power BI to analyze these different topics. Not every analysis will reveal insights, but nonetheless, it's important to do our exploratory analysis thoroughly.

First we gather the categorized demographic variables related to age in a new column called Demographics to end up with a column with three categories: "Senior","Under 30", and "Other".

Step 5– Inspecting Groups
Databel offers group contracts to customers from the same household. The advantage for the customer is a discounted rate, while it's a great way for Databel to grow its customer base. Our plan is to analyze if customers that are part of a group indeed have a lower phone bill, and if it has an impact on the churn rate.