

# Buisness Understaning

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## 1 Summary

SMEs can change their source providers for different reasons. In this section, I will mention those reasons and then starts to talk about how ever reason motivated me to look for a certain feature so that we will have a robust model at the end. The reasons I will talk more about are:

1. Having an unstable service.
2. Financial reasons.
3. Sustainable and environmental reasons.
4. Having better alternatives.

The quality of service is very important no matter which type of customer we are talking about. Due to this fact, I will try to see if we can have access to

- Number of time that our client ran out of service
- The rating of our customer services filled by our customers

All corporate no matter what tend to maximize their profit. In addition, small cooperates are mainly interested in finances as they may not have a strong financial background[1]. Hence, corp orates will tend to have better managerial plans for reducing the consumption[1]. Moreover the electricity prizes should be affordable for them and to still also allow a good profit margin for the corporates. As a result, I recommend tracking:

- Current prize they are paying.
- Their consumption of Electricity.
- The plan they are enrolled in.
- Their yearly income.
- Their yearly profit.

Meeting the sustainable development goals by trying to use environmental friendly sources, has been a growing interest for corporates. Hence we will see if our customers are interested with their carbon footprint or not.

Since our client starts to struggle after the liberalization of energy market. Therefore, tracking the cities of our customers and seeing how many competitors in these areas would be an instrumental feature.

## 2 Required Features

Features list		
Feature Name	Data type	Values range code
Corporate Name	Str	
Corporate location	Str	city name
How long they've been with our client	Str	Date
Company's yearly revenue	Int	In Millions of dollars
# of providers in this area	Int	# of clients that provide services to SMEs in this city
Current price	Int64	In thousands of dollars
Electricity consumption	Int64	measured in kWh
Are they concerned with carbon footage	Bool	Yes/No
How often the services has been cut before	Int	# of times
Plan type	Str	plan they are currently enrolled in
How they rate our customer services	Int	Discrete # of ratings from 0 to 10
Have they churn	Bool	Yes/No

## 3 Analytical Model

As we have seen from the previous table most of our features are numeric with few categorical data that can be converted into a numeric one. We have variety of different models that can be used. Hence I will try a

- SVC:  
SVCs are robust in dealing with noise and getting good results. Moreover, it's a non-parametric model, so we are not assuming a shape for the data which can be useful in complex data.

- Naive Bayes:  
In case I have seen the data is normally distributed, I'll try to fit a Naive bayes.
- KNNs:  
Since we are interested in figuring out which customers have churned, then getting the ones that are most similar to them may be very useful.
- XGBoost:  
since we still have some categorical data, then ensembled versions of the tree can be very useful.

## 4 References

1. <https://www.utilitydive.com/spons/4-things-businesses-need-feom-their-energy-provider/549133/>