Executive summary template

Situation

- Powerco is experiencing customer churn, they assume that the churn is driven by the customer price sensitivities, one possible strategy is to offer customers who have high probability to churn a 20% discount

Machine Learning Modeling

- After the data cleaning, DEA and feature engineering, compared several classification model such as Logistic Regression, Random Forest , SVC. Finally a XGBoost model has been built to predict customers' churn probability, achieving an accuracy 0f 0.92 and AUC score of 0.72 on test set

Insight :-

Around 10% churn rate exists in current customers
Major features driving customer churn, including:
- ➢ A high net margin on power subscription
- ➢ A high gross margin on power subscription
- ➢ Original campaigns that customer first subscribed to, especially with 'lxid'

In the strategy suggested by the SME division head we offer a 20% discount to all customer targeted. However, this might not be optimal either. We assumed before that customers offered a discount will not churn. However, that may not be true in reality. The discount may not be large enough to prevent churn.

In fact, we can predict the churn probability for each customer as a function of price, margin and other factors. Therefore, we can try to find a strategy for each customer that optimizes either their expected revenue or profit.

In order to go further, we'll need to try to:

Change the level of discount offered overall Predict the response of customers to that discount (i.e., the churn probability) based on how much that discount affects their prices, the revenue and margin.
Take care that we've applied the discount to all affected variables. To make this easier, we might want to retrain our model using a simpler set of variables where we know that we can factor the discount correctly into the predictors.
Find the discount level that balances customer retention vs the cost of false positives.
In fact, this could be turned into a 2D optimization problem:

Objective:
maximize net revenue (i.e. including the benefits of true positives and the cost of false positives)
Decision variables: Level of discount offered, and Fraction of people who are offered a discount An even more sophisticated strategy is to find the right level of discount for each customer that maximizes their predicted revenue or margin.