Proposal for churn prediction for Telecommunications Media and Technologies (TMT) companies

The mobile telecommunications industry is highly competitive. According to Consumer Affairs as referenced by EY, it is estimated that 97% of all Americans own a smartphone. Because of this, maintaining a customer base cannot simply revolve around attracting new customers. Because of this market saturation, other companies are looking to steal our customers. Therefore it is important to find ways of identifying customers who are about to churn, in order to retain them.

Project Goal

The goal of this project is to build a model that can accurately predict which customers are most likely to churn in the near future. This will allow the company to take proactive steps to retain those customers and reduce overall churn rate.

Audience

The primary audience is for those within the industry. It may be of particular interest to those in customer acquisition or customer retention roles. However, if successful this could theoretically be used with any industry with modifications.

Data Source

The project will utilize a dataset available on kaggle, which contains information on 7,043 customers. The data includes:

- Services subscribed (phone, internet, online security, etc.)
- Customer account information (tenure, contract type, payment method, etc.)
- Customer demographic data (age, gender, partner status, dependents)

Potential Challenges

The project might encounter some challenges:

- **Data Quality:** The accuracy of the model heavily relies on the quality of data. Any inconsistencies or errors in the data can impact model performance.

- **Model Interpretability:** While some models like Logistic Regression are inherently interpretable, others like Random Forest and Gradient Boosting can be more challenging to interpret.
- **Overfitting:** The model might overfit the training data and perform poorly on unseen data. Careful hyperparameter tuning and cross-validation can help mitigate this issue.

Project Deliverables

- **Churn Prediction Model:** A trained and validated machine learning model that can predict customer churn with a high degree of accuracy. This will be documented through use of jupyter notebooks.
- **Technical Documentation:** Detailed documentation outlining the model development process, including data preparation, feature engineering, model selection, hyperparameter tuning, and evaluation.
- **Business Recommendations:** Actionable recommendations for the telecommunications company based on the insights derived from the model.