CUSTOMER CHURN PREDICTION – Phase 2

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INTRODUCTION:

In the previous phase, we clearly established our end goals, and we also explained what insights we intend to derive from this project.

In this phase, we will introduce cutting-edge techniques and tools to advance our comprehension of CUSTOMER CHURN PREDICTION. In the design phase of customer churn prediction, the key objectives include finalizing model selection, feature engineering, and data integration strategies, ensuring model evaluation metrics and scalability are in place, and establishing ethical considerations for fair predictions and real-time responses to customer churn.

Below is an in-depth description of the design and algorithms applied in this project.

DATA INTEGRATION:

Data integration is a process that combines and unifies data from diverse sources, enabling businesses to access, analyze, and derive insights from a comprehensive dataset. This integration typically involves transforming data into a common format or structure and ensuring its quality and consistency. It is crucial for customer churn prediction projects as it allows for a holistic view of customer data, contributing to more accurate predictions and effective retention strategies.

DATA PREPARATION:

Data preparation is the process of cleaning, transforming, and organizing raw data to make it suitable for analysis or model training. This includes handling missing values, encoding categorical variables, normalizing data, and ensuring data quality. In the context of customer churn prediction, effective data preparation is essential to build accurate and reliable predictive models.

DATA MODELLING:

Data modeling in the context of customer churn prediction is a pivotal phase, where the preprocessed customer data is structured and organized to facilitate efficient analysis within IBM Cognos Framework

Manager. A well-crafted data model should establish relationships between relevant tables, define key churn metrics, and allow for predictive analysis. To enhance customer churn prediction, it's crucial to create a time-based dimension to track churn trends over specific periods. This data model forms the foundation for generating insightful reports and dashboards, simplifying the process of accessing and comprehending critical churn-related metrics and KPIs.

DESIGNING REPORT :

Designing reports is a crucial phase in the customer churn prediction project, using IBM Cognos to visually convey data insights effectively. In this process, the project team selects appropriate visualizations like charts, graphs, and tables to represent key churn-related performance indicators (KPIs) and metrics. Effective report design emphasizes clarity, relevance, and user-friendliness, ensuring stakeholders can swiftly comprehend critical insights. Moreover, well-thought-out layout and intuitive navigation enhance the user experience, simplifying data exploration and comprehension. Leveraging IBM Cognos tools, such as Cognos Analytics or Report Studio, custom reports can be tailored to specific churn prediction objectives, offering a dynamic and interactive platform for data-driven decision-making and ongoing improvement.

ANALYSIS :

In the analysis phase of customer churn prediction, data is

thoroughly examined to uncover patterns and insights related to customer behavior and performance metrics. These insights drive actionable strategies, which may include targeted retention efforts, personalized communication, or product/service improvements. This iterative process ensures that the business adapts to reduce customer churn and aligns with organizational goals and customer satisfaction.

MACHINE LEARNING MODELS :

Machine Learning Models: Machine learning models are a diverse set of algorithms used to analyze data and make predictions based on patterns and relationships within the data. In customer churn prediction, various machine learning models can be employed, such as decision trees, random forests, support vector machines, and neural networks. These models learn from historical customer data to predict the likelihood of churn.

Regression Models: Regression models are a specific category of machine learning models used for predicting numerical values. In the context of customer churn prediction, regression models like logistic regression are valuable for estimating the probability of a customer churning (a binary outcome – churn or not churn). These models use customer features (such as demographics, usage patterns, etc.) to calculate the probability of churn.

CONCLUSION :

Here, we have discussed the project design that we will follow and the machine learning models we will utilize in

this project