Business Case: Redefining Uber's Customer Journey with Data-Driven Strategies

Executive Summary

Uber, an industry leader in the global ride-sharing market, has transformed the way individuals commute. Despite this, there is a constant need to refine its service offerings to retain its edge in the increasingly competitive marketplace. This business case underscores the essentiality of leveraging data analytics to bolster Uber's customer service process, ameliorate overall efficiency, and enhance user experience. We have identified strategic opportunities in driver matching, accurate arrival time estimations, and customer support services, coupled with the task of determining the optimal city for the introduction of new features in the Canadian market.

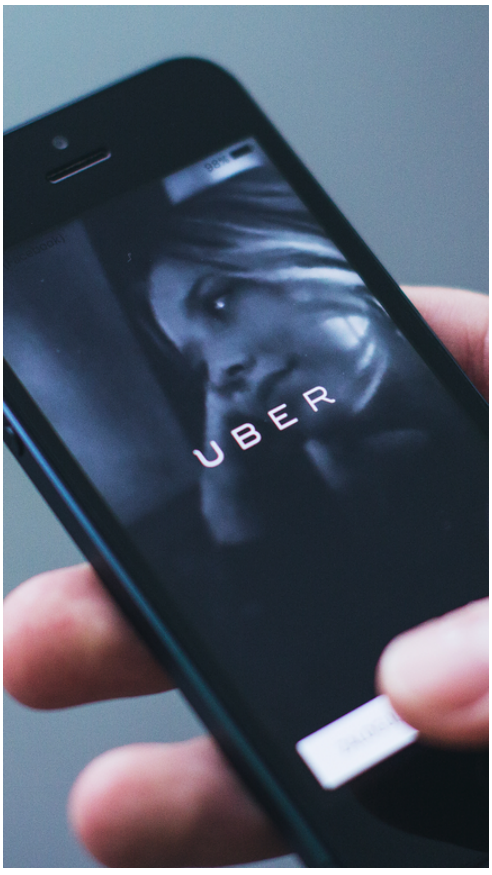
Objectives

- **Enhancement of Driver Matching**: The objective is to utilize statistical analysis and machine learning algorithms to improve the precision and efficiency of the driver-passenger matching process. An improved matching process will effectively diminish wait times, increase driver utilization, and provide an enhanced ride experience for customers.

- **Augmentation of the Arrival Time Estimates**: The aim is to bolster the reliability and accuracy of Uber's predicted arrival times. By doing so, we can diminish the level of uncertainty experienced by riders, fostering an increased level of user satisfaction and trust in the Uber platform.

- **Refinement of Customer Support**: Our objective is to leverage machine learning technology to automate and streamline the customer service process. This will enable swift and precise categorization of customer complaints and generation of automated responses. This approach is designed to boost resolution efficiency, thereby cultivating an improved customer support experience for Uber users.

- **Selection of Optimal City for New Feature Launch:** This objective centers around employing a systematic and data-driven approach to identify the most suitable city for launching and testing new features in the Uber app within Canada.



Criteria Selection

- **Driver Matching**: For optimizing the driver-passenger matching process, we employed K-means and DBSCAN clustering techniques. Key variables such as day of the week and ride durations were analyzed to discern patterns which can be utilized to forecast demand and optimize supply.

- **Arrival Time Estimates**: Multiple regression models were compared using historical data such as traffic, distance, time of the day, and day of the week. The KNeighborsRegressor model emerged as the superior choice based on performance metrics, namely, Mean Square Error (MSE) and Mean Absolute Error (MAE).

- **Customer Support**: The BERT-based text classification technique was chosen for its ability to automate the categorization of customer complaints and generate relevant automated responses. This method will ensure a smooth and efficient resolution process.

- **Optimal City Selection**: The Analytical Hierarchy Process (AHP) was followed to evaluate potential cities based on critical criteria such as population, income, and transportation infrastructure. This meticulous selection process will ensure the chosen city provides the best environment for successful deployment and testing of new features.

Gautham Sathyanarayanan & Mahroosa Ibtesaam