TenthPlanet

Location Optimization of ATM networks to maximize transactions and revenue

Description

Use of the Automated Teller Machine (ATM) has grown exponentially over the past few years due to its ease of use, increased functionality, proximity to high foot and vehicle traffic areas, and customer adaptation to technology. A lot of key factors are taken into consideration while making decision on where to place an ATM and operationalize the same. The solution makes use of advanced machine-driven algorithm to assist with the decision-making process.

Challenge

- Identify ATM's that needed fine-tuning in terms of operationalization or shut down in order to minimize the operational costs, while taking multiple key factors into considerations such as ATM footfalls, overall transactions inclusive of deposits, withdrawals and other miscellaneous account services.

- The customer wanted to include additional information such as nearby places of interest, restaurants, competitor ATM, health service providers, supermarkets, cash points and small business while providing the outcome.

- Data from multiple sources needed to ingested into one single source. Since, the data was from multiple sources such as flat files, database and API's, a dedicated data pipeline needs to be built in order to overcome these shortcomings.

Solution

- The first step was to create a reliable data from multiple data sources to characterize the transactions, footfalls and other key factors. This was achieved using an automated data pipeline which collected data from multiple disparate systems and cleansed the same.

- Additional data such as region-based population data, housing and commercial data was obtained through third-party sources. Google Places API was used to fetch key information located within 500 meters of the ATM such as cashpoints, competitor ATM, hospital, restaurants and other places of interest.

- By implementing machine driven algorithms a prediction was provided to determine the cash demand based on the nearby places of interest. Also, by implementing a graph model, a distribution model was provided which provide insights related to the population or footfall distribution in the event of closure of the ATM. This simulation will assist in terms of decision making related to the termination of the ATM.

Benefits

- Manage ATM cash management and optimization by leveraging the power of data and machine-driven algorithms. Instead of solely relying on corporate policies and personnel experience, these decisions can be made smartly, thus reducing the human interference and enhancing the cash management flow.

- Ability to obtain key insights while terminating a ATM. These insights relate to a what-if scenario, where it would project the population distribution in case of ATM termination or closure.

- With many key additional data is being collected, the same can be used to arrive at other additional insights such as placing additional ATM in places where the footfalls and cash distribution are high.