Analysis of Wi-Fi usage data to identify customer experience improvement areas

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Project Background

The telecom industry generates over 33.8 billion in revenue and is highly saturated. The services offered by the companies are similar and the providers are moving up the supply chain (a term also called as blurring of the industries). It also experiences a high customer churn and switching. Thus customer experience has become an important differentiating factor for these companies. Since internet (especially Wi-Fi is an integral part of everyone's life, it becomes an important gateway to analyse and identify opportunities for telecom companies). The company has come up with a new product which helps customers enhance their experience in Wi-Fi. The aim of this project is to analyse the journey of the customer by segmenting the customers based on WiFi usage in a unique way to derive meaningful customer experience enhancement points in their lifestyles, purchase behaviour, demographics and devices.

Data and Methods

The datasets used in this project consisted of customers wi-fi usage, customer demographics and customer account information. Geographical dataset was created from the customer information dataset.(see diagram below) Clustering methods(unsupervised/supervised such as K-means and Wards) were used to identify unique segments of the customer based on the Wifi usage data segment. These were then profiled based on the other two datasets. Segment Profiler tool from SAS and Decision Trees/Regression techniques were used for this. The results were visually plotted using various multi combination graphs such as Radar graphs to see the variance. Tableau was also used for geographical analysis and data visualisation to see if there any regional differences existed in the consumption of internet or the types of devices used. Literature review was conducted to see what are the trends in competitor telecom companies and the attitudes and behaviour of people towards consumption of internet. This was used to generate various hypothesis which was verified with the results obtained.
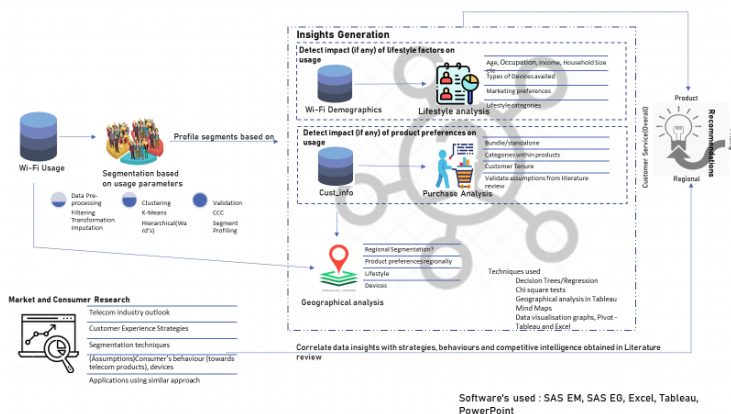
Key Findings

Based on the clustering results, segmentation of users into five categories was found to be optimal. Areas of possible dissatisfaction amongst customers as certain clients were not observed on the optimal combinations of amount of data consumed, number of devices, type of house and speed. Possible lifestyle and psychological drivers behind heavy and light users are deduced. Results also showed lack of product bundles with plans catered to the users with different usage patterns. Clients having a high number of devices in big households were also found on lower plans with lower bandwidth. Hypothesis that higher the lifestyle categories higher the data usage and number of devices was not in agreement with observations in other studies. Low usage customers were also on higher up on the lifestyle scale. Lack of technical skills was observed as drivers behind low usage of data. This shows that it is important to conduct internal analysis of clients as the preferences might not be similar to the general survey (conducted by survey companies). Differences were found in the regional wise distribution of usage and with the west showing regions of less consumption. Examples include tie-ups, broadcasting rights, etc to enhance the customer experience across the entire lifecycle are discussed. Ideas on this line such as passing on performance data and customer review to router manufacturers directly to enhance customer satisfaction. Approach towards tailored customer service based on the usage is also discussed. This is still a niche area amongst the companies. Certain recommendations such as the outlets that the clients visit, house age, ethnicity, hobbies are provided in the annexure that can be used by the marketing team in developing profiles for targeted advertising. our findings are in sync with the digital divide approach which states that if the issues of internet access gap are fixed then there will be homogeneous usage of data irrespective of the socio-economic, cognitive and cultural differentiation.

Value of the Research

There exists a gap in the literature regarding the use of Wi-Fi usage metrics to tailor customer experiences in the telecom industries. Very few highlights the importance of incorporating data usage (especially WiFi) as a key metric in the business functions even though it is one of the most common gateway to the internet and an important link between the consumer and the company. This report provides a framework by which the company can apply this metric to study the outlook of its customers in strategies such as product, pricing, geographical supply chain and customer service.

Software's used : SAS EM, SAS EG, Excel, Tableau, PowerPoint