

PROJECT PROPOSAL FOR ACME INNOVATIONS

Submitted by: IGNITE ANALYTICS

IGNITE ANALYTICS is a dynamic startup consultancy passionate about empowering businesses through data-driven Insights. As a startup, we constantly explore cutting-edge techniques to get the best out of your customer's data. We prioritize open communication and working together to find the perfect solution to your needs. We offer competitive rates while delivering top-tier data analysis expertise. Our enthusiastic and dedicated team is committed to your success. We are sure that our expertise in the analytics field will empower ACME innovations to get a clear understanding of your customers and the insights we provide will significantly contribute to business growth. In today's competitive world, it is tough to retain customer loyalty. We are going to gain a deeper understanding of your customer's demographics, spending habits and overall behavior that helps your esteemed organization to tailor your offering which will lead to building a strong relationship with the customer and help in retaining them for a long time.

METHODOLOGY

Data Exploration & Cleaning: To find out the errors or anomalies in your customer's data we examine the data set by cleaning and get it ready for analysis. We standardize the demographic data across several variables. We then extract product information from purchase history and organize that as transactional data.

Model Selection: We plan to use 2 models to get the best of your customer's data. To identify the trends in frequently purchased sets of orders we use Association Rule Mining. Also, Based on customer's purchase behavior and demographic characteristics we segment customers data into distinct groups using K-means clustering.

Model Training & Evaluation: After the Model selection process, we train those data models with the cleaned datasets. i.e. after scaling the clustered data, we find the optimal number of clusters using the elbow method and silhouette plot.

METRICS

The metrics that we consider are increased sales, improved customer retention (we do it by personalized marketing), and higher engagement rates through targeted campaigns.

RECOMMENDATIONS

Since we are deeply analyzing customer purchase behavior it is important to create a focused marketing campaign i.e. suggesting to customers what they usually buy. This is going to retain them for a long time because they will see what they want. This will eventually improve your sales. Also, the Apriori algorithm we use will help your company locate product bundles and cross-selling strategies.

CUSTOMER SEGMENTATION

We redefine the transaction data into the Apriori algorithm i.e. we create association rules with transaction information as rows and assign products in columns. By leveraging the purchase history, we do customer segmentation by creating features like total purchased items, categories the frequency of purchased items and so on. Then we cluster them and divide them into groups using K-means.

CONCLUSION

The results can be used in advertising campaigns, stocking popular items that are frequently purchased in pairs. Also, since we are segmenting customers based on their purchase behaviors, we could set up a dedicated customer service for specific categories.