Real-time Data Visualization Solution for a Beauty and Wellness E-Commerce Company

- **A Case Study**

Client

A fast-growing ayurvedic skin, hair, and beauty products brand headquartered in Chandigarh, India. It boasts a large customer base across the USA, UK, and South East Asia. The organization majorly operates in the e-store space and has more than 70 products in the market.

Problem Statement

The organization was looking for data engineering and business intelligence solutions to better manage day-to-day operations, analyze their large data and improve product sales with a focus on customer retention.

Some more concerns were as follows:

- Reliance on outdated methods such as Microsoft Excel Spreadsheets to track and analyze data. It was hard to manage the large amount of data of the organization on Excel and moreover, the reports were calculation intensive. A visual dashboard was required to analyze the data in real-time and gain actionable insights.
- There were multiple sources of data and the organization lacked a central data warehouse to aggregate the data from various sources for data analysis, data mining, etc.
- No proper system to monitor inventory levels better and forecast product demand.

Proposed Solution

The various concerns shared by stakeholders were understood by our team in depth. A proper workflow was planned to execute the solution.

- The data from multiple sources (Shopify, Amazon Seller, etc.) were sourced and stored in Google BigQuery, a centralized enterprise data warehouse. The data migration from various sources to the server was automated.
- The data was cleaned and unnecessary segments were removed for better interpretation. For tracking recurring users and their cohorts, historic data from legacy systems was structured and integrated into the required format.
- Since the client was looking for an affordable solution we leveraged the business intelligence tool - Redash, to build dashboards and visualize the data better. Later, we switched to Power BI, a leading business intelligence solution, for gaining real-time actionable insights. Various reports were built to track the business KPIs including a cohort analysis segment to track the retention of customers.

Business Impact

- The efficiency of the overall operations at the organization increased. Helping the client gain a 16% increase in the sales of their products with a significant improvement in the slow-moving products.
- The customer retention rate increased by 5% by end of the financial year and customer lifetime value improved to about 3 times the customer acquisition cost.
- Better control of inventory ensured that the items never went out of stock on the various e-commerce sites.
- Our client raised funds for the business and the valuation was expected to grow at a CAGR of 16.06% (by 2024) during the forecast period.