E-Commerce Sales Optimization

Data analytics is the foundation of any business that wants to succeed in today's world. Data analytics, particularly when it comes to e-commerce, assist sellers in better optimizing their sales strategy by acquiring insightful data.

To make educated and data-driven decisions, data analytics refers to the process of examining customer purchasing and preference trends, sales, and a variety of other data points. Whether you sell on Amazon or another e-commerce platform, you may significantly increase sales and enhance your overall sales strategy by closely monitoring certain indicators.

It is quite challenging to examine the data and improve the sales without a database since e-commerce sales are too large and contain hundreds of competing items. The database we are wanting to design will keep track of all Products, Customers, and Sellers, and will capture the relations between them.

# **Constraints:**

Since it is a very complex system, we would be modeling a small portion of it limited to US. Hence we have applied some constraints to the system.

* We assume every customer will give a review so, we could analyze the product's reliability.
* We will assume there is no return from the customer.
* There will be a unique seller for each product.
* Product cost remains the same once seller have fixed it.
* Ratings will be fixed to a scale of 1-5.
* Only one order per Customer.

# **Data Requirements:**

## **Customer:**

* The Database will have all the personal information of the customers. Each customer has a unique ID, Name, Phone Number, Email ID, and Address.

Customer places Order/s.

**Product:**

* Each product has a unique ID.
* Product’s name and associated cost, manufacturing company.

## **Seller:**

* Each seller has a unique ID.
* Seller’s name and address.
* All product IDs a seller is selling.

Seller can sell multiple products and no two seller’s sell same product.

## **Order:**

* Each order has a unique ID.
* All product ID’s in that order.
* Customer ID who placed the order.
* Date of an order(including time).

Order contains product/s. Also stores quantity of each product in that order.

## **Transaction:**

* Each transaction has a unique ID.
* Card information, card type and amount.
* Order ID to which the transaction is related to.

Each order has transaction.

## **Reviews:**

* Each review has a unique ID associated with the product sold.
* Each product can have multiple reviews from multiple customers.
* The review contains only the rating of the product.

Review will only have rating(numerical value between 1-5) and if a product has multiple ratings, average(mean) value will be stored. Also review will be taken for an individual product not for a whole order.

# **Business Goals:**

* Most purchased product.
* Best rated product(which has highest rating on scale 1-5).
* Best month of sales(which month has highest orders count).
* Best seller(who sold most products).
* City that has more orders.
* What time of a day more orders are taking place(can be used for Ads).
* Which products are ordered in combination(bundle discounts).
* Most used card types(for bank/card discounts).
* Which brand is most preferred?