# E-Commerce Data Analysis and Visualizations

An E-commerce company ran marketing campaigns to generate sales. They collected information on the type of device each customer used, the sale amount, total transaction for each day, etc. Here, we need to analyse the performance of the various marketing campaigns and understood its relationship with respect to user interaction and total sales. Finally, steps to improve campaign performance are discussed.

## Exploratory Data Analysis

### Data Dictionary

Data Dictionary explains what each column of the dataset represents

Column Name | Description

------------|------------

device\_created\_on | Device creation Timestamp

device\_type | Type of Device

operating\_system | Operating System on which user accessed the app

attribution\_created\_on | Attribution Campaign Timestamp

campaign | Marketing campaign name

user\_id | User Id

user\_created\_on | User creation Timestamp

name | User name

amount | Transaction amount

sale\_created\_on | Sale creation Timestamp

sale\_id | Sale Id

date | Sale created day

weekday | Day on which sale happened

item\_id | Item Id

**Task needs to be achieved**:

1. Acquire the data, dump the data into some of the databases (SQL, Mongo DB, Casandra local or cloud version)
2. Connect with the business user and try to get the understanding of the data attribute
3. Connect with the business user and try to get the understanding about the KPI (Key performance indicator)  
   A Key Performance Indicator (**KPI**) is a measurable value that demonstrates how effectively a company is achieving key business objectives
4. Connect with the business user with raw visualization and gather user experience and expectations feedback based on ease of use
5. Decide total number of dashboards based on user hierarchy and organization
6. Start building production-based dashboard
7. Below are the KPI which need to be captured

1. Relationship between Device Type and User Creation

2. Relation between Marketing Campaigns and User creation

3. Relation between Campaigns and Weekday

4. trend between sum amount of sale for top 10 campaigns across weekdays.

1. Send the Dashboard for a review for the stockholder
2. Performed UAT (user acceptance testing)
3. Go for the random test
4. Make it live
5. Share link and authorization for the user
6. Keep it in Hypercare for any modification

**Lastly, as a chronic over-achiever:**

* Find at least two unexpected phenomena in the data and provide a visualization and analysis to document their presence.

.