**Market Segmentation**

Market segmentation is the process of dividing a big target market into smaller group of consumers with some similarities like goegraphy, needs, behaviour etc.

**The task is divided among the team below:**

**Md Ismail Quraishi:** [1, 2, 3, 5]

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**Step 1: Deciding (not) to Segment:**

While making segmentation we have to keep some points so that we can make segment effectively.

* The author compares segmention with marriage rather than a date, it is because market segmentation is a long term process. If organization has patient and have a long time goal then go for segmentaion else not.
* Segmentaion requires changes, if the organization is ready for big changes then go for segmentaions else avoid.
* There are some cost for performing research and survey. If the organization is financially strong then segmentation should be successful.

**Step 2: Specifying the Ideal Target Segment:**

There are some standard criteria we should follow to make an effective segmentation. We have keep some points while making segmentation.

**Knock-out criteria:**

* All the members inside a segment/group must be homogenous/similar.
* Members from one segment must be dissimilar from the members of another segments.
* Segment should be large enough so that the generated profits should be greater than the expenses in making segmentation.
* Segmentaion must be matching the organization’s strength, so that organization have the ability to satisfy members’ needs.
* Members of the segmentaion must be identifiable so that organization can spot them int the market place.
* There must be a way to get in touch with the members of the segment.

**Attractiveness criteria:**

In addition to knock-out criteria also assign some attractiveness score to each segment based on how useful the segments are. For example : There are 4 segments where organization generates 40% of profits from segment two and 30% from segment four then we may assign a attractiveness score for segment One = 15, segment Two = 40, segment Three = 15 and segment Four = 30.

**Step 3: Collecting Data**

Data collection is most difficult part for any organization there are some way organizations use for data collection.

* **Survay Data:** Most of the organizations use survey data for market segmentation because survey data is cheap and easy to collect. But survey data can have a wide range of biases.
* **Internal Data Source:** Increasingly organizations have access to large amount of internal data that can be used for market segmentation analysis. It is easy to collect and use, represents actual behaviour of the customers.
* **Data from Experimental Studies:** This kind of data can be collected from research laboratory experiments. For example how customers reacts to a certain advertisements.

**Step 5: Extracting Segments**

In this step we will learn some famous clustering algorithms K-Means, Hierarchical clustering etc used for making segmentations.

**K-Means:** It is a distance based clustering algorithm which initiliazes K number of points then computes distance of each observations from each points then assing cluster labels to each obeservation which is nearest to K point again compute mean of the cluster and shift the point to the mean of the cluster and repeats process untill find best clusters.

**Heirarchical Clustering:**  These methods are most intiutive way of grouping data because they mimic how human would approach the tast of dividing a set of observations into k groups. Hierarchical clustering can be divided into two types, Agglomerative and Divisive.

Agglomerative clustering is that where select 1 point as a cluster then merge it with the nearest point and so on. Divisive clustering is that Where entire points are treated as one single cluster then break that cluster based on dissimilarities again and again.

**Linkage Methods used in Hierarchical Clustering:**

Single linkage: In this method nearest points from two clusters are selected for distance calculation. Single linkage is useful when there is very less noise in the dataset.

Complete linkage: In this method farthest points are selected for distance calculation.

Average linkage: Mean disctance is used between observation of two sets.