Team Report on Market Segmentation and Analysis (with case study)

By

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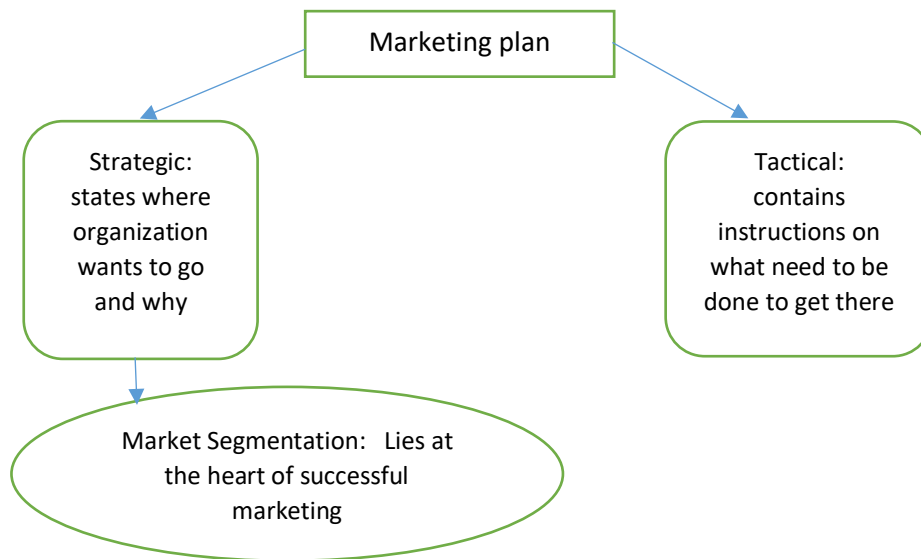
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Brief overview of Marketing and Market segmentation

- The purpose of marketing is to match the genuine needs and desires of consumers with the offers of suppliers particularly suited to satisfy those needs and desires.

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                        │  Marketing plan │
                        └─────────────────┘
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  ┌──────────────┐                        ╭──────────────────╮
  │ Strategic:   │                        │ Tactical:        │
  │ states where │                        │ contains         │
  │ organization │                        │ instructions on  │
  │ wants to go  │                        │ what need to be  │
  │ and why      │                        │ done to get there│
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   │ Market Segmentation:  Lies at │
   │ the heart of successful    │
   │ marketing                  │
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- Only after deciding the strategic marketing plan one can work with tactical marketing plan.

- Tactical marketing plan depends entirely on the strategic marketing plan, but the strategic marketing plan does not depend on the tactical marketing plan.

- Strategic marketing is the foundation of organisational success it must be good at all circumstances, one can afford to have a bad tactical marketing plan but not bad strategic marketing plan as good tactical marketing can never compensate for bad strategic marketing.

- Market segmentation helps marketing managers choose the right group of customers for a product and create the best marketing strategies to reach them. One of the key building block of strategic marketing, essential for marketing success as the most successful firms drive their businesses based on segmentation.

- Market segmentation means cutting markets into slices. Consumers belonging to the same market segments are similar in characteristics whereas consumers belonging to different market segments are very different from one another in characteristics.

- Based on market segment analysis, there are three types of market strategies: **Concentrated Market Strategy** (Focusing on one specific market segment), **Differentiated Market Strategy** (Targeting multiple segments with tailored marketing efforts for each), **Undifferentiated Market Strategy** (Using the same marketing approach for the entire market).

- Finer segmentation technique where each consumer represents their own market segment. Finer segmentation approaches are becoming more viable with the rise of e-Commerce and the use of sophisticated consumer databases enabling providers of products and services to learn from a person's purchase history about what to offer them next
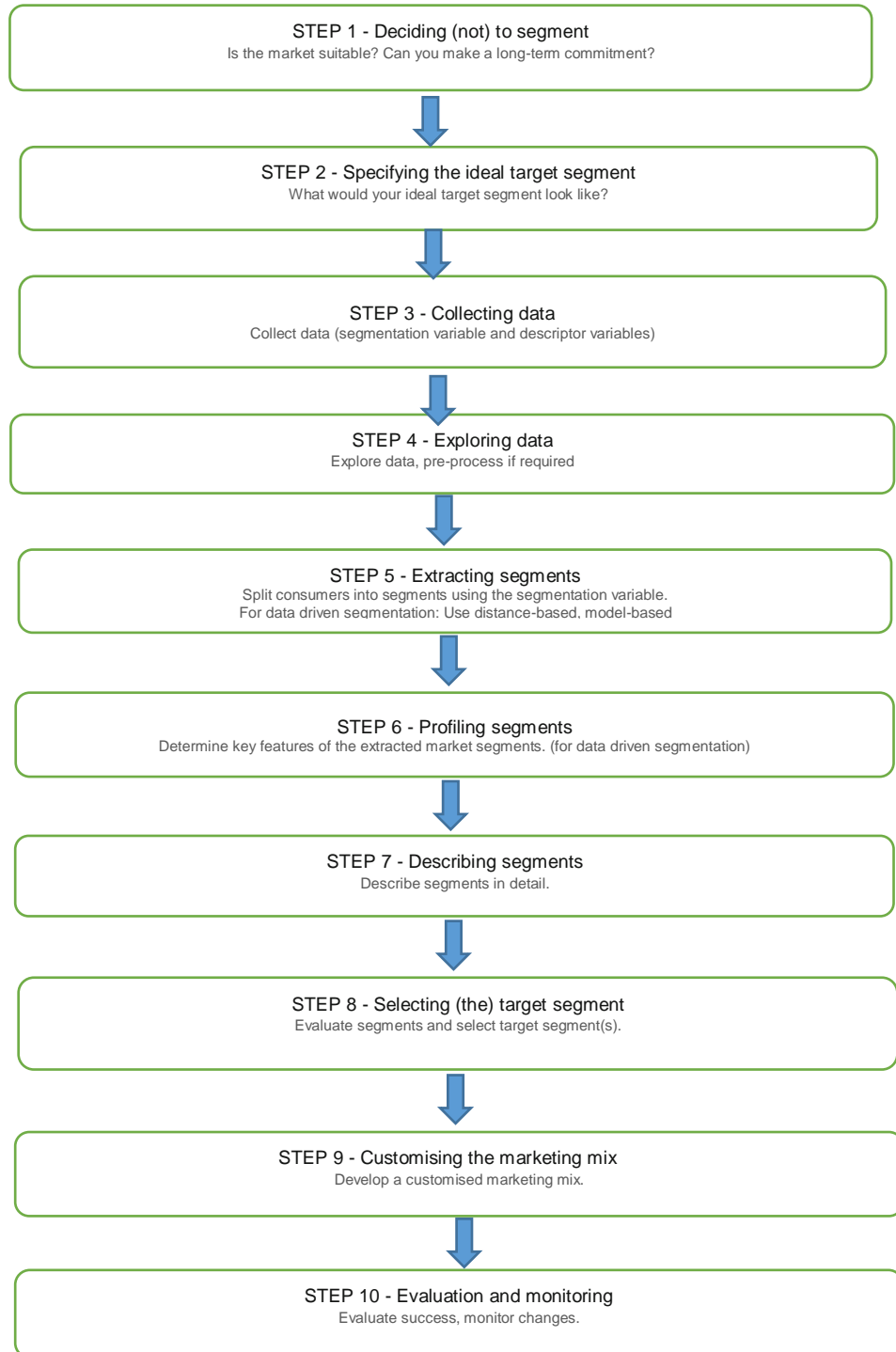
Market segmentation analysis

- The process of grouping consumers into naturally existing or artificially created segments of consumers who share similar product preferences or characteristics.

- Required: competent data analyst, and a user who understands the broader mission of the organisation. (**user mean the person or department in the organisation that will use the results from the market segmentation analysis to develop a marketing plan)

Clustering for segmentation
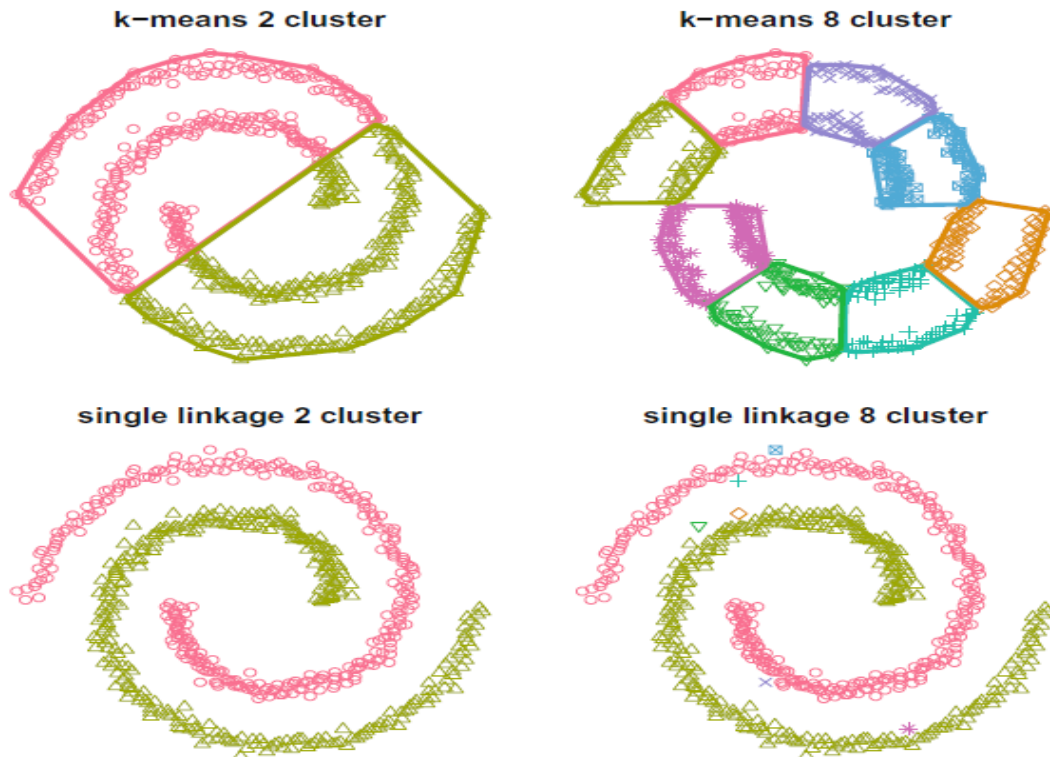
Ten steps of market segmentation analysis
(common-sense and data driven segmentation)

STEP 1 - Deciding (not) to segment
Is the market suitable? Can you make a long-term commitment?

STEP 2 - Specifying the ideal target segment
What would your ideal target segment look like?

STEP 3 - Collecting data
Collect data (segmentation variable and descriptor variables)

STEP 4 - Exploring data
Explore data, pre-process if required

STEP 5 - Extracting segments
Split consumers into segments using the segmentation variable.
For data driven segmentation: Use distance-based, model-based

STEP 6 - Profiling segments
Determine key features of the extracted market segments. (for data driven segmentation)

STEP 7 - Describing segments
Describe segments in detail.

STEP 8 - Selecting (the) target segment
Evaluate segments and select target segment(s).

STEP 9 - Customising the marketing mix
Develop a customised marketing mix.

STEP 10 - Evaluation and monitoring
Evaluate success, monitor changes.

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Steps of Market Segmentation:

Step 1: Deciding (not) to Segment:

- Long-Term Commitment: Market segmentation is not a one-time decision but a long-term strategy. Businesses must be willing to make ongoing changes in products, pricing, and marketing to support segmentation.

- Costs and Investments: Implementing segmentation requires money for research, surveys, advertising, and product modifications. A business should only proceed if the potential sales increase outweighs these costs.

- Organizational Changes: Companies may need to restructure their internal teams, focusing on customer segments rather than just products. This ensures continuous attention to different market groups.

- Management Support: Without leadership involvement, segmentation strategies can fail. Senior executives must actively support, finance, and oversee the implementation process.

- Potential Barriers: Resistance to change, lack of resources, poor communication, and absence of marketing expertise can hinder segmentation efforts. Organizations must evaluate and address these challenges before proceeding.

Step 2: Specifying the Ideal Target Segment:

- Involvement Throughout the Process: Businesses must actively participate in market segmentation, not just at the beginning or the end. Their input shapes data collection and segment selection.

- Two Types of Criteria: Organizations use knock-out criteria (essential, non-negotiable factors like size, identifiability, and reachability) to filter segments, and attractiveness criteria (such as profitability and growth potential) to decide the best segment.

- Different Evaluation Models: Various experts have suggested different segment evaluation criteria, but commonly considered factors include measurability, accessibility, profitability, and market stability.

- Structured Decision-Making: A structured approach, such as a segment evaluation plot (which maps segment attractiveness against business competitiveness), helps organizations select the right segment systematically.

- Collaboration Across Departments: Market segmentation affects multiple departments, so input from different teams ensures a well-rounded and practical strategy. Agreement on key criteria should involve executives and stakeholders.

Step 3: Collecting Data:

- Data Sources: Data for market segmentation can come from surveys, observations (e.g., scanner data), or experiments. The ideal source should reflect actual customer behaviour rather than self-reported information.

- Segmentation Criteria: Before collecting data, organizations must decide on the segmentation criterion—geographic, socio-demographic, psychographic, or behavioral.

- Data Quality Considerations: The dataset should be complete, contain relevant items, and avoid correlated or biased responses. A suitable sample size should be at least 100 times the number of segmentation variables.

- Internal Data Usage: Companies can use internal data (e.g., loyalty program data, online purchase history). However, internal data may over-represent existing customers and miss potential new consumers.

- Experimental Data: Organizations can conduct field or lab experiments to understand customer responses to advertisements, pricing, and product features.

Step 4: Exploring Data:

- Data-Preprocessing: Before extracting segments, data must be cleaned and checked for missing values, measurement levels, and dependencies.

- Understanding Distributions: Organizations should examine the distribution of each variable to detect patterns, biases, and segmentation potential.

- Choosing the Right Algorithm: Data exploration helps determine which segmentation algorithm to use, ensuring better accuracy in segment extraction.

- Checking for Outliers: Outlier detection ensures that extreme values do not distort segmentation results.

- Exploring Correlations: Relationships between variables (e.g., income vs. spending habits) should be analyzed to create meaningful segments.

Step 9: Customizing the Marketing Mix:

- Integration with Segmentation-Targeting-Positioning (STP): Market segmentation must align with positioning and competitive strategies. The STP approach (Segmentation, Targeting, and Positioning) ensures that marketing efforts are tailored to the selected segment.

- The 4Ps Framework: The marketing mix is commonly structured around Product, Price, Place, and Promotion. Each element must be adjusted based on the target segment's preferences.

- Product Adaptation: Companies may need to design new products or modify existing ones to meet the expectations of the selected market segment. Factors like branding, packaging, and features must align with segment needs.

- Pricing Strategy: Pricing should reflect what the target segment is willing to pay. Discounts, premium pricing, or special budget-friendly product lines can help attract and retain customers.

- Distribution (Place) & Promotion: Businesses should select the right distribution channels (online, retail stores, direct sales) based on customer preferences. Promotional strategies (advertising, PR, influencer marketing) should align with how the segment consumes information.

Nithish

Step 1: Deciding (not) to Segment

3.1 Implications of Market Segmentation

- Market segmentation requires long-term commitment and substantial investment in multiple areas like research, product development, and communication.

- It demands a shift from a product-focused to a market-focused approach, impacting internal structures and operations.

- Success depends on strong leadership and senior management support to drive implementation across all levels.

3.2 Implementation Barriers

- Leadership & Commitment: Senior management must be actively involved and provide necessary resources.

- Organizational Culture: Resistance to change and lack of communication can hinder success.

- Training & Expertise: Teams need knowledge and skills in segmentation principles.

- Financial & Resource Constraints: Budget limitations can restrict the feasibility of segmentation.

- Process Challenges: Poor planning, unclear goals, and lack of time can lead to failure.

- Solution: Overcoming these barriers requires leadership support, training, and structured planning.

3.3 Step 1 Checklist

- Organizations should assess their readiness before implementing segmentation.

- Key factors include market orientation, financial capability, internal communication, and leadership support.

- A qualified segmentation team and a structured process are essential for success.

- If an organization lacks these elements, it should reconsider pursuing segmentation until it is fully prepared.

Step 2: Specifying the Ideal Target Segment:

4.1 Segment Evaluation Criteria

- Market segmentation analysis requires continuous user input, not just at the beginning or end.

- Organizations must define two sets of criteria:
    - Knock-out criteria (essential, non-negotiable)
    - Attractiveness criteria (used to evaluate relative desirability)
- Literature provides various criteria, which organizations must customize for their needs.

4.2 Knock-Out Criteria

- Knock-out criteria determine whether a market segment qualifies for further evaluation.
- Key factors include:
    - Homogeneity (members must be similar)
    - Distinctiveness (different from other segments)
    - Size (large enough to justify marketing efforts)
    - Organizational fit (company must be able to serve the segment)
    - Identifiability (segment members must be recognizable)
    - Reachability (must be possible to communicate with the segment)
- These criteria must be clearly understood and defined by senior management.

4.3 Attractiveness Criteria

- Attractiveness criteria help assess and compare market segments.
- Unlike knock-out criteria, these are not binary; segments are rated on a scale.
- The final target segment is selected based on its overall attractiveness.
- Organizations must prioritize which attractiveness criteria are most relevant to them.

4.4 Implementing a Structured Process

- A structured approach is necessary for effective segment evaluation.
- The segment evaluation plot is a common method, mapping:
    - Segment attractiveness on one axis
    - Organizational competitiveness on the other
- Each organization must define its own evaluation criteria, as there is no universal standard.

- Stakeholders must negotiate and agree on the key factors for evaluation.

Step 3: Collecting Data

1. Importance of Empirical Data in Market Segmentation

- Empirical data is essential for identifying and describing market segments.

- Data-driven segmentation uses multiple variables, while commonsense segmentation relies on a single characteristic.

2. Segmentation Variables vs. Descriptor Variables

- Segmentation Variables: Used to split the market into different segments (e.g., gender, age, benefits sought).

- Descriptor Variables: Used to describe the segments in detail (e.g., socio-demographics, travel behavior).

3. Data-Driven vs. Commonsense Segmentation

- Commonsense Segmentation: Based on a single segmentation variable (e.g., gender).

- Data-Driven Segmentation: Uses multiple segmentation variables to identify natural groupings of consumers.

4. Role of Data Quality in Segmentation

- High-quality data is crucial for accurate segmentation and effective marketing strategies.

- Sources of segmentation data include surveys, purchase history (loyalty programs), and experimental studies.

- Behavioral data is often more reliable than survey data.

5. Choosing the Right Segmentation Criteria

- The choice of segmentation criteria depends on market knowledge and business objectives.

- Common segmentation criteria:

    o Geographic (location-based)

    o Demographic (age, gender, income)

    o Psychographic (lifestyle, values)

    o Behavioral (purchase habits, brand loyalty)

- The simplest, most cost-effective segmentation approach should be prioritized.

6. Geographic Segmentation as a Simple and Effective Approach

- Often used due to its practicality and ease of implementation.

- Example: A tourism company targeting different countries may need to customize its marketing based on language differences.

Step 6 – Profiling Segments

Purpose of Profiling

✔ Data-driven segmentation uncovers hidden patterns in customer behavior.
✔ Helps marketers make more informed and strategic decisions.
✔ Unlike commonsense segmentation, it derives characteristics from data, not assumptions.

Challenges in Data-Driven Segmentation

✔ Managers struggle with interpreting segmentation results.
✔ Viewing segmentation as a "black box" can lead to resistance and misinterpretation.
✔ Poor understanding results in ineffective marketing decisions.

Traditional Profiling Approaches

✔ Oversimplification may lead to loss of critical insights.
✔ Too much data in tables makes it hard to identify key segment characteristics.
✔ Statistical significance tests are misleading because segmentation already amplifies differences.

Importance of Visualizations in Profiling

✔ Graphical representations improve clarity and interpretation.
✔ Visual tools are more effective than complex tables for decision-making.
✔ Better visualization leads to better communication and strategic actions.

Step 9: Customising the Marketing Mix

Implications for Marketing Mix Decisions

- The marketing mix was initially viewed as a set of tools for maximizing sales, evolving from 12 elements to the widely used 4Ps (Product, Price, Place, Promotion).

- Market segmentation is integral to strategic marketing and aligns with positioning and competition.

- The Segmentation-Targeting-Positioning (STP) approach follows a sequence: segment identification, target selection, and positioning.

- Though STP suggests a structured process, organizations often iterate between segmentation and targeting before finalizing strategies.

Product

- Organizations must align products with customer needs, which may involve modifications rather than creating entirely new offerings.

- Decisions include naming, packaging, warranties, and after-sales services.

- Market segmentation guides product modifications. For instance, a cultural destination could develop "Museums, Monuments & More" packages to attract heritage-seeking tourists.

- Enhancing product appeal may involve repackaging existing features or marketing them differently based on segment preferences.

Price

- Pricing decisions involve setting base prices and determining discount structures.

- Market segmentation influences pricing strategies, as price sensitivity and purchasing behaviors vary across segments.

- Example analysis of Australian vacationers used biclustering to identify spending patterns, helping in segment-based pricing strategies.

- R programming was used to categorize consumers into segments and analyze spending per segment.

Place (Distribution)

- **Choosing Distribution Channels:** Companies must decide whether to sell products online, offline, or both. They must also determine whether to sell directly to customers or use intermediaries like wholesalers and retailers.

- **Customer Booking Preferences:** Understanding how customers prefer to book or purchase products helps businesses ensure availability across preferred channels.

- **Data-Driven Distribution Decisions:** Businesses can analyze customer booking behavior to optimize their presence across different distribution platforms.

Promotion (Marketing Communication)

- **Targeted Advertising:** Businesses must craft advertising messages that resonate with the target market, considering their preferred information sources.

- **Multi-Channel Approach:** Effective promotion involves a combination of advertising, public relations, sponsorships, and personal selling.

- **Preferred Information Sources:** Identifying how customers gather information helps businesses place promotional materials where they are most likely to be seen.

- **Media Planning:** Understanding TV and digital platform preferences allows businesses to maximize exposure and engagement with their target audience.

- **Tourist & Consumer Information Centers:** Having informational content available both physically (e.g., brochures) and digitally (e.g., websites) ensures maximum reach and accessibility.

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Steps of Market Segmentation:

Step 1: Deciding (Not) to Segment

Implications of committing to market segmentation

- To ensure market segmentation turns out to be a best strategy before pursuing it understand its implications.
- Organization needs to commit to the segmentation strategy on the long term as it depends on their ability and willingness to make substantial changes and investments. Segmenting a market has cost associated with it for instance performing the research, fielding survey, designing multiple advertisement, communication messages etc.
- Segment only when the expected increase in sales by segmenting is more than the cost of developing and using the segmentation strategy.
- To maximize the benefits of market segmentation, organizations need to organize around market segments (focus on the changing needs of MS) rather than products. Organizing around products such as developing new products, changing existing ones, adjusting prices, and modifying how they sell and communicate can impact the organization's structure.
- Market segmentation strategy must be made at the highest executive level and communicated at all subsequent levels.

Implementation Barriers

- Senior Management: lack - of leadership, proactive championing, commitment and involvement in the market segmentation process, not making enough resources available.
- Organizational culture: lack of market or consumer orientation, resistance to change and new ideas, lack of creative thinking, bad communication, lack of sharing of information and insights across organisational units, short-term thinking, unwillingness to make changes and office politics.
- Lack of training among senior management and the team tasked with segmentation
- Lack of a formal marketing function or a qualified marketing expert in the organisation
- Lack of a qualified data manager and analyst in the organisation
- Lack of financial resources, inability to make the structural changes required
- Solution: make market segmentation analysis easy to understand i.e. present results in a way that facilitates interpretation by managers. This can be achieved by using graphical visualisations.
- If barriers cannot be removed we should avoid going for market segmentation strategy.
- A resolute sense of purpose and dedication is required, tempered by patience and a willingness to appreciate the inevitable problems.

Step 2: Specifying the Ideal Target Segment

In this step the organisation has to make a major contribution to market segmentation analysis. This step guides Step 3 (data collection) and Step 8 (selecting one or more target segments)

Segment Evaluation Criteria

- For a market segmentation analysis to produce results that are useful to an organisation user input is essential. User needs to be involved in all stages of market segmentation analysis (start to end).
- Organisation must determine two main sets of segment evaluation criteria: knock-out criteria and attractiveness criteria.
- Other segment evaluation criteria: Measurable, Substantial, Accessible, sufficiently different, at suitable life-cycle stage, Large enough, Growing, competitively advantageous, Profitable, Likely technological changes, Sensitivity to price, Barriers to entry, Buyer or supplier bargaining power, Socio-political considerations, Cyclicality and seasonality, Life-cycle position, Distinguishable, Compatible with company, Responsive, Stable, Actionable, Identifiable, Heterogeneous between, Homogeneous within, Parsimonious, Growing, Targetable , Influence of company's current position in the market on growth opportunities, Competitor's ability and motivation to retaliate, Competence and resources, Segments that will prefer the value that can be created by the firm over current market offerings, Consumer motivation and goals indicating gaps in marketplace offerings when launching a new company and so on.

Knock-Out Criteria

- These are the essential, non-negotiable features that a segment must have for the organization to consider targeting it. This step helps filter out segments that don't align with the organization's basic requirements, saving time and resources.
- It determines if market segments resulting from the market segmentation analysis qualify to be assessed using segment attractiveness criteria. Inshort, first, we filter out segments using knock-out criteria. Then, assess the attractiveness of the remaining segments using attractiveness criteria.
- It includes: substantiality, measurability and accessibility, segment must be: homogeneous, distinct (members of the segment must be distinctly different from members of other segments), large, matching the strengths of the organisation, reachable, members of the segment must be identifiable.
- Knock-out criteria must be understood by senior management, the segmentation team, and the advisory committee.

Attractiveness criteria

- These are used to evaluate how attractive the remaining market segments are after they meet the knock-out criteria.
- They are not yes or no criteria. They are used to rate how attractive each segment is on a scale. The combined ratings across all attractiveness criteria determine if a

segment is selected as a target segment in the final step (Step 8) of the market segmentation analysis.

Implementing a Structured Process

- Most popular structured approach for evaluating market segments and choosing the target segment is the use of a segment evaluation plot showing segment attractiveness along one axis, and organisational competitiveness on the other axis.
- Not to use more than six factors as the basis for calculating segment attractiveness criteria.
- Step 2 is the base for this plot. It is used for selecting the attractiveness criteria for market segments which in turn is used in the step 3 collecting data and then in step 8 in selecting target segment.

Step 3: Collecting Data

Segmentation Variables

- Common-sense and Data-driven market segmentation make use of Empirical data. These data are used to identify or create market segments and describe these segments in detail.
- segmentation variable a variable in the empirical data used for segmentation.
- In common-sense segmentation, the segmentation variable is one single characteristic of the consumers in the sample (i.e. Common-sense make use of one segmentation variable) e.g. gender. Market segments are created by simply splitting the sample using this segmentation variable into a segment of women and a segment of men.
- descriptor variables are used to describe the segments in detail like age, the number of vacations taken, when they go on vacation, socio-demographics, information about media behaviour.
- Describing segments aids in creating a targeted and effective marketing mix.
- Data-driven market segmentation is based on multiple segmentation variables. E.g. common set of benefits tourist seek when going on vacation (from this data one segment can be characterised by seeking relaxation, culture and meeting people, but not interested in action and exploring).
- Good market segmentation analysis requires good empirical data.
- Sources of data: survey studies, observations such as scanner data where purchases are recorded.
- Source that delivers data most closely reflecting actual consumer behaviour is the best.

Segmentation Criteria

- The term segmentation criterion relates to the nature of the information used for market segmentation.
- Common segmentation criteria or approach to segment extraction are given below.

- **Geographic Segmentation**: the consumer's location of residence serves as the only criterion to form market segments. For example: if the national tourism organisation of Austria wants to attract tourists from neighbouring countries, it needs to use a number of different languages. Here language differences across countries represent a very pragmatic reason for treating tourists from different neighbouring countries as different segments (country-wise segment). Advantage of geographic segmentation is that each consumer can easily be assigned to a geographic unit. As a consequence, it is easy to target communication messages, and select communication channels to reach the selected geographic segments. Disadvantage is that living in the same country or area does not necessarily mean that people share other characteristics relevant to marketers, such as benefits they seek when purchasing a product.

- **Socio-Demographic Segmentation**: criteria include age, gender, income and education. can be very useful in some industries. For example: luxury goods (associated with high income), cosmetics (associated with gender), retirement villages (associated with age), tourism resort products (associated with having small children or not). Advantage is that segment membership can easily be determined for every consumer, it may also offer an explanation for specific product preferences (having children, for example, is the actual reason that families choose a family vacation village). Disadvantage, in many instances socio-demographic criterion may not be the cause for product preferences. It explains only about 5% of the variance in consumer behaviour. socio-demographic do not represent a strong basis for market segmentation as values, tastes and preferences are more useful because they are more influential in terms of consumers' buying decisions.

- **Psychographic Segmentation:** people are grouped according to psychological criteria, such as their beliefs, interests, preferences, aspirations, or benefits sought when purchasing a product. It covers all measures of the mind. Benefit segmentation most popular kind of psychographic segmentation. Lifestyle segmentation based on people's activities, opinions and interests. Psychographic criteria are more complex than geographic or sociodemographic criteria because it's hard to find just one trait that explains people's thoughts and feelings. To understand psychographics, studies use many different segmentation variables, like why people travel or what risks they worry about when going on vacation. An advantage of psychographic criteria is that they better explain why consumers behave differently. For instance, tourists who want to learn about other cultures will likely choose a cultural holiday. A disadvantage is that it's harder to figure out which segment consumer belong to. Psychographic approach depends heavily on the reliability and validity of the empirical measures used to capture the psychographic dimensions of interest.

- **Behavioural Segmentation**: searching for similarities in behaviour of a segment. possible behaviours are prior experience with the product, frequency of purchase, amount spent on purchasing the product on each occasion and information search behaviour. Behaviours as a segmentation variable emerged as superior to geographic variables for tourists. This means that understanding how tourists act (e.g., their activities, spending patterns, or travel habits) can provide better insights for segmenting the market compared to just knowing where they are from. Advantage is that the behaviour of interest is used as the basis of segment extraction. For instance, if we are analyzing customer behavior in a store, "the behavior of interest" might be how often customers purchase a particular type of product. We would then use this

information to create segments of customers based on their purchasing frequency. Disadvantage, behavioural data is not always readily available.

Step 5: Extracting Segments

Grouping Consumers

- Data-driven market segmentation analysis is exploratory by nature.
- Result of a market segmentation analysis is determined by the underlying data and the extraction algorithm (makes assumptions).
- segmentation methods or extraction algorithm used to extract market segments (clusters) are taken from cluster analysis.
- It is important to explore market segmentation solutions derived from a range of different clustering methods. These algorithms also impose structure on the extracted segments.
- Most popular extraction methods are distance-based methods and model-based methods.
- Other methods, some of which try to achieve multiple aims like performing a variable selection during the extraction of market segments.
- Experiment with all available methods and compare them to arrive at the best segmentation solution.

Extraction Methods: Distance based methods and Model based methods

Distance-Based Methods

- use a particular notion of similarity or distance between observations (consumers), and try to find groups of similar observations (market segments).
- Include Distance Measure, Hierarchical methods, Partitioning method and Hybrid approaches.

Distance measures

- It calculate the distances between two observations.
- Euclidean is the most common distance measure used in market segmentation analysis. Euclidean distance corresponds to the direct straight-line distance between two points in two-dimensional space. Makes use of Pythagoras theorem. The **Euclidean distance** between two points is found by first calculating the difference between their coordinates, squaring those differences, adding them together, and then taking the square root of the sum.
- Manhattan or absolute distance calculates the distance between two points assuming that streets on a need to be used to get from one point to another. **Manhattan distance** between two points is calculated by taking the sum of the absolute differences of their coordinates.

- **Asymmetric binary distance** measures similarity between two vectors by focusing on dimensions where at least one vector has a value of 1, treating shared 1s as similar and ignoring shared 0s. It's often used in market segmentation to identify key similarities based on uncommon activities.

Hierarchical Clustering Methods

- Hierarchical clustering methods are the most intuitive way of grouping data. It is akin to how we would divide **n** observations into **k** groups. There are 2 types
    - Divisive hierarchical clustering methods: It start with the complete data set X and splits it into two market segments in a first step. Then, each of the segments is again split into two segments. This process continues until each consumer has their own market segment.
    - Agglomerative hierarchical clustering method: In this the starting point is each consumer represents their own market. Step-by-step, the two market segments closest to one another are merged until the complete data set forms one large market segment.

- Hierarchical clustering makes use of **linkage methods** to measure the distance between groups of observations (segments). Following linkage methods are used
    - Single linkage: measures the distance between the closest observations in two sets.
    - Complete linkage: measure the distance between the two observations of the two sets that are farthest away from each other.
    - Average linkage: measure the mean distance between observations of the two sets.
    - Average and complete linkage are commonly used than single linkage because they tend to create more compact clusters and are more reliable when the clusters are not well-separated whereas single linkage tends to perform poor when clusters are not well separated.

- Ward clustering method: a very popular hierarchical clustering method based on squared Euclidean distances. Ward clustering joins the two sets of observations (consumers) with the minimal weighted squared Euclidean distance between cluster centers. Cluster centers are the midpoints of each cluster.

- Result of hierarchical clustering is a dendrogram. It's a tree diagram. Root representing one cluster and leaves single observations.

- Hierarchical clustering method works well with small dataset.

Partitioning Method (K-Means Clustering)
- Prefer for large dataset
- Partitioning methods, instead of building a complete Dendrogram, extract a specific number of segments.
- Most popular one is K-Means Clustering.
- These algorithm makes use of squared Euclidean distance.
- Steps:

- o Specify desired number of segments (k)
- o Randomly select k observations (consumers) from data set and use them as initial set of cluster centroids. If five market segments are being extracted, then five consumers are randomly drawn from the data set, and declared the representatives of the five market segments.
- o Assign each observation to the closest cluster centroid forming k market segments. If two centroids are equally distant, randomly select one. This step creates an initial, suboptimal segmentation where consumers are grouped by proximity to centroids, but the segments may not yet be perfectly homogeneous.
- o Recompute the cluster centroids (segment representatives) by holding cluster membership fixed, and minimising the distance from each consumer to the corresponding cluster centroid.
- o Repeat from step 3 until convergence or a pre-specified maximum number of iterations is reached. This means that the steps of assigning consumers to their closest representative, and electing new representatives is repeated until the point is reached where the segment representatives stay the same. This is when the stepwise process of the partitioning algorithm stops and the segmentation solution is declared to be the final one.

Step 7: Describing Segments

Developing a complete picture of Market segment
- Segment profiling is about understanding differences in segmentation variables across market segments.
- Describing segment is similar to profiling step. But the difference is variable are not used to extract market segment instead market segments are described using additional information.
- These additional variables are called descriptor. For e.g. when conducting a data-driven market segmentation analysis using the Australian travel motives data set variable, travel motive serve as main segmenting variable whereas age, gender, past travel behaviour, preferred vacation activities, media use, use of information sources during vacation planning, or their expenditure patterns during a vacation serve as descriptor variable.
- Good descriptions of market segments give insight into the nature of segments and help in development of customised marketing.

- How they can be utilised? For instance, we know from profiling (step 6) that segment x is nature lover. If through descriptor variable we came to know that they have a higher likelihood of volunteering for environmental organisations, and regularly read National Geographic than we have identified a way to communicate with them. And this can be used as a customised marketing.

- Using descriptive statistics (Visuals) and inferential statistics (analysis) we can study differences between market segments with respect to descriptor variables.

<u>Using Visualisations to Describe Market Segments</u>

- Charts can be used to visualise differences in descriptor variables.
- There are nominal and ordinal descriptor variable (such as gender, level of education, country of origin) and metric descriptor variable ((such as age, number of nights at the tourist destinations, money spent on accommodation).
- Advantages of visualization:
  - it simplifies the interpretation of results for both the data analyst and the user
  - it combines information on whether the differences are statistically significant, preventing the over-interpretation of differences that are not meaningful.
- managers prefer graphical formats, and view the intuitiveness of graphical displays as critically important.
- Graphical representation has more effect than tabular representation.

Prashant

Steps of Market Segmentation Analysis

Step 1: Deciding (not) to Segment

1.1 Market Segmentation: A Long-Term Commitment

Market segmentation is a business strategy where customers are divided into smaller groups based on their needs, preferences, or behavior. While it helps in targeted marketing, it is not always the best choice for every company.

1.2 Key Points to Consider Before Market Segmentation

Long-term commitment – Market segmentation is not a short-term plan; it needs continuous effort and investment.
High costs involved – Research, surveys, advertising, and product changes require significant money and resources.
Profitability check – The expected increase in sales should be higher than the segmentation cost.

1.3 Challenges in Implementing Market Segmentation

Lack of leadership support – If top management does not support or fund the strategy, it may fail.
Resistance to change – Employees and departments may not easily accept new ideas or changes.

 Lack of market knowledge – If the company does not understand customer needs properly, segmentation will not work.
Poor communication – If different teams do not share information, implementation will become difficult.
Short-term thinking – Segmentation needs a long-term vision, but some companies focus only on quick profits.
Lack of skilled professionals – A company needs marketing experts, data analysts, and financial support to execute segmentation properly.

1.4 Checklist Before Implementing Market Segmentation

Check if the company is customer-focused and open to new ideas.
Ensure strong support and financial commitment from senior management.
Confirm that the company is willing to make structural and strategic changes.
Form a dedicated team with marketing and data experts.
Develop a structured process with clear responsibilities.
Allocate sufficient time and resources for proper implementation.

If a company cannot meet these requirements, it should seriously reconsider market segmentation. However, if all conditions are met, proper planning and execution can lead to higher profits and better customer satisfaction.

Step 2: Specifying the Ideal Target Segment.

2.1 Market Segmentation Evaluation: Simple Explanation

Market segmentation means dividing customers into different groups based on their needs. But before choosing a target group, businesses must check if a segment is suitable.

2.1.1 Knock-Out Criteria (Must-Have Requirements)

- Customers in a segment should be similar to each other.
- The segment must be different from other segments.
- The segment should be big enough to make the business profitable.
- The company should have the ability to serve the segment well.
- Customers in the segment should be easy to identify.
- The segment should be reachable through marketing and sales efforts.

If a segment does not meet these points, it is **automatically rejected**.

2.1.2 Attractiveness Criteria (How Good is the Segment?)

- How big is the segment?
- Is it growing in the future?
- Is it profitable?
- How much competition is there?
- Can the company provide better products than others?

 Businesses rate different segments based on these points. The most attractive segment is selected as the target.

2.2 Why is this Important?
If a company follows these steps properly, it can choose the best customer group, avoid wasting money, and make more profit in the long run.

Step 3: Collecting Data.

Market segmentation is a way to divide a large market into smaller groups of consumers who have similar needs, preferences, or behaviors. This helps companies create products, services, and marketing strategies that are more tailored to each group. For example, a company selling shoes might segment its market into groups like athletes, office workers, and students, and then design specific shoes for each group.

There are different ways to segment a market:

Geographic Segmentation: Dividing the market based on location, like city, state, or country. For example, a company might sell winter clothes in colder regions and summer clothes in hotter areas.

Socio-Demographic Segmentation: Dividing the market based on age, gender, income, or education. For instance, a luxury brand might target high-income individuals, while a toy company might focus on children.

Psychographic Segmentation: Dividing the market based on lifestyle, interests, or values. For example, a travel company might target adventure lovers or people who prefer relaxing vacations.

Behavioral Segmentation: Dividing the market based on consumer behavior, like how often they buy a product or how much they spend. For instance, a coffee brand might target daily coffee drinkers versus occasional ones.

Companies use data like surveys, purchase histories, or experiments to understand these segments. Good data helps them make better decisions and create products that meet the needs of each group. For example, if a survey shows that young people prefer eco-friendly products, a company might launch a new line of sustainable items for that segment.

In short, market segmentation helps businesses understand their customers better and serve them more effectively. It's like dividing a big group of people into smaller, more manageable groups so that everyone gets what they want.

Step 8: Selecting the Target Segment.

In business, choosing the right group of customers (target market) is very important. Imagine you are selecting a life partner. First, you check if they match your expectations. Similarly, businesses check different customer groups and decide which one is best for them.

To do this, companies use a "decision matrix." This matrix helps them compare customer groups based on:

1. **How attractive the group is** – Do these customers fit the business?
2. **How attractive the business is to the group** – Will these customers prefer the business over others?

Each customer group is rated based on different factors like size, spending power, and interest in the company. Businesses use mathematical formulas to give scores and then create a chart (bubble chart). Bigger bubbles mean higher profit potential.

The best target market is the one where both the business and the customers have a strong interest in each other. If a group is very attractive but doesn't like the company's product, it might not be a good choice. Similarly, if a group likes the company but has low spending power, it may not be profitable.

In short, businesses select the best target group carefully using data and analysis, just like choosing the best life partner

Project links →

Ankita

https://colab.research.google.com/drive/1KZto7OURdyCVf5kgrWAY8SK1U9xWZBVs

Nithish

https://github.com/Nithishkareddy/McDonald-s-Case-Study-Analysis

Pooja

https://github.com/PoojaKuniyal/Market_segmentation/tree/main

Prashant

https://github.com/swamiprashant/Market_segmentation_Case_Study