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Step 1: Deciding (not) to Segment

1.1 Implications of Committing to Market Segmentation

Committing to market segmentation requires a long-term dedication and significant investments in research, product development, pricing, distribution, and communication strategies. It can necessitate structural changes within the organization to focus on different market segments. Consequently, this decision should be made at the highest executive level and consistently communicated throughout the organization.

1.2 Implementation Barriers

Implementing market segmentation can be hindered by barriers such as lack of leadership and resources from senior management, resistance to change within the organizational culture, inadequate training, and absence of a formal marketing function. Additionally, financial constraints and poorly defined objectives can impede progress.These challenges need to be proactively addressed or the organization should reconsider pursuing market segmentation.

Step 2: Specifying the Ideal Target Segment

2.1 Segment Evaluation Criteria

Segment evaluation involves user input throughout the market segmentation process, not just at the beginning or end. In Step 2, organizations must define two sets of criteria: essential, non-negotiable knock-out criteria for eliminating unsuitable segments, and attractiveness criteria for assessing the remaining segments. These criteria, derived from various literature sources, guide data collection and target segment selection, ensuring the chosen segments align with organizational goals and resources.

2.2 Knock-Out Criteria

Knock-out criteria help determine if market segments qualify for further evaluation using attractiveness criteria. Suggested by Kotler and others, these include substantiality, measurability, accessibility, homogeneity, distinctiveness, size, organizational capability, identifiability, and reachability. These criteria ensure segments are viable and align with organizational strengths. Senior management and the segmentation team must understand these criteria, with some, like minimum viable segment size, requiring specific definitions.

2.3 Attractiveness Criteria

Attractiveness criteria are used to rate each market segment on a spectrum rather than assessing them as simply compliant or non-compliant. These criteria help determine how appealing each segment is, with the combined ratings guiding the selection of target segments in the market segmentation analysis. The segmentation team selects the most relevant criteria for their specific situation

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2.4 Implementing a Structured Process

In the world of market segmentation, experts agree that using a structured approach is beneficial. One common method involves plotting segment attractiveness against how well the organization can compete in that segment (like a graph you might see). The criteria for what make a segment attractive and how well the organization can compete need careful consideration and agreement by the team. It's recommended to focus on no more than six key factors to keep things clear. Bringing in a diverse group from different parts of the organization to discuss and agree on these factors is important for making good decisions about which segments to target later on.

Step 3: Collecting Data

3.1 Segmentation Variables Segmentation Variables

Market segmentation relies on empirical data to define and describe distinct consumer groups. In "commonsense" segmentation, a single variable like gender splits a sample into segments (e.g., women and men), while other variables (e.g., age, vacation habits) describe these segments in detail. In contrast, "data-driven" segmentation uses multiple variables (e.g., vacation benefits sought) to uncover segments that may not share obvious traits like gender. Quality empirical data is crucial in both approaches: it ensures accurate assignment of individuals to segments and precise descriptions of these segments. This accuracy enables

tailored marketing strategies, including product customization, pricing, distribution, and advertising. Various data sources such as surveys or purchase records contribute to segmentation studies, with preference given to data that best reflects actual consumer behaviour over socially desirable responses.

3.2 Segmentation Criteria

Before embarking on segment extraction and data collection, organizations face a critical decision: selecting the segmentation criterion. Unlike segmentation variables, which are specific measurements or observations, segmentation criteria encompass broader categories of information used in market segmentation, such as geographic, socio-demographic, psychographic, and behavioural factors. This decision requires market knowledge and cannot simply be delegated to consultants or data analysts. The choice of segmentation criterion should ideally be guided by what works best for the product or service at minimal expense, emphasizing practicality over complexity.

3.3 Data from various sources

In market segmentation, data can be sourced from various methods, each impacting the segmentation process differently. Survey studies provide widespread data, but results may be biased, especially with socially desirable behaviours. Choosing variables like demographics, behaviour, or preferences is crucial, as they define segment characteristics.

The data used in Market Segmentation Analysis should,

- Contain all necessary items.
- Contain no unnecessary items.
- Contain no correlated items.
- Contain high-quality responses.
- Be binary or metric.
- Be free of response styles.
- Include responses from a suitable sample given the aim of the segmentation study.
- Include a sufficient sample size given the number of segmentation variables (100 times the number of segmentation variables).

Response options in surveys influence data quality. open-ended questions yield richer insights compared to closed ones. Response styles, such as acquiescence or extreme responding, can skew survey outcomes. Sample size plays a vital role. larger samples improve statistical validity and representativeness. Internal sources, like sales or customer records, offer precise behavioural data useful for segmentation. Experimental studies provide controlled environments to test hypotheses, offering insights into consumer behaviours not

observed in natural settings. Each data source has strengths and limitations, influencing the segmentation strategy's accuracy and effectiveness.

Step 5: Extracting Segments

5.1 Grouping Consumers

Grouping consumers in the context of market segmentation involves dividing a larger market into smaller, more homogeneous groups based on certain characteristics. These characteristics could include demographics, psychographics, behaviors, or other relevant factors. The goal is to identify distinct groups of consumers with similar needs, preferences, and behaviors so that marketing strategies can be tailored to each segment. Once consumers are grouped into segments, businesses can develop marketing strategies that are more relevant and effective for each segment. This can lead to improved customer satisfaction, increased brand loyalty, and a better understanding of the unique needs and preferences of various consumer groups.

5.2 Distance-Based Methods

Distance-based methods are a class of techniques used in data analysis and clustering to measure the similarity or dissimilarity between objects. These methods play a crucial role in clustering algorithms, where the goal is to group similar objects together. These distance measures are fundamental in various applications, including clustering, classification, and similarity-based searches. The choice of distance measure depends on the nature of the data and the specific requirements of the analysis. Different distance measures may yield different results, and selecting an appropriate measure is crucial for the success of the analysis.

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$$X = \begin{pmatrix} x_{11} & x_{12} & \cdots & x_{1p} \\ x_{21} & x_{22} & \cdots & x_{2p} \\ \vdots & \vdots & \ddots & \vdots \\ x_{n1} & x_{n2} & \cdots & x_{np} \end{pmatrix}$$

(columns)

The vector corresponding to the i-th row of matrix X is denoted as $x_i = (x_{i1}, x_{i2},...,x_{ip})$ in the following, such that $X = \{x_1, x_2,... x_p\}$ is the set of all observations. In the example above, Anna's vacation activity profile is vector $x_1 = (100, 0, 0)$ and Tom's vacation activity profile is vector $x_7 = (50, 20, 30)$.

5.2.2 Hierarchical Methods

Hierarchical clustering methods are the most intuitive way of grouping data because they mimic how a human would approach the task of dividing a set of n observations (consumers) into k groups (segments). Each consumer represents their own cluster. Market segmentation analysis occurs between those two extremes. Divisive hierarchical clustering methods 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 approaches the task from the other end. The starting point is each consumer representing their own market segment (n singleton clusters). Step-by-step, the two market segments closest to one another are merged until the complete data set forms one large market segment. Both approaches result in a sequence of nested partitions. A partition is a grouping of observations such that each observation is exactly contained in one group. The sequence of partitions ranges from partitions containing only one group (segment) to n groups (segments). They are nested because the partition with k + 1 groups (segments) is obtained from the partition with k groups by splitting one of the groups.

5.2.3 Partitioning Method

Hierarchical clustering methods are particularly well suited for the analysis of small data sets with up to a few hundred observations. For data sets containing more than 1000 observations (consumers), clustering methods creating a single partition are more suitable than a nested sequence of partitions. This means that instead of computing all distances between all pairs of observations in the data set at the beginning of a hierarchical partitioning cluster analysis using a standard implementation. A partitioning clustering algorithm aiming to extract five market segments, in contrast, would only have to calculate between 5 and 5000 distances at each step of the iterative or stepwise process (the exact number depends on the algorithm

used). In addition, if only a few segments are extracted, it is better to optimise specifically for that goal, rather than building the complete dendrogram and then heuristically cutting it into segments.

5.2.4 Hybrid Approaches

Several approaches combine hierarchical and partitioning algorithms in an attempt to compensate the weaknesses of one method with the strengths of the other. The strengths of hierarchical cluster algorithms are that the number of market segments to be extracted. The biggest disadvantage of hierarchical clustering algorithms is that standard implementations require substantial memory capacity, thus restricting the possible sample size of the data for applying these methods. The basic idea behind hybrid segmentation approaches is to first run a partitioning algorithm because it can handle data sets of any size. But the partitioning algorithm used initially does not generate the number of segments sought. Rather, a much larger number of segments is extracted. Then, the original data is discarded and only the centres of the resulting segments (centroids, representatives of each market segment) and segment sizes are retained, and used as input for the hierarchical cluster analysis. At this point, the data set is small enough for hierarchical algorithms, and the dendrogram can inform the decision how many segments to extract.

5.3 Model-Based Methods

Model-based methods for extracting segments refer to clustering techniques that involve fitting probabilistic models to the data. Unlike distancebased methods, which focus on measuring similarity or dissimilarity between data points, modelbased methods assume that the data is generated from a certain underlying probabilistic model. These methods aim to find the parameters of the model that best explain the observed data and, in the context of clustering, identify distinct segments or clusters within the data. One commonly used model-based clustering method is the Gaussian Mixture Model (GMM). GMM assumes that the data is generated from a mixture of several Gaussian distributions. Each Gaussian distribution represents a cluster, and the model estimates the parameters of these distributions, including mean, covariance, and mixing coefficients. Model-based clustering methods provide a flexible framework for segment extraction, allowing for more complex data distributions compared to some distance-based methods. It's important to understand the assumptions of the chosen model and validate the results based on the characteristics of the data and the goals of the analysis.

5.4 Algorithms with Integrated Variable Selection

These algorithms assume that each of the segmentation variables makes a contribution to determining the segmentation solution. Sometimes, segmentation variables were not carefully selected and contained redundant or noisy variables. Preprocessing methods can identify them. Variable selection for binary data is more challenging because single variables are not informative for clustering, making it impossible to pre-screen or pre-filter variables one by one. When the segmentation variables are binary, and redundant or noisy variables cannot be identified and removed during data pre-processing, suitable segmentation variables need to be identified during segment extraction. Several algorithms extract segments while–simultaneously– selecting suitable segmentation variables.

5.5 Data Structure Analysis

Extracting market segments is inherently exploratory, irrespective of the extraction algorithm used. Validation in the traditional sense, where a clear optimality criterion is targeted, is therefore not possible. Ideally, validation would mean calculating different segmentation solutions, choosing different segments, targeting them, and then comparing which leads to the most profit, or most success in mission achievement. As a consequence, the term validation in the context of market segmentation is typically used in the sense of assessing reliability or stability of solutions across repeated calculations after slightly modifying the, or the This approach is fundamentally different from validation using an external validation criterion. Throughout this book, we refer to this approach as stability-based data structure analysis. Data structure analysis provides valuable insights into the properties of the data. These insights guide subsequent methodological decisions. Most importantly, stability-based data structure analysis provides an indication of whether natural, distinct, and well-separated market segments exist in the data or not. If they do, they can be revealed easily. If they do not, users and data analysts need to explore a large number of alternative solutions to identify the most useful segments for the organization. If there is structure in the data, be it cluster structure or structure of a different kind, data structure analysis can also help to choose a suitable number of segments to extract

Step 9: Customizing the Marketing Mix

9.1 Implications for Marketing Mix Decisions

- The widely accepted modern interpretation is the 4Ps model, focusing on Product, Price, Promotion, and Place as the key components of an effective marketing strategy.

- Market segmentation is integral to strategic marketing and is closely linked with positioning and competition.
- The segmentation-targeting-positioning (STP) approach, emphasizes a sequential process: segmentation involves profiling and describing segments, followed by targeting the selection of a specific segment, and positioning focuses on distinct product perception aligned with segment needs, differentiating it from competitors.

9.2 Product

- In Developing the product dimension of the marketing mix, organizations must align product specifications with customer needs.
- This refers to the tangible or intangible goods or services that a company offers to meet the needs and wants of its target market. It involves decisions related to product design, features, quality, branding, packaging, and any additional services that accompany the product.

9.3 Price

- Price is the amount of money customers are willing to pay for a product or service.
- Pricing decisions involve determining the right balance between setting a price that covers production and distribution costs while remaining attractive and competitive in the market.
- Pricing strategies can include penetration pricing, skimming pricing, discount pricing, etc.

9.4 Place

- Place refers to the distribution channels through which a product or service is made available to customers.
- It involves decisions related to the selection of distribution channels, logistics, inventory management, and ensuring that the product is available at the right place and time for customers to purchase.
- Place also considers factors like retail outlets, online presence, and geographic reach.

9.5 Promotion

- Promotion encompasses all the activities that a company undertakes to communicate and promote its products or services to the target audience.

- This includes advertising, sales promotions, public relations, personal selling, and other promotional activities. The goal is to create awareness, generate interest, and persuade customers to make a purchase.

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