

Market Segmentation Analysis

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Steps

- Step 1: Deciding (not) to Segment
- Step 2: Specifying the Ideal Target Segment
- Step 3: Collecting Data
- Step 7: Describing Segments
- Step 8: Selecting the Target Segment(s) Summary
- Step 9: Customizing the Marketing Mix

Step 1 - Deciding Whether to Segment the Market

1.1 Implications of Choosing Market Segmentation

Market segmentation can be a powerful strategy, but it's not always the right choice. Before you start, consider these points:

- **Long-Term Commitment:** Market segmentation isn't a quick fix; it's a long-term strategy requiring ongoing effort and resources.
- **Cost:** Segmenting the market involves costs for research, surveys, designing various packages, and different advertisements. Ensure the potential sales increase justifies these expenses.
- **Organizational Changes:** You might need to develop new products, modify existing ones, adjust prices and distribution channels, and change how you communicate with the market. This could also mean restructuring your organization to focus on market segments rather than products.
- **Executive Decision:** The decision to segment should come from the highest level of management and be clearly communicated throughout the organization.

1.2 Barriers to Implementation

Successfully implementing market segmentation can be challenging due to several barriers:

1. Senior Management Issues:

- Lack of leadership and commitment from top management can hinder success.
- Not providing enough resources for both the initial analysis and long-term implementation can be problematic.

2. Organizational Culture:

- Resistance to change, lack of creativity, poor communication, short-term thinking, and office politics can obstruct implementation.
- Insufficient training and understanding of market segmentation can lead to failure.

3. Resource and Process Issues:

- Limited financial resources and the inability to make necessary structural changes can be obstacles.
- Poor planning, unclear objectives, and inadequate processes can impede progress.
- Management's reluctance to use unfamiliar techniques can be mitigated by presenting analysis results clearly and understandably.

Most barriers can be identified early and addressed proactively. If they cannot be resolved, reconsidering the segmentation strategy might be necessary.

1.3 Step 1 Checklist

Use this checklist to decide if market segmentation is viable. If you answer "no" to any of these questions, reconsider proceeding.

1. Cultural Readiness:

- Is the organization market-oriented?
- Is the organization willing to change?
- Does the organization take a long-term view?
- Is the organization open to new ideas?
- Is communication across units good?

2. Structural and Financial Readiness:

- Can the organization make significant structural changes?
- Are there enough financial resources to support segmentation?

3. Senior Management Commitment:

- Secure visible commitment from senior management.
- Ensure active involvement of senior management in the analysis.
- Obtain necessary financial support from senior management.

4. Team and Training:

- Make sure the segmentation concept and implications are understood; conduct training if needed.
- Form a team of 2-3 people, including marketing and data experts.
- Set up an advisory committee from all affected units.

5. Process and Planning:

- Ensure clear objectives for the analysis.
- Develop a structured process for the analysis.
- Assign responsibilities to team members and ensure enough time for the analysis.

Step 2: Identifying the Optimal Target Segment

2.1 Criteria for Segment Evaluation

For effective market segmentation analysis, continuous user input is essential. It's crucial that user involvement occurs throughout the process, not just at the beginning or end, to ensure the analysis is beneficial to the company.

Once a company opts for segmentation (Step 1), substantial contribution from the company in Step 2 is necessary. This involvement influences subsequent steps, particularly Step 3 (data collection) and Step 8 (segment selection). In Step 2, the company needs to establish two sets of criteria for segment evaluation. The first set, known as knock-out criteria, includes essential features a segment must have to be considered. The second set, attractiveness criteria, assesses how appealing the remaining segments are based on the knock-out criteria. Research provides numerous options for these criteria, often presented in various ways without clear separation.

The distinction between these two sets of criteria is important. Knock-out criteria are crucial and non-negotiable, while attractiveness criteria offer a broader range of considerations. The segmentation team uses the attractiveness criteria to evaluate potential segments and prioritize them based on importance. Knock-out criteria automatically eliminate certain segments, whereas attractiveness criteria, selected by the team, help in assessing segment desirability in Step 8.

2.2 Knock-Out Criteria

Knock-out criteria serve as an initial filter to determine if market segments can be further evaluated using attractiveness criteria. Kotler (1994) suggested the initial criteria, including substantiality, measurability, and accessibility. Later additions to these criteria include:

- Homogeneity within the segment.
- Distinctiveness from other segments.
- Adequate size.
- Compatibility with the company's strengths.
- Identifiability and reachability of individuals within the segment.

It's crucial for senior managers, the team, and advisors to comprehend these knock-out criteria. Most criteria are straightforward, though some, like segment size, may require detailed specifications.

2.3 Attractiveness Criteria

Beyond knock-out criteria, there are numerous segment attractiveness criteria that the segmentation team can select based on their specific needs. Unlike binary knock-out criteria, attractiveness criteria allow segments to be rated on a scale, indicating varying levels of attractiveness. These ratings collectively determine a segment's suitability as a target in Step 8 of the analysis.

2.4 Implementing a Structured Evaluation Process

A structured approach to market segmentation is widely recommended (Lilien and Rangaswamy 2003; McDonald and Dunbar 2012). One effective method is the "segment evaluation plot" (Lilien and Rangaswamy 2003; McDonald and Dunbar 2012), which visualizes segment attractiveness and the company's competitive position. The team selects relevant factors for attractiveness and

competitiveness from numerous options, typically focusing on around six key factors as suggested by McDonald and Dunbar (2012).

A diverse team representing various company divisions should manage the process (McDonald and Dunbar 1995; Karlsson 2015). If a smaller team leads the effort, they should consult with an advisory committee that represents the entire company. This inclusive approach ensures that different perspectives are considered and the strategy impacts all units appropriately. Although the segment plot is not created in Step 2, identifying attractiveness criteria early ensures that crucial information is gathered in Step 3, facilitating segment selection in Step 8.

By the end of this step, the team should finalize approximately six attractiveness criteria, each assigned a weight reflecting its importance. A common practice (Lilien and Rangaswamy 2003; McDonald and Dunbar 2012) is to allocate 100 points across the criteria, which is then discussed and agreed upon. It's advisable to get approval from the advisory committee, which includes representatives from various company segments to incorporate diverse viewpoints.

2.5 Step 2 Checklist

- Convene a meeting with the segmentation team.
- Discuss and finalize knock-out criteria such as homogeneity, distinctness, size, compatibility, identifiability, and reachability. These criteria will lead to the automatic elimination of non-compliant segments (by Step 8 at the latest).
- Present the knock-out criteria to the advisory committee for review and potential adjustments.
- Individually review available criteria for assessing market segment attractiveness.
- Collaborate with the segmentation team to agree on a subset of no more than six attractiveness criteria.
- Individually distribute 100 points among the agreed-upon attractiveness criteria, reflecting their relative importance.
- Discuss and agree on the weightings with the segmentation team.
- Present the selected attractiveness criteria and their proposed weights to the advisory committee for review and potential adjustments.

Step 3: Collecting Data

3.1 Segmentation Variables

Data is crucial for both commonsense and data-driven market segmentation. The term **segmentation variable** refers to the data characteristic used to divide a market into segments. In commonsense segmentation, a single characteristic, such as gender, is used to split the sample. For example, in Table 5.1, gender is used as the segmentation variable to create separate segments for men and women.

Descriptor Variables are additional characteristics used to detail each segment, such as age or vacation preferences. These variables help to describe the segments comprehensively and are essential for tailoring marketing strategies.

In **data-driven market segmentation**, multiple segmentation variables are used. These variables help identify or create market segments based on various attributes. For example, in Table 5.2,

benefits sought from vacations are used as segmentation variables, creating segments based on shared preferences rather than demographic characteristics alone.

Empirical Data quality is vital for both commonsense and data-driven segmentation. High-quality data ensures accurate segment identification and detailed descriptions, enabling effective marketing mix development.

Data Sources can include:

- **Surveys:** Directly collect consumer opinions and behaviors.
- **Observations:** Use scanner data or loyalty programs to track purchase history.
- **Experimental Studies:** Test different scenarios to gather behavioral data.

It is crucial to choose data sources that reflect actual consumer behavior, avoiding reliance on potentially unreliable survey data.

3.2 Segmentation Criteria

Before collecting data, organizations must decide on the **segmentation criteria**. These criteria guide the selection of segmentation variables and can include geographic, socio-demographic, psychographic, and behavioral aspects. The choice of criteria affects the segmentation outcome and should be based on relevance and simplicity.

Geographic Segmentation uses location-based criteria to form market segments. For example, a national tourism organization might segment tourists by language or region. Geographic segmentation is straightforward and practical but may not always capture relevant product preferences.

Socio-Demographic Segmentation uses characteristics such as age, gender, income, and education. This approach is useful in industries like luxury goods or tourism, where socio-demographic factors often correlate with preferences. However, socio-demographic criteria alone may not fully explain consumer behaviour, as they often account for only a small portion of behaviour variance.

3.3 Data from Survey Studies

Surveys are a common method for collecting data. Key considerations include:

- **Choice of Variables:** Select relevant variables that align with your segmentation goals (e.g., demographic, psychographic, behavioural).
- **Response Options:** Design response options carefully to capture accurate and useful data.
- **Response Styles:** Be aware of potential biases in how respondents answer questions and account for them in your analysis.
- **Sample Size:** Ensure the sample size is large and representative enough to provide reliable results.

3.4 Data from Internal Sources

Leverage internal data such as customer databases, sales records, and transaction histories. This data reflects real customer interactions and behaviours, offering valuable insights for segmentation.

3.5 Data from Experimental Studies

Conduct experiments to observe how changes in variables affect consumer behaviour. This approach helps in understanding cause-and-effect relationships and refining segmentation strategies.

3.6 Step 3 Checklist

- Convene a market segmentation team meeting.
- Identify potential segmentation variables and descriptor variables.
- Determine data collection methods to capture both segmentation and descriptor variables effectively.
- Design data collection processes to minimize biases and systematic errors.
- Collect and analyze data.

Step 7: Describing Segments

7.1 Developing a Complete Picture of Market Segments

Segment profiling is about understanding the differences in segmentation variables across market segments. These segmentation variables are initially chosen during the early stages of the market segmentation analysis process—conceptually in Step 2 (specifying the ideal target segment) and empirically in Step 3 (collecting data). The profiling step is integral in providing a clear depiction of these differences. In contrast, Step 7 focuses on describing segments using additional information not initially employed to extract market segments. This information includes variables such as demographics, socio-economic factors, media exposure, and product or brand attitudes, which provide a deeper understanding of the market segments.

For instance, in a data-driven market segmentation analysis using the Australian travel motives dataset, profiling involves examining the differences between segments based on travel motives. However, segment description goes further by incorporating additional data, such as segment members' age, gender, past travel behaviour, preferred vacation activities, media usage, and expenditure patterns. These additional variables, known as descriptor variables, are crucial for gaining a detailed insight into the nature of segments and developing a customized marketing mix.

A comprehensive segment description reveals essential information about the target segment, such as preferred communication channels and behavioural patterns. This knowledge is vital for designing effective marketing strategies tailored to each segment's specific needs.

7.2 Using Visualizations to Describe Market Segments

Visualizing segment descriptions is essential for simplifying the interpretation of differences in descriptor variables. There are various charts available for visualizing differences, including for nominal, ordinal, and metric descriptor variables. Graphical statistics offer significant advantages, such as simplifying result interpretation and integrating information about the statistical significance of differences, which helps avoid over-interpretation of insignificant differences.

1. **Nominal and Ordinal Descriptor Variables:** For nominal and ordinal descriptor variables, cross-tabulation is the foundation for all visualizations and statistical tests. For example, when analyzing the Australian travel motives dataset, the segment membership is cross-tabulated with descriptor variables such as gender. Visualizations like stacked bar charts or mosaic plots can be used to present this data. Mosaic plots are particularly effective because they allow for easy comparison of proportions across segments, even when segment sizes are unequal.
2. **Metric Descriptor Variables:** For metric descriptor variables, conditional plots are useful for visualizing differences between market segments. Tools like R packages lattice or ggplot2 can generate these plots, such as histograms or box-and-whisker plots. These plots allow for a more detailed comparison of metric descriptor variables across segments, providing additional insights that are crucial for segment description.

7.3 Testing for Segment Differences

Simple statistical tests like the Chi-squared (χ^2) test and Analysis of Variance (ANOVA) are used to test for differences in descriptor variables across market segments.

1. **Chi-squared Test:** This test is used to check for significant associations between nominal variables (e.g., gender) and segment membership. The test's output includes the test statistic, degrees of freedom, and p-value.
2. **Interpretation of p-value:** A p-value smaller than 0.05 indicates significant differences between segments. For instance, differences in moral obligation to protect the environment are shown to be significant.
3. **ANOVA for Metric Variables:** ANOVA is used to test for differences in means across segments for continuous variables like age or moral obligation. Significant differences are identified if the p-value is below 0.05.
4. **Pairwise Comparisons:** If ANOVA indicates significant differences, pairwise t-tests can identify which segments differ. These tests must adjust p-values for multiple comparisons using methods like Bonferroni correction or Holm's method.
5. **Visual Representation:** Mosaic plots and parallel box-and-whisker plots help visualize differences between segments. Tukey's Honest Significant Differences (HSD) plot shows confidence intervals for pairwise comparisons.
6. **Confidence Intervals:** In Tukey's HSD plot, if a confidence interval crosses the zero line, the difference is not significant. Otherwise, the difference is significant, as seen in the moral obligation differences between segments.

7.4 Predicting Segments from Descriptor Variables

This section discusses predicting market segments using descriptor variables through regression models and classification methods. The goal is to identify members of a market segment given descriptor variables, and to determine which descriptor variables are critical for segment identification.

Regression Analysis

Regression analysis is the basis for prediction models. It assumes that a dependent variable y can be predicted using independent variables or regressors x_1, \dots, x_p :

$$y \approx f(x_1, \dots, x_p)$$

The basic regression model is the linear regression model, which assumes that the function $f(\cdot)$ is linear and that y follows a normal distribution with mean $f(x_1, \dots, x_p)$ and variance σ^2 . The relationship between the dependent variable y and the independent variables x_1, \dots, x_p is given by:

$$y = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p + \epsilon$$

Generalized Linear Models

Generalized linear models (GLMs) can accommodate a wider range of distributions for the dependent variable. GLMs are not limited to the normal distribution and can use other distributions, such as the Bernoulli distribution with logit link, for classification problems.

The linear predictor in GLMs is given by:

$$g(\mu) = \eta = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p$$

Binary Logistic Regression

Binary logistic regression is used for predicting binary data using GLMs. The dependent variable follows the Bernoulli distribution with success probability μ , and the logit link maps the success probability μ onto the real line.

In R, the **glm()** function fits generalized linear models, including binary logistic regression.

Multinomial Logistic Regression

Multinomial logistic regression can fit a model that predicts each segment simultaneously. The dependent variable is assumed to follow a multinomial distribution with the logistic function as the link function.

In R, the **multinom()** function from the **nnet** package fits a multinomial logistic regression model.

Tree-Based Methods

Tree-based methods, such as classification and regression trees (CARTs), are an alternative approach for predicting a binary or categorical dependent variable given a set of independent variables. CARTs use a stepwise procedure to fit the model, recursively splitting consumers into groups based on one independent variable at a time.

In R, the **ctree()** function from the **partykit** package fits a conditional inference tree.

7.5 Step 7 Checklist

1. Bring across from Step 6 (profiling) one or a small number of market segmentation solutions selected on the basis of attractive profiles.

2. Select descriptor variables. Descriptor variables are additional pieces of information about each consumer included in the market segmentation analysis. Descriptor variables have not been used to extract the market segments.
3. Use visualisation techniques to gain insight into the differences between market segments with respect to descriptor variables. Make sure you use appropriate plots, for example, mosaic plots for categorical and ordinal descriptor variables, and box-and-whisker plots for metric descriptor variables.
4. Test for statistical significance of descriptor variables.
5. If you used separate statistical tests for each descriptor variable, correct for multiple testing to avoid overestimating significance.
6. "Introduce" each market segment to the other team members to check how much you know about these market segments.
7. Ask if additional insight into some segments is required to develop a full picture of them.

Step 8: Selecting the Target Segment(s) Summary

8.1 The Targeting Decision

- This step involves choosing which market segments will be targeted based on the profiles and descriptions from earlier steps.
- **Key Considerations:**
 - Ensure all segments meet the knock-out criteria. Double-check that segments are large enough, homogeneous, distinct, identifiable, reachable, and have needs the organization can satisfy.
 - Evaluate segment attractiveness and organizational competitiveness. Assess which segments are most attractive to the organization based on its goals and capabilities. Determine which segments would prefer the organization's offering over competitors and evaluate the likelihood of securing each segment.
 - Answer two main questions:
 1. Which segments does the organization prefer?
 2. How likely is it that the organization will be chosen by these segments?

8.2 Market Segment Evaluation

1. Use a decision matrix to visualize segment attractiveness and organizational competitiveness.
2. **Decision Matrix Variants:**
 - Various decision matrices can be used, such as the Boston Matrix, General Electric/McKinsey Matrix, or Directional Policy Matrix.
 - These matrices help visualize segment attractiveness and organizational competitiveness

3. **Defining Evaluation Criteria:**

- **Segment Attractiveness:** Criteria that make a segment desirable, such as market size, growth potential, and profitability.
- **Organizational Competitiveness:** Criteria assessing how well the organization meets the segment's needs, such as product appeal, pricing suitability, and distribution efficiency.

4. **Assigning Values and Weights:**

- **Segment Attractiveness:** Rate each segment based on predefined criteria, multiply by the assigned weight, and sum to get the overall attractiveness score (x-axis).
- **Organizational Competitiveness:** Rate how well the organization meets each segment's needs, multiply by the assigned weight, and sum to get the overall competitiveness score (y-axis).

5. **Creating the Segment Evaluation Plot:**

- Plot segments on a graph with segment attractiveness on the x-axis and organizational competitiveness on the y-axis.
- Use circles (bubbles) to represent each segment, where the size of the circle reflects additional criteria like profit potential or segment size.

6. **Interpreting the Plot:**

- Segments in the upper right quadrant are highly attractive and well-matched with the organization.
- Segments in the lower left quadrant may be less appealing or less well-aligned with organizational strengths.
- Use the plot to make informed decisions about which segments to target based on their attractiveness, competitiveness, and potential profitability.

8.3 Step 8 Checklist

1. Convene a segmentation team meeting.
2. Identify market segments for consideration based on profiling and description.
3. Ensure segments meet knock-out criteria; eliminate non-compliant ones.
4. Agree on values for segment attractiveness and organizational competitiveness.
5. Calculate overall attractiveness and competitiveness for each segment.
6. Plot these values on a segment evaluation plot.
7. Make a preliminary selection of target segments.
8. Ensure selected segments are compatible if targeting more than one.
9. Present selected segments to the advisory committee for discussion and possible revision.

Step 9: Customizing the Marketing Mix

Customizing the Marketing Mix is the phase in market segmentation where tailored marketing strategies are developed to engage specific target segments effectively. This step focuses on understanding the distinct characteristics and preferences of each segment, and then adapting the product, pricing, distribution, and promotional tactics accordingly. By analyzing the data gathered in previous steps, businesses can create personalized experiences that resonate with the needs and

desires of each segment. This approach enhances customer satisfaction and loyalty, ultimately driving business growth. Regular monitoring and adjustments ensure that the marketing mix remains aligned with evolving market trends and consumer preferences.

Step 9 involves crafting unique strategies for each target segment to maximize relevance and engagement. It's about creating customized product offerings, pricing structures, distribution channels, and communication approaches that cater to the specific attributes and behaviors of each segment, leading to more effective and successful marketing campaigns.

9.1 Implications for Marketing Mix Decisions

Implications for Marketing Mix Decisions refers to the process of analyzing the insights gained from market segmentation and applying them to shape the various elements of the marketing mix. Each identified market segment has distinct characteristics, preferences, and needs. Therefore, this step involves making strategic decisions about product development, pricing strategies, distribution channels, and promotional activities that will resonate most effectively with each segment.

For instance, if a business identifies a segment of health-conscious consumers who value organic and sustainable products, the implications for the marketing mix would include developing and promoting organic product lines, setting prices that align with the perceived value of such products, selecting distribution channels that reach environmentally-conscious consumers, and crafting advertising messages that highlight the products' eco-friendly features. By tailoring each element of the marketing mix to the unique requirements of each segment, businesses can enhance customer satisfaction, build stronger relationships, and increase their competitive advantage in the marketplace.

9.2 Product

In the context of market segmentation and the marketing mix refers to one of the core elements that a business can customize based on the characteristics and preferences of different market segments. It involves designing and developing products or services that align with the unique needs and desires of each segment. This includes considering factors such as product features, functionality, design, quality, and branding.

When applying market segmentation insights to product decisions, businesses can create offerings that cater to specific segments. For example, if a company identifies a segment of tech-savvy customers who value convenience, it might develop a mobile app that simplifies the shopping process. On the other hand, for a segment seeking luxury and exclusivity, the business could introduce premium versions of its products with enhanced features and materials. By customizing products to meet the distinct preferences of various segments, companies can increase customer satisfaction and loyalty while also potentially expanding their market reach.

The product element within the marketing mix involves tailoring products or services to the unique characteristics and needs of different market segments. This strategic approach helps

businesses create offerings that resonate with customers, driving higher sales and enhancing overall competitiveness.

9.3 Price

Price is a critical component of the marketing mix that involves setting the monetary value of a product or service based on various factors, including production costs, competition, customer perception, and market segmentation insights. When considering market segmentation, businesses analyze the different segments' price sensitivity, willingness to pay, and perceptions of value to determine optimal pricing strategies for each segment.

Market segmentation can guide pricing decisions by identifying segments with varying levels of price sensitivity. For instance, a business might offer premium pricing to a segment that values high-quality and unique features, while adopting a more competitive pricing strategy for price-sensitive segments. By tailoring prices to each segment's preferences and willingness to pay, companies can maximize revenue and profitability while effectively meeting the needs of diverse customer groups. The price element of the marketing mix involves setting prices that align with the preferences and perceived value of different market segments. Strategic pricing decisions based on market segmentation insights can enhance customer satisfaction, drive sales, and contribute to the overall success of a product or service in the market.

9.4 Place

Place refers to the distribution strategy in the marketing mix, focusing on how products or services are made available to customers. Market segmentation plays a crucial role in determining the most effective distribution channels for reaching different customer segments. By understanding the preferred shopping behaviors, locations, and accessibility of each segment, businesses can optimize their distribution networks.

Market segmentation guides place decisions by helping businesses select distribution channels that best match the preferences of each segment. For instance, segments that prefer convenience might be targeted through online platforms, home delivery, or local stores, while segments seeking specialized products might be reached through niche retailers or exclusive outlets. By tailoring distribution strategies to segment needs, companies can ensure that their products are available in the right places at the right times, enhancing customer satisfaction and market reach. The place element of the marketing mix involves strategically choosing distribution channels that align with the preferences and behaviors of different market segments. Market segmentation insights enable businesses to optimize their distribution networks, ensuring that products or services are easily accessible to each segment and maximizing the chances of success in the market.

9.5 Promotion

Promotion is a critical component of the marketing mix that involves communicating with target market segments to create awareness, interest, and desire for a product or service. Market segmentation guides promotional efforts by helping businesses tailor their messaging and communication channels to effectively reach and engage different customer segments.

By understanding the unique characteristics and preferences of each segment, businesses can create promotional campaigns that resonate with the specific needs and interests of their target audiences. This might involve using different language, imagery, or messaging styles to appeal to diverse segments. For example, a luxury fashion brand might use sophisticated and aspirational messaging to target a high-income segment, while employing a more casual and relatable tone for a younger, value-conscious segment.

Furthermore, market segmentation informs the selection of communication channels, ensuring that promotional efforts are directed to the platforms and media most frequented by each segment. This could involve using social media, influencers, traditional advertising, or other channels based on segment behaviors and preferences. By customizing promotion strategies according to market segments, businesses can enhance the effectiveness of their communication efforts and establish stronger connections with their target audiences.

9.6 Step 9 Checklist

- Convene a segmentation team meeting.
- Study the profile and the detailed description of the target segment again carefully.
- Determine how the product-related aspects need to be designed or modified to best cater for this target segment.
- Determine how the price-related aspects need to be designed or modified to best cater for this target segment.
- Determine how the place-related aspects need to be designed or modified to best cater for this target segment.
- Determine how the promotion-related aspects need to be designed or modified to best cater for this target segment.
- Review the marketing mix in its entirety.
- If you intend to target more than one segment: repeat the above steps for each of the target segments. Ensure that segments are compatible with one another.
- Present an outline of the proposed marketing mix to the advisory committee for discussion and (if required) modification.