

Applying the Analytic Hierarchy Process to Promotional Program Budget Allocation

What is the Analytic Hierarchy Process?

The Analytic Hierarchy Process (AHP) is a flexible tool for structuring complex problems that have both quantitative and qualitative aspects. As the name suggests, the Analytic Hierarchy Process breaks what can be complex, seemingly impenetrable problems into a hierarchy of components to make the problem easier to solve and allow the team to assess the relative importance of the components. These relative rankings are then used to determine which solution or strategy best satisfies the problem.

The AHP can be used in a group setting to take advantage of the perspective and knowledge of every team member, allowing a team from different marketing functions to work together, learn from each other, and develop a shared solution to a problem. The results of the AHP can then be used to explain how the marketing program allocation was made to management and other members of the organization and defend that decision, if necessary. The team-based process itself increases clarity and builds consensus.

The Analytic Hierarchy Process can be applied to any decision, but Objective Insights has used it most often for pricing and portfolio optimization decisions where there are many influencers and the pharmaceutical company must balance tradeoffs between financial and non-financial objectives. In addition, we have found that the AHP can be helpful in identifying a solution that may have been non-obvious at the outset.

The Analytic Hierarchy Process was developed by Thomas Saaty, Ph.D. in the 1970's when he was a professor at the Wharton School of Business, University of Pennsylvania.

How Does the Analytic Hierarchy Process Work?

The AHP starts with the team deciding upon the single mission or goal that defines what they wish to accomplish (for reference, an example of a completed AHP structure is shown on page 3). Next, the group determines what objectives (and where more detail is needed, sub-objectives) are important to satisfying the mission. For example, objectives could be physician awareness/trial/usage, patient awareness, compliance/persistence, reimbursement, and other desired outcomes. Objectives can be quantitative or qualitative.

After objectives have been determined, an optional step is for the team to identify stakeholders that are important to achieving the objectives and that are influenced by potential marketing programs. Examples of stakeholders are physicians (which could be further divided by specialty, prescribing habits, or importance within the medical community), patients, and payers.

Finally, the group develops a set of marketing programs to address the objectives. In a pricing situation, the strategies could be as simple as a range of price points or a more complex blend of prices and accompanying programs. This step is also an opportunity to develop creative solutions to fulfill the objectives.

These elements (mission, objectives, groups, marketing programs) define the AHP structure. The next phase of the process is to assign relative ratings to all of these elements. This is done through a series of pairwise comparisons where each element on a level is compared in importance with respect to an element on the level above. For example, the team may rank Objective 1 as strongly more important than Objective 2 with respect to the mission. This proceeds down through the levels until all of the marketing programs have been ranked with respect to the different objectives.

All of these relative ratings are then mathematically combined in the AHP model to determine how a fixed budget should be distributed amongst the marketing programs to best fulfill the mission. The AHP can also be subjected to sensitivity analysis to determine how the answer changes in response to weighting changes amongst objectives or stakeholders.

Another advantage of the AHP mathematical underpinning is that it can identify circular logic in the relative ratings. For example, if Program A is more important than Program B in achieving Objective 1, and Program B is more important than Program C in achieving the same objective, then Program A has to logically be more important than Program C. While this is a simple example, the situation grows more complex as the number of objectives and programs grows. The AHP keeps track of all this and flags elements where the group assessment is logically inconsistent.

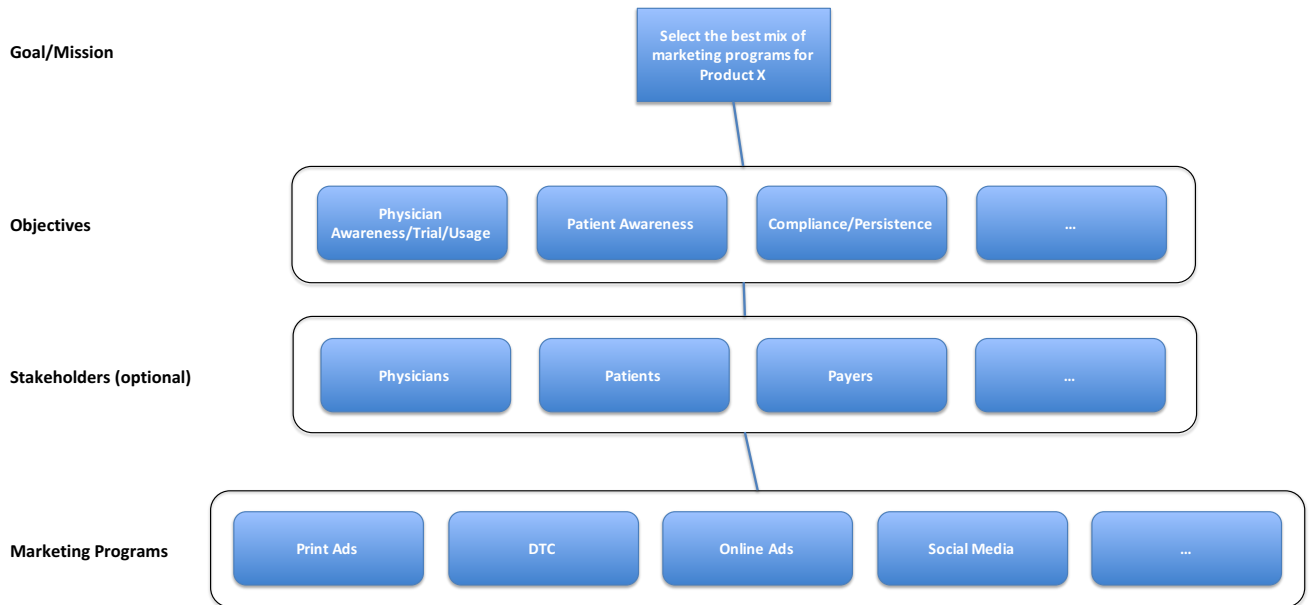
Finally, the AHP is a good tool to identify and discuss disagreements, as team members may have different opinions on what objectives and stakeholders are important and how different marketing programs affect them. Such disagreements can be noted during the process and flagged for sensitivity

analysis after the process is complete to see if the disagreement would change the final answer.

To summarize, the AHP is an assessment of the importance of the marketing programs to the most important project objectives. The results of this process will show how the marketing budget should best be allocated to meet the objectives of the company within the context of the environment in which the product is anticipated to launch.

Objective Insights uses the AHP primarily for pricing and portfolio optimization decisions. The decision about the best marketing program budget allocation is really a portfolio optimization decision. In other words, the portfolio consists of potential marketing programs and the goal is to optimize the proportion of the budget that is allocated to each program that maximizes the value of the portfolio.

Figure 1 – AHP Structure Example



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