



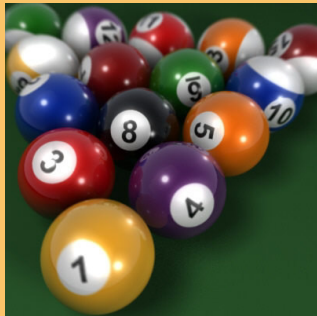
# Marketing Analysis Consulting

*Mathematics at the Service of Marketing*

Subject No. 3 – October 2007

## Communication Budget Allocation

*The optimal allocation of resources is the main objective of the budgeting process*



*Before starting the budgeting process it is very important to define the goals to be achieved.*

The allocation of resources, inter and intra departments, is one of the key management actions that need to be taken by companies. This is a complex and poorly structured process which is normally carried out on the basis of:

- Company records
- Forecasts of future results
- Secure funding

Part of this process will typically take place in the Marketing Department, and within it, in the area of Communication.

Added to the question of whether advertising works or not, there is a growing demand, among marketing executives, for the development of new tools to facilitate advertising budget allocation decisions: 1) how much to invest, 2) how to allocate that investment, and, 3), what is even more important, being able to monitor whether the decisions taken achieved the desired results.

Deciding where and how to spend your communication budget is what is known as "Communication Budget Allocation", and to best achieve this we will need two analytical tools: Econometric Modeling and Optimization Algorithms.

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### Mathematical Analysis of Budgeting



Objectives and Marketing Strategy

Econometric Models Determinants of Sales

Channel Optimization

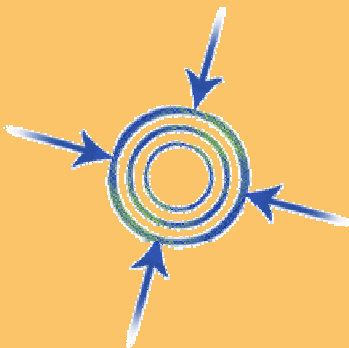
Budget Allocation





*Basing advertising on the percentage of sales method may have the effect of allocating too much or too little funding for a specific brand.*

*Understanding the brand position, the pre-determined objectives and the target audience, will allow us to adopt the best strategy.*



**The starting point: when to invest**

Within the literature on the subject, there are several allocation methods used by company executives to determine the advertising budget:

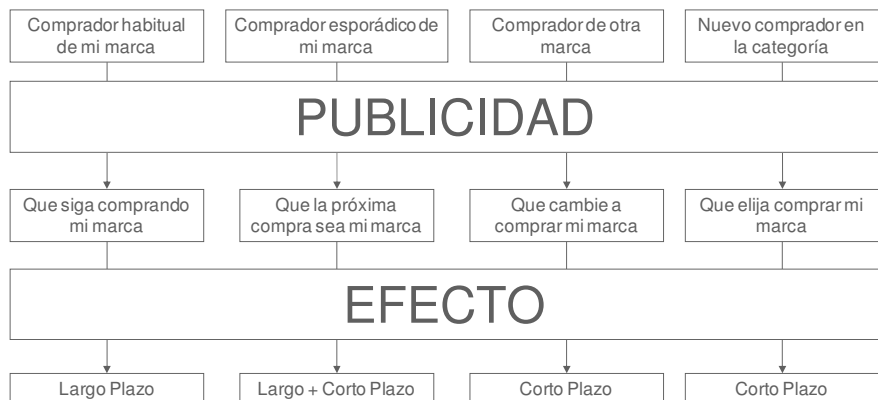
- All available funds method.
- Affordable method (amount left after covering all the other expenses).
- Historical: based on what was done in the previous year.
- Executive Experience. Percentage of Sales (% of the last year's Sales or the next year's forecast sales).
- Similar to competitors (rule SOV = SOM: Share Of Voice at least equal to Share Of Market).
- Based on objectives (benefits, growth, market share, brand, etc).

The percentage of sales method is the most commonly used, due to its simplicity and for having the added advantage of devoting more funds to the strongest brands or those of a bigger size, which are key elements when it comes to determining advertising profitability.

**Objective-based Budgeting**

Notwithstanding what has been said so far, the "Percentage of the Sales" method does not take into account the brand's current position, the specific objectives for each product, or the target group composition (percentages of buyers: regular, occasional, new, etc.) :

*Effects of Advertising on the Target Audience*





# Marketing Analysis Consulting

*Mathematics at the Service of Marketing*



André Langer Fernández

*Econometric modeling will allow us to analyze the existing interrelations among a great number of data.*



André Langer Fernández

*And the optimization algorithms will allow us to find the best only solution.*

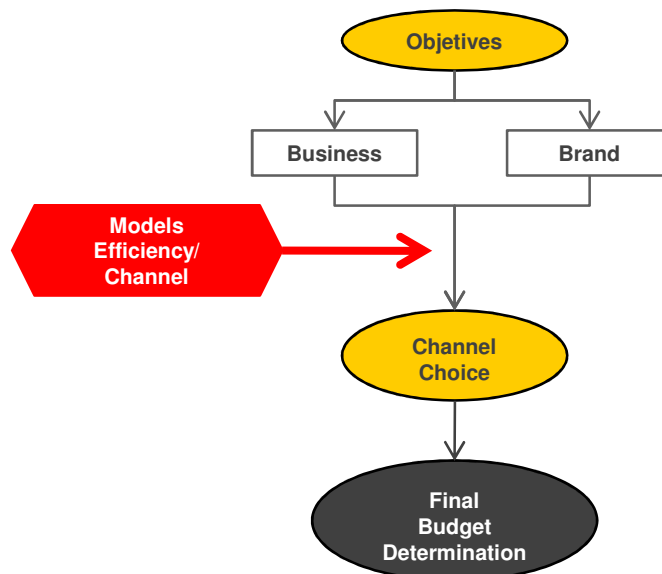
Therefore, we believe that it is essential to implement a new budgeting process focused on business and brand objectives. It's all about a two-way model: starting from the effects of advertising on the brand and on the sales -in the short term as well as in the long one-, and from the brand position at the current moment, we have to set up the appropriate budget and its optimal allocation channels to achieve the desired effect for every product.

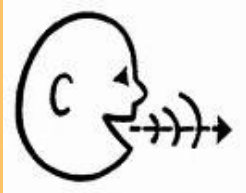
To achieve the objectives for this process, the **Econometric Modeling and Optimization Algorithms** represent an element of vital importance since they will allow us to evaluate the impact that different budget allocations (amounts, channels, targets, etc.) had on sales based on consumer response to advertising investment in previous periods, and use this to optimize future budgeting.

Apart from the usual objectives of volume or sales growth percentage, it is very important to **fix and measure over time, intermediate indicators** in relation to the consumer and to the brand:

- Brand awareness
- Brand attitude
- Buying intent

Finally, economic data such as media costs will represent a key element for measuring budget profitability.





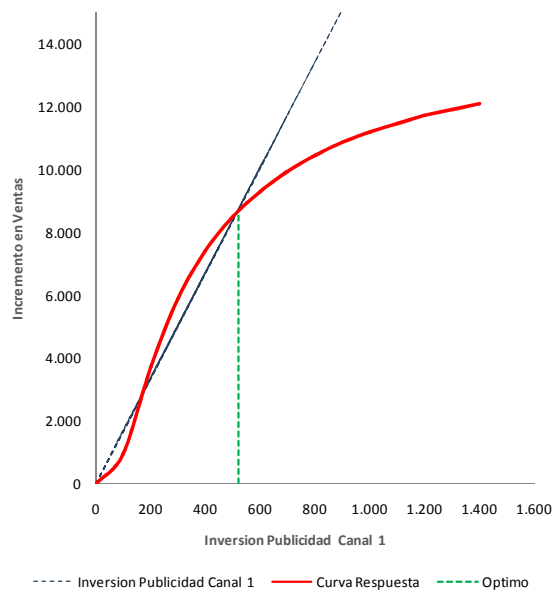
Consumers' response to advertising investment will facilitate better resource allocation.



### The Response Curve

The starting point of the **Econometric Models** is represented by the **Response Curve**, which will allow us to know the sales or the brand benefits that we will achieve for each budget level. The curve is defined by analyzing past responses to advertising and taking into account all the channels used, as well as the different targets, which will require a laborious and iterative process.

The main property of the response curve is that it is non-linear; that is to say, the curve does not continue to slope upwards as advertising budgets increase: sales reach a gradual saturation point. This means that there will be a budget when profit from advertising reaches a maximum and that implies that an increase in advertising spending will not generate significant increases in sales and the relative benefit will start to decrease.



Although the response curve is defined from modeling historical data, it's only natural that the future will be different, because a new execution, a different target audience, more sophisticated media or a new marketing mix; all of these can influence and affect the response, and that's why it is necessary to operate on a variety of scenarios based on different approaches and subsequently examine their impact on the budget.

Our experience suggests that what's most important is setting up a framework of brand-relevant data, market, profitability and media costs for better resource allocation.

*For each product and for each brand we must clearly know what are the objectives we want to*



*Within a portfolio of brands "halo" and "cannibalization" effects will always occur which should be isolated and analyzed.*



### **Conclusion**

Econometric Modeling and Optimization Algorithms provide three key elements to the budget allocation process:

1. A quantification of the historical return on marketing investment (representing an indication of future returns, important for fixing realistic financial objectives).
2. An estimate of diminishing returns, that is to say, in what way marginal return on advertising investment decreases as the budget increases (known as the response curve, which is vital for setting upper limits to the advertising budget).
3. Profitability maximization based on planned objectives.

For companies with an ample portfolio of brands, modeling can also provide an estimate of **halo and cannibalization effects** which are often ignored, despite the fact of being easily measurable and which can have a significant impact on budgets.

The econometric modeling approach will also provide (see the August Newsletter) understanding on how other marketing elements work, as well as their profitability. This sets up a framework for investigating the significance of diverting budgets from one area to other areas of marketing, such as to advertising instead of to sales promotions.

It is important to contemplate this mechanism as just another tool and not as the mechanism itself; therefore, it would be wise to continue using other methods for comparison and analyze the differences among them. In addition, it is essential to monitor the budgets in order to validate the budgeting process.

However, we have to know what has to be implemented. It can take time to obtain results using these models, but the reward will be worth the effort: WE WILL DEVELOP MORE EFFICIENT BUDGETS .