

# Market mix models optimized multi-million dollars marketing budgets of a Fortune 50 CPG company

## Introduction

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Our client, a Fortune 50 multinational food, snacks, and beverages corporation with an annual revenue of over 70 billion USD (*as of 2020*) and with presence in nearly 150 countries and territories, spends billions of dollars annually in its global marketing and advertising.

Client wanted to improve the efficiency of its marketing factors by identifying the contribution and ROI of various marketing factors such as advertisements (GRPs), newspaper ads, YouTube ads, and magazine ads. Client wanted to understand the impact of various marketing channels and their sub-components on total sales and to determine an optimal marketing mix.



## Implementation

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TransOrg developed market mix models by using advanced analytics and machine learning techniques covering four-six brands across South Africa, Australia, USA, Thailand, and China regions to provide granular level insights at the 'Country X Brand X Region' level and at the 'Channel X Sub-Channel X Campaign' level.

Models are refreshed either quarterly, half yearly or yearly depending upon the sales salience.

For each region mentioned above the input data used for building the models included:

- Internal shipment data
- Nielsen sales data with appropriate volume corrections based on internal shipment data
- Media data such as GRPs, impressions etc.
- Trade promotion and competition price
- Macro-economic factors such as GDP, growth rate, inflation etc.

### Transformations

- Various independent variables were created such as holiday flags, number of distributors, average base price and average discount percentage.

- Performed transformations on variables such as adstock, power and lag
- Created control variables
- Performed data exploration for additional insights

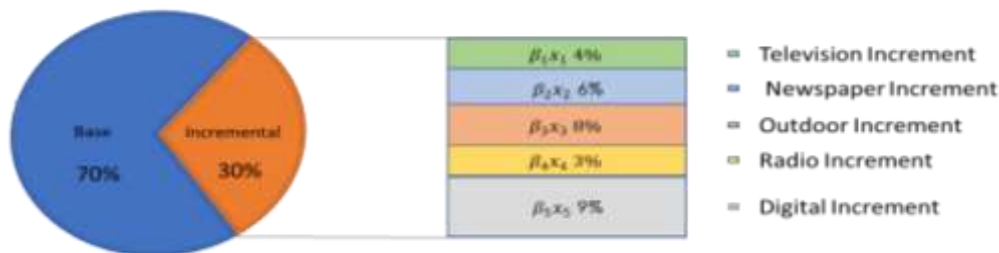
**Modelling**

1. Test combinations of input variables to determine their impact and isolate those that statistically explain the product performance.
2. Select best model (combination of variables) using statistical diagnostics and goodness of fit

## Marketing Analytics Approach

Advanced statistical methods were used to quantify the incremental impact of each marketing category on sales and to attain optimum spend in each marketing category.

Total sale for a period is due to base sales of the product and the incremental sales due to marketing initiatives. Using MMM, we determined the sales impact of each category ( $\beta$ ) as illustrated below:



The output of the first model was used as an input to create a second level model for each marketing category e.g., for digital marketing the impact of all sub-categories such as Facebook, affiliate marketing, display ads, etc., was determined as shown below:



The same approach was used to further drill down each sub-category to campaign level analysis as illustrated below.





In addition to the model, TranslOrg provided key business insights to the client such as how:

- An increase in media investments helped arrest the volume decline (positive effect of over 2%) and grew portfolio volume by ~1.5%
- With sufficiency in media ads, improved execution and increased competitor price helped gain significant volume
- With continued use of Facebook and Instagram ads, consisting of nearly half of the total digital marketing spends, are delivering high ROIs across all regions

## Impact

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The insights provided along with the MMM models are used by the client's marketing and strategy teams across the regions for setting their annual marketing budgets, determining their marketing spend allocation across the factors and in maximizing the ROIs by realigning the budget allocation for different channels.

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