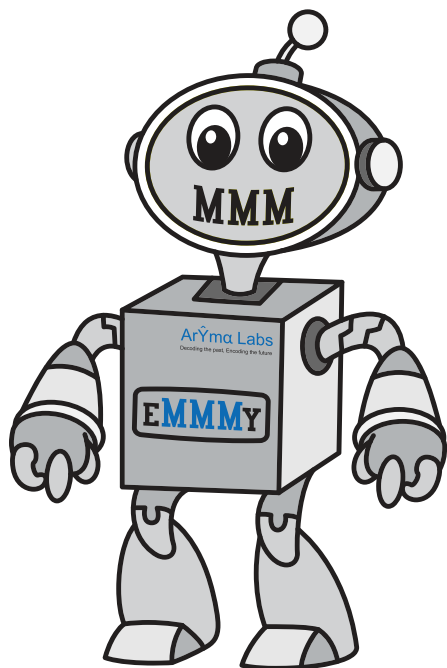# Marketing Mix Modeling

with

EMMMy

Contribution Chart Explained

What is a Contribution Chart ? Why use it ?

Contribution Chart is a Data Visualization technique to depict what marketing inputs drive sales and how much is the impact of each marketing input.
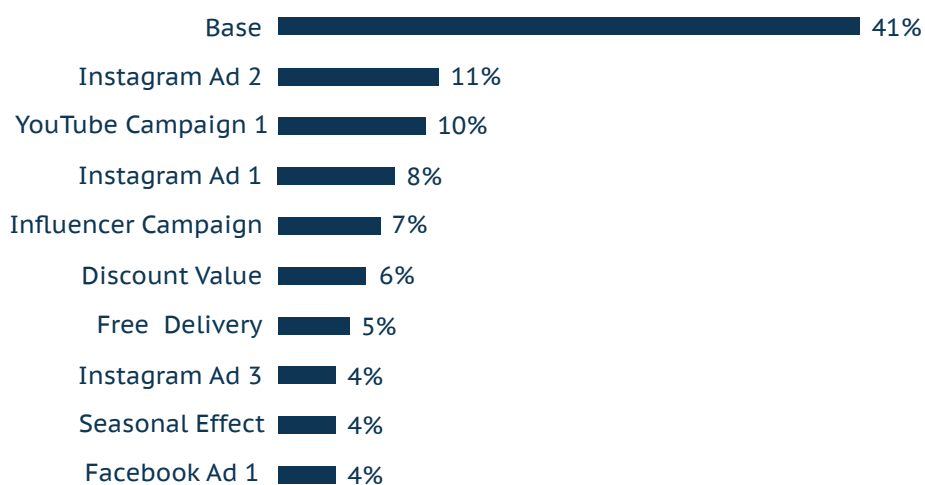
Contribution from each marketing input is product of its beta coefficient and input value.
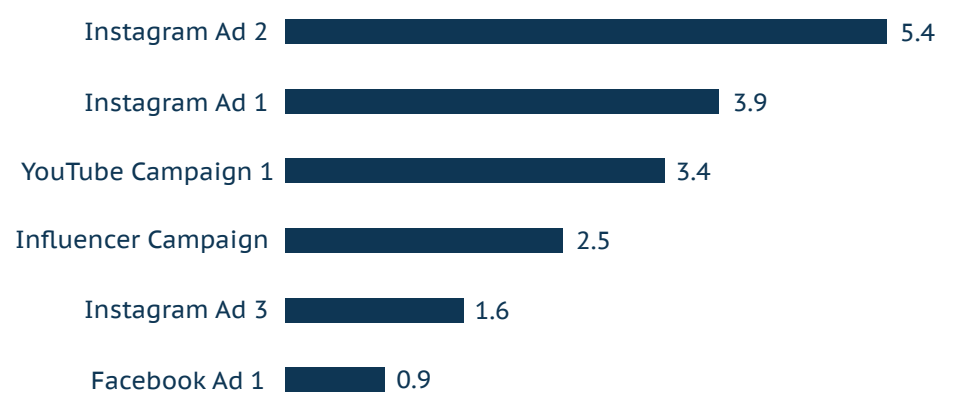
E.g.: Contribution from TV = β * TV Spends

Why do we use contribution charts ?

Well, It always helps to ease the cognitive burden off your time-starved clients by representing market reality in a visual way.

Drivers of Sales: Women Wear

Driver	Contribution
Base	41%
Instagram Ad 2	11%
YouTube Campaign 1	10%
Instagram Ad 1	8%
Influencer Campaign	7%
Discount Value	6%
Free Delivery	5%
Instagram Ad 3	4%
Seasonal Effect	4%
Facebook Ad 1	4%

ROI: Drivers of Women Wear

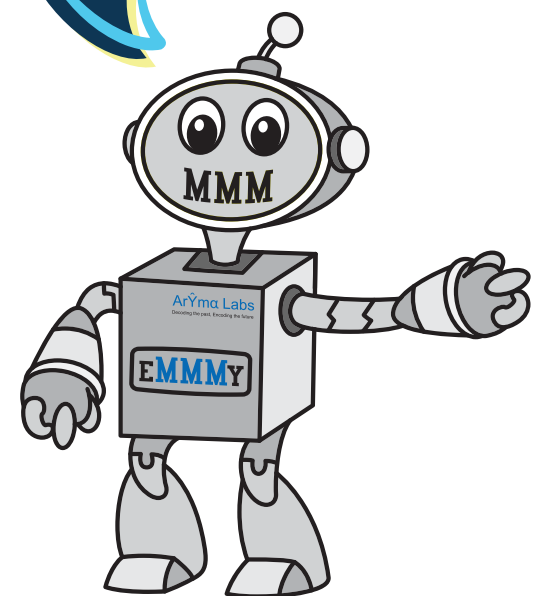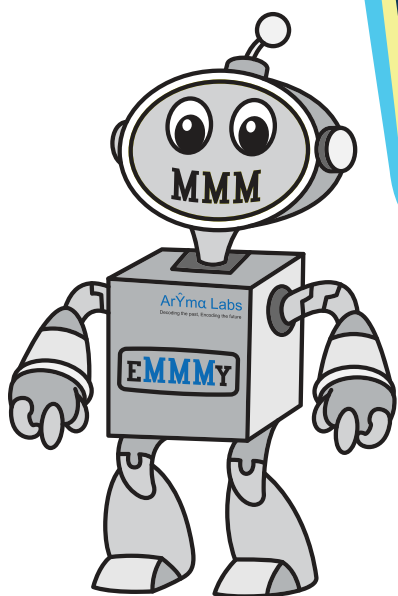| Driver	ROI
Instagram Ad 2	5.4
Instagram Ad 1	3.9
YouTube Campaign 1	3.4
Influencer Campaign	2.5
Instagram Ad 3	1.6
Facebook Ad 1	0.9

Types of Contribution Charts

How many types of Contribution charts are there ?

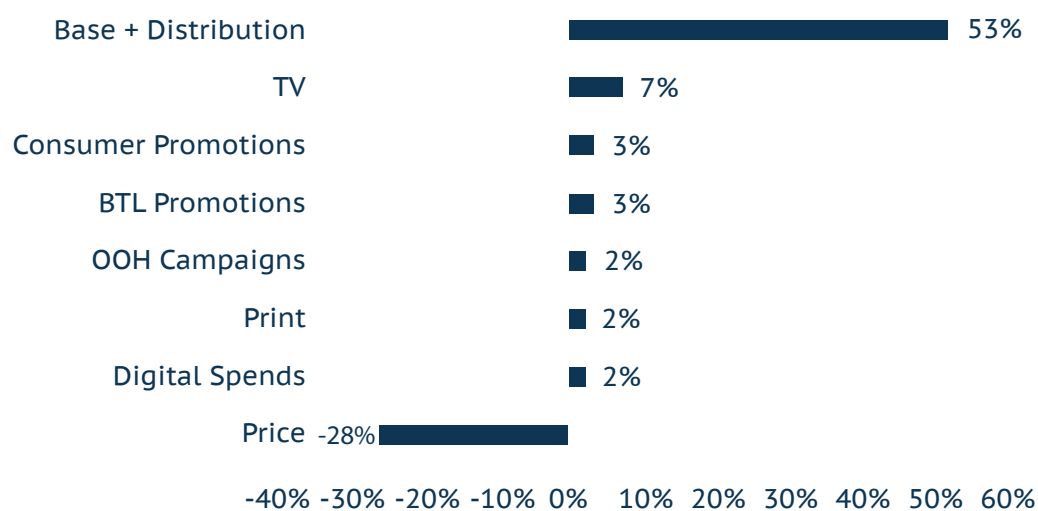Predominantly there are two types of Contribution charts.

1. Absolute contributions summing up to 100

2. Non absolute contributions summing up to 100

Let me start with Absolute Contributions summing up to 100 with an example

Contribution summing up to 100

Drivers of Sales

Base + Distribution	53%
TV	7%
Consumer Promotions	3%
BTL Promotions	3%
OOH Campaigns	2%
Print	2%
Digital Spends	2%
Price	-28%

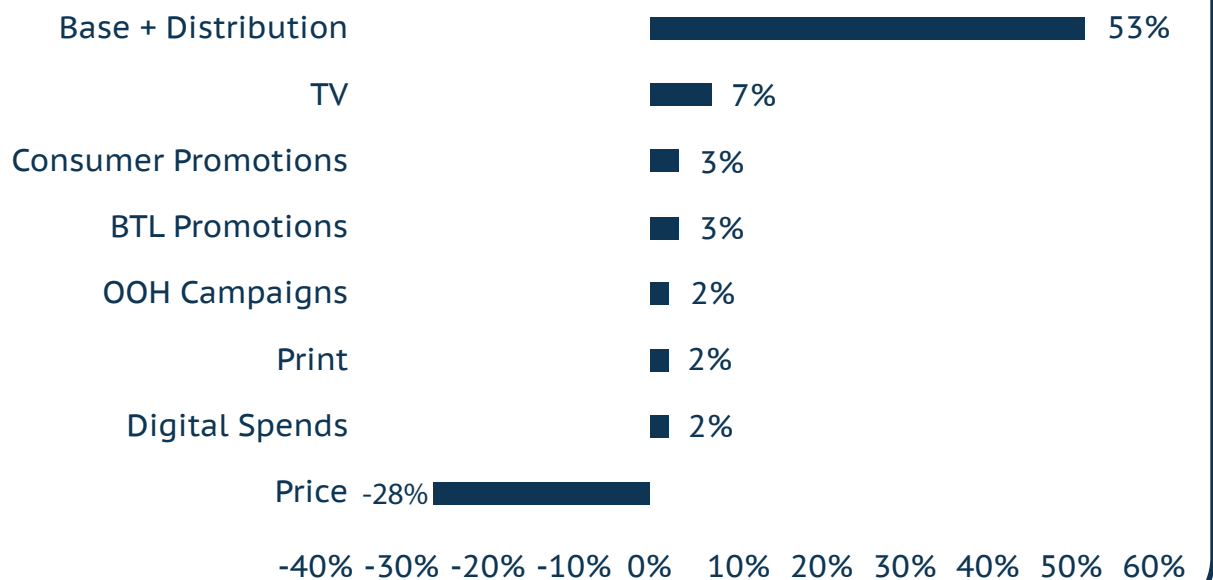-40% -30% -20% -10% 0% 10% 20% 30% 40% 50% 60%

Let's say we have sold 100 units of a product.

Out of the 100 units sold, 53 units would be sold even if the marketer doesn't invest in any form of advertisement. Basically, these 53 units are sold because of the brand's equity in the market and the awareness it had created in the customer's mind in the past. Similarly, 7 units are sold due to TV advertisements and 3 units are sold due to Consumer promotions and BTL promotions each.

Types of Contribution Charts
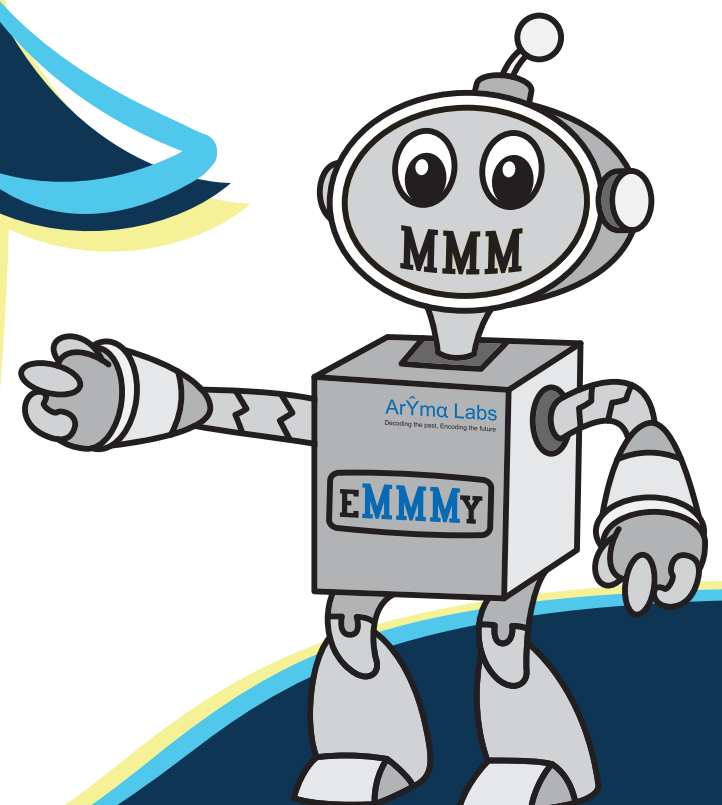
Absolute Contribution summing up to 100

Why is there a negative sign on price ?

Drivers of Sales

Driver	Contribution
Base + Distribution	53%
TV	7%
Consumer Promotions	3%
BTL Promotions	3%
OOH Campaigns	2%
Print	2%
Digital Spends	2%
Price	-28%

-40% -30% -20% -10% 0% 10% 20% 30% 40% 50% 60%

Interpreting price correctly is the key to understand the **MMM** contributions. Many a times, people are misled due to the negative sign present when it comes to representing price. Notice that, when we sum up the contributions in the above chart with the negative sign on price, the sum is 44 not 100.

If we ignore the negative sign on the price, the contributions would sum up to 100.

Negative sign of the price indicates that 28 units of sales was lost, due to increase in price. This is a notional concept which depicts that 28 additional units of sales could have been gained, had there been no increment in price.
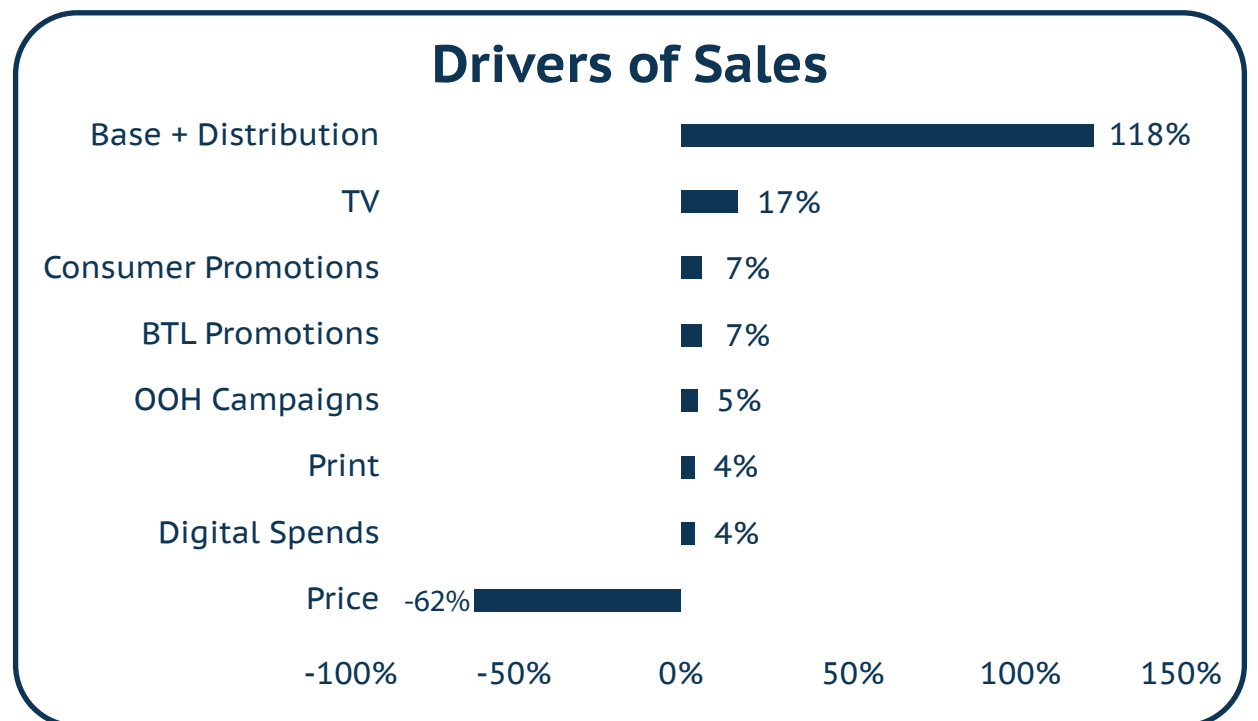
In addition to price, competitor activities are also represented with a negative sign on contribution for the same reason.

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Types of Contribution Charts

Non absolute Contribution summing up to 100

So, what is Non absolute contributions summing up to 100 ?

Drivers of Sales

Driver	Value
Base + Distribution	118%
TV	17%
Consumer Promotions	7%
BTL Promotions	7%
OOH Campaigns	5%
Print	4%
Digital Spends	4%
Price	-62%

-100% -50% 0% 50% 100% 150%

Absolute contributions method to interpret contributions is a little confusing for some people. So, there is another method which can be used to interpret the results.

In the above chart, we can see that the total contributions sum to 100% keeping the negative sign intact.

We can say from this chart is that the 162 units of the brand were sold (sum of all positive contributions). Out of the 162 units sold, sale of 118 units comes from Base and distribution. 17 units sold are driven by TV advertisement and so on. And 62 units of sales have been lost, due to price increment. Hence, to total sales would be 100 units.

MMM

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EMMMY
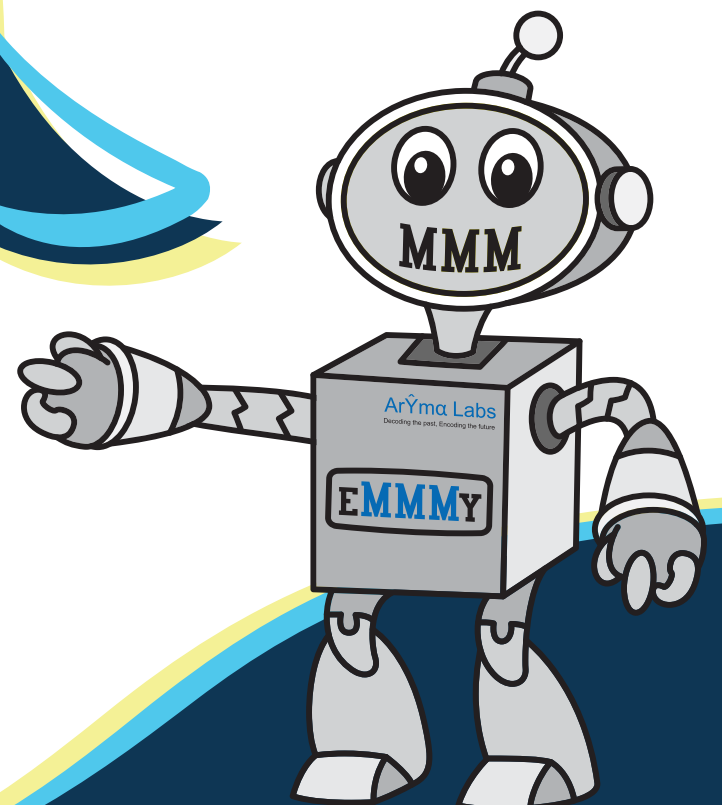
Pitfalls to Avoid

What are the pitfalls to avoid while interpreting **MMM** Contribution charts ?

Here are 3 pitfalls to avoid.
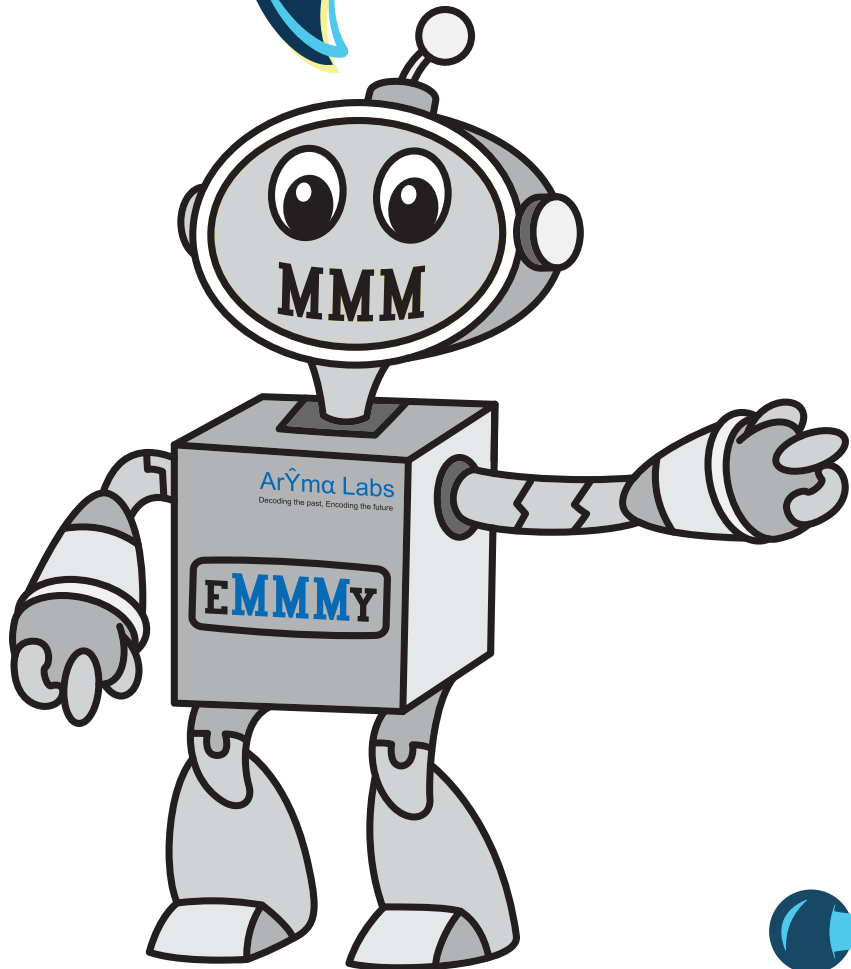
1) Just relying on contributions:

Marketing Mix Models are interpreted with a holistic approach. Just using contribution percentages is not a correct way to solve a Marketing Mix Modeling problem. What follows after contribution charts, is computing ROI.
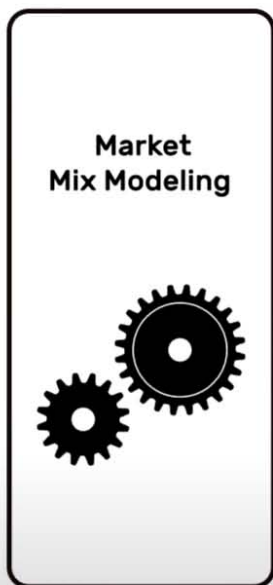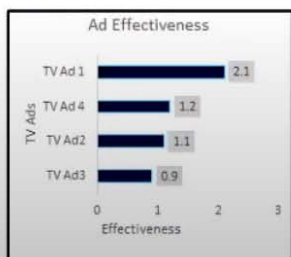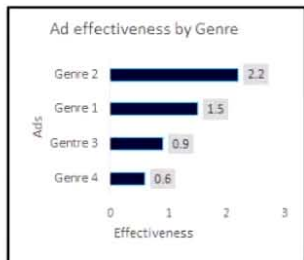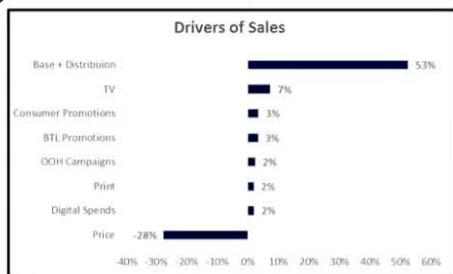
There could be a certain variable which would appear to show contributions in-line with the data used, but would show erratic ROI figures. In such a scenario, contributions should be adjusted to get all the results in-line.

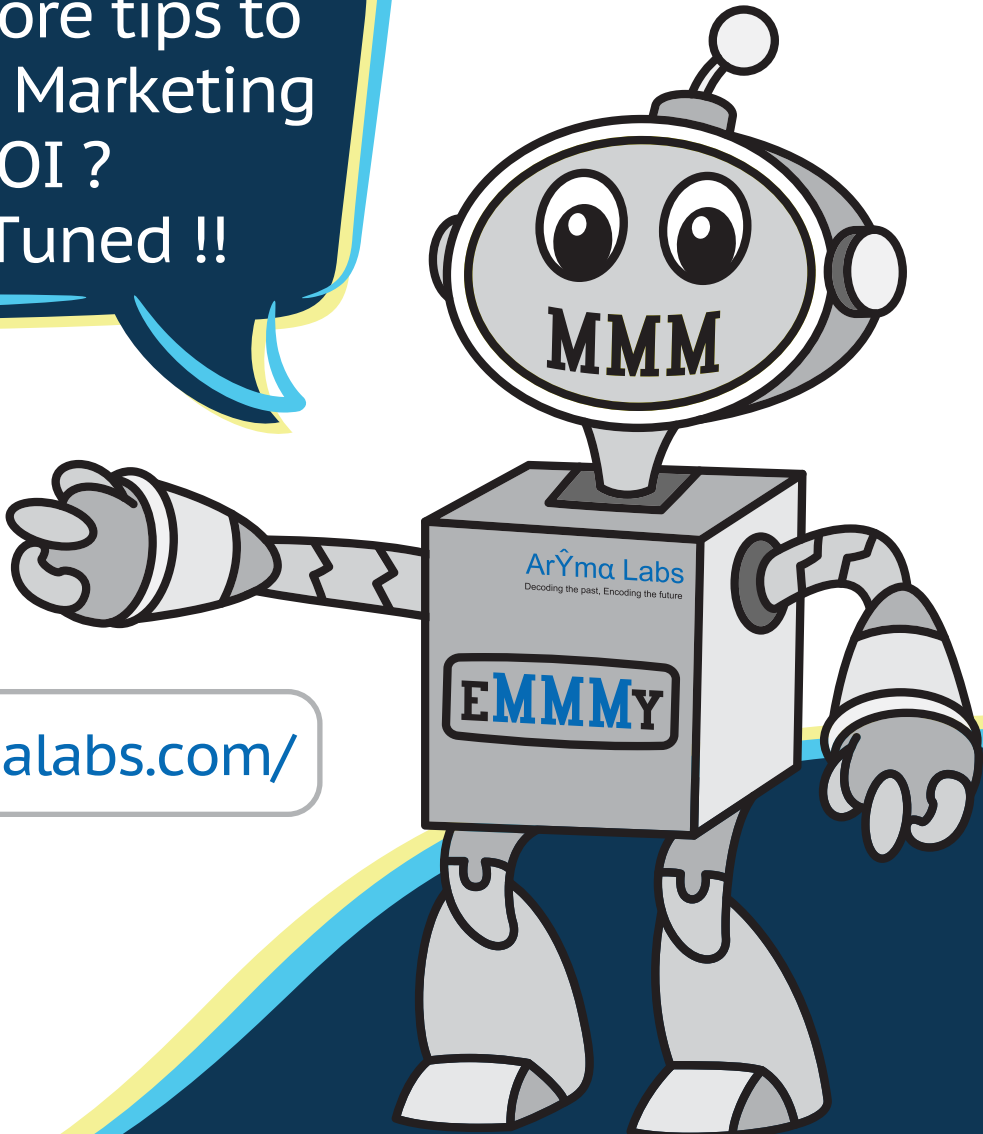### 2) Not comparing the contributions with the benchmark:

It is prudent to compare the contributions of the model, with the benchmark figures of a similar brand/category to gauge how accurate the contribution results are. This helps in validating the results before reaching the ROI computation phase.

3) Balancing Statistics and Domain:

Some **MMM** models built would be statistically robust, but may not make business sense or vice versa. Domain knowledge should be used in conjunction with statistics to draw upon business insights.

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Want more tips to improve Marketing ROI ?
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