



Arima

Is My Marketing Budget Big Enough?

Winston Li

winston@arimadata.com

- Agenda

- 1. Sizing the Marketing Budget
 2. Evolving the MMM: Arima's Framework
 3. Evolving the MMM: Data Automation
 4. Evolving the MMM: Newer Modeling Techniques
 5. Arima's MMM Platform in Action
 6. Q&A

1

Sizing the Marketing Budget

What MMM is an important part of the puzzle

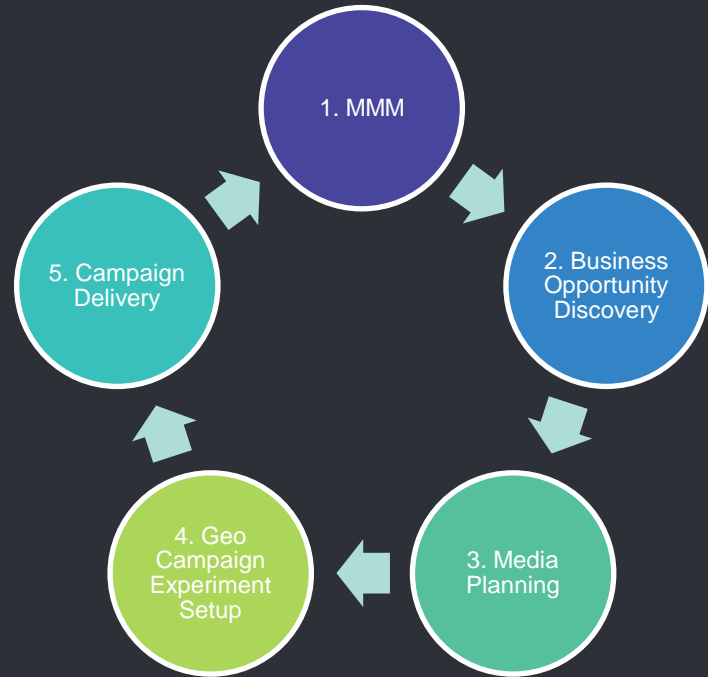
● Sizing the marketing Budget

○ Sizing the marketing budget requires market and customer data

- Avoid the risk of the under-sized marketing budget
- Provide fuel for marketers in the debate between Zero-Based Budgeting & Spend/Sales ratio
- Mark Ritson: <https://www.brandknewmag.com/we-need-a-new-third-way-to-set-marketing-budgets//>

• MMM as a part of an Iterative Process

1. MMM as a way to understand the value of what happened.
2. BOD as a way to find out what could happen if...
3. Cross media planning to optimize spend to outcome
4. Testing to define new best practice.



- Marketing Mix Modelling



A Marketing Mix Model (MMM) correlates key KPIs like sales or site visits with drivers such as marketing spend, competition and economics indicators to forecast future sales and discover incremental business opportunities.

2

Evolving the MMM

Arima's Marketing Mix Framework

● Marketing Mix Modelling



A good MMM should:

1. Give a comprehensive view of their marketing activities and their impact on profits.
2. Make strong predictions to help size the budget and allocate media dollars.
3. Connect the dots between brands, agencies, and publishers so that everyone works with the same benchmarks.

- MMM as a Backward Looking Explainer



MMMs need to explain the past to help marketers review historical campaign performance. This includes Return on Ad Spend Calculation and Sales Attribution.

Arima recommends 12 months of weekly historical data to build an accurate MMM.

- MMM as an Optimized Budgeting Tool



MMMs should guide the budget planning process and determine what media budget is needed to achieve business goals. This includes **Budget Calculation** and **What-If Analysis**.

Arima's self-serve MMM platform can help you figure out the size of the ROI opportunity and how to achieve that target.

- MMM as a Forward Looking Predictor



Predictive power key and MMMs need to be forward looking to guide future business decisions. This includes **Sales Forecasting** and **Media Plan Evaluation**.

Arima takes a software approach to building MMMs. Data collection is automated and continuously updated.

- MMM as a Geo Centric Framework



MMMs based matched market tests can account for the differences in conditions between test and control markets to isolate the true effects of their campaigns. Popular tests include Creative A/B Test, Channel Ratio Test, and Reach/Frequency Variation Test.

Geo experiments are powered by Arima's Synthetic Society data.

- MMM Powered by the Synthetic Society



The Synthetic Society is built using 21 Canadian data sources to mirror the real society. It is privacy-by-design and uses no PII.

It enables advanced modelling at the most granular level.

3

Evolving the MMM

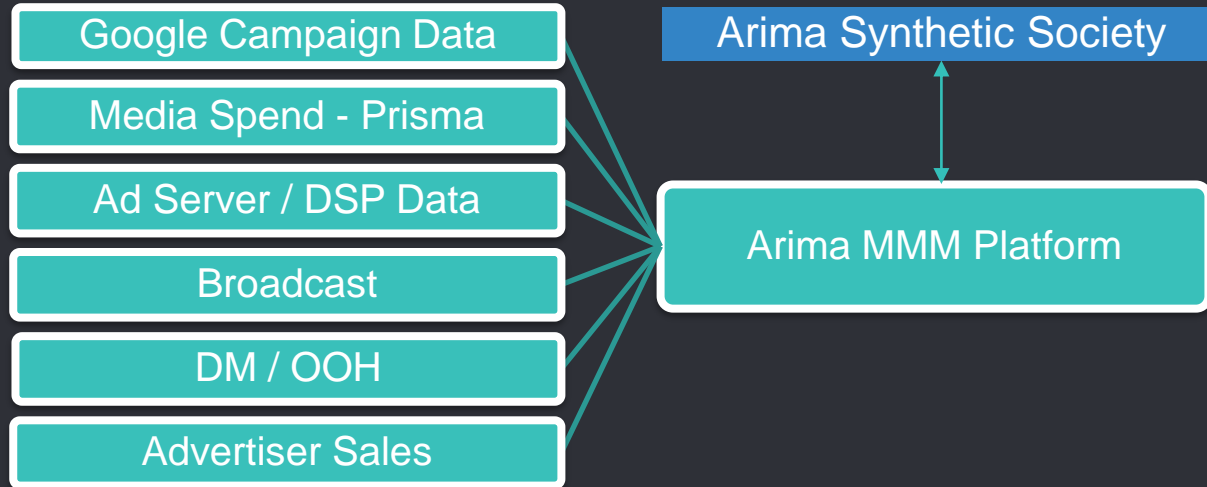
Automating the Most Tedious Step

● Data Automation with APIs

- Faster data
- Wider scope of data
- Finer grained campaign data
- Arima built APIs and data automation for many client data lakes.
- Arima is working with Google to access granular campaign data to make data feeds available through our platform.

- Standardized Inputs to an Arima MMM

○ The Arima platform is fueled by real time data feeds. We built automation tools to reduce the cost of data manipulation.



4

Evolving the MMM

How Newer Technology Improves MMMs

- Machine Learning based MMMs

○ In recent years, machine learning based MMMs because a challenger to regression based MMMs

Machine Learning based MMMs

- Have better predictive power
- Lack explainability & transparency
- can be good complements to regression-based models

Let's See It In Action



- Arima's MMM Framework is ideal for
 - Geo focused companies
 - Sales team with territories or retail locations
 - Tourism/Travel
 - E.g., Financial institutions, retail, real estate
 - Data rich brands
 - CRM databases or transactional data
 - E.g., E-commerce, CPG
 - Tier based organizations
 - Consolidates efforts
 - E.g., automotive

Thanks!

We are offering free insights reports to all participants

Interest? Contact us at
winston@arimadata.com



MMM Checklist

What are some things to consider when you build an MMM

- The Basic MMM

- The basic idea of an MMM is to find a relationship for

- The dependent variable Y (e.g., sales)
- Baseline β_0
- Marketing contributions X_i
- Competitive impacts C_j
- Macroeconomics influences M_k

$$Y = \beta_0 + \sum \beta_i X_i + \sum \beta_j C_j + \sum \beta_k M_k + \varepsilon$$

- The Basic MMM

- A simple MMM could look like this:

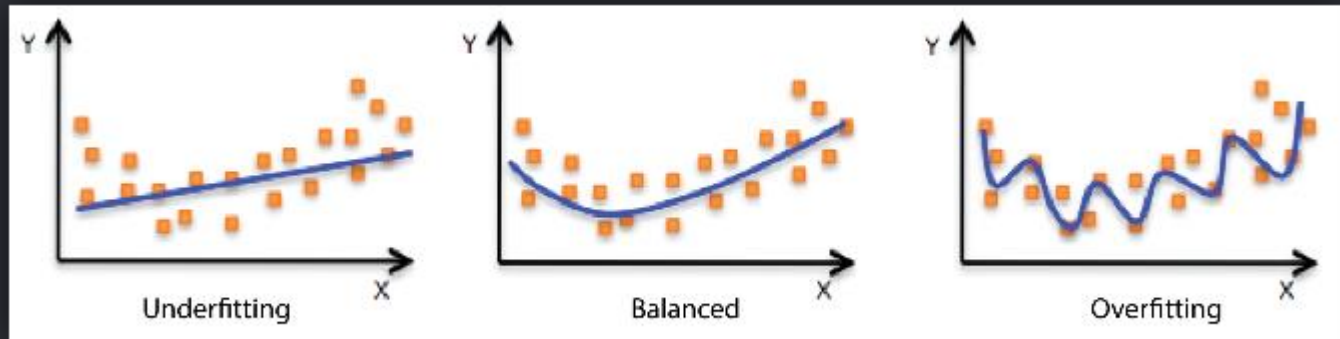
$$Y = 300 + 0.5 \times \text{TV Spend} + 0.7 \times \text{Social Spend} - 0.08 \times \text{Competitor} + 0.02 \times \text{Interest Rate} + \text{Noise}$$

This model tells us:

- A baseline sales of 300 (seasonality, brand equity, etc.)
- Social media is more efficient than TV
- Competition hurts sales
- An increase in Interest rate benefits the brand

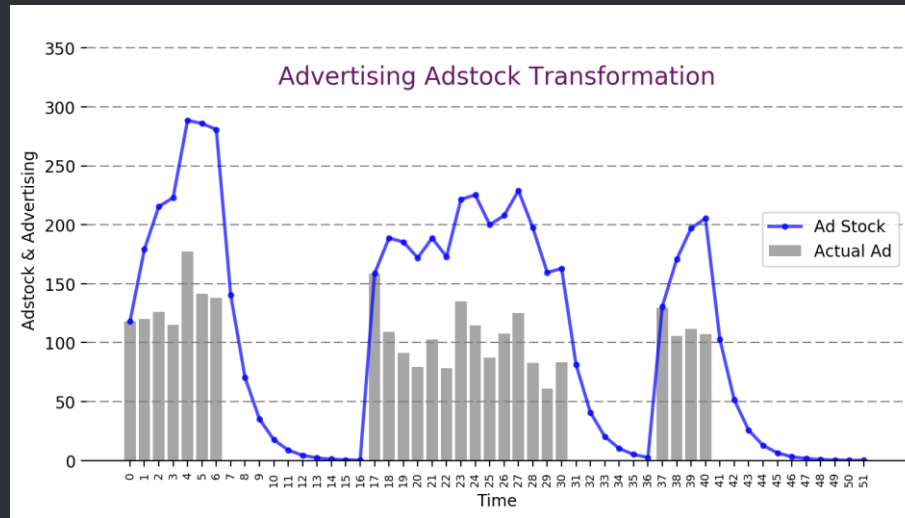
- The Basic MMM

○ The goal of a Regression based MMM is to optimize the impacts of each driver (the β s) by choosing the combination that gives the strongest “fit”. The middle model has the best “fit” and is therefore preferred.



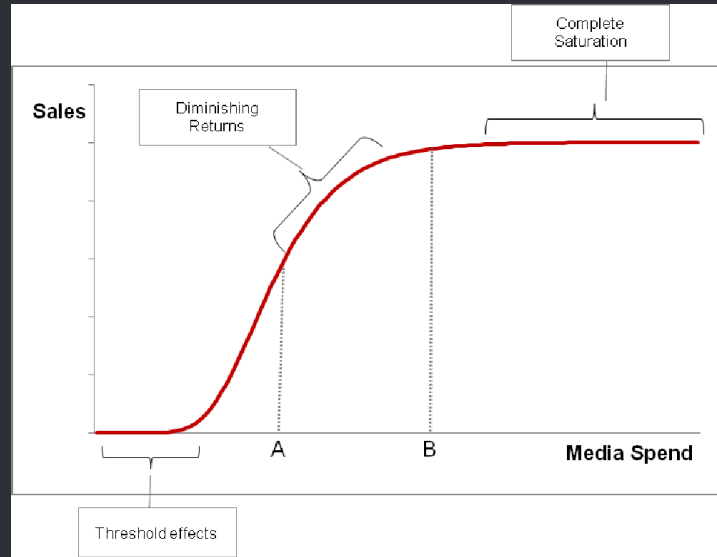
- Improving the Basic MMM

○ Marketing activity can have an impact on future time periods, with less impact carried over each ensuing period. This is called **Ad Stock**.



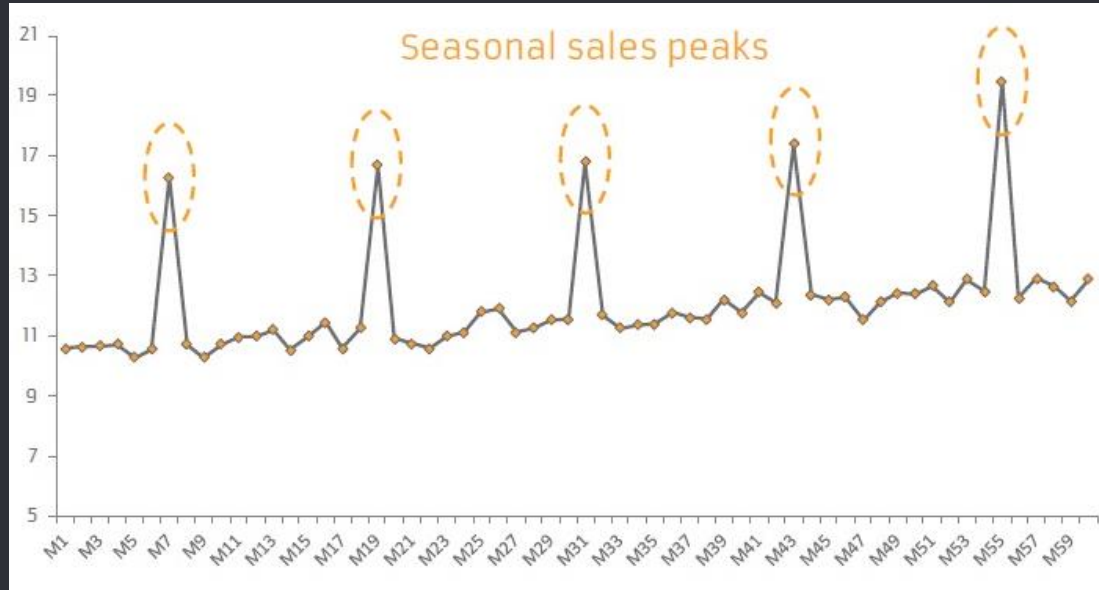
- Improving the Basic MMM

Marketing activity will carry diminishing rates of return as total spend increases. This is called **Saturation**.



- Improving the Basic MMM

○ Sales will be impacted by seasonal changes/holidays. This is called **Seasonality**.



- Improving the Basic MMM

- Factors should influence each other.

(Additive) $Y = 0.5 \times \text{TV Spend} + 0.7 \times \text{Social Spend}$

(Multiplicative) $Y = 0.5 \times \text{TV Spend} \times \text{Social Spend}$

Additive models assume independence among factors. It's simpler and easier for attribution.

Multiplicative models assume interdependence. It's more realistic but harder for attribution

- Improving the Basic MMM

- Sometimes we want to incorporate prior knowledge into MMMs

- Sales are better in certain month
- Some media are more efficient than others
- Directional correctness

A common way to incorporate prior knowledge is the **Bayesian Regression**.