



ANALYTIC EDGE
a C5i company



Marketing Mix Modelling: Everything You Need to Know

EXECUTIVE SUMMARY

Here's an interesting metric - 60% of US advertisers currently use Marketing Mix Modelling (MMM). And 58% of those not using MMM are considering doing so in the near future. And there's a good reason for this. In today's competitive market, every marketing dollar counts and maximizing ROI is critical. So what exactly is MMM?

Marketing Mix Modelling (MMM) is a time-tested analytical technique used by companies for measuring the impact of their marketing investments. First adopted by large multinational Consumer Packaged Goods (CPG) companies in the early 1990s, this comprehensive analytical approach takes a close look at the historical relationship between marketing spending and business performance.

It determines the effectiveness of different marketing elements like TV advertising, print advertising, digital marketing, pricing discounts, trade promotions, etc. in terms of their contribution to sales volumes, revenue, profitability or other relevant Key Performance Indicators (KPIs) and has become a crucial tool for guiding strategic and tactical marketing budget decisions.

This article takes an in-depth look at MMM - what exactly it is, why more and more companies are exploring it as a preferred measurement technique, the methodology and how it works, latest advancements and trends in MMM, and importantly how brands can benefit from leveraging this time-tested technique.

What is Marketing Mix Modelling?

Marketing Mix Modelling (MMM) also referred to as Media Mix Modelling, helps brands determine the actual impact of each marketing input or activity on KPIs such as volumes, revenue or profits. With **Marketing Mix Modelling**, companies get data-driven insights that allow them to adjust their marketing mix to achieve their sales forecast targets. It also provides inputs for optimal budget allocations for each particular marketing campaign or channel, based on how different channels are contributing to sales.

MMM platforms helps companies to streamline all the factors of a marketing mix such as product, pricing and promotions, and also determines the effect of each of the factors on sales. An important feature of **Marketing Mix Modelling** is that it takes into account not just the impact of marketing and media drivers on sales but also non-media drivers such as competitor activity, seasonality, weather, and holidays as well as macro drivers such as GDP, unemployment, inflation, purchasing power etc. This makes it an extremely comprehensive technique to understand and measure how different business drivers impact sales and other KPIs.

Marketing Mix Modelling can help companies make better decisions by comparing the trade-offs between marketing mix elements. The ultimate goal is to estimate the contribution of each marketing element to the company's overall performance. This technique is used to help identify which of these elements are most important for a company's success.

Why Use Marketing Mix Modelling?

While **Marketing Mix Modelling** has been used by CPG companies for many years, the technique of **Marketing Attribution** has gained popularity in recent times with the rise of digital marketing and digital-first businesses where most or all of the customer journey takes place online. MMM and attribution have co-existed, though the choice of which tool to use for marketing measurement was primarily a question of the industry you were in.

However, recent changes in privacy laws, corporate policies, and other factors are forcing companies to look towards adopting **Market Mix Modelling**, since it is privacy friendly and is not affected by changes such as GDPR and privacy regulations, phasing out of cookies on various browsers and Apple's restrictions on IDFA on iOS devices. Using **automated Marketing Mix Modelling** is quite effective because it considers aggregate data rather than user-level data for modelling and analysis. In addition, **Marketing Mix Modelling**



considers the impact of both internal and external factors in modelling, thus providing a more comprehensive look at the drivers that impact sales. This is especially beneficial for CMOs in companies, as **Marketing Mix Modelling** takes a holistic approach to marketing trends and provides a 360° view into the impact of various marketing and non-marketing drivers on sales.

The **MMM SaaS** tool by Analytic Edge enables effective ROI measurement without the limitations of traditional MMM such as being completely dependent on external consultants, being time and resource intensive, expensive, not easily scalable, and lack of transparency into the Modelling process (black box). Analytic Edge's **MMM software** allows brands to run predictive marketing analytics in-house and on-demand, with the cost, scale, and speed advantages they need.

Methodology Of Marketing Mix Modelling: Art or Science?

Getting the 'model' right for each brand and business and market is at the heart of the process. This is done by considering sales as the 'dependent' variable and various marketing efforts and external factors as 'independent' variables and running regression analyses and iterations to arrive at a model that explains the sales trends satisfactorily. The process is as much an art as it is a science. While technology does enable crunching large sets of data and running multiple iterations rapidly, identifying and selecting the right variables from amongst dozens that could impact sales, and teasing out the impact of each individual variable requires not just an intricate appreciation of econometrics, but also a deep understanding of the industry, the brand, and the market.

In a nutshell, **Marketing Mix Modelling** is about accurately defining the simultaneous relationship of various marketing activities with sales, using the statistical technique of regression.

When we talk about the **Marketing Mix Modelling** methodology, the principle of multi-linear regression is the most important aspect. Sales or market share is usually considered the dependent variable whereas independent variables could be the factors like distribution, price, TV spends, digital spends, website visitors, outdoor campaign spends, newspaper, and magazine spends, below-the-line promotional spends, consumer promotions information, etc.

Marketing Mix Modelling helps to effectively quantify the impact of each of the marketing inputs from the betas that are generated from the regression analysis performed. The beta shows that one unit increase in the input value would increase the sales by beta units while keeping the other marketing inputs constant. The variables can have either a linear or non-linear relationship with the sales. Deep Dives Analysis and Budget Optimization are the other key things that **MMM software** assists marketers with.

A typical MMM process involves the following steps and modules:

- **Data Input** – Manual data loading and alteration via a User Interface. This supplements automated ETL for new and ad-hoc data.
- **Data Review** – Review and quality check of the data to identify errors and check outliers. This step ensures complete and correct modelling inputs.
- **Modelling** – Build, test and iterate to arrive at a final model that explains past business performance based on all available data.
- **Reporting** – This involves standardized reports such as Contributions, Due-Tos, ROIs, Lifts and Response Curves.
- **Simulation** – This step allows for what-if scenario testing and marketing plan optimization.
- **Planning** – The final step of MMM revolves around forecasting and variance analysis and tracking progress vis-à-vis the plan.

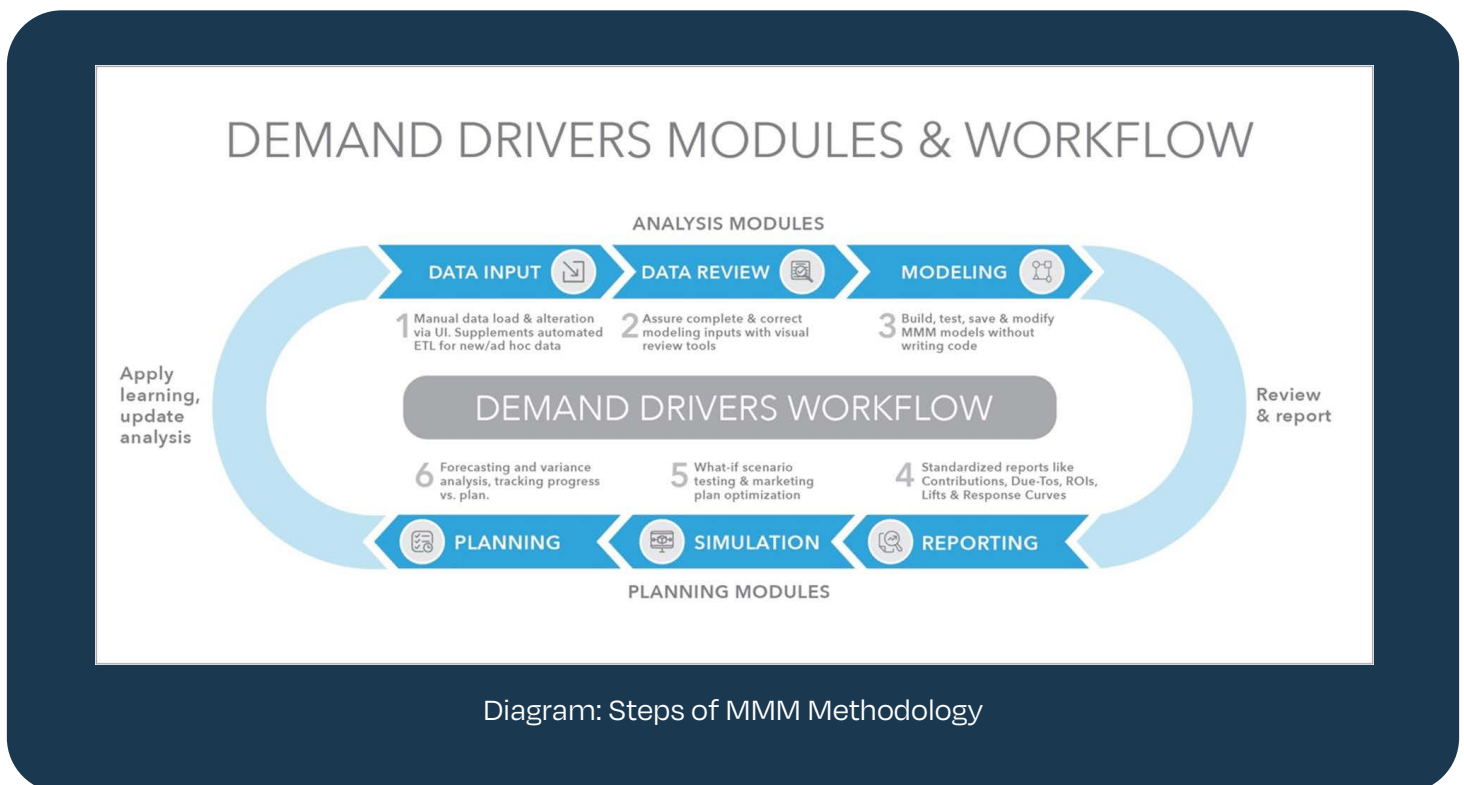


Diagram: Steps of MMM Methodology

Components of Marketing Mix Modelling

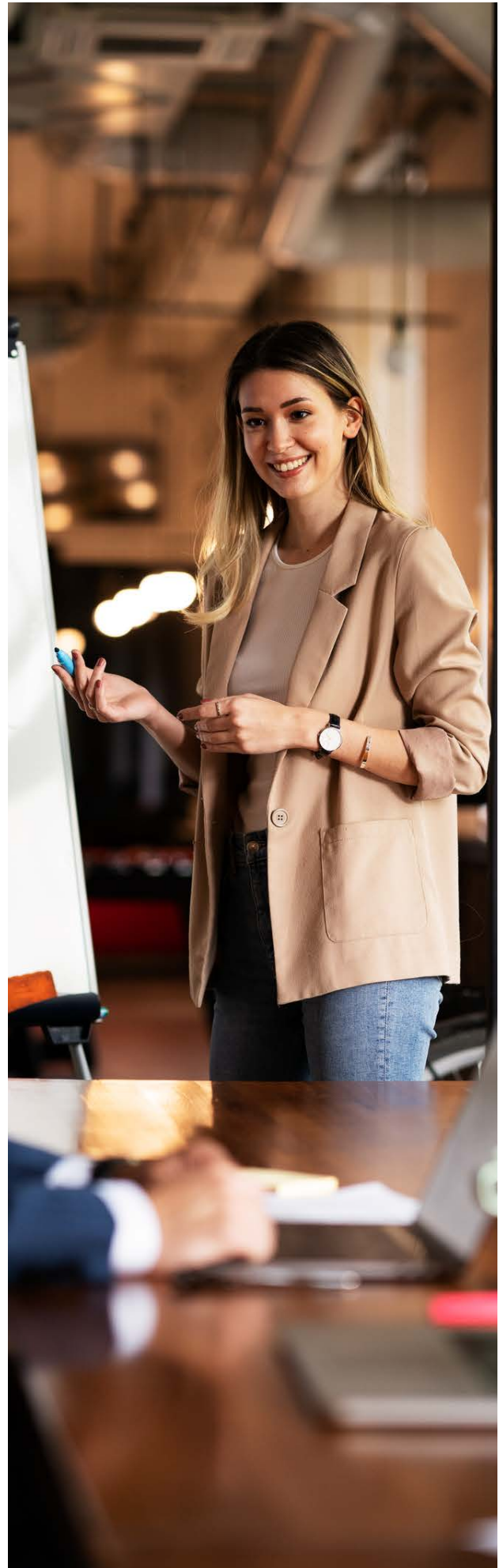
Here's a look at the basic **Marketing Mix Modelling** components:

- **Base Sales** – The base sales of a product are often driven by economic factors like trends, pricing, seasonality, or qualitative factors such as brand awareness or brand loyalty.
- **Incremental Sales** – This is the additional sales that come about as a result of promotional activities or marketing campaigns across different mediums.



The different elements that can be measured with the help of a **Marketing Mix Modelling optimization** are the following:

- **Base and Incremental Volume** – Base volume refers to the sales that would anyway happen even without any advertising or marketing activity. Incremental volume is the sales lift that is generated as a result of various marketing activities.
- **Advertising and Media** – Measuring the actual impact of media on sales achievement. This is a measurable factor that can determine the number of people that saw or clicked on an ad or visited the web page with promotional offers and how many ended up making an actual purchase. It gives a detailed and elaborate idea about the effectiveness of the ad.
- **Trade Promotions** – Trade promotions are an important part of every marketing strategy and the main purpose is to generate incremental sales during a short period with promotion schemes that increase product awareness.
- **Pricing** – An increase in product pricing can negatively affect sales volume. **Marketing Mix Modelling** offers an insight of the impact of pricing changes on sales volumes. Pricing decisions can be optimized based on this insight.
- **Distribution** – **Marketing Mix Modelling** can help determine the impact of changes in the width and depth of distribution channels on sales volumes. Distribution width refers to the number of sales channels and points a product or service is available in, whereas distribution depth means the range of SKUs available in each channel.
- **Launches** – Existing variables in the model help to capture the additional volume generated by promotions during product launches. Special variables are used to determine the incremental effect of the launches.
- **Competition** – Competition variables are created for capturing the impact of competition on brand sales. **Automated Marketing Mix Modelling** uses cross-promotional elasticity and cross-price elasticity to get an appropriate response from the competitive strategies



Building a Marketing Mix Model

Implementing **Marketing Mix Modelling SaaS** in your organization can bring numerous benefits to your brand. Here are the steps to follow to implement an MMM program.

- **Defining business priorities and scoping the study** - The first and most important step to getting MMM right is defining your business priorities. Identify top business challenges and encapsulate them under two broad categories of profitability and growth. Translate challenges into specific questions that define the scope. Identify how to answer these questions through MMM.
- **Assessing data readiness** - Data readiness is about assessing how data ready you are as an organization to embark on the MMM journey. Do you have a data infrastructure in your organisation? If yes, is it efficiently managed? Are data feeds automated? What is the frequency of data collection for sales, app downloads, media spend and other important variables? Typically for MMM you need 3 broad categories of data – performance data, media data, and other drivers.
- **Securing alignment** - Align with marketing, commercial and data science teams to get buy-in and allocate responsibilities. Any successful program will typically have a senior sponsor who will engage with and commission the work.
- **Using MMM recommendations for maximum impact** - MMM not only provides media mix recommendations but also non-media e.g., how promotions and pricing impact sales, the role of affiliates, how much in-store distribution contributed to sales, the true impact of seasonality etc. Therefore, the findings of the MMM can be used to inform the business on both marketing and non- marketing decisions in order to take relevant action.



The Working Of A Marketing Mix Model

With the right **DIY Marketing Mix Modelling**, businesses can maximize their advertising mix and promotional tactics to generate higher sales or revenues. MMM findings and insights allow marketers to determine the optimal mix of product, distribution, pricing, and promotion to create the ideal marketing mix to boost sales.

Factors such as traditional channels, promotions, seasonality, or other variables are also factored into the **MMM** by marketers. Once the data is collected from various sources, advanced statistical analysis and Artificial Intelligence (AI) are applied to the data. The insights can help to determine the effectiveness of the current marketing campaigns.

Benefits Of Marketing Mix Modelling

Using these insights, marketers can refine their cross-channel campaigns to drive optimal overall engagement and sales. With the help of data-driven analysis, automated Marketing Mix Modelling helps marketers remove the guesswork from the equation.

Marketing Mix Modelling vendors often use advanced methods such as linear or multivariate regression to forecast the impact of marketing tactics on sales.

Here are some of the top benefits of **Marketing Mix Modelling**:

- **To measure the ROI of marketing initiatives** – Correlating the various data insights back to the factors in each successful marketing campaign can help brands understand the full impact of their efforts.
- **To collate insights** – **MMM** helps to gather important insights from the various business initiatives and this can aid in allocating budgets within marketing or sales departments.
- **To accurately forecast sales** – **Marketing Mix Modelling** can effectively predict the revenue based on assumptions of future marketing plans and spends.
- **To understand the negative impacts** – It is important that brands take corrective actions and learn from any negative or unintended impacts of their marketing efforts. For example, a discount on one product may cannibalize sales of a similar product owned by the company.
- **To better plan marketing budgets & campaigns** – Businesses can get a better understanding of which marketing channels are best suited for their brands and spend accordingly to get maximum returns. Knowing the relevant markets for the campaigns is also important to avoid saturation.



Challenges and Limitations of Marketing Mix Modelling

While MMM offer numerous benefits to brands, traditional MMM solutions do have a few typical challenges and limitations.

- **Time and resource intensive** – MMM solutions have traditionally been time and resource intensive, making them prohibitively expensive to scale across the organization or update regularly.
- **Reliance on external specialists** – Companies are reliant on external vendors every time they need to run analytics and do not have option to do this in-house.
- **Black box approach** – Thirdly, MMM solutions are like 'black boxes' and third party vendors do not provide visibility into the models used and basis for insights. This results in low confidence and trust in MMM insights and recommendations.



Examples Of Market Mix Modelling

Here are some **Marketing Mix Modelling examples** from the business world:

- A leading bank wanted to move away from print and increase digital spending. Before doing that, they used a customized **Marketing Mix Modelling SaaS** to understand the effectiveness of different campaigns in specific regions, across different service channels and age cohorts, and optimize budget allocations. They were also able to identify the best channels to target certain unique offerings as well.
- A large supermarket chain wanted to devise an integrated marketing strategy based on customer purchase behavior in stores. They wanted to change the merchandising based on the items that were purchased by the customers. They used **automated Marketing Mix Modelling** for better customer segmentation analysis.

- A multinational CPG company's **automated Marketing Mix Modelling** offered them a continuous and 'always-on' MMM framework to aid frequent business planning decisions.
- A Spanish hotel chain with a global presence observed a significant 36% increase in Return on Advertising Spend (ROAS) by measuring the effectiveness of its different advertising channels and implementing changes based on the **Marketing Mix Modelling** insights.
- A global foods and nutrition company used **Marketing Mix Modelling** to determine the optimal allocation of their marketing budget across several brands in order to improve marketing Return on Investment (ROI). They also wanted to understand how marketing programs of one brand impacted the other brands.

Getting Started With Marketing Mix Modelling

With **Marketing Mix Modelling** businesses can better understand how changes in their marketing efforts affect their sales and profits. Establishing business objectives is the first step to getting started with **Marketing Mix Modelling optimization**. Following this, the required data is gathered and analyzed to determine the optimal combination of marketing efforts to maximize the company's profits.

Marketing Mix Modelling was traditionally seen as a technique for more traditional brands, with a higher proportion of offline spend. But even digital advertisers can significantly benefit from the wider view that MMM delivers. Modern **MMM software** offers marketers a holistic, telescope view, allowing them to optimize marketing allocations across various digital and offline channels and maximize marketing ROI.

Marketing Mix Modelling uses predictive Modelling to quantify the impact of various marketing activities on any Key Performance Indicator (KPI) such as sales, revenues, number of customers, number of installs, etc. With the help of such insights, your company can allocate marketing budgets optimally for maximum ROI.



Until recently, the choice of which solution to use for measurement, whether **Marketing Mix Modelling** or attribution was largely driven by the industry companies belong to. Digital-native advertisers typically opted for the speed and granularity of attribution, while more traditional or omnichannel advertisers opted for the accuracy and wider view that **Marketing Mix Modelling** platforms delivered.

With the improvements that next-gen **Marketing Mix Modelling** platforms now offer, digital advertisers can have the best of both worlds. They can combine and leverage the benefits of both attribution and **Marketing Mix Modelling** for a much more comprehensive measurement and insights through a future-proof measurement stack.

■ How Do Organizations Use Marketing Mix Modelling?

The technique analyzed the historical relationship between marketing spending and business performance.

Organizations use **Marketing Mix Modelling SaaS** to define the effectiveness of marketing elements such as TV advertising, digital advertising, print advertising, pricing discounts and trade promotions, etc. Companies can take faster and more data-driven marketing decisions with this type of information.

Marketing Mix Modelling was first adopted by large multinational consumer packaged goods companies around the early 90s.

When it was introduced initially, **Marketing Mix Modelling** platforms were only used by Tier 1 brands and companies that had access to huge marketing budgets. Low awareness and wrong perceptions about **Marketing Mix Modelling** being too time and effort-intensive were the reasons small to medium-sized companies did not adopt it. However, this has changed in the current scenario and now companies have started to adopt **Marketing Mix Modelling** irrespective of their size. The DIY **Marketing Mix Modelling** solutions are especially beneficial in marketing-heavy industries such as retail, pharmaceuticals, financial services, telecom, automotive, travel and hospitality.

The newer **Marketing Mix Modelling** platforms are faster to deploy, easier to use and much more affordable for Tier 2 or Tier 3 companies. The improvements in **Marketing Mix Modelling** have also made it 'Always-On'. They have the capabilities to continuously measure marketing effectiveness and deliver insights that are real-time and more actionable.

With the latest **MMM DIY** solutions, companies can log into the intuitive interface, evaluate recent marketing campaigns, rapidly update models based on the latest data, and generate real-time insights on demand to optimize their marketing investments on the go and maximize Return on Marketing Investment at affordable price points.

Analytics firms today are harnessing the power of technology and automation to drastically improve the way **Marketing Mix Modelling** is delivered. With better awareness and education about the potential of marketing analytics, more Tier 2 and Tier 3 companies will be encouraged to adopt **Marketing Mix Modelling** platforms.

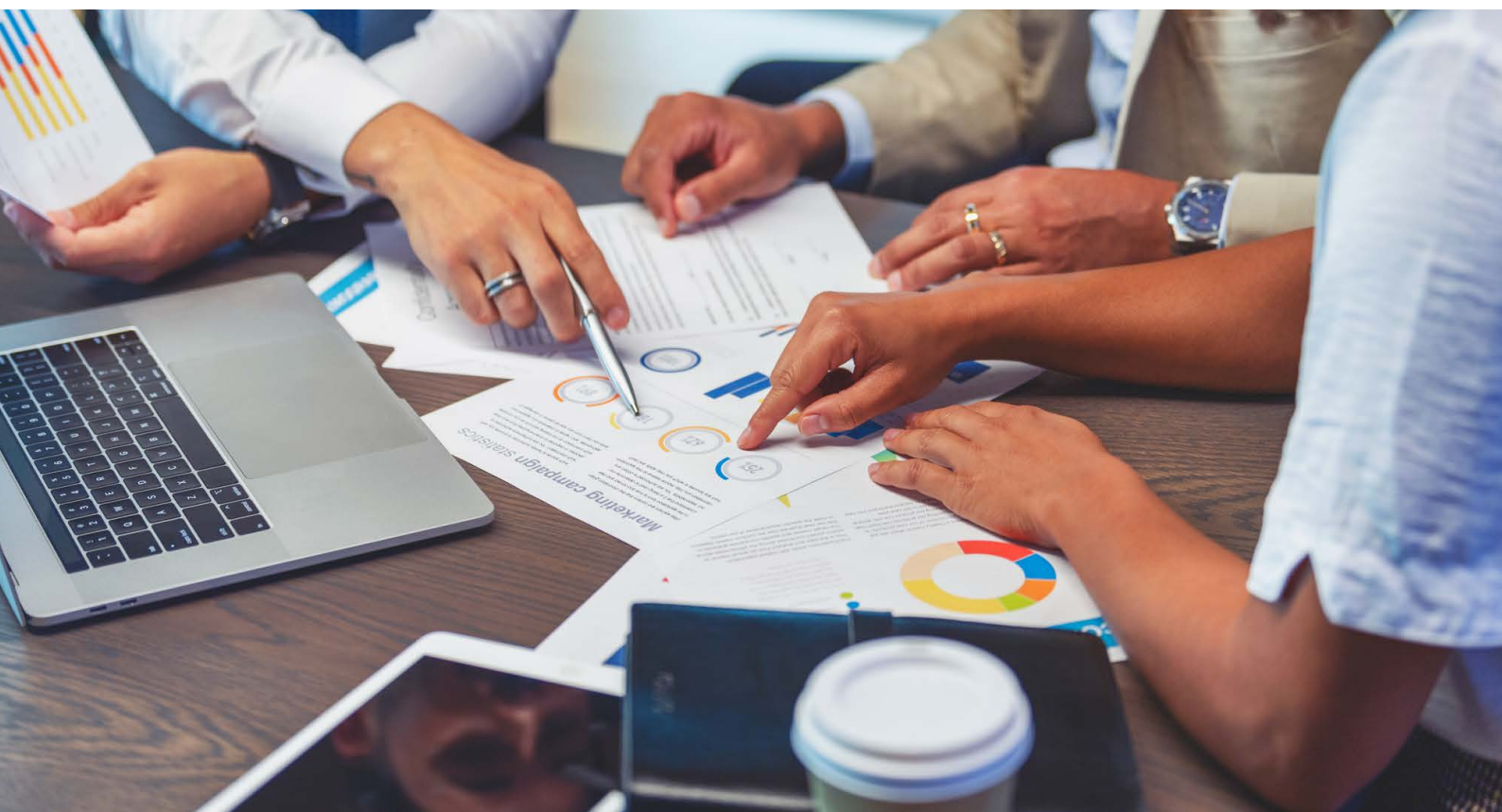
Trends In Marketing Mix Modelling

These developments promise to make MMM faster, easier and more action-oriented than ever before.

- Technologies such as Artificial intelligence (AI) and Machine Learning (ML) are leveraged by the latest **Marketing Mix Modelling** platforms to ensure data quality control and to identify incorrect data and outliers.
- Computing power is used to crunch large sets of data, run multiple iterations and build accurate models quickly and efficiently based on the latest data.
- Tools such as Natural Language Processing (NLP) and Natural Language Generation (NLG) are used by **automated Marketing Mix Modelling** platforms for reporting and insight generation.
- Intuitive interfaces and easy-to-use tools are increasingly bringing **Marketing Mix Modelling** in-house without dependency on **Marketing Mix Modelling vendors**.
- Analytics firms are increasingly offering newer deployment and business models including hosted and "Pay-Per-Use" models. Such models of **DIY MMM** are transparent without a "black box" approach and require minimal upfront investment and nominal ongoing costs by companies.
- Changes in corporate policies, privacy regulations and General Data Protection Regulations (GDPR) have impacted the data privacy practices globally. Companies that used to depend on the user-level data that was required by Multi-Touch Attribution (MTA) are forced to look beyond this.

Marketers are now turning to **Market Mix Modelling** for the holistic and telescopic view that it offers to better optimize marketing allocations. Here is a comprehensive article on how **Marketing Mix Modelling** is considered an alternative approach to filling the gaps in **MMM Attribution**

While discussing Marketing Mix Modelling, it is useful to keep in mind some key trends and developments that are impacting MMM and the marketing measurement space in general.



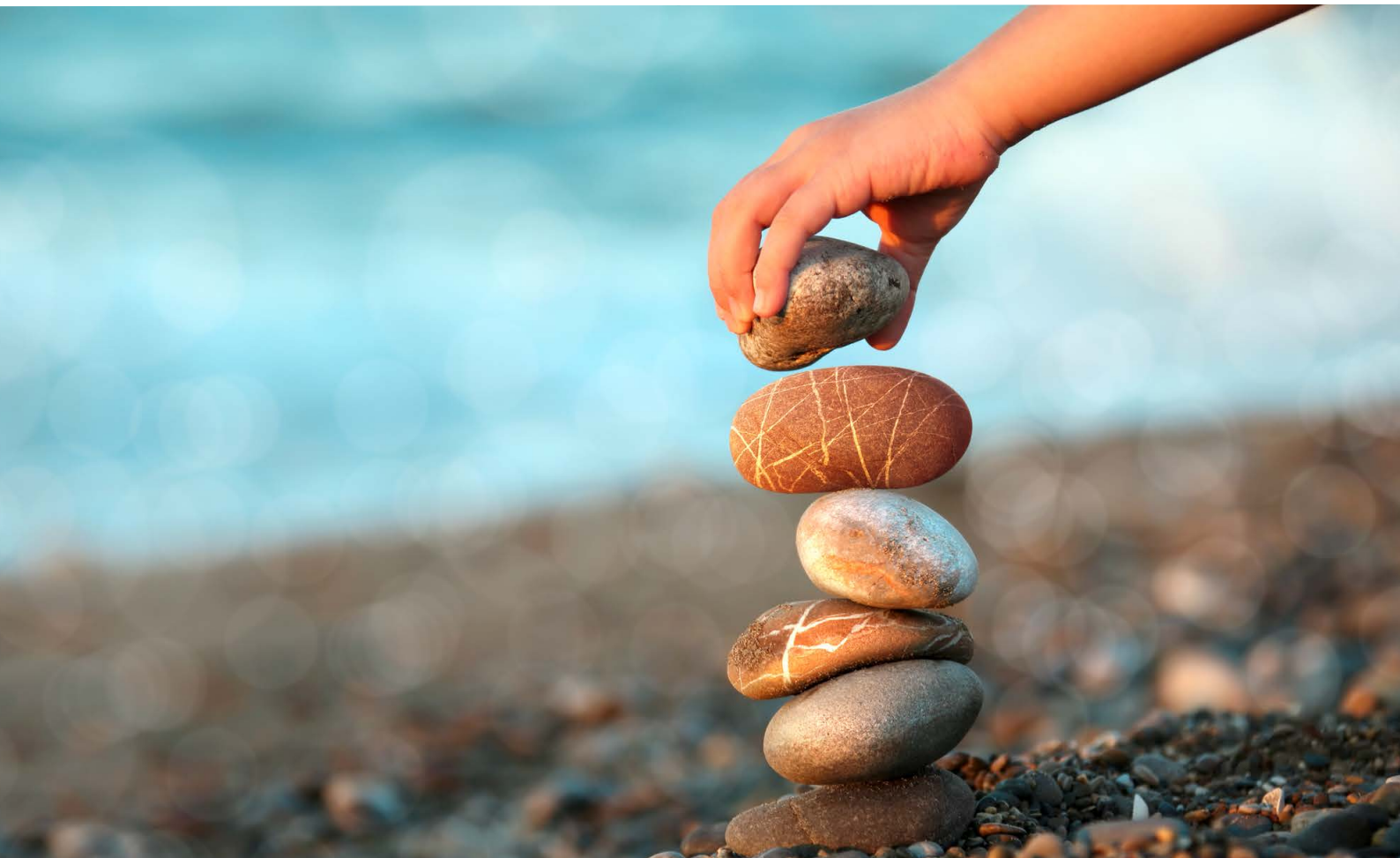
Conclusion

Automated Marketing Mix Modelling platforms have turned into a critical measurement tool for marketers because of their unique capabilities such as quantifying external impacts, shifting the focus to incremental measurement, estimating cross-channel effects and incorporating online & offline conversions.

Running **Marketing Mix Modelling** in-house and on-demand has the additional advantage of being privacy-friendly for brands that want to avoid sharing sensitive data with third-party analytics providers. Such models are often more cost-effective and less time-intensive. In-house **Marketing Mix Modelling** uses existing systems, data, and data science resources, and on the company's planning timeline and adds strategically essential analytic agility.

Demand Drivers[™] from Analytic Edge is a future-ready solution that gives brands the ability to run **Marketing Mix Modelling SaaS** and other measurement analytics in-house, using an automated and integrated process. It offers marketers the cost, scale and speed advantages they need, and provides an alternative to both attribution Modelling and traditional **Marketing Mix Modelling** approaches.

Demand Drivers is already used by various global brands to get a holistic view of the effectiveness of their marketing investments and make faster and more responsive marketing decisions. Demand Drivers is offered as a full-service solution with complete transparency into the Modelling process, for companies that prefer to outsource the process.





About Analytic Edge

Analytic Edge, a part of C5i, is a global analytics company that leverages technology and advanced analytics to help companies make data-based marketing decisions. The company's flagship platform Analytic Edge Qube offers a suite of marketing analytics solutions with a Software as a Service (SaaS) model. The solutions include DemandDrivers™ for always-on Marketing Mix Modelling (MMM), SynTest™ for AI powered Test and Learn, PriceSense™ for pricing and promotion analytics, and PowerView™ for analytics visualization. Analytic Edge works with clients across industry verticals such as e-commerce, mobile apps, gaming, consumer packaged goods, retail, automotive and many others.



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