MarketDial

The combined power of A/B testing and Market Mix Modeling

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Introduction

Accurately determining the contribution of each marketing channel to the overall sales outcome is crucial for retailers to optimize their marketing strategies and allocate resources effectively.

Attribution is tough. The complex interplay of various marketing channels and touchpoints throughout the customer journey complicates channel attribution, and the lag between exposure to marketing efforts and conversion adds another layer of complexity. Customers often interact with multiple channels – social media, search engines, email, and offline adve tising – over a period of time before making a purchase decision. Measuring dollar spend to dollar gained and isolating the precise impact of each channel is therefore intricate due to this interconnectedness.

To tackle the problem, marketers employ various tools and methodologies. Two prominent approaches are Market Mix Modeling (MMM) and A/B testing. MMM is a statistical technique that analyzes historical data to understand the impact of various marketing activities on sales or other key performance indicators (KPIs). A/B testing involves comparing two versions of a marketing asset or campaign (A and B) to determine which one performs better in achieving a desired outcome, such as conversion rate or sales.

While MMM provides a broader view of overall marketing performance to help in long-term strategic planning, A/B testing provides more granular insights into the effectiveness of individual marketing elements. Combining both approaches allows marketers to leverage the strengths of each method and gain a comprehensive understanding of the attribution landscape, ultimately leading to more informed decision making.

A closer look at Market Mix Modeling (MMM)

Market Mix Modeling helps quantify the impact of various marketing channels on sales outcomes, providing insights into the effectiveness of marketing strategies; however, it is not effective at pinpointing direct causation or analyzing results in real time.

MMM involves several key components, primarily utilizing regression modeling to attribute the impact of various marketing inputs on desired outcomes. The process typically follows a sequence of steps:

01   **Data collection and preparation** where comprehensive datasets are gathered and organized.

02   **Model development** in which statistical techniques are applied to build a mathematical model that scenario plans and projects marketing outcomes.

03   **Model validation** conducted to ensure accuracy and reliability.

04   **Scenario analysis** that explores different hypothetical situations and their potential impacts.

MMM facilitates informed decision making by providing quantifiable evidence of the effectiveness of different marketing strategies, but it also comes with several challenges. MMM is often based on historical data and may not be real-world tested, leading to potential discrepancies between projected outcomes and actual results. Moreover, MMM can be expensive, with initial setup costs ranging from six to eight figures, and the complexity and resource-intensive nature of MMM can pose challenges for both implementation and maintenance.

The value of multi-channel A/B testing

Unlike MMM which relies on historical data, A/B testing provides real-time insights and can be particularly effective for evaluating the immediate impact of changes in messaging, design, or targeting.

A/B testing allows marketers to isolate the impact of specific changes or variables by randomly assigning users to different groups and measuring their responses. The steps for implementing testing include:

01   **Hypothesis development** where marketers outline their expected outcomes and potential variations to test.

02   **Experimental design** that identifies the best group (A) and matches it to the best control group (B), ensuring tests are structured in a manner that reduces bias and noise and ensures accurate results.

03   **Implementation** includes orchestrating the test across relevant channels.

04   **Data collection and statistical analysis** allow marketers to discern which variants perform best.

With its unique ability to pinpoint causation, A/B testing provides invaluable decision intelligence on current customer preferences, behavior patterns, and market trends without straining financial or human resources.

A/B testing vs. Market Mix Modeling

MMM provides insights into the overall effectiveness of marketing channels over longer time frames, while A/B testing offers real-time feedback on the performance of specific marketing tactics through controlled experiments.

	MMM	A/B testing
Scope & granularity	Offers a macro-level analysis of marketing effectiveness, considering various factors such as advertising spend, pricing, and external influences.	Provides a micro-level view, focusing on specific marketing interventions and their immediate impact on consumer behavior.
Data requirements	Relies on historical data encompassing a wide range of marketing activities and sales outcomes, requiring substantial data collection and processing efforts.	Requires smaller sample sizes and shorter time frames, making it more suitable for rapid experimentation and iterative optimization.
Causality & correlation	Examines correlations between marketing inputs and sales outcomes, offering insights into the relative importance of different factors.	Enables retailers to establish causal relationships by directly manipulating marketing variables and observing their impact on consumer behavior.
Agility	While offering a comprehensive view of marketing effectiveness, it can require long lead times for data collection, model development, and validation.	Allows for real-time adjustments based on observed results, leading to increased opportunities for rapid iterating and improvements.

A/B testing vs. Market Mix Modeling

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	MMM	A/B testing
Cost	Tends to be more expensive and resource-intensive, requiring comprehensive data collection, sophisticated statistical analysis, and often involving the assistance of specialized analytics firms.	More suitable for tactical decision-making and short-term optimizations, requiring minimal resources to set up and execute, and offering quick insights at a relatively low cost.
Attribution	Typically uses statistical modeling techniques to estimate the contribution of various marketing channels based on historical data. While effective at capturing overall trends, MMM struggles to disentangle the effects of individual marketing tactics from other factors.	Relies on controlled experiments where changes made to one group are compared against another group without changes. The experimental design helps isolate the effects of specific changes enabling more accurate attribution.
Transparency	Often involves analyzing aggregate data and estimating the contribution of various marketing inputs to overall sales and revenue. Stakeholders who lack expertise in statistical analysis can find MMM more difficult to understand and trust.	Clear cause-and-effect relationships, real-time feedback, visibility into test design and execution, tangible outcomes, and iterative learning processes lead to ease of understanding and greater trust in outcomes.

# A/B testing as a replacement for Market Mix Modeling

A/B testing can be used to fine-tune the right channel spend levels by conducting multiple tests with different channel spending in different markets.

Retailers can gain insights into the relative impact of each channel on KPIs such as conversion rates, foot traffic, and revenue by running experiments where users are exposed to different variations of marketing tactics within each channel.

In performing several tests related to different marketing channels concurrently, retailers can quickly adapt and optimize their strategies based on empirical evidence, providing not only a granular understanding of channel performance, but also facilitating the identification of synergies and interactions between channels that may be overlooked in MMM.

Example

Run multiple tests with different channel spending in different markets to measure marketing effectiveness and fine-tune channel spend levels.
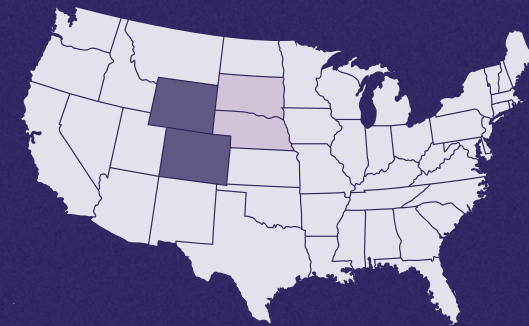
■ Treatment Market
■ Control Market

Real-world examples of omnichannel A/B testing

See how MarketDial's innovative approach drives superior insights, increasing speed to market with immediate channel intelligence.

Paid search precision

Turn paid search on, turn paid search off, test, and compare.

A current MarketDial client has used the software regularly to evaluate paid search impacts on omnichannel outcomes at the market level. By turning off paid search for various markets, they have been able to test against those markets utilizing paid search, evaluating effectiveness based on comparisons between the two.

Geo-centric granularity

Advertise online in one location, test, and measure store impact in that locale.

Other clients have relied on MarketDial to test the value of geo-centric advertising. One client examined if Waze-directed advertising would impact a specific food category, and with high confidence they discovered a significant lift in revenue in the Waze locations exposed to the geo-centric advertising.

# A/B testing as a complement to Market Mix Modeling

By leveraging A/B testing to validate MMM, retailers can move beyond theoretical analysis to actionable insights that drive measurable results in the real world.

While Market Mix Modeling serves as a foundational tool for understanding the overall impact of marketing channels on business outcomes based on a historical data analysis, A/B testing can play a crucial role in validating MMM hypotheses and bridging the gap between theory and real-world implementation.

Starting with an MMM analysis lays the groundwork by identifying potential areas for optimization and informing initial hypotheses about the effectiveness of specific marketing tactics. A/B testing then serves as a means to validate these hypotheses in a practical setting. By designing controlled experiments and running tests related to the recommended strategies, businesses can gather empirical evidence to corroborate the insights derived from MMM. This iterative process of hypothesis generation, testing, and analysis not only enhances the credibility of MMM findings but also provides tangible proof of concept to an executive audience.

For example, if the MMM statistical model suggests increasing radio spend to drive sales, businesses can use A/B testing to validate this recommendation by running a market test where radio advertising is increased in a targeted region while keeping other variables constant. Analyzing the results of this test provides concrete evidence of the impact of radio advertising on KPIs, validating the MMM insights and strengthening the case for strategic decision making.

Use an MMM to inform channel tactics, then layer in A/B testing to measure the effectiveness of the tactics in real time.


■ Treatment Market
■ Control Market
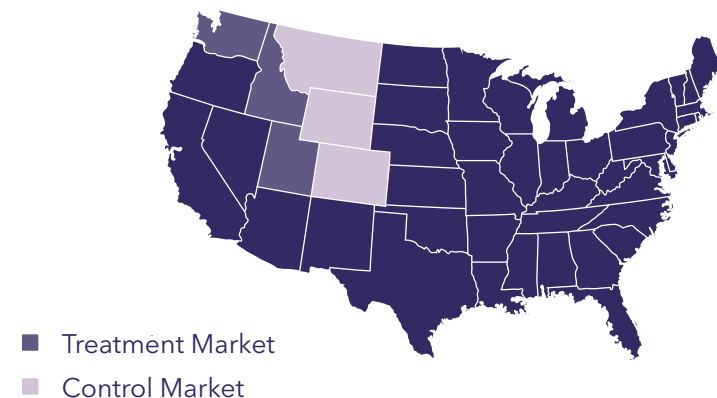
Conclusion

By validating MMM insights with real-world experimentation, marketers can navigate the complexities of attribution with greater confidence and precision.

The intricate interplay of various channels throughout the customer journey, coupled with the lag between exposure to marketing efforts and conversion, underscores the complexity of attribution analysis. Despite these challenges, marketers have at their disposal a range of tools and methodologies with MMM and A/B testing.

MMM offers a holistic view of marketing effectiveness by analyzing historical data to understand the overall impact of various marketing activities on KPIs. On the other hand, A/B testing provides granular insights into the performance of individual marketing elements through controlled experiments. By integrating both MMM and A/B testing, marketers can harness the strengths of each method to gain a comprehensive understanding of the attribution landscape.
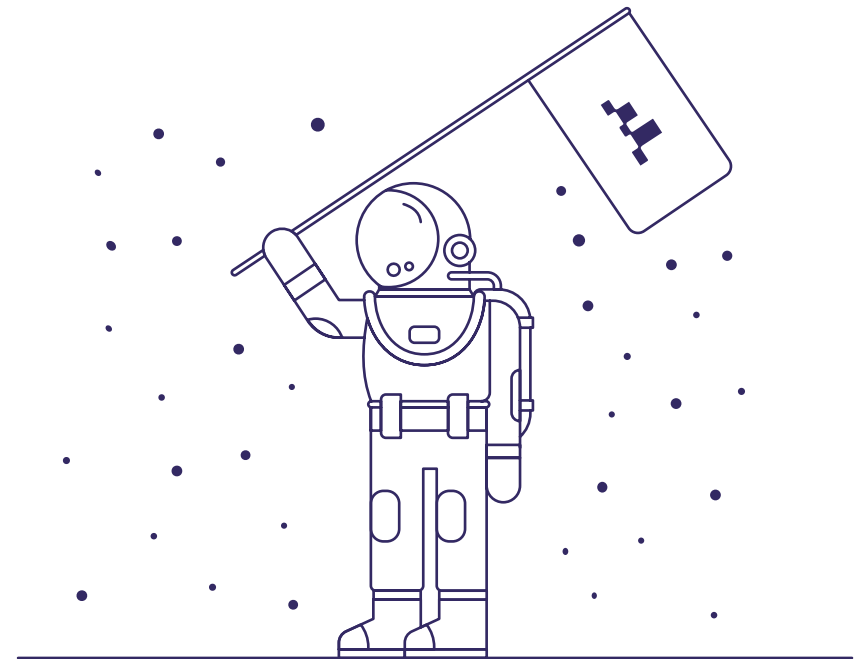
Want to learn more about how A/B testing can support your marketing strategy? Contact us at explore@marketdial.com

Why MarketDial?

MarketDial delivers decision intelligence by automating the data science behind in-store A/B testing. Retailers can now accurately measure ROI, enabling them to know on a small scale what changes will have big-scale impacts before full-scale rollout. For any retailer asking, *"What if,"* MarketDial has the answers.

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Johnny is a data scientist at his core, with a background as a management consultant with McKinsey & Company. In that role, he helped executives from retail partners address pressing challenges including: marketing, strategy, commercial transformation, operations, organization, big data, and advanced analytics. Johnny has degrees from Brigham Young University in Economics, Business Strategy, and Visual Arts. When Johnny is not working with data, he can often be found spending time with his children or in the mountains prepping for an upcoming endurance race, mountain climbing, or skiing.