

Gartner for Marketing Leaders

Measure the Impact of Marketing Using These Four Methods

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Marketing operations leaders need to use data to inform decision making, yet channel-based performance reporting is limited in scope and insight. Select a combination of four methods — MTA, MMM, holdout testing and unified measurement — to pursue an integrated approach to marketing measurement.



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Overview

Key Findings

- Marketing analytics teams aspire to reach higher levels of maturity, understand ROI, inform investments and optimize campaigns. To deliver quality insights with regular frequency, teams must draw from a complicated array of methods.
- Concerned about data availability and quality, marketers question the role that privacy and regulation will have in the ability to accurately track and measure the impact of campaigns.
- Marketing impact measurement can be prone to poor execution and interpretation. It requires domain expertise, educating teams and, often, third-party expert support.

Recommendations

Marketing operations leaders responsible for strategy and data should::

- Mature the marketing analytics function by planning, training and balancing third-party services with full-time equivalents (FTEs). Focus on customer data management to improve both the targeting of campaigns and the accuracy of campaign impact measurement.
- Map insight goals to appropriate measurement methodologies to ensure the tools and methods are selected and employed for appropriate purposes.
- Establish realistic expectations with stakeholders about insights and results interpretation and highlight the importance of taking an integrated approach to marketing measurement. Stay open-minded to a diversified analytics measurement strategy.
- Plan marketing data collection to support advanced analysis methodologies, especially the right volume, completeness and variety of data. Talk to the vendors and teams involved in data collection and processing to identify hurdles early on.

Introduction

Marketing operations leaders are on the hook to deliver sales and revenue, yet optimizing cross-channel marketing performance remains really hard. No single methodology provides a complete, perfect answer. Standard analytics tools and methods suffice to count conversions, report on results and calculate performance metrics on channels in isolation. Simply collecting digital channel data and applying last-click, single-touch, rule-based attribution analysis does not require advanced analytical maturity or technology. The result is a useful but limited view of marketing’s impact. This can lead to frustration due to an inability to articulate the full picture, such as the cross-channel impact of marketing at a customer level. However, many organizations maintain this level of analysis due to constrained resources, budget, skills and technology perpetuating what we call a “ceiling of insight.”

Only by leveraging advanced marketing analytics methods and technologies can organizations break through this ceiling of insight and develop more accurate quantification and understanding of the impact of marketing investments. The advanced techniques covered in this research are:

- Marketing mix modeling (MMM)
- Multitouch attribution (MTA)
- Holdout tests
- Unified measurement approaches (UMA)

Figure 1 illustrates the ceiling of insight dividing core and advanced insights, and the associated marketer goals, insights and methodologies.

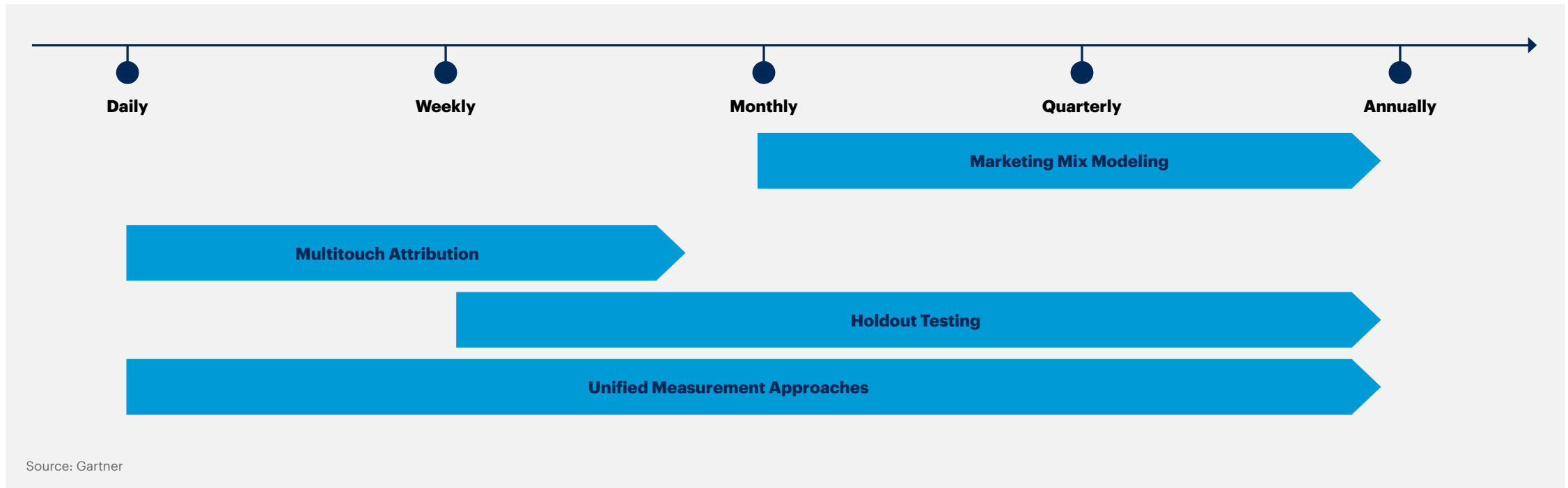
Figure 1. The Ceiling of Insight: Advanced Marketing Impact Measurement

		Example Insight	Example Impact	Advanced Methodologies
Advanced		Incrementality of Channels	Channel ROI Incrementality Optimization	
		Data-Driven Multichannel Multitouch Attribution	Advanced Channel and Campaign Optimization	
		Probability and Propensity Score	Segment Creation/Selection/Targeting	
		Forecast Performance	Short-Term Tactics and Long-Term Planning	
		Incremental Campaign Performance	Campaign Optimization (Incrementality)	
		Indirect Incremental Multichannel Marketing Impact	Multichannel Media Investment	
		Incremental ROI by Tactic	Tactic Investment	
Ceiling of Insight				
Core		Relative Channel Performance	Estimated Channel ROI Excluding Cross-Channel Effects	
		Attributing Rule-Based Values to Channels	Channel and Campaign Identification of Poor Performance	
		Campaign Direct Results	Basic Future Campaign Investment Planning	
		Aggregate, Separate Channel Tactic Performance	Basic Future Campaign Tactic Planning	
		Disconnected Online and Offline Marketing Impact	Siloed/Estimated Multichannel Investment	
		Direct Multichannel Measurement (e.g., Online to Store)	Directly Inferred Campaign and Tactic Selection	
		Aggregate ROI (Not Incremental)	Siloed/Suboptimal Investment	

Source: Gartner

Choose methods by considering the outputs as well as by looking at the associated decision frequency associated with it (see Figure 2).

Figure 2. Decision Frequency



Many advanced marketing analytics methodologies beyond measuring impact are outside the scope of this research.

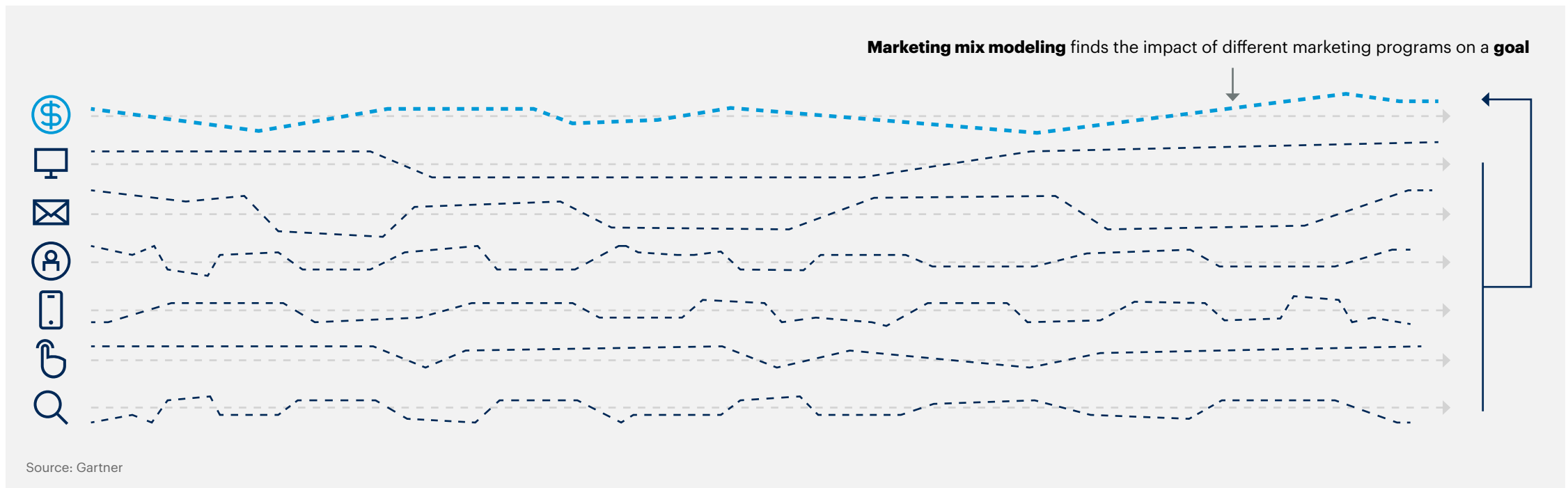
Analysis

Use Marketing Mix Modeling to Inform Multichannel Marketing Investment

MMM is a top-down methodology that uses time series, aggregate data, such as historical sales, aggregate media spend by channel or geography, competitor promotional events, or pricing, and econometrics techniques, like multivariate regressions, to generate models.

MMM reveals the relationships between a goal variable, such as sales, and independent variables, such as marketing spend (see Figure 3). It can be used to generate a broad range of insights, including the most prominent and sometimes elusive insight compared to other methodologies such as attribution — sales and revenue incrementality.

Figure 3. Marketing Mix Modeling



Classic marketing mix models quantify broader-scale multichannel marketing initiatives over longer periods of time. The models typically incorporate offline channel activity and the effects of external market forces such as competitor promotions and pricing, or weather. These characteristics make them valuable in driving longer-term planning discussions.

Examples of mix modeling insights include:

- The forecast impact of online marketing spend on physical store sales
- The optimal flighting patterns or sequences and volumes of ad exposure required to drive sales
- The optimal total mix of investment across online and offline advertising, given a target goal
- The impact of competitor activity on marketing effectiveness
- The marketing channel investment level required to achieve market share goals, given certain environmental conditions
- The forecast incremental impact of marketing activities on sales, revenue or market share

Market offerings vary, but usually comprise a service team and analytics platform packaged together. Marketers with in-house agency skills may be adept with MMM analysis, but the models can be dangerous in untrained hands. The risk of inaccurate analysis or interpretation is high, as is the gravity of the decisions made from the insights.

For more on effective marketing mix modeling, see CMO's Guide to Marketing Mix Modeling.

Primary MMM Use Cases

- **Quantifying the offline impact of online investments for a multichannel business:**
 - **Data.** This refers to time-series historical online and offline sales data, with online paid search investment data, competitor activity, and market conditions including market share.
 - **Model.** The resulting regression model is used to forecast sales in store resulting from investment online, and validates the online-to- offline shopping behavior hypothesis for the organization.
- **Forecasting the marketing mix and investment level required to drive new account signups, given market conditions:**
 - **Data.** This refers to time-series historical TV, radio, digital and print advertising investment, reach and impact, competitor activity, and market conditions including market share.
 - **Model.** The resulting models are used to identify optimal marketing mix and investment, given a target subscriber growth, and could be fine-tuned based on hypothetical future market conditions.

Benefits

- Marketers can quantify the return on marketing investments at an aggregate level and build models that allow predictions to be made using future market conditions and media investment scenarios.
- The relationship between disjointed channels and outside factors can be quantified, enabling the marketer to make decisions beyond the scope of in-channel measurement.

Challenges

- MMM does not provide touchpoint or tactical-level granularity, limiting its use in day-to-day media allocation and investment decisions.
- MMM requires specialized skills to deliver robust data and interpret it correctly, calling for an operational investment in resources both in-house and via third parties.
- MMM requires a significant level of advertising investment to be worthwhile from a cost perspective, and a significant length of time. At least two and preferably three years of historical data such as media, investment, footfall and sales.

Recommendations

- Identify resources for data acquisition, cleansing and validation. Models are only as good as the data on which they are built, and exploration of data availability and completeness is time well-spent.
- Involve decision makers and budgetholders early — creating a model is only half the battle. Influencing decisions and changing entrenched conventional wisdom require an inclusive approach. Address stakeholder concerns as they arise, and feed resolutions back into the analysis and approach.

For representative vendors, see Gartner's Market Guide for Strategic Marketing Measurement.

Prepare to Retool Multitouch Attribution for the Postcookie World

MTA is a bottom-up approach requiring user-level data to identify the relative contributions of consumer touchpoints along the path to a goal, such as a conversion event or lead. MTA is mostly used for online marketing analysis, underpinned by the ability to track an individual’s path to conversion across multiple touchpoints like paid search, app, web, display and video.

Accelerating constraints to person- and device-level data completeness and availability have made robust insight delivery even more challenging. One specific area of impact is multitouch attribution — which requires granular data to deliver insights. The most significant impacts to data include the loss of mobile identifiers and third-party cookies. The deprecation of IDFA in OS14.5 onward has restricted the mobile identifier used in mobile attribution modeling (see Apple Upsets the Digital Advertising Cart). Also the loss of third-party cookies have impacted multitouch attribution (see Google to Drop Cookies, but Still Hold the Cards).

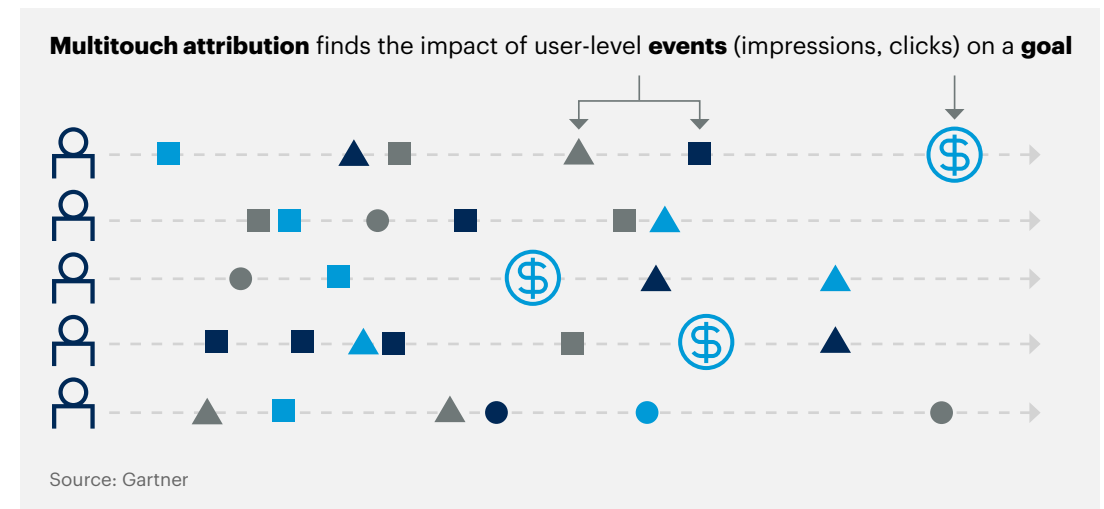
Despite the unfolding changes and limitations around data availability, MTA is likely to remain a useful tool. MTA algorithms can be developed and applied within the walled garden platforms, using data clean rooms like Google’s Ads Data Hub or Amazon Marketing Cloud (see How to Plan for Data Clean Rooms).

The decision frequency that MTA supports is granular and can be applied in-flight using real-time campaign data to inform tactical changes for campaign performance and budget optimization. MTA is also useful for postcampaign analysis.

Advanced algorithmic MTA is different from other forms of attribution analysis, which use fixed attribution models to provide correlations between campaign tactics and outcomes. Advanced algorithmic MTA uses various machine learning algorithms. It takes the traceable customer journey into account and attributes fractional contribution (sometimes called data-driven attribution) to the different touchpoints, allowing higher granularity in identification of optimization opportunities.

Figure 4 depicts how MTA finds the impact of user-level events on a goal.

Figure 4. Multitouch Attribution



Each attribution methodology has its place in the marketer's toolkit. Use rule-based attribution methods as a starting point to generate quick insights and hypotheses for testing when budgets, data, skills or timelines are constrained (see [When and How to Use Rule-Based Marketing Attribution Analysis](#)). Use algorithmic MTA to develop more accurate attribution insights when the required budgets, skills, data, timelines and resources are feasible.

Be sure to approach attribution insights with a clear understanding of how the provider's methodology works. Long-term changes around data privacy that manifest as browser restrictions on tracking (such as ITP 2.2 and 2.3), third-party cookie deprecation and regional regulatory constraints (such as GDPR and CPRA) mean that attribution providers have had to evolve their solutions. Ask your attribution vendor to articulate its approach to tackling these issues and how they impact the insights available.

Example insights you can generate include:

- **Intrachannel touchpoint attribution.** Examples determine which paid search keywords are used along the path to purchase or the combination of display creatives that result in a purchase.
- **Cross-channel touchpoint attribution.** This is similar to the above point, but this insight has a broader context — like which digital tactics and channels were most effective at generating prospects and which were most effective immediately prior to conversion.

- **Scenario modeling and recommendations for reallocation of marketing investment.** MTA technologies deal with vast quantities of granular data including cost and can build hypothetical scenarios based on different parameters such as efficiency or volume goals.
- **Segment- and attribute-based attribution insights.** MTA allows for optimization on a user-segment basis by correlating effects with user attributes, which supports more effective audience buying strategies.

**Context is critical when interpreting MTA analysis.
Understand the content of the tactic or advertisement
to validate its role in the customer journey.**

For example, a poorly performing ad aimed at generating upper-funnel prospects could be a result of ad copy and targeting, as opposed to the effectiveness of the channel itself. To differentiate, you will need a certain level of data quality and granularity (i.e., adequate ad metadata) and knowledge as to what ads were running, the market conditions and product availability, for example.

Primary MTA Use Cases

- **Intrachannel reallocation of budget for programmatic bid optimization.** Identification of the opportunities within paid search keyword portfolios that drive optimal performance, increasing overall yield, accounting for the value of all touchpoints. Informing the bidding strategy of the keyword portfolios involved.
- **Cross-channel customer journey performance insights.** Attribution of value to digital channel touchpoints in the multichannel customer journey. Quantifying the relative cross-channel effects on overall performance, providing channel campaign tactics budget investment insights.

Benefits

- Granular channel and tactic insights at a person and audience level enable in-flight budget allocation decisions to optimize campaign performance.
- MTA allocates value more accurately than rule-based attribution and importantly, where no value is provided, to discrete touchpoints in the customer's pathway to purchase.

Challenges

- MTA vendors offer different nuances to their methodologies, making the landscape challenging to navigate. Scrutinize methodologies to understand the context of the insights delivered (such as conversion incrementality quantified using baseline conversion propensity).
- Achieving the required user-level data to create robust algorithmic MTA models is not to be underestimated. Significant time, skills and resources are required to perform the necessary data wrangling.

- Complete path to purchase customer data sources are not achievable, affecting the underlying data validity and robustness of insights. This has been exasperated by:
 - Walled gardens such as Amazon and Google limiting person-level third-party data availability
 - Increasing browser-level cookie restrictions
 - Regional regulatory constraints such as the General Data Protection Regulation (GDPR) and California Privacy Rights Act (CPRA)

Recommendations

- Prepare to overhaul or reimagine MTA investments as cookie and device data deprecation play out.
- Allocate resources for data cleansing and validation, and follow Gartner's ABCD marketing data quality framework to build a foundation to quality insights (see Use Gartner's ABCD Framework to Audit and Improve Marketing Data Quality).
- Quantify the cost versus benefit of investing in MTA. Projects can require a high level of advertising investment for the resulting optimizations (which can be significant) to break even.

For representative vendors, see The Gartner Marketing Technology Vendor Guide.

Use Holdout Testing to Inform Incrementality and Validate Hypotheses

Holdout testing (often referred to as test and control) is a crucial method for testing hypotheses and measuring the incremental benefit (or lift) of marketing activity. Given adequate test design and sample sizes, it can provide a statistically significant measure of the causality. Most importantly, it tests hypotheses derived from the outputs of other methodologies. Used appropriately, it can increase analytics marketers' ability to accurately measure impact and generate concrete insights.

Stakeholders less acquainted with advanced analytics can understand the concept of A versus B, and statistical significance. Therefore, holdouts are useful to garner understanding and buy-in.

Holdout testing is a valuable method for operational marketing leaders to apply on both a granular and macro level to validate:

- Inferred channel incrementality from MMM analysis
- Suggested touchpoint optimization from customer journey analysis
- Inferred channel effects from MTA

Holdout testing in digital marketing is commonplace. Proprietary testing platform technologies and capabilities within integrated marketing suites and advertising platforms handle the mechanics of splitting the test-and-control audience segments and the statistical analysis of results. As with all statistics in marketing, this needs proper scrutiny and interpretation to ensure that the right insights are derived and the right decisions are driven. Such is the risk of false negatives and positives.

Robust test design and correct interpretation require advanced data practitioner skills and statistical knowledge. High-volume advertising and transaction data are required to generate robust test-and-control datasets.

Tests that do not contain enough data to achieve statistically significant results are generally not decision-quality. Low-volume, small-audience advertisers may not achieve the required data volume unless tests are conducted over a very long period of time. In this case, the opportunity cost of not advertising to the control group may outweigh the potential gains from insights.

Holdout tests can be performed at a short-term tactical level or a long-term always on timeline. Test duration and frequency are defined by the hypothesis and associated testing conditions (e.g., audience size, conversion rate, conversion volume and opportunity loss). Tests are not always mutually exclusive, meaning they can be run concurrently, but require close control to ensure no crossover of audiences.

To explore this topic further, see [How Digital Marketers Gain Buy-In for Holdout Tests](#) and [How Digital Marketers Design and Measure Holdout Tests](#).

Primary Holdout Test Use Cases

- **Prove the impact of new marketing channel investment.** A marketer wishing to quantify the value of a new marketing channel investment (e.g., addressable TV) leverages a channel-based holdout test. The addressable audience is split into a matched test-and-control group (see Note 1), and a test campaign is conducted in a manner through which the measured effect is scrutinized for its significance. This approach builds confidence in speculative investments by providing a framework in which effects can be proven statistically in advance of larger-scale investments.
- **Validate the hypothesis derived from attribution.** An attribution model may imply that one channel is better for generating prospective customers relative to another but is unable to quantify the incremental impact of the channel. In this case, the hypothesis states that if investment was increased in this channel and tactic, more leads would flow through the funnel to conversion. A holdout test is used to measure the sales that would have occurred in the absence of the channel investment and, therefore, its incrementality (see Note 2).
- **Quantify the impact of online investment across retail stores with a geodistributed match-market test.** A paid search experiment leverages a holdout test involving an upweight in spend versus the control group for matched geographic regions across the country. These matched regions are randomly split into two groups. The test group regions are subjected to a relative increase in paid search investment. The reach, clicks, online sales, store footfall and store sales are collected for the test-and-control regions, and the effect size calculated for the goal metrics. This statistically significant effect size is used to plan increases in digital investment that recognize a marginal return on investment beyond what was previously possible.

Benefits

- A holdout test can accurately quantify the incremental impact of marketing investments across channels and tactics.
- They can be leveraged to test hypotheses generated from insights delivered via other methodologies, such as attribution, or to test conventional wisdom. For example, “display banners don’t convert therefore they are not worth investment.”
- A test-and-learn culture in marketing measurement facilitates innovation by providing a framework for taking calculated risks, such as new channel investment and increases the knowledge and intellectual property of marketing analytics teams.

Challenges

- A significant sample size (i.e., the test-and-control audience sizes, test duration, and conversion or goal volume) is required to produce statistically significant results. Organizations with low levels of investment or low volumes of conversions will struggle to design feasible tests and collect meaningful results.
- The skills and experience required to design, implement and analyze tests via advertising and measurement technologies are less common with in-house marketing analytics teams. Therefore, agency and vendor support are often required, leading to a cost factor.
- Quantifying the opportunity cost versus benefit and influencing stakeholders can be a barrier to experimentation.

Primary Holdout Test Use Cases (continued)

Recommendations

- Define a clear purpose for experimentation by stating the testable hypothesis and collaborating with affected decision makers. This process clarifies the feasibility and parameters for the experiment and provides an anchor point for analysis and insights.
- Acquire stakeholder commitment to abide by the results of the experiment by bringing them along on the journey, answering questions and soliciting formal signoff at key stages (such as the definition of the hypothesis, data completeness and experiment design).
- Interpret the value of the test results within the insight they delivered as well as any opportunities to improve key performance indicators. A test that reveals counterintuitive results against the hypothesis and dispels conventional wisdom is an important and valuable part of your organizational intellectual property.



Use Unified Measurement Approaches to Combine the Benefits of MMM and MTA

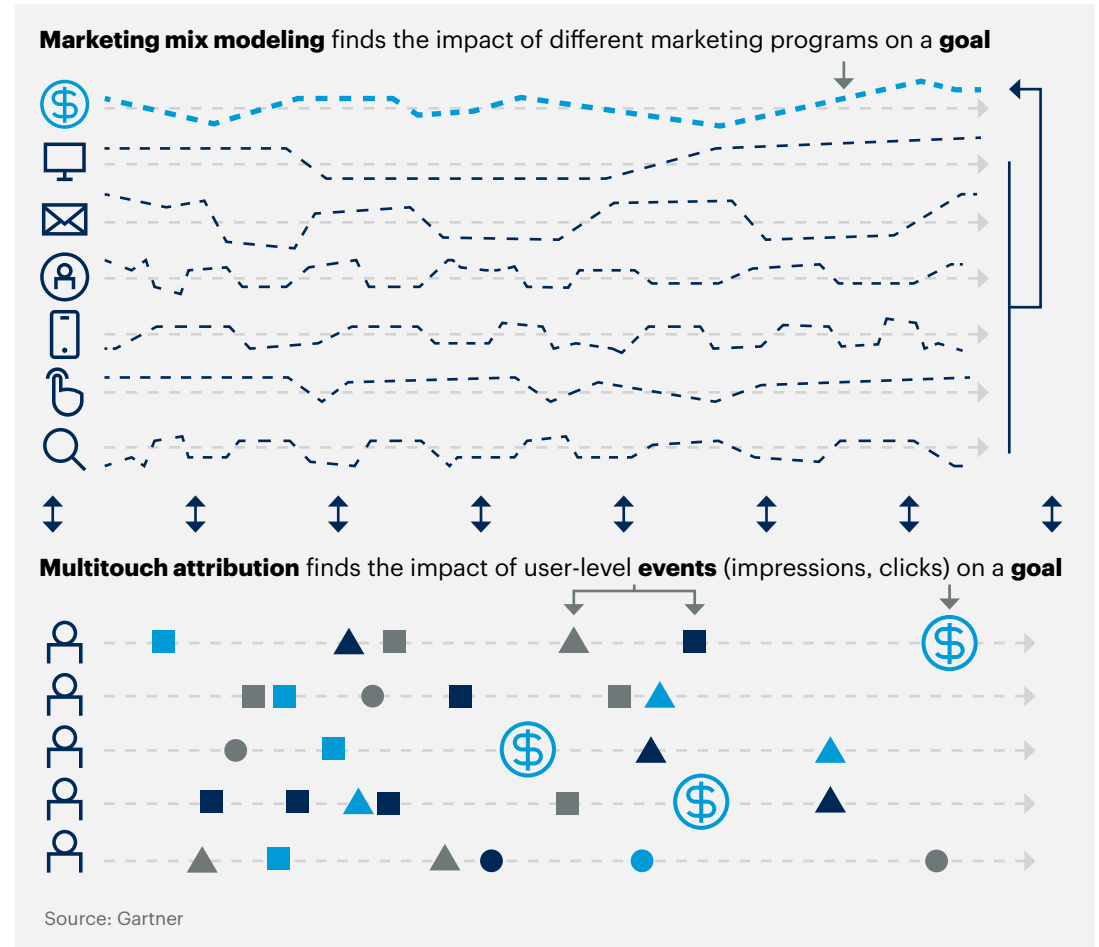
Unified measurement approaches answer questions that span both the tactical and strategic impacts of marketing. These approaches attempt to resolve the challenges of disparate, unlinked methodologies and insights. UMA is the coming together of top-down MMM and bottom-up MTA to provide the marketer with a cohesive, connected set of insights to inform tactical optimization and strategic planning. Look to UMA to understand results more consistently across methodologies.

UMA requires a significant commitment, both financially and operationally, since the complexity involved in achieving unified models across MMM and MTA is high.

As with the other advanced methodologies described, a service-plus-technology approach is the usual model of engagement for providers. The core of the challenge lies in acquiring and leveraging the user-level data that can provide continuity between MMM and MTA.

Figure 5 highlights the outcomes of UMA.

Figure 5. Unified Measurement Approaches



The three approaches to UMA are:

- **Conduct MTA and MMM separately**, and then use the results from both to inform decision making across different frequencies. The limitation of this approach is that the context of the customer is not linked between the two methodologies, meaning certain insights may not “meet in the middle” from top down to bottom up.
- **Leverage a UMA service provider** that can link the audience data at the MMM level and the MTA level, allowing marketers to predict the incremental uplift of granular marketing tactics in addition to performing longer-term marketing mix planning. This is often called “closed loop optimization and planning.” Vendors in this space utilize large-scale proprietary databases for user-level audience context.
- **Integrate MMM and MTA methodologies in-house.** In this case, user-level data acquisition is the primary challenge, secondary to which are the resources and skill sets required to gather and prepare data, develop models and interpret results. This is a strategic investment since UMA practices encompass both long-term strategic planning and always-on optimization.



Primary UMA Use Case (UMA Can Achieve Use Cases From MTA and MMM, but Delivers Some Exclusive Benefits)

Increasing the granularity of insight from mix modeling and predicting the incremental effects of campaigns and tactics. Developing a person-level model, encompassing the large-scale media data as well as the granular channels, campaigns, tactics and touchpoints, allows the predicted incrementality to be calculated for all levels of marketing investment. The benefit of a unified model is that all factors associated with the market model are integrated to the MTA, allowing predictions to be made for the incremental impact of a future marketing campaign investment change or tactic.

Benefits

- Combined or integrated measurement of both top-down MMM and bottom-up MTA approaches, giving continuity of insight, and incrementality from strategic and tactical decisions.
- Reduction of conflicting insights that can be introduced by a siloed measurement approach.
- Insights that improve the analytics marketer's ability to respond comprehensively to scrutiny from other departments, such as finance, and senior stakeholders.

Challenges

- Person-level data integrity across different methodologies is technically difficult. To create a unified model, without the aid of vendor offerings and professional services, requires significant resource investment with specialized skills in data management and analysis.

- The taxonomy of data and uniformity of goal measurement across the different sources that feed UMA are crucial since they facilitate the link between top-down MMM and bottom-up MTA.
- The insights available from UMA can significantly alter the perception of marketing performance across channels and tactics (beyond a siloed approach with online versus offline advertising measurement, for example). Therefore, stakeholder education is principal to effecting change in tactics and investments.
- Cost is generally the highest of the measurement approaches mentioned in this research. This is one of the benefits of experimentation, given its low costs relative to the value of insights.





Recommendations

- Build on resources and skills acquired through your team's growth in marketing analytics maturity to increase chances of success. Allocate dedicated resources for data acquisition, cleansing and validation.
- Quantify the cost versus benefit, taking into account media spend levels as recommended with MTA and MMM. In addition, explore the marginal benefit of investing in a solution that brings these methodologies together.
- Conduct an RFP for agency-vendor third-party services if your in-house marketing analytics team lacks the resources or maturity required to conduct UMA.

For representative vendors, see Gartner's Market Guide for Strategic Marketing Measurement.

Actionable, objective insight

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