IMPACT AT JMR

JOURNAL OF MARKETING RESEARCH
Multitouch Attribution in the Customer Purchase Journey

By P.K. Kannan and Hongshuang (Alice) Li | 6.15.2021

Online marketing channels have proliferated widely during the past two decades. They now complement traditional offline outlets but also draw significant marketing dollars away from offline channels.

Given the myriad purchasing options customers encounter today, their omnichannel journey can be long and winding. Customers often encounter multiple marketing messages in various formats across different channels before making purchases. A recent Salesforce survey shows that the average consumer communicates with a firm via 10 channels before conversion (Salesforce 2018).

Today’s expanding marketing channels yield voluminous data on customer touchpoints. With significant granular and integrated data now available, many marketing managers wonder how they can best assess their channels’ and ad messages’ ability to affect conversion events—whether they are leads, website sign-ups, or purchases. Senior executives frequently ask:

• How should a purchase be allocated to various marketing channels when digital touchpoints reveal a complex customer journey?

• What factors should influence credit assignment?

• Are heuristic credit allocation methods sufficient for most contexts?

• When do heuristics fail, and when do we need more sophisticated methods?

For example, when a conversion event occurs on a website or at a store, should marketing managers give credit to the first media/channel touchpoint on the customer journey, the touchpoint that successfully closed the journey, or all touchpoints evenly? And how should credit assignment vary from one customer to another or across segments?

Managers must correctly measure advertisement medium and channel touchpoint contributions.
to conversions to determine their marketing efforts’ return on investment. Researchers and practitioners have therefore developed and implemented various multitouch attribution models (Salesforce 2019).

Conversion Event Attribution Models

Multitouch attribution (MTA) models provide estimates to allocate conversion credit to some or all of the media/channel touchpoints customers encounter in their purchase journey. Single-touch models, such as last-touch attribution and first-touch attribution, do not account for all events leading to conversion. But they are easier and less expensive to implement than other models.

Weighted attribution models assign a fraction of each conversion credit to multiple or all customer touchpoints using defined rules, such as equal weight, exponential weight, etc. Rule-based attribution models focus only on customer journeys ending in successful conversion events and ignore the others. Many variations of weighted attribution models have evolved, with some using sophisticated algorithms based on machine learning.

The availability of granular customer journey data has also led to academic interest in customer journey models with more rigor and generalizability. Li and Kannan (2014) offer a three-stage Bayesian statistical model measuring the marginal contribution of six online marketing channels—display, email, referral, direct, organic search, and paid search—to purchases. The model captures consumers’ channel consideration, visits, and actual purchases. Analysts can estimate the attribution model using all customer journeys, regardless of conversion, and validate it through field experiments. Unlike rule-based heuristic models, Li and Kannan’s approach considers all possible channel combinations chosen by consumers and/or enabled by firms, allows time-decayed touchpoint impact to carry to the same marketing channel or spill over to another channel, and uses Shapley value (Shapley 1953) to calculate each channel’s marginal contribution by averaging its incremental contribution in all possible combinations.

Choosing a Model: Cost, Budget, and Product/Market Changes

Firms must consider the number of channels they use and their typical customer journey length when choosing attribution models. Companies with few channels and touchpoints require only simple models. Firms must also weigh model implementation and maintenance costs, as well as coordination costs across marketing silos.

Firms can experiment with feasible attribution models, compare outcomes, and choose the optimal approach for their needs. For example, Li et al. (2016) analyze a small online firm’s experiment with alternative heuristics—the last- and first-touch attribution models—and how the models impact budget allocation across different search keywords. The researchers find weighting average last- and first-touch attribution leads to improved budget allocation to keywords and higher ROI. Li and colleagues conclude sophisticated attribution models are not always necessary and even simple heuristics can help firms get closer to optimal allocation.
Many marketers mistakenly believe they must allocate significant budget to channels receiving large attribution credit for conversions. Danaher and van Heerde (2018) argue that attribution estimates look backward, as they are conditional on past budget allocation and resulting customer journey touchpoints. They conclude firms should base budget allocations across channels on investment elasticities in each channel rather than attribution estimates.

Managers must also consider their outcome of interest (e.g., new product awareness or total sales) when selecting an attribution model (Lobschat, Osinga, and Reinartz 2017). Attribution model choice not only affects a firm’s marketing performance assessment, but it can also lead to competition among publishers and motivate advertisers to bid aggressively (Berman 2018).

**Customer Segment, Creative, and Device Attribution**

Marketing executives increasingly need to measure cross-channel impact in specific contexts accurately. For example, researchers have investigated marginal advertisement performance across multiple latent customer classes (Chae, Bruno, and Feinberg 2019), various ad formats and content (Bruce, Murthi, and Rao 2017), and devices (De Hann et al 2018). Firms can also measure ad performance among multiple sub-brands belonging to the same parent and different purchase outlets (Danaher et al. 2020). In other words, firms can group touchpoints by channel, device, campaign, customer segment, message format, and other classifications suited to their marketing objectives.

Marketing managers today have access to increasingly fragmented and unstructured big data, but heightened customer privacy concerns often lead to aggregated and less granular information. Solving the attribution problem is therefore complex but indispensable. Multitouch attribution models empower managers to understand their advertising effects’ direction and size, making them more informed when allocating marketing dollars across all channels.

**AUTHORS**

**P.K. Kannan** is Dean’s Chair in Marketing Science and Associate Dean of Strategic Initiatives at the Robert H. Smith School of Business, University of Maryland, College Park, Maryland.

**Hongshuang (Alice) Li** is Assistant Professor of Marketing at the Fisher School of Business, The Ohio State University, Columbus, Ohio.

**CITATION**

REFERENCES


About JMR

The *Journal of Marketing Research* delves into the latest thinking in marketing research concepts, methods and applications from a broad range of scholars. It is included in both the *Financial Times* top 50 business journals and the University of Texas Dallas research rankings journal list.

About Impact at JMR

Impact at JMR highlights important and actionable content published in the *Journal of Marketing Research*. Executives can leverage this content in their organization. Professors can use it in their classrooms. Researchers can learn about distinct scholarly insights for their next big idea. We invite everyone to read, enjoy, learn, think and act.