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# What Do We Know About Digital Attribution?

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# Editor's Desk

## What Do We Know About Digital Attribution?

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Digital attribution sounds rather simple in that it involves isolating advertising tactics and assessing their impact on consumer decision making. But in a complex digital environment, advertisers must navigate through a variety of consumer platforms and touch points to find the optimal vehicles and mechanisms to cost effectively have an impact on consumer choice. And, on each research occasion, the process has to be all but reinvented.

One major difficulty for advertisers is how to measure the nearly overwhelming number of new touch points that have developed through evolving media trends and platforms. That concern is voiced by Gian M. Fulgoni in his “Numbers, Please” column, which kicks off the current issue’s special section on digital attribution.

In **“How Limited Data Access Constrains Marketing-Mix Analytical Efforts: Why Data Barriers Are Preventing Marketers from Optimizing Marketing Spend”** (please see page 390), Fulgoni addresses the problem of building “actionable marketing-mix models for accurately measuring marketing ROI without sufficient data at the individual consumer level.” The three largest “walled gardens” (Amazon, Facebook, and Google) have large data banks that can provide valuable insight on consumer behavior and media spending, the comScore cofounder notes, but these data pools are not the property of the client firms and remain the property of the platform owners themselves.

Fulgoni’s conclusion? By not openly sharing what they perceive to be proprietary data, Amazon, Facebook, and Google “can constrain the efforts of independent research companies to measure the financial return from an investment in advertising on walled gardens’ platforms.”

There are issues associated with multi-platform video-content consumption, Fulgoni allows. Among them are challenges of analyzing single-source models across a number of different

touch points. Adding to that difficulty is the nature of data privacy and the potential for overregulation.

Customer concern over the lack of control over the ownership of their data has generated new challenges for companies to create meaningful and easily understood data policies. The tightening of rules in Europe have set a precedent to put greater control in the hands of consumers, which puts additional pressure on companies to protect consumers.

In **“Why Companies Risk Losing Customers by Not Reciprocating on Shared Data: Rebuilding the Data-Sharing Economy in a Consumer-Driven World”** (please see page 394), Natasha Hritzuk (Turner) cautions that companies are not moving quickly enough to proactively develop new data policies and comfort consumers. Given the industry-wide tardiness in addressing the issue, Turner undertook its own research to understand what customers are willing to share, examine ways that it could communicate exactly how data is used along with benefits for the consumer, and discover what consumers want in terms of benefits that would allow an increase in data sharing.

To that end, Turner sampled more than 9,000 respondents and found that “consumers are willing to share most of the key data points that are vital to media and entertainment companies,” except for when data gets personalized or extends to focus on their family or friends. “In the long term, companies will benefit if they take steps to engage consumers in an open dialogue around data transactions,” Hritzuk explains.

With regard to examining the benefits that would incentivize sharing, Turner found two core types of benefits that consumers likely would welcome: opportunities for deeper engagement and seamless advertising experiences. “The more practitioners understand how, when, and what advertising consumers prefer ... the more they will be able to

deliver consistently better advertisement experiences.”

Finally, Turner’s research found that many consumers indeed are willing to share their data if they can easily see some reciprocity: “Companies need to be much more explicit about the connection between shared data and the subsequent benefits powered by that data,” the study concludes.

**“Attribution Modeling in Digital Advertising: An Empirical Investigation of the Impact of Digital Sales Channels”** (please see page 399) explores the impact of different sales channels on the consumer’s journey to purchase behavior. University of Southampton authors Tahir M. Nisar and Man Yeung compare and contrast four different attribution models: last-click, time-decay, uniformly distributed, and position-based.

Given that different online channels are involved at different stages of the consumer’s purchase journey, they write, it is important to examine the ability of these models to properly attribute credits to the various channels that have an impact upon the final purchase. In order to test the models, they included 996,708 transactions with a total revenue of more than \$158.5 million and an average order value of \$112.50. The number of customer journey lengths ranged from 1 to over 5 steps.

Testing the different models, the study found the “more rigorous variety of statistics-based attribution models as a preferable attribution strategy.” Such types of attribution model “allow one to provide more stable credit assignments to the digital channels in a purchase funnel.”

One caveat: “It appears that the attribution models currently do not value fully

social media, which often do not directly lead to purchase but can have a strong behavioral impact (e.g., by shaping the consideration set).” The authors suggest that the value of social media actually improves with the more highly sophisticated attribution models, but “the consumer behavior implications need to be accounted for fully in future research.”

The fourth paper in this special digital-attribution section addresses the concerns over some of the most heavily used modeling options. It also attempts to introduce some new modeling choices which may provide useful results.

In **“Coalition Game Theory in Attribution Modeling: Measuring What Matters at Scale”** (please see page 414), Seyed Hanif Mahboobi (Amazon Web Services), Mericcan Usta (GroupM), and Saeed R. Bagheri (Amazon Advertising) discuss the problems inherent in misattribution given the limitations of a variety of existing models. The authors explain that “predefined heuristic rules to distribute the credit among advertising inputs remain in widespread use: last-touch attribution, uniform attribution, and first-touch attribution. The importance of considering the full path to conversion, however, calls for more sophisticated methods.”

By using logistic regression and game theory as appropriate algorithmic approaches to attribution modeling testing, the study tested various models, utilizing the data from a three-month digital-advertising campaign for a national retailer. Their findings included the discovery that with the new approach to attribution modeling, programmatic media generated progressively higher attribution with more algorithmic approaches (like

game theory), while paid search was getting progressively lower attribution.

“Programmatic media effectively can target consumers interested in the product, regardless of where they are in the funnel,” the paper concludes. “Paid search, conversely, is focused more toward the end of the funnel.”

Different approaches provide different results, and it is always wise to use a variety of approaches to ensure the quality of the input for planning purposes. The authors offer logistic regression and game theory as valid choices for attribution modeling since “both approaches provide concise models that measure the incremental value each advertisement exposure adds to the consumer’s purchase decision.”

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A special thanks is in order for one of our highly valued contributors.

Gian Fulgoni, who has authored our “Numbers, Please” column since *JAR* introduced it five years ago, has been a consistently provocative and timely voice both in the *Journal* as well as in the industry that we serve. The cofounder, and former chairman/ceo of comScore, Inc., retired in 2017 after nearly 40 years of corporate management experience.

In the 20 issues of *JAR* since December 2013, the column is a staple that readers have come to anticipate and put to smart use. Fulgoni’s final column appears in these pages. But his influence—from his *JAR* work and his powerful and thoughtful contributions to the entire marketing research industry—will remain a high-bar standard for this and any other academic publication.

As always, I welcome your feedback.