

Data-Driven Attribution Modeling

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Purpose – Customer journey has become increasingly complex. The Internet offers a plethora of advertising channels (search, display, video, social...), and most customers usually come across multiple touchpoints before buying anything. The evaluation of marketing effectiveness has become even more challenging. Whereas organizations struggle determining the revenue generated by them and therefore cannot compute precise ROIs. This is where attribution comes into play.

Design/Methodology/approach – We developed and tested an attribution machine learning model for a major French online retailer. The dataset has 7.2 million users who visited the French version of the website for the first time between July 1st, 2017 and June 30th, 2018. The model was based on the concept of incremental A/B testing. We compared the outcome of a journey with and without a touchpoint, all else being the same, and considered that the incremental value of a touchpoint is equal to the revenue that we wouldn't have generated in its absence.

Findings – The counter-factual model outperformed with both the accuracy and variability metrics. Moreover, 68 % of users who followed a multi-channel customer journey are better described by the counter-factual model. Furthermore, the model has achieved an up to 50% more accurate revenue prediction compared to other models.

Research limitations/implications (if applicable) – The model was only tested on a single dataset. Also, the participant company operates on a very specific market. It would be valuable to train and test the model with other datasets and industries.

Practical implications (if applicable) – The model can estimate the expected revenue from a user based on its previous touchpoints, the expected impact of a next touchpoint can also be predicted. Therefore, marketers can try to influence this user's journey by triggering an email or a customised display campaign if they know that the expected gain is maximal for these actions at this point. This can lead to a data-driven segmentation of customers and focus resources on targeted segments, with the objective of maximising revenue at a minimal cost

Originality/value – This paper proposes a machine learning model to determine the true value of every touchpoint and marketing channel using a counter-factual approach. This research offers an evaluation of channel effectiveness at the individual customer scale, which is a necessary step towards service Marketing Mix Optimisation.

Key words Attribution modeling; Customer Acquisition; Customer Journey; Machine learning; AI

Paper type –Research paper