

Attribution Models in Marketing

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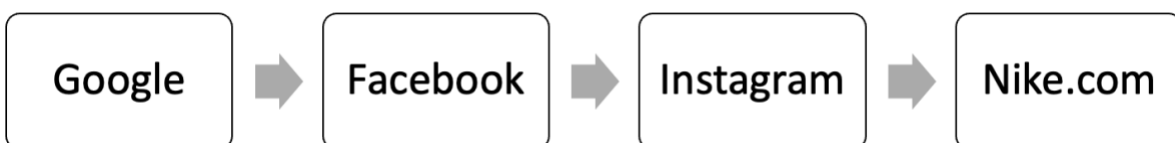
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INTRODUCTION

Advertising is one of the most important aspects of businesses – large or small. Since it is a huge investment that firms make, teams with expert marketing personnel are recruited. These teams specialize in creating new campaigns and channels that the firm can advertise through. Measuring the impact of the advertising can be done at an overall level easily, as there are a set of indicators used in the industry that provide this information. However, in the current data-driven world, every piece of information is important. The firms want to know which exact step of the advertisement campaign led to the purchase or persuaded interest from the customers. This process is known as attribution. In this report, few of the attribution techniques will be discussed to get a general idea about the models being used in the marketing industry.

TYPES OF ATTRIBUTION MODELS

Every step in a customer's journey before a purchase is called a touchpoint. In attribution models, these touchpoints are usually the channels through which the user traversed before making the purchase. Most purchases from users involve multiple touchpoints. For example, a user could click on a Google ad of a Nike shoe and then open the same ad on Facebook and Instagram later. He/she could then purchase the product directly from Nike's website. In this case, Google, Facebook, Instagram, and Nike's website would be the touchpoints in the customer's journey.



Touchpoints in the customer's purchase

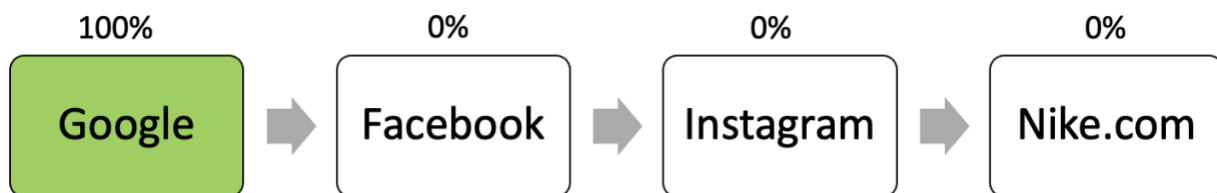
Attributing the purchase to these touchpoints can be done in the following ways:

- First-Interaction
- Last-Interaction
- Last Non-Direct click
- Linear
- Time Decay
- Position based
- Custom model based
- Experiment based

This report will briefly go over each of these attribution models using our Nike shoe example above. Before moving to the models, it is important to take a step back and realize that each of these models have their own pros and cons and the choice of model is completely up to the decision makers of the organization. A few of the pros and cons of all the models will also be discussed.

FIRST-INTERACTION MODEL

As the name suggests, the attribution of a purchase is made entirely to the first touchpoint of a customer's journey in the purchase. In the example above, the purchase would be attributed to the Google Ad as it opened the doors for the customer to purchase the shoes.



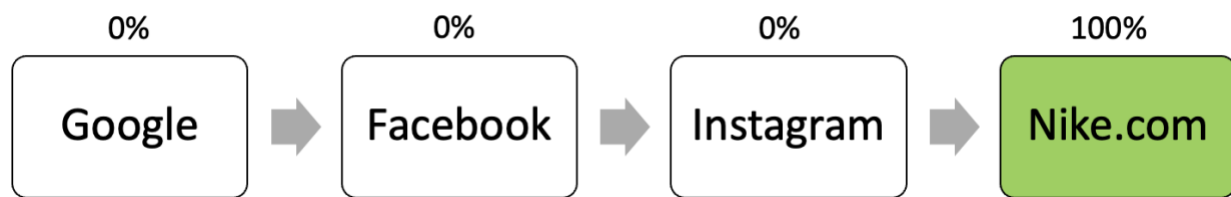
First-Interaction Attribution

This is a straight-forward approach attributing the first interaction of the user. It is especially useful for perishable goods as customers need to purchase these on a regular basis and would make their decision to purchase as soon as they see the first ad.

However, the simplicity of the model leads to ignoring the other touchpoints. This can affect decision making in cases of durable goods as the true effect of each of the touchpoints is not attributed according to the impact they had on the overall performance of the product. Also, it is not possible to always track the user's first touchpoint – which could lead to misleading interpretations of the attributions.

LAST-INTERACTION MODEL

The logic involved in this model is similar to the First-Interaction model. The attribution of a customer's purchase is made to the last touchpoint in the journey. In the example above, the purchase would be attributed completely to direct traffic on Nike's website.



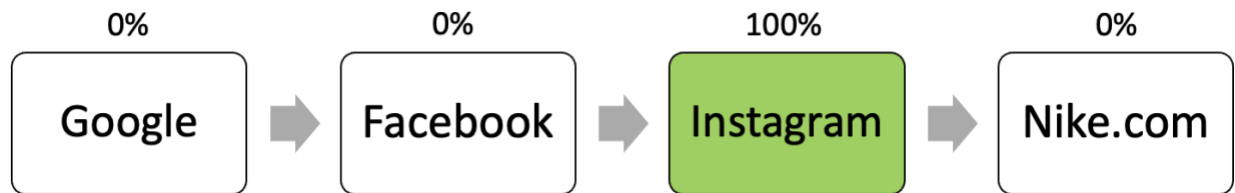
Last-Interaction Attribution

Even though this is also a straight-forward approach to attribution, it is very widely used as the default model in the marketing space because it does not involve the complexities of tracking the user's journey. Moreover, in items involving short buying cycles from the customers (like perishable goods), it is quite possible that the first and last interaction were the same. This model is very efficient in getting the effect of the advertisements in such cases.

Again, as this model ignores the previous touchpoints in the journey, key information about the effect of other touchpoints will be missed. Also, organic direct clicks in the data can create underlying biases in the model which can lead to inaccurate causal conclusions by the business.

LAST NON-DIRECT CLICK MODEL

This approach to marketing attribution involves giving credit to the last non-direct click in the customer's journey. The problem of biases caused due to organic direct traffic will be taken care of by using this approach. In the example above, Instagram will get all the credit for the purchase.

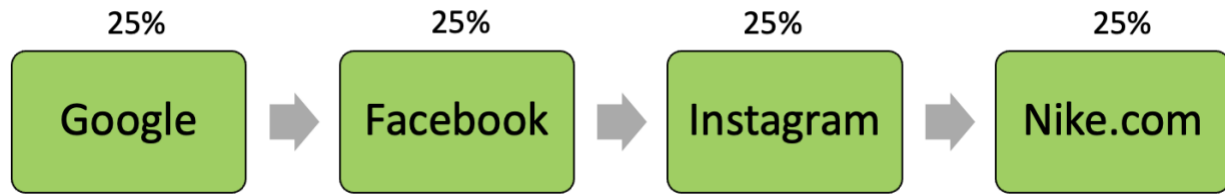


Last Non-Direct Click Attribution

Although this model solves the organic direct traffic issue, it still attributes 100% credit to a single touchpoint in the customer journey. As discussed previously, this can lead to incorrect decisions by the leadership.

LINEAR ATTRIBUTION MODEL

This is a model that considers more than one touchpoint in the process of attribution. In this model, each of the touchpoints are given an equal proportion of credit to maintain uniformity. In the example above, all four touch points will receive a 25% attribution using this model.



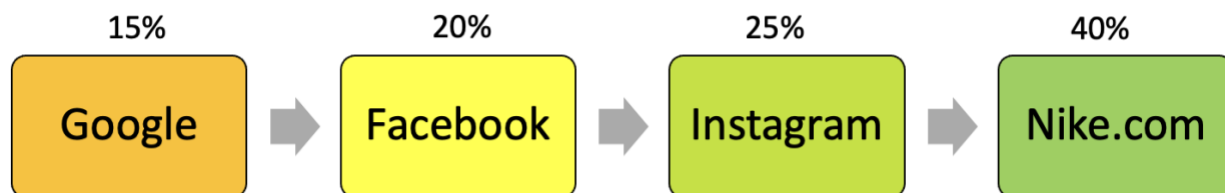
Linear Attribution

Linear Attribution ensures that a balance is maintained between each of the touchpoints or channels in the purchase journey of a customer. This way, each touchpoint will be given equal importance at the time of creating marketing campaigns.

However, since every touchpoint is treated equally, true effects of the actual well-performing or underperforming touchpoints cannot be uncovered using this model. Some decisions require bias, and this model will not be suitable at such points.

TIME DECAY MODEL

Like Linear Attribution, Time Decay Attribution also attributes all the touchpoints in a user journey. However, the attribution is not done uniformly. Based on the timeline, the touchpoints are allocated credit, with the last touchpoint getting the highest credit. In the example above, though all four touchpoints will get credit, Google will be assigned the lowest credit and Nike's website the highest.



Time Decay Attribution

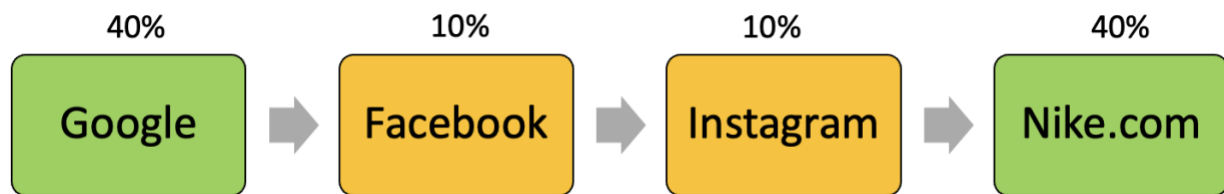
In most purchase journeys, touchpoints that occur at later stages (like retargeting) contribute higher to the decision made. This model ensures higher credit is given to the most recent

touchpoint and signifies the relationship built between the user and the business over a timeframe.

However, since this model gives less importance to the touchpoints that occurred early, there might be chances of missing out on measuring their true effects in some cases.

POSITION BASED MODEL

This model assigns credit to the touchpoints based on their chronological position. It is also known as the U-shaped approach. The earliest and the latest touchpoints are given the highest credit, while the other touchpoints are given rest of the credit divided equally. In the above example, Google and Nike's website will be attributed to highest credit while Facebook and Instagram will receive lower attributions.



Position Based Attribution (U-Shaped Attribution)

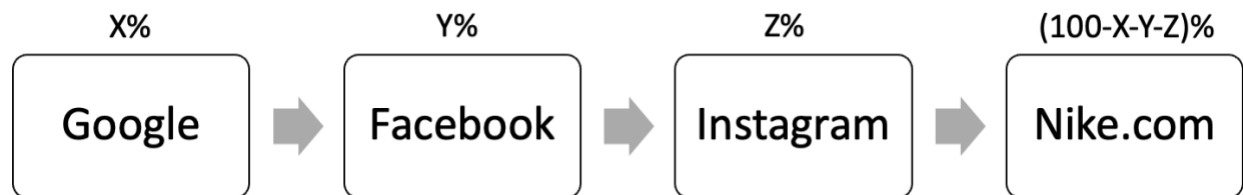
This model is a good choice when the business knows the most impactful touchpoints that bring in purchases frequently. In most cases, these tend to be the first and the last touchpoints in the journey and are attributed accordingly.

As with all other biased attribution models, this model can also lead to missed opportunities in cases where an intermediary touchpoint led to a huge chunk of users considering purchases.

Also, seasonality plays a role in this as an intermediary ad that was placed two weeks early to attract customers for a Black Friday sale might cause a purchase. In this case, however, the last click just before the sale will get the credit instead.

CUSTOM MODEL BASED ATTRIBUTION

Many firms hire engineering and analyst teams to curate their own model and attribute touchpoints accordingly. As the model is curated to match the company's data, it is highly likely to produce the best results in terms of attribution. In the example above, the marketing team at Nike can strategize and assign ad-hoc weights to each touchpoint that were obtained from regression and other forms of statistical analysis.



Custom Model Based Approach

Although this is the best model that firms can opt for, it is expensive to invest in infrastructure that is required to continuously recalibrate the model. Large companies have an added advantage due to lower budget constraints. Small businesses might not have enough data nor the financial capability to implement such a model into their marketing.

EXPERIMENT BASED MODEL

Experiment Based models serve as the best way for firms to design their marketing strategies.

In this model, the companies first test out multiple different combinations of weights for attributing the touchpoints and adapt the one that works the best for them.

Unlike other models, this model involves complexities in both technical and decision-making aspects of attribution. Hence, it will require high costs for implementation, both technically and operationally.

CONCLUSION

All the models discussed above serve the purposes of attribution. Businesses, based on their domains and how large they are, opt for various types of attribution models (even the ones not discussed in this report). At the end of the day, organizations need to understand what works best for them and implement these techniques into their systems. The challenge of having to decide which model to use is unavoidable for every firm. The earlier this challenge is tackled; the higher will be the outputs from advertising for businesses.

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