



Using Explainable AI in Marketing for Attribution Modeling

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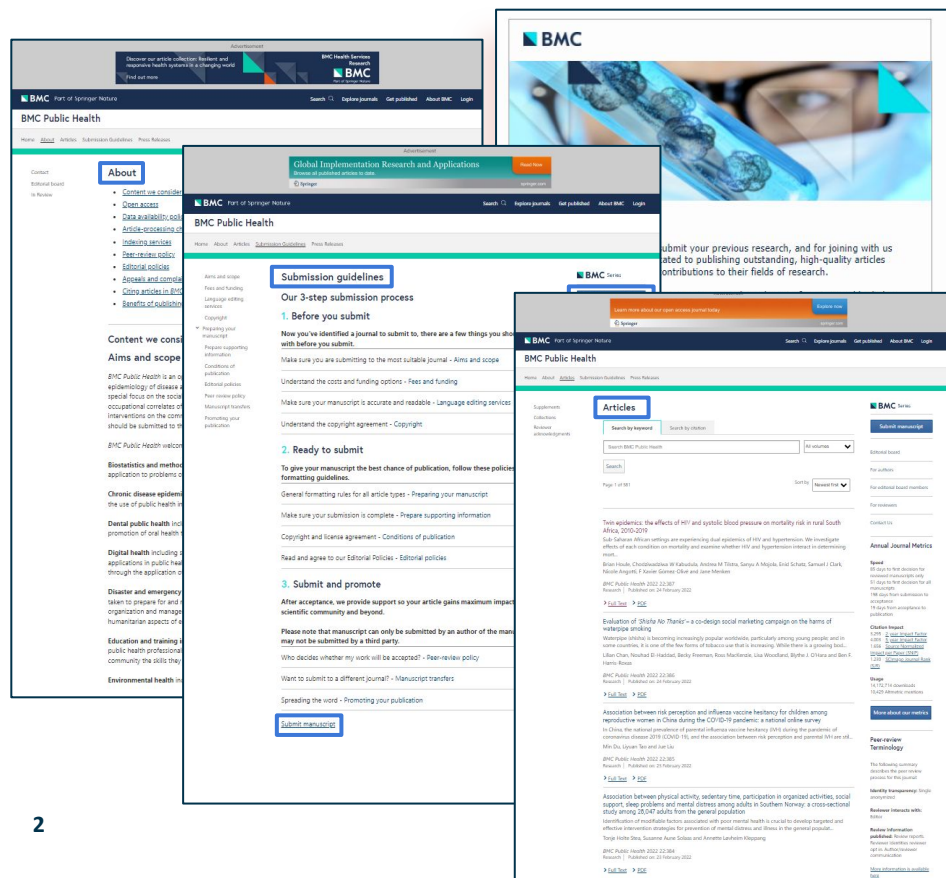
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Journey to submission

Various touch points & channels a user is exposed to



Every year millions of users visit SpringerNature websites and tens of thousands submit their articles.

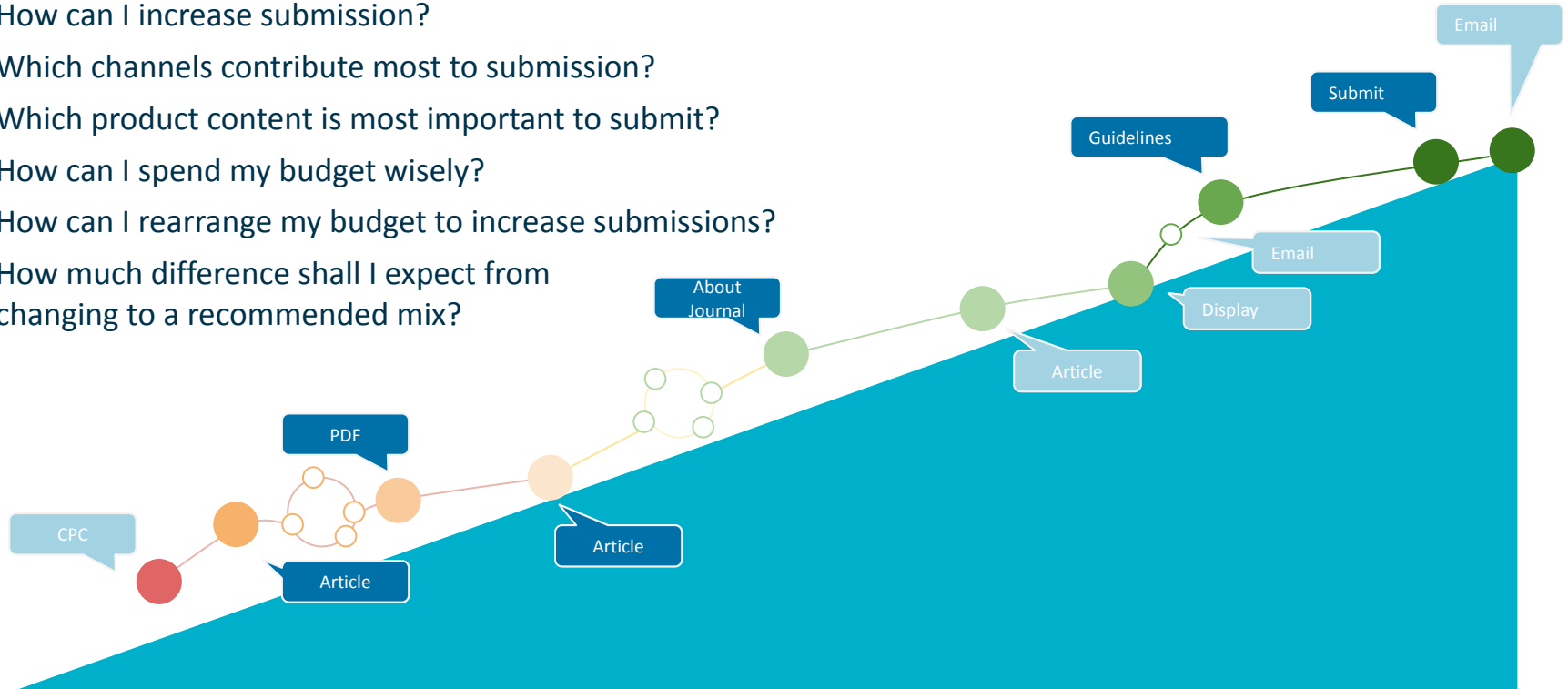
Marketing contributes to the online user journey to submission. That journey is fragmented and made of hundreds of steps and multiple channels.

Attribution modelling combines the pieces of this puzzle and organises the touchpoints in a sequential order allowing to predict the likelihood of a user to submit a manuscript.

Journey to submission

How can Marketing contribute to that journey?

- How can I increase submission?
- Which channels contribute most to submission?
- Which product content is most important to submit?
- How can I spend my budget wisely?
- How can I rearrange my budget to increase submissions?
- How much difference shall I expect from changing to a recommended mix?

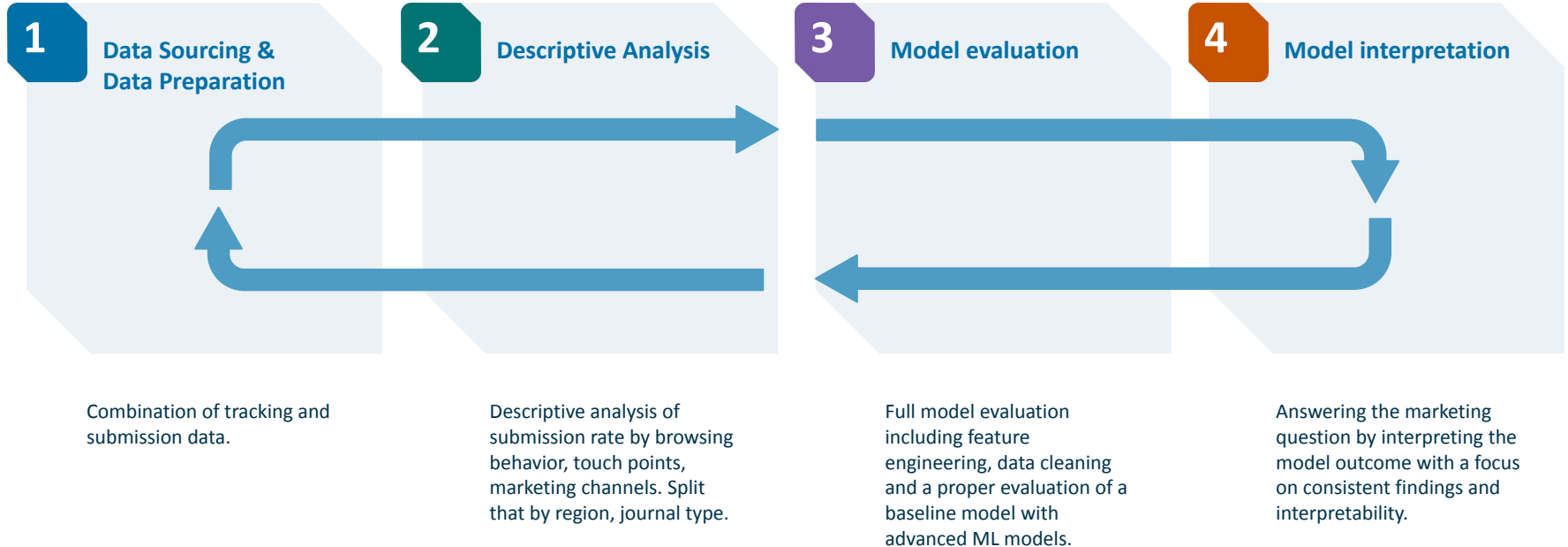


Let's run an Attribution model

“Put simply, marketing attribution is the analytical science of determining which marketing tactics are contributing to sales or conversions. It is the practice of evaluating the marketing touchpoints a user encounters on their path to purchase”

Lets run an attribution model

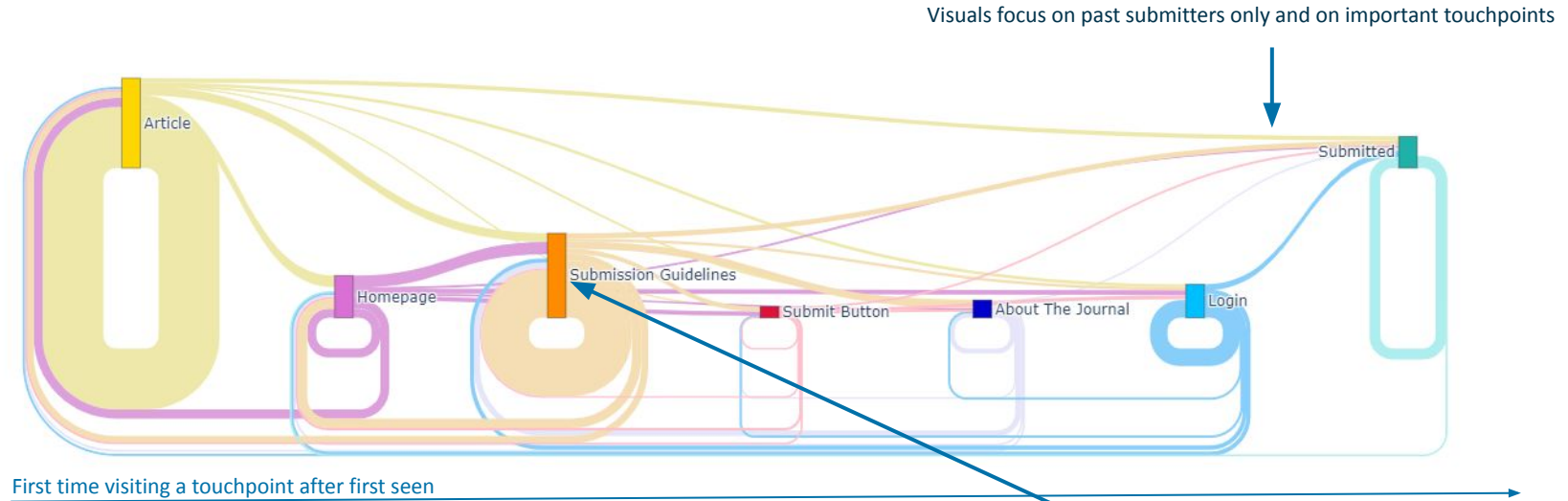
Analytics cycle for modeling attribution data



**Answer the
business
questions**

The journey of submitters over time

Using sankey diagrams in combination with descriptive outcomes



The order of the touchpoints is based on the first time a user visits an touchpoint after seen first - gives a natural order of the journey

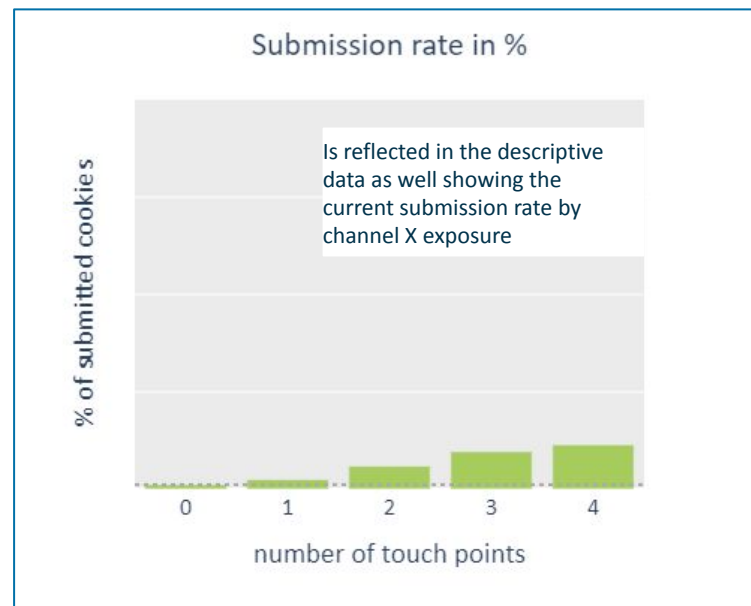
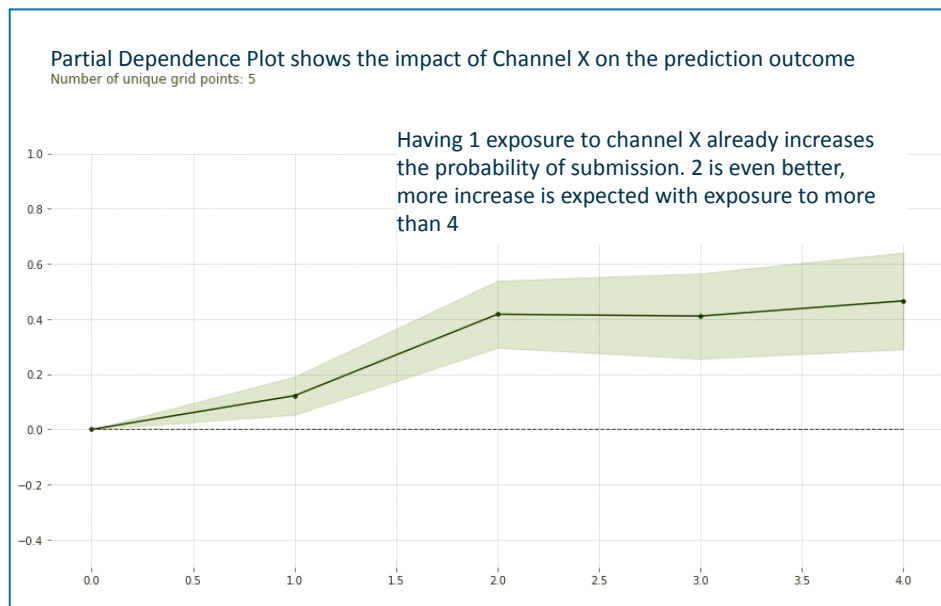
Size of the boxes gives guidance on how many sessions user spent on specific touchpoints within the journey

In addition we can add information e.g. importances or average time spent to understand how long they consume content

Answer the business questions

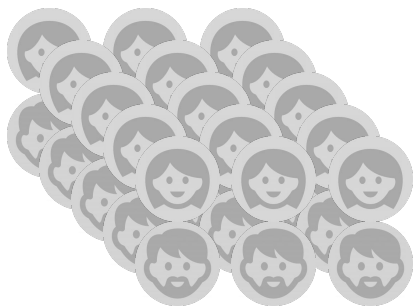
Which channels contribute most to submission? Take a look at channel X

Channel X in our case ranks 2nd in the permutation importance, which is an increase in model error when the channel information in the data is destroyed

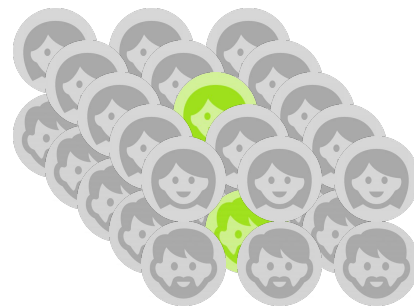


Eat your own dog food - testing marketing scenarios

Starting point are the non submitters having an average submission probability of 14% in the past



Past non submitters
Average submission probability = 14%



Potential increase
Average submission probability = 16%

Simulation approach

- Define a marketing scenario
e.g. increase exposure to channel X if user has < 1 touch point
- Decision rules for content based on the attribution model
e.g. users reading > 5 articles aware of guidelines
- Increase in touch points for content and marketing using a binomial distribution with specific settings for p and n
- Recalculate the submission probability based on attribution model



**Usage of the
outcome**

Usage of the outcome

Ways to use the results of the analysis

The collage shows the BMC Public Health website interface with several key sections highlighted:

- Homepage:** Features the BMC logo, navigation links (Home, About, Articles, Submission Guidelines, Peer Reviews), and a search bar.
- About Page:** Includes a sidebar with links to Contact, Editorial Board, and various policies (Aims and scope, Editorial policies, etc.).
- Submission guidelines:** A detailed page outlining the 3-step submission process, from preparation to submission and promotion.
- Articles Page:** Displays a list of articles with search filters and a 'Submit manuscript' button.
- Peer review section:** Provides information about the peer review process, including a timeline and a list of reviewers.

Red boxes and blue annotations highlight specific elements across the screenshots:

- Red boxes:** Highlight the 'About' page, 'Submission guidelines', 'Articles' page, and the 'Submit manuscript' button.
- Blue annotations:** Highlight the 'About' page, 'Submission guidelines', 'Articles' page, and the 'Submit manuscript' button.

- Train colleagues in workshops
- Decision rules for Strategy and Operation
- Cookie enrichment
- Tool for simulating marketing scenarios



THANK YOU

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