Part 3: Next steps

1. Assume we have a target of breaking even ($0) on CM2 in Winter sports. Given this target, is our marketing spend appropriate? If not, what would you recommend changing?
    - A single 5-week period isn't enough information to optimize spending for the next 5-week period. There may be seasonality, and marketing channels will have different ROAS depending on the time of year.
    - For the sake of argument, one KPI we can use to optimize our marketing spend is ROAS (Revenue / Marketing Costs) for each channel.
    - In our case, we'll define ROAS as channel attribution weight/channel budget weight.
        - ROAS > 1 indicates the channel has been under-allocated.
        - ROAS = 1 indicates optimized allocation.
        - ROAS < 1 indicates the channel has been over-allocation.
    - To calculate optimized marketing spend for each channel, we can use
        - Optimized budget = budget * ROAS
    - Note that this doesn't guarantee optimized revenue since marketing spend and ROAS aren't linear.
        - Time, other touchpoints, and user journeys are all factors.
    - Furthermore, ROAS doesn't wholly encompass a marketing channel's health.
        - CAC, CLV, and engagement metrics are all useful for gaining deeper insights into a channel's effectiveness and long-term viability.

    - The above calculation shows how to re-allocate the current budget, but if our goal is to break even (i.e. have a CM2 surplus of $0), we must determine if marketing ROI is positive (i.e. the revenue generated from conversions that come from the below marketing sources is positive).
        - This requires building on our attribution model to determine, for each conversion (i.e. purchase), the total marketing spend and lag time (since marketing spend isn't usually realized in the same week - unless it's a campaign offering an expiring discount).
            - I.e. we have to determine the marketing cost for each touchpoint.
        - The total marketing spend for each conversion will tell us if our marketing ROI is net positive or negative.
            - If positive, we can allocate the surplus CM2 spend to the highest ROI marketing channels.
            - If negative, we can pull back marketing spend and revise our marketing strategy.
    - *tl;dr If CM2 and **marketing ROI** are positive, we can optimize the surplus CM2.

Source Budget Weights + Attributions

Source	Sum of Spend	Source Weight	Conversion Proportion	Channel Attribution Weight	Optimized budget
affiliate	$1,788.55	0.04%	1%	8%	$348,337.79
bing ads	$68,561.33	1.63%	1%	4%	$157,175.40
facebook ads	$731,976.48	17.40%	1%	6%	$262,919.86
google ads	$3,405,286.07	80.93%	15%	82%	$3,439,179.37

SUMMARY

4 Rows – 9 Columns

$4,207,612.43
Sum of Sum of Spend

$4,207,612.43
Sum of Optimized budget

18%
Sum of Conversion Propor…

Source Budget Weights

Source	Sum of Spend	Source Weight	Week	source_group	attributed_at_date	attributed_at_date 1	spend_usd	spend_usd 2	Replaced
affiliate	$1,788.55	0.04%							
bing ads	$68,561.33	1.63%							
facebook ads	$731,976.48	17.40%							
google ads	$3,405,286.07	80.93%							

SUMMARY

4 Rows – 11 Columns

4207612.43
Sum of Replaced