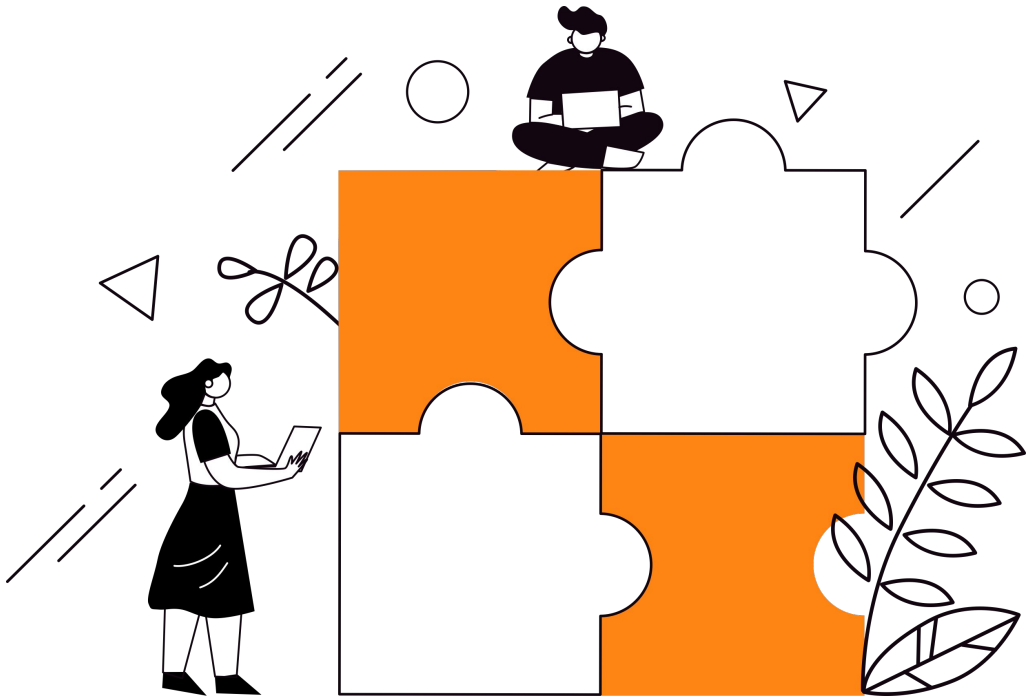
Agenda

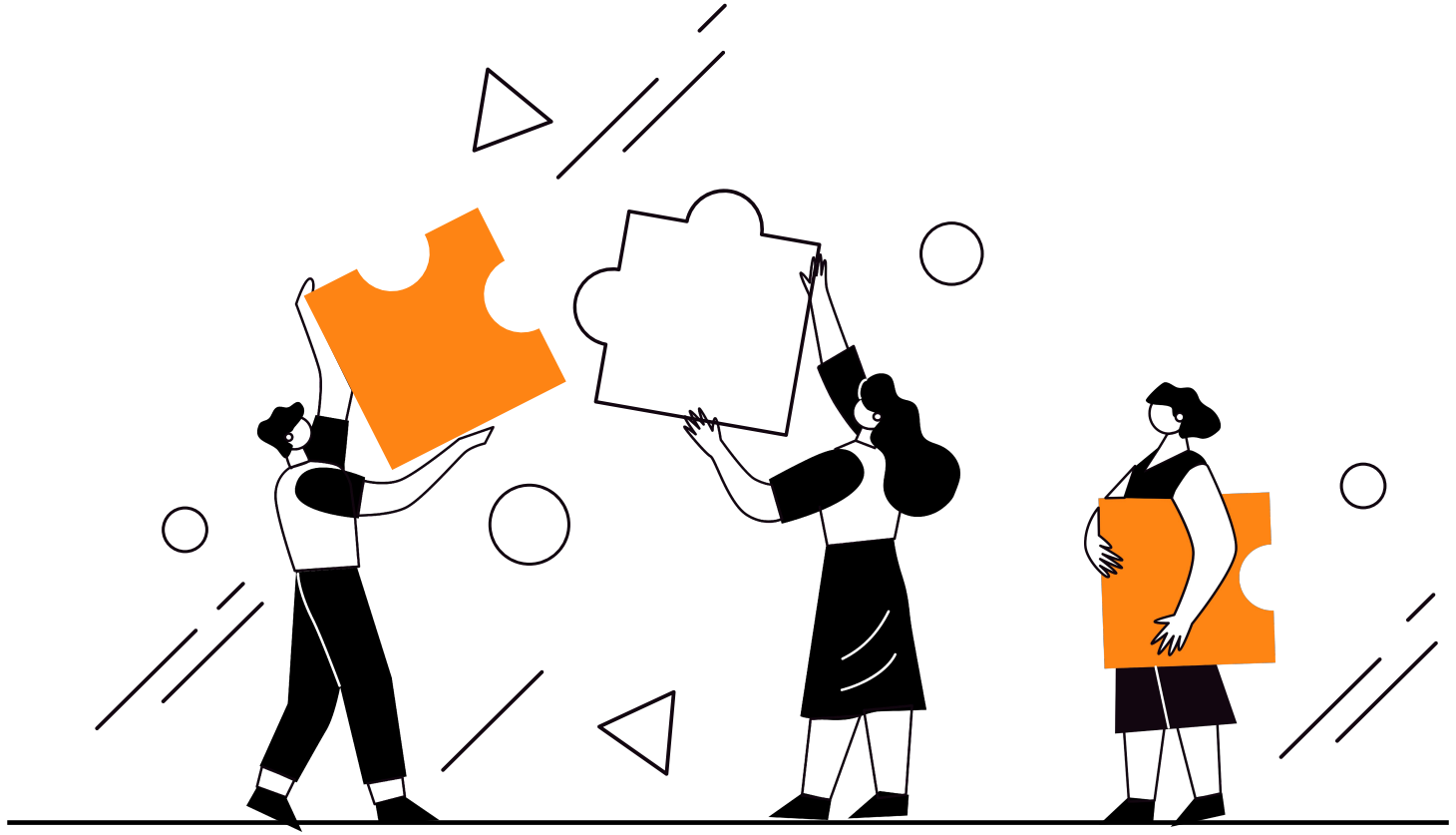


01 Question Scenario

02 Analysis Process

03 Analysis Steps 1 - 4

04 Mock Presentation Deck

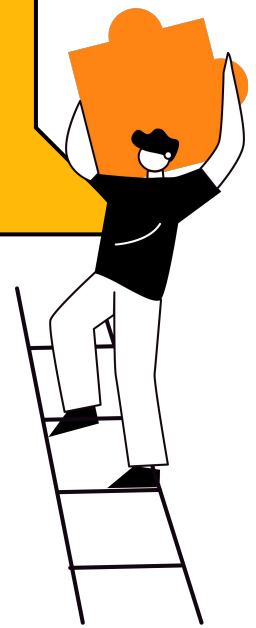


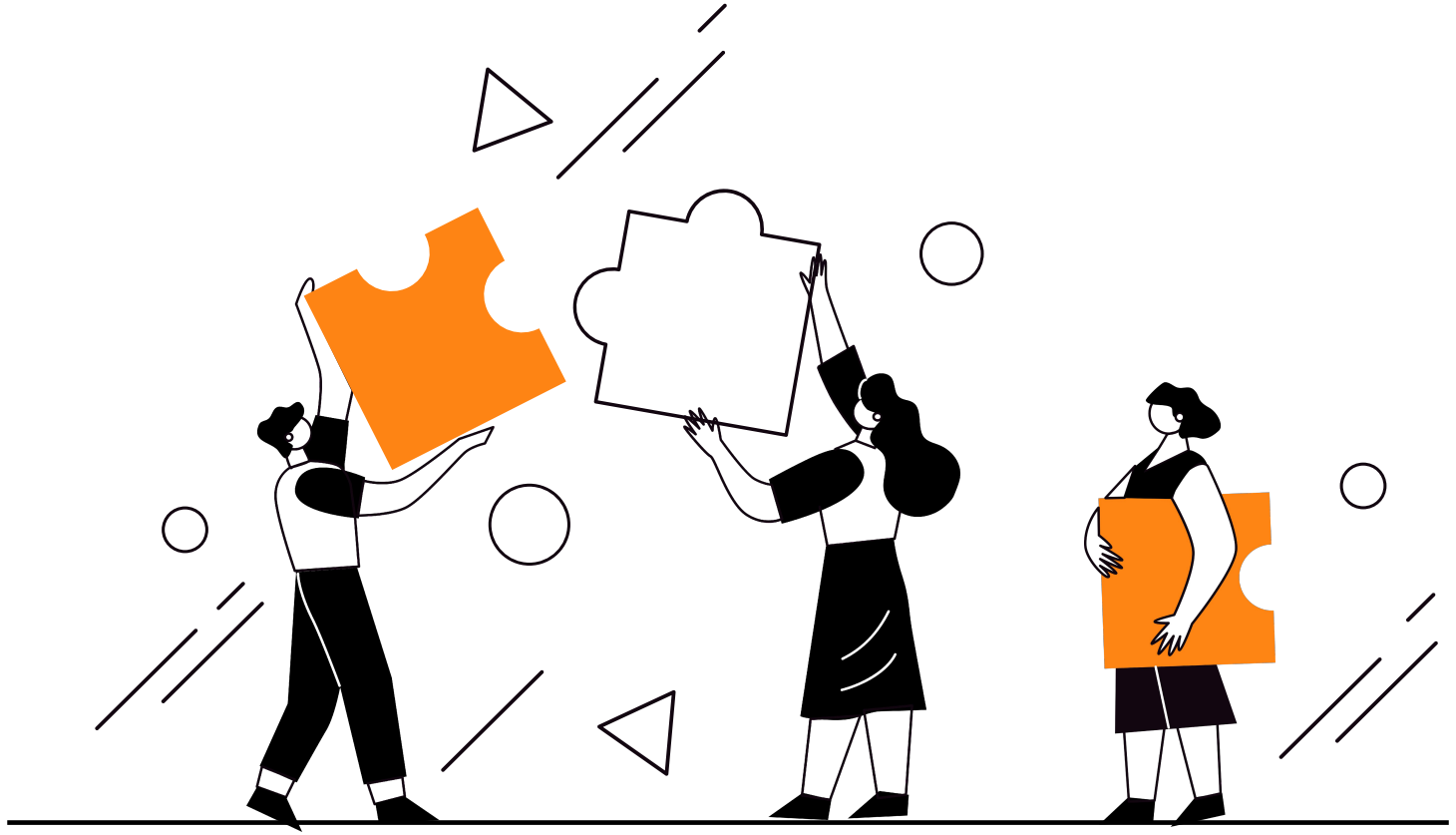
01 /.

Question Scenario →

Analysis Question

As a data analyst working for an advertising agency, Client A, a cosmetic company, has been implementing digital advertising across various channels such as search, display, and social media. They seek your expertise in understanding the seasonality and devising effective marketing campaign strategies for peak seasons to optimize sales. What approach would you recommend taking in this scenario?

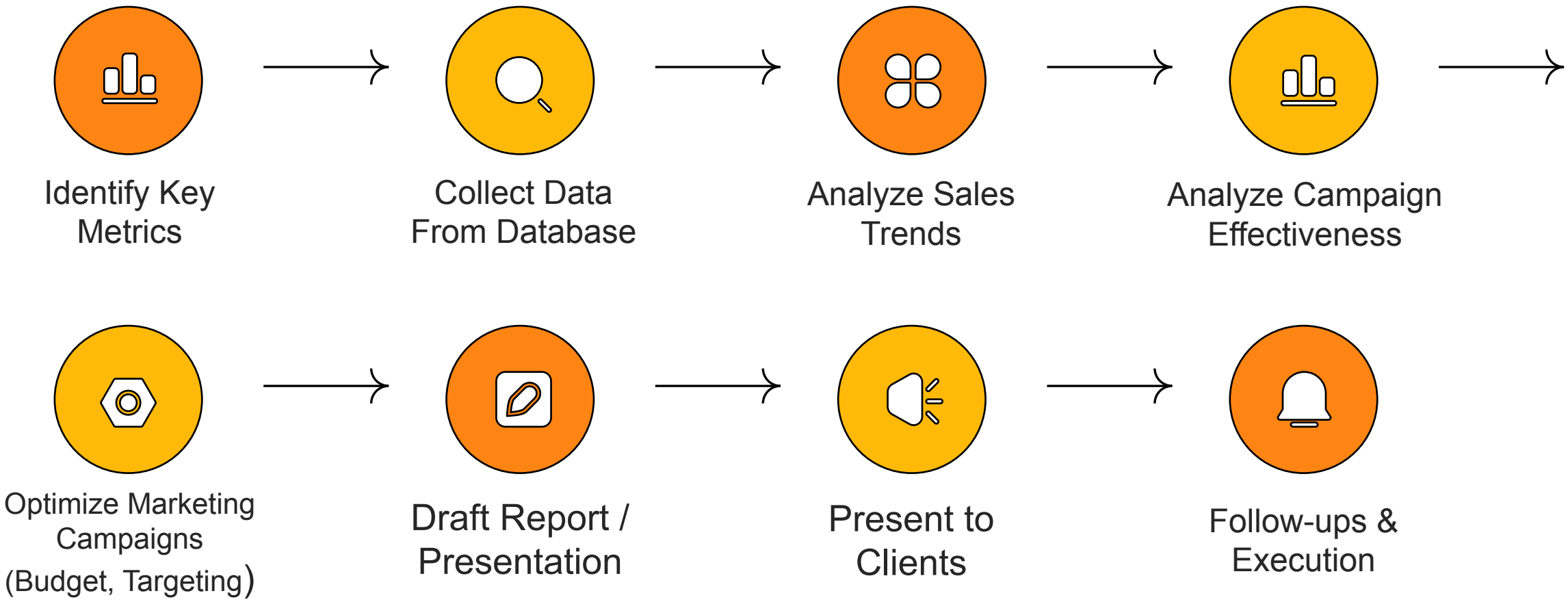




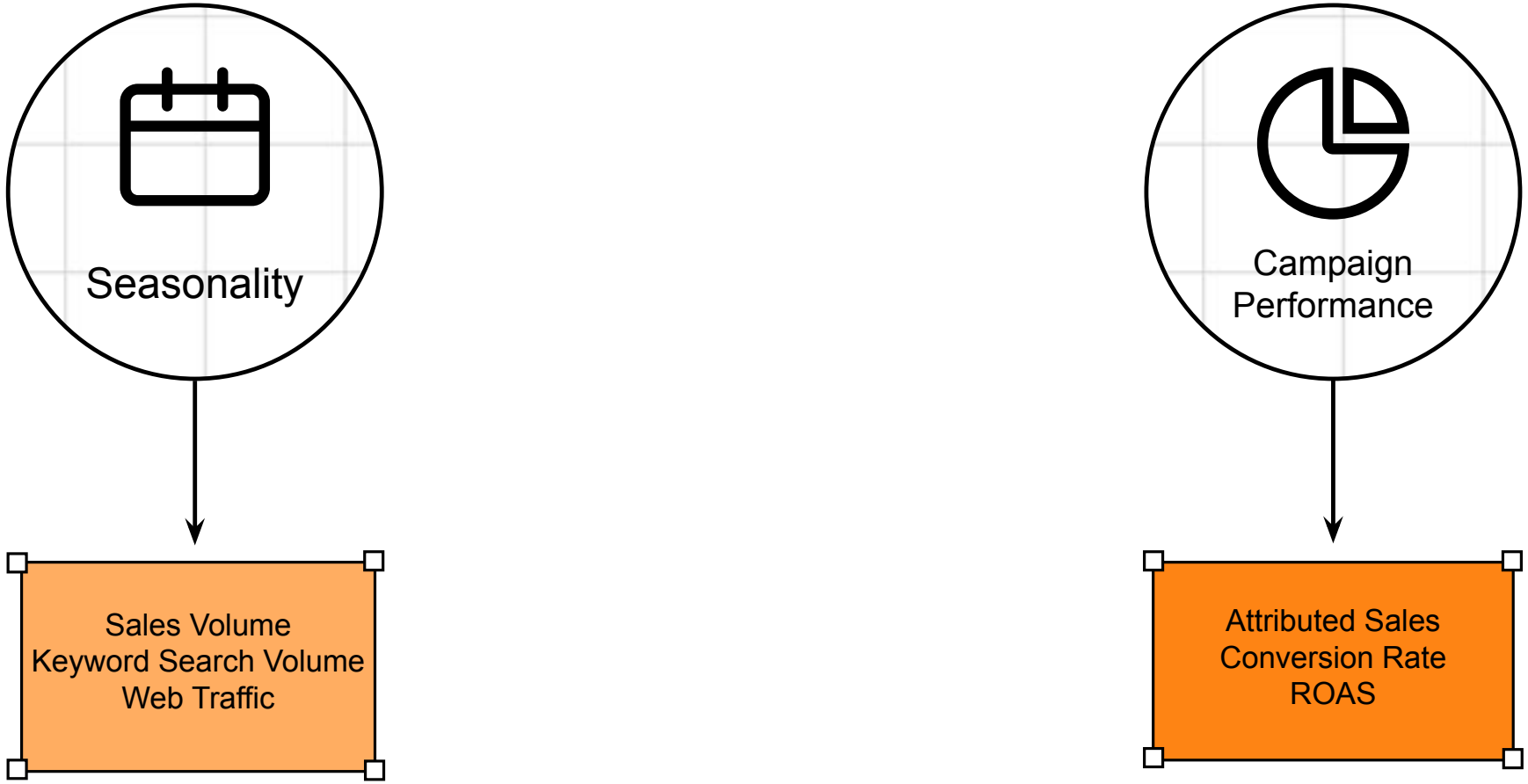
02 /.

Analysis Process →

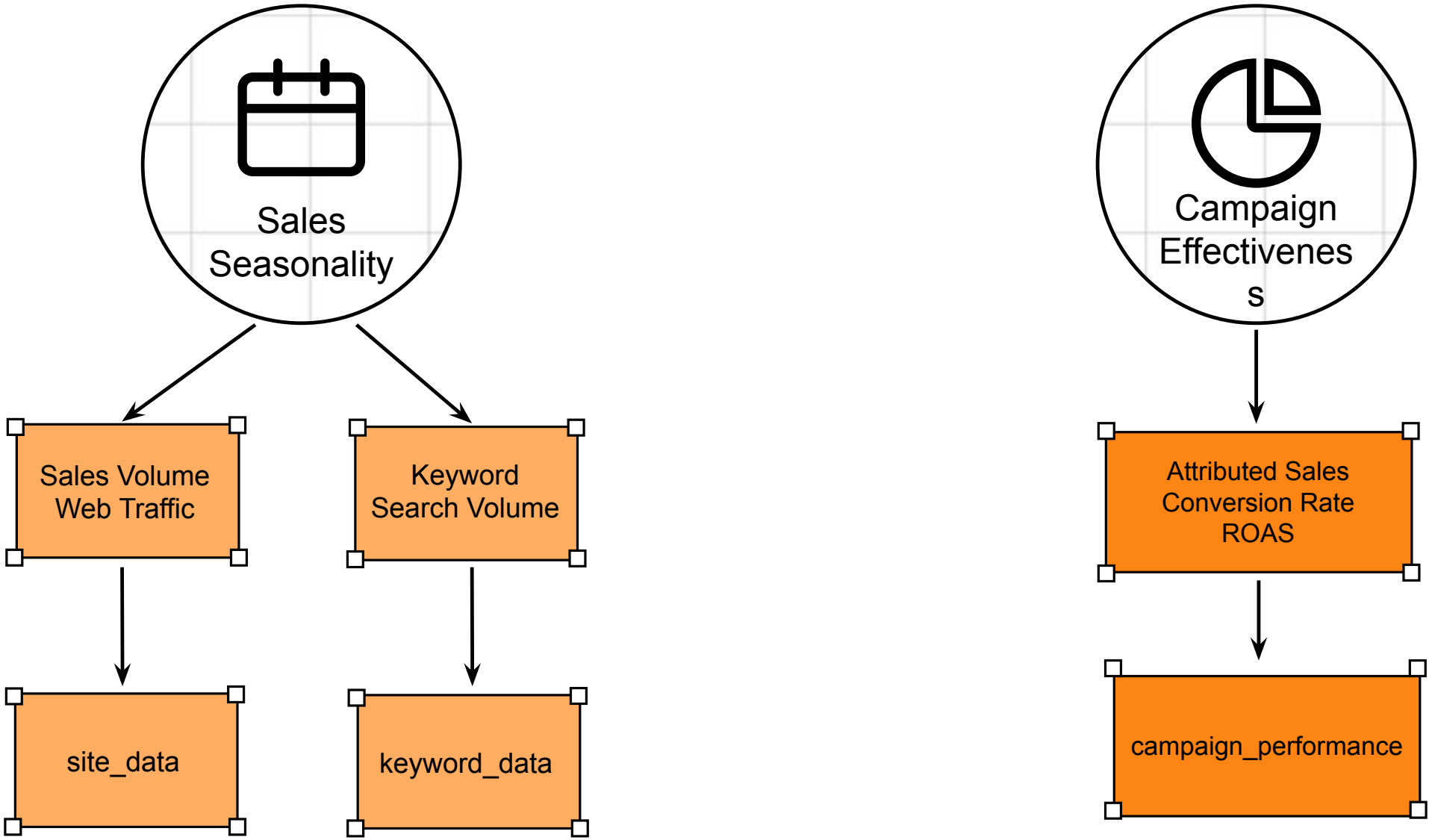
Analysis Process Overview



Step 1: Identify Key Metrics



Step 2: Collect Data From Database

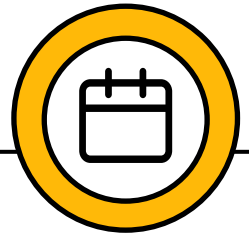


Step 3 (1) : Analyze Seasonality with SQL

Use The Site Below to Upload csv and Conduct SQL Queries
CSVFiddle

Sales Volume &
Website Traffic Trends

```
select  month(date) as month
        , sum(sales) as sales
        , sum(sessions) as sessions
from site_data
where client = 'A'
group by 1
```



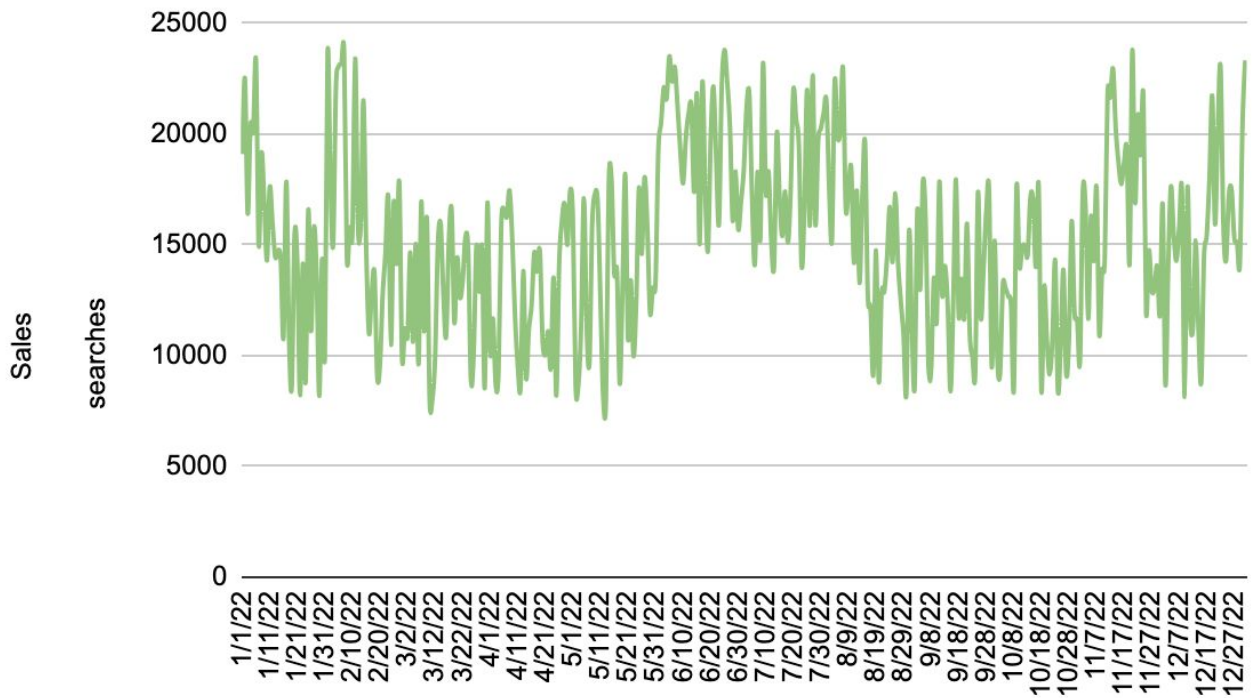
Related Keywords
Search Volume

```
select
            date
            , sum(search_volume) as
searches from keyword_data
where
          lower(keyword) in ('a', 'eyeliner',
'lipstick', 'lipgloss', 'eyeshadow',
'foundation', 'highlighter', 'eyebrow',
'lotion', 'facewash', 'serum')
group by 1
```

Step 3 (2): Analyze Sales Seasonality with Visualizations

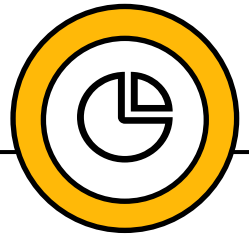
Sales & Website Trends

Keyword Trends



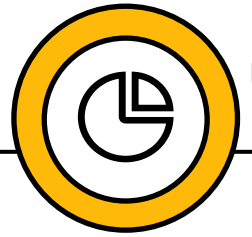
Step 4 (1) : Analyze Campaign Effectiveness by Channel with SQL

Use The Site Below to Upload csv and Conduct SQL Queries
CSVFiddle



Campaign Effectiveness by Channel

```
select channel
        ,sum(attributed_sales) as revenue
        ,sum(conversions)/sum(impressions) as conv_rate
        ,sum(attributed_sales)/sum(spend) as ROAS
        ,sum(attributed_sales)-sum(spend) as net_profit
from campaign_performance
where client = 'A'
        and date between '2022-01-01' and '2022-12-31'
group by 1
```

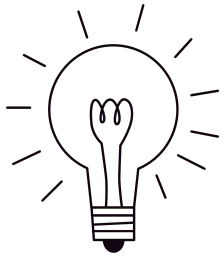


Union Different Tables

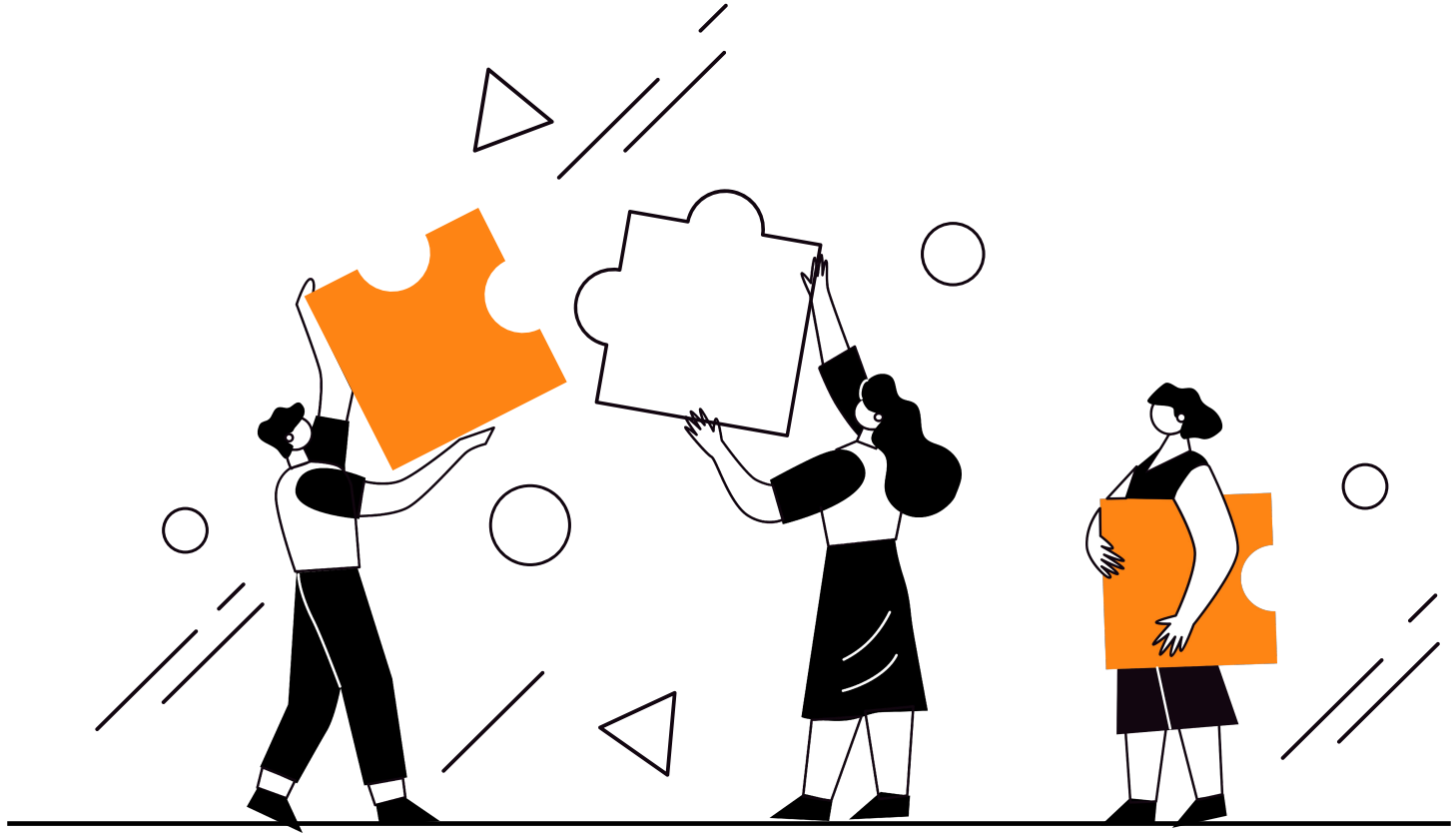
```
select
        channel
        , sum(attributed_sales) as revenue
from search_campaign
where date between ‘2022-01-01’ and ‘2022-12-31’
        and client = ‘A’
group by 1
Union all
select
        channel
        , sum(attributed_sales) as revenue
from social_campaign
where date between ‘2022-01-01’ and ‘2022-12-31’
        and client = ‘A’
group by 1
```

Step 4 (2): Analyze Campaign Effectiveness with Visualizations

Channel	Attributed Sales	Conversion Rate	ROAS	Net Profit
Search	$372,767	1.06%	$1.69	$152,143
Social	$277,592	0.80%	$1.33	$69,256
Display	$228,331	0.68%	$0.98	-$3,816



Campaign Effectiveness: Search > Social > Display

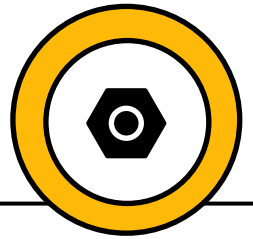


03 /.

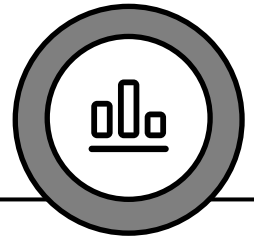
Optimize Marketing Campaigns

Step 5 (1): Optimize Marketing Campaigns - Budget Allocation

The client typically maintains a fixed budget allocation but makes minor adjustments based on performance. For example, during the holiday season, the total budget is $100K, with $50K for search, $25K for social, and $25K for display. Upon recognizing that search generates the most revenue and display the least, the revised allocation might be $60K for search, $25K for social, and $15K for display. This approach is common among clients.

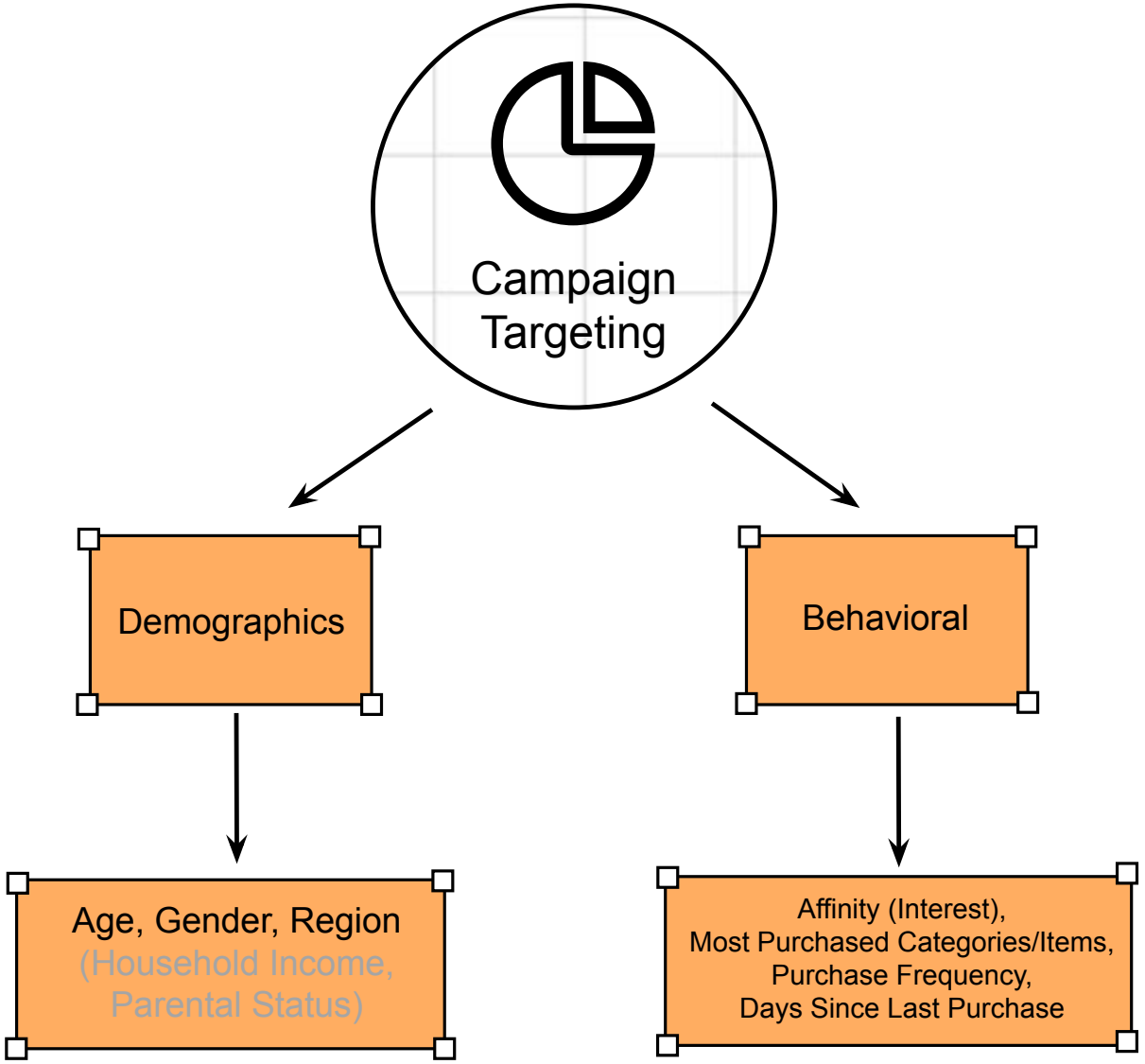


Another option is the use of MMM (Marketing Mix Modeling), an analysis technique that measures the impact of marketing and advertising campaigns. MMM helps determine how different elements contribute to desired outcomes, such as driving conversions. It provides insights to refine campaigns based on consumer trends and external influencers, optimizing engagement and sales. However, MMM is a complex technique not universally adopted.

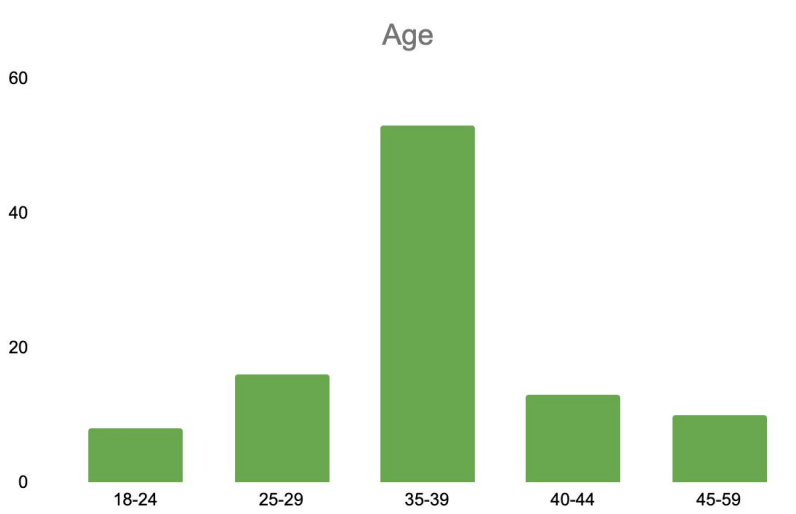


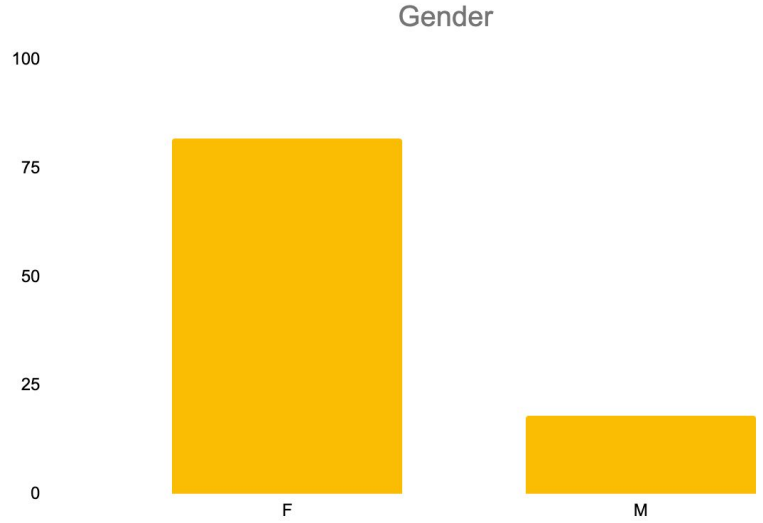
An internal budget forecast tool is also utilized. It involves a linear calculation that considers factors such as historical sales and spend, expected growth, and return on advertising spend (ROAS).

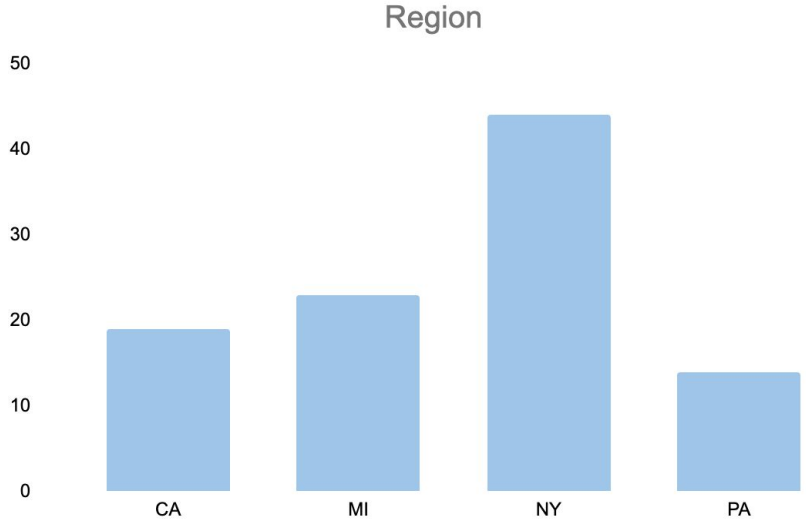
Step 5 (2): Optimize Marketing Campaigns – Campaign Targeting



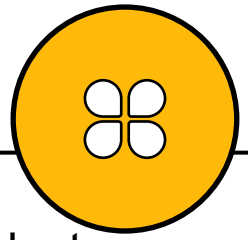
Step 5 (3): Campaign Targeting – Demographics Targeting







Step 5 (4): Campaign Targeting – Behavioral Targeting

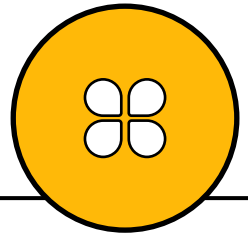


Most Purchased Categories

```
select
        category,
        sum(sales) as sales
from user_level_sales
where
        age_group = '35-39'
        and region = 'NY'
        and gender = 'F'
        and brand = 'A'
        and date between '2022-01-01'
and '2022-12-31'
group by 1
```

Category	Attributed Sales
Cosmetics	$10,141
Hair Care	$5,778
Eyeliner	$4,362
Nail	$5,031
Eyeshadow	$2,646
Bronzer	$53

Step 5 (5): Campaign Targeting – Behavioral Targeting

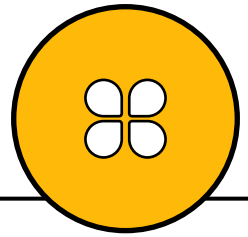


Average Purchase Frequency

The average number of transactions per customer per period

```
select
        count (distinct order_id)/count(distinct
customer_id) as frequency
from user_level_sales
where
        date between '2022-01-01' and '2022-12-31'
        and age_group = '35-39'
        and region = 'NY'
        and gender = 'F'
        and brand = 'A'
        and sales > 0
```

5 times

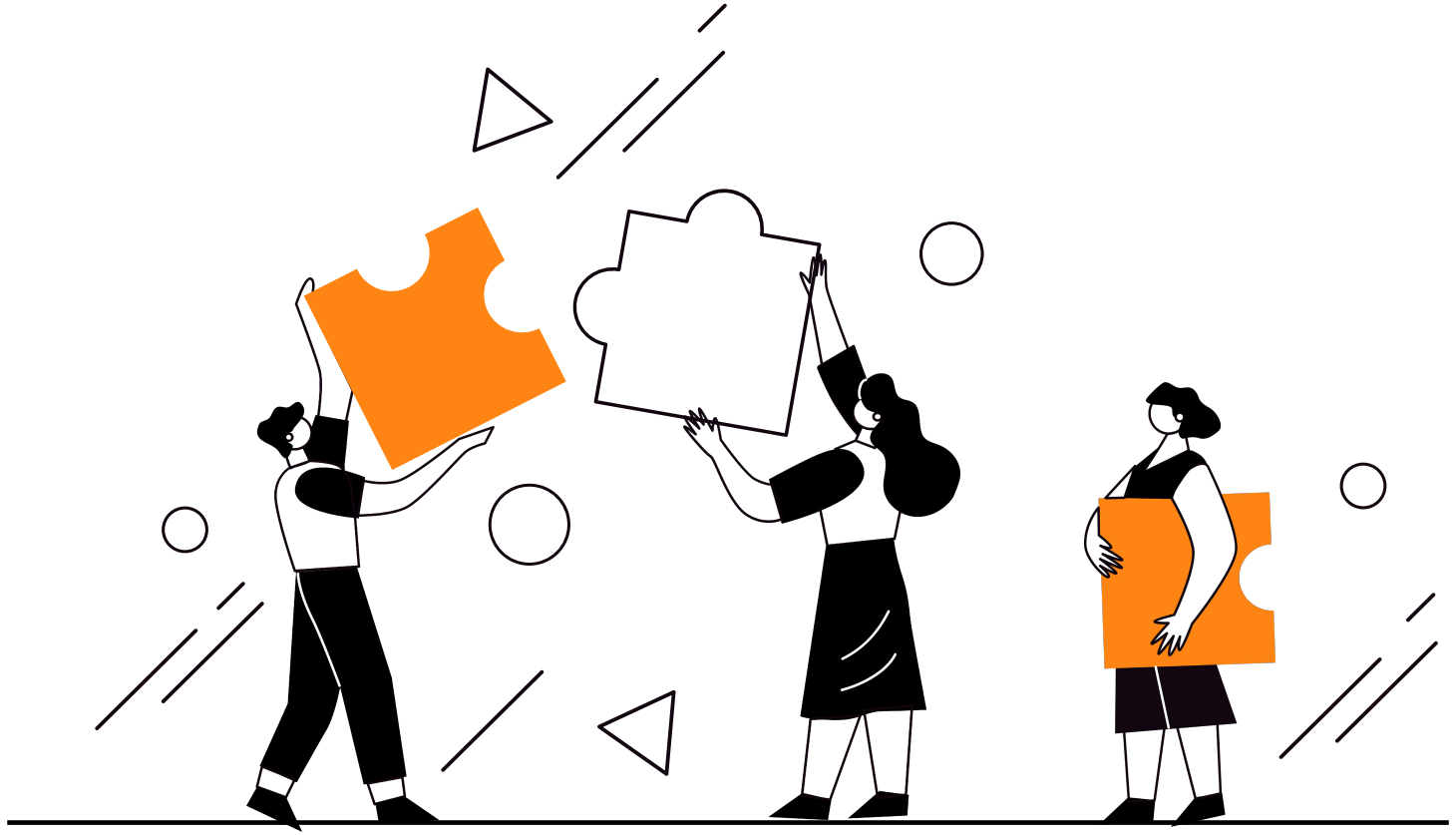


Average Days Since Last Purchase

```
with previous_date as
(select
date,
lag(date) over (partition by customer_id order by date) as
previous_date
from user_level_sales
where brand = 'A' and sales > 0  and age_group = '35-39'
        and date between '2022-01-01' and '2022-12-31'
        and region = 'NY' and gender = 'F' and brand = 'A')

select
avg(datediff('day', previous_date, date)) as
days_since_last_purchase
from previous_date
where previous_date not null
```

43 days

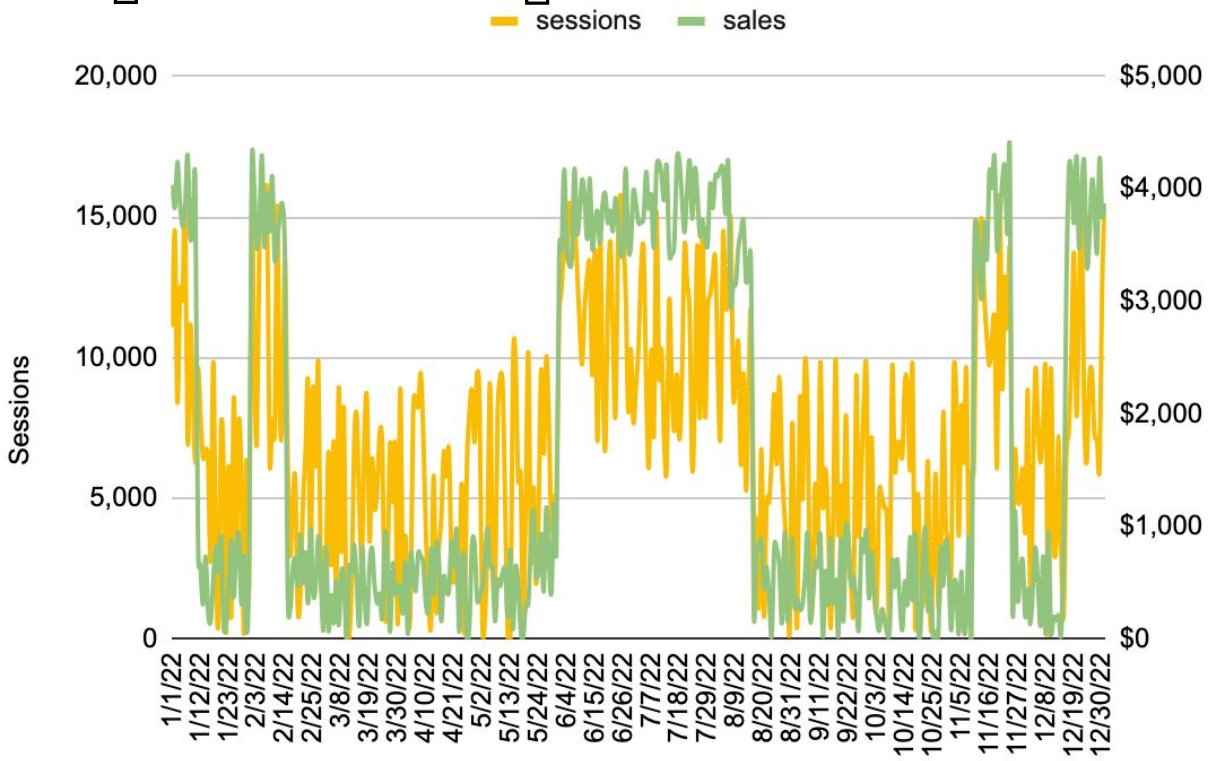


04 /.

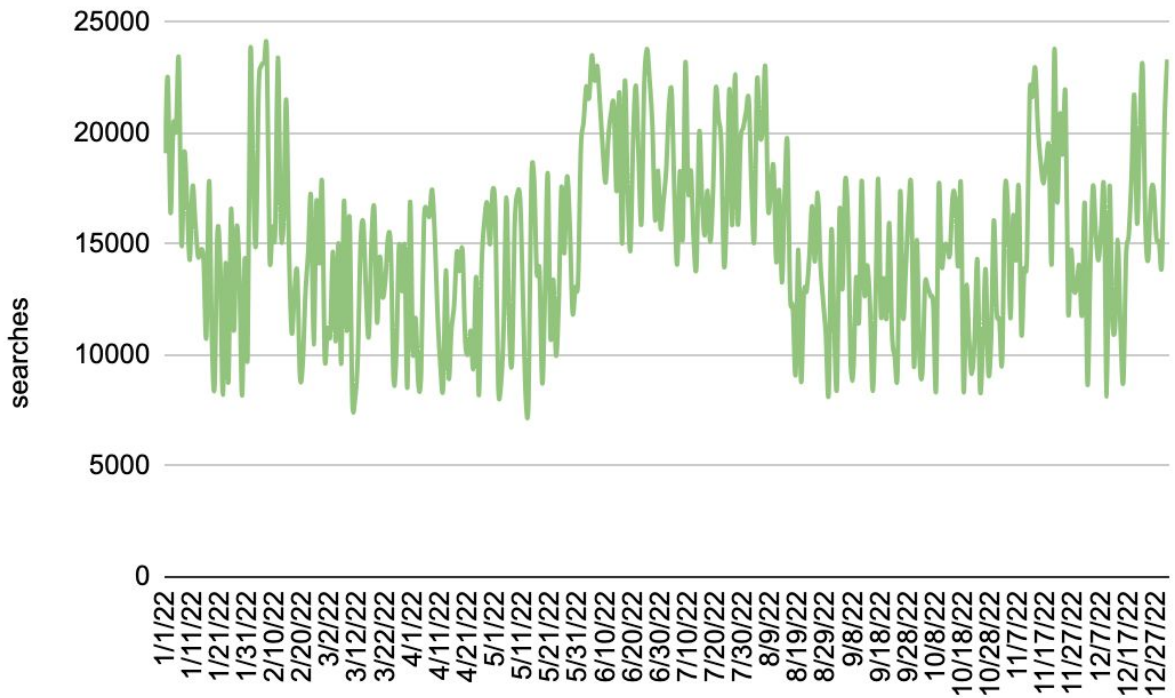
Mock Presentation

The highest points of sales, website traffic, and keyword searches were observed during the New Year's, Valentine's Day, summer, and holiday seasons, suggesting that there is potential to optimize marketing strategies to enhance sales.

Sales & Website Trends



Keyword Trends



Allocate a larger budget to the highly effective search and social campaigns, while also incorporating display advertising to enhance awareness and acquire new users

Channel	Attributed Sales	Conversion Rate	ROAS	Net Profit
Search	$372,767	1.06%	$1.69	$152,143
Social	$277,592	0.80%	$1.33	$69,256
Display	$228,331	0.68%	$0.98	-$3,816

Recommendation:

Search: $XXX Social:$XXX Display: $XXX

Based on historical data, our focus should be on women aged 35-39 who reside in New York

- Women
- 35 - 39
- Live in New York

To improve customer retention, we should implement the following remarketing strategies:

1. Utilize email campaigns that offer incentives to encourage customers to return. By sending targeted emails with personalized incentives, we can entice customers who have not made a purchase within 43 days to engage with our brand again.

2. Set up behavioral display campaigns specifically targeting customers who haven't made a purchase in the last 43 days. By displaying relevant ads to these customers based on their browsing behavior, we can increase the chances of re-engagement and improve our retention rate.