

# Business Requirements Document (BRD)

## Meta Ad Performance Analysis

### Business Objective

The business needs a **performance tracking report** for advertising campaigns running on **Facebook and Instagram**.  
The report will provide visibility into campaign reach, engagement, conversions, and budget utilization.  
This will enable the marketing team to:

- Identify the most effective platform (Facebook vs Instagram).
- Track campaign ROI and optimize budget allocation.
- Understand audience engagement patterns.

### Scope of the Report

- **In Scope:**
  - Campaigns running on **Facebook and Instagram** only.
- **Out of Scope:**
  - Other platforms (Messenger, Audience Network).
  - Organic engagement (only **paid ads** will be included).

### KPIs & Definitions

KPI	Definition	Formula	Example Use
Impressions	Number of times ads were displayed.	Count of event_type = Impression	Measure reach
Clicks	Number of times users clicked ads.	Count of event_type = Click	Measure engagement intent
Shares	Number of times ads were shared.	Count of event_type = Share	Viral engagement
Comments	Number of user comments on ads.	Count of event_type = Comment	User sentiment & feedback

KPI	Definition	Formula	Example Use
<b>Purchases</b>	Number of purchases made after seeing ads.	Count of event_type = Purchase	Conversions
<b>Engagements</b>	Total interactions (Clicks + Shares + Comments).	Clicks + Shares + Comments	Engagement volume
<b>CTR (Click Through Rate)</b>	% of impressions that resulted in clicks.	$(\text{Clicks} \div \text{Impressions}) \times 100$	Ad effectiveness
<b>Engagement Rate</b>	% of impressions that resulted in engagements.	$(\text{Engagements} \div \text{Impressions}) \times 100$	Overall ad appeal
<b>Conversion Rate</b>	% of clicks that resulted in purchases.	$(\text{Purchases} \div \text{Clicks}) \times 100$	Funnel efficiency
<b>Purchase Rate</b>	% of impressions that resulted in purchases.	$(\text{Purchases} \div \text{Impressions}) \times 100$	Conversion from reach
<b>Total Budget</b>	Total spend allocated to campaigns.	Sum of campaigns.total_budget	Cost analysis
<b>Avg. Budget per Campaign</b>	Average budget allocation per campaign.	Total Budget $\div$ Campaign Count	Budget distribution

## Charts Requirements:

### 1. Target Gender – Donut Chart

A **donut chart** will visualize performance split by **target gender** (from the ads table).

- The metric displayed (e.g., Impressions, Clicks, Purchases) will change dynamically via the parameter.
- Purpose: Identify which gender segment contributes most to the selected metric.

### 2. Target Age Group – Bar Chart

A **bar chart** will show engagement across **age groups** defined in the ads table.

- Each bar will represent one age group.
- The metric displayed will switch dynamically.
- Purpose: Highlight which age group is most responsive to campaigns.

### 3. Country – Map

A **map visualization** will display performance by **country** (from the users table).

- Bubble size or color intensity will represent the selected metric.
- Purpose: Provide a geographic view of campaign reach and engagement.

### 4. Calendar Month – Calendar Heat Map

A **calendar heat map** will plot performance at the **monthly level**, based on the timestamp field in ad\_events.

- Darker shades will indicate higher activity.
- Purpose: Detect seasonal trends, peak ad months, and low-activity periods.

### 5. Weekly Trend – Stacked Column by Ad Type

A **stacked column chart** will display weekly performance trends.

- X-axis → Week number (from the Date Table linked to ad\_events).
- Stacks → Different ad\_type values (from the ads table).
- Y-axis → Selected metric.
- Purpose: Compare ad type contributions over weeks.

## 6. Hourly Trend – Area Chart

An **area chart** will show activity by **hour of day** (from `ad_events[time_of_day]`).

- X-axis → Hour of the day (0–23).
- Y-axis → Selected metric.
- Purpose: Understand user activity patterns throughout the day.

## 7. Ad Type – Matrix

A **matrix visualization** will show the selected metric across **ad types** and possibly break down further by **platform (Facebook vs Instagram)**.

- Rows → Ad Types.
- Columns → Platforms or other campaign dimensions.
- Values → Selected metric.
- Purpose: Compare performance across ad formats and platforms side by side.