**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**

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| **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 |

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| **KPI** | **Definition** | **Formula** | **Example Use** |
| **Purchases** | Number of purchases made after seeing ads. | Count of event\_type = Purchase | Conversions |
| **Engagements** | Total interactions (Clicks + Shares + Comments). | Clicks + Shares + Comments | Engagement volume |
| **CTR (Click Through Rate)** | % of impressions that resulted in clicks. | (Clicks ÷ Impressions) × 100 | Ad effectiveness |
| **Engagement Rate** | % of impressions that resulted in engagements. | (Engagements ÷ Impressions) × 100 | Overall ad appeal |
| **Conversion Rate** | % of clicks that resulted in purchases. | (Purchases ÷ Clicks) × 100 | Funnel efficiency |
| **Purchase Rate** | % of impressions that resulted in purchases. | (Purchases ÷ Impressions) × 100 | Conversion from reach |
| **Total Budget** | Total spend allocated to campaigns. | Sum of campaigns.total\_budget | Cost analysis |
| **Avg. Budget per Campaign** | Average budget allocation per campaign. | Total Budget ÷ 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.