1. Project Planning & Management

Project Proposal

Business Problem:
Marketing managers struggle to monitor the effectiveness of multi-platform social-media campaigns.
They lack a unified view of KPIs such as engagement rate, click-through rate (CTR), and ROI across Facebook, Instagram, TikTok, and other platforms.

Goal:
This Power BI dashboard will analyze **marketing campaign performance data** to identify:

- The best-performing platforms and regions
- The campaigns with the highest ROI and CTR
- The correlation between budget, impressions, and conversions
- The performance trends over time

Key Questions:

1. Which platform generates the most conversions per budget spent?
2. Which region has the highest engagement rate?
3. What campaign types deliver the best ROI?
4. How do CTR and conversions trend over time?

Project Plan (Timeline & Milestones):

Phase	Description	Deliverable	Timeline
1. Data Sourcing	Collect data from Kaggle (Marketing Campaign Performance Dataset) and additional columns created for analysis.	Raw Excel dataset (unclean)	Week 1
2. Data Cleaning (Power Query)	Handle missing values, duplicates, inconsistent formats, and incorrect data types.	Cleaned Power Query table	Week 2
3. Data Modeling (Relationship View)	Build star schema with fact table (Campaign Performance) and dimension tables (Platform, Region, Manager, Date).	Power BI model (.pbix)	Week 3
4. DAX Measure Creation	Create KPIs such as CTR, ROI, Conversion Rate, Engagement Rate.	Set of DAX measures	Week 4
5. Report Building (Visuals)	Design dashboard with charts, slicers, filters, and interactivity.	Power BI dashboard	Week 5
6. Testing &Deployment	Validate calculations, ensure usability, publish to Power BI Service.	Final published report	Week 6

Task Assignment & Roles:

Team Member	Responsibility
Hannen	Project lead, data sourcing, data cleaning (Power Query)
Rodayna	Data modeling and DAX measure creation
Tuqa	Dashboard design and UI/UX formatting
Nada	Testing, documentation, and deployment

Risk Assessment:

Risk	Description	Mitigation
Data Quality	Missing or inconsistent values in source data	Perform data validation & profiling before modeling
Performance	Dashboard may load slowly with 10 000+ rows	Use aggregations, reduce visuals per page
Version Conflicts	Multiple edits on .pbix file	Use shared folder or OneDrive for version control
Security	Sensitive campaign or revenue data	Apply Row-Level Security (RLS) if shared with managers

KPIs:

Project KPIs (management-level):

- Deliver complete dashboard by **20 November 2025**
- At least **90 % visual interactivity accuracy** during testing
- Data refresh automated weekly

Dashboard KPIs (DAX measures):

KPI	Formula	Description
CTR (%)	(Clicks / Impressions) × 100	Measures ad click performance
Conversion Rate (%)	(Conversions / Clicks) × 100	Measures effectiveness of clicks
ROI (%)	(Revenue – Budget) / Budget) × 100	Return on investment
Engagement Rate (%)	(Clicks + Conversions) / Impressions) × 100	Overall engagement level
Average Revenue per Campaign	AVERAGE(Revenue)	Revenue efficiency indicator

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2. Requirements Gathering

Stakeholder Analysis

- **Primary User:** Marketing Manager / Campaign Analyst
- **Secondary User:** Executive Team (CEO / CMO)
- **Goal:** Quickly identify top-performing campaigns and underperforming areas needing optimization.

User Stories & Use Cases:

Role	Need	Value
As a **Marketing Manager**,	I want to filter by **Platform** and **Region**	So I can compare performance across channels
As a **Campaign Analyst**,	I want to see **ROI per campaign**	So I can allocate budgets efficiently
As a **Director**,	I want a **summary page with KPIs**	So I can monitor marketing impact at a glance

Functional Requirements

- Must include slicers for **Platform**, **Region**, **Manager**, **Date**
- Must show **Budget vs Revenue**, **CTR**, **ROI**, and **Conversion Rate**
- Must include **drill-through page** for campaign-level detail
- Must include **trend line** for CTR over time

Non-Functional Requirements

- **Performance:** All visuals load within 5 seconds
- **Security:** Limit data by manager (RLS)
- **Usability:** Clear visual hierarchy and consistent colors for platforms
- **Maintainability:** Easy to refresh with new Excel data each week

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3. System Analysis & Design:

Software / Data Architecture:

Layer	Technology	Description
Data Source	Excel (CSV from Kaggle + extended dataset)	Raw marketing campaign data
ETL Layer	Power Query Editor	Cleaning, formatting, deduplication
Data Model	Power BI Data Model (Star Schema)	Central fact table + dimension tables
Visualization Layer	Power BI Desktop & Service	Dashboard & reports
Deployment	Power BI Service / Teams Workspace	Shared with stakeholders

Database Design / Data Modeling

Star Schema Structure:

- **Fact Table:**
  Fact_CampaignPerformance
  → Campaign ID (FK), Date (FK), Region (FK), Platform (FK), Manager (FK)
  Includes: Budget, Impressions, Clicks, Conversions, Revenue, CTR, ROI

- **Dimension Tables:**
  - **Dim_Platform** (Platform ID, Platform Name)
  - **Dim_Region** (Region ID, Region Name)
  - **Dim_Manager** (Manager ID, Manager Name)
  - **Dim_Date** (Date ID, Day, Month, Year, Quarter)

Logical & Physical Schema + DAX Measures:

Table	Column Example	DAX Measures Example
Fact_CampaignPerformance	Budget, Revenue, Impressions	CTR = DIVIDE(SUM(Clicks), SUM(Impressions)) * 100
Dim_Date	Date, Month, Year	YTD Revenue = TOTALYTD(SUM(Revenue), Dim_Date[Date])
Dim_Region	Region Name	Revenue by Region = SUM(Revenue)
Dim_Platform	Platform Name	Platform CTR = AVERAGE(CTR)