

Social Media Analytics for Strategic Branding

Project overview:

You are hired as a Data Analyst by **PepsiCo**, a global leader in the food and beverage industry with a robust presence across digital platforms like Instagram, Twitter, Facebook, and YouTube. Over the past year, PepsiCo has intensified its digital marketing efforts, launching a variety of content-driven campaigns to enhance consumer engagement, expand its online reach, and maximize returns from digital advertising investments.

However, with the expansion across platforms and diverse campaign strategies, the **marketing team is struggling to align efforts with measurable business outcomes**. They lack a unified view of:

- Which types of content work best?
- Where to invest in the advertising budget?
- What drives audience growth and loyalty?
- How campaigns impact brand reach and sales pipeline?

Objective: Build a complete **Social Media Intelligence Solution in Excel** that not only consolidates raw data but **drives business insights**, answers strategic questions, and **empowers the team to make data-backed marketing decisions**.

(If you're unfamiliar with marketing concepts like campaigns, ROI, or other domain-specific terms, feel free to take the help of Google or AI tools like ChatGPT or Gemini to understand them better and apply them effectively in your project.)

Dataset: [PepsiCo Marketing Dataset](#)

Dataset Overview: This will give details about the data in each column.

1. Posts Dataset Description:

This dataset contains individual social media posts across different platforms. It is used to analyze content performance, engagement, and hashtag impact.

Column Name	Description
Post_ID	Unique identifier for each post
Platform	The social media platform: Instagram, Facebook, Twitter, YouTube
Date	Date when the post was published
Content_Type	Type of content: Image, Video, Carousel, Reel, Text, Short, Live, etc.
Caption_Text	Short text or description posted with the content
Likes	Number of likes received
Shares	Number of times the post was shared
Comments	Number of user comments
Impressions	Number of times the post was shown to users
Reach	Number of unique users who saw the post
Clicks	Number of times users clicked on links, images, etc.
Hashtags_Used	Comma-separated hashtags used in the post (e.g., #BetterWithPepsi, #LiveForNow)
Campaign_Name	Optional: Campaign name (if the post was part of a campaign); otherwise blank

2. Engagement Summary Dataset Description:

This dataset is aggregated weekly and tracks platform-level performance and budget usage. It helps in evaluating audience growth, engagement rates, and ad efficiency.

Column Name	Description
Week_Start_Date	The start date of the week (e.g., Monday)
Platform	Instagram, Facebook, Twitter, YouTube
New_Followers	Number of new followers gained that week
Unfollows	Number of users who unfollowed that week
Total_Followers	Total followers at the end of the week
Engagement_Rate	Average engagement rate for the week (usually Engagements ÷ Reach)
Ad_Spend	Total amount spent on ads that week for that platform (in USD)

3. Campaign Metadata Dataset Description:

This contains high-level info about the major marketing campaigns GlowHaven has run over the year.

Column Name	Description
Campaign_Name	Name of the marketing campaign
Start_Date	Date when the campaign began
End_Date	Date when the campaign ended
Objective	Business goal of the campaign: Brand Awareness, Product Launch, Traffic, Engagement, etc.
Total_Budget	Total allocated budget for the campaign
Target_Platforms	Platforms where the campaign ran (e.g., Instagram, YouTube)
Primary_Hashtags	Top hashtags used across campaign posts

Task to be performed :

(Please refrain from using AI to perform the tasks mentioned below, as it will only provide generic solutions.)

Task 1: Data Preprocessing and Cleaning (12 marks)

- Remove any duplicate post entries.
- Standardize date formats and platform names.
- Ensure numeric columns like Likes, Reach, Impressions, and Ad Spend have proper formatting.
- Split hashtags into individual tags.

Task 2: Engagement Analysis (8 marks)

Use the "Posts" sheet to:

- Calculate the average engagement rate per platform:
Engagement Rate = (Likes + Shares + Comments) / Impressions
- Identify top 10 posts with highest engagement.
- Create a pivot table that shows:
 - Total Likes, Shares, and Comments by Content Type and Platform.
 - Average Clicks per post by Hashtag.
- Highlight top-performing hashtags using a formula-based ranking.

Task 3: Social Media Platform analysis (12 Marks)

- Identify which Platform generates the highest engagement.
- Compare Growth rates of followers across different platforms.
- Visualize the engagement by ad spend across Platform.
- Advise whether to **focus on 1–2 core platforms** or continue multi-platform strategy. Justify the opinion by the analysis.

Task 4 : Hashtag & Content Strategy (16 Marks)

- Identify
 - Most frequently used hashtags.
 - Average performance (likes, comments) of posts containing each hashtag.
- Compare performance of videos vs. images vs. carousels across platforms.
- Recommend which content types should be prioritized on which platform.

Task 5 : Campaign Effectiveness (16 Marks)

- Calculate:
 - Total and average impressions, likes, and clicks **per campaign**.
 - Engagement uplift during vs. before the campaign period.
- Provide insights into:
 - Which campaign had the **highest ROI** in terms of engagement vs. budget.
 - Which campaign had the **strongest follower growth impact**.

Task 6: Follower Retention & Audience Loyalty (16 Marks)

- Visualize **weekly follower growth** trends by platform using **line charts**.
- Identify the week with the **highest net follower gain**.
- Create a **moving average chart** to smooth out follower growth trends.
- Determine the **correlation** between ad spend and follower growth using scatter plots and basic correlation calculation.

Task 7 : Video explanation: Expressing the finding and actionable insights (20 Marks) (The summary should be in your own words and must NOT be generated using AI. Please don't write a script and read it aloud. Marks will be deducted for doing so.)

Summarize the key findings and provide **concrete, data-backed recommendations** for improving **PepsiCo** social media marketing strategies, campaign planning, content performance, and platform-specific ROI.

Note:

- Please note that, if the student sets their own criteria, they need to clearly mention and explain it. Marks will be given according to the specified criteria if they are acceptable.
- Please do all the tasks in different workbooks for clarity and visibility.
- Plagiarism will result in a penalty, including possible project disqualification.
- The project will be evaluated based on the quality of analysis, depth of insights, and feasibility of recommendations.

Submission Guidelines:

- Save the worksheets in a folder and then convert it into a zipped (.zip) folder. **(Please note, the driveline for the video created should also be added in the sheet itself.)**
- Upload the zipped folder on your respective dashboard.
- Failure to comply with submission guidelines will result in no grading/0 marks.

How to ZIP a PDF file:

- Put all of the documents/sheets you want to compress (or just one) into a new folder.
- Right click on that folder.
- Select the "Compress to ZIP file" option and then click "Compressed (Zipped) folder."
- A new .ZIP file will be created that contains your document(s).