

Project Report: Tesla Social Media Analytics for Strategic Branding

1. Project Title

Tesla Social Media Analytics for Strategic Branding

2. Project Overview

Tesla, a global leader in electric vehicles and clean energy, has expanded its digital marketing initiatives across platforms such as **Twitter (X), Instagram, YouTube, and LinkedIn**.

The company aims to:

- Boost brand engagement
- Educate audiences about EV adoption and sustainability
- Strengthen customer loyalty
- Maximize ROI from digital ad spend

Despite high activity, Tesla's marketing team faces challenges in aligning campaigns with measurable outcomes.

This project focuses on building a **Social Media Intelligence Solution in Excel** to derive insights from raw data, measure performance, and guide strategic decisions.

3. Project Objective

To consolidate and analyze Tesla's social media data for actionable insights that help the marketing team:

- Identify high-performing content and hashtags
 - Evaluate platform engagement and ROI
 - Measure campaign effectiveness
 - Correlate ad spend with follower growth
 - Recommend content and platform strategies for better brand outcomes
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4. Dataset Description

a. Posts Dataset

Contains individual Tesla posts across all platforms.

Key Fields: PostID, Platform, Date, ContentType, Hashtags, Likes, Shares, Comments, Clicks, Impressions.

Purpose: Content performance and hashtag effectiveness.

b. Engagement Summary Dataset

Aggregated weekly data tracking platform-level performance.

Key Fields: Week, Platform, Followers_Gained, Ad_Spend, Total_Engagement.

Purpose: Evaluate follower growth, engagement trends, and ad spend efficiency.

c. Campaign Metadata Dataset

Contains details about Tesla's campaigns such as Cybertruck Launch, FSD Beta Rollout, Sustainability Awareness.

Purpose: Assess campaign ROI, engagement uplift, and audience growth.

5. Task-wise Implementation

Task 1: Data Preprocessing & Cleaning

- Removed duplicate Tesla posts.
- Standardized platform names .
- Converted all dates to standard format (DD-MM-YYYY).
- Formatted numeric columns (Likes, Shares, Impressions, Ad Spend) for consistency.
- Split hashtags into individual tags for separate analysis.

Result: Clean, standardized, and analysis-ready data across all datasets.

Task 2: Engagement Analysis

Formula Used:

$$\text{Engagement Rate} = (\text{Likes} + \text{Shares} + \text{Comments}) / \text{Impressions}$$

Analysis Performed:

- 1.Calculated **average engagement rate** for each platform.= **soln**: 1.Create new column Engagement rate =(Likes + Shares + Comments) / Impressions and .Create Pivot table, and ER in values and platform in rows
- 2.Identified **Top 10 Tesla posts** by engagement rate.=:**soln**: 2.sort ER column from largest to smallest apply top 10 rows
- 3.Created Pivot Tables for:
 - o Total Likes, Shares, Comments by **Content Type & Platform**.
 - o Average Clicks per Post by **Hashtag**.
 - o **Soln:**1.Create Pivot table, and sum of likes ,shares ,comment in values and in rows content type and platform,2.split the hashtag column and create pivot table average clicks in values and rows in post using slicer(hashtags)
- 4.Highlight top-performing hashtags (#Cybertruck, #ModelY, #EVAdoption, etc.).

Soln: 1.Create pivot table, and use conditional formatting and apply top bottom rule and top1 .

Key Insights:

- Top-performing hashtag is **#TeslaColnnovation** , which perform highest average of clicks which is **(157.02)**.
- **#TeslaColnnovation** , hashtag showcases Tesla's latest innovations and technological progress. This hastags should be prioritized in trending campaigns to highlight Tesla's Research and Development .to attracts strong audience engagement.

Task 3: Platform Analysis

Analysis Objectives:

- 1.Identify the platform with highest engagement (e.g., Twitter for announcements vs.YouTube for product demos)=**soln**: 1.Create Pivot table, and use (pivot chart)bar chart to show average engagement rate
- 2.Compare follower growth rates across platforms.=**soln**: 1.Create Pivot table, and use (pivot chart)column chart to show follwer growth rate across platfrom
- 3.Visualize Engagement vs. Ad Spend per platform.= **soln**: 1.USE scatter plot to show numerical value,Visualize engagement vs ad spend.
4. 4.Advise: Should Tesla focus on Twitter + YouTube (product announcements + demos) or maintain a multi-platform strategy? =>**AS we know Instagram has highest average engagement rate which is 5.7156** Tesla should **continue leveraging Instagram** for brand storytelling and customer engagement, as its audience is more responsive there.
 >To improve performance on **YouTube**, Tesla could introduce **short-form videos, interactive content, or behind-the-scenes clips** to increase viewer retention and engagement.

Findings:

- The average engagemnet rate are very similar for Twitter and Facebook (5.6558 and 5.6486) Instagram has highest average engagement rate (5.7156) and YouTube has lowest average engagement rate (5.5588).
- The Youtube and twitter(0.902% and 0.928%) has fastest followers growth ,while Facebook and Instagram(0.546% and 0.902%) lag behind.
- Instagram has the highest engagement rate (5.7156%) with lower ad spend (₹23,287) showing it's the most cost-effective platform. ,Facebook has the highest ad spend (₹27,591) but only a moderate engagement rate (5.65%), Twitter achieved strong engagement (5.66%) with the lowest ad spend (₹21,207), reflecting a high return on investment (ROI) ,YouTube showed the lowest engagement rate (5.56%) despite mid-level spending (₹24,573), suggesting room for improvement

Task 4: Hashtag & Content Strategy

Steps Taken:

- 1.Identify most frequently used Tesla hashtags. =**soln**: 1.Create Pivot table, to show most frequent hashtags.

2. Compare average performance of posts containing each hashtag. =Soln: 1.Create Pivot table, and use (pivot chart)pie chart to show average performance of each posts.

3. Compare content performance:

- o Videos (product demos, Elon talks)
- o Images (car designs, interiors)
- o Carousels (features, comparisons) =Soln: 1.Create Pivot table, and to show average performance of each content type

4. Recommend content type priorities per platform (e.g., videos on YouTube, car images on Instagram). =Soln:

>Text posts should be minimized or combined with visuals for better impact.

>Tesla should prioritize Stories and Reels on Instagram and Videos on YouTube to maximize engagement and audience retention.

Findings:

1. The most used Tesla hashtags are :

1.#TeslaColnnovation ->107

2.FutureOfDriving ->103

3.EVRevolution ->102

2.#TeslaColnnovation,#EVRevolution,#FutureofDriving (15%,15% and 14% respectively) are top Hashtags performer,while,#BetterwithTesla ,#AnytimelsTeslaTime and SmoothLikeNitroTesla (13% , 12% and 11%) lag behind.

3. Story , Reel , Carousel and video (18%,15%,15% and 15% respectively) are top content performer,while,image and Text (13% and 12%) lag behind.

Task 5: Campaign Effectiveness

Metrics Calculated:

- 1.Calculate: Total & Average Impressions, Likes, Clicks per Campaign.. **=soln:** 1.Create Pivot table, in column platform and in rows weekday value as total followers
- 2.Calculate: Engagement uplift during vs. before campaigns (e.g., Cybertruck launch spike).= **soln:** ModelYCampag showed the biggest uplift (13.14%) indicating strong excitement during the launch.SustainabilityDriveshow low uplifts (-6.10%)
- 3.Which campaign had the highest ROI (engagement vs. spend)?= **soln:** SustainabilityDrive recorded the Highest ROI (Return on investment)(0.01685). ModelYCampag campaign recorded lowest ROI(0.00574).
4. Which campaign drove the strongest follower growth?= **soln:** ModelYCampag gained the most followers (1090)among four campign ,it achieved the highest absolute growth.This shows that engaging content and the right platform mix can drive strong audience expansion.

Insights:

1. SustainabilityDrive recorded the highest clicks (10,672) and impressions (2,439,664), indicating the best reach and .
 2. The **SustainabilityDrive** campaign achieved the **highest reach**, while **ModelYCampaing** had the **best engagement efficiency**. Tesla can combine in Future both campaigns **SustainabilityDrive** and **ModelYCampaing** to reach strategy and gave engaging content for optimal results.
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Task 6: Follower Retention & Loyalty

Visualizations:

- Weekly follower growth line chart per platform.**=soln:** 1.Create Pivot table, and pivot chart(line chart) in column platform and in rows weekday value as total followers
- Moving average smoothing to show long-term growth.**=soln:** 1.Create pivot table , and pivot chart(line chart) in rows weekday and value as average of growth rate.
- Scatter plot showing correlation between **Ad Spend vs. Follower Growth.**= **soln:** 1.Using scatter plot show the ad spend vs follwer growth

Findings:

- The week of **December 30, 2024**, recorded the **highest follower growth (6,530 followers)**, indicating a strong peak in audience engagement during that period..
 - The week of **March 17, 2025**, recorded the **highest average of growth rate (4%)**, indicating a strong peak in audience engagement during that period..
 - **Instagram** has the **highest follower gain (960)** with **moderate ad spend (₹23,287)** showing it's better **ad efficiency audience engagement**. **Facebook and youtube show with higher ad spends (₹27591 and 24573)** indicating lower ROI on these platform, **Twitter maintained a balanced performance — achieving above-average followers (824)** with the **lowest ad spend (₹21,207)**.
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8. Conclusion

This project provides Tesla with a **data-driven foundation** to enhance its social media strategy. By applying these insights, Tesla can:

- Boost engagement and visibility
 - Improve ad spend efficiency
 - Strengthen community loyalty
 - Make informed, measurable marketing decisions
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9. Tools & Techniques Used

- **Microsoft Excel (Power Query, Pivot Tables, Charts)**
 - **Data Cleaning & Transformation**
 - **Engagement Rate Analysis**
 - **Visualization (Line Charts, Bar Charts, Scatter Plots)**
 - **Hashtag and Campaign ROI Analysis**
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10. References

- Marketing Analytics Frameworks (Engagement Rate, ROI)
- EV Industry Trends and Hashtag Studies
- Tesla social media analytics dataset.