## 

Proposal

**manifetch**

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## **Topic #**

### **1. Project Title**

### **AI-Driven Social Media Management and Optimization Platform**

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### **2. Problem Definition & Objectives**

### **Problem Definition:**

Organizations, brands, and creators face difficulties managing their presence across multiple social media platforms (Instagram, LinkedIn, X/Twitter, TikTok, etc.). This often requires juggling several disconnected tools for content creation, scheduling, and analytics, leading to fragmented workflows.

Even with advanced schedulers (like Buffer or Later) and recent fragmented AI tools, teams still spend excessive effort on content ideation, manual performance analysis, and optimization. This fragmented approach often results in non-personalizedoutreach, which reduces engagement. The need for an intelligent, unified social media agent that automates these tasks while maintaining brand consistency has become critical.

**Objectives:**

* Centralize content creation, scheduling, and analytics in one intelligent dashboard.
* Use AI to automate the generation of posts (text, images, hashtags) tailored for each platform's unique style.
* Predict and optimize posting schedules using engagement data.
* Provide real-time analytics and continuously improve recommendations using machine learning.
* Ensure compliance with privacy and platform regulations while maintaining brand authenticity.

### **3. Scope**

* Develop a web-based dashboard integrating AI-generated content, scheduling, and analytics.
* Support at least two major platforms (e.g., Instagram and LinkedIn) for proof of concept.
* Implement AI modules for text generation (captioning, hashtags) and image recommendations.
* Include data visualization of post performance metrics and engagement trends.
* Deliver a working prototype capable of publishing and monitoring posts via API.

### **4. User Profile**

**Target Users:**

* Social media managers and marketing teams.
* Small businesses and content creators seeking automation.
* Agencies managing multiple brand accounts.

**Institutional Partner:**

* Trueyogi

### **5. Anticipated Challenges & Constraints**

**Technical Challenges:**

* Integrating multiple social media APIs with different authentication flows (Meta Graph, LinkedIn API).
* Maintaining real-time updates and analytics synchronization.

**Time and Resource Constraints:**

* Limited access to premium API endpoints (e.g., Twitter API).
* Prototype restricted to 1–2 platforms and a small dataset due to time.

**Ethical and Regulatory Considerations:**

* Compliance with each platform’s terms of service and data privacy regulations (GDPR).
* AI-generated content must maintain brand authenticity and avoid plagiarism.

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### **6. Data Sources**

* APIs: Instagram Graph API, LinkedIn API, Twitter/X API (read/write access).
* Public trend sources: Google Trends, news headlines, or topic APIs for content inspiration.
* User interaction data: Engagement metrics retrieved from platform analytics endpoints.
* AI content generation: OpenAI API or Hugging Face models for text and image creation.