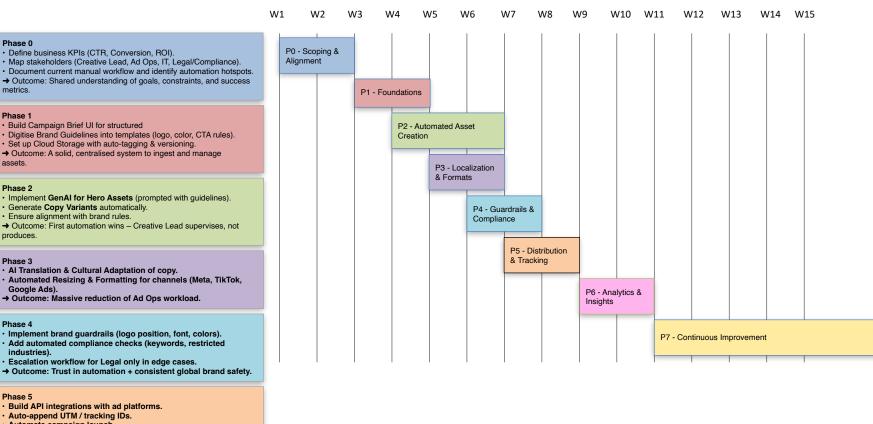
Social Campaign Maker

FDE Take-Home Exercise: Creative Automation for Social Campaigns

Asset Workflow with Automation Potential

| Phase | Traditional Description | Stakeholder | Automation Potential |
|-------------------------|--|---------------------------------|---|
| 1. Campaign Brief | Objectives, target audience, markets, key message, and brand guidelines documented | Creative Lead | Partial: Web UI for campaign brief upload, brand guidelines as templates |
| 2. Asset Creation | Designers/copywriters manually create hero visuals, claims, and layouts | Creative Lead | High: GenAl generates hero assets & copy variations based on templates |
| 3. Localization | Texts are translated, visuals/claims adapted for local markets | Creative Lead | Very high: Al-driven translation & cultural adaptation, automated layout adjustments |
| 4. Format Adaptation | Manual resizing for channels (16:9, 9:16, 1:1) | Ad Operations | Very high: Automated resizing & format templates |
| 5. Storage | Assets manually stored in folders, file naming, versioning | IT | Very high: Cloud storage + auto-tagging + automated version control |
| 6. Creative Review | Check look & feel, brand consistency | Creative Lead | Partial: Guardrails (logo placement, CTA style) ensure consistency; human spot checks |
| 7. Legal Review | Legal checks for trademarks, claims, youth protection, compliance | Legal/Compliance | Partial: Automated keyword/content filters; human review for edge cases only |
| 8. Technical Validation | Check resolution, file sizes, platform compatibility | Ad Operations | Very high: Automated format & quality checks |
| 9. Distribution | Manual upload to Meta Ads, Google Ads, TikTok; tracking added manually | Ad Operations | Very high: Direct API integration with auto- tracking |
| 10. Campaign Live | Monitoring and troubleshooting during campaign | Ad Operations, Creative Lead | Partial: Automated dashboards and alerts; human intervention when issues arise |
| 11. Analytics | Data collected and reports created manually | Ad Operations, Creative Lead | Very high: Automated dashboards + Alpowered insights & optimization suggestions |

Roadmap – Creative Automation Pipeline



- · Automate campaign launch.
- → Outcome: Campaigns flow directly from system → live.

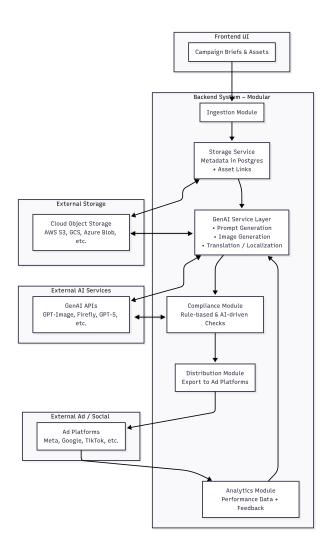
Phase 6

- · Real-time dashboards with CTR, Conversion, Spend, ROI.
- · Al-driven optimization suggestions (which copy, image, market performs best).
- · Feedback loop into templates & GenAl prompts.
- → Outcome: Continuous learning and performance improvements.

Phase 7

- Monitor performance data to improve prompts & guardrails.
- · Iterate on compliance rules as regulations evolve.
- · Scale system across new brands/markets.
- → Outcome: Future-proof pipeline.

A backend and data integration design



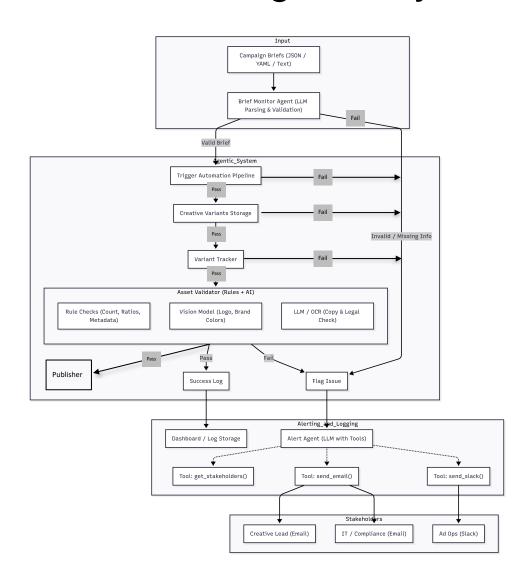
Backend and Data Integration Design

The backend is structured as modular services to support scalability and automation.

- Ingestion Service receives campaign briefs and assets from the UI and stores them in the storage layer.
- Storage Service cloud-based object store (e.g. AWS S3, Dropbox, etc.) for images and assets, with metadata stored in a relational DB (Postgres).
- GenAl Service Layer connects to external APIs (e.g. GPT-image, Firefly, GPT-5) to generate hero images, resized formats. Generates Prompts for image generation, translations.
- Compliance Service validates generated outputs against brand templates and compliance rules. (Al Driven)
- Distribution Service pushes approved assets to external Ad Platforms via APIs (Meta, Google, TikTok).
- Analytics Service ingests performance data from platforms, stores it in the DB, and provides dashboards and feedback to the GenAl layer.

Data Integration External integrations (Ad Platforms, GenAl APIs) are encapsulated in adapter services to isolate dependencies and make the system extensible.

Agentic System Design



LLM-Input { "campaign": "SUMMER2025", "stage": "Monitor", "issue": "missing_logo", "notify": { "Creative Lead": "Email", "Legal": "Email" } }

E-Mail to Customer Leadership

Subject: Update on Campaign Delivery Timeline

Dear Customer Leadership Team,

I wanted to provide you with a quick update regarding the current status of your upcoming campaigns.

While the core ingestion and asset preparation steps have been completed, we are experiencing a delay in the **creative generation phase**. This is due to dependencies on external GenAl services where provisioning and licensing processes are still pending. These external constraints have temporarily limited our ability to generate and finalize campaign creatives at the expected pace.

We are actively working with the providers to expedite resolution and are closely monitoring the situation. In parallel, our team has ensured that all other campaign elements (briefs, assets, distribution setup) are ready, so that once the GenAl service access is fully restored, we can move quickly into creative generation without further delay.

We will keep you updated on progress and provide revised delivery timelines as soon as we have confirmation from the GenAl provider.

Thank you for your understanding and support as we work through this dependency. Please be assured that minimizing impact on your campaign launch dates is our top priority.

Best regards, Kai Diefenbach

Forward Deployed AI Engineer