Social Campaign Maker

FDE Take-Home Exercise: Creative Automation for Social Campaigns

Kai Diefenbach, 30.09.2025

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: GenAI generates hero assets & copy variations based on templates
3. Localization	Texts are translated, visuals/claims adapted for local markets	Creative Lead	Very high: AI-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 + AI-powered insights & optimization suggestions

Roadmap – Creative Automation Pipeline

Phase 0
- Define business KPIs (CTR, Conversion, ROI).
- Map stakeholders (Creative Lead, Ad Ops, IT, Legal/Compliance).
- Document current manual workflow and identify automation hotspots.

➜ Outcome: Shared understanding of goals, constraints, and success metrics.

Phase 1
- Build Campaign Brief UI for structured
- Digitise Brand Guidelines into templates (logo, color, CTA rules).
- Set up Cloud Storage with auto-tagging & versioning.

➜ Outcome: A solid, centralised system to ingest and manage assets.

Phase 2
- Implement **GenAI for Hero Assets** (prompted with guidelines).
- Generate **Copy Variants** automatically.
- Ensure alignment with brand rules.

➜ Outcome: First automation wins – Creative Lead supervises, not produces.

Phase 3
- **AI Translation & Cultural Adaptation of copy.**
- **Automated Resizing & Formatting for channels (Meta, TikTok, Google Ads).**

➜ **Outcome: Massive reduction of Ad Ops workload.**

Phase 4
- **Implement brand guardrails (logo position, font, colors).**
- **Add automated compliance checks (keywords, restricted industries).**
- **Escalation workflow for Legal only in edge cases.**

➜ **Outcome: Trust in automation + consistent global brand safety.**

Phase 5
- **Build API integrations with ad platforms.**
- **Auto-append UTM / tracking IDs.**
- **Automate campaign launch.**

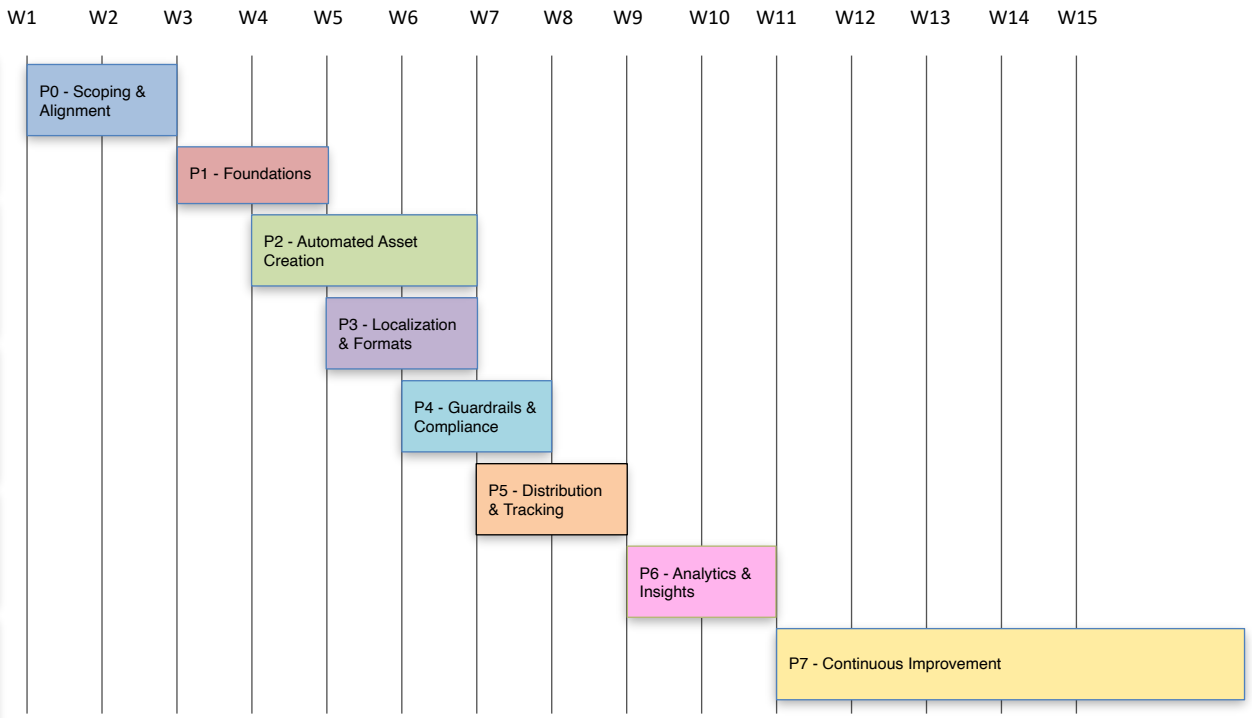
➜ **Outcome: Campaigns flow directly from system → live.**

Phase 6
- **Real-time dashboards with CTR, Conversion, Spend, ROI.**
- **AI-driven optimization suggestions (which copy, image, market performs best).**
- **Feedback loop into templates & GenAI prompts.**

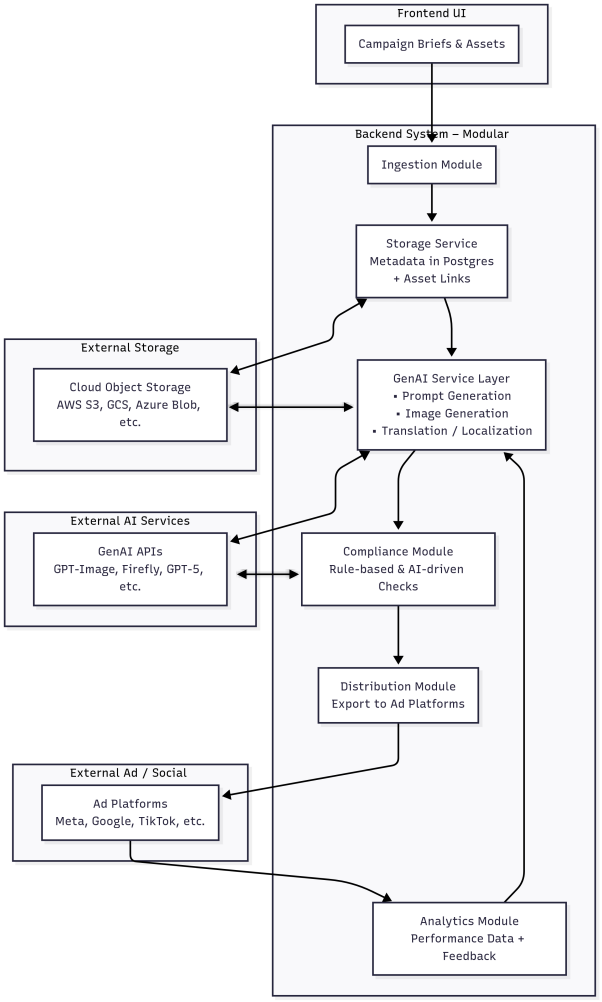
➜ **Outcome: Continuous learning and performance improvements.**

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

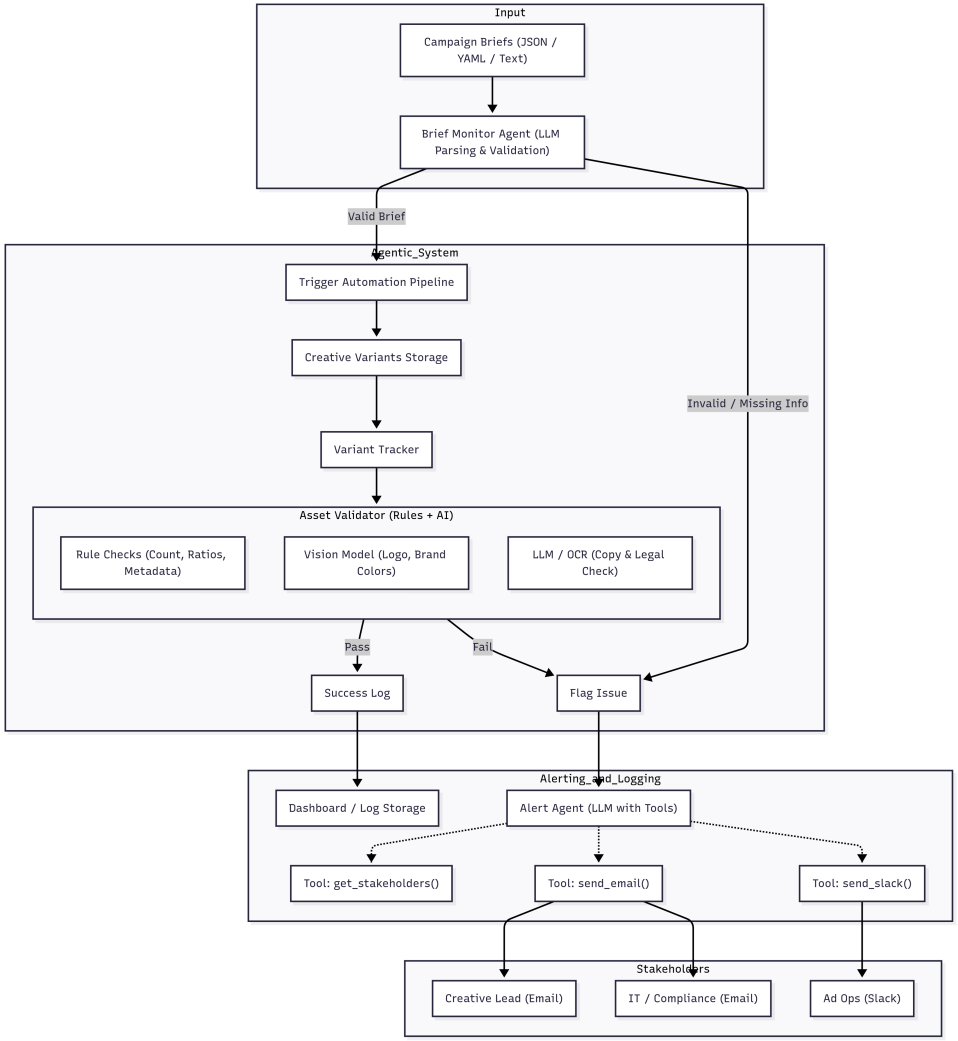


Backend and Data Integration Design
The backend is structured as modular services to support scalability and automation.

- **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).
- **GenAI 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. (AI 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 GenAI layer.

Data Integration External integrations (Ad Platforms, GenAI 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 GenAI 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 GenAI 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 GenAI 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