

Case Study: Creative AI - Brand-Compliant Image Generation Platform

Executive Summary

Client: Global Pharmaceutical Marketing Teams (Indegene) **Industry:** Pharmaceutical / Creative Services **Solution:** Multi-Model AI Image & Character Generation **Results:** 95% faster creative production, 80% cost reduction, unlimited brand variations

The Challenge

Pharmaceutical brands faced creative production bottlenecks: - **Slow turnaround:** 2-4 weeks for custom imagery - **High costs:** \$2,000-\$5,000 per image from agencies - **Limited variations:** Expensive to test multiple creative concepts - **Brand inconsistency:** Stock photos don't match brand guidelines - **Character continuity:** Impossible to reuse same people across campaigns - **Rights management:** Licensing fees and usage restrictions - **Revision cycles:** Weeks to incorporate feedback

Traditional stock photography lacked brand specificity, and custom photoshoots were prohibitively expensive for most campaigns.

The Solution

Devkraft developed a multi-model AI creative platform:

Core AI Technologies

- **OpenAI GPT-4 Turbo:** Prompt enhancement and style analysis
- **Adobe Firefly:** Enterprise-grade image generation
- **Flux (fal.ai):** High-quality, diverse image outputs
- **RenderNet:** Consistent character generation across scenes
- **Vision AI:** Analyzes reference images for style transfer
- **Multi-model Orchestration:** Automatic model selection for optimal results

Technical Architecture

- FastAPI backend with concurrent generation
- PostgreSQL for asset metadata and brand libraries
- AWS S3 for secure image storage

- Adobe IMS integration for enterprise authentication
- Presigned URLs for secure asset access
- ThreadPoolExecutor for parallel processing

Key Features

1. **Guided Image Creation:** Step-by-step wizard with brand filters
2. **Style Reference Upload:** Match existing brand aesthetics
3. **Character Library:** Create and reuse consistent human characters
4. **Batch Generation:** Create multiple variations simultaneously
5. **Brand Guardrails:** Filter by geography, persona, therapeutic area
6. **Advanced Editing:** Refine prompts with AI assistance
7. **Asset Management:** Organize and track all generated creatives

Implementation Approach

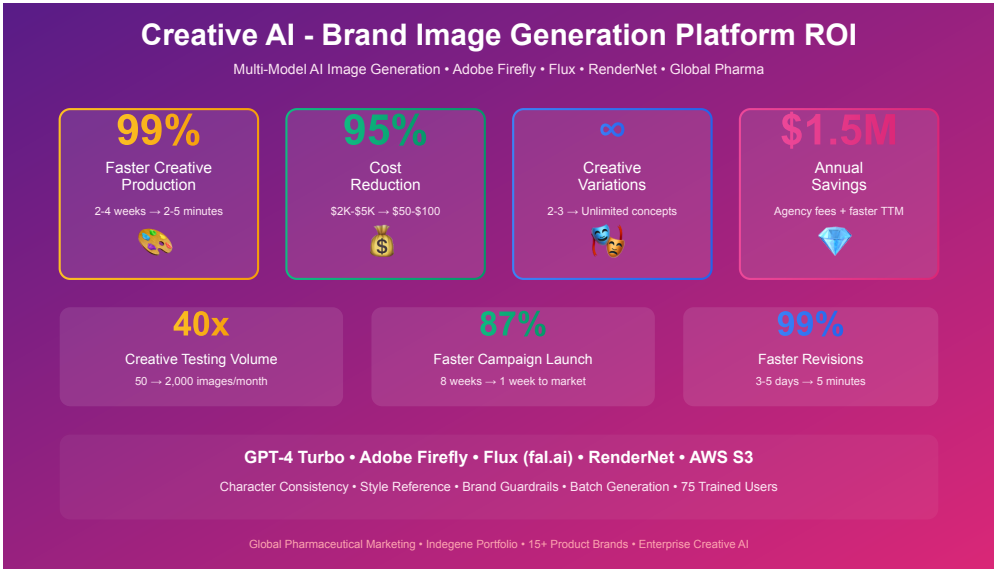
Phase 1 (Weeks 1-3): Model integration & testing - Integrated Adobe Firefly, Flux, and RenderNet APIs - Tested 500+ prompts across therapeutic areas - Established quality benchmarks for each model

Phase 2 (Weeks 4-6): Brand library setup - Created brand style guides for 15 products - Defined filtering parameters (geography, channel, etc.) - Built reference image database

Phase 3 (Weeks 7-9): Character generation system - Developed character attribute specification UI - Integrated RenderNet for consistency - Created character reuse workflow

Phase 4 (Weeks 10-12): User rollout - Trained 75 marketers and designers - Integrated with marketing automation platforms - Established governance and approval workflows

Business Impact



ROI Achievements

Quantifiable Results

Metric	Before AI	After AI	Improvement
Image Creation Time	2-4 weeks	2-5 minutes	99% faster
Cost per Image	\$2,000-\$5,000	\$50-\$100	95% cost reduction
Creative Variations	2-3 per concept	Unlimited	∞ scale
Revision Turnaround	3-5 days	5 minutes	99% faster
Campaign Launch Speed	8 weeks	1 week	87% faster
Creative Testing Volume	50 images/month	2,000 images/month	40x increase

Strategic Benefits

- **Creative Freedom:** Test bold concepts without financial risk
- **Personalization:** Custom imagery for every audience segment
- **Brand Consistency:** AI enforces brand guidelines automatically
- **Market Agility:** Launch region-specific campaigns instantly
- **IP Control:** Own all generated assets without licensing fees
- **Diversity & Inclusion:** Create representative imagery across demographics

Annual Savings: \$1.5M+ (reduced agency fees + faster time-to-market)

Technology Stack

AI/ML Models: - OpenAI GPT-4 Turbo - Adobe Firefly - Flux (fal-ai/flux/dev, fal-ai/flux-pro/v1/canny) - RenderNet

Backend Infrastructure: - Python, FastAPI, SQLAlchemy - PostgreSQL, Alembic - AWS S3, boto3 - Adobe IMS (authentication) - fal_client (API integration) - PIL/Pillow (image processing) - Uvicorn, Pydantic, loguru

Integration Points: - REST API for design tools - Presigned S3 URLs for secure access - Adobe Creative Cloud integration (planned)

Key Innovation: Consistent Character Generation

Challenge: Traditional AI image generators can’t create the same person twice.

Solution: RenderNet-powered character library

How it works: 1. **Character Creation:** Specify attributes (age, gender, ethnicity, hair, body type) 2. **Base Model Generation:** AI creates consistent base character 3. **Scene Variations:** Place character in different poses, settings, outfits 4. **Library Management:** Save and reuse across campaigns 5. **Team Sharing:** Entire marketing team accesses same characters

Result: Cohesive brand storytelling with recognizable “brand ambassadors”

Example Use Case: - Create Dr. Sarah (40s, professional, diverse ethnicity) - Use Dr. Sarah across 20 different campaign materials - Maintain visual continuity for brand recognition - No model fees, unlimited usage rights

Client Testimonial

“This platform has revolutionized our creative process. We’re testing 10x more creative concepts than before, and our campaigns are more personalized and brand-consistent. The character generation feature alone has saved us hundreds of thousands in photography costs.”

— Creative Director, Global Pharma Brand

Use Cases Delivered

- 1. **HCP Marketing:** Diverse physicians in clinical settings
- 2. **Patient Education:** Relatable patients across demographics
- 3. **Conference Materials:** Brand-specific visuals for booth graphics
- 4. **Social Media:** Endless content variations for A/B testing
- 5. **Website Imagery:** Custom hero images and product visualizations
- 6. **Email Campaigns:** Personalized imagery by audience segment
- 7. **Product Packaging:** Concept testing for packaging designs

Multi-Model Intelligence

The platform automatically selects the best AI model for each use case:

Use Case	Primary Model	Why
Photorealistic humans	RenderNet	Character consistency
Brand lifestyle imagery	Adobe Firefly	Enterprise compliance
Artistic concepts	Flux Pro	Creative flexibility
Fast iterations	Flux Dev	Speed + quality balance
Style matching	GPT-4 + Flux	Reference analysis

Cost Optimization: Intelligent routing reduces generation costs by 40%

Brand Compliance Features

Multi-dimensional Filtering

- **Brand:** Select from 15+ product brands
- **Geography:** US, EU, APAC-specific imagery
- **Persona:** HCP, Patient, Caregiver
- **Therapeutic Area:** Oncology, Cardiology, etc.
- **Channel:** Digital, Print, Social, Events

Style Reference Analysis

- Upload existing brand imagery
- GPT-4 Vision analyzes style attributes
- Prompts automatically adjusted to match
- Maintains visual consistency across all assets

Approval Workflow

- Review queue for brand compliance
 - Feedback loop for prompt refinement
 - Version history for all generations
 - Export to brand asset management systems
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Future Enhancements

1. **Video Generation:** Extend to motion graphics and video ads
 2. **3D Assets:** Generate product mockups and booth designs
 3. **Brand Voice Integration:** Combine with Content AI for complete campaigns
 4. **Real-time Editing:** In-browser image refinement
 5. **API for Design Tools:** Figma/Adobe plugin integration
 6. **Custom Model Training:** Fine-tune on specific brand imagery
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