Epics & Delivery Timeline

Social Media Marketing Dashboard

Feature: 001-social-media-marketing
Created: 2025-10-03
Planning Horizon: 8 weeks

Epic Breakdown

Epic 1: Foundation & Data Layer

Duration: Week 1-2 (2 weeks)
Priority: P0 (Blocker)

Scope

Establish core data models, database schema, and API infrastructure to support the entire workflow.

Functional Requirements Covered

- FR-022: Persist all uploaded briefs, assets, and generated content
- FR-023: Maintain associations between briefs, assets, ideas, and creatives
- FR-024: Track approval workflow state for each creative
- FR-025: Support multiple concurrent brief processing workflows

Key Deliverables

- Database schema with tables: briefs, assets, ideas, creatives, approvals
- RESTful API endpoints for CRUD operations
- File storage system for uploaded assets
- Basic error handling and validation

Acceptance Criteria

- [ ] Database can store all entity types with proper relationships
- [ ] API returns appropriate status codes and error messages
- [ ] File uploads are validated and stored securely
- [ ] System supports concurrent operations without data corruption

---

Epic 2: Content Input & Asset Management

Duration: Week 2-3 (2 weeks)
Priority: P0 (Blocker)
Dependencies: Epic 1

Scope

Enable users to upload product briefs and brand/product assets with visual management capabilities.

Functional Requirements Covered

- FR-001: Accept product briefs via text input or file upload (TXT, PDF, Word)
- FR-002: Upload areas for brand assets (JPG)
- FR-003: Upload areas for product assets (JPG)
- FR-004: Display thumbnails with delete icons
- FR-005: Delete uploaded assets via thumbnail
- FR-006: Validate file formats and reject unsupported types
- FR-007: Extract and parse content from document files

Key Deliverables

- Brief upload UI (text input + file upload)
- Document parser service (TXT, PDF, Word)
- Asset upload components with drag-drop support
- Thumbnail grid display with delete functionality
- File format validation (client + server)
- Error handling for corrupted/unreadable files

Acceptance Criteria

- [ ] Users can type or upload briefs in supported formats
- [ ] System extracts text from PDF and Word documents
- [ ] Asset thumbnails display with delete icons
- [ ] Invalid file formats are rejected with clear error messages
- [ ] Corrupted files trigger user-friendly error prompts

Epic 3: LLM-Powered Idea Generation

Duration: Week 3-4 (2 weeks)
Priority: P0 (Blocker)
Dependencies: Epic 2

Scope

Integrate LLM service to generate creative ideas based on briefs, with regeneration capability.

Functional Requirements Covered

- FR-008: Execute button for each uploaded brief
- FR-009: Send brief and assets to LLM when Execute is clicked
- FR-010: Generate one idea per region/demographic combination
- FR-011: Display regenerate and play buttons for each idea
- FR-012: Regenerate button creates new idea
- FR-013: Preserve original brief and assets during regeneration

Key Deliverables

- LLM service integration (OpenAI/Anthropic/etc.)

- Prompt engineering for idea generation
- Execute button triggering LLM workflow
- Idea card components with region/demographic tags
- Regenerate functionality with loading states
- LLM timeout and failure handling

Acceptance Criteria

- [ ] Execute button generates ideas for all region/demographic combos
- [ ] Each idea displays with regenerate and play buttons
- [ ] Regeneration replaces only the specific idea
- [ ] LLM failures display error messages with retry option
- [ ] Original brief data is preserved during regeneration

Epic 4: Creative Production with Adobe Firefly

Duration: Week 4-6 (3 weeks)
Priority: P0 (Blocker)
Dependencies: Epic 3

Scope

Generate final social media creatives using Adobe Firefly with streaming display, brand integration, and multi-language support.

Functional Requirements Covered

- FR-014: Play button sends brief and idea to Adobe Firefly
- FR-015: Generate final creative assets for each idea/region/demo
- FR-015a: Include campaign message in appropriate language
- FR-015b: Include brand logo or brand colors in creative
- FR-016: Place generated creatives in approval queue

Key Deliverables

- Adobe Firefly API integration
- Server-Sent Events (SSE) for streaming creative generation
- Progressive image display (spinners → final images)
- Brand color extraction from uploaded assets
- Logo overlay or brand color incorporation
- Multi-language text rendering (region-specific)
- Approval queue component with grid layout
- Firefly failure handling with regeneration

Acceptance Criteria

- [ ] Play button triggers Firefly creative generation
- [ ] Images stream in progressively (3 aspect ratios: 16:9, 9:16, 1:1)
- [ ] Campaign message appears in region's language
- [ ] Brand logo or colors are integrated into creative
- [ ] Generated creatives appear in approval queue

- [ ] Firefly failures display errors with retry option

Epic 5: Approval Workflow & Deployment

Duration: Week 6-7 (2 weeks)
Priority: P0 (Blocker)
Dependencies: Epic 4

Scope

Implement dual-approval system (creative + regional) with deployment capability.

Functional Requirements Covered

- FR-017: Each creative has regenerate, creative approval, regional approval buttons
- FR-018: Track approval status independently
- FR-019: Deploy button active only when both approvals granted
- FR-020: Display "deployed" banner when deploy is clicked
- FR-021: Prevent re-deployment of deployed creatives

Key Deliverables

- Approval status UI (checkboxes/toggles)
- Independent tracking of creative vs. regional approval
- Deploy button with conditional activation
- Deployed banner overlay
- Deployment state persistence
- Regenerate functionality from approval queue

Acceptance Criteria

- [ ] Creative and regional approvals can be toggled independently
- [ ] Deploy button activates only with both approvals
- [ ] Deployed creatives show banner and disable deploy button
- [ ] Regenerated creatives reset approval state
- [ ] System prevents double-deployment

Epic 6: User Experience & Polish

Duration: Week 7-8 (2 weeks)
Priority: P1 (Important)
Dependencies: Epic 5

Scope

Enhance UI/UX, add settings management, improve error handling, and optimize performance.

Key Deliverables

- Settings modal for API keys and provider selection
- Dynamic API key loading based on provider

- "Delete All" bulk action for creatives
- Loading states and progress indicators
- Responsive design for mobile/tablet
- Performance optimization (image loading, API calls)
- Comprehensive error messaging
- User guidance (tooltips, help text)

Acceptance Criteria

- [ ] Settings allow switching between LLM/image providers
- [ ] API keys populate automatically when provider is selected
- [ ] Bulk delete removes all creatives efficiently
- [ ] All async operations show loading indicators
- [ ] UI works on common screen sizes
- [ ] Errors provide actionable guidance

Delivery Timeline

Phase 1: Foundation (Weeks 1-2)

Milestones:

- Week 1: Database schema, API scaffolding, file storage setup
- Week 2: CRUD operations, validation, error handling

Deliverable: Working backend API with data persistence

Phase 2: Content Management (Weeks 2-3)

Milestones:

- Week 2: Brief upload UI, document parser
- Week 3: Asset upload, thumbnail display, delete functionality

Deliverable: Users can upload and manage briefs and assets

Phase 3: Idea Generation (Weeks 3-4)

Milestones:

- Week 3: LLM integration, prompt engineering
- Week 4: Execute button, idea display, regeneration

Deliverable: System generates LLM-powered creative ideas

Phase 4: Creative Production (Weeks 4-6)

Milestones:

- Week 4: Firefly API integration, basic generation

- Week 5: Streaming display (SSE), brand integration
- Week 6: Multi-language support, approval queue

Deliverable: System produces final creatives with brand elements

---

Phase 5: Approval & Deployment (Weeks 6-7)

Milestones:

- Week 6: Approval UI, status tracking
- Week 7: Deploy functionality, state management

Deliverable: Complete approval workflow with deployment

Phase 6: Polish & Optimization (Weeks 7-8)

Milestones:

- Week 7: Settings UI, bulk actions, error handling
- Week 8: Performance optimization, responsive design, testing

Deliverable: Production-ready application

Risk Mitigation

Technical Risks

Risk	Probability	Impact	Mitigation
LLM API failures	Medium	High	Implement retry logic, mock fallbacks, clear error messages
Firefly rate limits	Medium	High	Queue requests, implement backoff, show progress indicators
Document parsing errors	High	Medium	Support multiple parsers, validate formats, provide clear errors
Large file uploads	Low	Medium	Set file size limits, implement chunking, show upload progress

Schedule Risks

Risk	Probability	Impact	Mitigation
Firefly integration complexity	Medium	High	Allocate 3 weeks, prioritize core functionality first
Scope creep	Medium	High	Strict prioritization, defer P1 items if needed
API changes/deprecation	Low	Medium	Version pinning, monitor provider changelogs

---

Success Metrics

Functional Metrics

- [ ] 100% of acceptance scenarios pass
- [ ] All P0 functional requirements implemented
- [ ] Zero data loss during uploads or generation

- [ ] Approval workflow operates without state conflicts

Performance Metrics

- [ ] Brief upload < 2 seconds
- [ ] Asset upload < 5 seconds per file
- [ ] LLM idea generation < 30 seconds per region/demo
- [ ] Firefly creative generation < 60 seconds per aspect ratio
- [ ] Page load time < 3 seconds

User Experience Metrics

- [ ] Error messages provide clear next steps
- [ ] All async operations show loading indicators
- [ ] UI responsive on devices ≥ 768px width
- [ ] No blocking operations > 5 seconds without progress indication

---

Post-Launch Roadmap

Phase 7: Analytics & Insights (Future)

- Track creative performance metrics
- A/B testing for creative variations
- Export reports for stakeholders

Phase 8: Advanced Features (Future)

- Automated deployment to social platforms
- Scheduled posting
- Multi-campaign management
- Collaboration and commenting

Epics & Delivery Timeline (8 weeks)

Foundation & Data
Content & Assets
Idea Generation
Creative Production
Approval & Deployment
UX & Polish

Epic 1 (W1-2)
Epic 2 (W2-3)
Epic 3 (W3-4)
Epic 4 (W4-6)
Epic 5 (W6-7)
Epic 6 (W7-8)

W02 W03 W04 W05 W06 W07 W08 W09