

Data Structure: Agentic Content Marketer

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Change Log

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Author	John Edward Oblepias	NA	04/11/2025
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[e.g., User Guide]	DOC-CLaaS-003	Related

Overview

This database schema documentation covers the complete data structure for the **Content Marketing Application (Agentic Marketer)** for CLaaS2SaaS. The system manages an end-to-end content marketing lifecycle from solution positioning through final asset deployment.

Application Purpose

The Content Marketing Application automates and streamlines the creation, management, and deployment of marketing content across the CILOS funnel (Contact → Interest → Leads → Opportunity → Sales). It serves as a centralized platform for Content Marketing Associates (CMAs) to:

1. Define solution positioning via Solution Sales Canvas
2. Map content strategy across marketing funnel stages
3. Generate AI-assisted marketing assets
4. Package and deploy approved content

Database Architecture Philosophy

The schema follows a **stage-based workflow design** with three primary stages:

- **Stage 1:** Solution Sales Canvas (SSC) Foundation - Strategic positioning and validation
- **Stage 2:** Content Strategy & Funnel Mapping - AI-assisted content planning
- **Stage 3:** Content Asset Builder & Workflow - AI-powered asset creation and approval

Each stage maintains referential integrity through foreign key relationships, ensuring data consistency and traceability throughout the content lifecycle.

Schema: ContentMarketingDB

Stage 1: Solution Sales Canvas (SSC) Foundation

This stage captures the core business positioning data that serves as the single source of truth for all downstream content creation activities.

Table: ssc_main

Central table storing Solution Sales Canvas records with solution/sub-solution configuration, approval workflow tracking, and creator attribution.

Column Name	Data Type	Description	Constraints
ssc_id	varchar(255)	Primary key, unique SSC identifier	PRIMARY KEY
solution_id	int	Foreign key to solution master	FOREIGN KEY (contentmarketing_solution_master.solution_id), NOT NULL
sub_solution_id	int	Foreign key to sub-solution master	NOT NULL
ssc_url	varchar(500)	Link to generated SSC canvas document/file	NULL allowed

Column Name	Data Type	Description	Constraints
created_date	datetime2(7)	Timestamp of SSC creation	NOT NULL, DEFAULT GETDATE()
created_by	varchar(255)	User who created this SSC	NOT NULL
status	varchar(20)	Approval workflow status	NOT NULL, CHECK: 'Draft', 'In-Review', 'Approved', 'Rejected', DEFAULT 'In-Review'

Business Rules:

- Each SSC must link to valid solution and sub-solution combinations
 - Only users who are Admin/Owner can approve SSCs
 - Status transitions: Draft → In-Review → Approved/Rejected
 - Approved SSCs become read-only and will be used for Stage 2
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Table: *ssc_channels*

Marketing channels associated with each SSC (max 4 per SSC as per business rules).

Column Name	Data Type	Description	Constraints
id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL
channel_id	int	Foreign key to channel master	FOREIGN KEY (contentmarketing_channels_master.channel_id), NOT NULL
channel_order	int	Sequential order of channel (1-4)	NOT NULL

Unique Constraint: UNIQUE (ssc_id, channel_order)

Business Rules:

- Maximum 4 channels per SSC
 - channel_order determines display sequence (1 = first choice, 2 = second, etc.)
 - Channel categories: ① Social Media ② Direct Sales ③ Offline ④ Alliances
-
-

Table: *ssc_personas*

Buyer personas linked to each SSC (minimum 1 required per business rules).

Column Name	Data Type	Description	Constraints
id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL
persona_value	varchar(255)	Persona name/description	NOT NULL
persona_order	int	Sequential order	NOT NULL

Unique Constraint: UNIQUE (ssc_id, persona_order)

Business Rules:

- Minimum 1 persona required per SSC
 - Personas are used in Stage 2 for content mapping across CILOS funnel
 - Persona names example: "Fresh graduate", "Early career adult"
-

Table: ssc_problem_statements

Problems that the solution addresses (max 3-4 per business rules).

Column Name	Data Type	Description	Constraints
id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL
problem_value	varchar(255)	Description of customer pain point	NOT NULL
problem_order	int	Sequential order (1-4)	NOT NULL

Unique Constraint: UNIQUE (ssc_id, problem_order)

Business Rules:

- Maximum 3-4 problem statements per SSC
 - Problems must tie to chosen customer segments
 - Used to generate problem-focused content topics in Stage 2
-

Table: ssc_solution_features

Key differentiating features of the solution (max 3 per business rules).

Column Name	Data Type	Description	Constraints
id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL
feature_value	varchar(255)	Feature name and description	NOT NULL
feature_order	int	Sequential order (1-3)	NOT NULL

Unique Constraint: UNIQUE (ssc_id, feature_order)

Business Rules:

- Maximum 3 solution features per SSC
 - Features must align with UVPs
 - Feature descriptions limited to 255 characters
-

Table: ssc_unfair_advantage

Unique competitive advantages at company/solution level (max 3 per business rules).

Column Name	Data Type	Description	Constraints
id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL
advantage_value	varchar(255)	Description of unfair advantage	NOT NULL
advantage_order	int	Sequential order (1-3)	NOT NULL

Unique Constraint: UNIQUE (ssc_id, advantage_order)

Business Rules:

- Maximum 3 unfair advantages per SSC
 - Examples: “SkillsFuture SG partnership”, “Digital acceleration platform”
 - Used to inform differentiation messaging in campaigns
-

Table: ssc_unique_value_proposition

Value propositions that differentiate the solution (max 3 per business rules).

Column Name	Data Type	Description	Constraints
id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL
uvp_value	varchar(255)	Value proposition statement	NOT NULL
uvp_order	int	Sequential order (1-3)	NOT NULL

Unique Constraint: UNIQUE (ssc_id, uvp_order)

Business Rules:

- Maximum 3 UVPs per SSC
 - UVPs pulled into campaign messaging and content topics
 - Must clearly articulate “how we are uniquely different”
-

Master Table: contentmarketing_solution_master

Catalog of all CLaaS2SaaS solutions.

Column Name	Data Type	Description	Constraints
solution_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
solution_name	varchar(255)	Solution name	NOT NULL
solution_code	varchar(255)	Short code for solution	-
description	varchar(500)	Solution description	NULL allowed
status	varchar(8)	Active status	NOT NULL, CHECK: ‘Active’, ‘Inactive’
created_at	datetime	Record creation timestamp	NOT NULL, DEFAULT GETDATE()

Predefined Values:

- HED CLaaS (Higher Education CLaaS)
- Lifelong CET CLaaS (Continuing Education & Training)

- Enterprise CLaaS
 - University Alliance
-

Master Table: contentmarketing_sub_solutions_master

Sub-solutions under each primary solution.

Column Name	Data Type	Description	Constraints
sub_solution_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
solution_id	int	Foreign key to parent solution	FOREIGN KEY (contentmarketing_solution_master.solution_id), NOT NULL
sub_solution_name	varchar(255)	Sub-solution name	NOT NULL
sub_solution_code	varchar(255)	Short code	-
description	varchar(500)	Sub-solution description	NULL allowed
status	varchar(8)	Active status	NOT NULL, CHECK: 'Active', 'Inactive'
created_at	datetime2(7)	Record creation timestamp	NOT NULL, DEFAULT GETDATE()

Example Sub-Solutions:

- HED CLaaS → {WSD DB, WSD SE, WIM SE, WIM DB}
 - Lifelong CET CLaaS → {LLL DM, LLL CC, LLL DSAI, LLL AI APPS, LLL DIL}
 - Enterprise CLaaS → {SME Digitalization CLaaS, Large Corporate CLaaS}
 - University Alliance → {University Alliance}
-

Master Table: contentmarketing_channels_master

Marketing channel definitions.

Column Name	Data Type	Description	Constraints
channel_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
channel_name	varchar(100)	Channel name	NOT NULL
channel_code	varchar(100)	Short code for channel	NOT NULL
description	varchar(500)	Channel description	NULL allowed
status	varchar(8)	Active status	NOT NULL, CHECK: 'Active', 'Inactive'
created_at	datetime2(7)	Record creation timestamp	NOT NULL, DEFAULT GETDATE()

Predefined Channels:

- Social Media: Facebook, Instagram, LinkedIn, TikTok, YouTube
 - Direct Sales: Direct Sales Team, Inside Sales
 - Offline: Events, Proposals, Demos, Conferences
 - Alliances: Partner Networks, Resellers
-

Stage 2: Content Strategy & Funnel Mapping

This stage handles AI-generated content strategy, mapping personas across the CILOS funnel with appropriate channels, topics, CTAs, and asset types.

Table: asset_type

Content asset types available for marketing campaigns.

Column Name	Data Type	Description	Constraints
asset_type_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
asset_code	varchar(50)	Short code for asset type	NOT NULL
asset_name	varchar(150)	Asset type name	NOT NULL

Asset Types by CILOS Stage:

- **Contact (C):** Solution Banner Advert, Solution Video Script, Solution UVP Pitch, Podcast
 - **Interest (I):** Solution Landing Page, Solution Article, Solution Brochure, Product Brochure
 - **Leads (L):** Solution Minisite, Solution PPT, Solution Video Production
 - **Opportunity (O):** Solution PPT
 - **Sales (S):** Solution Article (*Case Study or Success Story*) , Product Brochure (*Enrollment Info Sheet*)
-

Table: cilos_stage

Learning outcome stages in the marketing funnel.

Column Name	Data Type	Description	Constraints
cilos_stage_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
cilos_code	varchar(10)	Single letter code	NOT NULL
cilos_name	varchar(100)	Full stage name	NOT NULL

CILOS Stages:

- **C (Contact):** Initial awareness and reach
 - **I (Interest):** Engagement and education
 - **L (Leads):** Lead generation and nurturing
 - **O (Opportunity):** Sales qualification
 - **S (Sales):** Closing and enrollment
-

Table: funnel_stage

Marketing funnel stage definitions.

Column Name	Data Type	Description	Constraints
funnel_stage_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
funnel_code	varchar(50)	Short code for stage	NOT NULL
funnel_name	varchar(100)	Stage name	NOT NULL

Funnel Stages:

- Awareness
- Interest

- Consideration
 - Decision
 - Won/Enrollment
-

Table: content_topic

AI-generated content topics based on SSC data (editable by users).

Column Name	Data Type	Description	Constraints
content_topic_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
content_topic	varchar(500)	Topic description	NOT NULL
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL
created_at	datetime2(7)	Record creation timestamp	NOT NULL, DEFAULT SYSUTCDATETIME()

Business Rules:

- AI generates topics from SSC problems, UVPs, and outcomes
 - Topics are editable by CMAs
 - Maximum 500 characters per topic
 - Topics must be relevant to associated CILOS/funnel stage
-

Table: cta

Call-to-action library (AI-selected by stage, editable by users).

Column Name	Data Type	Description	Constraints
cta_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
cta_text	varchar(500)	CTA text	NOT NULL
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL
created_at	datetime2(7)	Record creation timestamp	NOT NULL, DEFAULT SYSUTCDATETIME()

Example CTAs by Stage:

- Contact: “Visit landing page”, “Learn more”
 - Interest: “Read the brief”, “Watch the video”, “Explore minisite”
 - Leads: “Get the guide”, “Download brochure”, “Subscribe”
 - Opportunity: “Book a live demo”, “Request consultation”
 - Sales: “Approve proposal”, “Enroll now”
-

Table: ssc_funnel_mapping

Links all Stage 2 components together for complete full-funnel content planning.

Column Name	Data Type	Description	Constraints
funnel_mapping_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL

Column Name	Data Type	Description	Constraints
pdf_url	varchar(1000)	URL to PDF export	NULL allowed
word_url	varchar(1000)	URL to Word export	NULL allowed
funnel_stage_id	int	Foreign key to funnel stage	FOREIGN KEY (funnel_stage.funnel_stage_id), NOT NULL
cilos_stage_id	int	Foreign key to CILOS stage	FOREIGN KEY (cilos_stage.cilos_stage_id), NOT NULL
asset_type_id	int	Foreign key to asset type	FOREIGN KEY (asset_type.asset_type_id), NOT NULL
content_topic_id	int	Foreign key to content topic	FOREIGN KEY (content_topic.content_topic_id), NOT NULL
cta_id	int	Foreign key to CTA	FOREIGN KEY (cta.cta_id), NOT NULL
sort_order	int	Display order	NULL allowed
status	varchar(20)	Approval workflow status	NOT NULL, CHECK: 'Draft', 'In-Review', 'Approved', 'Rejected', DEFAULT 'In-Review'
remarks	varchar(300)	Additional notes/comments	NULL allowed
created_by	varchar(150)	CMA who created mapping	NULL allowed
created_at	datetime2(7)	Record creation timestamp	NOT NULL, DEFAULT SYSUTCDATETIME()
updated_at	datetime2(7)	Last update timestamp	NULL allowed

Business Rules:

- Each mapping row represents one content asset to be created
- All AI suggestions (asset type, topic, CTA) are editable
- Status transitions: Draft → In-Review → Approved/Rejected
- Approved mappings are read-only and passed to Stage 3

Stage 3: Content Asset Builder & Workflow

This stage manages AI-powered content creation, version control, and final asset export with embedded content standards.

Reference Table: brand_guideline_ref

Brand guideline references (read-only for users, managed by admin).

Column Name	Data Type	Description	Constraints
guideline_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
title	varchar(200)	Guideline document name	NOT NULL
guideline_url	varchar(1000)	URL to brand guideline PDF	NOT NULL

Business Rules:

- One-time setup by admin

- Read-only for CMAs during content creation
 - Ensures style consistency across all assets
 - Reference: eduCLaaS Brand Guidelines (May 2024)
-

Workflow Table: content_asset_builder

Builder sessions linking Stage 2 approved mappings with embedded content standards.

Column Name	Data Type	Description	Constraints
builder_id	bigint	Primary key	PRIMARY KEY, IDENTITY(1,1)
funnel_mapping_id	int	Foreign key to Stage 2 mapping	FOREIGN KEY (ssc_funnel_mapping.funnel_mapping_id), NOT NULL
ssc_id	varchar(255)	Foreign key to parent SSC	FOREIGN KEY (ssc_main.ssc_id), NOT NULL
channel_id	int	Foreign key to channel	FOREIGN KEY (contentmarketing_channels_master.channel_id), NOT NULL
std_width_px	int	Standard width in pixels	NULL allowed
std_height_px	int	Standard height in pixels	NULL allowed
std_aspect_ratio	varchar(20)	Standard aspect ratio (e.g., "16:9")	NULL allowed
std_headline_words_max	int	Maximum headline word count	NULL allowed
std_body_words_min	int	Minimum body word count	NULL allowed
std_body_words_max	int	Maximum body word count	NULL allowed
std_cta_words_max	int	Maximum CTA word count	NULL allowed

Business Rules:

- Each builder session must link to approved Stage 2 mapping
- Standards (std_* fields) are populated at builder creation and remain fixed

- Standards ensure AI-generated content meets channel/asset requirements
- All standards are optional but recommended for quality control

Example Standards by Asset Type & Channel:

- **TikTok Video:** 1080x1920px, 16:9 ratio, headline max 15 words
 - **LinkedIn Ads:** 1080x1080px, 1:1 ratio, headline max 10 words, body 150 words max
 - **Landing Page:** headline 10-12 words, body 40-60 words per section
 - **Email:** headline (subject) 6-8 words, body max 60 words per paragraph
-

Workflow Table: content_asset_result

Versioned AI-generated results with parent-child chain for version tracking.

Column Name	Data Type	Description	Constraints
result_id	bigint	Primary key	PRIMARY KEY, IDENTITY(1,1)
builder_id	bigint	Foreign key to builder session	FOREIGN KEY (content_asset_builder.builder_id), NOT NULL
version_no	int	Sequential version number	NOT NULL
is_current	bit	Flag indicating current/active version	NOT NULL, DEFAULT 1
parent_result_id	bigint	Foreign key to previous version	FOREIGN KEY (content_asset_result.result_id), NULL allowed
user_prompt	nvarchar(max)	User's input prompt/instructions	NOT NULL
ai_output_text	nvarchar(max)	AI-generated text content	NOT NULL
word_count	int	Total word count of AI output	NULL allowed
pdf_url	varchar(1000)	URL to exported PDF file	NULL allowed
word_url	varchar(1000)	URL to exported Word file	NULL allowed

Business Rules:

- Each result is versioned with parent-child relationship for full audit trail
- version_no increments automatically within a builder_id (1, 2, 3, ...)
- AI regeneration creates new result with previous result as parent
- Only one result can have is_current = 1 per builder_id
- user_prompt captures user's instructions for this generation
- ai_output_text stores the complete generated content
- pdf_url and word_url populated after content approval and export

Version Control Examples:

- **Initial Generation:** result_id=1, version_no=1, parent_result_id=NULL, is_current=1

- **Regeneration:** result_id=2, version_no=2, parent_result_id=1, is_current=1 (result_id=1 now has is_current=0)
 - **Polish/Edit:** result_id=3, version_no=3, parent_result_id=2, is_current=1
-

Table: content_asset_final

Final marketing assets created by the Content Marketing team using third-party applications (Canva, CapCut, etc.) with approval workflow tracking.

Column Name	Data Type	Description	Constraints
final_asset_id	bigint	Primary key	PRIMARY KEY, IDENTITY(1,1)
funnel_mapping_id	int	Foreign key to Stage 2 funnel mapping	FOREIGN KEY (ssc_funnel_mapping.funnel_mapping_id), NOT NULL
asset_url	varchar(1000)	SharePoint link to final asset file	NOT NULL
folder_name	varchar(255)	SharePoint folder name (follows SSC-ID naming convention)	NOT NULL
third_party_app	varchar(100)	Application used to create asset (e.g., Canva, CapCut)	NULL allowed
status	varchar(20)	Approval workflow status	NOT NULL, CHECK: 'Draft', 'In-Review', 'Approved', 'Rejected', DEFAULT 'Draft'
remarks	varchar(300)	Additional notes/comments	NULL allowed
created_by	varchar(150)	CMA who uploaded the asset	NULL allowed
created_at	datetime2(7)	Record creation timestamp	NOT NULL, DEFAULT SYSUTCDATETIME()
updated_by	varchar(150)	User who last updated the record	NULL allowed
updated_at	datetime2(7)	Last update timestamp	NULL allowed
version_no	int	Version number for tracking asset iterations	NOT NULL, DEFAULT 1

Business Rules:

- Each final asset links to approved Stage 2 funnel mapping via funnel_mapping_id
- asset_url stores the complete SharePoint link to the finalized marketing asset
- folder_name follows organizational naming convention (typically matches SSC-ID structure)
- third_party_app tracks which external tool was used (Canva, CapCut, Adobe, etc.)
- Status transitions: Draft → In-Review → Approved/Rejected
- Only approved assets are considered production-ready and can be deployed in campaigns
- version_no increments when assets are updated/replaced, maintaining version history
- created_by and updated_by capture user attribution for audit trail
- remarks field allows CMAs to add context about the asset or approval decisions

Integration Points:

- Links to ssc_funnel_mapping to maintain traceability from strategy through execution
 - Complements content_asset_result table (AI-generated scripts) with final production assets
 - Supports complete asset lifecycle: Strategy (Stage 2) → AI Generation (Stage 3) → Production (content_asset_final)
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Data Model

Key Relationships

Stage 1 Relationships:

1. SSC Hierarchy:

- ssc_main → contentmarketing_solution_master (Many-to-One via solution_id)
- ssc_main → contentmarketing_sub_solutions_master (Many-to-One via sub_solution_id)
- ssc_main → {ssc_channels, ssc_competition, ssc_customer_segments, ssc_personas, ssc_problem_statements, ssc_solution_features, ssc_unfair_advantage, ssc_unique_value_proposition} (One-to-Many via ssc_id)

2. Master Table Relationships:

- contentmarketing_sub_solutions_master → contentmarketing_solution_master (Many-to-One via solution_id)
- ssc_channels → contentmarketing_channels_master (Many-to-One via channel_id)

Stage 2 Relationships:

3. Content Mapping Flow:

- ssc_funnel_mapping references ssc_main (via ssc_id - varchar reference, no FK constraint)
- ssc_funnel_mapping → asset_type (Many-to-One)
- ssc_funnel_mapping → cilos_stage (Many-to-One)
- ssc_funnel_mapping → funnel_stage (Many-to-One)
- ssc_funnel_mapping → content_topic (Many-to-One)
- ssc_funnel_mapping → cta (Many-to-One)

4. AI-Generated Content References:

- content_topic references ssc_main (via ssc_id - varchar reference, no FK constraint)
- cta references ssc_main (via ssc_id - varchar reference, no FK constraint)

Stage 3 Relationships:

5. Content Creation Workflow:

- content_asset_builder → ssc_funnel_mapping (Many-to-One via funnel_mapping_id)
- content_asset_builder references ssc_main (via ssc_id - varchar reference, no FK constraint)

- content_asset_builder → contentmarketing_channels_master (Many-to-One via channel_id)
- content_asset_builder → asset_type (Many-to-One)
- content_asset_builder → cilos_stage (Many-to-One)
- content_asset_builder → funnel_stage (Many-to-One)
- content_asset_builder → content_topic (Many-to-One)
- content_asset_builder → cta (Many-to-One)
- content_asset_result → content_asset_builder (Many-to-One via builder_id)
- content_asset_result → content_asset_result (Self-referencing for versioning via parent_result_id)

Cascade Rules

- **NO CASCADE DELETE** on foreign keys - referential integrity maintained without cascading deletes
- **UNIQUE constraints** on all SSC child tables for (ssc_id, {field}_order) combinations
- **Default values** applied for status, timestamps, and is_current flags
- ssc_id is VARCHAR throughout the system for flexibility and integration with external ID formats

Index Strategy

- All primary keys have clustered indexes
 - Unique constraints create non-clustered indexes automatically
 - Foreign keys should have non-clustered indexes for query performance
-

Business Rules

Stage 1 Business Rules:

1. **SSC Creation & Validation:**

- Maximum 3 customer segments per SSC
- Maximum 3-4 problem statements per SSC
- Maximum 3 solution features per SSC
- Maximum 3 competitors per SSC
- Maximum 3 UVPs per SSC
- Maximum 3 unfair advantages per SSC
- Maximum 4 channels per SSC
- Minimum 1 persona required per SSC
- All child tables use {field}_order for sequencing (1, 2, 3, etc.)

2. **SSC Approval Workflow:**

- Default status is ‘In-Review’
- Allowed status transitions: Draft → In-Review → Approved/Rejected
- ssc_id is VARCHAR(255) to support various ID formats including external system integration
- ssc_url stores link to generated Solution Sales Canvas document

3. **Data Integrity:**

- UNIQUE constraints enforce no duplicate orders within same ssc_id
- All required fields must be populated before status can move to ‘In-Review’
- Child table records tied to ssc_id (varchar reference)

Stage 2 Business Rules:

1. **Content Mapping:**

- Every mapping row must contain valid ssc_id
- At least one asset type and CTA must be selected

- System auto-generates content topics and CTAs based on SSC data
- content_topic and cta tables store ssc_id for traceability

2. AI Content Generation:

- Content topics generated from SSC problems, UVPs, and outcomes
- CTAs recommended based on CILOS stage
- Maximum 500 characters for content topics
- Maximum 500 characters for CTA text
- Both are editable by CMAs after AI generation

3. Funnel Mapping Workflow:

- Default status is ‘pending’
- Status transitions: Draft → In-Review → Approved/Rejected
- sort_order determines display sequence in UI
- pdf_url and word_url populated after content map approval
- remarks field allows notes/comments for clarification

Stage 3 Business Rules:

1. Content Asset Builder:

- Each builder session links to approved Stage 2 mapping
- Standards (std_* fields) are populated at builder creation
- Standards include: width, height, aspect ratio, headline/body/CTA word limits
- All standards are optional but recommended for quality assurance
- Standards remain fixed after builder creation (no retroactive changes)

2. AI Generation & Versioning:

- Initial generation: version_no = 1, parent_result_id = NULL, is_current = 1
- Each regeneration increments version_no
- Parent-child relationship tracks version history
- Only one result per builder_id can have is_current = 1
- user_prompt captures instructions for each generation attempt
- ai_output_text stores complete generated content
- word_count calculated automatically from ai_output_text

3. Export & Deployment:

- pdf_url and word_url populated after content approval
- Current version (is_current = 1) is the version exported
- Previous versions retained for audit trail
- Metadata includes: SSC-ID, asset type, CILOS stage, channel

Cross-Stage Business Rules:

1. Referential Integrity:

- ssc_id is VARCHAR throughout for flexibility
- Some references use varchar without FK constraints (by design for external integration)
- Master tables (solutions, channels) use Active/Inactive status rather than deletion
- Child table order fields enforce UNIQUE(ssc_id, order) constraints

2. Workflow Progression:

- Stage 1 SSC must be created before Stage 2 mapping
- Stage 2 mapping must be approved before Stage 3 builder

- Each stage builds upon data from previous stage
- Traceability maintained through ssc_id references

3. Audit Trail:

- created_at timestamps on most tables
 - created_by captured where applicable
 - Version history maintained in content_asset_result
 - is_current flag identifies active versions
-

Naming Convention Standards

All exported assets follow this structure:

[SOLUTION/SUB-SOLUTION]-[COUNTRY/REGION]-[FISCAL YEAR]-[ASSET TYPE CODE]_[DESCRIPTOR]

Example: HED-WSDBD-PH-FY2026_Contact_AD_FB_Video001.mp4

Component Breakdown:

- **SOLUTION/SUB-SOLUTION:** HED-WSDBD (Higher Ed - Work-Study Degree Digital Business)
- **COUNTRY/REGION:** PH (Philippines)
- **FISCAL YEAR:** FY2026
- **ASSET TYPE CODE:** AD (Advertisement)
- **CHANNEL:** FB (Facebook)
- **DESCRIPTOR:** Video001 (Sequential numbering)

This ensures assets are:

- Traceable to source SSC and solution
- Organized by geography and timeframe
- Easily searchable and auditable
- Consistent across all campaigns

