

# Data Structure: Agentic Content Marketer

## Document Information

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## Version History

Version	Date	Author	Changes Made	Reviewed By	Approval Status
v1.0	04/11/2025	John Edward Oblepias	Initial database schema created for Content Marketing Application covering Stages 1-3	Pending	Draft - Awaiting Kernel Team Validation

## Change Log

Change ID	Version	Section Modified	Description of Change	Rationale
CH-001	v1.0	All	Initial schema design	New application development
CH-002				
CH-003				
CH-004				

## Distribution List

Name	Role	Department	Version	Date Sent
Tushar Doshi	AI & ML Engineer	Business Operations – IT (Kernel)	V1.0	04/11/2025

## Approval Signatures

Role	Name	Signature	Date
Author	John Edward Oblepias	NA	04/11/2025
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## Related Documents

Document Title	Document ID	Relationship
[e.g., Technical Specification]	DOC-CLaaS-002	Parent / Reference / Supporting
[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.

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## 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

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”
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*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
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*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
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*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

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*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”

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*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

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*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}

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*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
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## 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: *ciilos\_stage*

Learning outcome stages in the marketing funnel.

Column Name	Data Type	Description	Constraints
ciilos_stage_id	int	Primary key	PRIMARY KEY, IDENTITY(1,1)
ciilos_code	varchar(10)	Single letter code	NOT NULL
ciilos_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)

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*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:** 1080×1920px, 16:9 ratio, headline max 15 words
- **LinkedIn Ads:** 1080×1080px, 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

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*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`)

## 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

