

ConnecWrk – MSME Connect (Owner & Visitor) – Super Detailed Spec

Audience: Product, Engineering, Design, QA, AIML (RAG)

Scope: Everything required to build, test, document, and automate the MSME Connect feature set (Company Business Pages/CBP) for two personas:

- **MSME Owner (primary):** creates/edits/publishes CBP, manages services, badges, and media.
- **Seeker/Visitor (public):** browses category listings, opens CBPs, and contacts owners.

0A) Product Definition / Business Goal

What is MSME Connect? MSME Connect is the part of the platform where micro, small, and medium businesses (MSMEs) create and maintain an official Company / Business Page (CBP). A CBP is a verified public profile for the business. It contains: - Legal identity (GSTIN / Udyam) - Business name and description - Services / products they offer - Location and contact details - Branding (logo, cover, gallery) - Trust/verification badges

This is not just a marketing card. Creating a CBP: - Verifies the legitimacy of the business using government IDs (GSTIN / Udyam) via live verification APIs. - Generates an internal ID (`msmeId`) that represents the business entity in the system. - Allows the MSME to appear publicly in browse pages like `/smb-categories` where seekers filter by category, location, and trust badges. - Allows the MSME to be elevated into Featured MSME placements, which are high-visibility promo slots rendered on `/msme-connect` and other surfaces (e.g. article sidebars). - Allows that MSME entity to power other features across the product stack, for example: - attaching the business to a job post, - auto-filling address/contact/location in other flows, - letting seekers contact "the business" (not just a random user account).

Business Goal of MSME Connect - Give MSMEs credibility and visibility. - Let seekers quickly discover and contact businesses based on: - location (city/state/country), - category / industry, - verification badges (GST Verified, KYC Verified, etc.), - plan/feature tier. - Provide one single source of truth for the company's identity so downstream modules (Jobs, Talent, Marketplace, Featured carousels, etc.) all reference the same canonical record. - Create a self-serve loop: MSME owners control their presence (edit / publish / badge request / archive) without manual ops.

How Personas Interact With MSME Connect - MSME Owner (authenticated user with an MSME role or similar): - Creates a CBP through a two-step onboarding flow. - Enters/verifies legal details (GSTIN or Udyam), uploads logo, provides descriptions, address, and contact channels. - Can edit later, publish/unpublish, request verification badges, manage services/products, manage media. - Can archive or delete the CBP. - Can link this CBP to other flows (e.g. Job postings) so the business identity carries over.

- Seeker / Visitor (public or logged-in non-owner):
- Browses MSMEs by category, city, badge ("GST Verified"), or featured status.
- Opens a CBP (`/business/<slug>`) to evaluate credibility and services.

- Uses visible contact methods (message / email / phone depending on plan + privacy settings) to reach the MSME.
- Encounters Featured MSMEs injected into discovery surfaces, article sidebars, etc.

Relationship to Other Surfaces - `/msme-connect` markets the concept and drives Owners to "Create Business Page". - `/smb-categories` is the searchable/browsable directory for Visitors. - `/my-business` is the Owner's dashboard (status, analytics, edit/publish actions). - `/edit-cbp?id=<cbpId>` is where Owners maintain and verify their CBP. - `/business/<slug>` is the public SEO-facing profile that Visitors consume.

This section defines *why* MSME Connect exists and what success looks like for each persona. All later sections (Glossary, Routes, UX flows, API, Validation, etc.) describe *how* we deliver it.

0) Glossary - **CBP**: Company Business Page (public profile page for an MSME).

- **Service/Product**: Repeatable card shown on a CBP describing what the business offers.

- **Badge**: Verification or achievement indicator (e.g., KYC Verified, GST Verified).

- **Featured**: Paid/premium placement in lists/search.

1) Routes & Access

Route	Access	Persona	Purpose
<code>/msme-connect</code>	Public	Both	Landing/marketing page for MSME module; CTAs to create CBP or browse.
<code>/smb-categories</code>	Public	Seeker/ Visitor	Browse MSMEs with category/ location/badge filters and sorting.
<code>/my-business</code>	Authenticated Owner	MSME Owner	Owner dashboard to view/publish/ edit owned CBP(s).
<code>/cbp</code> or <code>/create-new-company</code>	Authenticated Owner	MSME Owner	Create new CBP (wizard or single page).
<code>/edit-cbp?id=<cbpId></code>	Authenticated Owner	MSME Owner	Edit an existing CBP.
<code>/business/<slug></code>	Public	Both	Public-facing CBP details page (SEO friendly).

Deep links: Any gated CTA (e.g., Post a Job) opens a modal directing to `/cbp` when no CBP exists.

2) Personas & Top Tasks

High-level Persona Intent This section defines not just who the personas are, but what they are actively trying to accomplish when they land in MSME Connect.

MSME Owner / Business Representative - Wants to establish a credible public presence for their company. - Wants their company to "look real" (legal name, GST/Udyam verification, professional logo,

service listings). - Wants discoverability in searches and category listings so potential clients/investors/partners can find them. - Wants control: ability to edit, publish/unpublish, and request verification without waiting on manual support. - Wants proof-of-seriousness: badges like GST Verified / KYC Verified that increase trust. - Wants to reuse the same company identity elsewhere (e.g. when posting jobs) so they don't have to retype address/contact every time.

Seeker / Visitor (public or logged-in non-owner) - Wants to *find* relevant MSMEs fast, not scroll randomly. - Trust filter: prefers MSMEs that are verified, have complete details, and look active. - Location filter: "Show me MSMEs in Gurgaon / Delhi / Bangalore." This matters because for many services (repair, logistics, on-site work) geography is critical. - Category/industry filter: "Show me Media Agencies" or "Show me Hospitality vendors" etc. - Wants a single page (`/business/<slug>`) where they can skim: - what the company does, - what services they offer, - any credentials/badges, - how to reach them. - Does not want friction to contact. They expect a clear CTA: message / email / phone.

These intents drive: - The creation wizard UX for owners (`/cbp`), - The browse/filters UX for seekers (`/smb-categories`), - The Featured MSME module on `/msme-connect` to highlight high-quality/verified businesses.

2.1 MSME Owner (Primary)

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- **Goals:** Create a credible public page, showcase services, earn verification badges, drive inquiries, and appear in category searches.
- **Top tasks:** Create CBP → Publish → Edit details → Manage services/products → Upload/replace media → Request badges → View analytics → Upgrade plan/feature listing.

2.2 Seeker/Visitor (Public)

- **Goals:** Discover relevant MSMEs, evaluate credibility, and initiate contact quickly.
- **Top tasks:** Browse by category/location → Filter by badge/plan → Open CBP → View services/media/badges → Contact owner (message/email/phone).

3) Data Model (Implementation-ready)

3.1 Business (CBP)

```
{
  "id": "uuid",
  "owner_user_id": "uuid",
  "name": "string (1-80)",
  "slug": "string (kebab-case, unique)",
  "tagline": "string (0-120)",
  "description": "string (50-2000)",
  "category": "enum(category_id)",
  "website": "url|null",
  "email": "email|null",
  "phone": "e164|null",
  "address": {"line1": "string|
```

```

null", "city": "string", "state": "string", "country": "string", "pincode": "string", "lat":
0.0, "lng": 0.0},
  "social": { "facebook": "url|null", "instagram": "url|null", "linkedin": "url|
null", "x": "url|null", "youtube": "url|null" },
  "logo_url": "url|null",
  "cover_url": "url|null",
  "gallery": ["url"],
  "services_count": 0,
  "badges": ["badge_id"],
  "plan_tier": "basic|basic_plus|premium",
  "status": "draft|pending_verification|published|suspended|archived",
  "featured_until": "iso8601|null",
  "views": 0,
  "contacts_clicked": 0,
  "created_at": "iso8601",
  "updated_at": "iso8601"
}

```

3.2 Service/Product

```

{"id": "uuid", "business_id": "uuid", "name": "string(1-80)", "short_description": "string(0-240)", "p
0, "price_max": 0, "currency": "INR", "image_url": "url|null", "tags": ["string"]}

```

3.3 Badge

```

{"id": "badge_id", "name": "KYC Verified|GST Verified|ISO Certified|Award
Winner|Partner|Top Rated", "type": "verification|achievement", "status": "earned|
requested|rejected", "issued_at": "iso8601|null"}

```

4) State Machine

```

draft —Publish—▶ published —Suspend—▶ suspended
    ▲                               |                               |
    |                               |                               |
    └── Unpublish ◀──────────┐   └──▶ appeal/review
                             |
published —Archive—▶ archived (soft delete; restore ≤30 days)

```

- **Badges:** requested → earned|rejected (independent of CBP state).

5) MSME Owner – UX Flows (Click-by-click)

5.1 Create CBP (`/cbp` or `/create-new-company`) – screen map & field labels

Form title: *Create Business Page* (left aligned).

Left rail: profile mini-card with progress; quick links (MSME Connect, Freelancer Connect, Talent Connect, MSME Jobs, Articles and Trivia).

Upper form fields (two-column layout where applicable): 1. **Name Of Your Company/Business/Trade Name As Per GSTIN Registration** – *single-line input spanning full width.*

2. **Validate Your Company/Business/Trade Name** – **dropdown** labeled *Select (used to verify against registry; triggers inline validation).*

3. ***Contact Person's Name and Your Current Designation In The Organization** – *side-by-side inputs.*

4. **Phone Number** – **numeric input with country formatting; validation on blur.**

5. **Industry Category** – **right-side dropdown** Please select* (required taxonomy).

6. **Short Description (Maximum 150 Characters)** – **single-line input with live counter.**

7. ***Detailed Description (Maximum 500 Words)** – *multi-line textarea with counter.*

8. **Company/Brand Logo (Preferred Size 100×100 px, Max 2MB)** – **file input with** Choose file** button under the descriptions. JPG/PNG/WebP accepted; preview after choose.

Consent checkboxes (below uploader):

- I accept ConneCWrk's Terms & Conditions and Privacy Policy (links open in new tab).
- I agree to receive business enquiry through ConneCWrk platform.

Primary action: Save (blue button bottom-right). Disabled until required fields + consents are satisfied.

On Save → create draft CBP; redirect to `/my-business` with success toast. If the platform supports immediate publish from this screen, show **Publish** button once minimum fields are valid.

5.2 Edit CBP (`/edit-cbp?id=<cbpId>`) – unchanged behavior with added placements

- **Top right: Save, Publish/Unpublish** toggle, and **View Public Page**.
- **Badges** panel: badge chips with statuses (earned/requested); **Request verification** opens upload modal below the panel.
- **Services/Products: Add Item** button above the list; each row has **Edit** and **Delete** icons; drag handle at left for reordering. Edit CBP (`/edit-cbp?id=<cbpId>`)
- Replace logo/cover; add/remove/reorder gallery images.
- Services: **Add, Edit, Delete**, drag to reorder; soft-delete confirms.
- Badges: **Request verification** (uploads doc), **Revoke** (owner) or **Remove** (admin).
- **Publish/Unpublish** toggles when status is draft/published.
- **View Public Page** opens `/business/<slug>` in new tab.

5.3 My Business Dashboard (`/my-business`)

- Cards for each owned CBP: status chip, last updated, views, contacts clicked.
- CTAs: **Edit, Publish/Unpublish, Feature** (upsell/plan check), **Delete/Archive**.
- If no CBP: empty state with **Create a Business Page** CTA.

5.4 Media Management

- Upload rules enforce size/type; images > thresholds prompt client-side compression.
- Failed uploads show retry; partial successes persist already-uploaded items.

5.5 Contact Handling (for Owners)

- On public CBP, **Contact** clicks open message dialog or reveal email/phone (subject to plan/credits).
- Owner receives in-app notification + email digest.

6) Seeker/Visitor – UX Flows

6.1 MSME Connect Landing (/msme-connect) – screen map & button placement

Header strip (under global navbar): two tabs — **All Business Pages** (active by default) and **My Business Page** (owners only).

Hero panel (top): title *MSME Connect*, marketing copy, CTA **Create Business Page** → (orange pill at right of hero).

Benefits panel: three bullet points explaining visibility & content; link copy *Establish your business presence on ConneCWrk, today.* opens /cbp.

Featured MSMEs grid: 3×N card grid. Each **card** shows logo, truncated name, category chip, and an orange **View Details** → button at the bottom of the card. Top-right of the section has a **View all** button which jumps to /smb-categories (All Business Pages tab with filters).

Articles section below: heading **Articles** with **View all** (top-right). Cards open /articles-detail?articleId=<id> when clicked.

Exact interactions - Create Business Page → opens /cbp (or /create-new-company if deep linked) and starts the owner flow.

- **View all (Featured MSMEs)** → /smb-categories.

- **View Details → (on a card)** → /business/<slug> (public CBP).

- **Articles → card click** → /articles-detail?articleId=<id>.

6.2 Browse Listings (/smb-categories) – screen map & controls

Top bar: left-aligned tabs **All Business Pages** | **My Business Page**; right-aligned CTA **Create Business Page** (primary pill) which deep-links to /cbp.

Filter strip (under tabs): **Filter by Category** with chip list — *All Categories* (selected by default) plus chips like *Hospitality, Media Agency, Education and Training, + More (14)* expanding the chip drawer.

Results grid: cards identical to Featured grid; each with **View Details** →.

Search bar (top center): keyword search for business name/category.

Exact interactions - Clicking any **category chip** filters instantly and updates URL query.

- **My Business Page** tab shows only the owner's CBP(s) (requires login).

- **Create Business Page** opens /cbp modal/route if the user has none.

6.3 Open CBP (/business/<slug>) - unchanged

See prior section for content blocks and CTAs (Message Owner / Email / Phone) — placements remain as before.

6.4 Articles from MSME Connect – deep link behavior

Article cards within /msme-connect mirror /articles-and-trivia grid. Clicking a card or its title opens an article detail page in the same tab. **View all** jumps to the full Articles listing.

7) Forms & Validations (Owner)

7.1 Company Details

Field	Type	Required	Constraints	Error
name	text	yes	1–80 chars; unique	Duplicate/length errors shown inline
logo	image	recommended	PNG/JPG/WebP ≤5MB; ≥256×256	Invalid type/size
cover	image	optional	PNG/JPG/WebP ≤10MB; ≥1200×400	Invalid type/size
tagline	text	no	≤120 chars	Too long
description	rich text	yes	50–2000 chars	Must be 50–2000 chars
category	select	yes	existing taxonomy	Required
website	url	no	http(s)	Invalid URL
email	email	no	RFC 5322	Invalid email
phone	phone	no	E.164	Invalid phone
address.line1	text	no	≤120 chars	Too long
city/state/ country	text	no	normalized strings	Invalid
pincode	text	no	4–10 chars	Invalid
social.*	url	no	http(s)	Invalid

7.2 Services/Products

Field	Type	Required	Constraints
name	text	yes	1–80
short_description	text	no	≤240
price_min/price_max	number	no	0–1e9; min ≤ max

Field	Type	Required	Constraints
currency	enum	no	default INR
image_url	image	no	≤5MB

7.3 Badges

- Select earned badges.
- **Request verification:** upload PDF/JPG ≤5MB + comment ≤240 chars → status `requested`.

Publish gating: require `name`, `category`, `description` valid; uniqueness check must pass.

8) API Contracts

(Owner actions require Authorization: Bearer `<token>`)

8.1 List MSMEs (public)

```
GET /api/msme/msmelisting?
page=1&limit=20&category=design&city=Gurgaon&badge=gst_verified&plan=premium&sort=updated_desc
- 200 → { "items": [Business], "page":1, "limit":20, "total":523 }
```

8.2 Featured MSMEs (public)

```
GET /api/msme/featuredmsmelisting?limit=12 - 200 → { "items": [Business] }
```

8.3 Create CBP (owner)

```
POST /api/msme/createmsme with Business schema.
- 201 → { "id":"uuid", "status":"draft" }
- 409 → { code:"DUPLICATE_NAME" }
```

8.4 Update CBP (owner)

```
PUT /api/msme/updatemsme/{id}
- 200 → { "updated": true, "status": "published|draft" }
```

8.5 Delete/Archive CBP (owner)

```
DELETE /api/msme/deletemsme/{id}?force=false
- 204 (archived); force=true → hard delete (admin only).
```

Uploads: Use multipart for binary uploads; server returns CDN URLs to persist in entity payloads.

8B) API Endpoints — Sample Requests & Responses (Owner & Visitor)

Canonical examples to align backend, clients, and the bot. These mirror your live contracts.

8B.1 Authentication APIs

Endpoint: POST /api/auth/login **Request**

```
{
  "email": "user@example.com",
  "password": "Example@123",
  "appType": "desktop1",
  "appVersion": "V3.1"
}
```

Response

```
{
  "status": true,
  "access_token": "<jwt>",
  "refresh_token": "<refresh>",
  "user": { "id": 101, "name": "Rohit", "role": "msme" }
}
```

8B.2 OTP Auth API

Endpoint: POST /api/auth/userloginwithotp - **Send OTP**

```
{ "useremail": "user@domain.com", "reqType": "sendotp" }
```

- **Verify OTP**

```
{ "useremail": "user@domain.com", "reqType": "verifyotp", "verifyCode":
"973236" }
```

8B.3 MSME Creation APIs (Two-step)

• **Step 1:** POST /api/msme/createMsmeStep1

```
{
  "companyBusinessName": "Yes Bank Ltd",
  "companyTypeId": 180,
  "contactPerson": "Divyansh",
}
```

```

"phoneNumber": "9889074567",
"chkAcceptTerms": 1,
"chkAgreeEnquiry": 1,
"shortDescription": "Financial services company",
"longDescription": "Leading MSME financial partner with 10+ years of
experience.",
"GSTIN": "07AAACY2068D1ZI"
}

```

• **Step 2:** POST /api/msme/createMsmeStep2

```

{
  "msmeId": 116,
  "industryClass": "Micro",
  "empnoId": "1",
  "establishedYear": "2012",
  "countryId": "101",
  "stateId": "10",
  "locationName": "Delhi",
  "postalCode": "110006",
  "emailAddress": "divyanshu@connecwrk.com",
  "completeAddress": "123 Industrial Area, Delhi"
}

```

Flow: /cbp Save → **Step 1** (returns msmeId) → surface Step 2 fields → **Step 2** → redirect /my-business.

8B.4 Data Model snapshot (API-facing)

Business (MSME)

```

- id (uuid)
- owner_user_id
- business_name
- description
- category
- subcategories []
- address { street, city, state, country, postalCode }
- contact { phone, email, website }
- verification_status: [pending, verified, rejected]

```

User

```

- id, name, email, phone, role (admin/msme/freelancer), created_at,
updated_at

```

8B.5 Validation & Error Handling

Rules - `business_name`, `email`, `category` are **mandatory** on publish. - Password policy: must include **uppercase**, **lowercase**, **number**, **symbol**. - **GSTIN** regex: `^[0-9]{2}[A-Z]{5}[0-9]{4}[A-Z]{1}[1-9A-Z]{1}Z[0-9A-Z]{1}$`.

Error format (example)

```
{
  "error": {
    "code": "BAD_REQUEST",
    "message": "Missing required field: business_name"
  }
}
```

9) Permissions & Access Control

- **Owner:** create, edit, publish/unpublish, archive, request badge verification, manage services/products/media.
- **Admin:** suspend CBP, verify/reject badges, manage featuring.
- **Public/Seeker:** browse, view, contact (message/email/phone subject to plan & rate limits).

Security: JWT required for owner endpoints; CSRF for form posts; rate limit create/update (≤ 10 /min/user).

Privacy: hide email/phone if owner disables; in that case show only in-app message option.

10) Ranking, Search & Discovery

- **Index fields:** `name`, `category`, `city/state/country`, `badges`, `plan_tier`, `updated_at`, `views`.
- **Ranking:** Featured > Premium boost > Text relevance > Recency > Views.
- **Caching:** 5-min cache on public lists; purge on update.

11) Analytics & Events

Common payload: `{ user_id, business_id, plan_tier, page_url, ts }` - Owner: `cbp_create_start`, `cbp_create_submit`, `cbp_create_success`, `cbp_edit_open`, `cbp_edit_save`, `cbp_publish`, `cbp_unpublish`, `cbp_service_add`, `cbp_service_remove`, `cbp_badge_request`, `cbp_badge_approved`, `cbp_badge_rejected`. - Visitor: `msme_connect_view`, `featured_msme_card_impression`, `msme_view_all_click`, `msme_list_view`, `msme_filter_apply`, `msme_card_open`, `cbp_view`, `cbp_contact_click`, `article_card_open_from_msme`, `articles_view_all_click`.

Suggested locations to fire - `/msme-connect` on load → `msme_connect_view`.

- Hero CTA **Create Business Page** click → `cbp_create_start` with `{source:"hero_cta"}`.

- Featured card visibility → `featured_msme_card_impression` (when $\geq 50\%$ in viewport).

- **View all** click in Featured or Articles → respective events with `{source_section}`.
- `/smb-categories` on filter chip click → `msme_filter_apply` with `{category}`.
- `/cbp` **Save** success → `cbp_create_success`.
- Article card click within MSME Connect → `article_card_open_from_msme`.

19) RAG routes & pipeline routing (owner/visitor) — add-on for Connie

This section defines **metadata**, **URL routing**, **intents**, and a **light rules engine** so retrieval and tool selection become deterministic.

19.1 Canonical route map (for metadata `route` field)

- `msme.connect.home` → `/msme-connect` → <https://connecwrk.com/msme-connect/>
- `msme.connect.categories` → `/smb-categories` → <https://connecwrk.com/smb-categories/>
- `msme.connect.my_business` → `/my-business` → <https://connecwrk.com/my-business/>
- `msme.connect.create` → `/cbp` (alias: `/create-new-company`) → <https://connecwrk.com/cbp/>
- `msme.connect.edit` → `/edit-cbp` (owner-only; typically query `?id=<cbpId>`) → <https://connecwrk.com/edit-cbp/?id=<cbpId>>
- `msme.connect.public_page` → `/business/<slug>` → <https://connecwrk.com/business/<slug>> (if applicable)

When generating external answers, prefer **absolute URLs** above. For in-app navigation, relative routes are fine.

19.2 Chunk metadata schema (add to every indexed unit)

```
{
  "product": "msme_connect",
  "persona": "owner|visitor",
  "route": "msme.connect.edit",
  "action": "create|edit|publish|browse|filter|contact|add_service|
request_badge|upload_logo",
  "section_path": "Create > Company Details > Name",
  "field": "company_name|industry_category|phone|short_description|...",
  "validation": {"required": true, "min": 1, "max": 80},
  "plan_requirement": "basic|basic_plus|premium|none",
  "access": "public|auth|owner",
  "api": ["/api/msme/createmsme"],
  "last_modified": "2025-10-09T00:00:00Z"
}
```

19.3 Intent catalogue (classifier labels)

Owner: `create_business_page`, `edit_business_page`, `publish_business_page`,
`add_service`, `remove_service`, `update_logo`, `request_badge_verification`,
`manage_media`, `open_my_business`.

Visitor: `browse_msme`, `filter_msme`, `open_cbp`, `contact_msme`.

Add **few-shot utterances** to the classifier (examples): `"create a business page"`,
`"verify GST"`, `"media agencies in Gurgaon"`, `"open my business page"`.

19.4 Router decision matrix

- 1) **Hard route cues** → map directly: `/cbp` or `Create Business Page` → `msme.connect.create`; `View Details/Featured` → `msme.connect.categories`.
- 2) **Persona detection**: if query contains `my/edit/publish/service/badge` and user is authenticated/owner ⇒ `owner`, else `visitor`.
- 3) **Entity extraction**: `category`, `city/state/country`, `badge`, `plan`, `field`.
- 4) **Retriever filter**: `product=msme_connect` + `route in {...}` + `persona`.
- 5) **Ranking**: hybrid (BM25 + vector) → cross-encoder re-rank; boost exact `field` matches.

19.5 Namespace strategy (vector DB)

- Namespace per product: `msme_connect`.
- Collections per persona: `owner`, `visitor`.
- Optional sub-collections per route.

19.6 URL deep-link templates (tool output)

Return deep links in answers:

```
{"deeplink":"/edit-cbp?id=<business_id>","cta":"Open Editor"}
```

For browsing: `/smb-categories?category=<id>&city=<city>&badge=<badge>`.

19.7 Sample router (Python pseudocode)

```
def route_msme(query, user):
    q = query.lower()
    persona = 'owner' if user.is_auth and any(k in q for k in ['my ', 'edit', 'publish', 'service', 'badge']) else 'visitor'

    if '/cbp' in q or 'create business page' in q:
        forced_routes = ['msme.connect.create']
    elif 'edit' in q and 'business' in q:
        forced_routes = ['msme.connect.edit']
    elif any(k in q for k in ['featured', 'view details', 'categories']):
        forced_routes = ['msme.connect.categories']
    else:
```

```

        forced_routes =
['msme.connect.home', 'msme.connect.categories', 'msme.connect.public_page']

        entities = extract_entities(q)

        results = retriever.search(
            query=query,
            namespace='msme_connect',
            filters={'persona': persona, 'route': {'$in': forced_routes}},
            boost_fields=['field', 'action']
        )
        return rerank(results, query), entities, persona

```

19.8 Entity patterns (regex/DSL)

- **Badges:** (kyc|gst|iso|top rated|partner) → badge ids.
- **Fields:** name|industry category|phone number|short description|detailed description|logo → field metadata.
- **Location/Category:** look up against controlled lists with fuzzy match.

19.9 Answer templates (owner vs visitor)

- **Owner/create:** "Open /cbp → fill **Name** (1–80 chars; unique) → **Industry Category** → **Phone Number** → **Short Description** ≤150 → **Detailed Description** ≤500 words → **Logo** 100×100 ≤2MB → accept checkboxes → **Save**."
- **Visitor/filter:** "Open /smb-categories → choose *Media Agency* → search *Gurgaon* → **View Details** → **Contact**."

19.10 Freshness & cache hints

Prefer newest `last_modified`; avoid suggesting `publish` steps if `status=draft` in context; bias to `featured` snippets for visitor discovery.

19.11 Evaluation set

Create 50 prompts split owner/visitor; compute route accuracy, action precision, and link validity; iterate on rules.

20) MSME Connect – Deep Technical Appendices (Owner / Visitor)

This section extends MSME Connect with ingestion-ready detail for Connie: exact API shapes, payload field meanings, status semantics, real-time flows, UI component behavior, and error policies. This content is meant to be chunked and indexed with metadata for high-precision retrieval.

20.1 API Endpoints (Owner/MSME and Public Discovery)

20.1.1 Create MSME – Step 1 (Create initial CBP)

- **Endpoint:** POST /api/msme/createMsmeStep1
- **Auth:** Authorization: Bearer <token>
- **Purpose:** Creates a new MSME profile (draft CBP) and returns a unique msmeId.
- **Called from:** /cbp → Save / Continue.
- **Response (success):**

```
{
  "success": true,
  "msmeId": 789,
  "message": "Business created successfully"
}
```

20.1.2 Update MSME – Step 1 (Edit initial company info)

- **Endpoint:** POST /api/msme/updateMsmeStep1
- **Purpose:** Updates Step-1 data if msmeId already exists. Used when owner comes back to fix/change:
 - companyBusinessName
 - GSTIN / Udyam
 - contactPerson / phoneNumber
 - descriptions, etc.

20.1.3 Complete MSME Profile – Step 2 (Finalize CBP)

- **Endpoint:** POST /api/msme/updateMsmeStep2
- **Auth:** Authorization: Bearer <token>, Content-Type: application/json
- **Purpose:** Adds operational details (address, contact channels, establishment info, JV/Investment flags). After Step 2, the CBP is considered complete and can move toward published.
- **Typical payload:**

```
{
  "msmeId": 789,
  "industryClass": "Micro",
  "empnoId": "10",
  "establishedYear": "2020",
  "countryId": "1",
  "stateId": "5",
  "locationName": "Gurgaon",
  "postalCode": "122001",
  "completeAddress": "Full address",
  "emailAddress": "contact@company.com",
  "alternatePhoneNo": "9876543210",
  "alternateEmail": "support@company.com",
  "businessWebsiteUrl": "https://company.com",
  "externalInvestment": "1",
  "jointVenture": "0",
}
```

```
"chkOverAge": 1
}
```

20.1.4 Fetch current business for editing (My Business / Edit CBP)

- **Endpoint:** POST /api/msme/editbusiness?mId=<businessId>
- **Purpose:** Returns full business details so /edit-cbp?id=<cbpId> can prefill the form.
- **Returned fields include:**
 - companyBusinessName, industryClass, shortDescription, longDescription,
 - empnoId, establishedYear,
 - countryId, stateId, cityName, postalCode, completeAddress,
 - contactPerson, phoneNumber,
 - emailAaddress, alternateEmail, alternatePhoneNo, businessWebsiteUrl,
 - enquiryStatus, externalInvestment, jointVenture,
 - companyTypeId, companyTypeName.

20.1.5 Delete / Archive Business

- **Endpoint:** POST /api/msme/deletebusiness?mId=<businessId>
- **Purpose:** Permanently remove (or archive) the CBP. Requires owner auth.
- **Notes:** Archival should behave like soft delete (recoverable ≤30 days). Hard delete is owner+admin or admin-only.

20.1.6 Public MSME discovery (used by seekers/visitors)

- **Featured listing:** GET /api/msme/featuredmsmelisting?limit=12
- Returns promoted/featured MSMEs for /msme-connect landing + hero sections.
- Each item includes: id, companyBusinessName, fileUploaded (logo), shortDescription, industry, location, establishedYear.
- **Curated listing / browse:** GET /api/msme/msmelisting or GET /api/msme/curatedListingMSME
- Supports filters like category, city, badge, plan, and paging.
- Used by /smb-categories and the "View all" flows.

20.1.7 Helper / reference APIs used during CBP creation

- GET /api/msme/industrycategory → list of industry / category options to populate "Industry Category" dropdown.
- GET /api/msme/countrylist → country options for address block.
- GET /api/msme/statelist?countryId={countryId} → dynamic state list after user picks a country.

These reference APIs make the "Step 2" address section interactive instead of hardcoded.

20.1.8 Verification APIs

- **GSTIN Verification:** GET /api/auth/gstinVerification?gstInNumber={gstInNumber}
- Returns official trade/legal name for that GSTIN.
- Auto-fills Company/Business Name and marks the profile as verified.
- **Udyam Aadhaar Start:** GET /api/auth/udyamaadhaar?udyamAadhaarNumber={udyamNumber}

- Returns a `request_id` representing the verification job.
- **Udyam Aadhaar Poll:** GET `/api/auth/udyamaadhaarVerify?request_id={request_id}`
- Returns `status` (`completed`, `in_progress`, `failed`) and, on success, the verified enterprise name.

Connie should treat these verification calls as prerequisites for trust badges like GST Verified / Udyam Verified.

20.2 Payload Structures & Field Semantics

These structures define what each step of the MSME onboarding and editing flow collects. The bot will surface these when users ask "Why do you need this field?" or "What should I enter here?"

20.2.1 Step 1 payload (CreateMsmeStep1 / UpdateMsmeStep1)

Core business identity + compliance + high-level pitch. Sent as multipart/form-data because of `mlogo`.

Key fields: - `companyBusinessName` (string, required) - Legal/registered trade name. Auto-filled from GSTIN/Udyam when verified. - `companyTypeId` (number, required) - Selected company/industry type. - `subIndustryId` / `otherCatName` - Specific niche/vertical if not covered by main category. - `contactPerson` (string, required) - `currentDesignation` (string) - `phoneNumber` (string, required) - `industryClass` ("Micro" | "Small" | "Medium" etc.) - `empnoId` (string/enum for headcount band) - `establishedYear` (string year) - `shortDescription` (string, required) - Hard limit ~150 characters. - `longDescription` (string, required) - Hard limit ~500 words, emojis not allowed. - `mlogo` (file upload, required) - Preferred ~100×100 px; must be JPG/PNG/WebP; size limit typically ≤2MB/5MB. - `chkOverAge` (1/0) - `chkAcceptTerms` (1/0) - `chkAgreeEnquiry` (1/0) - All must be accepted to submit. - `businessTypeApi` ("GSTIN" | "Udyam") - `GSTIN` (string, 15 chars) OR `UdyamRegNum` (string, ~19 chars) - `verifiedByAPI` ("1" or "0") - "1" means GSTIN/Udyam verification succeeded.

This payload is what actually creates the CBP draft and returns `msmeId`.

20.2.2 Step 2 payload (UpdateMsmeStep2)

Operational and publishing data.

Key fields: - `msmeId` (required) - `industryClass` (may repeat / refine classification) - `empnoId` - `establishedYear` - `countryId`, `stateId`, `locationName` (city), `postalCode`, `completeAddress` - `emailAddress`, `alternateEmail`, `alternatePhoneNo`, `businessWebsiteUrl` - `businessWebsiteUrl` must start with `http://` or `https://`. - `externalInvestment` ("1" or "0") — indicates openness to outside investors. - `jointVenture` ("1" or "0") — indicates openness to JV / partnership. - `chkOverAge` (1/0 legal attestation).

This data powers what seekers see on `/business/<slug>` and what autofills in other modules (e.g. job posting address).

20.2.3 Edit Business payload (editbusiness)

Same general shape as Step 2 plus: - `enquiryStatus` - whether this CBP is accepting inbound enquiries. - `companyId`, `companyName` - classification info. - `otherCatName` - custom category string.

Used in `/edit-cbp?id=<cbpId>` and `/my-business` so owners can revise without re-creating the CBP.

20.3 Status Management (Verification & Publication)

20.3.1 CBP lifecycle states

- `draft` - created but not published; owner is still filling details.
- `pending_verification` - waiting for business verification / review.
- `published` - visible on `/msme-connect`, `/smb-categories`, and `/business/<slug>`.
- `suspended` - hidden by admin for compliance; owner sees warning banner.
- `archived` - soft-deleted by owner; can be restored ≤ 30 days.

Allowed transitions: - `draft` → Publish → `published` - `published` → Suspend → `suspended` - `published` → Archive → `archived` - `published` → Unpublish → `draft` - `suspended` → appeal / review → (back to `published` if cleared)

20.3.2 Verification status

Separate from publish state. - Business verification uses GSTIN or Udyam. - We store: - verification source (GSTIN / Udyam) - `verifiedByAPI`: "1" | "0" - verification status from Udyam poll: `completed`, `in_progress`, `failed`. - Once verified, Connie should surface badges like "GST Verified" or "KYC Verified" and treat the business as trustworthy.

This status is what powers badges in the CBP header and filters like "only GST verified" in `/smb-categories`.

20.4 Real-time Updates / Live UX Behaviors

20.4.1 GSTIN instant validation

- Owner enters GSTIN in Step 1 and chooses GSTIN as verification method.
- Frontend calls `GET /api/auth/gstinVerification?gstinNumber=<gstin>`.
- Response returns official registered/trade name.
- UI auto-fills `companyBusinessName` and sets `verifiedByAPI = "1"`.
- Result: faster onboarding, less fake data.

20.4.2 Udyam Aadhaar polling

- Owner enters Udyam number (for MSMEs that may not have GSTIN).
- Frontend calls `GET /api/auth/udyamaadhaar?udyamAadhaarNumber=<num>` → gets `request_id`.

- Frontend polls `GET /api/auth/udyamaadhaarVerify?request_id=<id>` every ~30s (up to ~7 tries).
- When status=`completed`, we store the returned enterprise name, mark verified, and move the CBP toward a publishable state.
- When status=`failed`, we show an inline error and keep Publish disabled until corrected.

20.4.3 Dynamic State dropdown

- In Step 2, when the owner chooses `countryId`, we call `GET /api/msme/statelist?countryId=<id>` and auto-populate the State dropdown.
- This prevents invalid state/country combos, and Connie can tell users "please choose Country first; I'll then unlock State".

20.4.4 Draft persistence / resume later

- After Step 1 Save, we already have an `msmeId`.
- The owner can exit and come back later to finish Step 2.
- `/my-business` will show this draft with status `draft` or `pending_verification` and a CTA like Edit / Continue.

Connie guidance to owner: "You've already created msmeId 789. Open My Business, click Edit, and complete Step 2 so we can publish."

20.5 UI Components (Owner vs Visitor)

20.5.1 Owner-facing forms (Create CBP / Edit CBP)

- Screen title: "Create Business Page" or "Edit Business Page".
- Left rail: mini-profile / progress sidebar plus quick links to other modules (MSME Connect, Freelancer Connect, Talent Connect, MSME Jobs, Articles and Trivia).
- Main form groups in Step 1:
 - "Name Of Your Company/Business/Trade Name As Per GSTIN Registration"
 - "Validate Your Company/Business/Trade Name" (verification selector for GSTIN/Udyam)
 - "Contact Person's Name" and "Your Current Designation In The Organization"
 - "Phone Number" (validated on blur)
 - "Industry Category" (dropdown)
 - "Short Description (Maximum 150 Characters)" (with counter)
 - "Detailed Description (Maximum 500 Words)" (with counter)
 - "Company/Brand Logo (Preferred Size 100×100 px, Max 2MB)" (file picker with preview)
- Consent checkboxes:
 - Accept Terms & Conditions / Privacy Policy (links open in new tab)
 - Agree to receive business enquiries via ConneCtWrk
- Primary CTA: **Save** (blue, bottom-right). Disabled until required fields + consents are filled.
- Post-save behavior: create draft CBP, then redirect to `/my-business` or reveal Publish if requirements are met.

20.5.2 `/edit-cbp?id=<cbpId>` top bar

- Right side controls:
 - **Save**
 - **Publish / Unpublish** toggle (if status is `draft` or `published`)

- **View Public Page** (opens `/business/<slug>` in new tab)
- Sections in Edit view:
- **Badges panel:** shows earned / requested badges with status chips; "Request verification" opens upload modal for docs.
- **Services/Products section:** has "Add Item"; each service row has Edit, Delete, and drag handle for reordering.
- **Media section:** logo, cover, gallery with upload, replace, and delete. Oversized files trigger compression prompts.

20.5.3 `/my-business`

- Card per CBP owned:
- status chip (`draft`, `published`, etc.)
- last updated timestamp
- KPIs like `views`, `contacts clicked`
- CTAs: Edit, Publish/Unpublish, Feature (upsell), Delete/Archive.
- Empty state if no CBP:
- Message encouraging creation
- CTA **Create a Business Page** → `/cbp`

20.5.4 Visitor-facing surfaces

- `/msme-connect` :
- Hero panel with marketing copy and "Create Business Page" CTA (orange pill).
- Featured MSMEs grid (3×N); card shows logo, business name, category chip, and "View Details →".
- "View all" button jumps to `/smb-categories`.
- Articles block below with "View all"; article cards deep-link to article detail.
- `/smb-categories` :
- Tabs: "All Business Pages" | "My Business Page".
- Top-right CTA: "Create Business Page" → `/cbp`.
- Filter chip strip (category chips like Hospitality, Media Agency, Education & Training, etc.).
- Search bar for keywords.
- Results grid with the same MSME cards (logo, truncated name, category chip, and "View Details →").
- Clicking "View Details →" opens `/business/<slug>`.
- `/business/<slug>` :
- Public CBP profile with: logo / cover, description, badges, services/products list, media/gallery, and Contact options (message/email/phone gated by plan/visibility).

20.6 Error Handling & Validation Behavior

This is what Connie should say when users hit problems.

20.6.1 Field-level validation (inline errors)

- `companyBusinessName` is required and must be unique.
- `shortDescription` must be within its character limit (~150 chars).
- `longDescription` must be within its word limit (~500 words) and cannot contain emojis.
- `businessWebsiteUrl` must start with `http://` or `https://`.

- `phoneNumber` must be a valid phone (≤ 12 digits / proper formatting).
- `postalCode` must satisfy length (typically 6 for India, up to ~10 globally).
- Logo upload:
 - required for publishability,
 - must be JPG/PNG/WebP,
 - size cap (2MB–5MB depending on slot),
 - minimum dimensions (e.g. 100×100 or 256×256).
- Consent checkboxes must be ticked (T&C, enquiry consent, age/eligibility).

UI exposes these as inline messages near each field, and keeps the Save / Publish button disabled until blockers are fixed.

20.6.2 Verification errors (GSTIN / Udyam)

- If GSTIN number or Udyam Aadhaar number fails verification:
 - Surface the message returned by the verify API (ex: "Enterprise not found" / "Invalid GSTIN").
 - Keep `verifiedByAPI` at "0".
 - Keep Publish disabled.
- If Udyam polling returns `failed`, prompt owner to correct the number and retry.
- If polling remains `in_progress`, show "Verification in progress" state rather than letting them continue without verification.

Connie guidance to owner: "Your verification hasn't completed yet. We'll automatically fill your legal business name once it succeeds."

20.6.3 Network / backend errors (toast patterns)

- After any POST/PUT (create, update, delete):
 - If `response.success === false`, show toast: `Operation failed` or backend-provided `response.message`.
 - If the request throws (network/server), show toast: `Network error occurred`.
- For destructive actions like delete/archive:
 - Always confirm intent.
 - After success, remove the CBP card from `/my-business` list or mark it archived.

This lets Connie answer support tickets like "Why did it say Network error occurred when I tried to save my business profile?"

20.7 Retrieval / Chunking Guidance for Connie

When these appendices are chunked into the knowledge base: - **Namespace suggestion** - `api_reference`: all endpoints, payload schemas, verification APIs, helper lookup APIs, lifecycle responses. - `text_reference`: owner/visitor flows, screen maps, CTA placements, publish rules. - `tables`: status states (`draft`, `published`, `suspended`, `archived`), verification statuses (`completed`, `in_progress`, `failed`), field constraints. - **Metadata to attach per chunk**

```
{
  "product": "msme_connect",
  "persona": "owner" || "visitor",
  "route": "msme.connect.create" || "msme.connect.edit" ||
```

```

"msme.connect.my_business" [] "msme.connect.categories" []
"msme.connect.public_page",
  "action": "create_business_page" [] "edit_business_page" []
"publish_business_page" [] "request_badge_verification" [] "filter_msme" []
"contact_msme",
  "field": "companyBusinessName" [] "shortDescription" [] "longDescription" []
"businessWebsiteUrl" [] "phoneNumber" [] "postalCode" [] "mlogo" [] null,
  "plan_requirement": "basic" [] "basic_plus" [] "premium" [] "none",
  "access": "public" [] "auth" [] "owner",
  "api": ["/api/msme/createMsmeStep1", "/api/msme/updateMsmeStep2", "/api/
auth/gstinVerification", "/api/msme/featuredmsmelisting"],
  "last_modified": "2025-10-28T00:00:00Z"
}

```

This guarantees Connie can: - answer "How do I register my MSME?" with `/cbp` + Step 1 + Step 2 guidance, - answer "Why is my business not showing yet?" with `draft` vs `published` rules and verification steps, - answer "Show MSMEs in Gurgaon" with `/smb-categories` + `featuredmsmelisting` / `msmelisting` APIs, - answer error questions using the same validation logic the UI uses.

End of Section 20.