

Group 27 : ConnectSphere



Dhirubhai Ambani University Technology

Formerly DA-IICT

:Group Members:

Manit Shah(202301425 – Group Leader)

Jill Chhagnani(202301273)

Manya Shah(202301424)

Neel Gamit(202301469)

Kathan Balar(202301279)

Jay Balar(202301422)

Vasu Bhensdadia(202301416)

Lingampalli Venkata(202301280)

Samay Kharidia(202301433)

Soham Rathod(202301457)

ConnectSphere – Functional Requirements with Elicitation Techniques

1. User Authentication

- **Description:** Signup/Login using email, phone, or third-party providers (Google, Facebook).
 - **Elicitation Technique:** Observation, Surveys
-

2. Profile Management

- **Description:** Profile picture, bio, contact info, privacy (public/private).
 - **Elicitation Technique:** Document Analysis
-

3. Messaging System

- **Description:** One-on-one & group chats with text, emojis, images, read receipts.
 - **Elicitation Technique:** User Workshops (users requested real-time messaging)
-

4. Content Upload

- **Elicitation Technique:** Surveys
-

5. Engagement Tools

- **Description:** Likes, threaded comments, shares, bookmarks, story reactions.
 - **Elicitation Technique:** Brainstorming
-

6. Privacy Control

- **Description:** The system shall allow users to set their profile visibility as public or private, controlling who can view their information and posts.
 - **Elicitation Technique:** Surveys
-

7. Connection

- **Description:** The system shall allow users to follow/unfollow, send/accept/decline friend requests, update follower counts in real time, and manage private vs. public connection approvals.
 - **Elicitation Technique:** Document Analysis
-

8. Push Notifications

- **Description:** Alerts for likes, comments, followers, story views, and messages.
 - **Elicitation Technique:** Prototyping feedback
-

9. Content Feed

- **Description:** Dynamic news feed showing posts from followed users, trending topics.
 - **Elicitation Technique:** Prototyping (mockups tested with sample users)
-

10. Communities

- **Description:** The system shall allow users to create and join communities, with options for free or paid membership, where paid communities provide exclusive access to premium content and discussions.
 - **Elicitation Technique :** from surveys
-

11. Reporting Content

- **Description:** The system shall allow users to report posts, comments, or accounts for inappropriate content, which will be flagged for review by the system administrator or moderation team.
 - **Elicitation Technique:** Surveys
-

12. Creator Dashboard

- **Description:** The system shall provide content creators with a dashboard to track post performance, audience engagement (likes, comments, shares), follower growth, and revenue from paid subscriptions or premium content.
 - **Elicitation Technique:** Surveys
-

13. Content Collaboration

- **Description:** The system shall allow content creators to collaborate on posts by tagging other creators as collaborators, ensuring the post is published on both profiles with shared engagement metrics, while requiring consent from the tagged creator before publishing.
- **Elicitation Technique:** One-to-One Interview

Non-Functional Requirements for ConnectSphere(NFRs)

Scalability

- **Description:** It is one of the key priorities for technical stakeholders for future growth.\
- **Elicitation Technique:** Formal Interviews with Investors (future growth expectations).

Performance

- **Description:** Fast feed loading and real-time messaging.
- **Elicitation Technique:** From survey.

Security

- **Description:** Role-based access control and secure password storage.
- **Elicitation Technique:** From surveys and interviews.

Availability

- **Elicitation Technique:** From surveys and interviews.

Connect Sphere Use Cases

1. General User Options

UC-01: User Registration

- **Description:** Allows a user to create a new account or log into an existing one to access the platform.
- **Actors:** General User
- **Pre-conditions:** User is on the landing page.
- **Main Flow:**
 1. User chooses to register with email.
 2. System validates that the username/email is unique.
 3. User sets a secure password meeting security requirements.
 4. User logs in successfully.
- **Alternative/Exception Flows:**
 - **Duplicate Account:** System alerts that email/username is already taken.
 - **Weak Password:** System rejects password and requests a stronger one.

UC-02: Profile Management

- **Description:** Users customize their personal profile and privacy settings.
- **Actors:** Registered User
- **Main Flow:**
 1. User accesses their profile settings.
 2. User updates bio, personal info, or uploads a profile picture.
 3. User sets profile visibility to public or private.
 4. System saves changes instantly.
- **Alternative/Exception Flows:**
 - **Duplicate Username:** System denies that duplicate username is already taken.

UC-03: View and Interact with Feed

- **Description:** Users view updates from followed accounts and interact via likes, comments, or shares.
- **Actors:** Content Consumer
- **Main Flow:**
 1. System displays a dynamic feed of posts from followed users.
 2. User scrolls through the feed; newest posts appear at the top.
 3. **To Like:** User taps the like button; count updates instantly.
 4. **To Comment:** User submits a text comment; it appears under the post.
 5. **To Share:** content appears on their profile with original attribution and can use share button as well to share link.
- **Alternative/Exception Flows:**
 - **Empty Feed:** System prompts user to follow others if no posts are available.
 - **Duplicate Like:** System prevents a user from liking a post twice.(unlikes on clicking already liked post)
 - **Empty Comment:** System rejects blank comments.

UC-04: Create and Publish Post

- **Description:** Users upload content to share with followers or publicaly or privately.
- **Actors:** User/Creator

- **Main Flow:**
 1. User selects text, image, or video to upload.
 2. User publishes the post.
 3. Post appears in the feed.
- **Alternative/Exception Flows:**
 - **Invalid Format/Size:** System rejects files that are too large or unsupported.

UC-05: Direct Messaging

- **Description:** Users communicate privately with other users.
- **Actors:** User
- **Main Flow:**
 1. User searches and selects other user.
 2. User sends text, emojis, or images.
 3. Message is delivered in real-time.
 4. Recipient receives a message in chat section.
- **Alternative/Exception Flows:**
 - **Blocked:** System prevents sending messages if the user is blocked.

UC-06: Manage Connections

- **Description:** Users manage their social network by following or unfollowing others.
- **Actors:** User
- **Main Flow:**
 1. User searches for an account.
 2. User clicks "Follow" or "Unfollow" or "Removing unaccepted follow request".
 3. System updates the follower count and feed immediately.
- **Alternative/Exception Flows:**
 - **Self-Follow:** System prevents a user from following themselves.

2. Content Creator Options

UC-07: View Creator Analytics

- **Description:** Creators view performance metrics for their content.
- **Actors:** Content Creator(verified user)
- **Pre-conditions:** User must be verified.
- **Main Flow:**
 1. Creator accesses the dashboard(analytics).
 2. System displays impressions, likes, shares, comments, engagement rate,impressions.
 3. System displays growth trends graphical view and revenue from communities.
- **Alternative/Exception Flows:**
 - **No Data:** System indicates analytics are not yet available.
 - **Not verified user:** System prevents non verified user from getting analytics

UC-08: Collaborative Posting

- **Description:** Creators co-author posts with other users.
- **Actors:** Content Creator
- **Main Flow:**
 1. Creator drafts a post.
 2. Creator tags another creator as a collaborator.
 3. System requests consent from the tagged creator.
 4. Once approved, the post appears on both profiles, sharing engagements.

- **Alternative/Exception Flows:**
 - **No Consent:** System prevents collaboration publishing without approval.
-

3. Administration & Moderation

UC-09: Moderate Content and Users

- **Description:** Admins and users manage safety by reporting or suspending violations.
- **Actors:** User (Reporter), System Admin (Enforcer)
- **Main Flow (Reporting):**
 1. User flags a post, comment, or account for inappropriate content.
 2. Report is sent to the moderation team.
- **Main Flow (Suspending):**
 1. System Admin reviews user history.
 2. Admin suspends the user with a custom explanation.
- **Alternative/Exception Flows:**
 - **Security Appeal:** Admin cannot suspend if an appeal is currently pending.
 - **Missing Reason:** System requires a valid violation reason before suspension.

Connect Sphere User Stories

1. Account & Login

Front of Card

| As a general user, I want to create an account using email or login using username so that I can access the platform and start sharing content.

Back of Card

Success Scenario:

- User registers with email or username.
- Unique username/email is validated.
- System sends verification email.
- User sets a secure password.
- User logs in and logs out securely.

Failure Scenarios:

- **Duplicate account:** This email/username is already taken.
- **Weak password:** Password must meet security requirements.
- **Email not verified:** Please confirm your email to continue.
- **Server error:** Unable to process registration. Try again later.

2. View Feed

Front of Card

As a content consumer, I want to scroll through a feed of posts so that I can see updates from people I follow.

Back of Card

Success Scenario:

- Feed displays posts from followed users.
- Newest posts appear at the top.
- Posts load with full content (images, text, likes, comments).

Failure Scenarios:

- **Empty feed:** Your feed is empty. Follow users to see posts.
 - **Network error:** Unable to load feed. Check your connection.
 - **Server issue:** Something went wrong. Please refresh.
-

3. Create Post

Front of Card

As a user, I want to upload photos, videos, or text so that I can share content with my followers.

Back of Card

Success Scenario:

- User selects and uploads text, image, or video.
- Captions and tags can be added.
- Post appears in feed after publishing.

Failure Scenarios:

- **Invalid format/size:** Unsupported file type or file too large.
 - **Server error:** Upload failed. Please try again later.
 - **Unauthorized:** Please log in to create a post.
-

4. Like Post

Front of Card

| As a user, I want to like posts so that I can show appreciation for content I enjoy.

Back of Card

Success Scenario:

- User taps like/unlike.
- Like count updates instantly.
- System prevents duplicate likes.

Failure Scenarios:

- **Unauthorized:** Login required to like posts.
-

5. Comment on Post

Front of Card

| As a user, I want to leave comments so that I can share my thoughts and interact with others.

Back of Card

Success Scenario:

- User submits comment.
- Comment appears under post.
- Comment count updates.
- User can edit/delete own comments.

Failure Scenarios:

- **Empty input:** Comment cannot be blank.
 - **Unauthorized:** Please log in to comment.
-

6. Share/Repost

Front of Card

As a user, I want to share or repost content so that others in my network can also see it.

Back of Card

Success Scenario:

- User selects share/repost option.
- Original creator attribution is displayed.
- Shared post appears in followers' feed.

Failure Scenarios:

- **Unauthorized:** You must log in to share posts.
-

7. Direct Messaging

Front of Card

As a user, I want to send and receive private messages so that I can communicate directly with friends or followers.

Back of Card

Success Scenario:

- User sends text, emoji, or media.
- Messages deliver in real time.
- User can mute or delete conversations.
- Notification is received for new messages.

Failure Scenarios:

- **Unauthorized:** Please log in to send messages.
 - **Blocked:** You cannot message this user.
-

8. Notifications

Front of Card

As a user, I want to receive notifications when someone interacts with my content so that I can stay updated.

Back of Card

Success Scenario:

- Notifications are triggered for likes, comments, follows, and messages.
- User can adjust notification preferences.
- Notifications appear in-app and optionally by email.

Failure Scenarios:

- **Disabled notifications:** *Enable notifications in your settings.*
 - **Delay or error:** *Notifications may be delayed.*
-

9. Follow/Unfollow

Front of Card

As a user, I want to follow or unfollow people so that I can control whose content appears in my feed.

Back of Card

Success Scenario:

- User follows/unfollows an account.
- Feed updates immediately.
- System prevents following self.

Failure Scenarios:

- **Unauthorized:** *Please log in to follow users.*
 - **Server issue:** *Unable to update follow status.*
-

10. Search

Front of Card

As a user, I want to search for users or posts so that I can quickly find specific content.

Back of Card

Success Scenario:

- User searches by username, hashtags, or keywords.
- Relevant results are displayed.
- Recent searches are saved.

Failure Scenarios:

- **No matches:** No results found.
 - **Server error:** Unable to fetch results.
-

11. Save/Bookmark

Front of Card

| As a user, I want to save posts so that I can revisit them later.

Back of Card

Success Scenario:

- User bookmarks a post.
- Saved posts appear in a separate section of profile.
- User can remove bookmarks.

Failure Scenarios:

- **Unauthorized:** Login required to save posts.
 - **Server issue:** Unable to save post.
-

12. Edit/Delete/Archive Post

Front of Card

| As a user, I want to edit, delete, or archive my posts so that I can correct mistakes or remove unwanted content.

Back of Card

Success Scenario:

- User edits caption or tags.
- User deletes post permanently.

- Changes update instantly in feed.

Failure Scenarios:

- **Unauthorized:** You can only edit your own posts.
 - **Server error:** Action failed. Try again later.
-

13. Profile Management

Front of Card

As a registered user, I want to customize my profile with photos, bio, and personal information so that others can discover and connect with me.

Back of Card

Success Scenario:

- User uploads profile picture.
- User edits bio and personal info.
- Privacy settings are updated successfully.

Failure Scenarios:

- **Invalid file type:** Upload a valid image format.
 - **Unauthorized:** Please log in to update your profile.
 - **Server issue:** Unable to save changes.
-

14. Report/Block

Front of Card

As a user, I want to report or block inappropriate content or people so that my experience is safe.

Back of Card

Success Scenario:

- User reports posts, comments, or accounts.
- User blocks another account.
- Report is sent to moderators.

- Blocked users cannot interact.

Failure Scenarios:

- **Unauthorized:** Please log in to report or block.
 - **Server error:** Unable to process your request.
-

15. Creator Dashboard & Analytics

Front of Card

As a content creator, I want to view insights on my posts and followers so that I can understand my audience engagement.

Back of Card

Success Scenario:

- Dashboard shows impressions, likes, shares, comments, saves.
- Follower growth trends are displayed over time.
- Top-performing posts are highlighted.

Failure Scenarios:

- **No data:** Analytics not available yet.
 - **Server error:** Unable to load insights.
-

16. Content Collaboration

Front of Card

As a content creator, I want to collaborate with other creators on posts so that I can expand my reach.

Back of Card

Success Scenario:

- User tags another creator as collaborator.
- Post appears on both creators' profiles.
- Engagement is shared between both creators.

Failure Scenarios:

- **Unauthorized:** Collaboration requires consent from tagged creator.
 - **Server issue:** Unable to publish collaboration.
-

17. Community Manager: Add/Remove Members

Front of Card

As a Community Manager, I want to add & remove members so that only verified users join my group.

Back of Card

Success Scenario:

- Reviews pending member requests.
- Approves or denies requests based on criteria.

Failure Scenarios:

- **User Input Error (community full):** Community capacity reached. Cannot approve additional members.
 - **Security Concern (unauthorized access):** You are not authorized to manage this community.
-

18. System Admin: Suspend a Violating User

Front of Card

As a System Admin, I want to suspend a user who violates community guidelines.

Back of Card

Success Scenario:

- System Admin reviews a user's history.
- System allows suspension with a custom explanation.

Failure Scenarios:

- **System failure (account lockout error):** Failed to suspend user. Retry in 5 minutes.

- **User input error (invalid reason):** Suspension reason is missing. Select a valid guideline violation.
 - **Hardware malfunction (unresponsive tool):** Moderation panel offline. Check your internet connection.
 - **Security concern (appeal request):** User has initiated an appeal. Cannot suspend until resolved.
-

19. Investor: View Financial Metrics

Front of Card

| As an investor, I want to view the platform's financial metrics to assess profitability.

Back of Card

Success Scenario:

- User logs into the investor portal.
- System displays revenue, user growth, and ad performance.

Failure Scenarios:

- **System failure (data unavailability):** Financial data is currently being processed. Check back tomorrow.
 - **User input error (invalid login):** Incorrect credentials. Reset your password to access.
 - **Hardware malfunction (device crash):** Portal not loading. Ensure your browser is updated.
 - **Security concern (fraud detection):** Unusual login detected. Complete a security verification step.
-

20. Developer Documentation

Front of Card

| As a developer, I want a modular and well-documented system architecture so that I can efficiently implement, debug, and maintain features in Connect Sphere.

Back of Card

Success Scenarios:

- Code is divided into clear, reusable modules (e.g., User Management, Messaging, Feed).
- APIs are fully documented with request/response formats.
- Unit tests and integration tests run successfully.
- Deployment and environment setup instructions are available and verified.

Failure Scenarios:

- Missing documentation: Developers spend excessive time understanding code.
- Broken modules or failed tests: Features cannot be implemented or deployed.
- API errors or inconsistencies: Integration with frontend or other services fails.

(7) POC of Sprint 1

Objective :

To define system requirements and deliver an initial working implementation of the platform, focusing on:

- Gathering functional and non-functional requirements
- Identifying and refining epics
- Resolving requirement conflicts

Solving part of epic 1 and implementing epic 2

