**CAPSTONE PROJECT 2**

**1. Quarterly Audits are planned Q1 , Q2, Q3, Q4 for this Project What is your knowledge on how these Audits will happen for a BA ?**

**Q1. Process Audit**

* Ensures the team is following defined processes (Agile, SDLC, documentation standards).
* Reviews your BA artifacts like BRD, RTM, and change logs.

**Q2. Compliance Audit**

* Ensures the project is following legal, regulatory, or CSR requirements.
* Important in CSR-funded projects where transparency is key.

**Q3. Performance/Progress Audit**

* Measures if the team is meeting milestones, timelines, and deliverables.
* Auditors review whether the product is meeting farmer and stakeholder expectations.

**Q4. Financial Audit**

* Reviews how the budget (2 Crores INR) is being used.
* Although more relevant to PM and finance leads, your change requests may affect budget estimates.

**Q1: Requirements & Planning Phase**

* Stakeholder Analysis completed
* Business Requirements Document (BRD) signed off
* Initial Use Cases and User Stories drafted
* Baseline Scope defined
* Farmer needs gathered and documented (from Peter, Kevin, Ben)
* Compliance with CSR Objectives noted
* Approval or feedback from Mr. Henry, Mr. Pandu, Mr. Dooku

**Q2: Design & Mid-Development**

* RTM linked to Design Components
* Participation in UI/UX reviews (focus on user-friendliness)
* Validate development features against requirements
* Document gaps or changes and raise CRs
* Update user stories & acceptance criteria as needed
* Share updated MoMs and feedback logs

**Q3: Testing Support & UAT Prep**

* Map BA requirements to test cases with QA team (Jason, Alekya)
* Support UAT scenario preparation
* Log feedback and mismatches from testing team
* Maintain updated RTM with test coverage
* Coordinate with Farmers (end users) for early feedback

**Q4: Final Validation & Closure**

* Final sign-off of requirements from stakeholders
* CSR compliance verification inputs (impact documentation)
* Lessons learned and retrospective notes
* Final RTM and BRD handed off
* Transition documentation to support/maintenance team
* Feedback collection from Farmers on product usability

2.**Before the Project is going to Kick Start, The Committee asked Mr Karthik to submit BA Approach Strategy Write BA Approach strategy (As a business analyst, what are the steps that you would need to follow to complete a project – What Elicitation Techniques to apply, how to do Stakeholder Analysis RACI/ILS, What Documents to Write, What process to follow to Sign off on the Documents, How to take Approvals from the Client, What Communication Channels to establish n implement, How to Handle Change Requests, How to update the progress of the project to the Stakeholders, How to take signoff on the UAT- Client Project Acceptance Form )**

Business Analysis Planning & Initiation

Objective:

Define the roadmap for requirements gathering stakeholder engagement, documentation, validation, and approvals.

 Key Activities:

* Understand project goals from the Committee (Mr. Henry, Mr. Pandu, Mr. Dooku)
* Identify key stakeholders (farmers, manufacturers, internal APT team)
* Set up BA documentation repository (Confluence, Google Drive, etc.)
* Establish standard templates for BRD, FRD, MoMs, RTM, CRs

Stakeholder Analysis & Role Definition

Stakeholders Identified:

Primary: Mr. Henry (Visionary), Mr. Pandu (Finance), Mr. Dooku (Coordinator), Peter/Kevin/Ben (Farmer Representatives)

Secondary: Mr. Karthik (Delivery Head), Mr. Vandanam (PM), Dev, QA, Network, DB teams

Elicitation Techniques

Techniques to Be Applied:

* Workshops – Group sessions with stakeholders to understand pain points
* Interviews – 1:1 with Peter, Kevin, Ben, and manufacturer representatives
* Surveys/Questionnaires – To gather insights from wider farmer base
* Observation (Job Shadowing) – Understand current purchase processes
* Document Analysis – Review government regulations, existing portals

Document Sign-off & Approval Process

Process to Follow:

* Share draft document (BRD, FRD) with relevant stakeholders.
* Conduct walkthrough sessions to explain content.
* Collect feedback within a defined review cycle (3–5 days).
* Incorporate changes and finalize version.
* Get formal sign-off via email or digital approval (DocuSign / Signed PDF).

Communication Strategy

Channels to Use:

* Email – For formal communication and approvals
* WhatsApp / Teams Group – For quick updates with internal team
* Meetings – Weekly status calls with PM, fortnightly reviews with Committee
* Shared Drives / Confluence – Central repository for project documents
* Progress Reports – Biweekly dashboard to all stakeholders

Change Request Management

 Change Request Handling:

* CR Raised → By Stakeholder or Team
* BA Documents impact → On requirements, cost, timeline
* CR reviewed by PM → For feasibility
* Sent to Committee → For final approval
* RTM and FRD updated → Reflecting CR
* Change implemented → Post approval only

 Status Updates to Stakeholders

Methods:

* Biweekly Progress Reports → Shared with Committee
* Milestone Reviews → Highlight completed deliverables vs plan
* Issue Tracker Summary → Risks, dependencies, escalations

UAT Sign-off & Client Acceptance

UAT Sign-off Process:

* Prepare UAT Plan & Scenarios (based on FRD & Use Cases)
* Coordinate UAT with stakeholders (Peter, Kevin, Ben, Committee)
* Record feedback, defects, and fixes
* Once UAT is passed, fill out:
* UAT Completion Checklist
* Client Project Acceptance Form
* Get formal sign-off from Committee

**3.Explain and illustrate 3-tier architecture?**

The 3-tier architecture is a software design pattern that separates the application into three logical layers:

**1. Presentation Tier (Client Layer)**

What It Is:

* This is the front-end—what the user sees and interacts with.
* Responsible for displaying data and capturing user inputs.

**Example:**

* Farmer Login/Register
* View/Order Products
* Track Order Status
* Manufacturer Dashboard

**2. Application Tier (Business Logic Layer)**

What It Is:

* Handles core business logic, processes data, and communicates between UI and DB.
* Validates requests, applies rules, and ensures secure transactions.

**Example:**

* Business Rules
* Authentication/Validation
* Order Processing Logic
* Notifications/Alerts

**3. Data Tier (Database Layer)**

What It Is:

* Stores and manages all the project’s data securely.

**Example:**

* Farmer & Manufacturer Info
* Product Inventory
* Orders & Transactions
* Delivery Records

**4.Business Analyst should keep What points in his/her mind before he frames a Question to ask to the Stakeholder ( 5W 1H – SMART – RACI – 3 Tier Architecture – Use Cases, Use case Specs, Activity Diagrams,Models, Page designs)**

**5W 1H**

* Who? Who is involved and who will perform this task?
* What? What is the main objective and what kind of process is involved?
* Where? Where does this activity take place?
* When? When will it be performed?
* Why? Why is it needed and why are we solving the problem?
* How? How is the task performed?

**SMART**

S – Specific: Be clear on what area or module you're asking about

M – Measurable: Try to uncover quantifiable expectations ("How many products per page would you like to see?")

A – Achievable: Ask only what's within project or technical scope

R – Relevant: Make sure the question aligns with business goals (e.g., improving farmer access)

T – Time-bound: Include timelines or trigger events in questions ("When do you expect the order to be fulfilled?")

**RACI Roles**

* Who is Responsible? (e.g., Peter for farmer feedback)
* Who is Accountable? (e.g., Committee for approval)
* Who should be Consulted? (e.g., Dev/QA for technical feasibility
* Who should be Informed? (e.g., Project Manager)

**3-Tier Architecture Impact**

Presentation Layer: What kind of interface? mobile or web?

Application Layer: Should the system auto approve orders or have manual reviews?

Data Layer: What kind of information should we store for each purchase or product?

**Use Cases / Use Case Specs**

"What do you expect to happen after placing an order?"

Activity Diagrams

"What steps do you follow to restock fertilizer inventory?"

**Wireframes / Page Design**

"Do you prefer a product list view or grid view?"

**5.As a Business Analyst, What Elicitation Techniques you are aware of? ( BDRFOWJIPQU)**

**Brainstorming**

Used to generate a large number of ideas from a group, often in early stages.

**Document Analysis**

Reviewing existing documentation to understand the current state or extract requirements.

**Requirements Workshops**

Structured sessions with stakeholders to define, prioritize, and agree on requirements.

**Focus Groups**

Gathering insights from a group of selected stakeholders or users about expectations and experiences.

**Observation**

Watching users perform tasks to understand their workflows and uncover hidden requirements.

**Walkthroughs**

A step-by-step review of a process or document to gather feedback and identify gaps.

**Job Shadowing**

Closely observing a stakeholder as they perform their job to gather detailed understanding of tasks.

**Interface Analysis**

Analyzing the interactions between systems or between user and system to determine requirements.

**Prototyping**

Creating visual representations or mockups to help stakeholders visualize requirements.

**Questionnaires / Surveys**

Used to gather information from a large audience quickly, especially when stakeholders are remote.

**User Stories / Use Cases**

Capturing functional requirements from the user’s perspective, typically used in Agile environments.

**6.Which Elicitation Techniques can be used in this Project and Justify your selection of Elicitation Techniques? Prototyping, Use case Specs, Document Analysis, Brainstorming**

|  |  |  |
| --- | --- | --- |
| **S.No** | **Techniques** | **Description** |
| 1 | Brainstorming | Generating creative ideas or solutions with stakeholders (e.g., features needed for farmer app). |
| 2 | Document Analysis | Reviewing existing documents (manuals, forms, reports) to gather background info. |
| 3 | Requirements Workshop | Group sessions to elicit, refine, and prioritize requirements collaboratively. |
| 4 | Focus Groups | Targeted group discussions with users sharing common roles  |
| 5 | Observation | Watching users perform tasks to understand real workflows (e.g., how farmers order fertilizers now). |
| 6 | Workshops | Interactive sessions for discussing, refining requirements, or solving problems. |
| 7 | Job Shadowing | Sitting alongside users during their daily tasks to learn their process firsthand. |
| 8 | Interviews | One-on-one or group conversations to gather in-depth information. |
| 9 | Prototyping | Using mockups or wireframes to help stakeholders visualize the system and gather feedback. |
| 10 | Questionnaires | Structured set of written questions to collect input from a large audience. |
| 11 | User Task Analysis / Use Cases | Analyzing the steps users take to complete tasks; helps define use cases and requirements clearly. |

**Identify Business Requirements (which includes Stakeholder Requirements)**

 **BR001 – Farmers should be able to search for available products in fertilizers, seeds, pesticides BR002 – Manufacturers should be able to upload and display their products in the application**

* Farmers should be able to search for available products in fertilizers, seeds, pesticides.
* Manufacturers should be able to upload and display their products in the application.
* Farmers must be able to browse the product catalogue without login.
* Farmers must login to purchase or add products to wishlist (buy-later list).
* New users should be able to register using email ID and password.
* The application must support a role-based login system for Farmers and Manufacturers.
* The platform should have a secure and simple payment gateway (COD, UPI, Cards).
* Users must receive email confirmation and order updates after purchase.
* Users should be able to track delivery of their order from the system.
* System should allow account creation and password recovery.
* Admin or Supplier should be able to manage inventory (add/edit/delete products).
* Application must have multi-language support (optional future enhancement).
* Application must be responsive on mobile devices.
* All stakeholder communication should be tracked and logged in the system.

|  |  |  |
| --- | --- | --- |
| **Stakeholder Name** | **Role** | **Stakeholder Type** |
| Mr. Henry | Project Sponsor, Visionary (SOONY) | Primary Stakeholder |
| Mr. Pandu | Financial Head (SOONY) | Decision Maker |
| Mr. Dooku | Project Coordinator (SOONY) | Liaison/Coordinator |
| Mr Peter | Farmer | Key End User |
| Mr Kevin | Farmer | Key End User |
| Mr Ben | Farmer | Key End User |
| Suppliers | Product suppliers | External stakeholders |
| Mr karthik | Delivery head (APT IT) | strategic partner |
| Mr Vandanam | Project Manager (APT IT) | Internal Stakeholder |
| Me(BA) | Business Analyst (APT IT) | Facilitator |

**7.Make suitable Assumptions and identify at least 10 Business Requirements**

**Assumptions:**

* Users (Farmers & Suppliers) will access the system via web and mobile applications.
* Internet connectivity in rural areas may be weak, so the app should be lightweight and responsive.
* A centralized admin panel will be used to manage users, orders, and product listings.
* The system must support multiple product categories.
* Each user type (Farmer, Manufacturer, Admin) will have separate login access and permissions.

**Ten Business Requirements**

* The system must allow Farmers to register and log in using email ID and password.
* The application must allow Manufacturers to upload and manage product listings for fertilizers, seeds, and pesticides.
* Farmers must be able to browse and search for available products using filters like category, brand, and price.
* Farmers must be able to add products to cart or a buy-later list for future purchases.
* The system must include a secure payment gateway that supports COD, UPI, and card payments.
* Upon successful order placement, users should receive email notifications with order details.
* Farmers should be able to track the delivery status of their orders through the system.
* The system must have role-based access control, restricting actions based on user type (Farmer, Supplier, Admin).
* The application must be responsive and mobile-friendly for access from various devices, including smartphones.
* The system should allow Admins to monitor user activity and manage reported issues from Farmers or Manufacturers.

**8.List your assumptions**

**Internet Connectivity Exists**

Farmers and manufacturers in remote areas have at least basic internet access via mobile or desktop devices.

**User Literacy Level**

Target users (Farmers and Manufacturers) are comfortable using simple web/mobile interfaces and basic digital operations (login, browsing, payments).

**Separate Roles Exist**

There are distinct user roles: Farmers, Manufacturers, and Admins, each with different access levels and functionality.

**Email is a Valid Communication Channel**

All users have access to a valid email address for account creation, verification, and order notifications.

**Product Categories are Fixed Initially**

The system will initially support three main categories only: Fertilizers, Seeds, and Pesticides.

**Payment Gateway Integration is Feasible**

Third-party payment gateways (supporting COD, UPI, Credit/Debit cards) can be integrated into the system.

**Delivery Logistics Will Be Handled by Third-Party or Manufacturer**

The platform does not manage physical delivery but only tracks delivery status updates provided by delivery partners.

**Security & Compliance Standards Will Be Followed**

All personal and financial data will be handled securely, following applicable cybersecurity and privacy norms.

**Product Listings Are Managed by Manufacturers**

Manufacturers are responsible for keeping product details (stock, prices, images) up to date through the platform.

**The Platform Will Be Built as a Web Application (Mobile-Responsive)**

A mobile application may be considered in the future, but for now, the focus is on a mobile-friendly web app.

**9.Give Priority 1 to 10 numbers ( 1 being low priority – 10 being high priority) to these Requirements after discussions with the stakeholders**

|  |  |  |
| --- | --- | --- |
| **Priority** | **BR ID** | **Requirement Description** |
| 1 | BR001 | The system must allow Farmers to register and log in using email ID and password. |
| 2 | BR002 | The application must allow suppliers to upload and manage product listings. |
| 3 | BR003 | Farmers must be able to browse and search for available products |
| 4 | BR005 | The system must include a secure payment gateway that supports COD, UPI, and card payments. |
| 5 | BR004 | Farmers must be able to add products to cart or buy-later list. |
| 6 | BR006 | Users should receive email notifications upon successful order placement |
| 7 | BR007 | Farmers should be able to track the delivery status of their orders. |
| 8 | BR008 | The system must have role-based access control for different user types. |
| 9 | BR009 | The application must be responsive and mobile-friendly. |
| 10 | BR010 | Admins should be able to monitor user activity and manage issues. |

To make the project team understand the requirements, you need to convert those requirements into UML diagrams and screen mock-ups.





**10.Draw use case diagram**



**11.Prepare use case specs for all use cases**

**UC001: User Registration & Login**

**Actors:** Farmer, Manufacturer, Admin

**Preconditions:** User has access to a valid email address and internet connection.

* User clicks "Register"
* Enters email and password in Login page
* System validates credentials or registers new user
* User is redirected to their dashboard

**Postconditions:** User session is established.

**UC002: Browse/Search Products**

**Actor(s):** Farmer

**Preconditions:** User must be logged in.

* + User navigates to product catalog
	+ Applies search/filter options
	+ System displays matching products

**Postconditions:** Search results are displayed.

**UC003: Add to Cart / Buy Later List**

**Actor(s):** Farmer

**Preconditions:** User must be logged in and browsing the catalog.

* + User selects a product
	+ Clicks “Add to Cart”
	+ Product is added to respective list

**Postconditions:** Product is saved in user’s session/cart.

**UC004: Upload Product (Manufacturer)**

**Actor(s):** Manufacturer

**Preconditions:** Manufacturer must be logged in.

* + Manufacturer clicks “Add Product”
	+ Fills in product details (name, type, price, image, etc.)
	+ Submits the form

**Postconditions:** Product appears in the catalog for farmers.

**UC005: Make Payment**

**Actor(s):** Farmer

**Preconditions:** User must be logged in with items in cart.

* + User proceeds to checkout
	+ Selects payment method
	+ Completes payment

**Postconditions:** Payment is processed, order is placed.

**UC006: Track Order**

**Actor(s):** Farmer

**Preconditions:** Order must be placed.

* + User navigates to “My Orders”
	+ Selects order to track
	+ System shows delivery status

**Postconditions:** Tracking details are viewed by user.

**UC007: Receive Email Notification**

**Actor(s):** Farmer, Manufacturer

**Preconditions:** User must perform an action (register, order, etc.)

* + User completes an action
	+ System generates and sends email

**Postconditions:** Email is delivered.

**12.Activity diagram**

**Activity diagrams**

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