***Online Agriculture Products Store***

**Question 1: Identify Business Process Model for Online Agriculture Store**

**Goal:** In order to help his friends and many others like him who cant able to deal with their agricultural problems, the Online Agriculture Products Store's idea is being implemented and the main objective is to develop an easy-to-use platform that links farmers in remote locations with merchants of agricultural products (fertilizers, seeds, and pesticides). So everyone can have a easy access of it and they can increase their productivity

 with the right knowledge of agricultural products provided by the platform

**Inputs will be :-**

1.Manufacturers' details on herbicides, crops, and fertilizers to gauge their level of

product expertise

2. Data from farmers, such as their location, preferred products, and past purchases.

3. Demand and pricing trends for agricultural products based on market demands

4. Customer feedback on goods and services for ongoing development in accordance with  shifting marketing trends

**Resources:**

1.Business analysts, developers, testers, and project manager comprise the project team.

2. databases, server infrastructure, and platforms for web and mobile application.

3.  The project has a budget of two crore Indian rupees. 4. The project will take 18 months to complete.

**Outputs:**

1. A completely functional mobile and online application that enables farmers to peruse

and buy agricultural goods. 2. Comprehensive product listings that include manufacturer details, pricing, and

descriptions.

3. Farmers receive confirmations and notifications after a successful transaction. arrangements for product delivery to farmers' sites.

**Activities:**

1. Requirement gathering: Working together with manufacturers and farmers to collect requirements. 2. Design and Development: Developing the backend systems, user interface, and application architecture. 3. Testing: Carrying out comprehensive testing to guarantee security, usability, and functionality.

4. Deployment: Starting the program and granting users access to it. 5. Marketing and Training: Educating farmers about the platform and offering them training on its use.Value Created to the

**End Customer:**

1. Accessibility: From the convenience of their homes, farmers can obtain a variety of agricultural supplies.

2. Cost-Effectiveness: Reasonably priced products and possible producer discounts.

3. Time-saving: Cuts down on the amount of time needed to buy agricultural goods. 4. Direct Communication: Promotes openness and trust by enabling direct communication between farmers and manufacturers.

**Question 2: SWOT Analysis for the Project**

**Strength:**

**1. The platform helps farmers in isolated places by meeting a vital demand. 2. Farmers and manufacturers can speak with each other directly, doing away with intermediaries.**

**3. Put your attention on developing a user-friendly interface. 4. Improves brand image by being in line with corporate social responsibility.**

**Weaknesses:**

**1.Internet connectivity may be erratic for farmers in isolated locations. 2. Opposition to switching to online platforms from conventional buying methods. 3. A substantial upfront cost for marketing and development. 4. To use the platform efficiently, farmers might need training.**

**Opportunities:**

1.The possibility of growing to other nations and areas dealing with comparable issues. 2. Possibilities for cooperation with NGOs and agricultural associations. 3. The potential to add additional agricultural goods and services in the future. 4. Using cutting-edge technology (like AI and IoT) to improve features.

**Threats:**

1. Competition may increase as new online platforms appear. 2. Adherence to rules governing e-commerce and agriculture. 3. Economic fluctuations that impact farmers' purchasing power. 4. Possible dangers to user privacy and data security.

**Question 3: Feasibility Study Points for Technology (Java)**

**Hardware:**

1.Server Requirements: Assess the need for dedicated servers or cloud services to host the application.

2.Network Infrastructure: Ensure robust network infrastructure to support application performance.

**Software:**

1.Development Tools: Identify necessary Java development frameworks (e.g., Spring, Hibernate).

2.Database Management: Choose a suitable database system (e.g., MySQL, PostgreSQL) for data storage.

3.Testing Tools: Select testing frameworks (e.g., JUnit, Selenium) for quality assurance.

**Trained Resources:**

1.Skill Assessment: Evaluate the current skill levels of team members in Java and related technologies.

2. Training Programs: Plan for any additional training required for team members to enhance their skills.

**Budget:**

**Cost Estimation**: Detailed breakdown of costs for development, testing, deployment,

**Question:- 4 Gap Analysis**

AS IS Process: Farmers presently depend on regional vendors who charge extra

prices and have limited product availability.

TO BE Process: By offering a greater selection of goods at affordable costs, an online

platform will increase accessibility and convenience.

**Question - 5 Risk Analysis:**

• Business Risks:

* The internet platform's market acceptability.
* Competition from current vendors.
* Changes in the economy that impact farmers' purchasing power.
* Competition may increase as new online platforms appear.
* Adherence to rules governing e-commerce and agriculture.

• **Project risks include:**

• Platform development's technical difficulties.

• Project schedule delays.

• Team dynamics and the availability of resources.

**Question 6 – Stakeholder Analysis (RACI Matrix)**

| **Stakeholder** | **Responsible** | **Accountable** | **Consulted** | **Informed** |
| --- | --- | --- | --- | --- |
| Mr. Henry |  | X |  | X |
| Mr. Pandu |  | X |  | X |
| Mr. Dooku |  | X |  | X |
| Mr. Karthik | X |  | X | X |
| Project Manager | X |  | X | X |
| Development Team | X |  |  | X |
| Farmers (Peter, Kevin, Ben) |  |  | X | X |

**Key Stakeholders:**

* **Decision Makers:** Mr. Henry, Mr. Pandu, Mr. Dooku.
* **Influencers:** Farmers (Peter, Kevin, Ben), Development Team, Suppliers.

**Question 7: Business Case Document for Online Agriculture Products Store**

**1.ExecutiveSummary:** The goal of the Online Agriculture Products Store is to make necessary agricultural supplies like seeds, fertilizer, and pesticides easily accessible to farmers in isolated locations.The goal of this project, which is headed by Mr. Henry and backed by APT IT SOLUTIONS, is to raise farmer incomes and agricultural production.

**2.ProblemStatement:** Obtaining necessary agricultural supplies is extremely difficult for farmers in remote places, which lowers crop yields and causes financial instability. These problems are made worse by the absence of a direct line of contact between farmers and suppliers.

**3. Objectives:**

• To develop an easy-to-use online marketplace where farmers may buy and access agricultural goods. • To help farmers and suppliers communicate directly with one another. • To increase the agricultural supply chain's overall effectiveness.

**4. Stakeholders:**

• Principal Participants: APT IT SOLUTIONS (Development Team), Mr. Henry (Project Sponsor), and farmers Peter, Kevin, and Ben. • Secondary Stakeholders: Community organizations, local government, and providers of agricultural products**.**

**5. Financial Overview:**

* **Budget:** 2 Crores INR allocated for the project.
* **Funding Source:** CSR initiative led by Mr. Henry.

**6. Risk Analysis:**

**• Business risks include competition, market acceptability, and changes in the economy. • Project risks include delays, budget overruns, and technical difficulties.**

**7.Conclusion:** For distant farmers, the Online Agriculture Products Store offers a substantial chance to enhance the agricultural supply chain. This program can boost local economies and increase productivity by utilizing technology.

**Question 8 – Four SDLC Methodologies**

**1.Sequential**: **Iterative**: Evolving the system through repeated cycles,Unlike the Sequential (Waterfall) Model, which follows a linear path, the Iterative Model allows for revisiting and revising earlier phases based on feedback and testing results. This approach is particularly useful in projects where requirements are expected to evolve or are not fully understood at the outset.

**2.Evolutionary**: Gradually refined through feedback loops,The Evolutionary Model is a software development methodology that focuses on the incremental and iterative development of software systems. This approach allows for the gradual evolution of the software through multiple iterations, with each iteration producing a working version of the software that can be refined based on user feedback and changing requirements. The Evolutionary Model is particularly useful in situations where requirements are not fully understood at the beginning of the project or are expected to change over time.

**3.Agile**: Incremental, collaborative, and time-boxed development,Agile is a software development methodology that emphasizes flexibility, collaboration, and customer satisfaction through iterative and incremental development. It is designed to accommodate changing requirements and promote adaptive planning, encouraging teams to deliver high-quality software in a collaborative environment. Agile methodologies prioritize individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, and responding to change over following a plan.

**Question 9 – SDLC Models (Waterfall, RUP, Spiral, Scrum)**

* **Waterfall**: Linear, best when requirements are well-defined,The Waterfall Model is one of the earliest and most straightforward software development methodologies. It follows a linear and sequential approach, where each phase of the software development life cycle (SDLC) must be completed before moving on to the next. This model is named "Waterfall" because the process flows downwards through distinct phases, resembling a waterfall

**Phases of the Waterfall Model**

Requirement Gathering

Requirement Analysis

Design

Development

Testing

Deployment

* **RUP (Rational Unified Process)**: Iterative with defined roles and artifacts,The Rational Unified Process (RUP) is a software development methodology created by Rational Software, which is now part of IBM. RUP is an iterative and incremental approach that provides a disciplined framework for assigning tasks and responsibilities within a development organization. It is designed to be adaptable to various project types and sizes, making it suitable for a wide range of software development projects.
* **Spiral**: Risk-driven and suitable for complex projects,The Spiral Model emphasizes risk assessment and management throughout the development process, allowing for continuous refinement and adaptation based on user feedback and changing requirements.
* **Scrum**: Agile-based, focused on iterations (sprints), ideal for dynamic changes,Scrum is an Agile-based framework for managing software development projects. It is designed to facilitate collaboration, flexibility, and iterative progress toward well-defined goals. Scrum emphasizes teamwork, accountability, and continuous improvement, making it particularly effective for projects with rapidly changing requirements or complex environments.

**Question 10 – Waterfall vs V-Model**

* **Waterfall**:

1. Linear and sequential

2.Testing occurs after implementation

3.Limited flexibility for changes

4.Extensive documentation at each phase

5.Limited user involvement during development

6.Quality assurance occurs after development

* **V-Model**:

1.Linear with a focus on verification and validation

2.Testing is integrated with development phases

3.Limited flexibility for changes

4.Extensive documentation with a focus on testing

5.Limited user involvement during development

6.Quality assurance is built into the process

* **V-Model Advantage**:

1.Better validation and verification, early detection of defects.

2.Early Testing

3.Clear Relationships:

4.Improved Quality

* Waterfall model Advantage

1.Simplicity

2.Clear Milestones

3.Timelines and costs can be estimated more accurately due to the structured approach

**Question 11 – Justify V-Model for the Project**

Given this is a CSR-funded fixed-scope project with limited room for iterative change and the importance of early validation, V-Model ensures clarity, parallel testing, and traceability of requirements to test cases.

**Question 12 – Gantt Chart Outline**

Phases in V-Model:

* RG (Requirement Gathering)
* RA (Requirement Analysis)
* Design
* D1/T1, D2/T2, D3/T3, D4/T4 (Development/Test Cycles)
* UAT (User Acceptance Testing)

Gantt chart should show:

* Time allocation to each phase
* Resource mapping: PM, BA, Dev, Testers, DB, Network Admin

|  |  |  |  |
| --- | --- | --- | --- |
| **Phase** | **Task Description** | **Duration (Months)** | **Resource Involved** |
| RG (Requirement Gathering) | Collecting stakeholder requirements | 2 | BA, PM |
| RA (Requirement Analysis) | Analyzing and refining requirements | 1 | BA, PM |
| Design | Architecture, Database design | 2 | BA, Developers, DB Admin, NW Admin |
| D1 | Module 1 Development  | 2 | Developers |
| T1 | Testing Module 1 | 1 | Testers |
| D2 | Module 2 Development  | 2 | Developers |
| T2 | Testing Module 2 | 1 | Testers |
| D3 | Module 3 Development  | 2 | Developers |
| T3 | Testing Module 3 | 1 | Testers |
| D4 | Final Integration | 2 | Developers, DB Admin |
| T4 | Final System Testing | 1 | Testers |
| UAT | User Acceptance Testing | 1 | BA, Testers, Farmers (End Users) |

**Question 13 – Fixed Bid vs Billing**

* **Fixed Bid**:
	+ Predefined scope and price.
	+ Risk on service provider.
	+ Suitable for well-defined projects.
* **Billing (T&M)**:
	+ Based on time and effort.
	+ Flexible scope.
	+ Risk shared with client.

**Question 14 – BA Timesheets across SDLC**

* **Design Phase**:
	+ Activities: Process modeling, requirement documentation, wireframes.
	+ Time: 20 hours/week.
* **Development Phase**:
	+ Activities: Support developers, clarifications, requirement traceability.
	+ Time: 15 hours/week.
* **Testing Phase**:
	+ Activities: Test case review, defect triage, UAT support.
	+ Time: 15-18 hours/week.
* **UAT Phase**:
	+ Activities: Coordinate UAT, training sessions, collect feedback.
	+ Time: 20 hours/week.
* **Deployment & Implementation**:
	+ Activities: Documentation handover, support, go-live support.
	+ Time: 10-15 hours/week.