**Question 1: Identify Business Process Model for Online Agriculture Store – (Goal, Inputs, Resources, Outputs, Activities, Value created to the end Customer**

**Ans.**

**Business Process Model (BPM) for Online Agriculture Store**

**Definition:** A BPM outlines the structured workflow of a business process, ensuring efficiency and effectiveness. It is required to understand the inputs, resources, outputs, and overall process flow, aiding in clear project execution.

**Goal:** Facilitate remote area farmers in purchasing agricultural products (fertilizers, seeds, pesticides) online by connecting them directly with manufacturers.

**Inputs:**

* Farmers' requirements for fertilizers, seeds, and pesticides.
* Manufacturer details and product description.
* Online platform for product listing and purchase.

**Resources:**

* Technology (Web/Mobile Application, Java-based backend, Database management)
* Human Resources (Developers, Testers, Project Manager, Business Analyst)
* Financial Investment (2 Crore INR)
* Time Duration (18 months)

**Outputs:**

* Online store with product listing from manufacturers.
* Farmers purchasing agricultural products seamlessly.
* Increased accessibility for remote farmers.

**Activities:**

1. Requirement gathering from stakeholders.
2. Designing the application architecture.
3. Developing and testing the application.
4. Launching and maintaining the platform.

**Value Created for End Customer:**

* Easy access to essential farming products.
* Cost and time savings.
* Better yield and productivity through quality inputs.

**Question 2 – Mr Karthik is doing SWOT analysis before he accepts this project. What Aspects he Should consider as Strengths, as Weaknesses, as Opportunity and as Threats.**

**Ans.**

**Definition:** SWOT analysis helps assess a project's Strengths, Weaknesses, Opportunities, and Threats. It is required to evaluate feasibility, risks, and potential advantages for a successful project.

**Strengths:**

* Strong financial backing from SOONY.
* Experienced team with technical expertise.
* Addresses a critical pain point for farmers.

**Weaknesses:**

* Farmers' lack of digital literacy.
* Internet accessibility issues in remote areas.

**Opportunities:**

* Expansion to other agricultural services (e.g., consultancy, market price tracking).
* Integration with government initiatives for farming support.

**Threats:**

* Cybersecurity threats.
* Competitor platforms emerging.
* Farmers' reluctance to adopt new technology.

**Question :3 Mr Karthik is trying to do feasibility study on doing this project in Technology (Java), Please help him with points (HW SW Trained Resources Budget Time frame) to consider in feasibility Study.**

**Ans.**

**Feasibility Study:**

**Definition:** A feasibility study assesses whether a project can be successfully completed within the given constraints (technical, financial, human resources, and timeline). It helps in making informed go/no-go decisions.

**Technology (Java-Based Solution):**

* **Hardware:** Cloud-based servers, hosting, secure payment gateways.
* **Software:** Java-based application, MySQL for database, Spring Boot framework.
* **Trained Resources:** Skilled Java developers, testers, network admin, DB admin.
* **Budget:** 2 Crore INR (ensuring efficient resource allocation).
* **Time Frame:** 18 months, with phased development and testing.

**Question: 4 Mr Karthik must submit Gap Analysis to Mr Henry to convince to initiate this project. What points (compare AS-IS existing process with TO-BE future Process) to Showcase in the GAP Analysis**

**Ans:**

**Gap Analysis:**

**Definition:** Gap analysis is a method used to compare the current state of a process, product, or organization with its desired future state. By identifying the "gap" between where you are now and where you want to be, you can determine what steps are necessary to achieve your goals.

**Why is Gap Analysis Used in Projects?**

* **Identify Shortcomings**: It helps pinpoint areas where current performance is lacking compared to desired objectives.
* **Develop Action Plans**: By understanding these gaps, teams can create targeted strategies to bridge them.
* **Allocate Resources Efficiently**: It ensures that efforts and resources are directed toward areas needing improvement.
* **Enhance Decision-Making**: Provides a clear framework for making informed decisions to achieve project goals.

|  |  |  |
| --- | --- | --- |
| **Category** | **AS-IS (Current Process)** | **TO-BE (Future Process)** |
| Product Procurement | Manual, time-consuming, and costly | Digital, streamlined, and cost-effective |
| Accessibility | Limited to local vendors | Access to multiple manufacturers |
| Order Placement | In-person purchase | Online order and doorstep delivery |
| Payment Methods | Cash transactions | Online payments |

**Question: 5 List down different risk factors that may be involved (BA Risks And process/Project Risks)**

**Ans:**

**Risk Analysis:**

**Definition:** Risk analysis is the process of identifying and evaluating potential events that could negatively impact a project's objectives, such as its scope, schedule, cost, or quality. By understanding these risks, project teams can develop strategies to prevent or minimize their effects, thereby increasing the chances of project success.

**Business Analyst Risks**

* **Incomplete or Misunderstood Requirements**: If a BA does not fully capture or accurately interpret what stakeholders need, the project may deliver unsatisfactory results.
* **Stakeholder Misalignment**: Differences in expectations or priorities among stakeholders can lead to conflicts, which a BA must navigate carefully.
* **Change Management**: Managing changes to project requirements can be challenging, especially if not handled systematically.

**Process or Project Risks**

These are broader risks that can affect the entire project:

* **Technical Challenges**: Issues like technology limitations or integration problems can hinder project progress.
* **Resource Constraints**: Limited availability of necessary resources, such as skilled personnel or equipment, can delay or derail a project.
* **External Factors**: Elements outside the project's control, like regulatory changes or market fluctuations, can impact its success.

**Question: 6 Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take Decisions and Who are the influencers**

**Ans:**

**Stakeholder Analysis (RACI Matrix):**

**Definition:** A RACI matrix, also known as a Responsibility Assignment Matrix, is a project management tool that clarifies roles and responsibilities for tasks and deliverables within a project. The acronym RACI stands for:

* **Responsible**: Individuals or groups who complete the task.
* **Accountable**: The person ultimately answerable for the task's success and who delegates work to those responsible.
* **Consulted**: Those whose input is sought during the task's execution; involves two-way communication.
* **Informed**: Individuals or groups kept updated on task progress and outcomes; involves one-way communication.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Stakeholder** | **Responsible** | **Accountable** | **Consulted** | **Informed** |
| **Mr. Henry**  **(Project Owner)** |  | Yes |  | Yes |
| **Mr. Pandu**  **(Financial Head)** |  | Yes |  | Yes |
| **Mr. Doku**  **(Project Coordinator)** |  | Yes |  | Yes |
| **Framers**  **(Peter, Kevin, Ben)** |  |  | Yes |  |
| **Developer**  **(Ms. Juhi, Mr. Teyson,**  **Ms. Lucie, Mr. Tucker, Mr. Bravo)** | Yes |  |  |  |
| **Tester**  **(Mr. Jason, Ms. Alekya)** | Yes |  |  |  |
| **Mr. Kartik**  **(Delivery Head)** | Yes |  | Yes |  |

**Question: 7 Help Mr Karthik to prepare a business case document**

**Ans:**

**Business Case Document:**

**Definition:** A business case document is a document that provides justification for initiating a project or task. It outlines the benefits, costs, and risks associated with the proposed initiative, helping decision-makers determine its value and feasibility.

**Why is a Business Case Important in a Project?**

* **Justification**: It explains why the project is necessary and how it aligns with organizational goals.
* **Resource Allocation**: By detailing expected costs and benefits, it aids in deciding how to allocate resources effectively.
* **Risk Assessment**: Identifying potential risks allows for proactive planning to mitigate them.
* **Decision-Making**: Provides a structured basis for stakeholders to approve, modify, or reject a project proposal.

**Business Case Document: Online Agricultural Store**

**1. Executive Summary**

The proposed venture aims to establish an online platform connecting farmers with manufacturers, facilitating the procurement of agricultural products. This platform will enhance accessibility to essential farming inputs, thereby improving farming efficiency.

**2. Problem Statement**

Farmers often face challenges in procuring quality agricultural products due to limited access to suppliers, lack of transparency in pricing, and geographical constraints. This results in inefficiencies and increased costs in farming operations.

**3. Solution**

The solution is to develop a web and mobile platform that bridges the gap between farmers and manufacturers. This platform will offer:

* **Product Listings:** A comprehensive description of agricultural products, including seeds, fertilizers, pesticides, and equipment.
* **Transparent Pricing:** Clear and competitive pricing information to assist farmers in making informed purchasing decisions.
* **Logistics Support:** Assistance with delivery and supply chain management to ensure timely and cost-effective procurement.
* **Customer Support:** Access to expert advice and support to address any issues or queries.

**4. Financials**

The project requires an investment of ₹2 Crore INR, allocated as follows:

* **Platform Development:** ₹1 Crore for designing and building the web and mobile applications.
* **Marketing and Outreach:** ₹50 Lakhs to promote the platform and attract users.
* **Operational Costs:** ₹50 Lakhs for initial operations, including staffing and logistics.

The development timeline is estimated at 18 months, with the platform expected to become operational and start generating revenue within this period.

**5. Benefits**

* **Increased Accessibility:** Farmers will have easier access to a wide range of agricultural products, reducing dependency on local suppliers and intermediaries.
* **Improved Farming Efficiency:** Streamlined procurement processes will enable farmers to obtain quality inputs promptly, leading to better crop yields and reduced operational delays.
* **Cost Savings:** Direct transactions between farmers and manufacturers can lead to competitive pricing, resulting in cost savings for farmers.

**6. Risk Assessment**

* **Technology Adoption:** Farmers may be hesitant to adopt new technology. Mitigation: Provide training and support to ease the transition.
* **Supply Chain Challenges:** Ensuring timely delivery of products. Mitigation: Establish reliable logistics partnerships and contingency plans.
* **Market Competition:** Other platforms may offer similar services. Mitigation: Differentiate through superior user experience, customer service, and value-added features.
* **Market Expansion:** Manufacturers will gain access to a broader customer base, including farmers in remote areas, thereby expanding their market reach.

**Question: 8 The Committee of Mr. Henry, Mr Pandu, and Mr Dooku and Mr Karthik are having a discussion on Project Development Approach.**

**Mr Karthik explained to Mr. Henry about SDLC. And four methodologies like Sequential Iterative Evolutionary and Agile. Please share your thoughts and clarity on Methodologies**

**Ans:**

**Four SDLC Methodologies:**

**Definition:** The **Software Development Life Cycle (SDLC) methodology** is a structured process used by software developers to design, develop, test, deploy, and maintain software applications efficiently. It provides a framework to ensure high-quality software while managing time, cost, and resources effectively.

1. **Sequential (Waterfall Model)**

* Follows a **linear** and **phased approach** where each phase (Requirements → Design → Development → Testing → Deployment) is completed before moving to the next.
* **Best for:** Projects with well-defined requirements and minimal changes.

2. **Iterative Model**

* Develops software in **repeated cycles (iterations)** where each version improves on the previous one.
* **Best for:** Projects where requirements evolve but need early deliverables.

3. **Evolutionary Model**

* Develops a **basic version (prototype)** and improves it continuously based on user feedback.
* **Best for:** Large and complex projects where user feedback is crucial.

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4. **Agile Model**

* Breaks development into **small, frequent releases (sprints)** with ongoing customer feedback.
* **Best for:** Fast-changing environments where flexibility is needed.

**Question 9 – Waterfall, RUP, Spiral, and Scrum Models.**

**Ans:**

The **Software Development Life Cycle (SDLC)** has different models, each with its advantages and limitations.

1. **Waterfall Model**
   * A **step-by-step** approach where each phase (Requirement, Design, Development, Testing, Deployment) is completed **before moving to the next**.
   * Best suited for projects with well-defined requirements and clear goals.
   * Simple, structured, and easy to manage.
2. **Rational Unified Process (RUP)**
   * Divides development into four phases: Inception, Elaboration, Construction, and Transition.
   * Iterative approach, allowing repeated testing and modifications.
   * More flexible than Waterfall but requires more management.
3. **Spiral Model**
   * Best for **large, high-risk** projects.
   * Combines **planning, prototyping, development, and testing in repeated cycles**.
   * Focuses on risk management but requires more time and resources.
4. **Scrum Model (Agile)**
   * Works in short cycles called **Sprints** (2–4 weeks).
   * Encourages continuous feedback and frequent updates.
   * Best suited for projects where requirements may change frequently.

**Question 10 – Write down the differences between waterfall model and V model.**

**Ans:**

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|  | **Waterfall Model** | **V-Model** |
| **Process Flow** | Linear, step-by-step | V-shape (each development phase has a corresponding testing phase) |
| **Flexibility** | Changes are difficult once a phase is completed | Changes are difficult, but testing happens earlier |
| **Testing** | Happens after development is complete | Testing happens in parallel with development |
| **Best For** | Simple and well-defined projects | Critical systems like healthcare or banking |
| **Time & Cost** | Can be slow and costly if changes are needed | Less costly than Waterfall because errors are detected earlier |

**Question 11: As a BA, state your reason for choosing one model for this project.**

**Ans:**

For this project, the **Waterfall Model** is the best choice because:

1. **Clear Requirements:** The project's goal is well-defined – creating an online agriculture store.
2. **Structured Approach:** Each phase is completed before moving to the next, ensuring **proper documentation and planning**.
3. **Better for Large Teams:** The project involves multiple stakeholders and developers, and Waterfall ensures **clear roles and responsibilities**.
4. **Fixed Budget and Timeline:** The project has **a fixed budget (2 Crores INR) and duration (18 months)**, making Waterfall a good choice as it follows a **strict schedule**.
5. **Low Requirement Changes:** Since agricultural product sales have standard features, there will not be many changes during development.

Thus, using the **Waterfall Model** ensures a **structured, organized, and risk-free** development process for this project.

**Question 12:** **Gantt Chart**

**The Committee of Mr. Henry, Mr Pandu, and Mr Dooku discussed with Mr Karthik and finalised on the V Model approach (RG, RA, Design, D1, T1, D2, T2, D3, T3, D4, T4 and UAT**

**Mr Vandanam is mapped as a PM to this project. He studies this Project and Prepares a Gantt chart with V Model (RG, RA, Design, D1, T1, D2, T2, D3, T3, D4, T4 and UAT) as development process and the Resources are PM, BA, Java Developers, testers, DB Admin, NW Admin.**

**Ans:**

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**Question: 13 Explain the difference between Fixed Bid and Billing projects**

**Ans:**

**Fixed Bid vs. Billing Projects:**

**Definition:** These are two common pricing models in project contracts. Understanding their differences helps in selecting the right financial approach.

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|  | **Fixed Bid Contract** | **Billing Projects** |
| **Cost** | Total project cost is agreed upon before work begins. | Payment is based on actual time spent and materials used. |
| **Scope Definition** | Requires a well-defined project scope with clear requirements. | Suitable for projects where the scope may evolve or is not fully defined at the start. |
| **Flexibility** | Less flexible; changes can lead to renegotiation or additional costs. | More flexible; allows for adjustments as the project progresses. |
| **Risk** | Service provider bears the risk of underestimating time or resources needed. | Client assumes more risk due to potential increases in time and material costs. |
| **Budget Control** | Easier for clients to manage budgets since the cost is fixed. | Harder to predict total costs, requiring careful monitoring to stay within budget. |

**Question 14 – Preparer Timesheets of a BA in various stages of SDLC**

**Ans:**

**Timesheets for BA in SDLC Stages:**

**Definition:** A **timesheet** for a Business Analyst (BA) in SDLC tracks the time spent on different tasks during each phase. It helps in project planning, resource allocation, and productivity measurement.

1. **Design Phase:**
   * Writing Functional Requirement Documents (FRD)
   * Wireframing & Use case preparation.
   * Conducting design review meetings with stakeholders
2. **Development Phase:**
   * Answering developer queries & clarifying requirements
   * Updating documents based on technical feedback
   * Attending stand-up meetings for project updates.
3. **Testing Phase:**
   * Reviewing test cases and validating business scenario.
   * Assisting testers in understanding business requirements
   * Tracking their resolution
4. **UAT Phase:**
   * Coordinating UAT sessions with stakeholders
   * Gathering and documenting feedback from users
   * Ensuring all business needs are met before final approval
5. **Deployment & Implementation:**
   * Supporting users during the go-live period
   * Creating user manuals & conducting training sessions
   * Assisting in post-deployment issue resolution.



**Activity Diagram**

