**Nurturing Process - Capstone Project1 – Part -1/3**

**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:** A business process is a collection of activities designed to produce a specific output for a particular Customer or market. It implies a strong emphasis on how the work is done within an organization, in contrast to a product’s focus on what. A process is thus a specific ordering of work activities across time and place, with a beginning, an end, and clearly defined inputs and outputs: a structure for action.

 **Goal**: To Provide an online platform for farmers to buy agricultural products easily (fertilizers, pesticides, seeds)

 **Inputs** : Product details from manufacturers, customer orders, payment information.

 **Resources**: Farmers, suppliers, IT team, Customer service staff, online application.

 **Outputs**: A user- friendly platform for farmers to browse and purchase products, delivery of products to customers, and financial transactions.

 **Activities**: Farmers registering themselves->Searching for products ->Placing orders ->Customer service management involvement->Final arrival of products to the Customers to their address.

 **Value Created to the end Customer**: Cost reduction, Access to a wider range of products, direct supply to the Customers, Improved efficiency, time -saving.

**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:** **Strengths:**

1. Project aligns with the company’s mission of providing IT solutions to improve the lives of people in rural areas.

 2. The company has a talent pool of experienced developers and other IT professionals available to work on the project.

 3. The project has the support of Mr. Henry, a successful business man, and other stakeholders who can provide valuable input resources.

 **Weaknesses:**

 1. The 18- month project duration may be a tight timeline to deliver a complex system.

 2. The company may not have previous experience in developing an online agriculture product store.

 3. The budget of 2 Crores INR may not be sufficient to cover all the costs of the project.

 4. The company may not have enough knowledge of the agriculture industry to understand the specific needs of the farmer’s needs and manufacturers.

 **Opportunities:**

1. The project could open up new business opportunities for the company on the agriculture and rural areas.

 2. The project could help improve the lives of farmers in remote areas by making it easier for them to access the products they need.

 3. The company could use this project as a showcase for future projects and gain reputation.

 4. The online store could be platform for farmers to connect with each other and share their experiences.

 **Threats:**

 1. The project may face competition from existing online agriculture product stores if any.

 2. The project can be affected by changes in government regulations or policies.

 3. The company may encounter unexpected technical difficulties or delays during the development process thus escalating costs.

 4. The farmers may not be willing to adopt the new technology as they may be reluctant to change and do not see utility in it. They may be reluctant to bear the cost and changes for the system due to lack of trust.

**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: Hardware:** Mr. Karthik should ensure that the company has necessary hardware resources to support the project such as servers, storage and network infrastructure. He should also consider scalability if in future expansion takes place in case of project grows in size and usage.

**Software:** Mr. Karthik should evaluate the existing software systems and libraries that the company users and assess whether they are compatible with Java.

**Trained Resources:** Mr. Karthik should identify the availability of trained resources within the company who can work with Java. He should also assess whether the company has enough Java developers with the necessary skills and experience to complete the project within the given timeline.

 **Budget:** Mr. Karthik should analyse the costs associated with the project, such as hardware, software and personal costs. He should also evaluate whether the project budget of 2 crores INR is sufficient to cover all the costs and of not how to adjust the projects cope to make it feasible.

**Timeframe:** Mr. Karthik should evaluate whether the 18-month project duration is realistic given the complexity of the project. He should also consider may potential delays or obstacles that may arise during development process.

**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 show case in the GAP Analysis.

**ANS: Gap Analysis:** A comparison of the current state(As-Is) and desired future state(To-be) of an organization in order to identify differences that need to be addressed.

**As – Is:** The access to materials required for farming is restricted. If farmers want to buy fertilizers, seeds, pesticides, they have to purchase through the market . It’s time consuming, given less availability of fertilizers, seeds, pesticides.

**To- Be:** To design and deploy an online platform to enable farmers to buy agriculture products directly from manufacturers. This will add convenience, save time, effort and cost, make agriculture more effective.

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

**ANS: Risk Analysis:** An uncertain event or condition which can have impact on either cost, time, scope or quality. Risk analysis is done to determine if the proposed project carries more risk than the organization’s capacity to support.

**Business Analyst (BA) Risks:**

1. **Unclear Requirements** – Farmers may not be familiar with digital platforms, leading to changing requirements.
2. **Stakeholder Conflicts** – Conflicting interests between companies (sellers) and farmers (buyers).
3. **Data Accuracy** – Farmers’ lack of technical knowledge may result in inaccurate data entry.
4. **Resistance to Change** – Farmers might prefer traditional buying methods over online platforms.

**Project Risks:**

1. **Technical Risks** – Issues with Java-based development, database failures, or security vulnerabilities.
2. **Budget Constraints** – Project budget may be insufficient to cover the development and implementation costs, leading to financial constraints.
3. **Time Delays** – The **18-month** duration may extend due to unforeseen issues.
4. **User Adoption** – Farmers may struggle with mobile/web usage.
5. **Infrastructure Issues** – Poor internet connectivity in rural areas could affect system performance.

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

**ANS:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role** | **Responsible (R)** | **Accountable (A)** | **Consulted (C)** | **Informed (I)** |
| Mr. Henry (Project Sponsor) |   | A | C | I |
| Mr. Pandu (Financial Head) |   | A | C | I |
| Mr. Dooku (Project Coordinator) |   | A | C | I |
| Mr. Karthik (Delivery Head, APT IT SOLUTIONS) | R |   | C | I |
| Mr. Vandanam (Project Manager) | R | A | C | I |
| Jyothsna(Business Analyst) | R |   | C | I |
| Ms. Juhi (Senior Java Developer) | R |   | C | I |
| Java Developers (Mr. Teyson, Ms. Lucie, Mr. Tucker, Mr. Bravo) | R |   |   | I |
| Mr. Mike (Network Admin) | R |   |   | I |
| Mr. John (DB Admin) | R |   |   | I |
| Mr. Jason, Ms. Alekya (Testers) | R |   |   | I |
| Farmers (Peter, Kevin, Ben) |   |   | C | I |

**Key Stakeholders Who Can Take Decisions:**

1. Mr. Henry – As the project sponsor, he makes high-level strategic decisions.
2. Mr. Pandu – Approves and monitors financial decisions.
3. Mr. Dooku – Oversees project coordination and ensures alignment with CSR goals.
4. Mr. Karthik – Ensures the project delivery from APT IT SOLUTIONS and makes key technical decisions.
5. Mr. Vandanam – Manages execution and project timelines, making operational decisions.

**Key Influencers:**

1. Peter, Kevin, Ben – They provide critical end-user requirements and feedback.
2. Ms. Juhi (Senior Java Developer) – As the lead developer, she influences technical implementation.
3. Jyothsna (Business Analyst) – Facilitates stakeholder communication, gathers requirements, and influences scope.
4. Mr. Jason & Ms. Alekya (Testers) – Influence quality control by identifying defects and improvements.

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

**ANS:** A business case document is a package of information, analysis and recommendations. A business case is prepared by Sr. BA, Business Architect and Pre-sales team. A business case also helps in identify key stakeholders who are affected by the problem.

1. **Why is the Project initiated?** To provide an IT solution to farmers to buy fertilizers, seeds, pesticides online.
2. **What are the current problems?** Farmers are facing issues at the time of procurement of fertilizers, seeds.
3. **With this project how many problems could be solved?** By providing the online platform, farmers can check, compare, and also buy fertilizers, sees, pesticides online. Also logistics for delivery is not farmer’s concern.
4. **What are the resources required?** To develop this online platform we need the following resources.
5. 1 Project Manager
6. 1 BA
7. 5 Developers
8. 2 Testers
9. 1 Network Engineer
10. 1 database Admin
11. Hardware resources
12. **How much organizational change is required to adopt this technology?** In this case the company Soony is the organization on whose order the solution is being built. The domain of Soony Company is not clearly mentioned. They will have to work closely with the agri domain experts Peter, Kevin and Ben , understand their needs well, before participating in requirement elicitation meetings with the IT company. The domain experts are not technically sound or may be inadequately educated. The company will have to make genuine efforts to work in a collaborative manner with the domain experts.
13. **Timeframe to recover ROI?** The ROI recovery period depends on :

1. Total Investment- 2 Crores INR.

2. Revenue Model- Whether platform earns through commissions, subscriptions, advertisements, or partnerships.

3. Operational Costs- Maintenance, hosting, marketing, Customer support, etc.

4. Adoption rate- The number of farmers and manufacturers using the platform.

 **7. How to identify stakeholders in a Project?** Identifying stake holders in a project is a crucial step in project management, especially for the Online Agriculture Products Store. Stake holders are individuals or groups who affect or are affected by the project.

 **Steps to identify Stakeholders:**

 **1. Analyze the Project scope:** Understand the purpose of the project and its key deliverables.

 **2. Categorize Stakeholders:** Divide into Internal and external.

 **A) Internal Stakeholders** (Within the project organization):

 **a. Project Sponsor** – Mr. Henry (funding and strategic vision)

 **b. Project Delivery Team** – APT IT SOLUTIONS (Mr. Karthik, Mr. Vandanam, developers, testers, admins).

 **c. Project Managers & Coordinators** – Mr. Dooku (Project Coordinator), Mr. Pandu (Financial Head).

 **d. Business Analyst** – You (gathering and managing requirements).

 **B) External Stakeholders** (Outside the project organization):

* 1. **Farmers** (End users: Peter, Kevin, Ben, and others in rural areas).
	2. **Manufacturers** (Companies selling fertilizers, seeds, pesticides)
	3. **Regulatory Authorities** (Agriculture and e-commerce regulations).
	4. **Logistics & Delivery Partners** (Ensuring product delivery)
	5. **CSR Committees & Investors** (SOONY Company and other funders).

 **3. Use Stakeholder Identification Techniques:**

 **a. Interviews & Meetings – Talk to key stakeholders (e.g., Mr. Henry, farmers, manufacturers).**

 **b. Document Analysis** – Review project charters, contracts, and business cases**.**

 **c. Brainstorming Sessions** – Involve project team members to identify overlooked stakeholders.

**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: Sequential:** This methodology follows a linear approach and moves through each phase of the SDLC in a set sequence. This method is best suited for projects with well-defined requirements, low risk, and predictable outcomes.

**Iterative:** This methodology involves developing the software in iterations, where each iteration build upon the previous one. This method is best suited for projects with complex requirements and high risk.

**Evolutionary:** This methodology involves developing a basic version of the software and then incrementally improving it. This method is best suited for projects with rapidly changing requirements and high risk.

**Agile:** This methodology is based on an iterative and incremental approach and involves close collaboration between the development team and stakeholders. This method is best suited for projects with rapidly changing requirements, high risk, and complex environments.

**Question 9**: They discussed models in SDLC like waterfall RUP Spiral and Scrum. You put forth your understanding on these models When the APT IT SOLUTIONS company got the project to make this online agriculture product store, there is a difference of opinion between a couple of SMEs and the project team regarding which methodology would be more suitable for this project. SMEs are stressing on using the V model and the project team is leaning more onto the side of waterfall model. As a business analyst, which methodology do you think would be better for this project?

**ANS: Agile:** This methodology is based on an iterative and incremental approach and involves close collaboration between the development team and stakeholders. This method is best suited for projects with rapidly changing requirements, high risk, and complex environments.

**Waterfall:** This methodology is a sequential approach where each phase of development must be completed before moving on to the next phase. It is best suited for projects with well-defined requirements and clear project goals.

**RUP:** This model is a unified and iterative approach that uses a set of best practices for software development. It is best suited for complex projects with changing requirements.

**Spiral:** This model is a combination of both sequential and iterative approaches, where each iteration build upon the previous one. It is best suited for high- risk projects with uncertain requirements.

**Scrum**: This model is an agile approach that emphasizes framework, collaboration, and adaptability, it is best suited for projects with rapidly changing requirements and complex problem- solving.

As per the suggestion of SME- V model will be more appropriate for the reason that it provides more flexibility and can adapt some changes to project if required. As chances are the project may need more changes during the project timeline.

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

**ANS:** **Waterfall Model:**

* 1. The waterfall model is a sequential development process, where progress follows in a downward, linear fashion from one phase to the next.
	2. It is a traditional and straightforward methodology.
	3. It is well suited for projects with well-defined and fixed requirements.
	4. Each phase must be completed before the next one starts.
	5. Testing is done only after the development phase is completed.

**V-Model:**

1. The V- Model is a variation of the Waterfall model, where each stage of development is accompanied by a corresponding testing phase.
2. It allows for the integration of testing and development into a single continuous process.
3. It is well suited for projects with high-quality and regulatory requirements.
4. It allows for early detection and correction of defects, reducing the cost of fixing them later.
5. It provides a clear and traceable path for verifying the software development process.

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

**ANS:** V-Model is selected. It is recommended by the SME and is more suited for this project. The V-Model allows changes in between the project which might be suitable for project where change requirement can arise due to regulators.

**Question 12**: 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:**

|  |  |
| --- | --- |
| **Phase** | **Duration** |
| Requirements Gathering (RG) | 2 Months |
| Requirement Analysis (RA) | 1 Month |
| Design | 2 Months |
| Development (D1-D4) | 7 Months |
| Testing (T1-T4) | 4 Months |
| UAT | 2 Months |

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

**ANS: Fixed Bid Model:** The Fixed Bid Model is a method of project delivery where the price for the project is agreed upon and fixed at the outset . In this model, the scope of the project is defined and agreed upon by the client and the vendor, and the vendor is responsible for delivering the project within the agreed-upon budget and timeline. The vendor bears the risk of any cost overruns or schedule delays.

**Billing Model:** The Billing Model is a method of project delivery where the client is charged based on the actual time and resources used on the project. In this model, the scope of the project is not fixed. The client is charged based on the actual time and resources spent on the project, and any changes to the scope of the project are accommodated through changes to the budget and timeline. This model allows for greater flexibility in the project.

**Question 14**: Prepare Timesheets of a BA in various stages of SDLC.

➢ Design Timesheet of a BA ➢ Development Timesheet of a BA ➢ Testing Timesheet of a BA ➢ UAT Timesheet of a BA ➢ Deployment n Implementation Timesheet of a BA

**ANS: Requirement Gathering:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Task Description** | **Start Time** | **End Time** | **Total Hours** |
| 01-01-2025 | Conducted meetings with stake holders to gather requirements | 09:00 | 13:00 | 4 |
| 02-01-2025 | Reviewed existing system documentation to identify gaps | 10:00 | 16:00 | 6 |
| 03-01-2025 | Facilitated brainstorming sessions with project team and stakeholders | 10:00 | 15:00 | 5 |
| 04-01-2025 | Analyzed and documented requirements | 09:00 | 15:00 | 6 |
| 05-01-2025 | Followed up with stakeholders for clarifications and feedback | 10:00 | 16:00 | 6 |
| 06-01-2025 | Prepared & presented requirements document to project team | 09:00 | 14:00 | 5 |
| **Total** |   |   |   | **32** |

**Requirement Analysis:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Task Description** | **Start Time** | **End Time** | **Total Hours** |
| 01-01-2025 | Reviewed current system documentation | 09:00 | 14:00 | 5 |
| 03-01-2025 | Conducted stakeholder interviews | 10:00 | 16:00 | 6 |
| 04-01-2025 | Analyzed interview findings | 10:00 | 17:00 | 7 |
| 05-01-2025 | Created requirements documentation | 09:00 | 15:00 | 6 |
| 07-01-2025 | Facilitated requirements review meeting with stakeholders | 10:00 | 16:00 | 6 |
| 08-01-2025 | Revised requirements based on feedback | 09:00 | 14:00 | 5 |
| **Total** |   |   |   | **35** |

**Design:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Task Description** | **Start Time** | **End Time** | **Total Hours** |
| 01-01-2025 | Reviewing user requirements | 09:00 | 17:00 | 8 |
| 03-01-2025 | Creating use cases and workflows  | 10:00 | 18:00 | 8 |
| 04-01-2025 | Designing database scheme | 10:00 | 17:00 | 7 |
| 05-01-2025 | Creating wireframes | 09:00 | 18:00 | 9 |
| 07-01-2025 | Reviewing design | 10:00 | 16:00 | 6 |
| 09-01-2025 | Creating design specifications | 11:00 | 14:00 | 3 |
| 10-01-2025 | Meeting with development team | 10:00 | 15:00 | 5 |
| 11-01-2025 | Updating design based on feedback | 11:00 | 16:00 | 5 |
| 12-01-2025 | Finalizing design documents | 10:00 | 17:00 | 7 |
| 13-01-2025 | Reviewing and approving design | 09:00 | 14:00 | 5 |
| **Total** |  |  |  | **63** |

**Development:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Task Description** | **Start Time** | **End Time** | **Total Hours** |
| 01-05-2025 | Meeting with Developers | 09:00 | 17:00 | 8 |
| 02-05-2025 | Conduct a session to elucidate design of software | 10:00 | 18:00 | 8 |
| 03-05-2025 | Conducted session for design development | 10:00 | 17:00 | 7 |
| 04-05-2025 | Reviewed test plans for upcoming release. | 09:00 | 18:00 | 9 |
| **Total** |  |  |  | **32** |

**Testing:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Task Description** | **Start Time** | **End Time** | **Total Hours** |
| 01-05-2025 | Conducted functional testing of feature X | 09:00 | 12:00 | 3 |
| 02-05-2025 | Collaborated with testing team on issue Y | 10:00 | 13:00 | 3 |
| 03-05-2025 | Conducted regression testing of module Z | 10:00 | 14:00 | 4 |
| 04-05-2025 | Reviewed test plans for upcoming release | 09:00 | 12:00 | 3 |
| 05-05-2025 | Analyzed test results and reported issues | 10:00 | 14:00 | 4 |
| 06-05-2025 | Tested integration of module A with module B | 09:00 | 12:00 | 3 |
| **Total** |  |  |  | **20** |

|  |  |
| --- | --- |
|  |  |
|  |  |

|  |  |
| --- | --- |
|  |  |