**Question 1: Business Process Model**

**Answer:**

**Business Process Modelling** is the analytical and visual representation of an organizations business process. Process modelling software gives an analytical representation of ‘as-is’ process in an organization and contrasts it with ‘to-be’ process for making them more effective.

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

**Goal**: The gaol is to make it easier for farmers in rural areas to purchase seeds, fertilizers and pesticides from any location by using internet connectivity from online store.

**Inputs**: Agricultural products from local farmers and distributors, Website platform, Payment processing system, Shipping carrier services and Customer service support

**Resources**: Resources include all team members who keep things going smoothly and online application that allows orders to be placed online. Partner courier that will transport goods to

**Outputs**: Output is the availability of all seeds, pesticides and fertilizers on the online platform, processed payments by payment getways and payment confirmations and delivery to all remote area pin code.

**Activities**: Activities include sourcing and listing agricultural items, creating and managing the website, taking online orders from clients, displaying the shipment information along with the date and collecting payment via online payment getways or offering a cash on delivery alternative.

**Value created to the end Customer**: Purpose of value is to satisfy farmers in remote areas who want improved agricultural practices. Developing internet platforms user friendly and convenient access to high quality agricultural products. Simple online ordering trustworthy delivery and shipping services. Support for queries and problems from customer care.

**Question 2: SWOT Analysis**

**Answer:**

**SWOT analysis** is a strategic planning tool that assesses an organizations Strengths, Weaknesses, Opportunities and Threats.

Mr Karthik is doing SWOT analysis before he accepts this project.

**Strengths:**

* Wide reach customers from variety of areas can access the online agricultural store.
* Compared to a traditional store, an online store has reduced overhead expenses.
* Shopping and ordering are made simple for customers.
* Improved client interactions and automated inventory management.

**Weaknesses**:

* Lack of experience in the agricultural sector
* Potential technological challenge
* Company do not have enough resources to work on this project
* Team handling this kind of project for the first time
* Time duration is 18 months, which seems less

**Opportunities**:

* The project is the first of it’s a kind that the company is working on.
* To address the issues facing farmers
* Undiscovered market with room to grow and expand

**Threats**:

* Competition from existing stores, technological disruption
* The CSR initiative must be considered when creating a project
* Do farmers know anything about the online stores?
* How to transport agricultural products to poor and rural areas of the nation

**Question 3 – Feasibility Study**

**Answer:**

**A feasibility study** is an assessment of the practicality of a proposed plan or project. A feasibility study analyses a viability of a project to determine weather the project or venture is likely to succussed.

Mr Kartik 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.

**Hardware**:

* Infrastructure requirement for the online platform
* Laptops: 12
* Desks and Chairs: 12

**Software:**

* Licenses of Windows and Java application JDK 22.0.2 : 12
* Availability for Skilled Java Developers

**Trained Resources: 12 Resources**

* Delivery Head: 1 – Mr Kartik
* Project Manager: 1 – Mr Vandanam
* Sr. Java Developer: 1 – Ms Juhi
* Java Developers: 4 – Mr Teyson, Ms Lucie, Mr Tucker and Mr Bravo
* Network Admin: 1 – Mr Mike
* Database Admin: 1 – Mr John
* Testers: 2: Ms Alekya and Mr Jason
* BA: 1 – Me

**Budget:** INR 2 CR

**Time Frame:**

* Project duration and deadlines : 18 Months

**Question 4 – Gap Analysis**

**Answer:**

**A Gap Analysis** is a tool that businesses to compare their current performance to their desired performance. It helps you identify the “gap” between where your business currently stands (AS-IS) verses where you want your business to be (TO-BE).

Mr Kartik 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.

**AS-IS:** Current manual procurement process for farmers. Farmers find it difficult to obtain pesticides; they have to pay for travel expenses to get to the city and are unable to locate reliable dealers there; As a result they wind up purchasing inferior goods at high prices. There are still a lot of necessary products and equipment’s of machinery missing from market.

**TO-BE:** Automated online platform for purchasing agricultural products. Farmers will be able to quickly and easily search for any type of agricultural production across the globe with just one click and make payments online in real time. This is actually a better option than going to bank to take out cash. An additional bonus is that there are no delivery charges and the purchased items will be delivered right to their doors.

**Gap:** Identifying the differences between the current and future process.

**Question 5 – Risk Analysis**

**Answer:**

**“Risk Analysis”** refers to the process of identifying, evaluating and prioritising potential negative events or uncertainties that could impact a project, business operation or organization, by assessing their likelihood of occurrence and potential severity to develop mitigation strategies and minimize negative outcomes.

List down different risk factor that may be involved (BA Risk and Process/ Project Risks)

**Project Risk:**

* Additional funding might be needed to keep the project moving forward without any problems.
* Old people and uneducated farmers may be against digitalization and persuade younger farmers not to support it.
* May find problem delay in delivery in rural areas.

**BA Risks:**

* Communication gap – incorrect information when gathering requirements, input in multiple languages for farmers.
* The duration of project development is less
* Selecting the wrong elicitation method
* Relevant studies on climate change and agriculture
* Request for changes made by stakeholder’s during the last stage
* Co-ordination between JAVA developers and coders is crucial
* Simple payment get-way or COD option and proper connection with delivery channel partner

**Question 6 – Stack holder Analysis (RACI Matrix)**

**Answer:**

**“Stakeholder Analysis”** is the processof identifyingand evaluating all individuals or groups that have an interest in a project or business decision, assessing their level of influence and impact, and understanding their needs and expectations to ensure their concerns are considered during decision-making and project planning.

Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take Decisions and who are the influencers.

|  |
| --- |
| **RACI – Responsible(R), Accountable(A), Consulted(C), Informed(I), Authorized(\*), Not Available(NA)** |
| Tasks | Mr Henry – Project Sponsor | Peter, Kevin, Ben – Key Stakeholders | Mr Karthik – DH | Mr Vandanam – PM | Ms Juhi – Sr. JAVA Developer | Teyson, Lucie, Bravo & Tucker – JAVA Dev. | Mr Jason & Ms Alekya – Testers | PRATIK - BA | Mr Mike –Network Admin, Mr John – DB Admin |
| Requirement Gathering | \* | C | NA | A/I | NA | A | NA | R | NA |
| Requirement Analysis | NA | NA | NA | I | NA | NA | NA | R | NA |
| Development | \* | NA | NA | R/A | C/A | R | NA | C | C/A |
| Testing | NA | NA | NA | R/A | I | NA | R | I | NA |
| Implementation | NA | NA | R | I | I | NA | NA | R | NA |
| UAT | I | NA | NA | R/A | NA | NA | NA | C | NA |

**INFLUENCERS:**

* Mr Henry is the main influencer in this project as he is the sponsor and initiator of project.
* Since he is the projects sponsor and originator, Mr Henry is the primary influencer. The project will be significantly impacted by his choices and demands.
* The API IT Solutions team has a significant impact because they are in charge of completing the project. Their choice and efforts will directly affect how well the project turns out.
* Key Decision Makers: Since Mr Henry is project sponsor and initiator, he is the primary decision maker. Regarding the requirements and goal of the project, his decision will be final.
* The API IT Solution team plays a crucial role in decision making since they are in charge of completing the project. Their choices about the projects technological elements will be crucial to the project success.

**Question 7: Business Case Document**

**Answer:**

**A “Business Case Document”**  in business analysis is a formal document that outlines the rational for undertaking a project or initiative, detailing the potential benefits, costs, risks and alternative solutions to persuade decision-makers to approve the proposed project, essentially justifying its value to the organization.

Help Mr. Karthik to prepare a Business Case Document

* Should include project overview, objective, benefits, risks, budget, timeline and stakeholder analysis
* **Project Overview:** Why was this project initiated?
	+ Mr Henry identified a need for farmers to deliver agriculture products to their doorstep and an opportunity for himself to capitalize on an opportunity.
* **Risks:** What are the current problems?
	+ Difficulties in procuring fertilizers, which are very important for farms. Buying seeds for farming certain crops and a lack of pesticides could help greatly reduce pests in crops.
* **Benefits:** With this project, how many problems could be solved?
	+ This project will facilitate farmers to buy seeds, pesticides and fertilizers from anywhere through internet connectivity.
* **Budget:** What are the resource required?
	+ Financial resources such as banks and investors. Manpower such as packers, delivery boys, developers and testers to test and develop the project. Sellers/dealers to tie up and sell products online.
* **Objectives:** How many organizational changes are required to adopt this technology?
	+ No change is required as such.
* **Timeline:** What is the timeframe to recover ROI?
	+ 6 months
* **Stack holder Analysis:** How do I identify stack holders?
	+ Stack holders are identified on the below basis: Understanding the purpose of identifying stack holders. Determine their impact on the project. Their needs in relation to the project. Mr Henry, Peter, Kevin, Ben, farmers and sellers are the prime stack holders.
* **Following are the high-level scopes for this engagement :**
	+ Requirement Study
	+ Design
	+ Testing
	+ Development

**Question 8: Four SDLC Methodologies**

**Answer:**

**“SDLC Methodologies”** refers to the different structured approaches to manage the software development process, from the initial planning and requirement gathering stages to the final deployment and maintenance, essentially outlining a systematic framework for creating software projects, where business analysts play a key role in defining requirements and ensuring alignment with business needs throughout the business lifecycle.

The four methodologies like sequential, Iterative, Evolutionary an Agile.

1. **Sequential:** The entire project is delivered at the end of developing life cycle.
2. **Iterative:** with frequency some modules are delivered. In this model, the total software development is divided into iterations and each iteration has design, development, testing and review.
3. **Evolutionary:** within the scope they will continuously evolve they will try and fail and then they will start adding function.
4. **Agile:** Continuous delivery in the every stage of the project.

**Question 9: Waterfall, RUP, Spiral and Scrum Model**

**Answer:**

**A Software Development Life Cycle (SDLC)** model is a framework that guides the process of developing software applications. SDLC models have different approaches to the phases of development. Some of the common SDLC models are as below,

1. **Waterfall Model:** It is a traditional model and it follows a structured approach with each phase having specific deliverables.
2. **V Model:** It is a verification and validation model in which each phase must be completed so that next phase begins. Testing of product is planned in parallel with a corresponding phase of development in V-model.
3. **RUP Model:** RUP stands for Rational Unified Process, where phase / module wise (long term project) application is developed. Hence we can track the defect at early stages. This avoids the downward flow of the defect.
4. **Spiral Model:** The spiral model is a risk driven process model generator for software projects. The spiral model has four phases: Planning, Risk Analysis, Engineering and Evolution.
5. **Scrum Model:** Scrum is a process framework used to manage product development. Scrum is empirical in that it provides a means for teams to establish a hypothesis of how they think something works, try it out, reflect on the experience, and make the appropriate adjustment.

**Question 10: Waterfall vs. V-Model**

**Answer:**

**Waterfall** is a sequential, linear approach, while **V-model** is an extension of waterfall that emphasizes testing at each stage.

|  |  |  |
| --- | --- | --- |
|  | **Waterfall Model** | **V-Model** |
| **Approach** | Waterfall model follows a sequential approach | V-model follows a verification and validation approach |
| **Testing** | In waterfall model testing is conducted only after the development phase is completed. | In V-model testing is conducted in parallel with each development phase. |
| **Flexibility** | Waterfall model is less flexible | V-model is more flexible |
| **Feedback** | Waterfall model provides feedback only after end of the development cycle | V-model provides feedback at each stage of development |
| **Risk Management** | Waterfall model does not prioritize risk management | V-model has risk management as an integral part of its development process |
| **Documentation** | Waterfall model emphasize extensive documentation | V-model emphasizes documentation that necessary for each phase of development |
| **Delivery** | Waterfall model delivers the final product at the end of development phase | V-model delivers incremental version of product at each stage of development |

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

**Answer:** Since the waterfall model provides a structured approach with set stages, it would be beneficial in cases where subject expertise may be lacking. Reviews are conducted at the conclusion of each phase to determine whether or not the project is going in the right direction.

**Question 12: Gantt chart:**

**Answer:**

A **Gantt chart** is a visual representation of a project timeline, displaying each task within a project as a horizontal bar, indicating its start and end dates, duration and dependencies between tasks, allowing project managers to effectively plan, track and monitor progress throughout the project lifecycle.



**Question 13: Difference between Fixed Bid vs. billing projects**

**Answer:**

**Fixed Bid Model:**

**A Fixed bid** project is a project where the price is set in advance and doesn’t change regardless of how long it takes to complete.

In this model, the vendor commits to a set amount of money for a project with defined deliverables. These are usually domestic projects when a company has specific elements in their project, such as predetermined data, a fixed scope, or a strict budget. The fixed bid project is charged as a single, flat fee, irrespective of hours spent.

This model features predefined project requirements, fixed time frames, and a fixed budget. As the name implies this model is about freezing your project requirements and specifications together with the costs before development begins. For any extra work that was not specified in the documentation, client must pay extra.

The fixed bid model can be beneficial for companies that have a clear understanding of their project requirements and are looking for cost predictability. However, it can also bring some confusion when it comes to choosing which model is best to handle your business.

**Billing Model:**

**“Billing Projects”** refers to the process of invoicing clients for the work completed on a specific project, including documenting all tasks done, time spend, and expenses incurred during the project execution. Essentially ensuring a company gets paid for the services delivered on a project-by-project basis;

It involves setting rates, creating invoices and collecting payments based on the project agreement with the clients.

In this model project is billed on the number of hours worked, at the hourly, daily, or monthly fixed billing rates assigned for that project. This model is used when there is no restriction on budget, it can be increased, based on the work required by the team.

**Question 14: Prepare timesheets of BA in various stages of SDLC**

**Answer:**

**Timesheet is breakdown of everyday works.**

**Day 1: Timesheet of BA: Requirement Gathering**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Description** | **Time Started** | **Time Stopped** | **Time Total** | **Remark** |
| Had a meeting with stack holders | 10:45 AM | 11:45 AM | 60 Min | Completed |
| Worked on consolidation of raw information received from stack holders | 12 PM | 1 PM | 60 Min | Completed |
| Discussion on call about summarized data with stack holders for verification | 1:15 PM | 2:30 PM | 75 Min | Completed |
| High level design document is prepared and analysed | 3 PM | 4 PM | In Progress | Completed |

**Day 2: Timesheet of BA: Requirement Analysis**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Description** | **Time Started** | **Time Stopped** | **Time Total** | **Remark** |
| Had a meeting with internal stack holders | 10:45 AM | 11:45 AM | 60 Min | Completed |
| Review on gathered requirement | 12 PM | 1 PM | 60 Min | Completed |
| Discussion on call about summarized data with stack holders for verification | 1:15 PM | 2:30 PM | 75 Min | Completed |
| Discussion on how to go further after analysis with stack holders | 3 PM | 4 PM | In Progress | Completed |

**Day 3: Timesheet of BA: Discussion with technical team on analysed requirement**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Description** | **Time Started** | **Time Stopped** | **Time Total** | **Remark** |
| Had a meeting with technical team | 10:45 AM | 11:45 AM | 60 Min | Completed |
| Detailed analysis on progress of application | 12 PM | 1 PM | 60 Min | Completed |
| The risk and challenges faced in the designed phase are covered | 1:15 PM | 2:30 PM | 75 Min | In Progress |
| High level design document is prepared and analysed | 3 PM | 4 PM | 60 Min | Completed |

**On Development Phase: Development Timesheet of a BA**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Description** | **Time Started** | **Time Stopped** | **Time Total** | **Remark** |
| Morning meeting with programmer and developers  | 10:45 AM | 11:45 AM | 60 Min | Completed |
| Thorough analysis on the coding part of the software | 12 PM | 1 PM | 60 Min | Completed |
| Reporting the development of the software | 1:15 PM | 2:30 PM | 75 Min | In Progress |
| Low level design document is prepared by developers and studied | 3 PM | 4 PM | 60 Min | Completed |

**On Testing Phase: Testing Timesheet of BA**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Description** | **Time Started** | **Time Stopped** | **Time Total** | **Remark** |
| Meeting with testers and responsible stack holders  | 10:45 AM | 11:45 AM | 60 Min | Completed |
| Comprehensive assessment of software as per the client needs | 12 PM | 1:30 PM | 90 Min | Completed |
| Defects are analysed and errors are minimized | 2:15 PM | 3:45 PM | 90 Min | In Progress |
| Test document is prepared | 4:00 PM | 5:00 PM | 60 Min | Completed |

**At stage of UAT: UAT Timesheet of BA**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Description** | **Time Started** | **Time Stopped** | **Time Total** | **Remark** |
| Morning meeting with concerned team  | 10:45 AM | 11:45 AM | 60 Min | Completed |
| Sincere requests for changes are taken into consideration | 12 PM | 1:30 PM | 90 Min | Completed |
| Checked the project in front of client - Functionalities are added as per the given change request | 2:15 PM | 3:45 PM | 90 Min | Completed |
| Reporting the possible outcome to the PM | 4:00 PM | 5:00 PM | 60 Min | Completed |

**At the day of Deployment: Deployment and Implementation Timesheet of BA**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Description** | **Time Started** | **Time Stopped** | **Time Total** | **Remark** |
| Team meeting to analyse the user readiness of the software | 10:45 AM | 11:45 AM | 60 Min | Completed |
| Running the software for first time and project got initiated by client | 12 PM | 1:30 PM | 90 Min | Completed |
| Risk analysis of given project from the release engineers perspective and had discussion about process changes | 2:15 PM | 3:45 PM | 90 Min | Completed |
| Discussed about essential takeout’s from the project | 4:00 PM | 5:00 PM | 60 Min | Completed |