PROJECT 1 – PART-1

Question 1: Business Process Model for Online Agriculture Store

Answer:

Goal: Facilitate farmers’ access to seeds, fertilizers, and pesticides through an online platform.

Inputs: Product details from manufacturers and user preferences from farmers.

Resources: A project team led by Mr. Henry and a budget of 2 Crores INR.

Output: An online application and order confirmations for farmers.

Activities: Developing the application, collaborating with manufacturers, and marketing the platform to farmers.

Value Created to the End Customer: Improved accessibility to essential agricultural products, streamlined purchasing processes, and better pricing, enhancing agricultural productivity and efficiently meeting farmers' needs.

Question-2: SWOT

Answer:

|  |  |
| --- | --- |
| INTERNAL FACTORS | |
| STRENGTHS + | WEAKNESSES – |
| * User Friendly Website and Shopping Experience * Convenience and Accessibility * Wide Product range | * Logistical Challenges * Dependence on Internet Connectivity * Seasonal Demand Variability |
|  |  |
| EXTERNAL FACTORS | |
| OPPORTUNITIES + | THREATS – |
| * Untapped market * Growing demand for online shopping | * New Competitors * Economic downturns or Fluctuations |

Question 3: Feasibility Study

Answer

Budget assigned to the project – 2 cr.

Cost estimated – 1.8 cr.

Feasibility Study on Technology:

Technology used: Database servers, Payment gateway integrations, Cloud storage

Web Server: Apache

Database Server: MySQL, MongoDB

Programming Language: Java, PHP, Python

Total Score: 20L

**Hardware**

Webservers: Dell PowerEdge, HPE ProLiant, Lenovo Think system

Database servers: Supermicro Super Server, Dell PowerEdge, Amazon RDS

Load Balancers: HAproxy, AWS Elastic, Citrix ADC

Storage Devices: Dell EqualLogic, AWS, Synology DiskStation

Total Score: 45 L

**Software**

Payment Gateway: Phonepe, Razorpay, Pinelabs

E-commerce Platform: Magento, Shopify, We Commerce

Security Applications: SSL Certificates, Web Application Firewall, Anti Malware & Software

Total Score: 25 L

**Resources**

Project Manager (PM)

₹1,200,000 (for 18 months)

Business Analyst (BA)

₹800,000 (for 18 months)

Senior Java Developer

₹1,000,000 (for 18 months)

Java Developers (5)

5 x ₹600,000 = ₹3,000,000 (for 18 months)

Database Administrator (DB Admin)

₹800,000 (for 18 months)

Network Administrator (NW Admin)

₹800,000 (for 18 months)

Testers (2)

₹1,200,000 (for 18 months)

Total Score: 90L

Question 4: Gap Analysis

Answer:

**Current State**

* Customers usually have to visit physical stores to purchase agricultural products such as seeds, fertilizers, which can be inconvenient particularly for those who is the who live remote areas. This limits their access to necessary products.
* Is the website user-friendly and easy to navigate? Is the checkout process smooth and efficient?
* Limited payment methods primarily only credit cards or basic digital payment methods.
* Limited partnerships with a few manufacturers. Dependency on a small number of suppliers.
* High operating costs because of investments in technology and marketing.

**Desired State**

* Customers will be able to purchase products at any time and from any location with a fully integrated online platform. This will include detailed product reviews and descriptions that are easily accessible**.**
* Easy-to-use website with a simple payment process and straightforward functionality.
* A Variety of safe payment options, such as PayPal, credit cards, mobile wallets (like Google Pay and PhonePe & Paytm), and financing choices for expensive products
* Expansion into new product categories and markets
* Enhanced operational efficiency and profitability by implementing cost reduction strategies.

Question 5: Risk Analysis

Answer:

**Internal Risks**

* Poor communication within the project team may result in misunderstandings and errors**.**
* Uncontrolled changes or continuous growth in project scope may impact deadlines and budgets.
* Ineffective allocation of resources, such as time, money can result in delays or failures in important aspects of a project.
* Technical issues and system downtime can affect customer experience.

**External Risks**

* Changes in e-commerce regulations could disrupt business operations.
* Increased competition from other online agricultural platforms may impact market share.

**Project Risks**

* Scope changes or inaccurate estimations can lead to excess spending.
* Delivering a product that does not meet quality requirements could damage reputation and usability.
* The project may fall behind schedule due to a number of reasons, including unforeseen challenges or increased complexity.

**BA Risks**

* Insufficient or unclear requirements can lead to scope creep, delayed timelines, and rework if developers create features that do not meet user needs.
* Failing to engage key stakeholders throughout the project can lead to a lack of support and resources when needed.
* lack of risk identification may result in insufficient preparedness and potential delays in project completion.

Question 6: RACI Matrix

|  |  |  |  |
| --- | --- | --- | --- |
| R/A/C/I | Name of the Respondent | Designation | Details |
| Responsible | Mr. Dooku | Project Coordinator | Email id: Dooku@work.in  Ph no: 9000000000 Reach out: 9Am to 1pm IST |
| Mr. Karthik | Delivery Head | Email id: Karthik@work.in  Ph no: 9000000001 Reach out: 9Am to 1pm IST |
| Mr. Vandanam | Project Manager | Email id: Vandanam@work.in  Ph no: 9000000002  Reach out: 9Am to 1pm IST |
| Accountable | Mr. Henry | Founder | Email id: Henry@work.in  Ph no: 9000000003  Reach out: 9Am to 1pm IST |
| Consulted | Mr. Pandu | Financial head | Email id: Pandu@work.in  Ph no: 9000000004  Reach out: 9Am to 1pm IST |
| Ms. Juhi | Senior java developer | Email id: Juhi@work.in  Ph no: 9000000008 Reach out: 9Am to 1pm IST |
| Mike | Network Admin | Email id: Mike@work.in  Ph no: 9000000009  Reach out: 9Am to 1pm IST |
| John | Database | Email id: John@work.in  Ph no: 9000000010 Reach out: 9Am to 1pm IST |
| Alekya | Tester | Email id: Alekya@work.in  Ph no: 9000000012 Reach out: 9Am to 1pm IST |
| Informed | Ben | Committee Member/Farmer | Email id: Ben@work.in  Ph no: 9000000007 Reach out: 9Am to 1pm IST |
| Peter | Committee Member/Farmer | Email id: Peter@work.in  Ph no: 9000000005 Reach out: 9Am to 1pm IST |
| Kevin | Committee Member/Farmer | Email id: Kevin@work.in  Ph no: 9000000006 Reach out: 9Am to 1pm IST |

Question 7: Business Case Document

Answer:

1. Why is this project initiated?

The project is initiated to solve the primary challenges that farmers, especially those in remote areas, experience when trying to get essential agricultural products including seeds, fertilizer, and pesticides. The goal is to create a seamless platform that enables farmers to procure these supplies easily and efficiently, thus reducing the time and effort spent on procurement.

1. Current Problems.

Farmers, especially in remote areas, struggle to access necessary supplies such as seeds, fertilizers, and pesticides. This limited availability often leads to lower crop yields. The lack of available agricultural products, such as seeds, fertilizers, and pesticides, severely limits farmers' ability to achieve best crop yields and manage their farming operations effectively.

1. Problem solved.

The online agriculture product store significantly improves accessibility for farmers, particularly those in remote areas who previously faced challenges in procuring essential agricultural supplies. By providing a centralized platform, farmers can easily browse a wide range of products, including seeds, fertilizers, and pesticides, from various manufacturers. This platform enables farmers to engage with suppliers, ensuring that they receive timely information about product availability and pricing.

1. Resources required.

To execute this project, several key resources are required. A skilled development team, including Java developers and testers, will be essential for building and maintaining the online platform. Additionally, network and database administrators will be needed to ensure the system's reliability and security. A project manager will oversee the project, coordinating efforts among team members and stakeholders. Furthermore, necessary hardware and software infrastructure, such as servers and development tools, will be required to support the application.

1. How much organizational change is required? To adopt this technology?

Cultivating a culture open to adopting new technologies among stakeholders. Concentrating more on User Acceptance Focus by Promoting. user acceptance by highlighting the advantages of the new technology and providing ongoing support to ease the transition. Establishing a feedback loop to monitor the effectiveness of the new system and make necessary adjustments based on user experiences and suggestions.

1. What is the timeframe to recover ROI?

The expected timeframe to recover the return on investment (ROI) for this project is approximately 18 months. This estimate considers the initial development costs, ongoing operational expenses, and projected revenue generated from increased sales through the online platform. By aligning the project's duration with the corporate social responsibility (CSR) initiative, the organization aims to demonstrate its commitment to supporting farmers while achieving financial sustainability.

1. How to identify stakeholders?

Identifying stakeholders is a crucial step in the project planning process. Stakeholders can be identified through a comprehensive stakeholder analysis, which involves mapping out individuals and groups who will be affected by the project. Key stakeholders include farmers who will use the platform, manufacturers who will supply products, project coordinators who will oversee implementation, and the development team responsible for building the application. Engaging these stakeholders early in the process will ensure their needs and concerns are addressed, fostering collaboration and support for the project.

Question 8: Four SDLC Methodologies

Answer:

**Sequential - Waterfall Model**

The Waterfall model follows a structured, linear process where each phase must be completed before moving on to the next. It consists of key stages: requirements analysis, design, implementation, testing, integration, deployment, and maintenance. This methodology is best suited for projects with well-defined, stable requirements, as it facilitates clear project management and milestone tracking. However, its rigid nature can be a drawback when requirements change, as implementing modifications later in the process can be costly and time-consuming.

**Iterative - Rational Unified Process (RUP)**

RUP is a flexible development framework that divides the project lifecycle into four stages: Inception, Elaboration, Construction, and Transition. This iterative approach encourages continuous refinement and stakeholder involvement while focusing on risk management. By delivering functional components in stages, RUP effectively accommodates evolving requirements, making it an excellent choice for complex projects that demand adaptability.

**Evolutionary - Spiral Model**

The Spiral Model is designed for risk-driven development, combining iterative and prototyping techniques. Each cycle, or “loop,” includes four key activities: Planning, Risk Analysis, Engineering, and Evaluation. By continuously reassessing risks and incorporating user feedback, this model helps teams identify and mitigate potential issues early on. Its emphasis on flexibility and ongoing refinement makes it particularly suitable for large, high-risk projects with significant uncertainties.

**Agile - Scrum**

Scrum is an Agile methodology centered around short, iterative development cycles called “sprints,” typically lasting 2 to 4 weeks. Teams work from a prioritized Product Backlog, delivering specific features in each sprint. Daily stand-up meetings enhance communication, while Sprint Reviews and Retrospectives allow teams to improve their processes continuously. Scrum’s focus on collaboration and adaptability makes it ideal for dynamic environments where requirements frequently change.

Question 9: which methodology do you think would be better for this project?

Answer:

I would recommend adopting the Agile methodology, Due to its flexibility, stakeholder engagement, Quick Delivery of Functional Features, and Risk Management. It allows for quick adaptations to user feedback, engaging stakeholders continuously and delivering early value to farmers effectively.

Question 10: Difference between Waterfall Vs V-Model

| **Aspect** | **Waterfall model** | **V-model** |
| --- | --- | --- |
| **Cost** | The cost of Waterfall model is low. | V-model is expensive. |
| **Simplicity** | Simplicity of Waterfall model is simple. | Simplicity of V-model is Intermediate. |
| **Flexibility** | Flexibility of Waterfall model is Rigid. | Flexibility of V-model is Little flexible. |
| **Phases** | There is no way to return to the earlier phase. | There is no such constraint in V-model. |
| **Execution Process** | Waterfall model is a sequential execution process. | It is also a sequential execution process. |
| **Linear Movement of Steps** | Waterfall model’s steps move in a linear way. | V-model’s steps don’t move in linear way. |
| **Reusability** | Re-usability of Waterfall model is Limited. | V-model can be Re-use for some extent. |
| **User Involvement** | User involvement in Waterfall model is only in beginning. | User involvement in V-model is also only in beginning. |
| **Testing Activities Start** | In Waterfall model testing activities start after the development activities are over. | In V-model testing activities start with the first stage. |
| **Success Guarantee** | Guarantee of success through Waterfall model is low. | Guarantee of success through V-model is high. |
| **Process** | Waterfall model is a continuous process. | V-model is a simultaneous process. |
| **Defects** | Software made using Waterfall model, the number of defects are less in comparison of software made using V-model. | Software made using V-model, the number of defects are greater in comparison of software made using Waterfall model. |
| **Requirement Specification** | Requirement specification in Waterfall model is necessary in beginning. | Requirement specification in V-model is also necessary in beginning. |
| **Customer Involvement** | Less customer involvement. | More customer involvement as compared to waterfall model. |
| **Testing during Development** | It is not possible to test a software during its development. | There is possibility to test a software during its development. |
| **Identification of Defects** | Identification of defects is done in the testing phase. | Identification of defects can be done from the beginning. |
| **Debugging** | Debugging is done after the last phase. | Debugging can be done in between phases. |
| **Usage** | Waterfall model is less used now-a-days in software engineering. | V-model is widely used in software engineering. |

Question 12: As a BA, state your reason for choosing one model for this project?

The V-Model emphasizes verification and validation, ensuring that each phase of development is completed before moving on to the next, which is crucial for delivering a high-quality product that meets the needs of farmers and stakeholders. Additionally, the involvement of stakeholders at each stage allows for continuous feedback, reducing the risk of misalignment with business objectives and enhancing overall project success.

Question 12: Gantt Chart

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Task**  **s** | **week**  **1** | **week**  **2** | **week**  **4** | **week**  **6** | **week**  **8** | **week**  **10** | **week**  **12** | **week**  **14** | **week**  **16** | **week**  **18** |
| **RG** |  |  |  |  |  |  |  |  |  |  |
| **RA** |  |  |  |  |  |  |  |  |  |  |
| **D1** |  |  |  |  |  |  |  |  |  |  |
| **D2** |  |  |  |  |  |  |  |  |  |  |
| **T1** |  |  |  |  |  |  |  |  |  |  |
| **T2** |  |  |  |  |  |  |  |  |  |  |
| **T3** |  |  |  |  |  |  |  |  |  |  |
| **T4** |  |  |  |  |  |  |  |  |  |  |
| **UAT** |  |  |  |  |  |  |  |  |  |  |
| **Deployment** | |  |  |  |  |  |  |  |  |  |

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| **Resour ces** | **Wee k1** | **Week 10** | **Week 20** | **Week 28** | **Week 38** | **Week 48** | **Week 56** | **Week 65** | **Week 73** | **Week 78** |
| **Project Manag er** |  |  |  |  |  |  |  |  |  |  |
| **Busine ss analyst** |  |  |  |  |  |  |  |  |  |  |
| **Java Develo per** |  |  |  |  |  |  |  |  |  |  |
| **Tester** |  |  |  |  |  |  |  |  |  |  |
| **DB**  **admin** |  |  |  |  |  |  |  |  |  |  |
| **Netwo rk admin** |  |  |  |  |  |  |  |  |  |  |

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

**Fixed bid** projects involve a predetermined amount that clients agree to pay for the entire project, regardless of the actual expenses incurred during development. This pricing structure provides cost certainty for the client and defines the project scope upfront. However, it places the financial risk primarily on the vendor, as they must manage any unexpected costs or overruns within the set budget. This makes accurate estimation of project requirements and resources essential. Fixed bid contracts are typically best suited for projects with well-defined objectives and minimal expected changes, as any alteration in scope can complicate the agreement and may require renegotiation.

**Billing projects**, often based on time and materials, require clients to pay for the actual hours worked and materials used during the project. This structure offers greater flexibility as it allows for adjustments in scope and requirements without the need for renegotiation. The client assumes more financial risk since they are responsible for the actual costs incurred, but this arrangement also grants vendors the freedom to focus on delivering quality work without the constraints of a fixed budget. Billing projects are ideally suited for initiatives where requirements are unclear at the outset or expected to evolve, as they can accommodate changing priorities and deliverables more fluidly throughout the project lifecycle.

Question 14: Timesheets of a BA in various stages of SDLC

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| --- | --- | --- | --- | --- | --- |
| Design Timesheet | | | | | |
| S.No | Tasks | Actionable items | Start Time | End Time | Duration |
| 1 | Requirements gathering | Conducting a meeting with stakeholders to gather requirements | 10:00 AM | 11:30 AM | 1.5 hours |
| 2 | Client interaction | A zoom call to update the client on the MOM | 11:30 AM | 1:30 PM | 2 hours |
| 3 | Wireframe Creation | Develop wireframes and design layouts | 2:30 PM | 3:30 PM | 1 hour |
| 4 | Design Review | Conduct design review session with stakeholders | 3:30 PM | 4:30 PM | 2 hour |
| 5 | Team meeting | Discussion on the day inputs | 4:30 PM | 7:00 PM | 2.5 hours |

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| Development Timesheet | | | | | |
| S.No | Tasks | Actionable items | Start Time | End Time | Duration |
| 1 | Requirement Clarification | Coordinate with developers for clarity on requirements | 10:00 AM | 11:30 AM | 1.5 hours |
| 2 | Collaborating with developers | Daily stand-up meetings | 11:30 AM | 1:30 PM | 2 hours |
| 3 | Clarifying requirements | Review development progress | 2:30 PM | 3:30 PM | 1 hour |
| 4 | Meeting with Stakeholders | Provide updates to stakeholders about progress | 3:30 PM | 4:30 PM | 2 hour |
| 5 | Team meeting | Discussion on the day inputs | 4:30 PM | 7:00 PM | 2.5 hours |

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| Testing Timesheet | | | | | |
| S.No | Tasks | Actionable items | Start Time | End Time | Duration |
| 1 | Test Case Preparation | Develop test cases based on specifications | 10:00 AM | 11:30 AM | 1.5 hours |
| 2 | Test Planning | Collaborating with QA to develop a test plan | 11:30 AM | 1:30 PM | 2 hours |
| 3 | Participate in Testing Sessions | Join testing sessions to observe and gather insights from QA | 2:30 PM | 3:30 PM | 1 hour |
| 4 | Issue Tracking and Reporting | Analysing test results and discuss findings with the QA team, Identify areas where requirements may need clarification | 3:30 PM | 4:30 PM | 2 hour |
| 5 | Review Testing Results | Provide updates to stakeholders about progress | 4:30 PM | 7:00 PM | 2.5 hours |

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| --- | --- | --- | --- | --- | --- |
| UAT Timesheet | | | | | |
| S.No | Tasks | Actionable items | Start Time | End Time | Duration |
| 1 | UAT Plan Preparation | Collaborate with stakeholders to outline UAT objectives | 10:00 AM | 11:30 AM | 1.5 hours |
| 2 | User Training for UAT | Conduct training sessions for testers/user representatives | 11:30 AM | 1:30 PM | 2 hours |
| 3 | UAT Execution | Facilitate UAT sessions and observe testing, Document user feedback and issues found | 2:30 PM | 3:30 PM | 2 hour |
| 4 | UAT Feedback Analysis | Compile and analyze feedback from UAT participants | 3:30 PM | 4:30 PM | 2 hour |
| 5 | UAT Sign-off | UAT sign-off meeting with stakeholders | 4:30 PM | 7:00 PM | 2.5 hours |

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| --- | --- | --- | --- | --- | --- |
| Deployment n Implementation Timesheet | | | | | |
| S.No | Tasks | Actionable items | Start Time | End Time | Duration |
| 1 | Deployment Planning | approaching with the technical team. Prepare a deployment checklist and timeline | 10:00 AM | 11:30 AM | 1.5 hours |
| 2 | User Training | Create training materials for users | 11:30 AM | 1:30 PM | 2 hours |
| 3 | Post-Deployment Support | Monitoring application post-launch for any immediate issues. Gather feedback for future improvements | 2:30 PM | 3:30 PM | 2 hour |
| 4 | Post-Deployment Review | Conducting a post-deployment review meeting to assess successes and issues | 3:30 PM | 4:30 PM | 2 hour |
| 5 | Feedback Collection | Gathering feedback from users and stakeholders regarding the deployment process and application performance | 4:30 PM | 7:00 PM | 2.5 hours |