online Agriculture Products Store

Mr. Henry, after being successful as a businessman and has become one of the wealthiest persons in the city. Now, Mr. Henry wants to help others to fulfil their dreams. One day, Mr. Henry went to meet his childhood friends Peter, Kevin and Ben. They live in a remote village and do farming. Mr. Henry asked his friends if they are facing any difficulties in their day-to-day work.

Peter told Mr. Henry that he is facing difficulties in procuring fertilizers which are very important for farm. Kevin said that he is also facing the same problem in-case of buying seeds for farming certain crops. Ben raised his concern on lack of pesticides which could help in greatly reducing pests in crops.

After listening to all his friends’ problems, Mr. Henry thought that this is a crucial problem faced not only by his friends but also by so many other farmers. So, Mr. Henry decided to make an online agriculture product store to facilitate remote area farmers to buy agriculture products. Through this Online Web / mobile Application, Farmers and Companies (Fertilizers, seeds and pesticides manufacturing Companies) can communicate directly with each other.

The main purpose to build this online store is to facilitate farmers to buy seeds, pesticides, and fertilizers from anywhere through internet connectivity. Since new users are involved, Application should be user friendly.

This new application should be able to accept the product (fertilizers, seeds, pesticides) details from the manufacturers and should be able to display them to the Farmers. Farmers will browse through these products and select the products what they need and request to buy them and deliver them to farmers location.

Mr. Henry has given this project through his Company SOONY. In SOONY Company, Mr Pandu is Financial Head and Mr Dooku is Project Coordinator. Mr. Henry , Mr Pandu , and Mr Dooku formed oneCommitteeand gavethisproject to APTIT SOLUTIONS company forBudget2 Crores INR and 18months Duration under CSRinitiative.Peter,Kevin and Ben are helping the Committee and can be considered as Stakeholders share requirements for the Project.

Mr Karthik is the Delivery Head in APTITSOLUTIONS company and he reached out to MrHenry through his connects and Bagged this project. APTITSOLUTIONS company have Talent pool Available for this Project. Mr Vandanam is project Manager, Ms. Juhi is Senior Java Developer, Mr Teyson, MsLucie, MrTucker, MrBravo are Java Developers. Network Admin is MrMike and DB AdminisJohn .MrJason and MsAlekya are the Tester. And you joined this team as a BA.

1.Identify Business Process Model for Online Agriculture Store

Goals-

The goal for the business is to create a strong and reliable online platform that acts a bridge between Farmers and agricultural products manufacturers. Helping farmers to procure agricultural products and solving procurement problems particularly faced by remote farmers.

Inputs-

Inputs should be considered from manufacturer point of view related to price of the product, product details and specifications. On the other hand farmers being buyers their details related to agriculture products required and delivery locations. Technical and non technical related to webpage and mobile application.

Resources-

Two strong and supportive teams Soony and APTIT Solutions with same ideology team members working towards the project. Team should have good technical skills and knowledge related to tools which help them to develop webpage and mobile application with in the given budget of 2crores.

Output-

A user-friendly interface for the farmers who can easily understand the application and order online confidently without any payment issues.

Activities-

Meeting with stakeholders and gather information related product, system and user requirements. Explaining the team how exactly the webpage and mobile application can be designed, developed, tested and deployed. Considering various inputs and ideas.

Value creation-

Availability of agricultural products online, cost saving for customers. Increasing in sales to sellers and giving a new exposure to customers available and looking for agricultural products in remote areas.

2. SWOT Analysis

**Weakness**

Farmers online knowledge.

Logistics related to delivery.

User base for new online initiative.

**Strengths**

Agricultural needs.

Good budget and time.

Stakeholders support.

CSR activities.

**Opportunities**

New Market growth.

Filling gap between buyer and seller.

Can build new platforms in future based on the online platform.

**Threads**

Adaption of new technology by farmers.

Transport hurdles being remote areas.

Demand may vary depending on economic factors.

Government regulations.

3. Feasibility study

Hardware requirements-

Servers which provides high performance to host the applications. On the other hand these hardware servers should also be supportive for customers devices such as desktops, laptops, tablets and mobile phones installed with android or IOS.

Software requirements-

Technology suggested by team making sure customer is comfortable and easy to use the application. Payment gateway should be secured as it is online order and payment.

Resources-

Java developers with strong knowledge is required. One among the team is required for maintaining the database, one as a network admin to control and maintain hosting environment securely. BA is required to communicate with developers and consider the stakeholders requirements and share the same with developers. One PM for channelizing the team make sure to meet deadline and maintain team harmony.gstake

Budget-

With in the given budget 2crores should be spent accordingly among Hardware and software procurement, team paycheques for 18 months and maintain the project.

Time Frame-

Project should be segregated among different phases for requirement gathering, Design, develop, test, deploy and support. Each time frame for the different phases should be discussed among the team and should meet dead-line i.e 18 months.

4. Gap Analysis

|  |  |  |
| --- | --- | --- |
|  | Current state | Desired state |
| Ordering Method | Visiting store and time consuming. | Online which is effortless and also can be easily tracked and timely. |
| Availability  | Very few option of products available and restricted to access wide range of products. | Wide range of products and chance to choose among the products. |
| Purchase method | Cash and card according to in-store acceptance. | Online payments and securing the customers transaction and acknowledgement mail or sms. |
| Delivery | Transportation arranged by farmers, if limited size using their own transport | Delivered safely at door step and customer can track the order. |
| Eradication of middleman  | Middle man can be avoided if involved. | Buyer and seller can interact directly with the help of online platform |
| Customer reception  | May or may not exists | Customer can expect response from sellers for their queries. |

5. Risk Analysis

**BA Risks**

Stakeholders Involvement-

Not able to understand stakeholders requirements and channelizing in a wrong way will effect the project and leads to delay for timely delivery. To avoid this risk a clear documentation and constant interaction with stakeholders and feedback helps.

Domain knowledge and experts-

Team might have good technical knowledge but domain knowledge related to this particular project may be minimum. To avoid this risk expert suggestion to understand better like peter, kevin and Ben can help with few insights.

User Experience-

Developing an online platform for remote customers an easy and friendly application must be created. The risk of not developing a friendly application may be lead to one of the risk. To avaoid such risk frequent feedback from remote farmers can help.

Change in requirements-

Not only related to one particular project stakeholders change requirements very frequently based on market changes. This risk will lead to delay in project. This kind of risk can be minimized by implementing change management process and making it to understand for stakeholders.

**Process and project risks**

Budget risks-

Within the given budget of 2crores the project should be done to avoid project budget exceeding risk. Constant budget monitoring for expenditure and allocating budget for unexpected expenses will help.

Failure to meet timelines-

This risk will effect both the budget and timely delivery of the project. Introducing agile methodology, team meetings, individual interaction, tools like Kanban board will help to avoid this risk.

Resources and their availability-

Making sure right and skilled employee available at right time will help to avoid this risk. Availability of similar skilled employee and cross-training among the team should be planned.

Logistics risks-

Logistics is the one among the important risks that shell be avoided. As most of the business is relayed on transportation timely and safe delivery should be prioritised. To minimize the risk strong logistics partner should be on-boarded and tracking facility should be available.

6. RACI Metrics

|  |  |  |
| --- | --- | --- |
| Responsible | KarthikVandanam JuhiTeysonLucieTucker BravoJason Alekya  | Delivery head Project managerSenior Java DeveloperJava DeveloperJava DeveloperJava DeveloperJava DeveloperTesterTester |
| Accountable | Vandanam  | Project manager  |
| Consulted  | KarthikJuhiMikeJohn | Delivery headSenior Java DeveloperNetwork AdminDatabase Admin |
| Informed | KarthikHenryDookuPeterKevinBen | Delivery HeadSponserProject CoordinatorStakeholderStakeholderStakeholder |

7. Business Case Document

Why is the project initiated-

The project has taken up to fill up the gap between buyers who are farmers and sellers who are manufacturing farming products. By building an online platform few problems such as availability of agricultural products and easy delivery can be addressed through friendly online platform. Cost efficiency and wide range of farming products are made available to farmers

What are the current problems-

As Peter, Kevin and Ben addressed their major issues are availability of farming products such as seeds availability for few crops, procuring fertilizers being part of farming and pesticides for pest control over farm lands. This not only one’s problem but a common problem among the farmers.

How many problems can be solved with this project-

Building a communication channel among farmers and manufactures can be resolved with the help of online platform. Clear costing of the products are available online along side with wide range of products with door delivery should be a merit to the customers. Timely delivery for cultivation is addressed with strong delivery partners.

What are the resources required for the project-

The Project requires strong Human resources team in order to keep up the pace, understand the need and purpose of the project, maintain team harmony. Each individual should understand their responsibility and importance of their contribution towards the project. An investment of 2 crores and 18 months of time should be invested accordingly. Software and Hardware procurement related to the project should done. Right and experienced team players such as Java developers, Testers, Network and database administrators are major resources. Investing accordingly in each phase of the project should be taken care by Business heads, project managers and good control on team is important.

How much Organizational changes are required to adopt this change-

Changes are major among this project while building an online platform for farmers with a very minimal knowledge about online platform. Starting with organizational changes creating a team for agricultural online platform and managing the team day to day and making them to understand that project is made for farmers an easy and user friendly application development is a major new adoption. Well conducting training and taking constant feedback from farmers as test and trail will help the project. Building a trust among the farmers and manufacturers is also a challenging and new adaption that should be existing.

What is the Time frame to recover ROI-

Initial Investment: 2 crores

Cost for operations: Marketing the online platform, Logistics cost, maintenance and support for online platform.

Revenue from online platforms: Advertisements on webpage, subscription plans, promotions, minimal fees from manufacturers for showcasing their products online.

It entirely depends on how many farmers are using the online platform and how frequently they are ordering and number of manufacturers registering online for selling their products.

How to identify Stakeholders-

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Designation  | Interest level  | Influence level |
| Henry | Sponsor | High | High |
| Karthik | Delivery Head  | High | High  |
| Manufacturers | Suppliers  | High | Medium  |
| Farmers | Influencers  | High | Medium |
| Government  | Compliance officers | Low | High |

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.

Sequential Methodology-

The Waterfall Model, another name for the sequential methodology, is a conventional, linear approach to software development in which the project is broken up into discrete stages. Before going on to the next phase, each one must be finished. It works best on projects with clear requirements and minimal to no anticipated modifications throughout the development phase. This methodology's primary characteristic is its inflexible structure.

Process:

Gathering requirements-> System design-> Implementation-> Testing-> Deployment-> Maintenance

Iterative Method-

Repetition of development cycles or iterations is a component of the iterative method. The development process is divided into smaller parts, or iterations, as opposed to the sequential technique. Each iteration consists of planning, design, development, testing, and feedback. More flexibility is possible with this method since the system may be continuously improved and evolved by incorporating feedback from each iteration into subsequent cycles.

Process:

Plan in minor parts of the project-> Design and develop-> Test-> Feedback-> Improve if needed in next iterative.

Evolutionary Method-

Iterative development using the evolutionary method involves building the system piecemeal, frequently through prototyping. Its main goal is to create a functional prototype of the system early on and make necessary adjustments in response to user input. This method works particularly well when the exact needs are not known or are anticipated to change over time.

Process:

Develop prototype-> Feedback from users-> Prototype is improved if needed-> New version is released-> Repeat the cycle.

Agile Method-

The Agile Methodology is a contemporary and adaptable approach to software development that emphasizes producing tiny, useful system increments in brief cycles known as sprints, which typically last two to four weeks. It places a strong emphasis on teamwork, client feedback, and flexibility. Agile works well in dynamic settings when it is anticipated that the product or its requirements will change quickly.

Process:

Plan-> Develop-> Review-> Repeat.

However, a sequential or iterative strategy might also be effective if the project scope is well-defined from the beginning and unlikely to change, particularly for less dynamic components of the project.

Conclusion: Agile is frequently regarded as the most adaptable and dynamic technique for projects including shifting needs and regular stakeholder feedback, even though each methodology has advantages and disadvantages. It is a good option for complicated and changing projects since it places an emphasis on flexibility, collaboration, and iterative delivery. Iterative and evolutionary approaches, on the other hand, provide flexibility and permit modifications during development through multiple cycles, whereas the waterfall method is best suited for projects with precise, well-defined criteria and less flexibility.

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 ?

Waterfall model-

A methodical and systematic approach to software development is the Waterfall Model. Before moving on to the next stage of growth, each one must be finished. It works well for projects whose requirements are clear up front and unlikely to alter as the project is being developed. When a project has consistent requirements, few unknowns, and well-defined goals, the Waterfall technique performs well.

V-Model

The Waterfall model is expanded upon by the V-model (Verification and Validation Model), which places an emphasis on validation and verification at every development stage. Every stage of the development process has a corresponding testing phase in the V-Model. The V-Model incorporates testing and verification into the development cycle, guaranteeing that every component is verified and validated prior to proceeding to the next step, in contrast to Waterfall, which does so after development.

RUP Model-

Compared to Waterfall or the V-Model, RUP is a more adaptable iterative software development process. It involves ongoing testing, feedback, and iteration with the goal of creating a high-quality product through gradual development. The four primary stages of a project are Inception, Elaboration, Construction, and Transition, according to RUP.

Spiral model-

The Spiral Model is an iterative process that emphasizes risk management and ongoing system improvement through iterative cycles. It enables iterative development, risk management, and ongoing system improvement based on user feedback.

Agile model-

Scrum is an Agile technique that uses brief, time-boxed sprints to promote incremental and iterative development. Scrum is a popular choice for projects where the scope is expected to vary or when frequent feedback is required since it enables teams to swiftly adjust to changes in needs.

Promote the V-Model as the best approach for this project in my capacity as a business analyst. It preserves the development team accustomed organized methodology while being in line with the stakeholders priorities for risk and quality management.

10. Write down the differences between waterfall model and V model.

|  |  |
| --- | --- |
| Waterfall Model | V Model |
| Each Phase flows downwards like a waterfall. | Development and testing are closely aligned. |
| Testing is done after the development is done | Testing is done in each phase. |
| Errors are detected after the development phase.  | Errors are detected earlier because of testing in every phase. |
| Used of easy to go projects with fixed requirements. | Used in Healthcare or other industries which are to be handled very carefully. |
| Requires extensive documentation in every phase | Requires documentation along with testing in each phase |
| It is linear and sequential | Sequential with simultaneously performing testing and development |
| Errors detected in later stages are resulted in increasing project cost | Errors are identified and resolved in early stages reducing cost. |
| Risks might not be identified until testing is done. | Risks are mitigated due to testing in each phase. |

11. As a BA, state your reason for choosing one model for this projects.

Project goals aligned-

A organized strategy such as the V-Model, in which every phase and delivery is thoroughly recorded and traceable, is made possible by the project's 18-month timeframe and budget of 2 crores Indian rupees.

The long-term objective of sustaining and growing the application is supported by the model's emphasis on traceability and documentation.

Quality assured-

Farmers depend on the platform for essential supplies including seeds, fertilizer, and pesticides via this project's online agriculture supply store. Their operations and means of subsistence could be disrupted by any problems or mistakes in the system.
By including testing into each stage, the V-Model guarantees that flaws are found and fixed quickly, producing a high-quality end product.

Risk Mitigation-

Agricultural products frequently require adherence to regional rules and ordinances (e.g., seed certificates, limits on the use of pesticides). By emphasizing validation at every stage, the V-Model guarantees that the system complies with these specifications right away.
Early fault discovery lowers the possibility of later, expensive re-do.

Stake holders preferences-

SMEs that support the V-Model emphasize how important quality, risk management, and requirement compliance are to them. Building trust and ensuring better collaboration are two benefits of aligning the development process with stakeholder expectations.

Alignment with project goals-

A organized strategy such as the V-Model, in which every phase and delivery is thoroughly recorded and traceable, is made possible by the project's 18-month timeframe and budget of 2 crores Indian rupees.
The long-term objective of sustaining and growing the application is supported by the model's emphasis on traceability and documentation.

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.



|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Months | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
| Phases |  |  |  |  |  |  |  |  |  |
| RG |  |  |  |  |  |  |  |  |  |
| RA |  |  |  |  |  |  |  |  |  |
| Design |  |  |  |  |  |  |  |  |  |
| D1 |  |  |  |  |  |  |  |  |  |
| T1 |  |  |  |  |  |  |  |  |  |
| D2 |  |  |  |  |  |  |  |  |  |
| T2 |  |  |  |  |  |  |  |  |  |
| D3 |  |  |  |  |  |  |  |  |  |
| T3 |  |  |  |  |  |  |  |  |  |
| D4 |  |  |  |  |  |  |  |  |  |
| T4 |  |  |  |  |  |  |  |  |  |
| UAT |  |  |  |  |  |  |  |  |  |
| Delivery |  |  |  |  |  |  |  |  |  |

13. Explain the difference between Fixed Bid and Billing.

|  |  |
| --- | --- |
| Fixed Bid | Billing |
| Which is agreed initial stages of the project | It is based on timeline and milestones. |
| Easy for client to control costs as it is predictable | Continuos tracking as costs can increase. |
| Suitable for simple or clear projects | Suitable for complex and research based projects |
| Payments are based on completion of projects. | Payments are based on time or deliverables. |
| Timelines are predetermined  | Timelines are changed as per change in requirements . |
| Resource utilization is limited  | Resource utilization can be identified by client |
| Suitable for projects which tend to finish early or under budget | Profits are dependent on actual work billed. |
| Extensive documentation at the beginning to identify scope and cost. | Documentation evolves during the project. |

14. Prepare Timesheets of a BA in various stages of SDCL .

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.No.** | **Task** | **Actionable Items** | **Start Time** | **End Time** | **Duration (Hours)** |
| 1 | Requirement Gathering | Conduct stakeholder interviews, gather documents | 9:00 AM | 11:00 AM | 2 |
| 2 | Requirement Analysis | Analyze requirements, prepare functional specs | 11:30 AM | 1:00 PM | 1.5 |
| 3 | Meeting with Team | Discuss project scope, clarify queries | 2:00 PM | 3:00 PM | 1 |
| 4 | Documentation | Update BRD (Business Requirement Document) | 3:15 PM | 4:45 PM | 1.5 |
| 5 | Validation with Stakeholders | Review and validate requirements with stakeholders | 5:00 PM | 6:00 PM | 1 |

Total Hours= 7

 Development Timesheet of a BA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SNO** | **Task** | **Actional Items** | **Start Time**  | **End Time** | **Duration**  |
| 1 | Requirement Traceability Matrix | Map requirements to design and development tasks | 9:00 AM | 10:30 AM | 1.5 |
| 2 | Functional Specification Review | Review design documents for alignment with requirements | 10:45 AM | 12:15 PM | 1.5 |
| 3 | Development Support | Clarify requirements for developers and resolve queries | 1:00 PM | 2:30 PM | 1.5 |
| 4 | Test Case Review | Validate test cases against requirements | 2:45 PM | 4:15 PM | 1.5 |
| 5 | Change Request Management | Analyze and document any new or modified requirements | 4:30 PM | 6:00 PM | 1.5 |
|  |  |  |  | Total | 7.5hrs |

Testing timesheets of a BA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SNO** | **Tasks** | **Actionable Items** | **Start Time** | **End Time**  | **Duration** |
| 1 | Test Plan Review | Review test plan to ensure coverage of all requirements | 9:00 AM | 10:30 AM | 1.5 |
| 2 | Test Case Validation | Validate test cases against functional requirements | 10:45 AM | 12:15 PM | 1.5 |
| 3 | Test Execution Monitoring | Monitor execution of test cases and track progress | 1:00 PM | 2:30 PM | 1.5 |
| 4 | Defect Triage | Analyze reported defects, prioritize, and coordinate fixes | 2:45 PM | 4:15 PM | 1.5 |
| 5 | UAT Preparation | Prepare users for UAT, review scenarios, and provide guidance | 4:30 PM | 6:00 PM | 1.5 |

|  |  |
| --- | --- |
| Total Hours | 7.5hrs |

UAT Timesheets of a BA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SNO** | **Tasks** | **Actionable Items** | **Start Date** | **End Date** | **Duration** |
| 1 | UAT Kickoff Meeting | Brief end-users on the UAT process, goals, and timelines | 9:00 AM | 10:00 AM | 1 |
| 2 | Test Case Review with Users | Review and explain UAT test cases and scenarios | 10:15 AM | 11:30 AM | 1.25 |
| 3 | UAT Support | Provide real-time assistance to users during test execution | 11:45 AM | 1:15 PM | 1.5 |
| 4 | Defect Review and Resolution | Log, review, and prioritize defects reported by users | 2:00 PM | 3:30 PM | 1.5 |
| 5 | UAT Feedback Analysis | Collect and analyze feedback from users | 3:45 PM | 4:45 PM | 1 |
| 6 | UAT Closure and Reporting | Summarize UAT results, prepare a closure report | 5:00 PM | 6:00 PM | 1 |
|  |  |  |  | Total Hours | 7.25 |

Deployment and Implementation Timesheet of a BA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SNO | **Task** | **Actionable Items** | **Start Time** | **End Time** | **Duration**  |
| 1 | Deployment Planning | Coordinate with stakeholders, review deployment checklist | 9:00 AM | 10:30 AM | 1.5 |
| 2 | Final Requirement Validation | Confirm that all requirements have been implemented | 10:45 AM | 12:00 PM | 1.25 |
| 3 | Go-Live Preparation | Ensure system readiness, validate deployment environment | 12:15 PM | 1:45 PM | 1.5 |
| 4 | Deployment Support | Provide real-time support during system deployment | 2:00 PM | 4:00 PM | 2 |
| 5 | Post-Deployment Verification | Verify functionality, conduct smoke testing | 4:15 PM | 5:45 PM | 1.5 |
| 6 | User Communication and Handover | Conduct user training, share system documentation | 6:00 PM | 7:30 PM | 1.5 |
|  |  |  |  | Total Hours | 9.25 |