Decode the case study

* **Project Idea**:- To develop an online web/mobile application agriculture product store for farmers.
* **Current need**:- Online store is to facilitate farmers to buy seeds, pesticides, and fertilizers. Application should be User friendly. Application should be able to accept products from manufacturers and should be able to display them to the Farmers.
* Overview of the project:- Online web/ Mobile app to be prepared for farmers to buy the agriculture product. There is no existing Online web/ Mobile app. There is no existing Online web/ Mobile app and it’s a new one that has to be designed for the farmers.
* **Current problem**:- Difficulties in procuring fertilizers, buying seeds for farming & lack of pesticides.

1. Prepare Business Process Model
* **Goal**:- To help others or his friends fulfil the dreams of becoming rich/wealthy. Farmers should be able to buy seeds, pesticides and fertilizers from anywhere through internet connectivity
* **Inputs**:- Budget of 2 crores & 18 months duration, . Peter, Kevin and Ben as stakeholders to share requirements for the project
* **Resources**:- Project Team (Project Manager, Sr Java Developer, Java Developers, Network Admin & Testers)
* **Output**:- Online web/mobile application for purchasing of products
* **Activities**:- Planning for the project, coding & testing done by Developers & Testers
* **Value**:- Attractive website with good graphics and user friendly to navigate web/mobile application

1. SWOT
* **Strenghts**:- **Weakness:-**

Trust shown by SOONY & decided No experience members to work on

to give the project to APT IT this project as this is a new online web/

Solutions mobile app to be launched for the first

 time

 **Opportunity**:- **Threats**:-

This online/mobile app for This online web/mobile app is

agriculture store is getting getting launched for the first time.

launched for the first time & Not sure if the assigned team,

no competitors are there in the budget and time will be enough to

market currently complete this project

 3) Feasibility study

* **Hardware**:- System storage, Backup storage & Network infrastructure
* **Software**:- Content Management system, Shopping cart software for agricultural products, App for mobile store & Payment gateway reference
* **Trained Resources**:- Project Manager, Sr Java Developer, Java Developer, Network Admin, Tester & Business Analyst
* **Budget**:- 2 Crores
* **Time Frame**:- 18 months duration, out of which we can target to complete the project in 16 months and keep 2 months for any testing purpose or changes requested by stakeholders to be done on the final project

 4) GAP Analysis

* **AS-IS (Current state)**:-
* The current state is that there is no online web/mobile app and this is causing difficulties for the farmers to procure fertilizers, buying seeds & pesticides as many of the farmers stay in remote area. These farmers currently purchase these items from the market but then have to bear loss incase if they do not get the required items which is necessary for farming.
* **TO-BE (Desired state)**:-
* To create online web/mobile app for agricultural store as this will ease the way for the farmers to buy the fertilizers, seeds & pesticides. With this farmers will be able to do farming all and make good profit throughout the year
* Establish customer service support line so that farmers who are not tech savvy can call the helpline number and order the product via call
* Every product on the website should be displayed with the product name and product price
* Online discounts should be offered as these products are directly being published by the manufacturer and no middle man/agent is involved in this process
* Online registration option to be given to the farmers so they can login and view products online which are available. With this all their required information will be stored eg:- delivery address, phone number, email address etc and they do not have to enter these details all the time while purchasing the products

 5) Risk Analysis

**Process Risks**:-

* If team from APT IT SOLUTIONS is not calibrated on the what the client need is, then this will lead to project failure or can end up making online web/mobile app which is not suitable for agricultural products
* As this is the first time that we are launching agricultural products online web/mobile app, there are chances that client can come back with loads of change request incase they want any amendments to be done
* Proper support would be required to be given to team members as this is first agricultural products online web/mobile app which will be launched in the market and team doesn’t have any prior experience
* Peter, Kevin & Ben do not have any exposure managing business at big level and they not communicating proper requirements to the APT IT SOLUTIONS can lead to project failure

**BA Risks**:-

* Not having knowledge of the domain.
* BA has no experience in handling this kind of project in past and improper planning can lead to project failure.
* Peter, Kevin & Ben do not have any exposure managing business at a high level and they not communicating proper requirements to BA will lead to not gathering requirements correctly.

**Project Risks**:-

* As this is the first agricultural product launched in the market, manufacturers not updating correct details of the product and price online web/mobile app can lead to mis-selling
* Many of the farmers all this while have been purchasing the products from market using cash and farmers not holding online account or not trained on how to use online services
* Business stakeholders unrealistic expectations at the last minute (towards end of 18 months duration) for any major changes to be done for online web/mobile app during final project completion
* Agricultural website/mobile app will be launched for the first time and hence not sure what technical difficulties that farmers might expect when using the services

 6) RACI Matrix

|  |
| --- |
| **Agriculture online web/mobile store** |
| **R/A/C/I** | **Name of the person responsible** | **Designation** | **Details** |
| Responsible |  Ms. Juhi  | Senior Java Developer | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Teyson | Java Developer | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Ms Lucie | Java Developer | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Tucker | Java Developer | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Bravo  | Java Developer | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
|  Mr Jason  | Tester | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
|  Ms Alekya  | Tester | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Accountable | Mr Vandanam  | Project Manager | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Graifen Menezes | Business Analyst | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Consulted | Mr Mike  | Network Admin | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr John | Data Base Admin | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Peter | Stakeholder | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Kevin | Stakeholder | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Ben | Stakeholder | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Informed | Mr Karthik | Delivery Head  | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Henry | Client | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Pandu | Financial Head | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |
| Mr Dooku | Project Co-ordinator | Email:XXX@XX.COM, Phone Nos:- 123 & Reach out time:- 09:00-18:00 |

 7) Case Study

* **Why is this project initiated**:-
* This project is initiated to help the famers order fertilizers, pesticides and seeds online using online web/mobile app. With this it will ease the process of buying agricultural products online and getting the product delivered at the door step.
* **What are the current problems**:-
* Farmers staying in remote areas do not get agricultural products very easily. Visiting market is the only option through which they can rely on getting the products but the challenge is that if the products are not available in the market, then they are left with no option and it’s a loss to their farming business.
* **Initiating this project, how many problems can be resolved**:-
* With implementation of online purchase of agricultural products, many of the farmers staying in remote areas will benefit from this. It will allow them to purchase fertilizers, pesticides and seeds using online web/mobile app which at times is not available when they visit market to purchase these. Also, farmers can place order in bulk if needed because it will deliver the products directly at their door step. This will eliminate the time and strength which normally requires when products have to purchased by visiting the market. These products will be directly coming from the manufacturer, hence farmers will get discounts on products which normally doesn’t happen if there is an involvement of an agent/ middle man
* **Resources Required**:-
* A good team needed to handle this project, which means we would need intelligence of Business Analyst to prepare a plan for the project so that there is no communication gap between clients and the technical team.
* A team of technical experts which includes Developers, Testers, Network Admin, Data Base Admin.
* Project Manager to monitor the project and address all of project related issues.
* Delivery Head to maintain good relations with the client and gaining confidence in them that as a team we can deliver the best possible product as expected.

**Time frame to recover ROI**:-

* All depends on how we meet our customer expectations and how well we are connected with our customers. We will built such a website that gives all the required guidelines when purchasing an online agricultural products. Farmers who are not tech savvy will have an option to call customer service and place the order online.
* On the website we will educate the customer what is the benefit of buying the products directly from the manufacturer as they will get heavy discounts.
* With all the above attractive points mentioned on the website/mobile app the time frame to recover ROI will be between 3-4 years.
* **Identify stakeholders**:-
* Whenever starting with any project we need to list down the stakeholders and identify as to which category they fall into. Using RACI matrix tool it will help us to define stakeholder roles and responsibilities for a project.

 Stakeholder analysis is as follows:-

1. Project Stakeholder:- Project Manager, Business Analyst, Delivery Head, Sr Java Developers, Java Developers, Network Admin, Data Base Admin & Tester
2. Business stakeholder:- Business owner (SOONY Company), Business Sponsor (Mr Henry)
3. Third Party stakeholder:- Farmers (Mr Peter, Mr Kevin & Mr ben)

 8) Four SDLC Methodologies

* **Sequential**:-
* Each phase must be completed before the next one can start
* There is no overlap between the phases
* The model prioritizes gathering detailed project requirements
* The model plans the entire development process
* The model establishes deliverables for each phase
* There are phases which work in proper phases:-

Requirement Analysis

• Planning

• Architectural Design

• Software Development

• Testing

• Deployment

• Maintenanc

Requirement Analysis

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• Testing

• Deployment

• Maintenanc

• Requirement Analysis

• Planning

• Architectural Design

• Software Development

• Testing

• Deployment

• Maintenanc

1. Requirement Analysis
2. Planning
3. Design
4. Software Development
5. Testing
6. Deployment
7. Maintenance
* **Iterative**:-
* Development takes place through repeated cycles (iterations) and in small parts at a time
* The iterative methodology is a process of gradual improvement, learning from the previous iteration how to improve the next
* The process involves learning from mistakes and building knowledge
* Changes can be made before moving to the next development phase
* Requirements of the complete system are clearly defined and understood
* In this model full specification of requirements is not needed. Instead, development begins by specifying and implementing just part of the software, which is then reviewed to identify further requirements
* Results are obtained early and periodically
* Progress can be measured
* **Evolutionary**:-
* The software is developed in cycles or iterations, with each cycle delivering a working version of the system with increasing functionality
* User feedback is continuously gathered throughout the development process to guide the evolution of the software
* Change Requirements are allowed during project progress
* This methodology is best for projects where requirements are fully not defined or may change frequently
* The outcomes of each iteration are tested, integrated, and become an executable system.
* Users get a chance to experiment with a partially developed system much before the full working version is released.
* Training can start on an earlier release, so customer feedback is taken into account.
* **Agile**
* It is a very quick, iterative and incremental soft development methodology that prioritizes flexibility, collaboration, and customer feedback.
* The four key values of Agile are:
1. Individuals and interactions over processes and tools
2. Working software over comprehensive documentation
3. Customer collaboration over contract negotiation
4. Responding to change over following a plan
* There are 12 principles followed in Agile:-
1. To satisfy the customer
2. Welcome change
3. Frequent delivery
4. Work together
5. Motivated individuals
6. Face to Face conversations
7. Working software
8. Sustainable development🡪 constant pace
9. Technical Excellence
10. Maintain simplicity
11. Self organized teams
12. Feedback & adjust

 9) Waterfall RUP Spiral and Scrum Models

* **Sequential - Waterfall**:-
* This is one of the approach to software development that consists of several phases.
* Every phase has to be completed in specific order.
* We can’t jump to another phase until and unless the current phase that you are working on is completed and tested.
* This model is useful in situations where the project requirements are well-defined and the project goals are clear.
* **Iterative – RUP (Rational Unified Process**):-
* In this methodology, the project is broken down into various phases. Every phase will have its own goals and deliverables.
* After completion of every phase the product is delivered to the client.
* There are 4 main stages in RUP :- Inception, Elaboration, Construction, and Transition. For every phase of the project, these stages are repeated which helps to deliver the right quality of product to the client.
* RUP allows adjustments to requirements and design based on feedback received.
* **Evolutionary – Spira**l:-
* The spiral model is a risk-driven process for software projects.
* This model is divided into four phases:- Planning, Risk Analysis, Engineering and Evaluation.
* Planning:- This helps in identifying project objectives/goal and accordingly the requirements are gathered for the same
* Risk Analysis:- Helps in understanding what are the risks involved while working on the project and eliminate or resolve those risks
* Engineering:- The project is developed using prototypes or diagrams and ensuring no risks by referring to Risk Analysis exercise
* Evaluation:- The software is tested and assessed and any feedbacks from the clients is taken into consideration to show improvements
* **Agile – Scrum**:-
* Using Agile – Scrum methodology, it helps the team structure and manage their work through a set of values, principles, and practices.
* This methodology relies on incremental development that focuses on continuous improvement.
* The Product Owner manages Product backlog which has the list of tasks involved and requirements for the project
* In Scrum, work is organized into short iterations known as ‘sprints, typically lasting one to four weeks. During each sprint, the team focuses on delivering a small, tangible piece of the overall project
* Regular meetings, such as daily stand-ups and sprint reviews, keep the team aligned and ensure progress is on track.

 10) Waterfall Vs V-Model

|  |  |  |
| --- | --- | --- |
| **Sr Nos** | **WaterFall** | **V-Model** |
| 1 | Waterfall model cost is low | V Model is expensive |
| 2 | Waterfall model is simple | V Model is intermediate |
| 3 | Waterfall model is rigid | V Model is flexible |
| 4 | In Waterfall model, we can't return to the previous stage | V Model allows to go back and make any changes if need be |
| 5 |  Testing activities start after the development activities are over | Testing activities start from the first stage itself |
| 6 | Success through Waterfall model is low | Success through V-model is high |
| 7 | It is not possible to test a software during its development | It allows to test a software during its development |
| 8 | Debugging is done after the last phase | Debugging can be done in between phases |
| 9 | Waterfall model is less used now-a-days in software engineering | V-model is widely used in software engineering |
| 10 | Possibilities of getting more defects in testing phase | Possibilities of getting fewer defects in testing phase |

 11) Justify your choice

As a BA,

* I would use V Model because this is the first website for agricultural product that is getting developed in the market
* V model is based on the verification and validation of each stage of the development of the online store of Agricultural products
* Using the model I can complete each step before moving on to the next step.
* It will allow changes to be done to the development process
* Testing of the activities will be done at the earlier stage which allows to identify any issues and get it rectified/corrected
* It will give clear guidelines by focusing on one phase at a time
* Success of using V Model is also very high
* Customer/client will have a view of the software development from the very initial stage
* Feedback from the customer/client will help to make good improvisation on the product as per their requirement

 12) Gantt Chart



 13) Fixed Bid Vs Billing

**Fixed Bid**:- A fixed bid project is billed at a fixed amount regardless of the number of hours worked. Also, it doesn’t matter how many resources are used for this project as the client/sponsor pays a fixed amount to complete the assigned project. This fixed amount can be applied to the entire project as per project weeks or months or even start and end date of the project. These projects are based on duration and requires a start and end date

**Billing**:-

In this model, client/sponsor pays depending upon how many resources would be working on this project. The payout is done basis the responsibilities assigned to each of the designation or the amount of work that is completed and is paid hourly basis.

 14) Timesheets

|  |
| --- |
| **Design** |
| Sr Nos | Actionable Items | Start Time | End Time | Duration |
| 1 | To discuss about technical design | 09:00 | 11:30 | 02:30 |
| 2 | Engaging stakeholder in the project plan | 11:30 | 13:00 | 01:30 |
| 3 | Organize the requirements | 13:30 | 15:30 | 02:00 |
| 4 | Calculate the budget and costing of project | 15:30 | 16:45 | 01:15 |
| 5 | Weekly stand up meetings | 17:15 | 18:00 | 00:45 |
|   |   |   | Total  | 08:00 |
| **Development**  |
| Sr Nos | Actionable Items | Start Time | End Time | Duration |
| 1 | Outline project goal, constraints, roles and responsibilities of all stakeholders, expected timeline | 09:00 | 11:00 | 02:00 |
| 2 | Prepare plan to assign tasks to each of the team member | 11:00 | 13:00 | 02:00 |
| 3 | Meeting with PM to ensure deliverables are been worked upon | 13:30 | 15:00 | 01:30 |
| 4 | Review the development stage | 15:00 | 16:45 | 01:45 |
| 5 | Weekly stand up meetings | 17:15 | 18:00 | 00:45 |
|   |   |   | Total  | 08:00  |
| **Testing**  |
| Sr Nos | Actionable Items | Start Time | End Time | Duration |
| 1 | Meeting with testers to check on possible outcome | 09:00 | 11:30 | 02:30 |
| 2 | Zoom call with testers to review testing scenarios  | 11:30 | 13:00 | 01:30 |
| 3 | Connect with QA to discuss about automation code and who have the required access | 13:30 | 15:30 | 02:00 |
| 4 | Meeting with QA team to identify where the tests will run | 15:30 | 16:45 | 01:15 |
| 5 | Meeting QA, testers or stakeholders to check if the application works as expected | 17:15 | 18:00 | 00:45 |
|   |   |   | Total  | 08:00 |
| **UAT**  |
| Sr Nos | Actionable Items | Start Time | End Time | Duration |
| 1 | Check BRD t o confirm if the requirements are fulfilled | 09:00 | 11:00 | 02:00 |
| 2 | Brief discussion with client about the project | 11:00 | 13:00 | 02:00 |
| 3 | Execute testscripts ,record the results and defects in front of the client | 13:30 | 15:00 | 01:30 |
| 4 | Sign off meeting | 15:00 | 16:45 | 01:45 |
| 5 | Weekly stand up meetings | 17:15 | 18:00 | 00:45 |
|   |   |   |  Total | 08:00 |
| **Deployment n Implementation**  |
| Sr Nos | Actionable Items | Start Time | End Time | Duration |
| 1 | Collaborate with Development Team | 09:00 | 11:30 | 02:30 |
| 2 | Document detailed function specification | 11:30 | 13:00 | 01:30 |
| 3 | Discussion about process changes | 13:30 | 15:30 | 02:00 |
| 4 | Prepare training materials and user guides | 15:30 | 16:45 | 01:15 |
| 5 | Collaborate with IT Team for system development | 17:15 | 18:00 | 00:45 |
|   |   |   |  Total | 08:00  |