COEPD – Traditional Development

Capstone Project 1 - **Online Agriculture Store**

Submitted by – Divyansh Chand

**Question No 1**

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

Business process modeling is the representation of a company’s business processes or workflows as a means of identifying potential improvements.

**Goal** :-

1) Online Agriculture store for farmer buy fertilizers, seeds and pesticides and manufacturing company sales farmer requirement needs.

2) To establish direct communication between farmers and manufacturers without any intermediary agents

**Inputs,**

1)Resources who manage admin work, call answering, and do service part.

2) Listing products from manufacturers on the platform - (seeds, pesticides, and fertilizers.)

**Resources:-**

1) Farmers, Fertilizers, seeds, Pesticides, Manufacturing company

2) Machines, Net connection Networks, Hardware, Delivery services

3) IT Team, Develper Team

**Output :-**

Increase the sales of fertilizer, seeds and pesticides and manufactures

**Activity : -**

1) Farmer buy fertilizer seeds and pesticides manufactures sales the farmer requirement.

2) Online payment received and Delivery team deliver the product on time.

3) Customer support resolve the product delivery issue and payment.

**Question 2**

**Mr. Karthik is doing SWOT analysis before he accepts this project. What Aspects he Should consider as Strengths, as Weaknesses, as Opportunity and as Threats.**

**Strengths: -**

1)Strong stake holders with higher wish to completed the project

2)Strong demand and supply requirement.

3)Project is funded by stakeholder huge amount (2cr )

4)Monopoly business in remote area no agriculture stores.

**Weakness:**

1)Farmers are living in remote area may be chance of internet connectivity issue.

2)May be farmer are not user-friendly online buy products.

**Opportunity: -**

1)Potential market for remote area

2)This is 1st project hence increase the company reputation in the market after the success the project.

3) This is monopoly business for remote area.

**Threats -**

1) No Internet connectivity at the buyer's end.

**Question:-2**

**Mr Karthik is trying to do feasibility study on doing this project in Technology (Java), Please help him with points (HW SW Trained Resources Budget Time frame) to consider in feasibility Study.**

**Answer -**

For completion of this project, we need 2 people in hardware requirements.

7 people will be involved in the software requirement of the project which includes the testing part of it.

Apart from these hardware and software requirements, we have PM and BA who are extending their support for successful project submission in the given timeline.

The offered budget of 2cr seems to be sufficient for the project.

The timeline given for this project is 2 years and can be completed successfully.

**Question:-3**

**Mr Karthik must submit Gap Analysis to Mr Henry to convince to initiate this project. What points (compare AS-IS existing process with TO-BE future Process) to showcase in the GAP Analysis**

**Answer -**

 AS-IS existing process -

Farmers visit the nearest store to procure/buy required Agricultural products (seeds, pesticides, and fertilizers.).

But most of the time required products were not available at the store and farmers faces difficulty in their day-to-day work.

Thus, the farmers are facing issues in terms of time, money, and the number of efforts they are investing in their basic farming requirements.

TO-BE future Process -

After successful completion of the agricultural product, the online store application farmer will log in on the website/app and browses his requirement through products listed by manufacturers and suppliers. (Seeds, pesticides, and fertilizers). A farmer will add a product to the cart or gives a call to a support number to place an order. The farmer provides necessary details like Address, quantity, and payment method. products will get delivered by delivery services within a week.

Farmers will be able to use the saved time, money, and energy in focusing their main task of farming and gaining optimum output from their farms.

**Question :-4**

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

BA Risks

1) Improper Project Planning

2) Incomplete requirements gathering.

3) Stakeholders are not able to provide the proper requirement.

4) Frequent changes in requirements from the client side

process/Project Risks

1) The project does not align with stakeholder expectations.

2) Employee turnover, including key team members leaving projects.

3) May the same project or application already have published by the competitor.

4) Getting requirements from the farmer/Client which are practically impossible to provide.

5) Scope creep, a project may not be possible to complete.

**Question :-5**

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

**Answer :-**

Project sponsor -Mr. Henry

Financial head -Mr. Pandu

Project coordinator -Mr. Dooku

Key Stakeholders- Peter, Kevin, Ben

Delivery Head -Mr. Karthik

Project Manager - Mr. Vandanam

Senior Java Developer - Ms. Juhi

Java Developers - Mr. Teyson, Ms. Lucie, Mr. Tucker, Mr. Bravo

Network Admin - Mr. Mike

DB Admin - Mr. John.

Testers - Mr. Jason

Ms. Alekya

BA – You (Divyansh Chand )



Figure 1

**Question 6**

**Help Mr Karthik to prepare a business case document**

**Answer –**

|  |  |  |
| --- | --- | --- |
| Project Manager | Mr. Vandanam |   |
| Date of Approval | 1-Jul | Last revision date |   |
| Executive summary | Presently the farmers must procure the required material locally which consumes more time and energy. Also, there is monopoly of local shopkeeper or distributor for selling the material. Once the online platform is made available to the farmers, they can order required material online it will save their time and energy. They will be getting competitive rate from the manufacturers due to close competition. Thus, the farmers will get benefitted in several ways due to existence of online agricultural product store. |
| Problem Statement | Farmers having problem in purchasing seeds / fertilizers / pesticides time money and energy is saved, due to formation of online platform farmers ca1n place their orders directly to the manufacturers easily, also competitive pricing can be available by them, thus procurement of various farming related products can be made easy. |
| Solution  | Farmers will be able to buy the fertilizers, seeds and pesticides using online store application. This application would be able to accept the product details from manufactures and display the same to farmers. Farmers will be getting the product to their location which will their time which can be used to effective farming.  |
| Cost | 2 Crores INR |
| Timescale | Formation of this online platform may take 18 months for completion. |
| Expected ROI | Tentatively it will take 30 to 40 months for the return on investment for this project |
| Expected Risk | Right now, project look like simple and straight forward, but challenges can come while execution of application as this is new to market product. |

**Question**

**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**

**Answer -**

Sequential methodology –

It is the most common and classic life cycle it is very simple to understand and use, in sequential methodologies each phase must be completed in its entirety before the next phase can begin. In this methodology end of the first phase is the beginning of the second phase. At the end of every phase, a review takes place to determine whether the project is going right path or whether it continues or discard. In this methodology, we follow the below-mentioned steps

Requirement Gathering: Information gathered from the client and as per the requirement of the client's Business Requirement has been created

Requirement analysis: - Once business requirements and stakeholder requirements are gathered analysis is taken place by using MoSCoW and FURPS technology and FS/FRS SSD SRS RTM document are created.

Design: - In the design phase DB designer & architecture design the software boundary and create HDD and CDD and a combination of both solution documents has been created

Development and Coding: - Once the designer design the software then the developer does the coding of the software and developed the software and create LDD & CDD document

Testing: - After finishing the coding tester comes into the picture, they did the various testing task of the developed and coded program with less error and create the test document

UAT: - The last phase of this SDLC method is (the user acceptance test). After finished all the phases final product run is done on the user server or UAT server. Deployment and Implementation Release the product to a client

Iterative -

The iterative methodology is based on a set of building blocks, it describes for production what necessary skills are required and the step-to-step explanation describes how a specific development goal is to be achieved.

Steps to be followed in iterative Method

Role: -Role defines a set of related skill competencies and responsibilities

Work: -It represents something resulting from the task & including all the documents and models produce while working through the process

Task: - This describes a unit of work assigned to the role and provides a meaningful result

Evolutionary: -

This method is used for Risk analysis. It has four phases viz planning, Risk Analysis, Engineering, and evaluation. The software Project is repeatedly passed through each phase in iteration, Planning is the baseline of the spiral

Planning Phase: - Information Gathered

Risk Analysis Phase: - To identify the risk and alternate solution of risk and prototype produced

Engineering Phase: - Software is produced and Testing done

Evaluation Phase: - In this phase allow the customer to evaluate the output of the project to date before the project continues to the next spiral

Agile: -

Agile Methodologies can be implemented where faster delivery is required, in this method no documentation is required coding is itself formed as documentation, Agile is the faster method to achieve the goal. It satisfies the customer through early and continuous delivery of the valuable software, Changes can easily be accepted and implemented in any phase of SDLC,

In this phase software is continuously delivered to the customer from a couple of weeks to a month, working software is the primary measure of the life cycle, to build the product with a motivated individual using face-to-face conversation promotes sustainable development, the best architecture requirement and Design emerge from the self-organizing team.

**Question:**

**Waterfall RUP Spiral and Scrum Models**

**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?**

**Answer -**

A) Waterfall: -A waterfall model is a traditional model in IT companies, The waterfall model is a classical model used in the system development life cycle to create a system with a linear and sequential approach. In this model software development is done from one phase to another phase in a download manner, the output of one phase is used as an input for the next phase, every phase must be completed before the next phase starts and there is no overlapping of the phases. it is a progressive implementation of the project which is divided into different phases of SDLC. As waterfall models have few limitations, still it was used earlier on a wide range

B) RUP Model: -Stands for Rational Unified Model This is a software development process from rational, a division of IBM, it divides the development process into four distinct phases that each involve business modeling, Analysis, and design, Implementation, testing, and deployment, In RUP there are four project life cycles

A) Inception

B) Elaboration

C) Construction

D) Transaction

 C) Spiral: -

This phase starts with a gathering of business requirements in the subsequent spirals as the product matures identification of system requirement are done In this phase. This also includes understanding system requirements through continual communication between the customer and the analyst

at the end of the spiral, the product is deployed

1) Design: The design phase starts with the design in the baseline spiral and involves the architectural, logical design of modules, physical product design, and final design in successive spirals.

2) Construct: Construct phase refers to the development of the final software product at every spiral. In the spiral when the product is just thought and the design is being developed, a Proof of Concept (POC) is developed in this phase to get the users’ feedback. Then in the successive spirals with higher clarity on requirements and design, a working model of the software called to build is developed with a version number. These versions are sent to the users for feedback.

3) Evaluation and Risk Analysis: Risk analysis includes identifying, estimating, and observing technical feasibility such as schedule slippage and cost overrun. After testing the build, at the end of the first iteration, the user evaluates the software and provides feedback. Based on the customer assessment, the development process enters into the next iteration and afterward follows the linear approach to implement the feedback provided by the user. The process of iterations along the spiral carries on throughout the life of the software

 D) Scrum: -

Scrum is not a process technique or definitive method, rather it is a framework within which you can employ various processes and techniques. It has three roles, and every role has clear accountability. The product owner is responsible for maximizing the value of the product resulting from the development teamwork

The Scrum model suggests that projects progress via a series of sprints. In keeping with an agile methodology, sprints are time-boxed to no more than a month-long, most commonly two weeks

Scrum is a lightweight agile process framework used primarily for managing software development. Scrum is often contrasted with the so-called “Waterfall” approach, which emphasizes up-front planning and scheduling of activities, followed by execution

The scrum models have 5 steps also called phases in a scrum.

Step 1: Product Backlog Creation.

Step 2: Sprint planning and creating a backlog

Step 3: Working on sprint.

Step 4: Retrospective and the next sprint planning

According to me, the use of the V Model methodology is supposed to be better for this project. It is also known as Verification and Validation Model.

V-model is a sequential process in which the next phase begins only after the completion of the present phase.

also, The Committee of Mr. Henry, Mr. Pandu, and Mr. Dooku discussed with Mr. Karthik and finalized the V Model approach.

**Question : Waterfall Vs V-Model**

**20Write down the differences between waterfall model and V model.**

**Answer -**

|  |  |
| --- | --- |
| **Waterfall model** | **V-model** |
| In Waterfall model required budget is low. | V Model is expensive compared to Waterfall model |
| Simplicity of the water model is simple. | Simplicity of the V Model is intermediate. |
| Flexibility of Waterfall model is rigid. | Flexibility of V model is little flexible. |
| Waterfall model steps move in a linear way. | V Models steps don’t move in a linear way |
| In Waterfall model testing activities start after the development activities are over. | In V model testing activities start with the first stage. |
| Guarantee of success through waterfall model is low. | Guarantee of success through V model is high. |
| Waterfall model is a continuous process. | V Model is simultaneous process. |
| Software made using waterfall model the number of defects is less in comparison of V Model. | Software made using V model the number of defects is greater in comparison of software made using waterfall model |
| Waterfall model is less used now a days in software engineering. | V model is widely used in software engineering |
| Requirements are clear from the start | High amount of uncertainty |
| One of the very old methods and commonly used | Not so commonly used |
| Simple to use method steps can be completed alternatively | Each step should be completed before moving to another step |
| Defects found at the end | Defects found at the start of the project |

**Question 11 – Justify your choice**

**As a BA, state your reason for choosing one model for this project**

**Answer -**

V Model is based on verification and validation wherein change requests can be easily accommodated in the middle of the project development life cycle. Also, Coding and testing are performed simultaneously hence defects of the error are less so higher chance of success in this model.

SMEs are stressed about using the V model. And Committee of Mr. Henry, Mr. Pandu, and Mr. Dooku discussed with Mr. Karthik and finalized the V Model approach.

hence V model is the best choice.

**Question 12 – Gantt Chart**

**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.**

**Answer -**



**Question 13 – Fixed Bid Vs Billing**

**Explain the difference between Fixed Bid and Billing projects**

**Answer -**

fixed bid -

A fixed bid project must have a start and end date and it is billed on a specific amount regardless of the hours worked this fixed bid can be allocated within a month a week or after the completion of the project. This is based on milestones.

Billing model -

The billing model is used for the project based on time and material. It is a simple method where the prices per person per skill per technology are decided and charged based on it, vendor issues monthly insight of work completed this model is agile-oriented. this is based on the time material work hour model.

**Question 14 – Preparer Timesheets of a BA in various stages of SDLC**

**➢ Design Timesheet of a BA**

**➢ Development Timesheet of a BA**

 **➢ Testing Timesheet of a BA**

 **➢ UAT Timesheet of a BA**

**➢ Deployment n Implementation Timesheet of a BA**

Design Timesheet of a BA

|  |
| --- |
| **Design Time Sheet for BA** |
| **Day Worked** | **Login time** | **Logout time** | **Hours worked** |  **Task done** |
| **Day 1 in Design** | 9:00 AM | 1:00 PM | 4 | Preparation of ADD and HDD |
| 1:00 PM | 2:00 PM |   | Lunch |
| 2:00 PM | 3:00 PM | 1 | Preparation of ADD and HDD |
| 3:00 PM | 6:00 PM | 3 | Finalize the solution |

Development Timesheet of a BA

|  |
| --- |
| **Development Timesheet of a BA** |
| **Day Worked** | **Login time** | **Logout time** | **Hours worked** |  **Task done** |
| **Day 1 in Development** | 9:00 AM | 1:00 PM | 4 | Use case Diagram, Use case specs. |
| 1:00 PM | 2:00 PM |   | Lunch |
| 2:00 PM | 3:00 PM | 1 | Preparation of ADD and HDD |
| 3:00 PM | 6:00 PM | 3 | Discussion and framing LDD and CDD application. |

Testing Timesheet of a BA

|  |
| --- |
| **Testing Timesheet of a BA** |
| **Day Worked** | **Login time** | **Logout time** | **Hours worked** |  **Task done** |
| **Day 1 in Testing** | 9:00 AM | 1:00 PM | 4 | Review of system test cases. |
| 1:00 PM | 2:00 PM |   | Lunch |
| 2:00 PM | 3:00 PM | 1 | Review of system test cases. |
| 3:00 PM | 6:00 PM | 3 | providing feedback wherever required. |

UAT Timesheet of a BA

|  |
| --- |
| **UAT Timesheet of a BA** |
| **Day Worked** | **Login time** | **Logout time** | **Hours worked** |  **Task done** |
| **Day 1 in UAT** | 9:00 AM | 1:00 PM | 4 | Run test case with stakeholders |
| 1:00 PM | 2:00 PM |   | Lunch |
| 2:00 PM | 6:00 PM | 4 | Run test case with stakeholders |

Deployment n Implementation Timesheet of a BA

|  |
| --- |
| **Deployment n Implementation Timesheet of a BA** |
| **Day Worked** | **Login time** | **Logout time** | **Hours worked** |  **Task done** |
| **Day 1 in Deployment n Implementation** | 9:00 AM | 1:00 PM | 4 | Running application on clients server |
| 1:00 PM | 2:00 PM |   | Lunch |
| 2:00 PM | 4:00 PM | 2 | Doubt clearing sessions |
| 4:00 PM | 6:00 PM | 2 | project closure documentation |