COEPD – Traditional Development

Capstone Project1 – Part -1

**DINESH KULKARNI**

Online Agriculture Products Store

**Question 1 – BPM**

Identify Business Process Model for Online Agriculture Store – (Goal, Inputs, Resources, Outputs,

Activities, Value created to the end Customer)

Goal: -To provide online platform for purchasing agriculture products to farmers

Inputs: -Product orders, Company information, Product details, Farmers information, Payment information

Resources: -Mobile and Web online store app, Payment interface, Agriculture products stock, Customer support team, Shipping arrangement

Outputs: -Orders, Payment confirmation, Product delivered, Feedback from farmers

Activities: -

1.Farmers can browse products

2.Farmers can add products to cart

3.Farmeres can make Payment

4.Orders can process

5.Orders can be shipped to farmers

6.Products can be stocked

7.Payment can be processed

Value created to end customer: - Farmers can compare the products, farmers can get discount coupon for purchase of bulk orders

**Question 2 – SWOT**

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.

Strength: -

1.Farmeres can order the agriculture products from any location

2.All kinds of products are available for purchase

3.As there is online store so cost of product is less as no traveling to physical store

4.Farmres can pay for products by cash or cards as per their convenient

Weaknesses: -

1.Internet connectivity issue in rural area

2.As farmers cannot check products physically so quality is concern

3.Many farmers do not know how to use online app

4.Also, language is problem for may farmers as they are from villages

Opportunities: -

1.Increased use of smart phones can enhance the product sell

2.For certain products farmers can avail government subsidy

3.Farmeres can collaborate with suppliers for their choice products in minimum cost for bulk orders

4.Also, rapid growing technology can help farmers to try new thing in their farming

Threats: -

1. Shipping to remote area is difficult
2. Market competitions for online application
3. Weather conditions can affect farmer’s purchase habit
4. Resist to change towards digital platform

**Question 3 – Feasibility study**

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.

Hardware feasibility and requirement: -

1.Computer and laptop

2.Mobile and Tablet devices

3.Serveres

4.Data storage device

Software feasibility and requirement

1.JAVA technology with android app

2.Payment Interface with mobile app

3.Database technology like MYSQL and ORACLE

4.Integration with partners and security for Application

Trained resources

1.Front end and backend developers skilled in JAVA and Mobile app

2.Testeres

3.DBA

4.UX and UI developers

Budget feasibility

1.App development- 3 to 5 lakhs

2.Hosting app- 2 to 3 lakhs

3.Software license- 3 to 4 lakhs

4.Inventory setup- 5 to 10 lakhs

5.Marketing- 4 to 6 lakhs

6.Logistic- 4 to 5 lakhs

7.Staff- 20 to 30 lakhs

8.Misclenious – 10 to 12 lakhs

Total should be less than 2Cr

Time feasibility

1.Market research- 1 to 2 Months

2.App development- 4 to 8 Months

3.App Testing- 1 to 2 Months

4.Deployment in production- 1 to 2 Months

5.Maintaince- 1 to 2 Months

Total time duration should be less than 18 months

**Question 4 – Gap Analysis**

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

AS-IS (Existing process)

1.Physical shop to purchase the agriculture products

2.Limited payment options for farmers

3.Limited products range is available for purchase

4.No option for feedback of product

5.Time required to delivery of product is high

6.No ease of return the product to company

TO-BE (Future process)

1.Online shopping app to purchase the agriculture products

2.Farmeres can pay for products by COD, Cards, or any options

3.Different suppliers giving different products range

4.Farmeres can give product rating

5.Shipping and tracking are fast

6.Facility to provide returning of product

**Question 5 – Risk Analysis**

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

1.Farmeres may hesitate to switch to digital platform

2.Local supplier may give agriculture products with lesser cost

3.Rular areas my have some logistic and shipping issue

4.Agriculture products may come under government rules and regulations so interconnection with them is challenge

5.Farmeres are not highly educated so language may be problem

6.After purchasing agriculture product payment may be an issue

7.Rural area there may be internet and power supply issue

8.Usage of application is concern as it may fail

9.Availablity of skilled resources may be issue

10.Product stocks may be difficult due to change in weather conditions

**Question 6 – Stakeholder Analysis (RACI Matrix)**

Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take

Decisions and Who are the influencers

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Activity | Business Owner (Henry, Pandu, Dooky) | Project Manager  (Vandanam) | BA  (Dinesh) | Developer  (Juhi, Luci, Tucker, Bravo) | Tester (Jason, Aleky) | Farmers (Peter,Kevin,Ben) | Supplier |
| Project Approval and Budget | A | C | I | I | I | I | I |
| Project Initiation | C | R | I | I | I | I | I |
| Requirement gathering | C | I | R | I | I | I | C |
| App Development | I | A | C | R | I | I | C |
| App Testing | I | A | C | I | R | I | I |
| App Deployment and App Maintenance | I | A | C | R | C | I | I |
| Order and Delivery of product setup | I | R | C | I | I | I | C |
| User review and feedback | I | C | C | R | I | I | I |
| Vendor and supplier coordination | I | A | C | I | I | C | R |

**Question 7 – Business Case Document**

Help Mr Karthik to prepare a business case document

1.Why is this project initiated

This online agriculture shopping app aims to bridge the gap between farmers and suppliers. This app is user friendly and can be use by new farmers effectively to browse and purchase the agriculture products

2.What are the current problems?

farmers are unable to buy products of their choice at village location effectively with lower cost

3.With this project how many problems could been solved?

Online app offer range of agriculture products

Farmer can browse the agriculture products as per their choice

farmers can purchase products with less cost

farmers can pay for product as per their choice

This app can connect farmer with suppliers

Farmer can return the product effectively

4.What are the resources required?

For online agriculture shopping app development, we require 1 Project manager,1 Sr JAVA developer,3 JAVA developer,1 Network Admin,1 DB admin,2 Tester and 1 BA

5.How much organisational change is required to adapt this technology?

Soony company required one committee with financial head and project coordinator so that the can outsource the project from API IT solutions apart from that no any organisational change is required

6.Time frame to recover ROI

Total estimated budget is 2Cr and Time line for project is around 18 months to revenue generate from commission on sale from supplier with promotional and discount code to farmers can enhanced the sale so expected to recover amount within 1 year

7.Stakeholder

So online agriculture shopping app provides opportunity for farmers (User) to purchase the products from suppliers (Third party stake holders)

App development project is initiated by (Business stakeholders) and project stakeholders are developing the app for farmers.

**Question 8 – Four SDLC Methodologies**

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

SDLC stands for Software development life cycle. It tells us that how to build the software application

There are five phases of SDLC

Requirement Gathering, Requirement Analysis, Design, Development-coding, Testing

1.Sequential: -It is called as waterfall model. In this each phase must be completed in its entirely before the next phase can begin. At the end of each phase a review takes place to determine if the project is on right path and whether to continue or discard the project. This is very simple and well suited for stable requirement but it is not good for flexibility in changes

2.Iterative RUP Rationalised unified process: -It is based on set of building blocks or content elements describing what is to produce the necessary skill required and step by step explanations describing how specific development goals are to be achieved.

Four project life cycle phases

Inception: -Agreement among the team and customer

Elaboration: -Agreement within the team as to architecture and design needed to deliver the agreed system behaviour

Construction: -Iterative implementation of fully functional system

Transition: -Delivery, Defect correction and tunning to ensure customer acceptance

3.Evolutionary Spiral

The spiral model emphasis on risk analysis. The spiral model has 4 phases planning, Risk analysis, Engineering, and evolution. A software project repeatedly passes through these phases in iterations. The base line spiral starting in the planning phase requirements are gather and risk is assessed. Each subsequent spirals builds on the baseline spiral. Requirements are gathered during planning phase. Prototype is produced at the end of risk analysis phase; Software is produced in engineering phase along with testing at the end of the phase. The evolution phase allows the customer to evaluate the output of the project before next spiral. The angular component of spiral represents progress and radius of the spiral represents the cost. It does not work for smaller project.

4.Agile: -It effectively handles the changes. Delivery time is high. Satisfy the customer through early and continuous delivery of valuable software. It emphasizes on collaboration, Flexibility, and iterative development. It prioritises the delivering functional software in short cycle called sprint incorporating feedback and adaptive changes.

Each methodology has its own advantage and disadvantages here by considering all factors we will adapt WATERFALL model for our online Agriculture shopping app.

**Question 9 – Waterfall RUP Spiral and Scrum 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?

As a business analyst lets see the difference between V model and Water fall model

Clear and stable requirement: -For our online agriculture shopping app our requirement is clear and stable. Waterfall model is simple our requirement is agriculture products, Payment interface, shopping cart system so there is very less chances of change in requirement.

Testing: -We are focusing on testing after the app is developed also, we have less only 2 testing resources so it is very convenient to test end to end after development.

Shorter time line: -Within 18 months we are expected to delivered the sopping app so waterfall model is more convenient as waterfall model allows to developed product faster than other.

On the other hand, V model requires testing on each development phase so resource requirement is more. Also, If our requirement changes is more and critical then V model is useful.SO in our case waterfall model is best suited

**Question 10 – Waterfall Vs V-Model**

Write down the differences between waterfall model and V model.

|  |  |  |
| --- | --- | --- |
| Parameter and Property | Waterfall | V model |
| Structure | Linear or Sequential | V shaped |
| Definition | 1 phase is finished then next start | Testing is performed along with Dev |
| Use | Fix Scope and requirement | Changes in requirement |
| Risk | High | Low |
| Cost | Less | More |
| Error finding | After development of Software | Along with the development |

**Question 11 – Justify your choice**

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

Each methodology has its own advantage and disadvantages here by considering below factors we will adapt WATERFALL model for our online Agriculture shopping app.

Fix requirement, Limited Resources, Available budget, Project time duration and Project size is small

**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.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Activity/Time (Months) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| RG |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| D1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| D2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| D3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| D4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| UAT |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Question 13 – Fixed Bid Vs Billing**

Explain the difference between Fixed Bid and Billing projects

The fix bid (Millstone) and billing (Time and Material) refers to different pricing models used in project-based work

In Fix bid client and service provider agree on set of prices for the entire project before work begins. The price remains fix regardless of how much time or resources required to complete the project. Initially client and vendor define scope, deliverables, time, and cost so it is best suited for fix requirement project.

In billing project client pays to vendor depends on actual time and material spend on project. Client and vendor agrees upon the manhour and cost of material daily basis. The final cost depends on how much resources and material cost throughout project life cycle. This is suitable for projects with unclear requirements. Also, it is suited for complex and long-term projects

**Question 14 – Prepare 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 Stage:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Activity | Meet Stakeholder to gather requirement | Analyse and document business requirement | Review initial design with designer | Discussion with SME regarding feasibility | Prepare functional document and use cases | Perform requirement traceability matrix |
| Date/ Hours |  |  |  |  |  |  |
| 01-04-2025 | 8 |  |  |  |  |  |
| 02-04-2025 | 2 | 3 | 1 | 1 |  |  |
| 03-04-2025 |  | 1 | 3 | 2 | 1 | 1 |
| 04-04-2025 |  | 1 | 1 | 3 | 2 | 1 |

Development Stage

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Activity | Discuss requirement with developer | Prepare user stories and clarify doubts of developer | Conduct meeting with developer | Provide support in developing and coding | Monitor the coding process | Checking the functionality with requirement |
| Date/ Hours |  |  |  |  |  |  |
| 05-04-2025 | 6 | 2 |  |  |  |  |
| 06-04-2025 |  | 4 | 4 |  |  |  |
| 07-04-2025 |  |  | 4 | 4 |  |  |
| 08-04-2025 |  |  | 2 | 2 | 2 | 2 |

Testing

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Activity | Test plan review | Coordinate with tester to prepare test cases | Conduct meeting with Tester | Review test cases and test execution | Check test report and analyse any defects | Prioritize the defects and assist tester for reporting defects |
| Date/ Hours |  |  |  |  |  |  |
| 09-04-2025 | 8 |  |  |  |  |  |
| 10-04-2025 |  | 3 | 3 | 2 |  |  |
| 11-04-2025 |  |  | 1 | 3 | 3 |  |
| 12-04-2025 |  |  |  | 4 | 2 | 2 |

UAT

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Activity | Define scope and clarify requirement with User | Prepare UAT test scope based on business requirement | Coordinate with UAT team for execution | Review UAT result and feedback analysis | Assist on UAT defects and analyse defect report | Final UAT signoff from USER |
| Date/ Hours |  |  |  |  |  |  |
| 13-04-2025 | 8 |  |  |  |  |  |
| 14-04-2025 |  | 4 | 4 |  |  |  |
| 15-04-2025 |  |  | 2 | 4 | 2 |  |
| 16-04-2025 |  |  |  | 3 | 3 | 2 |

Development and Implementation

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Activity | Assist in final deployment and User coordination | Provide support during development process | Check post deployment issue and coordinate with team | Participate in meeting and analyse feedback | Check system is properly working | Record feedback from live USER’s |
| Date/ Hours |  |  |  |  |  |  |
| 17-04-2025 | 4 | 4 |  |  |  |  |
| 18-04-2025 |  |  | 4 | 4 |  |  |
| 19-04-2025 |  |  |  | 1 | 5 | 2 |
| 20-04-2025 |  |  |  |  | 4 | 4 |