

Capstone Project1 – Part -1/3 V2D1- Mar2024

Key Person in this Project

- * Mr Henry - Business Man and Owner of Soony Company
- * Peter - Mr Henry's Friend
- * Kevin - Mr Henry's Friend
- * Ben - Mr Henry's Friend
- * Mr Pandu - Functional Head of SOONY
- * Mr Dooku - Project Coordinator
- * Mr Karthik - Delivery Head
- * Mr Vandanam - Project Manager
- * Ms Juhi - Senior Java Developer
- * Mr Teyson - Java Developer
- * Ms Lucie - Java Developer
- * Mr Tucker - Java Developer
- * Mr Bravo - Java Developer
- * Mr Mike - Network Admin
- * John - DB Admin
- * Mr Jason - Tester
- * Mr Alekya - Tester

Question 1 - BPM

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

Answer:

As per my understanding, BPM is a combination or collection of activities that needs to performed to get the desired output for a particular customer/Market.

This generally includes 5 steps

- * Goal
- * Input
- * Resources
- * Output
- * Activities

Business Process Model for Online Agriculture Store

1- Goal

To facilitate remote areas farmer to buy agricultural products online and get them delivered at their location.

2- Input

- * App Development
- * User Registration/Customer information

- * Categorisation of products or product details (Manufacturer Name, Product Name, Pricing details, Availability duration)

3- Resources

- * List of all the companies/Vendor needs to be mapped, which are dealing with these kind of products/Inventory Management
- * Human Resources/Manpower (BA, PM, Developers, Tester, Admin)
- * Internet
- * Platform for payment/Payment gateway

4- Output

- * Working application or Website
- * Customer Profile
- * Order Management System
- * Delivery Tracking
- * Customer feedback

5- Activities

- * User can login using login credentials
- * User can see all the available products
- * Order processing
- * Payment gateway (Multiple payment option)
- * Order Processing
- * Order Tracking/Delivery status

Question 2 - SWOT

Answer:

SWOT is an acronym of Strength, Weakness, Opportunity & Threats

1- Strength

Aspects he should consider under strength

- * Mr Henry itself a strength for this project (as he is well known businessman)
- * Dedicated budget of 2Cr along with the defined timeline of 18 months.
- * We have dedicated team consist of a BA, PM, 4 Developer, 1 Senior Developer, 1 Network admin, 1 Admin & 2 tester.
- * Dedicated coordinator for this project (Mr Dooku).

2- Weakness

Aspects he should consider under weakness

- * Internet connectivity may be unreachable (as its a remote village)
- * Customer's are not that much familiar with mobile application
- * Order delivery might create an issue in this (it can hamper the promised delivery date).

3- Opportunities

Aspects he should consider under opportunities.

- * There might be a possibility of getting it fully digitalised agriculture supply
- * Services can be expanded in term of consultation regarding the crops, pesticides and other products.

4- Threats

Aspects he should consider under Threats

- * Competitors - it might be possible, that other apps are also providing/dealing with the same kind of services
- * Database Security - it is one of the most critical information, which may lead to cyber attacks
- * Logistics issues - As its a remote location, it can affect the delivery time because of poor infrastructure

Question 3 - Feasibility Study

Answer:

Feasibility study based on 5 factors, which include (Technology, Hardware, Software, Budget & Resources)

- * Technology - we are using JAVA platform to get the application developed
- * Hardware - These might include the storage (where all the data get stored, Data storage device)
- * Software - Payment gateway will be one of the vital in this development & one more is Delivery tracking mechanism (which will help in getting live tracking)
- * Budget - It is already fixed at 2Cr. With 18 months timeline.
- * Resources - The resources required for the completion for the projects are mentioned
 - * Project Manager - Mr Vandanam will be there to plan and track the project
 - * 4 Java Developers - They will be used to do backend work (like coding)
 - * 1 Senior Developer
 - * 2 Tester - They will test the validation of the application (or to check the error)
 - * Network Admin & a Admin - they will be setting up the servers and connections
 - * Business Analyst - I will be there to collect the all the requirements form stakeholders

Question 4 - GAP Analysis

Answer:

Mr Karthik must present the below Gap analysis & the difference between AS IS & To Be to Mr. Henry

- * AS IS Process
 - * Currently farmers are walking to store/shops for getting their requirements.
 - * Product availability is a major concern in offline markets (as it might be possible that all the product are not available with the store/Manufactures.

* TO BE Process

- * Farmers will be able to view the entire product list.
- * They can order at their own, no need to visit multiple manufactures for the requirements
- * Product availability will always be there even in remote location

Question 5 - Risk Analysis

Answer:

BA Risk

- * Competition can be the one, which can impact the reachability in market.
- * As we are developing application for the farmers, they are not that much tech savy (it might be possible, that they will find it difficult to use)
- * Product pricing is a concern here, which can directly affect the presence in market

Project Risk

- * Logistics is major concern in this project, as products will delivered at remote. Therefore ensuring it to get these delivered in time.
- * Payment gateway needs to be reliable else this can develop trust issue in customer (if payment get failed repeatedly)
- * Technology chooses for this project should be reliable, else will lead to maximum downtime.
- * Internet issue in remote areas

Question 6 - Stakeholder Analysis (RACI Matrix)

Answer:

RACI Matrix - Responsible, Accountable, Consulted, Informed

Responsible - Person who performs to complete the task

RACI Matrix

Name	Position	R	A	S	C	I
Mr Henry	Support Person			Yes		Yes
Peter, Kevin & Ben						
Mr Pandu	Business Stakeholder					Yes
Mr Dooku	Business Stakeholder					Yes
Mr Karthik	Delivery Head					
Mr Vandanam	Project Manager		Yes			
Ms Lucie, Mr Tucker, Mr Bravo, Mr Teyson, Ms Juhi	Java Developer					
Mr Jason, Mr Alekya	Tester				Yes	
Mr Mike, Mr John	Network Admin & DB Admin					
Pratik	BA	Yes	Yes			

Accountable - Person who own the delivery of the project

Consulted - Person who provide feedback about the process

Informed - Person, who has to be informed about the task (but that person is not involved in day to day task)

Question 7 - Business Case Document

Answer:

Business case document is basically a justification of projects with detailing of projects.

Below are the points covered, while preparing Business Case Documents:

- * Why is this project initiated (It project is to be created so that, farmers can easily order Seeds, Crops & Pesticides, as per their requirement from their convenient locations)
- * What are the current problems
 - * Farmers in remote areas are finding it difficult to get the required thing for farming
 - * The products are not available instantly or whenever required
 - * They need to travel more to get those fertilisers, pesticides & seeds
- * What are the resources required
 - * Resources generally includes Manpower.
 - * It includes the software (like Visio, Draw iO)
 - * Dedicated team is required to make this online platform like (BA, Developer, Tester etc)
 - * This include budget as well (which is already their of 2Cr)
- * How much time required to recover ROI

The time required to complete this project is 18 months.
- * Stakeholder Identification
 - * There are multiple stakeholders involved in this project (same can be referred from RACI Matrix)

Question 8 - Four SDLC Methodologies

Answer:

There are 4 types of SDLC Methodologies

- * Sequential
- * Iterative
- * Evolutionary
- * Agile

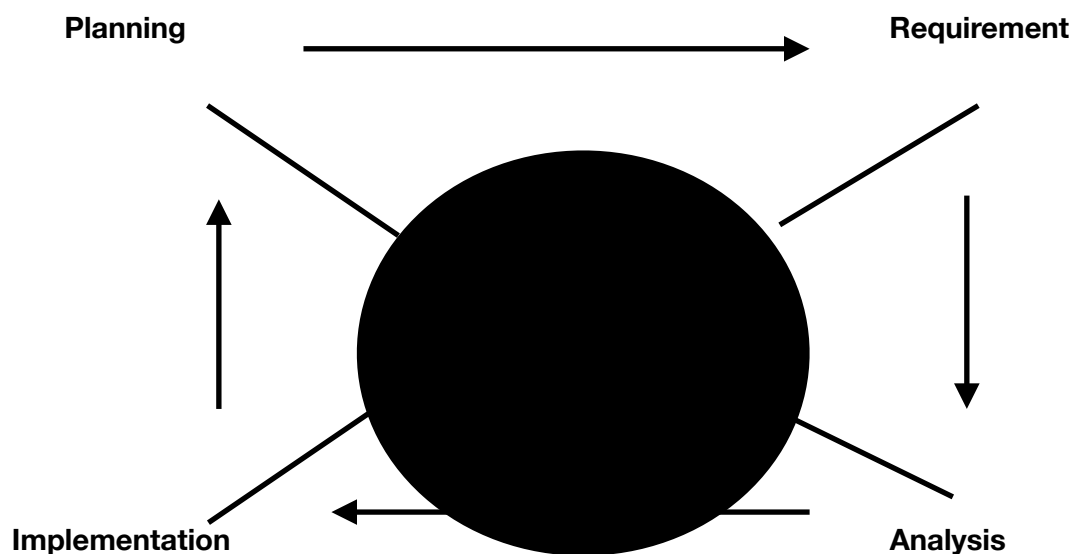
- * Sequential (Waterfall Model)

- * Sequential model is very simple to understand and use

- * It is also called as Linear sequential life cycle model
- * In this model, every phase to be completed before the next phases (after considering phase review), as every phase has their review mechanism, which will let us know whether the project is on correct path or not

There are various stages of Waterfall Model

- Requirement Gathering
 - Requirement analysis
 - Design
 - Development & Coding
 - Testing (UAT)
 - Deployment
 - Implementation
 - Maintenance
- Iterative Model
 - Iterative model is also known as RUP Model (Rational Unified Model)
 - It is basically an approach to build the system on doing repetitive steps like (Planning, requirement, design & Implementation).
 - We need to repeat below mentioned steps until final application is complete



- Evolutionary Model
 - This model is also known as spiral model
 - Its a risk driven model, which is generally used for complex projects or large size projects
 - It can easily handle change request at any point of time
 - Application will get produced at early stage based on mentioned phases

4 Phases of evolutionary model

- Planning (Requirements can be gathered here)
- Risk Analysis (Process of identifying risk in online agricultural products trade in)
- Engineering (Prototype get created in testing will take place in engineering phases)
- Evaluation (same is handed over to customer/User for their feedback).

- **Agile Model**

- Agile methodology is one of the fastest delivery methods.
- Software can be developed in a very minimal time.
- Changes can be accepted at any point of time.
- It will break down the app development project into several phases (which will help us to get it functional quickly)

Question 9 - Waterfall RUP Spiral and Scrum Model

Answer:

- **Waterfall Model**

Waterfall is one of most popular and structured method of SDLC, where development depends on the previous phase. In this model, software development takes place in multiple phases, where each phase needs to be complete before the second phase begins. Each phase has its own review mechanism, through which we got to know whether or not to proceed with the project.

- **RUP (Rational Unified Process)**

RUP is an iterative process for SDLC, because each process get repeated again and again until application development.

In this process, application development improved gradually (as various changes can be identified during the iteration). There are various activities that takes place during this process. 1-Planning, 2-Design, 3-Implementation, 4-Testing.

- **Spiral**

Spiral model is a combination of iterative and waterfall model. It is commonly used for large and complex project where the changes can be done at any point of time.

This model provided the platform to create prototypes in each phases so that we can add the changes, whichever is required (so that application can be releases gradually).

- **Scrum**

Now a days, it is one of the most used models as it is based on incremental processes. It breaks down the process in multiple phases (which is called as Sprint).

Which is usually in 3-4 weeks on the basis of prioritisation given by the client for their requirement. Changes can be entertained at any point due to its flexibility (as the final development is still not done).

Question 10 - Waterfall v/s V-Model

Answer:

Waterfall Model	V-Model
It is based on sequential method	It is based on sequential and Parallel as well
Testing will be done after completion of phase	Testing will be done parallel to development phase
It is difficult to entertain change request (once the phase completed)	Changes can be managed but it is not that much easy because it impact both the sides
Simple and easy to understand	It is complex to understand due to its structure
Problems can't be identified earlier, until development complete	Problem can be identifies in mid of the development
It is good for smaller projects, where requirements are clearly understood	It is good for the project, where validation is one of the most important factor

Question 11 - As a BA, state your reason for choosing one model for this project

Answer:

As a business analyst, I will choose agile model for developing this project.

The reason behind choosing Agile methodology is that there is scope of continuous improvement in developing this online agricultural products (as of now, it is just limited to ordering pesticides, crops, seeds, fertilisers etc)

But as per my observation, there might be more future requirement or possibilities for adding more product into it (which referred as changes) which can be easily taken care through agile methodology.

And we have also given with the timeline of 18 months (which is fixed). Therefore, this will help us to break the entire app development process in multiple phases and to track the app development effectively.

Question 12 - GANTT Chart

Answer :

Gantt chart is basically a tool to track timelines of the project.

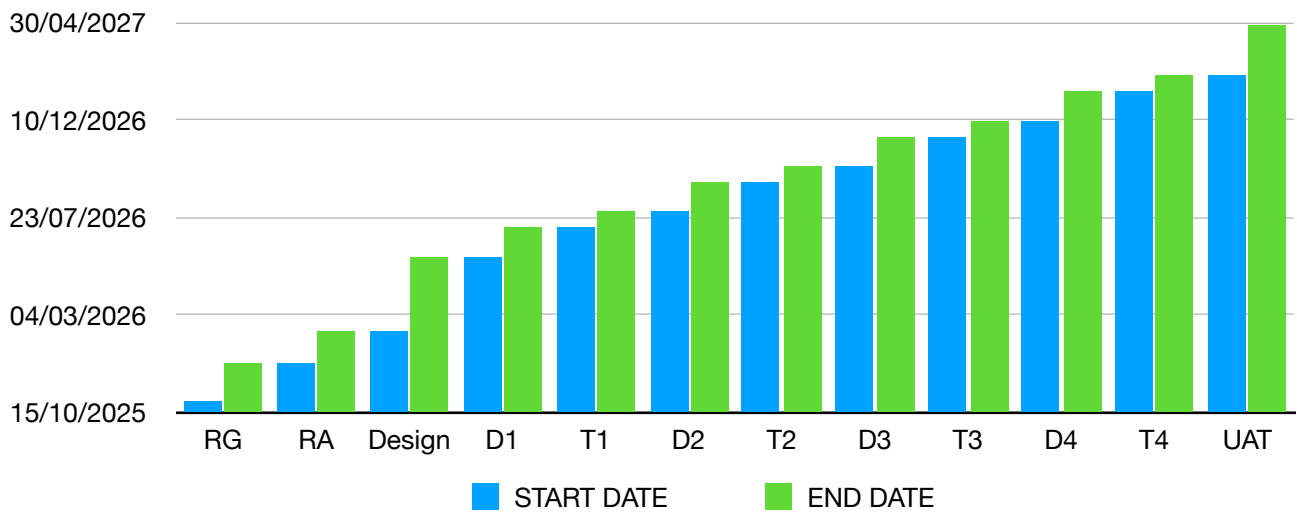
It generally shows all the parameters of project (like what's the start date & end date of the project, what are the timeline of completing particular phase/task)

This help us to visualise the progression of the project.

Timelines

PROCESS	START DATE	END DATE	APPROX TIME	NO OF DAYS
RG	1-11-25	25-12-25	10%	55
RA	25-12-25	7-2-26	8%	44
Design	7-2-26	27-5-26	20%	109
D1	27-5-26	9-7-26	8%	44
T1	9-7-26	31-7-26	4%	22
D2	31-7-26	13-9-26	8%	44
T2	13-9-26	4-10-26	4%	22
D3	4-10-26	17-11-26	8%	44
T3	17-11-26	9-12-26	4%	22
D4	9-12-26	21-1-27	8%	44
T4	21-1-27	12-2-27	4%	22
UAT	12-2-27	30-4-27	14%	76

GANTT Chart (Agricultural App)



Question 13 - Fixed Bid & Billing Projects

Answer:

Fixed Budget - It is defined as fixed amount of money that involves in developing a particular project. It is basically preferred for small and medium scale project where the requirements are very clear and understandable, where the goals are clear etc.

Preferences of Fixed bid projects

- Works well with small & medium size projects
- Goals should be clear
- Requirement to be specified properly
- Budget constraint
- Timelines are fixed

Billing Projects - This mode includes a process of sending invoices/billing to client on hourly basis for the work completed which includes timesheet of those (who are working on that project).

In this model, the client get the idea/progression details on their project and changes can be entertained in middle of the project.

Question 14 - Time sheets of BA in various stages of SDLC

Answer:

Design Time Sheet - Pratik Satrote

Task	Start Time	End Time	Duration
Discuss with client for design & Solutions	9:30	12:30	3h
Continuation with the discussion for design & Solutions	12:30	14:30	2h
Evaluating and finalising the designs	14:30	16:00	1h 30m
Verification & Validation	16:00	17:00	1h
Finalisation of design	17:00	17:30	30m

Development Time Sheet - Pratik Satrote

Task	Start Time	End Time	Duration
Coordinating with developers for their progress	9:30	12:30	3h
Clarification of their doubts	12:30	15:30	3h
Change requirement during development phases	15:30	17:30	2h

Testing Time Sheet - Pratik Satrote

Task	Start Time	End Time	Duration
Work with testing team to create the test cases and validation parameters	9:30	12:30	3h
Review all the test cases (validated by testing team)	12:30	16:30	4h
Take sign off form client (after all validations)	16:30	17:30	1h

UAT Time Sheet - Pratik Satrote

Task	Start Time	End Time	Duration
Develop UAT validation plan	9:30	13:30	4h
Create test cases	13:30	15:30	2h
Validate the same and publish results	15:30	17:30	2h

Deployment Time Sheet - Pratik Satrote

Task	Start Time	End Time	Duration
Provide training for all the users	9:30	12:30	3h
Ensure, development should be done for all the functionalities (Recheck)	12:30	13:30	1h
Provide test result to the client	13:30	14:30	1h
Coordinating with IT/Deployment team	14:30	17:30	3h