**Proj Prep 1 Case Part 1**

**QUESTION 1 :** Identify Business Process Model for Online Agriculture Store – (Goal, Inputs, Resources, Outputs, Activities, Value created to the end Customer)

**ANSWER 1 :** Business process model for creating an online agricultural store will be as follows:

1. **Goal –** To create an online agricultural store in the form of an online platform/application wherein farmers can purchase pesticides, fertilizers, seeds etc. online.
2. **Input –** Details of various products that will be listed for sales in the application. Payment options available, their information and their implementation keeping in mind that the end users will be farmers. Delivery information how to deliver the products ordered. Placing an order and various options available for selecting a product and ordering it along with payment options.
3. **Resources –** IT infrastructure for building mobile application or website, manpower comprising of testers, Human resources manager, application/web developers, supervisors at various levels, customer service team etc, sponsors/stakeholders for funding the requirements.
4. **Output –** An online platform easy to understand and operate for farmers wherein they can search/browse/navigate through various products as per requirements, place order, make payment/explore payment options and get the same delivered at doorstep for which tracking is available.
5. **Activities –** Development of mobile application/website and maintenance of it from time to time. Uploading the product information from the farmers to the mobile application/website, and updating it from time to time. Stock updation of various products post every order completion. Managing the payment options online/cash on delivery. Managing the order placed by the farmers/end users. Managing the delivery since placement of order till its delivery to the farmers. Post delivery, customer service team will take care of after sales servicing for clients.
6. **Value created to the end customer –** Farmers will have access to the products that they weren’t able to procure earlier through online platform. Farmers will have ease of choosing the right product with right quantity online for which earlier they had to depend on offline shops which in turn was dependant on stock availability for certain items/quantity.

**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.

**ANSWER 2 :**

SWOT analysis is an abbreviation corresponding to Strengths, Weaknesses, Opportunities and threats relating to a particular problem/issue/concern. Below are the aspects which could be considered for SWOT analysis by Mr.Karthik

* **Strengths** :
	+ - Ease of access to the farmers as they will be able to order seeds/fertilizers/pesticides etc online
		- Trust of people that they will get best price for the goods purchased as there will be transparency in ordering pesticides/seeds/fertilizers etc.
		- All products will be at one place, farmers will not have to visit one or the other shop for the same.
		- Multiple options for payment like UPI, cards, internet banking, cash on delivery etc
		- Product review can help in sharing the feedback with the companies for further improvements, if any.
* **Weaknesses** :
	+ - Distance of villages from hub/spoke location for delivery can make things delayed
		- Farmers may have difficulty in accessing the online platform and can have difficulty in understanding too as many of them are illiterate.
		- Connectivity issue in application/internet.
		- Ordered products could be out of stock at times.
* **Opportunities** :
	+ - This could be a new way to reach farmers as earlier agriculture products companies could connect only through retailers/distributors.
		- Farmers could get their desired products and compare them with other options from various companies’ products can get better value for money.
* **Threats** :
	+ - Climate change could lead to delay in delivery of orders.
		- Insufficient budget could lead to delay in improvements which could be needed in application.

**QUESTION 3 :** 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 3 :**

For feasibility study, Mr.Karthik could consider below points. :

* **Hardware :** A computer system to run commands, electrical setup, network and computer cables, networking setup for accessing internet, cables, computer peripherals, Server computer for handling application logins etc.,
* **Software :** JAVA application will be the software in which application to be created, android/IOS compatibility check, interface for integrating the application through android/IOS.
* **Trained resources :** Technical team to create application in collaborative work with professional JAVA Developers, product manager, testers, network admin, business analyst, data for agriculture, farmers and professionals who can help with agriculture related queries while creating application.
* **Budget :** 2 crores
* **Time frame :** 18 months for creating, testing, and handling first set of complaints for improvements.

**QUESTION 4:** 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 4 :**

In GAP analysis, Mr.Karthik has to submit the report to Mr.Henry. Currently, AS-IS for the applications will be : In current scenario, farmers are not getting proper access to various farming related products and are bound to purchase the same through retailers/distributor shops wherein, at times, they have to compromise with some substandard product too, if there need product is unavailable with the shop in their vicinity. Or, they have to travel far for procuring the required pesticides, fertilizers, seeds etc. Also, shopkeepers charge as per their will and if the good is needed, farmers are bound to pay the price quoted by the shopkeepers.

GAP analysis TO-BE : With the introduction of online application, farmers will be able to access required goods on time at their doorsteps, compare the goods online with various similar products, check product specifications for better results. This will be time and cost saving for the farmers.

**QUESTION 5 :** List down different risk factors that may be involved (BA Risks And process/Project Risks)

**ANSWER 5 :**

**BA RISKS :**

* Choosing improper elicitation technique could lead to wrong analysis.
* Entertaining change requests in last phase by the stakeholders.
* Improper information gathered at the time of gathering requirements.
* The period of project development to be adhered at all times.
* Climate, soil, equipments study for crops/farming.
* Coordination between various departments, especially JAVA developers, coding and testing teams.
* For implementing application for farmers, Multilanguage input will be required for various states.
* Connect with proper delivery partner to ensure delivery on time
* Payment modes and payment gateways should be easy to access by the farmers.

**PROJECT/PROCESS RISKS :**

* Recommendations/advice to the farmers should be according to the climate and land they live in/operate from.
* Handling of online portal should be cost-efficient for the farmers.
* Seeds quantity, pesticides, fertilizers and the quality should be at par with the products available offline.
* Awareness of farmers along with ease of access could be a cause of failure for the application.

**QUESTION 6:** Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take

Decisions and Who are the influencers

**ANSWER 6 :**

**Responsible :** Ritesh(the BA), Sr.Developer(Ms.Juhi)

**Accountable :** Project Manager(Mr.Vandanam), Ritesh(the BA)

**Supporting :** Project manager(Mr.Vandanam), Network Admin(Mr.Mike), DB Admin(Mr.John), Delivery Head(Mr.Karthik), Stakeholders(Mr Dooku, Mr.Pandu, Mr.Henry)

**Consulted :** Testers, Developers

**Informed :** Peter, Ben, Kevin (Customers, farmers) , Mr.Henry (Sponsor)

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| --- | --- | --- | --- | --- | --- | --- |
| **NAME** | **POSITION** | **R** | **A** | **S** | **C** | **I** |
| Ritesh | BA | YES | YES |  |  |  |
| Mr.Vandanam | Project Manager |  | YES | YES |  |  |
| Mr.Jason, Ms.Alekya | Tester |  |  |  | YES |  |
| Ms.Juhi | Sr.JAVA Developer | YES |  |  | YES |  |
| Mr.Teyson, Ms.Lucie, Mr.Tucker, Mr.Bravo | JAVA Developers |  |  |  | YES |  |
| Mr.Karthik, Mr.Mike, Mr.John | Delivery Head , Network Admin and DB Admin |  |  | YES |  |  |
| Mr.Henry | Business Owner/Sponsor |  |  | YES |  | YES |
| Mr.Peter, Mr.Ben,Mr.Kevin | Customer(Farmers) |  |  |  |  | YES |
| Mr.Dooku, Mr.Pandu | Business Stakeholders |  |  | YES |  |  |

**QUESTION 7 :** Help Mr Karthik to prepare a business case document

**ANSWER 7 :**

**Business case document**

1. **Why is this project initiated?** : This project was initiated by Mr.Henry to help his friends anf other farmers to reach out to the seller directly so that they can get seeds, pesticides, fertilizers at actual price and also can choose from variety of products through online platform.
2. **What are the current problems?** :Currently farmers are procuring the requisites through offline channels(through shops), wherein shopkeepers may or may not charge them fairly, they doesn’t get variety of same item and also availability of required product cannot be guaranteed at a particular shop which makes them travel long distances for the required item.
3. **With this project how many problems could be solved?** : With this project, various problems could be solved. 1) Farmers can order their required goods on time at the convenience of their home and are not required to travel far distances for procuring some particular item. 2) Farmers can choose from variety of products which enables them to purchase the exact item rather than ordering the one available as per offline store availability. 3) Farmers can purchase required item at right price rather than the one quoted by the offline shopkeeper.
4. **What are the resources required?** : IT infrastructure for building mobile application or website, manpower comprising of testers, Human resources manager, application/web developers, supervisors at various levels, customer service team etc, sponsors/stakeholders for funding the requirements.
5. **How much organizational change is required to adopt this technology?** : To adopt this technology, following changes are required in the organisation. There has to be a team deployed for gathering information from the stakeholders, bridging the information between the stakeholders and the developer team, checking on the progress with the developer team, testing the developed application and checking on the shortcomings as per the requirements, sharing the tested application with the stakeholders so that they can inform changes if any, a server to be deployed for a glitch free experience in mobile/web application access. Setting up a delivery team to take care of order since it is placed till its delivery. A customer support team to take care of after sales services.
6. **Time frame to recover the ROI(Return on investment)? :** Assuming the target customers being farmers, time frame required to recover the ROI would be around 4-5 years.
7. **How to identify stakeholders? :** Stakeholders will be the persons who are either the persons accessing the mobile/web application or are the persons who are enabling the application development. These will include all those people who will or can be benefitted with the application usage.

**QUESTION 8 :** The Committee of Mr. Henry , Mr Pandu , and Mr Dooku and Mr Karthik are having a discussion onProject 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 8 :**

SDLC refers to Software Development Life Cycle. Below are various SDLC methodologies

1. **SEQUENTIAL – WATERFALL** : This is the most common type of SDLC methodology. It is also referred as Linear-Sequential life cycle model. In this model, each stage/phase is checked for completion before moving to next stage/phase. At the end of each phase, a review is done to check whether the project is on the right path as desired or if any changes are required.

Various stages are involved in waterfall model, Requirement gathering, requirement analysis, design, development-coding, testing, UAT, configuration management, deployment, implementation, maintenance. This model is advised for small scale projects.

1. **ITERATIVE – RUP(RATIONAL UNIFIED PROCESS) :** The Rational Unified Process is an iterative software development process framework. RUP is based on describing what is to be produced, skills required for producing, step by step explanation on how to achieve this goal. In simple words, who will do what, what to be produced, how the required product will be produced. It majorly has four stages namely inception, elaboration, construction and transition.
2. **EVOLUTIONARY :** This methodology is also called as SPIRAL model. This model has four major stages namely Planning, Risk analysis, Engineering and Evaluation. A software development project passes through these stages periodically, which mitigates the risk associated with error building during each stage. This methodology is advised for big projects where risk has to be mitigated to reduce big losses.
3. **AGILE-SCRUM :** This methodology is employed where faster delivery of software is required. Since, there is no documentation, customer retention is easy. Software coding itself forms the documentation part. There are 12 principles in this methodology. All project and business persons work together closely for developing software faster. Since, face to face conversation is involved within development team making bonding within the team strong.

**QUESTION 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?

**ANSWER 9 :**

SDLC refers to Software Development Life Cycle. Below are various SDLC methodologies

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1. **RUP(RATIONAL UNIFIED PROCESS) – (ITERATIVE) :** The Rational Unified Process is an iterative software development process framework. RUP is based on describing what is to be produced, skills required for producing, step by step explanation on how to achieve this goal. In simple words, who will do what, what to be produced, how the required product will be produced. It majorly has four stages namely inception, elaboration, construction and transition.
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3. **SCRUM(AGILE) :** This methodology is employed where faster delivery of software is required. Since, there is no documentation, customer retention is easy. Software coding itself forms the documentation part. There are 12 principles in this methodology. All project and business persons work together closely for developing software faster. Since, face to face conversation is involved within development team making bonding within the team strong. This can be implemented either in beginning or when it is sensed that project is falling behind schedule.

Out of SDLC methodologies mentioned, I think V-model would be beneficial as it is a small scale project and V-model works best for small projects. Also, there is a testing and review is done at each stage which makes it easier to track the progress whether it is in line with the objectives or not. Being a small scale project, it will be easier to track progress through completion of each stage.

**QUESTION 10 :** 20Write down the differences between waterfall model and V model.

**ANSWER 10 :**

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| **S.no.** | **WATERFALL MODEL** | **V-MODEL** |
| 1 | Very simple to understand and use | Intermediate, simple and easy to use |
| 2 | Rigid as each phase has its own testing and review mechanism | Little flexible phase has specific deliverables and a review process |
| 3 | Re-usability of model is limited | Can be re-used to some extent |
| 4 | Cost of operation is low | Cost of operation is high/expensive |
| 5 | Steps move in a linear way | Steps doesn’t move in a linear way |
| 6 | Testing activities start after development activities are over | Testing activities start with the first stage |
| 7 | There is no way to return to the earlier phase | There is a possibility to return to earlier phase |
| 8 | Guarantee of success through Waterfall model is low | Guarantee of success through V-model is high |
| 9 | Waterfall model is a continuous process | V-model is a simultaneous process |
| 10 | Software made using Waterfall model, the number of defects are less in comparison of software made using V-model | Software made using V-model, the number of defects are greater in comparison of software made using Waterfall model |
| 11 | Less customer involvement | More customer involvement as compared to waterfall model |
| 12 | It is not possible to test a software during its development | There is possibility to test a software during its development |
| 13 | Identification of defects is done in the testing phase | Identification of defects can be done from the beginning |
| 14 | Debugging is done after the last phase | Debugging can be done in between phases |
| 15 | Waterfall model is less used now-a-days in software engineering | V-model is widely used in software engineering |

**QUESTION 11 :** As a BA, state your reason for choosing one model for this project

**ANSWER 11 :**

As a BA, reasons behind me choosing V-model over waterfall model for this project are numerous. Enumerating few below:

1. V-Model is more flexible as compared to waterfall model.
2. Software testing is possible at any stage.
3. Debugging is possible at any stage.
4. Returning to previous stage is possible which is not in case of waterfall model.
5. More customer involvement is there as compared with waterfall model.
6. Guarantee of success is high as compared with waterfall model.

**QUESTION 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.

**ANSWER 12 :**

Gantt Chart



**QUESTION 13 :** Explain the difference between Fixed Bid and Billing projects

**ANSWER 13 :**

Fix Bid projects are the projects where the sponsor provides a deadline for budget and estimated time for completion. For example, here budget is 2 crores and work has to be completed within 18months. There is fixed rules for budget and timeframe for completion of particular task/project. Payment can be made in some portion as advance and some post completion of work as agreed upon between the parties. Under billing projects, sponsor will make payment on the basis of work done on hourly basis or as per the work done on weekly, monthly basis as agreed upon.

**QUESTION 14 :** Preparer Timesheets of a BA in various stages of SDLC - 20 marks

➢ 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

**ANSWER 14 :**

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| **DESIGN TIMESHEET OF A BA** |
| S.No. | Tasks | Actionable Items | Start time | End time | Duration |
| 1 | Identification of design requirements of clients-meeting | Meeting with the design team for discussing client requirements for design | 10:00 AM | 11:00 AM | 1 hour |
| 2 | Client interaction | A call over Zoom to update client on the minutes of meeting | 11:00 AM | 1:00 PM | 2 hours |
| 3 | Checking and correcting the inputs in design document | In-person call with SME – discussion for design | 2:00 PM | 3:30 PM | 1.5 hours |
| 4 | Sorting the requirements | Work on the template | 3:30 PM | 4:30 PM | 1 hour |
| 5 | Team meeting with design team | Discussion on day’s inputs  | 4:30 PM | 7:00 PM | 2.5 hours |
| 8 hours |

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| **DEVELOPMENT TIMESHEET OF A BA** |
| S.No. | Tasks | Actionable Items | Start time | End time | Duration |
| 1 | Identification of client requirements-meeting | Meeting with the developer team  | 10:00 AM | 11:00 AM | 1 hour |
| 2 | Client interaction | A call over Zoom to update client on the minutes of meeting | 11:00 AM | 1:00 PM | 2 hours |
| 3 | Checking the progress on software development whether in-line with client requirements or not. | In-person call with SME – discussion | 2:00 PM | 3:30 PM | 1.5 hours |
| 4 | Checking the progress with developer team | Work on the template | 3:30 PM | 4:30 PM | 1 hour |
| 5 | Team meeting with design team | Discussion on day’s inputs  | 4:30 PM | 7:00 PM | 2.5 hours |
| 8 hours |

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| **TESTING TIMESHEET OF A BA** |
| S.No. | Tasks | Actionable Items | Start time | End time | Duration |
| 1 | Identification of client requirements-meeting | Meeting with the testing team | 10:00 AM | 11:00 AM | 1 hour |
| 2 | Client interaction | A call over Zoom to update client on the minutes of meeting | 11:00 AM | 1:00 PM | 2 hours |
| 3 | Checking and correcting the inputs with testing team | In-person call with SME – discussion | 2:00 PM | 3:30 PM | 1.5 hours |
| 4 | Checking the progress with testing team whether the software fulfils the requirements mentioned in BRD document. | Work on the template | 3:30 PM | 4:30 PM | 1 hour |
| 5 | Team meeting with testing team | Discussion on day’s inputs  | 4:30 PM | 7:00 PM | 2.5 hours |
| 8 hours |

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| **UAT TIMESHEET OF A BA** |
| S.No. | Tasks | Actionable Items | Start time | End time | Duration |
| 1 | Identification of client requirements-meeting | Meeting with the testing team | 10:00 AM | 11:00 AM | 1 hour |
| 2 | Client interaction | A call over Zoom to update client on the minutes of meeting | 11:00 AM | 1:00 PM | 2 hours |
| 3 | Arranging a UAT session with the end user –client | Checking with the client whether software meets their requirements | 2:00 PM | 3:30 PM | 1.5 hours |
| 4 | Discussing feedback received from client with the various teams involved and communicating changes, if any to be done | Meeting with various teams | 3:30 PM | 4:30 PM | 1 hour |
| 5 | Team meeting | Discussion on day’s inputs  | 4:30 PM | 7:00 PM | 2.5 hours |
| 8 hours |

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| **DEPLOYMENT AND IMPLEMENTATION TIMESHEET OF A BA** |
| S.No. | Tasks | Actionable Items | Start time | End time | Duration |
| 1 | Identification of client requirements-meeting and checking for any requirement which may had been missed out | Meeting with the deployment and implementation team | 10:00 AM | 11:00 AM | 1 hour |
| 2 | Client interaction to inform customer about the deployment and implementation | A call over Zoom to update client on the minutes of meeting | 11:00 AM | 1:00 PM | 2 hours |
| 3 | Arranging a demo session to make client’s end users familiar with the software and its features | Checking with the client for arranging the demo session | 2:00 PM | 3:30 PM | 1.5 hours |
| 4 | Discussing feedback received from client with the various teams involved and communicating changes, if any to be done | Meeting with various teams and arranging a customer support team | 3:30 PM | 4:30 PM | 1 hour |
| 5 | Team meeting | Discussion on day’s inputs  | 4:30 PM | 7:00 PM | 2.5 hours |
| 8 hours |