Capstone Project1

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

Ans:

- **Goal :** Help farmers buy seeds, fertilizers and pesticides easily using a mobile or wed app.
- **Inputs :** Farmer details, product info, internet connection, Payment options, Courier service and online platform/mobile app
- **Resources :** Mobile/web app, farmers, Manufacture, delivery staff, project team, software, servers, database.
- **Outputs :** Invoice and receipts, sales report, product delivery, product reviews and feedback.
- **Activities :** companies register and add product, admin check and approve,farmers register and enter credentials,search product, add to cart and place order, payment gateway, summary of product, delivered , farmer gives feedback or rating
- **Value :** time saves, better farming results,fast delivery to home, cost efficiency.

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.

Ans:

STRENGTS	WEAKNESS
• Sufficient budget • Strong client and CSR • Clear user base	• Low digital literacy • New to agri-tech • Fixed CSR budget • Logistics challenges
OPPORTUNITIES	**THREATS**
• Grow in agri-tech • Long term clients • Expand to new areas • Build brand image	• Poor rural internet • Competitors exist • Risk more

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.

Ans:

- **Technology:** using Java technology with secure, cloud-based infrastructure to build a simple and reliable platform.
- **Hardware:** RAM, Android test devices, cloud, secure network with proper backup
- **Software:** Need tools like Java JDK, MySQL(Database), Payment gateway software.
- **Resources:** project management team, Business analysts, Software developers.
- **Budget:** Total budget is (2 crores), which includes – Team salary, servers, training and extra costs.
- **Time frame:** Based on the resources, no of features

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

Ans:

Current State:

- Farmers buy from local shops or middlemen with high prices and no direct link with manufactures.
- Limited productes availability
- Waste of time and travel cost
- No digital records or tracking

Desired State:

- Farmers buy in app directly from manufactures
- Affordable and standardized pricing structure
- Two way communication with sellers with wide range of products Availability Across categories
- Convenient home ordering Reduced operational costs
- System generated receipts and Real-time order Tracking

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

Ans:

Internal Risks:

- Poor documentation and version control.

- Resource unavailability or skill gaps
- Inadequate communication between internal teams

External Risks:

- Logistical challenges in Rural areas.
- Internet Connectivity Issues.
- Vendor or Third party integration failures.

BA Risks:

- Misunderstanding rural user needs.
- Incomplete or unclear requirements.
- Communication gaps between stakeholders.
- Poor Documentation leading to rework.

Project based Risks:

- Delays in product delivery Affecting farmer trust
- Budget overrun.
- Data security issues and misuse.
- Resistance to platform adoption.

Question 6 Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take Decisions and Who are the influencers.

Ans:

RACI	Name of the Resource	Designation	Details
Responsibe	Mr.Vandanam	Project Manager	Email:vandanam@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
	Ms. Juhi	Sr. Java Developer	Email:Juhi@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
	Mr.Bravo	Java Developer	Email:Bravo@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
Accountable	Mr. Karthik	Delivery Head (APT IT)	Email:Karthik@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
	Mr.Henry	Sponser/CSR Head	Email:Henry@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
	Mr.Pandu	Financial Head (SOONY)	Email:Pandu@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST

Consulted	Mr. Dooku	Project Coordinator (SOONY)	Email:Dooku@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
	Peter, Levin, Ben	Farmer Stakeholders	Email:Farmer@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
	Mr. John	Database Administrator	Email:John@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
Informed	Mr.Mike	Network Administrator	Email:Mike@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
	Ms.Alekya	Tester	Email:Alekya@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST
	Mr.Jason	Tester	Email:Jason@123.com Ph No: 1234567890 Reach out : 9 AM – 1 PM IST

Question 7 Help Mr Karthik to prepare a business case document

Ans:

- **Project idea :** Develop a digital platform that connects farmers directly with manufacturers for purchasing agricultural products
- **Current needs :** They need a simple mobile app in their language to buy quality products at fair prices, with delivery and support.
- **Overview of the project :** This project will create an easy-to-use online platform where farmers can buy seeds, fertilizers, and pesticides directly from manufacturers. It supports SOONY's CSR initiative to help rural farmers by reducing middlemen and costs.
- **Current problems :** Farmers in remote areas pay high prices and struggle to get products on time due to lack of direct access.
- **Resources required:**
  Team: BA, PM, Developers, testers, admins
  Tools: Java, MySQL, Cloud
  Budget : 2 crores
  Time: 18 months
- **Organizational Change Needed:** Some training for farmers and setup for manufacturers to use the system, but manageable overall.
- **ROI Timeline:** ROI is social, not financial. Positive impact expected in 12–18 months through cost savings and adoption.
- **Key Stakeholders:** Mr. Henry (Sponsor), Mr. Pandu (Finance), Mr. Dooku (Coordinator), Mr. Karthik (Delivery), Farmers, and Manufacturers.

Question 8 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

Ans:

Mr. Karthik explained to the committee four SDLC approaches used in software projects: Sequential, Iterative, Evolutionary, and Agile, as part of the system development life cycle (SDLC).

Sequential Model: This is a step-by-step model where the next phase starts only after the previous one finishes.

- **When to use :** When the requirements are clear and fixed.
- **Best for :** Projects with low risk and clear documentation.

Iterative Model : In this model, the system Is developed and improved through multiple small versions. Each version is refined based on feedback.

- **When to use:** When requirements are expected to evolve.
- **Best for:** Medium-sized projects where regular updates are expected.

Evolutionary Model: A working version is released early with basic features. Based on user feedback, it is gradually enhanced with additional features.

- **When to use:** When the client wants to see results quickly and update requirements over time.
- **Best for:** Projects that require frequent interaction with users.

Agile Model: Agile divides the work into short sprints. Each sprint delivers a working part of the system, which is reviewed and improved regularly.

- **When to use:** When the project needs flexibility and fast delivery.
- **Best for:** Projects where user feedback is frequent, and changes are likely.

For this agriculture project, Agile or Iterative is best. They allow regular feedback from farmers and let the team improve the platform step by step.

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?

Ans:

Here are the different software development life cycle (SDLC) models and how they work

1. **Warterfall Model :** The Waterfall model is a step-by-step process where each phase is done one after the other. It works well when requirements are clear but changes later are hard and costly to make.
2. **V Model :** The V-Model matches each development step with a testing step, helping to catch errors early. It's best for projects with clear requirements
3. **RUP (Rational unified process) :** RUP is a phased and repetitive model developed by IBM, with four phases: Inception, Elaboration, Construction, and Transition. It manages risks early, allows parallel testing, and suits medium to large projects with changing requirements.
4. **Spiral Model :** The Spiral model is a risk-focused, repeating process that suits high-risk or unclear projects, but it can be costly due to continuous risk analysis.
5. **Scrum (Agile methodology) :** Scrum is an Agile method with short sprints, suited for changing requirements and quick delivery, but not ideal for fixed-budget projects.

As a Business Analyst, I recommend using the **V-Model** over the Waterfall model for this Online Agriculture Product Store project.

The reason is that the V-Model allows testing to happen alongside each development phase**,** which means errors and gaps in requirements can be identified early. This is very important for this project, as it is being built for rural farmers who may not be tech-savvy, and we cannot afford late-stage issues.

The Waterfall model is linear, and testing only begins after full development is completed. This increases the risk of discovering problems too late, leading to delays, rework, and budget overruns.

Since the requirements from farmers and stakeholders like Peter, Kevin, and Ben are already discussed and clear, the V-Model is ideal. It ensures that each requirement is verified and validated with matching test cases, leading to a more reliable and higher quality product**.**

The V-Model is the best fit for this project because it allows early testing, helps avoid delays, and ensures the product meets farmer needs from the beginning.

Question 10 Write down the differences between waterfall model and V model.

Ans:

Waterfall Model	V-Model
Cost is Low	Cost is Expensive
Moves in Linear way	Doesn't move in Linear way
Teasting activities start at the last stages	Testing activities are started at the first stages
Less customer involved	More customer involved
Risk detected later	Risk identified during early validation stages

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

Ans:

I chose the V-Model because the requirements are already clear, and this project needs to be done on time and with good quality.

V-Model helps us test at every step, so we can find mistakes early and fix them quickly. Since farmers will use this app and may not be good with technology, we must make sure the system works properly from the beginning.V-Model also helps us reduce rework and deliver a smooth, reliable platform. That's why it is the best fit for this project.

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.

Ans:

Phase	Duration(Weeks)	Key Activites	Resources Involved
RG	Week 1 – Week 10	Requirement Gathering	BA,PM
RA	Week 11 – Week 25	Requirement Analysis	BA,PM

Design	Week 26 – Week 40	Architecture and UI/UX Design	BA,Java Dev, PM,DB Admin,NW Admin
D1	Week 41 – Week 45	Module 1 Development	Java Dev,DB Admin
T1	Week 46 – Week 48	Testing Module 1	Testers
D2	Week 49 – Week 53	Module 2 Development	Java Dev,DB Admin
T2	Week 54 – Week 56	Testing Module 2	Testers
D3	Week 57 – Week 61	Module 3 Development	Java Dev,DB Admin
T3	Week 62 – Week 64	Testing Module 3	Testers
D4	Week 65 – Week 69	Module 4 Development	Java Dev,DB Admin
T4	Week 70 – Week 72	Testing Module 4	Testers
UAT	Week 73 – Week 78	User Acceptence Testing	BA,Testers,PM,Stakeholders

Resourcse Involved :

- **Project Manager (PM) :** Mr.Vandanam(Overall Planning and Monitoring)
- **Business Analyst(BA):** You (Requirements Gathering,UAT Coordination)
- **Java Developers:** Juhi, Teyson, Lucie, Tucker, Bravo (All Development Phases)
- **DB Admin:** Mr.John (Supports All Models)
- **Network Admin:** Mr. Mike (Supports Design Phase)
- **Testers**: Mr. Jason, Ms. Alekya (All Testing Phases + UAT)

Question 13 Explain the difference between Fixed Bid and Billing projects

Ans:

- **Fixed Bid :** A Fixed Bid project is one where the total cost of the project is agreed upon in advance**.** The scope, timeline, and deliverables are clearly defined before the project starts. The service provider must complete the work within the agreed budget, regardless of how much time or effort it takes. This model is best for projects with clear, stable requirements**.**
- **Billing Projects :** A Billing project**,** also known as a Time and Material (T&M) project**,** is where the client pays based on the actual work done. The billing depends on the number of hours or days worked, and it offers more flexibility to make changes during the project. This model is suitable for projects with changing or unclear requirements**,** where continuous collaboration is needed.

Question 14

Design Timesheet of a BA

No	Tasks	Actionable Items	Start Time	End Time	Duration
1	Create wireframes	Designed sample screens for homepage and product pages	10:00 AM	11:30 AM	1.5 hour
2	Draft functional design document	Documented business flows, field names, and validations	11:30 AM	1:00 PM	1.5 hour
3	Review with UI/UX and Dev team	Conducted review call to align on screen elements	2:00 PM	3:00 PM	1 hour
4	Update RTM	Linked design elements to requirements	3:15 PM	4:15 PM	1 hour
5	Internal review and sign-off prep	Final review with PM and QA	4:30 PM	6:00 PM	1.5 hour

Development Timesheet of a BA

No	Tasks	Actionable Items	Start Time	End Time	Duration
1	Explain Requirements to developers	Walkthrough of FRD and UI screens	10:00 AM	11:00 AM	1 hour
2	Field validation discussion	Discussed dropdowns, mandatory fields with devs	11:15 AM	12:00 PM	45 mins

3	DB design support	Helped define field types and formats with DB team	2:00 PM	3:00 PM	1 hour
4	UI development review	Checked initial screen flow for alignment with wireframes	3:15 PM	4:15 PM	1 hour
5	Daily sync-up call	Shared blockers, status update with PM	4:30 PM	5:15 PM	45 mins

Testing Timesheet of a BA

No	Tasks	Actionable Items	Start Time	End Time	Duration
1	Review test cases	Verified test scenarios with requirements	10:00 AM	11:00 AM	1 hour
2	Clarify requirement bugs	Explained expected outputs to testers	11:15 AM	12:15 PM	1 hour
3	Validate test data	Checked sample test data	2:00 PM	3:00 PM	1 hour
4	Join defect triage meeting	Participated in defect discussion with teams	3:15 PM	4:00 PM	45 mins
5	Update RTM	Linked passed test cases with requirements	4:15 PM	5:00 PM	45 mins

UAT Timesheet of a BA

No	Tasks	Actionable Items	Start Time	End Time	Duration
1	Prepare UAT scenarios	Created UAT flows for end users	10:00 AM	11:30 AM	1.5 hour
2	UAT session with stakeholders	Walkthrough with Peter, Kevin, Ben	11:30 AM	1:00 PM	1.5 hour
3	Capture UAT feedback	Documented feedback and bugs	2:00 PM	3:00 PM	1 hour
4	Coordinate fixes with dev team	Shared issues and tracked changes	3:15 PM	4:00 PM	45 mins
5	Final approval & sign-off	UAT closure confirmation	4:15 PM	5:00 PM	45 mins

Deployment n Implementation Timesheet of a BA

No	Tasks	Actionable Items	Start Time	End Time	Duration
1	Deployment coordination	Finalizing release date, notifying stakeholders	10:00 AM	11:00 AM	1 hour
2	Go-live support	Monitored screens and basic functionalities	11:00 AM	12:00 PM	1 hour

3	Capture live issues	Recorded and reported real-time problems	12:30 PM	1:30 PM	1 hour
4	Prepare user manuals	Documented simple steps for farmers to use system	2:00 PM	3:30 PM	1.5 hour
5	Conduct user training	Live walkthrough to end users and committee	4:00 PM	5:30 PM	1.5 hour