# **Capstone Project 1: Online Agriculture Product Store**

### ****1. Identify Business Process Model for Online Agriculture Store – (Goal, Inputs, Resources, Outputs, Activities, Value Created)****

**Goal:**The main goal is to create a simple and easy-to-use online platform where farmers can buy things like seeds, fertilizers, and pesticides. This platform will help farmers, especially those in remote areas, to get these essential products without having to travel far.

**Inputs -**Product information, Farmer details (contact, location, delivery info),Technology (website, mobile app),Payment processing data.

**Resources-** Manufacturers (who will supply products),Skilled developers and project managers, Cloud technology or servers to run the platform,Budget of 2 Crores INR to cover development, testing, and marketing.

**Activities:**

* Manufacturers upload their products onto the platform.
* Farmers browse the products, select what they need, and place orders.
* Farmers make payments, provide delivery information, and receive products at their locations.
* Customer service support for issue resolution.

**Outputs:**

* Farmers can access a wide variety of agricultural products online.
* They can easily place orders and have the products delivered to their homes.

**Value Created:**

* **For Farmers:** Easier access to products, better prices, and convenient home delivery.
* **For Manufacturers:** Exposure to a larger market and access to new customers.
* **For the Community:** Improved farming practices, higher productivity, and better crop yields.

### ****2. SWOT Analysis for the Project****

**Strengths:**

* Solves a major problem by connecting farmers to products they need.
* The platform can offer a wide selection of products from various suppliers.
* Strong team and funding available (2 Crores INR).

**Weaknesses:**

* Lack of internet access or technology familiarity in remote areas.
* Limited logistics and delivery options for remote locations.
* Possible resistance to adopting new technology.

**Opportunities:**

* Potential for expansion to include more products and services.
* Possibility of data-driven suggestions for products based on farmer behavior.
* Growth into international markets or new geographical regions.

**Threats:**

* Competition from other platforms or companies offering similar services.
* Potential legal regulations that restrict online sales of agricultural products.
* Resistance to the platform from farmers who are unfamiliar with online shopping.

### ****3. Feasibility Study (Technology: Java)****

**Hardware (HW):**

* Cloud hosting or reliable servers (AWS, Google Cloud, etc.) for storage and data processing.
* The platform should be accessible on smartphones and desktops.

**Software (SW):**

* Java will be used for the backend, ensuring scalability and performance.
* Mobile apps can be developed using frameworks like React Native or Flutter for both Android and iOS.
* A robust database (e.g., MySQL) to store user, product, and transaction data.

**Trained Resources:**

* Java developers for backend development.
* Mobile developers for app development.
* Database administrators for managing and securing data.
* Testers to ensure the platform works seamlessly.

**Budget:**

* The project is funded with a budget of 2 Crores INR, which covers development, testing, marketing, and deployment.

**Timeframe:**

* The project will take approximately 18 months, including development, testing, and deployment.

### ****4. Gap Analysis (AS-IS vs TO-BE Process)****

**Current state**

* Farmers rely on local stores which may have limited product options.
* Products can be expensive, and there are issues with delivery timing and quality.
* Farmers often need to travel long distances to purchase necessary products.

**Desired state**

* Farmers can access a wide variety of products online with just a few clicks.
* They can place orders and have products delivered to their doorstep.
* The platform will offer better prices, more choices, and faster delivery.

**Gap:**

* **Current Process:** Limited product options, high prices, and inconvenient access.
* **Future Process:** Easy access to a variety of products, affordable prices, and efficient delivery.

### ****5. Prepare Risk analysis****

### ****Internal risk:****

### Dependence on external vendors for product supply and inventory management

### High operating expenses due to investments in technology and marketing

### Technical issues and software and application crash at initial phase

### External risk:

### Competition may arrive

### Changes in e commerce industry

**BA Risks:**

* Misunderstanding the needs of farmers may lead to a platform that doesn't meet their expectations.
* The project scope could be unclear, leading to confusion or delays.

**Project Risks:**

* Technical challenges like website crashes, slow performance, or security issues.
* Delivery challenges, especially in remote or difficult-to-reach locations.
* Unforeseen costs or budget overruns.
* Legal risks related to the online sale of agricultural products.

### ****6. Stakeholder Analysis (RACI Matrix)****

| **Stakeholder** | **Responsible** | **Accountable** | **Consulted** | **Informed** |
| --- | --- | --- | --- | --- |
| Mr. Henry (Sponsor) |  | ✔ | ✔ | ✔ |
| Mr. Pandu (Finance) |  | ✔ | ✔ | ✔ |
| Mr. Dooku (Coordinator) |  | ✔ | ✔ | ✔ |
| Mr. Vandanam (PM) | ✔ | ✔ | ✔ | ✔ |
| Mr. Karthik (Delivery Head) | ✔ | ✔ | ✔ | ✔ |

### ****7. Business Case Document****

* Why is this project initiated
* To identify the gap in the agricultural market
* What are the current problem
* A short selection of products from limited and local suppliers suppliers
* With this project how many problem can be solved
* Wide range of products
* Easy to connect with multiple suppliers to get the best price
* Doorstep delivery
* What are the resources required
* Team members, information, data from all over the state, contacts of supplier
* How much organizational change is required to adopt this technology
* Adopting the **Online Agriculture Product Store** will require updating technology, shifting from traditional to digital processes, and training staff and users. It will involve integrating new platforms, improving security, and adapting workflows for online sales and logistics. Leadership support is key for smooth adoption, and cybersecurity and data privacy compliance will be crucial
* What is the time frame to recover ROI
* The time frame may varies depends on several factors such as initial investment, operational costs, market demand, and revenue generation.

Approximately 18 months required

* How to identify the stakeholders
* Generally we identify stakeholders by using RACI matrix. There are many types of stakeholders like primary, secondary, internal etc.

### ****8. Project Development Approach (SDLC and Methodologies)****

**SDLC Models:**

* **Sequential (Waterfall):**
This method involves completing each phase one after the other. It's easy to manage but may not be flexible if changes are needed.
* **Iterative- RUP**
Work is done in smaller phases or iterations, with each iteration building upon the last. This allows for more flexibility and feedback.
* **Evolutionary- SPIRAL**
The project grows gradually, with regular improvements and new features added over time.
* **Agile- SCRUM**
The project is divided into small, manageable tasks called sprints. After each sprint, the team gets feedback and makes adjustments for the next cycle.

### ****9. SDLC Models: Waterfall, RUP, Spiral, and Scrum****

* **Waterfall Model:**
Follows a strict order of phases. Each phase must be completed before moving to the next. Works well for projects with clear, unchanging requirements.
* **RUP (Rational Unified Process):**
This model is flexible and iterative, breaking the project into smaller phases while accommodating changes during the process.
* **Spiral Model:**
Focuses on risk management by iterating through planning, designing, testing, and evaluating risks before proceeding.
* **Scrum (Agile):**
The project is divided into small cycles (sprints), and after each sprint, feedback is gathered. This allows for continuous improvement and flexibility.

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

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| Waterfall model  | V model |
| Waterfall model is low cost model | V model is expensive |
| Testing activities in waterfall model starts at later stages | Testing stages in V model starts at earlier stages |
| This model moves in linear way | This model doesn’t move in linear way |
| less customer involvement needed in this model | More customer involvement needed in this model |

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

As a business analyst best suitable model for this project is waterfall model. Because this project is small at initial stage and waterfall model is suitable for small projects. This model moves in linear way so the every process can be reviewed well.

**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.**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **month 2** | **month 4**  | **month 6** | **month 8** | **month 10** | **month 12** | **month 14** | **month 16** | **month 18** | **month 20** |
| RG |   |   |   |   |   |   |   |   |
|   |   | RA |   |   |   |   |   |   |
|   |   |   |   | DESIGN |   |   |   |   |
|   |   |   |   |   |   | DEVOLOPMENT |   |   |
|   |   |   |   |   |   |   |   | TESTING |
|   |   |   |   |   |   |   |   |   | UAT |

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| **Resources** |  | **month 2** | **month 4**  | **month 6** | **month 8** | **month 10** | **month 12** | **month 14** | **month 16** | **month 18** | **month 20** |
| project manager  |  |   |   |   |   |   |   |   |   |   |   |
| BA |  |   |   |   |   |   |   |   |   |   |   |
| java devoloper |  |  |  | D1 | D2 |   | D3 |   | D4 |  |   |
| operations support  |  |  |   |   |   |   |   |   |   |   |   |
| tester  |  |   |   |   |   |   | T1 | T2 | T3 | T4 |   |
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| **D1**: Backend development (Database, API, Server-side logic). |
| **D2**: Frontend development (User interface for web and mobile). |
| **D3**: Integration (Connecting backend with frontend and third-party systems like payment gateway). |
| **D4**: Final adjustments (UI/UX enhancements, final tweaks). |
| **Resources**: PM, Java Developers, DB Admin, NW Admin. |
| **Duration**: 8-10 months, with each phase lasting 2-3 months. |
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| **T1**: Unit testing (Test individual components). |
| **T2**: Integration testing (Ensure the various parts of the system work together). |
| **T3**: System testing (End-to-end testing of the complete system). |
| **T4**: User acceptance testing (UAT) (Ensure the system meets end-user expectations). |
| **Resources**: Testers, Java Developers (for bug fixes). |

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

* A fixed bid project is one in which the service provider agrees to deliver a specific scope of work for fixed price. The scope of work, deliverables, and timeline are agreed upon upfront, and the service provider assumes the risk for any cost overruns or delays
* A billing project is one in which the service provider bills the client for the acual time and material expended on the project. The client pays for the service providers time and expenses, and the scope of work can be adjusted as needed throughout project.

**14. Design a time sheet for various phases in SLDC**

1. Design Timesheet of a BA
2. Development Timesheet of a BA
3. Testing Timesheet of a BA
4. UAT Timesheet of a BA
5. Deployment n Implementation Timesheet of a BA

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| **SDLC Phase** | **Task** | **Actionable Items** | **Start Time** | **End Time** | **Duration** |
| **Design** | Review business requirements with stakeholders | Gather and review requirements from stakeholders. Align with business goals. | Week 4, Day 1 | Week 4, Day 2 | 8 hours |
|   | Prepare use cases and user stories | Create use cases and user stories based on requirements. | Week 4, Day 3 | Week 4, Day 4 | 8 hours |
|   | Collaborate with UI/UX designers | Discuss UI/UX design elements. Ensure design reflects business needs. | Week 5, Day 1 | Week 5, Day 2 | 8 hours |
|   | Finalize business process diagrams | Create and finalize business process flowcharts. | Week 5, Day 3 | Week 5, Day 4 | 8 hours |
|   | Review and finalize design document with developers | Finalize design document with development team. | Week 5, Day 5 | Week 5, Day 5 | 8 hours |
| **Development** | Assist developers in translating business requirements | Break down requirements into technical specifications. | Week 6, Day 1 | Week 6, Day 2 | 8 hours |
|   | Conduct requirements review with development team | Review requirements during development cycle. | Week 7, Day 1 | Week 7, Day 2 | 8 hours |
|   | Monitor development progress | Track progress and ensure alignment with business goals. | Week 7, Day 3 | Week 7, Day 3 | 8 hours |
| **Testing** | Review test cases and test plans | Ensure test cases reflect business requirements. | Week 8, Day 1 | Week 8, Day 2 | 8 hours |
|   | Participate in test scenario discussions | Provide input on test scenarios. | Week 9, Day 1 | Week 9, Day 2 | 8 hours |
|   | Validate test results and track defects | Review test results. Report defects. | Week 10, Day 1 | Week 10, Day 2 | 8 hours |
|   | Ensure business requirements are met across platforms | Verify system functionality on various platforms. | Week 10, Day 3 | Week 10, Day 3 | 8 hours |
| **UAT** | Prepare UAT test cases | Create UAT test cases based on business requirements. | Week 12, Day 1 | Week 12, Day 2 | 8 hours |
|   | Conduct UAT sessions with business users | Facilitate UAT testing with business users. Gather feedback. | Week 13, Day 1 | Week 13, Day 3 | 16 hours |
|   | Analyze feedback and prioritize changes | Address feedback and work with developers to make changes. | Week 14, Day 1 | Week 14, Day 2 | 8 hours |
|   | Obtain UAT sign-off | Collect final UAT sign-off from stakeholders. | Week 14, Day 3 | Week 14, Day 3 | 8 hours |
| **Deployment**  | Review deployment plan | Ensure deployment plan meets business requirements. Review checklist. | Week 15, Day 1 | Week 15, Day 2 | 8 hours |
|   | Assist with user training | Provide user training and documentation. | Week 16, Day 1 | Week 16, Day 2 | 8 hours |
|   | Monitor initial deployment | Validate deployment to ensure business needs are met. | Week 16, Day 3 | Week 16, Day 4 | 8 hours |
|   | Finalize deployment and business process alignment | Ensure final business process alignment. Collect sign-offs from stakeholders. | Week 17, Day 1 | Week 17, Day 2 | 8 hours |