

Detailed Report: Augmented Reality App for Biology Students

Ans-1. Company Life Cycle Stage Identification

The augmented reality application lies in the **Ideation Stage** of the company life cycle.

Evidence supporting this:

- **Traction:** The company has not yet achieved any market traction or significant user adoption.
- **Pilot Results:** The product underwent initial testing and demonstrated a 40% improvement in student performance. However, it has yet to reach a broader audience or confirm product-market fit.
- **Focus on Value Communication:** This reflects challenges in establishing a strong brand presence or demonstrating value to potential customers and partners.

SWOT Analysis

Strengths:

- Innovative and interactive learning method using AR technology.
- Proven improvement in understanding and marks (up to 40%) during pilot testing.
- Aligns well with the tech-savvy Gen Z demographic.

Weaknesses:

- High dependency on compatible hardware, limiting accessibility for some students.
- Requires significant investment in marketing and value communication.
- Reliance on individual schools or institutions for adoption.

Opportunities:

- Potential for partnerships with schools and ed-tech platforms.
- Can expand to include other subjects or grades.
- Addresses growing demand for personalized and technology-driven education solutions.

Threats:

- High competition from established ed-tech platforms.
- Privacy and data security concerns.
- Expensive to develop and maintain AR content.

Ans-2. Challenges and Solutions

Challenges:

1. Value Communication:

- Educators and schools may not immediately understand or appreciate the value of AR-based teaching methods, resulting in resistance to adoption.

2. Hardware Dependency:

- The app requires students to have AR-compatible devices, which can be a significant barrier in underprivileged or resource-constrained schools.

3. Cost of Development and Maintenance:

- AR apps require continuous updates and enhancements, which are expensive.

Solutions:

1. Effective Value Proposition:

- Create case studies highlighting improved results in pilot testing to communicate benefits.
- Provide free trials to schools to showcase the app's impact.
- Conduct workshops for teachers and administrators to demonstrate the value of AR in education.

2. Collaborations:

- Partner with schools that provide tablets or smart devices to students.
- Build pre-recorded lessons that can be projected in classrooms to address hardware limitations.

3. Revenue Models:

- Introduce a subscription-based model for schools and offer institutional discounts.
- Sell premium features, such as custom AR lessons, at an additional cost.
- Example: Ed-tech giant BYJU'S uses partnerships with schools and a subscription-based model to successfully market its services.

Ans-3. Convertible Note Milestones

Investment Amount: ₹50 lakhs

Milestones and Conversion Rates:

- 1. Milestone 1 (6 months):** Establish pilot partnerships with at least 5 medium-to-upper-tier schools, ensuring that at least 100 students in each school actively use the app.
 - Conversion Rate: 20%

2. **Milestone 2 (12 months):** Launch the product commercially and onboard 10 additional schools, achieving a minimum of 1,000 active users.
 - Conversion Rate: 15%
3. **Milestone 3 (18 months):** Develop AR modules for other subjects or grades, ensuring 50% growth in active users (1,500 users).
 - Conversion Rate: 10%
4. **Milestone 4 (24 months):** Secure partnerships with major ed-tech platforms and increase the user base to at least 3,000 users.
 - Conversion Rate: 5%

Ans-4. Customer Acquisition Cost (CAC)

The **CAC** is calculated using the following formula:

$CAC = \text{Total Marketing and Sales Expense} / \text{Number of Customers Acquired}$

Assumptions:

1. Marketing Expense per Milestone:

- For the first milestone, assume the company invests **₹5,00,000** in digital ads, workshops, demos, and partnerships.

2. Customers Acquired:

- The company aims to acquire **500 users** through this marketing expense in the first milestone.

Calculation:

$CAC = ₹5,00,000 / 500 = ₹1,000$

Thus, the **Customer Acquisition Cost (CAC)** per user is **₹1,000**.

Customer Lifetime Value (CLV)

The **CLV** is calculated using the following formula:

$CLV = \text{Average Value of Purchase per Customer} \times \text{Purchase Frequency} \times \text{Customer Retention Period}$

Assumptions:

1. Average Value of Purchase:

- The app charges **₹600 per year per student** for its subscription.

2. Purchase Frequency:

- Each customer renews their subscription **once per year**.

3. Customer Retention Period:

- Initially assumed to be **1 year**, with a potential for renewal over additional years.

Year-Wise CLV Calculations:

Year 1 CLV:

$$\text{CLV} = ₹600 \times 1 \times 1 = ₹600$$

Year 2 CLV:

$$\text{CLV} = ₹600 \times 1 \times 2 = ₹1,200$$

Year 3 CLV:

$$\text{CLV} = ₹600 \times 1 \times 3 = ₹1,800$$

Year 4 CLV:

$$\text{CLV} = ₹600 \times 1 \times 4 = ₹2,400$$

Year 5 CLV:

$$\text{CLV} = ₹600 \times 1 \times 5 = ₹3,000$$

Breakeven Analysis:

- **CAC (₹1,000)** is higher than the CLV for the first year (**₹600**), resulting in a **loss of ₹400 per user** in Year 1.
- By **Year 2**, the CLV reaches **₹1,200**, which is higher than the CAC. At this point, the company starts making a profit of **₹200 per user**.
- From **Year 3 onward**, the business becomes increasingly profitable as CLV exceeds CAC by a growing margin.

Summary:

- **CAC** is calculated by dividing the total marketing expenses by the number of customers acquired.
- **CLV** is derived by multiplying the subscription fee with the purchase frequency and retention period.
- The business requires at least **2 years** of customer retention to break even and start generating a profit.

