Project Design Phase

Problem–Solution Fit Template
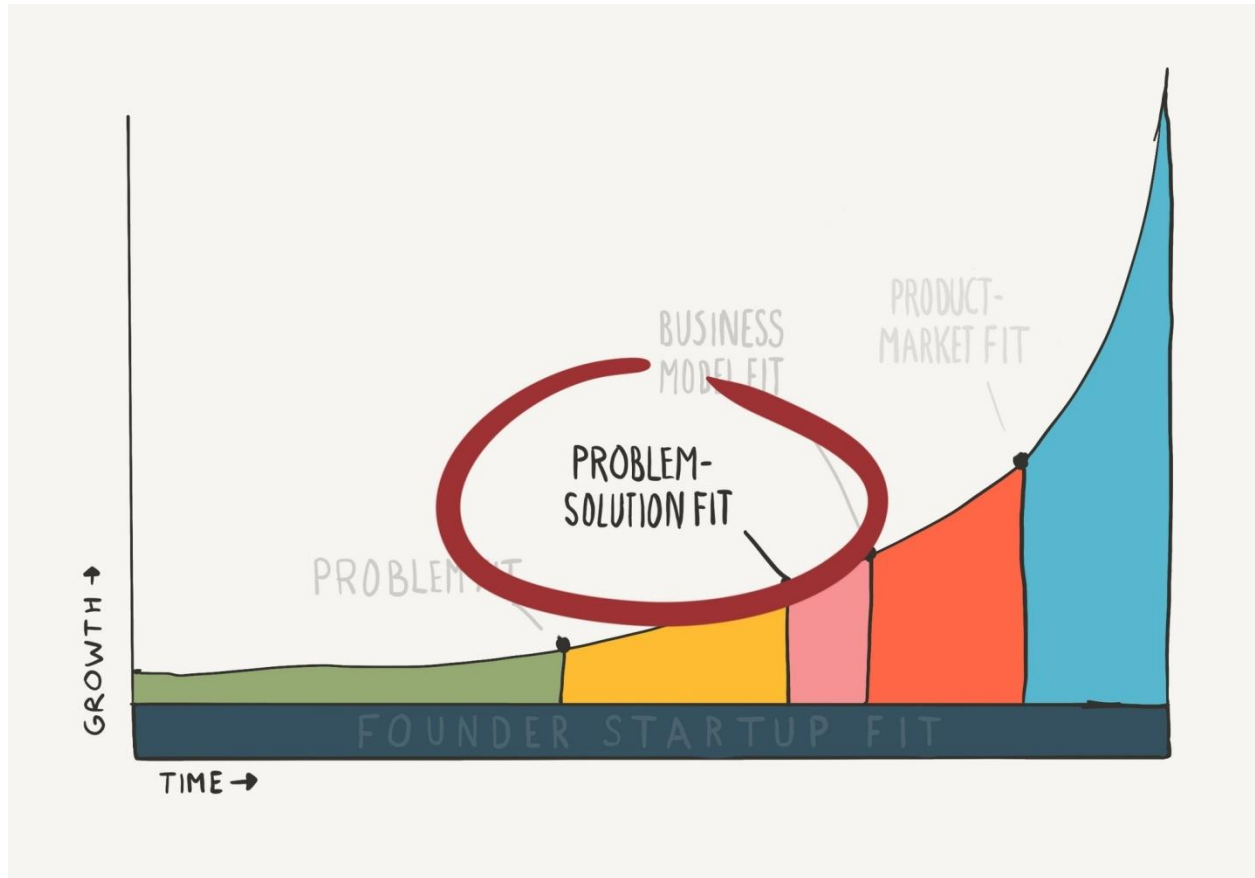
Date	06 November 2025
Team ID	F529277D47452DB9E7447BD087E08E5E
Project name	Medical inventory management
Maximum Marks	4 Marks

1. Problem Statement

- Hospitals and clinics struggle to efficiently manage medical inventory.
- Frequent issues include:
  - Overstocking or stockouts of critical supplies.
  - Expired medicines or unused equipment.
  - Lack of real-time visibility of inventory levels.
  - Manual record-keeping leading to errors and delays.
  - Poor coordination between departments and suppliers.

2. Target Users / Stakeholders

- Hospital administrators
- Pharmacists and store managers
- Nurses and medical staff
- Suppliers / vendors
- Biomedical engineers (equipment maintenance)

3. User Needs / Pain Points

User Type	Pain Points / Needs
Pharmacist	Need real-time alerts for low or expiring stock
Nurse	Need quick access to available items during emergencies
Administrator	Need accurate usage and cost reports
Supplier	Need timely restocking requests
Maintenance Team	Need tracking of medical devices and their maintenance schedules

4. Proposed Solution

Develop a Medical Inventory Management System that:

- Tracks real-time stock levels of medicines, consumables, and equipment.
- Sends automatic alerts for expiry and low-stock items.
- Generates detailed reports on inventory usage and trends.
- Integrates with supplier systems for auto-replenishment.

- Provides secure, role-based access (admin, pharmacist, nurse).
- Uses barcode or QR scanning for fast item tracking.

5. Key Features

✓ Real-time inventory dashboard
✓ Expiry date tracking and alerts
✓ Automated reorder system
✓ Purchase order management
✓ Supplier and vendor management
✓ Usage reports and analytics
✓ Role-based access control
✓ Cloud backup and data security

6. Expected Benefits

- Reduces wastage of medical supplies.
- Ensures timely availability of essential items.
- Minimizes manual errors and paperwork.
- Saves time for healthcare staff.
- Improves patient care through efficient supply management.
- Enhances financial control and accountability.

7. Success Metrics

Metric	Goal / Indicator of Fit
Reduction in expired stock	↓ 80% within 6 months
Stock-out incidents	↓ 90% compared to manual tracking
Time saved in stock management	↓ 50%
User satisfaction	> 90% positive feedback
Cost savings	↓ 20–30% in procurement waste