

## **PROBLEM – SOLUTION FIT DOCUMENT**

### **1. CUSTOMER SEGMENT(S)**

- Online shoppers facing defective product/service issues
- Customers of e-commerce platforms
- Students & working professionals
- Small businesses needing complaint tracking
- Organizations wanting structured grievance management

### **2. JOBS-TO-BE-DONE / PROBLEMS**

- Register complaints easily without visiting physical offices
- Track complaint status in real-time
- Communicate directly with support agents
- Get timely resolution (refund/replacement/service)
- Maintain digital record of complaints

### **3. TRIGGERS**

- Receiving a defective product
- Poor service experience
- Delay in refund
- No response from customer care
- Frustration with traditional complaint systems

### **4. EMOTIONS (BEFORE / AFTER)**

#### **Before using ResolveNow:**

- Frustrated
- Confused
- Angry
- Helpless

**After using ResolveNow:**

- Confident
- In control
- Satisfied
- Assured about resolution

**5. AVAILABLE SOLUTIONS**

Current alternatives customers use:

- Calling customer care helpline
- Email complaints
- Social media complaints
- Physical office visits
- Manual tracking through phone calls

**Problems with Existing Solutions:**

- No real-time tracking
- Long waiting times
- No structured complaint ID
- Poor communication transparency

**6. CUSTOMER CONSTRAINTS**

- Limited technical knowledge
- Limited internet connectivity
- Fear of data misuse
- Lack of trust in complaint resolution systems

**7. CUSTOMER BEHAVIOR**

- Searching for complaint forms online
- Posting complaints on Twitter/Instagram

- Calling customer support multiple times
- Following up repeatedly
- Saving screenshots as proof

## **8. CHANNELS OF BEHAVIOR**

### **8.1 ONLINE**

- Website login
- Email communication
- Social media
- Chat support

### **8.2 OFFLINE**

- Visiting service centers
- Calling helpline numbers
- Talking to store representatives

## **9. PROBLEM ROOT CAUSE**

- Lack of centralized complaint system
- Poor communication between departments
- Manual tracking systems
- No transparency in resolution status
- No real-time customer interaction

## **10. YOUR SOLUTION**

ResolveNow provides:

- Centralized digital complaint management
- Real-time status tracking
- Role-based dashboards (User, Agent, Admin)
- Direct chat communication via Socket.io

- Secure authentication using JWT
- Admin-controlled complaint assignment
- Automated notifications

It solves transparency, tracking, and communication gaps in traditional complaint systems.

## **PROPOSED SOLUTION TEMPLATE**

### **1. Problem Statement (Problem to be solved)**

Customers face difficulty in registering, tracking, and resolving complaints efficiently due to lack of transparency, delayed responses, and unstructured communication in traditional complaint systems.

### **2. Idea / Solution Description**

ResolveNow is a web-based full-stack application that enables users to:

- Register complaints online
- Track complaint status in real-time
- Communicate with assigned agents
- Receive notifications for updates
- Provide feedback after resolution

It includes separate dashboards for:

- User
- Agent
- Admin

### **3. Novelty / Uniqueness**

- Real-time chat between customer and agent
- Role-based access system
- Complaint routing by admin
- Digital complaint history management

- Secure authentication & encrypted passwords

#### **4. Social Impact / Customer Satisfaction**

- Saves time and effort
- Reduces frustration
- Increases trust in complaint systems
- Encourages transparency
- Improves service quality

#### **5. Business Model (Revenue Model)**

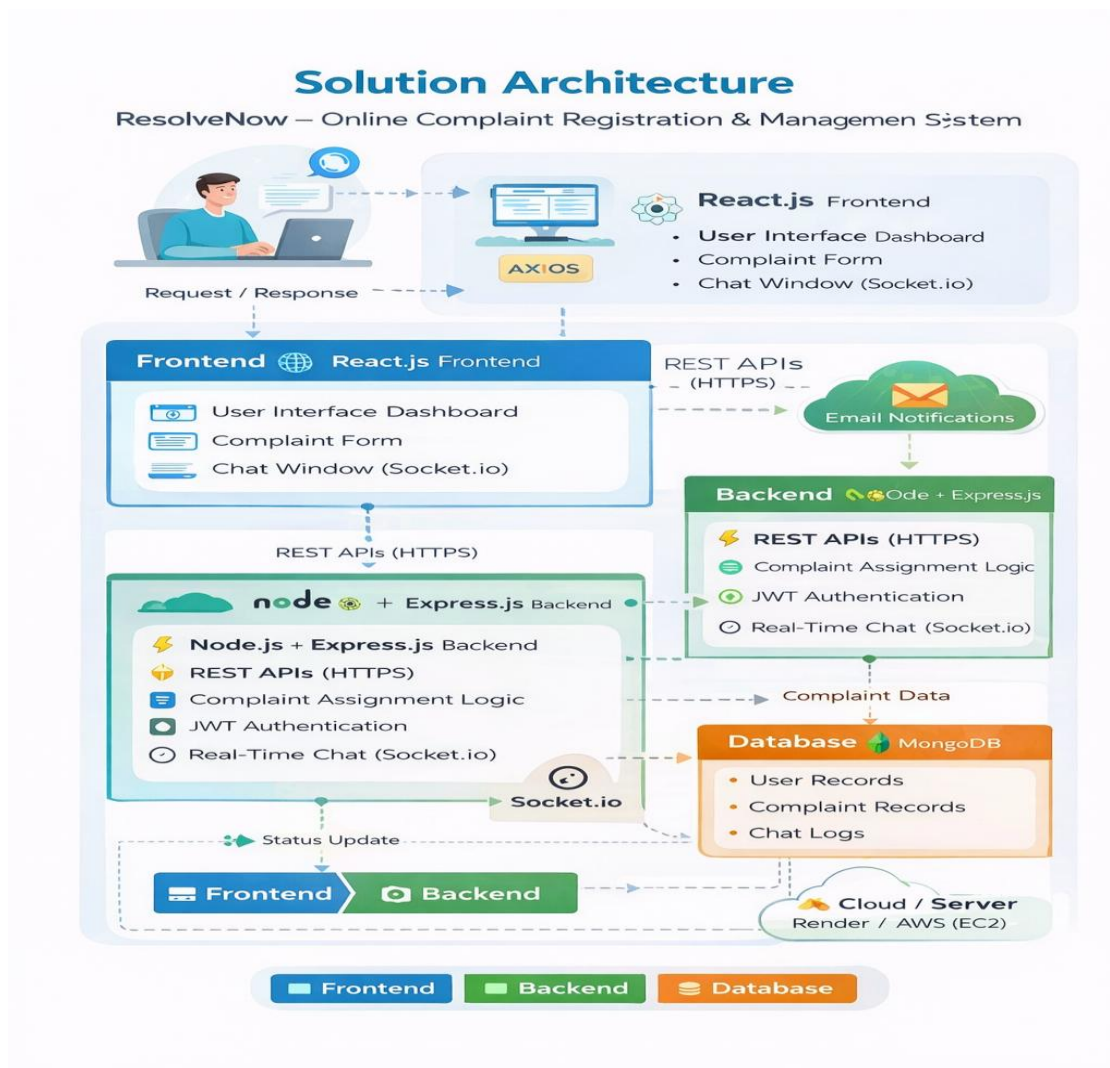
Possible revenue streams:

- SaaS subscription model for companies
- Enterprise licensing
- Custom complaint system development
- Premium analytics dashboard
- Integration services

#### **6. Scalability of the Solution**

- Built using scalable MERN stack
- MongoDB supports large data growth
- Can be deployed on cloud infrastructure
- Supports multi-organization model
- Can integrate AI-based complaint classification

#### **SOLUTION ARCHITECTURE DOCUMENT:**



## Solution Architecture Description

ResolveNow follows a **3-Tier Client-Server Architecture**:

### Presentation Layer (Frontend)

Technology: React.js

Responsibilities:

- User interface
- Complaint submission forms
- Dashboard views
- Chat window
- Status tracking

- API calls using Axios

### **Application Layer (Backend)**

Technology: Node.js + Express.js

Responsibilities:

- REST API handling
- Business logic
- Authentication (JWT)
- Role-based authorization
- Complaint assignment logic
- Real-time communication (Socket.io)

### **Data Layer**

Technology: MongoDB

Collections:

- Users
- Agents
- Complaints
- Messages

Responsibilities:

- Store complaint details
- Store chat messages
- Maintain complaint status history

### **Data Flow in Architecture**

1. User sends request → React Frontend
2. Frontend → REST API (Express Server)
3. Server processes request

4. Data stored/retrieved from MongoDB
5. Server sends response to frontend
6. Real-time chat handled via Socket.io
7. Email notifications triggered

## **Infrastructure**

Deployment Options:

- Frontend → Vercel / Netlify
- Backend → Render / AWS EC2
- Database → MongoDB Atlas
- Secure communication via HTTPS

## **Security Architecture**

- Password hashing using Bcrypt
- JWT-based authentication
- Role-based authorization
- API validation
- Data encryption

## **Architecture Justification**

- 3-tier architecture ensures separation of concerns
- Scalable backend using REST APIs
- NoSQL database allows flexible schema
- Real-time communication improves user experience
- Cloud-ready deployment