

Project Design Phase
Problem – Solution Fit Template

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| Date | 14 March 2025 |
| Team ID | PNT2025TMID00705 |
| Project Name | TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning |
| Maximum Marks | 2 Marks |

Problem-Solution Fit for TrafficTelligence

Purpose:

The Problem-Solution Fit ensures that TrafficTelligence effectively addresses real-world traffic congestion challenges with a practical and scalable solution.

Problem Statement:

Urban traffic congestion leads to delays, increased fuel consumption, and environmental pollution. Current traffic estimation models are inaccurate and fail to adapt to real-time conditions.

Proposed Solution:

TrafficTelligence leverages Machine Learning and AI to provide accurate traffic volume predictions. It integrates historical traffic data, real-time sensor inputs, and weather conditions to offer dynamic route optimization.

Benefits of Problem-Solution Fit Approach:

- ✅ **Solves Complex Traffic Issues**
 - Predicts congestion and suggests alternative routes.
 - Helps city planners optimize infrastructure.
- ✅ **Increases Adoption Through Familiar Interfaces**
 - Uses web & mobile apps with intuitive dashboards.
 - Provides API integration for government and logistics companies.
- ✅ **Sharpens Communication & Marketing Strategy**
 - Targets daily commuters, logistics managers, and city planners.
 - Uses AI-generated reports and visual insights to improve decision-making.
- ✅ **Improves Customer Experience & Social Impact**
 - Reduces daily commute times and fuel costs.
 - Lowers CO₂ emissions by optimizing vehicle flow.
- ✅ **Scalability & Business Model**
 - Can be scaled for smart cities, delivery services, and public transport networks.
 - Monetization through subscriptions, partnerships, and government collaborations.

Template:

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|-------------------------|--|--|---|-----------------------------------|
| Define CS, fit into CC | 1. CUSTOMER SEGMENT(S) CS Who is your customer? I.e. working parents of 0-5 y.o. kids | 6. CUSTOMER CONSTRAINTS CC What constraints prevent your customers from taking action or limit their choices of solutions? I.e. spending power, budget, no cash, network connection, available devices. | 5. AVAILABLE SOLUTIONS AS Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? I.e. pen and paper is an alternative to digital notetaking | Explore AS, differentiate |
| | 2. JOBS-TO-BE-DONE / PROBLEMS J&P Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides. | 9. PROBLEM ROOT CAUSE RC What is the real reason that this problem exists? What is the back story behind the need to do this job? I.e. customers have to do it because of the change in regulations. | 7. BEHAVIOUR BE What does your customer do to address the problem and get the job done? I.e. directly related: find the right solar panel installer, calculate usage and benefits; Indirectly associated: customers spend free time on volunteering work (I.e. Greenpeace) | |
| Identify strong TR & EM | 3. TRIGGERS TR What triggers customers to act? I.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news. | 10. YOUR SOLUTION SL If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour. | 8. CHANNELS of BEHAVIOUR CH 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7 | Extract online & offline CH of BE |
| | 4. EMOTIONS: BEFORE / AFTER EM How do customers feel when they face a problem or a job and afterwards? I.e. lost, insecure > confident, in control - use it in your communication strategy & design. | | 8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development. | |

References:

1. <https://www.ideahackers.network/problem-solution-fit-canvas/>
2. <https://medium.com/@epicantus/problem-solution-fit-canvas-aa3dd59cb4fe>