

Problem Solution Fit

Date	27 June 2025
Team ID	LTVIP2025TMID48669
Project Name	Visualization Tool for Electric Vehicle Charge and Range Analysis.
Maximum Marks	2 Marks

TITLE :

Visualization Tool for Electric Vehicle Charge and Range Analysis.

Team ID : LTVIP2025TMID48669

Team Members :

Team Leader : Likitha Dadi

Team member : Ella Likhitha

Team member : Gandi Dinesh

Team member : Allada Vasanth

Team member : Goona Ganapathi Swamy

The Problem–Solution Fit analysis helped align real EV user needs with the proposed solution. EV owners often face **range anxiety**, **lack of real-time charging station visibility**, and **fragmented data sources**.

Through empathy mapping, pain-point analysis, and user behavior study, it was identified that a **centralized, visual, and web-accessible dashboard** could effectively address these challenges. This fit confirms that the proposed solution directly tackles a real-world user problem using feasible technology.

Problem-Solution Fit canvas

Purpose / Vision Help EV users make smarter charging and travel decisions.

Version:

Define CS, fit into CL	1. CUSTOMER SEGMENT(S) CS - EV owners (urban and suburban) - Fleet operators - City planners - EV rental services	6. CUSTOMER LIMITATIONS CL <small>EG. BUDGET, DEVICES</small> - Not tech-savvy - Limited access to premium apps or tools - Device compatibility (mobile/tablet only users) - Budget-conscious (prefer free/low-cost tools)	5. AVAILABLE SOLUTIONS AS <small>PLUSSES & MINUSES</small> - Google Maps: Shows locations but not real-time availability (-) - OEM EV apps: Often brand-specific and not customizable (-) - Third-party apps: May lack data accuracy	Explore AS, differentiate
	2. PROBLEMS / PAINS PR <small>ITS FREQUENCY</small> - Difficulty finding available EV charging stations (daily/regularly) - Range anxiety due to poor route planning - Lack of visibility into past charging trends	9. PROBLEM ROOT / CAUSE RC - No centralized data hub combining real-time charge availability + range prediction - Fragmented data across various platforms - Lack of predictive analytics	7. BEHAVIOR BE <small>ITS INTENSITY</small> - Regular use of mobile apps for navigation - Active search for charging stations - Strong interest in optimizing time/cost (high intensity)	
Identify strong TR & EM	3. TRIGGERS TO ACT TR - Long wait times at charging stations - Running out of charge mid-journey - Rising electricity costs and need for efficient planning	10. YOUR SOLUTION SL - A data visualization dashboard built with Tableau - Features: Real-time charging station status, range analysis, historical usage trends - Connects to MySQL database for live data access - Helps users plan routes and charging stops efficiently	8. CHANNELS of BEHAVIOR CH ONLINE - Online: EV mobile apps, dashboards, route planners, forums OFFLINE - Offline: Asking at fuel stations, printed maps, EV community meetups	Extract online & offline CH of BE
	4. EMOTIONS EM <small>BEFORE / AFTER</small> - Before: Frustrated, anxious, uncertain - After: Confident, informed, in control			



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