

Problem Solution fit Template

Project Title: Virtualization tool for electric vehicle charge & range analysis

Team Id: LTVIP2026TMIDS47701

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| Define CS, fit into CC | 1. CUSTOMER SEGMENT(S) <ul style="list-style-type: none">Electric Vehicle (EV) owners (2-wheelers, 3-wheelers, cars)Fleet operators (ride-hailing, delivery, logistics)EV buyers evaluating range performanceCharging infrastructure plannersAutomotive engineers & data analysts | 6. CUSTOMER CONSTRAINTS <ul style="list-style-type: none">Limited technical knowledge of battery behaviorInaccurate or static range estimates.Lack of real-time data visualizationPoor integration with driving conditionsData overload without clear insights | 5. AVAILABLE SOLUTIONS <ul style="list-style-type: none">Basic dashboard range estimators in EVsMobile apps showing battery percentage onlyStatic manufacturer-claimed range valuesSimple navigation apps with charging points | Explore AS, differentiate |
| | 2. JOBS-TO-BE-DONE / PROBLEMS <ul style="list-style-type: none">Understand real-time battery charge and remaining rangePredict how driving behavior, terrain, and weather affect rangeReduce "range anxiety" during tripsPlan charging stops efficientlyCompare expected vs actual vehicle performance | 9. PROBLEM ROOT CAUSE <ul style="list-style-type: none">Range calculations based on ideal conditionsNo visualization of energy consumption patternsLack of predictive analyticsPoor user understanding of battery dynamicsFragmented data sources | 7. BEHAVIOUR <ul style="list-style-type: none">Frequently checking battery percentageOver-charging due to fear of running outAvoiding long tripsDriving conservatively to save chargeRelying on external apps for reassurance | |
| Focus on J&P, tap into BE, understand RC | | | | Focus on J&P, tap into BE, understand RC |

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| <div>3. TRIGGERS</div> <div><ul style="list-style-type: none">• Low battery warning• Planning a long or unfamiliar trip• Unexpected drop in remaining range• Searching for nearby charging stations• Comparing EV efficiency across routes or vehicles</div> <div>TR</div> | <div>10. YOUR SOLUTION</div> <div>SL</div> <div>Interactive visual dashboard showing:</div> <div><ul style="list-style-type: none">• Battery charge vs distance• Energy consumption trends• Predicted remaining range</div> <div>Real-time data integration (speed, terrain, weather)</div> <div><ul style="list-style-type: none">• Route-based range forecasting• Charging station visualization and recommendations• User-friendly graphs, alerts, and insights</div> | <div>8. CHANNELS of BEHAVIOUR</div> <div>CH</div> <div><ul style="list-style-type: none">• In-vehicle infotainment system• Mobile application (Android / iOS)• Web dashboard for analytics• Alerts & notifications• Navigation and maps integration</div> |
| <div>4. EMOTIONS: BEFORE / AFTER</div> <div>EM</div> <div>Before</div> <div><ul style="list-style-type: none">• Anxiety about reaching destination• Uncertainty and lack of trust in range estimates• Frustration due to inaccurate predictions</div> <div>After</div> <div><ul style="list-style-type: none">• Confidence in trip planning• Reduced stress while driving• Trust in EV performance and data insights</div> | | |