Batch #62
Team Members:
G Mahidhar Reddy 24CS002988
Sree Chandana 24CS002921
Sasi Preetham Reddy 24CS002907
Vishruth Krishna 24CS002918

# Customer Journey Map for a Structural Health Monitoring Solution for Metro Rail Networks

| | Awareness | Consideration | Decision | Implementation | Adoption | Optimization | Retention And Advocacy |
|---|---|---|---|---|---|---|---|
| **Customer activity** | •Metro rail authority recognizes the need for real-time structural health monitoring due to increasing operational demands, safety concerns, or regulatory requirements. | Evaluates potential SHM solutions and vendors, including system capabilities, implementation timeline, and ROI. | •Selects a vendor and signs an agreement to implement the SHM solution. | System components are installed across the metro network and integrated into a central dashboard. | Metro rail operators begin using the system for regular monitoring and maintenance scheduling. | Periodically reviews the system's effectiveness and identifies improvements for enhanced performance. | •Considers expanding the system's use to other transportation networks and advocates for its adoption in the industry. |
| **Touchpoints** | •Industry conferences<br>•Vendor websites or demonstrations<br>•Case studies of similar SHM implementations | •Vendor meetings and product demos<br>•Competitive analysis reports<br>•Testimonials or references from similar metro projects | •Vendor proposals<br>•Contract negotiations | •Project management updates<br>•Onsite visits for hardware installation<br>•Software integration checkpoints | •Training sessions<br>•Regular maintenance schedules for the SHM system | •System health reports<br>•Vendor feedback sessions | •Post-implementation reports<br>•Public safety metrics<br>•Industry presentations or publications |
| **Painpoints** | •Lack of insight into existing infrastructure issues<br>•High maintenance costs from reactive repairs<br>•Public and employee safety concerns | •Complexity of integrating new systems with existing infrastructure<br>•Lack of clarity on long-term benefits and cost-effectiveness | •Navigating procurement regulations<br>•Ensuring scalability of the chosen solution | •Minimizing disruption to ongoing operations<br>•Training staff to use the new system | •Adapting workflows around the new insights<br>•Ensuring high uptime of monitoring components | •Keeping up with software and hardware updates<br>•Balancing budget constraints for system upgrades | •Ensuring ROI is well-documented<br>•Quantifying intangible benefits (e.g., improved public trust) |
| **Technologies Used** | ◦Marketing materials, educational webinars, and whitepapers | 3D system modeling tools, cost analysis tools, feasibility reports | ◦Detailed system architecture mockups, simulation-based demonstrations | ▪**Sensors:** Vibration, strain, temperature, and displacement sensors<br>▪**Data Acquisition System:** IoT-enabled edge devices for real-time data capture<br>▪**Communication Network:** LoRa, 5G, or fiber optics for data transmissions | ▪Predictive analytics for failure forecasting<br>▪Real-time alerts and anomaly detection<br>▪Visualization tools: GIS-enabled mapping on the dashboard | Periodic firmware updates, machine learning model retraining, and advanced diagnostic tools | Benchmarking tools, ROI calculators, and communication platforms for stakeholder engagement |