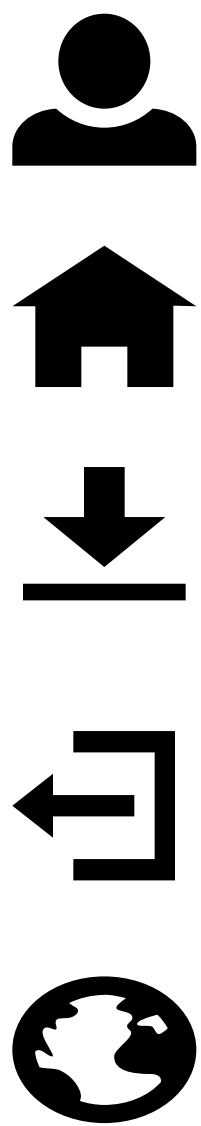


Business Model Canvas

Created by **Davinder Singh; Armaanpreet Singh; Amit Bhatti**

Designed via [AltexSoft BMC Tool](#)

<h3>Key Partnerships</h3> <ul style="list-style-type: none">- Technology providers : Companies supplying sensors, IoT devices, and data analytics software.- Railways Autoharities : Collaborate for data sharing and system integration.- Reasearch Institutions : Partner for ongoing research and development.- Consulting Firms : Provide expertise in system design and implementation.- Government Agencies : Ensure compliance with regulations and standards.	<h3>Key Activities</h3> <ul style="list-style-type: none">- System Design : Develop the architecture for the monitoring system.- Sensor Deployment : Install sensors on critical infrastructure components.- Data Collection : Gather real-time data on structural health.- Data Analysis : Use AI and machine learning to analyze data for anomalies.- Dashboard Development : Create a user-friendly interface for monitoring and reporting.	<h3>Value Propositions</h3> <ul style="list-style-type: none">- Enhanced Safety : Early detection of structural issues to prevent accidents.- Cost Efficiency : Reduced maintenance costs through predictive analytics.- Real-time Monitoring : Continuous oversight of structural health.- Data-Driven Decisions : Informed decision-making based on accurate data.- User -Friendly Dashboard : Easy access to critical information for stakeholders.	<h3>Customer Relationships</h3> <ul style="list-style-type: none">- Dedicated Support : Provide technical support and training for users.- Regular Updates : Keep customers informed about system improvements and new features.- Feedback Mechanism : Encourage user feedback for continuous improvement.- Community Engagement : Foster a community of users for knowledge sharing.	<h3>Customer Segments</h3> <ul style="list-style-type: none">- Metro Rail Authorities : Primary users responsible for infrastructure safety.- Maintenance Teams : Personnel who will use the system for daily operations.- Government Regulators : Agencies monitoring compliance and safety standards.- Passengers : Indirectly benefit from improved safety and reliability.
	<h3>Key Resources</h3> <ul style="list-style-type: none">- Sensors and IoT Devices : Essential for real-time monitoring.- Data Analytics Software : Tools for processing and analyzing collected data.- Cloud Infrastructure : For data storage and processing.- Human Resources : Engineers, data scientists, and support staff.- Financial Resources : Funding for development and deployment.		<h3>Channels</h3> <ul style="list-style-type: none">- Direct Sales : Engage directly with metro rail authorities and operators.- Online Platforms : Use websites and social media for marketing and information dissemination.- Industry Conferences : Showcase the system at relevant events and trade shows.- Partnerships : Collaborate with industry stakeholders for broader reach.	
<h3>Cost Structure</h3> <ul style="list-style-type: none">- Development Costs : Expenses related to system design and software development.- Operational Costs : Ongoing costs for data storage, processing, and maintenance.- Marketing Costs : Expenses for promoting the system to potential customers.- Personnel Costs : Salaries for engineers, data scientists, and support staff.			<h3>Revenue Streams</h3> <ul style="list-style-type: none">- System Sales : Revenue from selling the monitoring system to metro rail authorities.- Subscription Fees : Ongoing fees for data analytics and dashboard access.- Consulting Services : Income from providing expert advice and support.- Training Programs : Fees for training personnel on system usage and maintenance.	



Key Components of the SHM System

- Sensors:
 - Strain Gauges: Measure deformation in structural components.
 - Vibration Sensors: Monitor dynamic responses to train movements.
 - Displacement Sensors: Track shifts in structural alignment.
 - Temperature Sensors: Assess thermal effects on materials.
 - Corrosion Sensors: Detect deterioration in metal components.

Objectives

- Safety Assurance: Proactively identify structural issues to prevent accidents and ensure passenger safety.
- Reliability: Maintain consistent service by monitoring the health of infrastructure components.
- Longevity: Extend the lifespan of rail assets through timely maintenance and repairs.

