

## Project Design Phase-I Problem – Solution Fit Template

Date	17 OCTOBER 2022
Team ID	PNT2022TMID39941
Project Name	Smart Solution For Railway
Maximum Marks	2 Marks

### Problem – Solution Fit Template:

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why

### Purpose:

- ☐ Automated train operation (ATO) is a solution that provides support for automation of driving function (e.g., starting, accelerating, braking, and stopping) that is used in conjunction with the safety automatic train protection (ATP) function of train control.
- ☐ Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.
- ☐ Smart sensors and analytics across the train engine, coaches, and tracks allow rail systems to be remotely checked.
- ☐ Support for development and implementation of smart railway solutions .Use of intelligent.
- ☐ **Understand the existing situation in order to improve it for your target group.**

### Template:

Project Title:		Project Design Phase-I - Solution Fit Template		Team ID: PNT2022TMIDxxxxxx	
Define CS, fit into CC	Focus on J&P, fit into BE, understand RC	Focus on J&P, fit into BE, understand RC	Focus on J&P, fit into BE, understand RC	Explore AS, differentiate	
	Focus on J&P, fit into BE, understand RC	Focus on J&P, fit into BE, understand RC	Focus on J&P, fit into BE, understand RC	Explore AS, differentiate	
<b>1. CUSTOMER SEGMENT(S)</b> <small>Who is your customer?</small> A customer is an individual or business that purchases another company's goods or services. Customers are important because they drive revenues; without them, businesses cannot continue to exist. <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">CS</div>		<b>6. CUSTOMER CONSTRAINTS</b> <small>Which solutions are available to the customers when they face the problem?</small> Smart sensors and analytics across the train engine, coaches, and tracks allow rail systems to be remotely checked and repaired before a small issue magnifies. <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">CC</div>		<b>5. AVAILABLE SOLUTIONS</b> <small>Which solutions are available to the customers when they face the problem?</small> <ul style="list-style-type: none"> <li>Digital Twin— Digital platform for railways and airways.</li> <li>Role of sensors in predictive maintenance.</li> <li>Predictive maintenance and CMMS.</li> <li>The IoT-connected trains.</li> <li>Big Data analytics for smart railway.</li> </ul> <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">AS</div>	
<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> A. Ticketless travelling B. Damage and theft of railway property. C. Unnecessary use of emergency chain. D. Rough terrain. <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">J&amp;P</div>		<b>9. PROBLEM ROOT CAUSE</b> <ul style="list-style-type: none"> <li>CMMS</li> <li>Digitalization</li> <li>Indian Railways</li> <li>IoT</li> <li>Maintenance</li> <li>OMRS</li> <li>predictive analysis</li> </ul> <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">RC</div>		<b>7. BEHAVIOUR</b> <small>What does your customer do to address the problem and get the job done?</small> i.e. The aims of this paper are to estimate the behaviour of railway passengers by using smart card data and to evaluate the effects of train . <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">BE</div>	
<b>3. TRIGGERS</b> <small>Introducing the smartness concept in the transportation infrastructure will influence the population growth and business needs. Smart sensors and analytics across the train engine, coaches, and tracks allow rail systems to be remotely checked and repaired before a small issue.</small> <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">TR</div>		<b>10. YOUR SOLUTION</b> <small>We used a data-driven startup scouting approach to identify the most relevant solutions globally. The Global Startup Heat Map below highlights 5 interesting examples out of 630 relevant solutions. Depending on your specific needs, your top picks might look entirely different.</small> <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">SL</div>		<b>8. CHANNELS of BEHAVIOUR</b> <b>8.1 ONLINE</b> <small>Furthermore, this survey focuses on providing a holistic approach, identifying scenarios and architectures where railways could leverage.</small> <b>8.2 OFFLINE</b> <small>Scholarly articles for offline behaviour for smart railways solutions.</small> <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">CH</div>	
<b>4. EMOTIONS: BEFORE / AFTER</b> <small>After embracing Artificial Intelligence, Indian Railways is moving towards Emotional Intelligence (EI) to rule out signal-failure. It is a vital element of the digital rail solution that is ... single train and then analyse it in real time to detect problems before these.</small> <div style="text-align: right; background-color: #f0f0f0; padding: 2px;">EM</div>					

References:

1. <https://ieeexplore.ieee.org/document/8026132>
2. <https://ieeexplore.ieee.org/document/8026132>