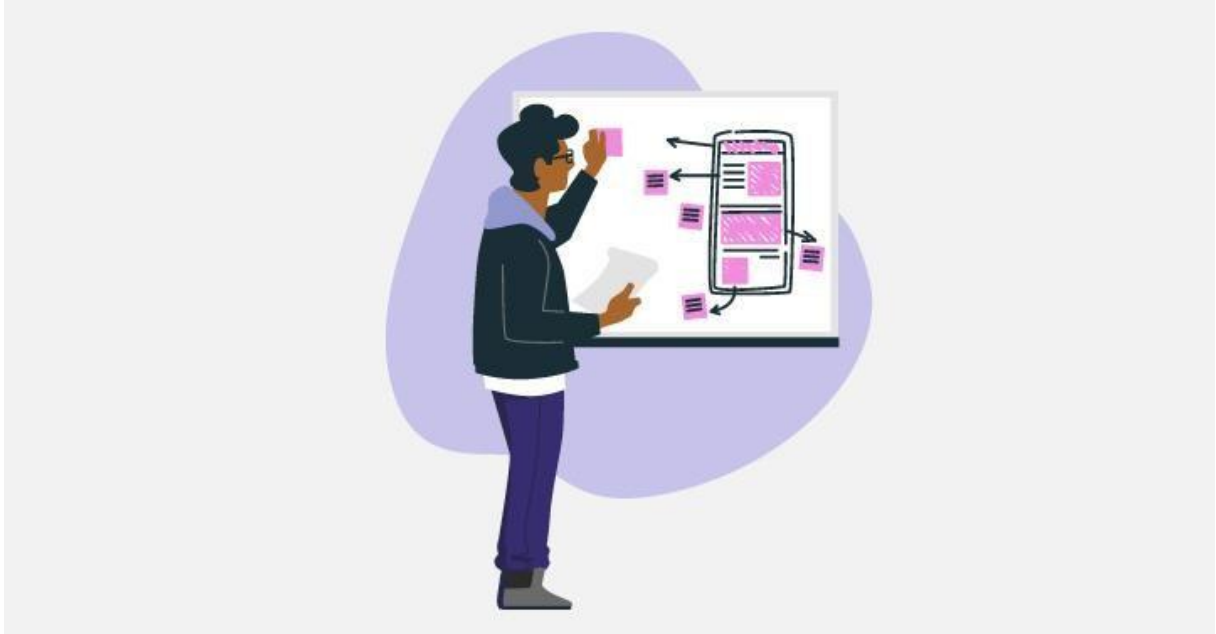


## **PROBLEM - SOLUTION FIT**



**PROJECT TITLE: “IoT Based Weather Adaptive Street Lighting System”**

**Team ID: Team ID: NM2023TMID09640**

**Team Leader: ADITHYA N**

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## Problem-Solution fit canvas 2.0

Purpose / Vision

Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> <div>Residents of the neighborhood</div>	<b>6. CUSTOMER CONSTRAINTS</b> <span>CC</span> <div>Limited budget for street lighting improvement</div>	<b>5. AVAILABLE SOLUTIONS</b> <span>AS</span> <div>Traditional street lighting system, installation of additional street lights, brighter bulbs</div>	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span> <div>Feel safe and secure in the neighborhood at night</div>	<b>9. PROBLEMROOT CAUSE</b> <span>RC</span> <div>Faulty street lighting system, delayed maintenance</div>	<b>7. BEHAVIOUR</b> <span>BE</span> <div>Residents may report inadequate street lighting to the government or community leaders, avoid walking in poorly lit areas at night, or install personal lighting devices for safety.</div>	
Identify strong TR & EM	<b>3. TRIGGERS</b> <span>TR</span> <div>Nighttime, dark streets, reports of crime</div>	<b>10. YOUR SOLUTION</b> <span>SL</span> <div>Implement <u>weather based</u> street lights in poorly lit areas, prioritize timely maintenance, and incorporate smart controls to adjust lighting levels based on natural light and pedestrian/vehicle presence.</div>	<b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span> <div>Online - <u>Social media</u>, email, website contact form</div>	Extract online & offline CH of BE
	<b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span> <div>Before - Anxiety, fear, vulnerability; After - Relief, comfort, safety</div>		<div>Offline - Community meetings, town halls, letters to government officials.</div>	



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## Problem-Solution fit canvas 2.0

Purpose / Vision

Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> <div>Drivers on the highway</div>	<b>6. CUSTOMER CONSTRAINTS</b> <span>CC</span> <div>Limited visibility due to poor lighting</div>	<b>5. AVAILABLE SOLUTIONS</b> <span>AS</span> <div>Traditional street lighting system, installation of additional street lights, brighter bulbs</div>	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span> <div>Navigate safely and efficiently on the highway at night</div>	<b>9. PROBLEM ROOT CAUSE</b> <span>RC</span> <div>Incorrect placement of street lights, inadequate lighting intensity</div>	<b>7. BEHAVIOUR</b> <span>BE</span> <div>Drivers may slow down or avoid driving on the highway at night due to poor lighting, report inadequate lighting to the government or highway authorities, or install personal lighting devices in their vehicles.</div>	
Identify strong TR & EM	<b>3. TRIGGERS</b> <span>TR</span> <div>Nighttime, dark highway, lack of visibility</div>	<b>10. YOUR SOLUTION</b> <span>SL</span> <div>Implement Weather based street lights along the highway, strategically place lights to provide adequate coverage, and incorporate smart controls to adjust lighting levels based on natural light and traffic patterns.</div>	<b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span> <div>Online - <a href="#">Social media</a>, email, website contact form</div>	Extract online & offline CH of BE
	<b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span> <div>Before - Anxiety, stress, insecurity After - Confidence, comfort, safety</div>		<div>Offline - Highway authorities, traffic police, letters to government officials.</div>	



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## Problem-Solution fit canvas 2.0

Purpose / Vision

Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> <div>Employees and customers in the commercial area</div>	<b>6. CUSTOMER CONSTRAINTS</b> <span>CC</span> <div>Limited budget for street lighting improvement</div>	<b>5. AVAILABLE SOLUTIONS</b> <span>AS</span> <div>Traditional street lighting system, installation of additional street lights, brighter bulbs</div>	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>JBP</span> <div>Feel safe and secure while shopping or working in the commercial area at night</div>	<b>9. PROBLEM ROOT CAUSE</b> <span>RC</span> <div>Faulty street lighting system, delayed maintenance</div>	<b>7. BEHAVIOUR</b> <span>BE</span> <div>Employees and customers may avoid the commercial area at night due to poor lighting, report inadequate lighting to the government or business owners, or install personal lighting devices for safety.</div>	
Identify strong TR & EM	<b>3. TRIGGERS</b> <span>TR</span> <div>Nighttime, dark streets, reports of crime</div>	<b>10. YOUR SOLUTION</b> <span>SL</span> <div>Implement Weather based street lights along the highway, strategically place lights to provide adequate coverage, and incorporate smart controls to adjust lighting levels based on natural light and traffic patterns. Additionally, collaborate with businesses in the commercial area to provide lighting in their storefronts and parking lots.</div>	<b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span> <div>Online - <a href="#">Social media</a>, email, website contact form</div>	Extract online & offline CH of BE
	<b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span> <div>Before - Insecurity, anxiety, stress After - Confidence, comfort, safety</div>		<div>Offline - Business owners, local authorities, letters to government officials.</div>	



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## Problem-Solution fit canvas 2.0

Purpose / Vision

Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> Individuals who walk on foot for commuting or recreational purposes in urban areas.	<b>6. CUSTOMER CONSTRAINTS</b> <span>CC</span> Limited mobility and visibility during the night.	<b>5. AVAILABLE SOLUTIONS</b> <span>AS</span> Traditional street lighting system, installation of additional street lights, brighter bulbs	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span> To feel safe and comfortable while walking during the night in poorly lit areas.	<b>9. PROBLEM ROOT CAUSE</b> <span>RC</span> Poorly lit areas due to inadequate street lighting systems.	<b>7. BEHAVIOUR</b> <span>BE</span> Using the mobile app to report any issues with the lighting system and receiving alerts about maintenance and repair work.	
Identify strong TR & EM	<b>3. TRIGGERS</b> <span>TR</span> Feeling anxious or stressed due to poor lighting while walking during the night.	<b>10. YOUR SOLUTION</b> <span>SL</span> Develop and implement a smart lighting system using energy-efficient LED lights and motion sensors. Use a centralized control system to monitor and adjust the lighting levels based on the foot traffic in the area. Use a mobile app to allow pedestrians to report any issues with the lighting system and receive alerts about maintenance and repair work. Use solar panels and other renewable energy sources to power the lighting system.	<b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span> Online - <a href="#">Social media</a> , email, website contact form	Extract online & offline CH of BE
	<b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span> Before - Insecurity, anxiety, stress After - Confidence, comfort, safety		Offline - Conducting maintenance and repair work on the lighting system.	



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## Problem-Solution fit canvas 2.0

Purpose / Vision

Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> <p>Government officials responsible for ensuring the adequate supply of electricity and managing the electricity grid.</p>	<b>6. CUSTOMER CONSTRAINTS</b> <span>CC</span> <p><u>Limited budget</u> and resources for implementing new lighting systems.</p>	<b>5. AVAILABLE SOLUTIONS</b> <span>AS</span> <p>Traditional street lighting system, installation of additional street lights, brighter bulbs</p>	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span> <p>To provide adequate lighting for city residents while ensuring energy efficiency.</p>	<b>9. PROBLEM ROOT CAUSE</b> <span>RC</span> <p>Traditional street lighting systems consume a lot of energy and contribute to environmental impact.</p>	<b>7. BEHAVIOUR</b> <span>BE</span> <p>Monitoring the performance of the smart lighting system and making adjustments based on the foot traffic in the area.</p>	
Identify strong TR & EM	<b>3. TRIGGERS</b> <span>TR</span> <p>Government regulations to reduce energy consumption and environmental impact.</p>	<b>10. YOUR SOLUTION</b> <span>SL</span> <p>Develop and implement a smart lighting system using energy-efficient LED lights and motion sensors.          Use a centralized control system to monitor and adjust the lighting levels based on the foot traffic in the area.          Use a mobile app to allow pedestrians to report any issues with the lighting system and receive alerts about maintenance and repair work.          Use solar panels and other renewable energy sources to power the lighting system.</p>	<b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span> <p>Online - Monitoring the performance of the smart lighting system through a centralized control system.</p>	Extract online & offline CH of BE
	<b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span> <p>Before - Before - Concerned about environmental impact and energy consumption.          After - Confident in providing adequate lighting while ensuring energy efficiency.</p>		<p>Offline - Conducting maintenance and repair work on the lighting system.</p>	



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