

# Problem Solution Fit

Date	15 November 2022
Team ID	PNT2022TMID01841
Project Name	Gas leakage monitoring and alerting system for industries

	1. CUSTOMER SEGMENT(S) <small>CS</small> <small>Who is your customer? i.e. working parents of 0-5 y.o. kids</small>	6. CUSTOMER CONSTRAINTS <small>CC</small> <small>What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices.</small>	5. AVAILABLE SOLUTIONS <small>AS</small> <small>Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What price &amp; costs do these solutions have? i.e. pen and paper is an alternative to digital notetaking</small>	
Define CS, fit into CC	<ul style="list-style-type: none"> <li>✓ Oil, Gas, Polymer Industries</li> <li>✓ Hospitals</li> <li>✓ Mining</li> <li>✓ Chemical Industries</li> </ul>	<ul style="list-style-type: none"> <li>✓ Technical constraints</li> <li>✓ Budget constraints</li> </ul>	<p>Existing systems provides constant monitoring and detection of gas leakage along with storage of data in database for predictions and analysis.</p> <p>The drawback of existing system's includes chance of malfunctioning of devices (i.e) when dust, steam, fog blocks the system, it will not be able to take measurements</p>	Explore AS, differentiate

	2. JOBS-TO-BE-DONE / PROBLEMS <small>J&amp;P</small> <small>Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.</small>	9. PROBLEM ROOT CAUSE <small>RC</small> <small>What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations.</small>	7. BEHAVIOUR <small>BE</small> <small>What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)</small>	
Focus on J&P, tap into BE, understand RC	<p>Gas leakage is an important aspect to be noted as it cause major damage when ignored. It is important to raise an intimation when the gas level surpasses certain threshold value. Survey's state that in the Oil &amp; gas industries, gas leakage problems occur frequently and lack of proper intimation at those situation leads to hazards. IOT can be utilized for efficient and easy monitoring of gas leakages on a continuous basis and from any distance.</p>	<p>Improper maintenance of the system and carelessness leads to gas leakage hazards. The following are few causes that paves way to gas leakage</p> <ul style="list-style-type: none"> <li>✓ Unreliable metal-metal seals</li> <li>✓ Improperly installed tube fittings</li> <li>✓ Poor tubing selection preparation</li> </ul>	<ul style="list-style-type: none"> <li>✓ Calculate usage and benefits of the system</li> <li>✓ Customer volunteer work</li> <li>✓ Take initiative steps towards problem if any in case.</li> </ul>	Focus on J&P, tap into BE, understand RC

	3. TRIGGERS <small>TR</small> <small>What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.</small>	10. YOUR SOLUTION <small>SL</small> <small>What kind of solution suits Customer scenario the best? Adjust your solution to fit Customer behaviour, use Triggers, Channels &amp; Emotions for marketing and communication.</small>	8.1 ONLINE CHANNELS <small>CH</small> <small>What kind of actions do customers take online? Extract online channels from box #7 Behaviour</small>	
Define CS, fit into CL	<ul style="list-style-type: none"> <li>✓ Need for safety of lives &amp; environment</li> <li>✓ Reviews from customers</li> </ul>	<p>This system is an industrial monitoring system designed using IOT. The gas sensor captures the information about gas levels and posts this into a data cloud. The sensor detects the leakage of gas under various atmospheric conditions. As soon as gas leakage is detected, the alarm is raised in the form of the buzzer. This system is also supported by an LCD to display the location of leakage, alert the observer, and activate the exhaust fan in the particular section to evacuate leaked gas.</p>	<ul style="list-style-type: none"> <li>✓ Stable internet connectivity required</li> <li>✓ Check out for rescue measures</li> <li>✓ Call emergency helplines</li> </ul>	Explore AS, differentiate
	<p>4. EMOTIONS: BEFORE / AFTER <small>EM</small> <small>How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure &gt; confident, in control - use it in your communication strategy &amp; design.</small></p> <p>Anxiety, phobic -&gt; Decisive mindset, calm, confident</p>	<p><small>If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.</small></p>	<p>8.2 OFFLINE CHANNELS <small>CH</small> <small>What kind of actions do customers take offline? Extract offline channels from box #7 Behaviour and use them for customer development.</small></p> <ul style="list-style-type: none"> <li>✓ Open all windows doors during gas leakage</li> <li>✓ Ensure that main electrical supply is turned off</li> <li>✓ Keep in reach of first aid kit &amp; extinguishers</li> </ul>	