

## PROJECT DESIGN PHASE-I - SOLUTION

Project Title: Gas Leakage monitoring & Alerting system for Industries

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| <b>1. CUSTOMER SEGMENT</b> <b>CS</b> <ul style="list-style-type: none"><li>The customers for our project is people. Such industries include agriculture, manufacturing, construction, transportation, and communication, among others.</li></ul> | <b>2. CUSTOMER CONSTRAINTS</b> <b>CC</b> <ul style="list-style-type: none"><li>Detect and ventilate the leaked gas.</li><li>Turn off gas valve automatically.</li></ul>  | <b>3. AVAILABLE SOLUTIONS</b> <b>AS</b> <ul style="list-style-type: none"><li><b>PROS:</b> Monitors the gas level in the present atmosphere.</li><li>Alert us, when any gas leakage.</li><li>Low power consumption.</li><li><b>CONS:</b> The challenge of operating electrical equipment as exhaust fan.</li><li>Needs an UPS for uninterrupted</li></ul> |
| <b>4. JOBS-TO-BE-DONE / PROBLEMS</b> <b>J&amp;P</b> <ul style="list-style-type: none"><li>Detection of gas leak,</li><li>Alert surrounding through ALARM,</li><li>Send SMS through GSM module.</li></ul>   | <b>5. PROBLEM ROOT CAUSE</b> <b>RC</b> <ul style="list-style-type: none"><li>The danger happens when gas leaks out. It is dangerous because gas is flammable, which means that if there's a flame or even a spark in the area of a leak, it could cause a fire or explosion.</li><li>A gas leak can happen if a gas pipe is damaged or a fitting is loose.</li><li>There is a possibility of avoiding such dangerous problems, by ventilating the leaked gas out of the area, and by alerting the people.</li><li>Goal of our Project, " Provide the safe and best product using Internet of Things, to people which detects the gas leakage and alert them, and ensure their Safety".</li></ul> | <b>6. BEHAVIOUR</b> <b>BE</b> <ul style="list-style-type: none"><li>Choosing the right sensor</li><li>Reliable components</li><li>Calculating the usage</li></ul>   |
| <b>7. EMOTIONS: BEFORE / AFTER</b> <ul style="list-style-type: none"><li>Prevents gas leak</li><li>Avoid fire accidents</li><li>Safe environment</li></ul>   | <b>8. PROPOSED SOLUTION</b> <ul style="list-style-type: none"><li>Gas detection</li><li>Alert alarm</li><li>Alert sms</li></ul>  |   |