

## Project Design Phase-I

### Problem Solution Fit

Date	17 October 2022
Team ID	PNT2022TMID30897
Project Name	IoT based smart crop protection system for agriculture

Define CS, fit into CL	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> Who is your customer? eg. we're the parents of 0-5 yrs. kids <input type="checkbox"/> Farmers, who's not near his field. <input type="checkbox"/> Crop importers	<b>6. CUSTOMER LIMITATIONS</b> <span>CL</span> <small>EG. BUDGET, DEVICES</small> What limits your customers to act when problem occurs? Spending money, time, effort, effort in detecting the problem, etc. Available devices <input type="checkbox"/> High adoption costs, security concerns. <input type="checkbox"/> Prevent the unnecessary use of this device. <input type="checkbox"/> Use it according to the climate change	<b>5. AVAILABLE SOLUTIONS</b> <span>AS</span> <small>PLUSES &amp; MINUSES</small> Which solutions are available to the customer when he/she is facing the problem? <input type="checkbox"/> Monitor different parameters and mobile or web application make easily to farm the crop field. <input type="checkbox"/> Certain cultural practices can prevent or reduce insect crop damage.	Explore AS, differentiate
	<b>2. PROBLEMS / PAINS + ITS FREQUENCY</b> <span>PR</span> Which problem do you solve for your customer? There could be more than one, explore different sides. eg. on the one hand, it's a good investment (1). <input type="checkbox"/> It's difficult to monitor and control <input type="checkbox"/> Ain't known if the application doesn't work properly.	<b>9. PROBLEM ROOT / CAUSE</b> <span>RC</span> What is the root of every problem from the list? eg. People think that solar panels are bad investment right now, because they are too expensive, and they don't know how to use them. <input type="checkbox"/> If temperature, PH level, humidity & light intensity makes the serious cause for the environment. <input type="checkbox"/> Farmer affected by less productivity which will affect in their profit.	<b>7. BEHAVIOR + ITS INTENSITY</b> <span>BE</span> What does your customer do about / around / directly or indirectly related to the problem? eg. directly related: farmer's manual, green energy calculation to monitor the problem (1.1), usually chooses for 100% green provider (1.2). indirectly related: volunteering work (Greenpeace etc) <b>Direct related:</b> Tries to find a solution to prevent this problem <b>Indirect related:</b> Located in rural where internet connectivity might not be strong enough to facilitate fast transmission speeds.	
<b>3. TRIGGERS TO ACT</b> <span>TR</span> What triggers customer to act? eg. seeing their neighbor installing solar panels (1.1), reading about in the newspaper (1.2) <b>Create opportunities to lift people out of poverty in developing nations. (Over 60%)</b>	<b>10. YOUR SOLUTION</b> <span>SL</span> If you are working on existing business: write down existing solution first, fill in the gaps and check how much does it fit reality. If you are working on a new business proposition then keep it blank until you fill in the gaps and check how much does it fit reality. <b>"IoT based Smart crop protection system for agriculture"</b> It help farmers grow more food on less land by protection crops from pests, diseases and weeds as well as raising productivity per hectare.	<b>8. CHANNELS of BEHAVIOR</b> <span>CH</span> <b>ONLINE</b> Extract channels from Behavior block <b>ONLINE:</b> The Data send through application for the farmers to know about the farms.	Extract online & offline CH of BE	
<b>4. EMOTIONS BEFORE / AFTER</b> <span>EM</span> Which emotions do people feel before/after this problem is solved? eg. frustration, blocking (can't afford it) - boost, feeling smart, be an example for others <b>BEFORE:</b> Finances, Heavy work overload and conflict in relationship. <b>AFTER:</b> It will easier to make more yield in field	<b>OFFLINE</b> Extract channels from Behavior block and use for customer development. <b>OFFLINE:</b> The control action is taken by the farmers to monitor the farms.			