

Project Design Phase-I

Problem – Solution Fit Template

Date	19 September 2022
Team ID	PNT2022TMID26610
Project Name	SmartFarmer - IoT Enabled Smart Farming Application
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:

- ☐ Solve complex problems in a way that fits the state of your customers.
- ☐ Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.
- ☐ Sharpen your communication and marketing strategy with the right triggers and messaging.
- ☐ Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems.
- ☐ **Understand the existing situation in order to improve it for your target group.**

Template:

Problem-Solution fit canvas 2.0

Purpose / Vision

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 0.8em;">Define CS, fit into CC</div> <div style="flex-grow: 1;"> <div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>1. CUSTOMER SEGMENT(S)</div> <div style="background-color: #f8d7da; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">CS</div> </div> <div style="padding: 5px;"> <p><small>Who is your customer?</small></p> <p>The customer for this product is a farmer who grows crops. Our goal is to help them monitor field parameters remotely. This product saves agriculture from extinction.</p> </div> </div> </div>	<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>6. CUSTOMER CONSTRAINTS</div> <div style="background-color: #f8d7da; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">CC</div> </div> <div style="padding: 5px;"> <p>Using a large number of sensors is difficult. An unlimited or continuous internet connection is required for success.</p> </div>	<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>5. AVAILABLE SOLUTIONS</div> <div style="background-color: #f8d7da; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">AS</div> </div> <div style="padding: 5px;"> <p>The irrigation process is automated using IoT. Meteorological data and field parameters were collected and processed to automate the irrigation process. Disadvantages are efficiency only over short distances, and difficult data storage.</p> </div>
<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 0.8em;">Focus on J&P, tap into BE, understand RC</div> <div style="flex-grow: 1;"> <div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>2. JOBS-TO-BE-DONE / PROBLEMS</div> <div style="background-color: #fff3cd; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">J&P</div> </div> <div style="padding: 5px;"> <p>The purpose of this product is to use sensors to acquire various field parameters and process them using a central processing system. The cloud is used to store and transmit data using IoT. The Weather API is used to help farmers make decisions. Farmers can make decisions through mobile applications.</p> </div> </div> </div>	<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>9. PROBLEM ROOT CAUSE</div> <div style="background-color: #fff3cd; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">RC</div> </div> <div style="padding: 5px;"> <p>Frequent changes and unpredictable weather and climate made it difficult for farmers to engage in agriculture. These factors play an important role in deciding whether to water your plants. Fields are difficult to monitor when the farmer is not at the field, leading to crop damage.</p> </div>	<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>7. BEHAVIOUR</div> <div style="background-color: #fff3cd; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">BE</div> </div> <div style="padding: 5px;"> <p>Use a proper drainage system to overcome the effects of excess water from heavy rain. Use of hybrid plants that are resistant to pests.</p> </div>
<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 0.8em;">Identify strong TR & EM</div> <div style="flex-grow: 1;"> <div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>3. TRIGGERS</div> <div style="background-color: #d4edda; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">TR</div> </div> <div style="padding: 5px;"> <p>Farmers struggle to provide adequate irrigation. Inadequate water supply reduces yields and affects farmers' profit levels. Farmers have a hard time predicting the weather.</p> </div> </div> </div>	<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>10. YOUR SOLUTION</div> <div style="background-color: #d4edda; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">SL</div> </div> <div style="padding: 5px;"> <p>Our product collects data from various types of sensors and sends the values to our main server. It also collects weather data from the Weather API. The final decision to irrigate the crop is made by the farmer using a mobile application.</p> </div>	<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>8. CHANNELS of BEHAVIOUR</div> <div style="background-color: #d4edda; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">CH</div> </div> <div style="padding: 5px;"> <p>Online: Providing online assistance to the farmer, in providing knowledge regarding the pH and moisture level of the soil. Online assistance to be provided to the user in using the product.</p> <p>Offline: Awareness camps to be organized to teach the importance and advantages of the automation and IoT in the development of agriculture.</p> </div>
<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;"> <div>4. EMOTIONS: BEFORE / AFTER</div> <div style="background-color: #d4edda; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">EM</div> </div> <div style="padding: 5px;"> <p>Before: Lack of knowledge is weather forecasting → Random decisions → Low yield. After: Data from reliable source → correct decision → High yield.</p> </div>		