Project Design Phase-I
Problem – Solution Fit Template

Date	8 Nov 2022
Team ID	PNT2022TMID46644
Project Name	Project - Real-Time Communication System Powered by AI for Specially Abled
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:

1. CUSTOMER SEGMENT(S) CS
Who is your customer?
i.e. working parents of 0-5 y.o. kids

deafness (Hearing loss).
For inability to speak and see(muteness.) those prople who face difficulty to communicate with normal people through sign language

6. CUSTOMER CONSTRAINTS CC
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.

Deaf and mute people just share the information through sign language and these gestures are made using hands, fingers, arms, head, and also facial expressions.

5. AVAILABLE SOLUTIONS AS
Which solutions are available to the customers when they face the problem

The recognition of signs with facial expression, hand gestures, and body movement simultaneously with better recognition accuracy in real-time with improved performance helps in better communication.
A study on-manual sign involves the face region, including the movement of the leas eyebrow movement, and mouth shape. This can be traced and interpreted to show communication.

2. JOBS-TO-BE-DONE / PROBLEMS J&P
Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one, explore different sides.

Communication between specially-abled and ordinary people has always been a challenging task.
Solving the problem of recognizing words or sentences using sign language.

9. PROBLEM ROOT CAUSE RC
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.

We take a selected problem and give a solution. That solution is extremely helpful for people who face difficulty with hearing or speaking. Hearing disabilities and Speaking problems are becoming common among kids.

7. BEHAVIOUR BE
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)

We start by collecting key points from mediapipe holistic and collect a bunch of data from keypoints
We then build a LSTM model and train with our stored data which helps us to detect action with a number of frames.
Once training is done, we can use this model for real time hand gesture detection and simultaneously convert the gesture to speech using OpenCV.

3. TRIGGERS TR
What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.

The relatives or family members of deaf and mute people face difficulties to express their opinion and communicating with them.
Being left out of social activities.

4. EMOTIONS: BEFORE / AFTER EM
How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure > confident, in control - use it in your communication strategy & design.

The emotions are frustrated, anger, left out, lonely, fear, neglected

10. YOUR SOLUTION SL
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.

Sign language recognition is the task of recognizing sign language glosses from video streams and the glosses are converted into audio. It can bridge the communication gap between deaf and mute people, facilitating the social inclusion of hearing-impaired people.

8. CHANNELS of BEHAVIOUR CH
8.1 ONLINE
What kind of actions do customers take online? Extract online channels from #7

8.2 OFFLINE
What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.

Facing difficulties in communicating with normal people.
Not being understood and being left out from important discussions.