Project Design Phase-I
Problem – Solution Fit Template

Date	11 October 2022
Team ID	PNT2022TMID17273
Project Name	A Novel Method for Handwritten Digit Recognition System
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 behavioural 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 behaviour.
- 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:

Project Design Phase-I - Solution Fit Template

Project Title: A Novel Method for Handwritten Digit Recognition System

Project ID: PNT2022TMID40411

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) CS

Customers are those who work with handwritten numbers in places like banks, schools, colleges, railroads, etc.

6. CUSTOMER CONSTRAINTS CC

- Lack of reliable internet connections, unavailability of gadgets like mobile phones and computers, inaccessibility of appropriate cameras.
- Because handwritten numbers are not always accurate and might have a wide variety of tastes, it is a difficult work for the computer.
- This issue can be solved by using an image of a digit to identify the digit that is present in the image, which is done through handwritten digit recognition.

5. AVAILABLE SOLUTIONS AS

- Although there are current alternatives to this approach, they are not very precise, robust, or rotation- and variation-invariant.
- The ability of a computer to honor the mortal handwritten characters from many sources, including as photographs, papers, and touch input.

Explore AS, differentiate

2. JOBS-TO-BE-DONE / PROBLEMS J&P

- It is really challenging to comprehend and analyze the handwritten numbers.
- More training data required.
- Hard to recognize digits, dim lighting, weak eyesight.

9. PROBLEM ROOT CAUSE

Hand-written digits are in varying fonts and sizes, thus they are becoming increasingly difficult to ascertain due to various factors such as weakening eye-sight, time constraints, etc.

7. BEHAVIOUR

- Finding the best software that more quickly and accurately identifies digits.
- Customer wants reliable internet connections and high-quality cameras.

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS

- Obtain the data quickly and accurately.
- The exchange of information is made simple and is one of the simplest ways to speak with a computer and grasp the language.

4. EMOTIONS: BEFORE / AFTER

BEFORE: Uncertain, Reserved, and Perplexed.

AFTER: Assured, Upright, and Rational.

10. YOUR SOLUTION

- The solution aims to reliably recognize hand-written digits using Convolutional Neural Network (CNN) algorithm.Therefore,reducing costs for the company and increasing worker productivity.

8. CHANNELS OF BEHAVIOUR

8.1 **ONLINE**

- The processing and uploading of the photographs both require a steady internet connection.

8.2 **OFFLINE**

- Purchase contemporary electronics and confirm their functionality.

Identify strong TR & EM