Project Title: A Novel Method for Handwritten Digit Recognition System **Project Design Phase-I - Solution Fit Template** **Team ID:** PNT2022TMID27279

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) CS

Who is your customer?

The Customers who deals with the handwritten digits like Post Office, Bank sectors, Colleges, Schools, Railways and some government organizations, etc.,

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.

They believe that the alternatives will result in errors and fault will be inconvenient.

5. AVAILABLE SOLUTIONS AS

Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have?

There are no widely used software's for handwriting detection. Instead, they check with other people to affirm what number it is.

Explore AS, differentia

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

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.

Handwritten digits are it may not be understandable for all, because the handwritting styles differ. It may cause errors when dealing with rough handwriting.

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 face numerous challenges in handwritten digit recognition, because different people's will have different writing styles and lack of optic character recognition. This investigation offers the indepth comparison of various machine literacy and deep literacy.

7. BEHAVIOUR BE

What does your customer do to address the problem and get the job done?

Finding the best software for detecting accurate digits in a more efficient manner.

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

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.

To obtain the digits accurately and quickly.

4. EMOTIONS: BEFORE / AFTER

EM

How do customers feel when they face a problem or a job and afterwards?

Feels frustrated and sad when digits are not entered.

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.

A solution to this problem is the Handwritten Digit Recognition System, which uses a picture of a digit and recognizes the digit present in the image. Convolutional Neural Networks model build with PyTorch and applied to the dataset to recognize handwritten digits.

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.

Using software that is available on the internet. Obtaining assistance from those nearby in order to recognize the digits written by their customers.