Project Title: A Novel method for Handwritten Digit Recognition System **Project Design Phase-I - Solution Fit Template** **Team ID:** PNT2022TMID30180

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) — CS

Who is your customer?
i.e. working parents of 0-5 y.o. kids

Customers are the one who going to use the software and they can be people, semi blind people, in bank sector, in postal office, colleges, number plate recognition.

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.

Customers need accuracy and fast prediction of digits and they also look for alternate solution to speed up the process.

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? i.e. pen and paper is an alternative to digital notetaking

There is many software for the prediction of digit but some doesn't provide us correct result. They lack the ability to predict digit with maximum accuracy and minimum error.

Explore AS, differentiate

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.

Semi blind people find it hard to understand people handwriting since it differs from people to people. It may cause error in prediction.

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.

Customer find it difficult to detect the digit as different people has different writing. Prediction of numeric is a difficult and time-consuming process. Semi blind people face obstacle since they are not sure about the result.

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)

To design a software that predict handwritten digits in less time with given dataset and also provide high accuracy result.

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

Identify strong TR & EM

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 predict scanned image to obtain result with less time and high accuracy.

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.

Customer sometimes get irritated using software as it's not working properly and also, they are not sure whether the prediction is right or wrong after processing the handwritten numeric.

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.

Our solution is implementation of Handwritten digit recognition using various algorithms such as SVM, CNN, IBM Cloud and the IBM Cognos for analytic. Conversion of handwritten digit to computerized format using DL algorithm with less time and high accuracy. Also helpful to semi blind people who has difficult in reading.

8. CHANNELS of BEHAVIOUR — CH

8.1 ONLINE
What kind of actions do customers take online? Extract online channels from #7

User can check the digits by scanning image and predict the result with accuracy rate.

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

There isn't any offline application for digit prediction.

Identify strong TR & EM