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

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Define CS, fit into CC

1. CUSTOMER SEGMENT(S) CS

- Banking sector,
- postal sector,
- form data entry

6. CUSTOMER CONSTRAINTS CC

- Security threats
- Doubt of accuracy of interpreted digits
- procedure of scanning makes them feel hard

5. AVAILABLE SOLUTIONS AS

- Many algorithms like CTC, SVM classifier etc. Are available for digit recognition
- AI and Machine learning based recognition systems
- CNN and ANN based digit recognitions

Explore AS, differentia

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

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

- Recognize the joined-up numbers
- Detect the unrecognizable handwritten digits
- Differentiating similar looking digits
- Poor quality handwritten digits identification

9. PROBLEM ROOT CAUSE RC

- Scribbled digits, joined up digits, widely varying handwriting of people makes the digits unclear.
- reduced eyesight of people makes it difficult for them to understand the digit

7. BEHAVIOUR BE

- Customer uses a handwritten digit recognition system to resolve their problems

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

3. TRIGGERS TR

- Entering wrong data in forms and applications due to doubts
- Eyesight problems trigger people to seek for a solution.

10. YOUR SOLUTION SL

- Using MNIST dataset, convolutional neural network is trained repeatedly to predict the unrecognizable digits

8. CHANNELS of BEHAVIOUR CH

8.1 ONLINE

- Real time handwritten digit recognition by giving immediate data

8.2 OFFLINE

- Recognizing scanned handwritten digits

	4. EMOTIONS: BEFORE / AFTER EM ➢ Before: feels doubtful about handwritten digits; ➢ After: undoubtful digits		