Problem-Solution fit canvas 2.0

Purpose / Vision: A Novel Method for Handwritten Digit Recognition

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) — CS

A person who needs to needs to calculate amount, accountant, person with poor eye sight, teacher who has to calculate numbers, bank and finance manager.

6. CUSTOMER CONSTRAINTS — CC

It is a difficult because handwritten digits are not perfect and of different styles, lighting of the image should be good, it should have clear background, taking long time to recognize.

5. AVAILABLE SOLUTIONS — AS

The datasets used should be of various different handwritten styles as every handwriting is unique. The datasets of own and neighbouring persons should be included for more accuracy.

Explore AS, differentiate

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

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

Offline handwriting recognition systems are less accurate than online systems. Improper usage of the app by the user may lead to problem in recognizing the digits.

9. PROBLEM ROOT CAUSE — RC

A simple mismatch in a digit may completely change the entire digits completely which leads to further problems in future use.

7. BEHAVIOUR — BE

Behavioral characteristics through text processing and handwriting recognition.An option for retaking the image is provided, Reading the instruction on how to use the app will be helpful to the customers

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

Identify strong TR & EM

3. TRIGGERS — TR

Handling more manual work due to the error in recognizing, Late recognition of digits.

4. EMOTIONS: BEFORE / AFTER — EM

Manually entering digits takes more time. Handwriting recognition will lead to great relief for people who work in accounts.

10. YOUR SOLUTION — SL

The handwritten recognition model takes an image as an input and compare the preprocessed digits with the trained datasets and give the output of digits as a text format.

8. CHANNELS of BEHAVIOUR — CH

8.1 ONLINE

Online handwriting recognition involves the automatic conversion of text as it is written on a special digitizer where a sensor picks up the pen-tip movements as well as pen-up/pen-down switching.

8.2 OFFLINE

K-NN combined with preprocessing methods can achieve great performance apart from Neural Network when used as a classification algorithm in offline handwritten digit recognition.

Extract online & offline CH of BE

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