

Define CS, fit into CC

## 1. CUSTOMER SEGMENT(S)

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

Users or individuals who wish to extract digits from handwritten text image

CS

## 6. CUSTOMER CONSTRAINTS

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.

An unclear image won't produce reliable findings.

CC

## 5. AVAILABLE SOLUTIONS

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

Traditional handwriting recognition systems have depended heavily on existing information and handicraft features.

AS

Explore AS, differentiate

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

## 2. JOBS-TO-BE-DONE / PROBLEMS

Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.

Job is to recognize the handwritten digits. Handwritten digits are not always of same size, width, orientation as they differ from person to person so the problem will be classifying the digits

J&P

## 9. PROBLEM ROOT CAUSE

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.

The problem is that there are different styles of handwritten dataset which makes it difficult for the programmers to provide to provide enough examples.

RC

## 7. BEHAVIOUR

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 acquire accurate results in the digits, customers or users should try with a clear image and crisp handwriting.

BE

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

Identify strong TR & EM

## 3. TRIGGERS

What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.

When it is necessary to recognise handwritten numbers.

TR

## 4. EMOTIONS: BEFORE / AFTER

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.

Stressed, frustrated/  
Curious, satisfied

EM

## 10. YOUR SOLUTION

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.

The suggested solution seeks to reliably recognise handwritten digits using deep learning and computer vision techniques, reducing costs for the organisation and increasing worker productivity.

SL

## 8. CHANNELS of BEHAVIOUR

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

Online channels can be extracted from behaviour blocks

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

From various handwriting digits, extract offline channels.

CH

Extract online & offline CH of BE