

## Project Design Phase-I - Solution Fit

☐ **Project Title:** Deep Learning Fundus Image Analysis for Early Detection of Diabetes Retinopathy

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### 1. CUSTOMER SEGMENT(S)

Who is your customer?

The customer here is the Eye specialist hospitals, Diagnosis center and also eye camps where the patients suffering from Diabetes Retinopathy is included

### 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.

Here, the constraints includes application where the model can be fit in for scanning and also there must be network connection while scanning. The budget of this product can be paid as per the usage

### 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

The available solution includes manual diagnosis of the Diabetes Retinopathy and this might be time consuming and high cost

### 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.

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- Checking the patient with diabetes where the severity in this case may lead to loss of vision.
- Scanning of the retina with the trained model and get the result of the patient

### 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 still exist because the Diabetes Retinopathy is irreversible process, as it cannot be cured and it can be detected at early stage so the patient can be prevented from loss of eye vision

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### 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)

The customer tries to find the prior solution, where the detecting of Diabetes Retinopathy is a time consuming process, an early and efficient process can be implemented and get as a solution for the problem that is causing severity of the patient's situation.

BE

### 3. TRIGGERS

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

Regular checkup of diabetes where it includes sugar blood test, intake of insulin, maintaining healthy diet and medicines

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.

When the patient is suffering from the problem they might face difficulties than usual after undergoing certain procedures for the cure of their problem it will be easier for them to maintain the balanced life style

### 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.

Here the solution provided will be early detection of Diabetes Retinopathy using the transfer learning technique which can detect