

Solution-Fit Template

Project Title: Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy

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Define CS, fit into CC	<div>1. CUSTOMER SEGMENT(S)<div>CS</div><div>Who is your customer? i.e. working parents of 0-5 y.o. kids</div><div>Mainly ophthalmologist and patients who are suffering from complication of diabetes</div></div>	<div>6. CUSTOMER CONSTRAINTS<div>CC</div><div>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.</div><div>Normal Diagnosis takes more time and man power</div></div>	<div>5. AVAILABLE SOLUTIONS<div>AS</div><div>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</div><div>Ophthalmologist and lab experts manually diagnosing DR from fundus images.</div><div>It requires a lot of effort and experience.</div></div>	Explore AS, differentiate
	<div>2. JOBS-TO-BE-DONE / PROBLEMS<div>J&P</div><div>Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.</div><div>While the number of ophthalmologists is disproportionally low, the number of persons with diabetes is dramatically rising. Diabetic Retinopathy diagnosis takes a long time.</div></div>	<div>9. PROBLEM ROOT CAUSE<div>RC</div><div>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.</div><div>Complication of Diabetes.</div><div>Not Diagnosing it in early stage.</div></div>	<div>7. BEHAVIOUR<div>BE</div><div>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)</div><div>They must locate a skilled ophthalmologist who can diagnose diabetic retinopathy quickly and affordably.</div><div>They should take treatment in the initial stage.</div></div>	
Identify strong TR & EM	<div>3. TRIGGERS<div>TR</div><div>What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.</div><div>After the patient gets the symptoms of it. somehow learned about the dangers of not identifying it early.</div></div> <div>4. EMOTIONS: BEFORE / AFTER<div>EM</div><div>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.</div><div>Before: fear and no confidence.</div><div>After: Confident and happt.</div></div>	<div>10. YOUR SOLUTION<div>SL</div><div>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.</div><div>By creating a Deep Learning model with CNN for quick, low-cost, and accurate DR diagnosis without the use of ophthalmologists.</div></div>	<div>8.CHANNELS of BEHAVIOUR<div>CH</div><div>8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7</div><div>8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.</div><div>Online: They are able to comprehend how things function.</div><div>Offline: The model will be given retina lesions with high resolution for detection.</div></div>	Identify strong TR & EM