

Project Design Phase-I

Project Title: Predicting the energy output of wind turbine based on weather condition

Define CS, fit into CC	1. CUSTOMER SEGMENT(S) Who is your customer? i.e. working parents of 0-5 y.o. kids Wind Energy Producers	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. Lack of information on proper wind farm locations Not clear on how to effectively utilize wind to produce a steady energy source	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 Guesses based on past year's energy output	AS	Explore AS, differentiate
	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. Analyse weather patterns to predict wind energy output	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. Unpredictable weather conditions High initial set up cost Inconsistent flow of energy i.e., Unsteady source of energy	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) Customer collects data from potential wind farm and uses the predictive model to check if the area is feasible for a wind farm	BE	
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 one energy producer optimizes it's wind energy production, other producers follow	TR	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. It reduces the need for additional balancing energy and reserve power to integrate wind power. The inlet condition of the wind farm is forecasted by a auto regressive model.	SL	8. CHANNELS of BEHAVIOUR 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7 After uploading collected data, the app predicts the wind energy output 8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development. Data is collected by the customer	CH	Extract online & offline CH of BE
	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. Before: Anger at improper energy flow After: Satisfaction after optimized energy flow	EM					