

Project Design Phase-I

Solution Fit

Project Title: Emerging Methods for Early Detection of Forest Fires

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1. CUSTOMER SEGMENT CS

Who is your customer?

- Forest Fire Department throughout the world.

Define CS, fit into CC

6. CUSTOMER CONSTRAINT CC

What constraints prevent your customers from taking action or limit their choices of solutions?

- Power Availability.
- Network Connection.
- Compatible system.
- Smart Mobile phones.
- Cameras.

5. AVAILABLE SOLUTIONS AS

Which solutions are available to the customers when they face the problem or need to get the job done?

- Previous system have elevated CO2 and temperature levels check by Internet of Things (IoT) sensors. But plotting the sensor in the forest areas are so difficult and have threat to stealing.
- Viable detector of wildfire smoke in videos taken by UAVs and sent to concerned forest department. But the are so expensive.
- Patrolling and manned watch towers.

Explore AS, differentiate

2. JOBS-TO-BE-DONE / PROBLEMS J&P

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

- Detect the wildfire at the earliest stage.
- To create an alert system which send the alert message once the system detects the flame or smoke.
- Intimating the police department to block the nearby roads and also to alarm the tribals and villagers.

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

9. PROBLEM ROOT CAUSE RC

What is the real reason that this problem exists?
What is the backstory behind the need to do this job?

- Forest fire is a major threat to the wildlife and our environment as they destroy large area of forest and cause global warming due to emission of CO2 & other greenhouse gases.
- Dangerous for the villagers and the tribals present near by forest.

7. BEHAVIOUR BE

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)

- Install required amount of cameras in the forest.
- Collect images & videos from satellite as well as cameras for passing them into the model.
- Prohibit all fire inducing materials inside the forest.

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

3. TRIGGERS TR

What triggers customers to act?

- News of wildfires that happened in other areas.
- Having the history of occurrences of forest fire during summer.

4. EMOTIONS: BEFORE / AFTER EM

How do customers feel when they face a problem or a job and afterwards?

- People who are impacted by forest fires may experience many negative emotions.
- Forest fires create stress for everyone, mainly for forest fire officers.
- Being helpless is another major trigger.

Identify strong TR & EM

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.

- Collecting videos from satellites and cameras across forest areas.
- Implementing feature extraction and image augmentation.
- Train the model using CNN algorithm with threshold of fire size and an efficient mobile alert system is included that sends messages to corresponding authorities.

8. CHANNELS of BEHAVIOUR CH

8.1 ONLINE

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

- Informing police department
- Passing information regarding forest fires in social media sites, so that officers could seek common people's help.

8.2 OFFLINE

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

- Driving fire engine to the spot
- Using fire extinguishers
- Blocking roads to forest
- Visiting to the spot

Identify strong TR & EM