

Define CS, fit into CC

1. CUSTOMER SEGMENT(S)

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

CS

A Dashboard for Predicting Heart Disease

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.

CC

Maintenance of server, data, Network errors, no support system, wrong data input gives wrong output therefore error handling

5. AVAILABLE SOLUTIONS

Which solutions are available to the customers when they face the problem

AS

We could have reduced the information needed to enter as some features have no impact on predicted risk. Using predicted risk score strata is useful for recommending follow-up actions, as was the case in this example. If we report the likelihood of heart disease to a patient, our predicted probability must be well calibrated (i.e., aligned with the actual chance that heart disease occurs).

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.

J&P

Cardiovascular diseases (CVD) are currently the leading cause of premature death worldwide. Model-based early detection of high-risk populations for CVD is the key to CVD prevention. The aim is to To create and visualize an interactive dashboard to predict heart disease and to also give any health recommendation or suggestion for the predicted output.

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

RC

As said earlier heart diseases are crucial and causing a greater number of deaths every year. Therefore, predicting them before the event of stroke are the most important and life saving factor existing till date. People are not aware of themselves about such heart diseases and they also don't go for a monthly checkup. Therefore, developing a predictive dashboard for heart disease will help them to easily know whether they have a chance of getting a heart disease or not.

7. BEHAVIOUR

What does your customer do to address the problem and get the job done?

BE

i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering

The recognition of heart disease from diverse features or signs is a multi-layered problem that is not free from false assumptions and is frequently accompanied by impulsive effects. The health care industry collects huge amount of health care data. Therefore, making use of these datasets by creating an interactive dashboard can save millions of lives and commercializing it in hospitals will improve the diagnosis of heart disease more effectively.

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

### 3. TRIGGERS

#### TR

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

In India, studies have reported increasing CHD prevalence over the last 60 years, from 1% to 9%-10% in urban populations and <1% to 4%-6% in rural populations. Using more stringent criteria (clinical  $\pm$  Q waves), the prevalence varies from 1%-2% in rural populations and 2%-4% in urban populations. This may be a more realistic prevalence of CHD in India. Case-control studies have reported that important risk factors for CHD in India are dyslipidemias, smoking, diabetes, hypertension, abdominal obesity, psychosocial stress, unhealthy diet, and physical inactivity.

### 4. EMOTIONS: BEFORE / AFTER

#### 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.

**Before:** No proper tool to identify cardiovascular disease at early stages.

**After:** An interactive dashboard to indicate the levels and seriousness of ones heart disease with proper suggestion and recommendation.

### 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.

We will collect the Dataset from the UIC which includes the age indicating the age of the patient, sex demonstrates the sex of the patient, trestbp demonstrates the resting blood weight, cp demonstrates the chest torment, fbs indicates the fasting blood sugar, chol demonstrates cholesterol, etc. Before training the model, we will split the dataset into two sets training set and testing set. We are going to use the Deep neural network and genetic algorithm; a deep neural network (DNN) is an artificial neural network (ANN) with numerous layers between the input and yield layers. We will test our model on testing data and we will evaluate the performance of our model using evaluation metrics like accuracy, precision, etc.

### 8. CHANNELS of BEHAVIOUR

#### CH

#### 8.1 ONLINE

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

**A user/patient will feed his/her data in the interactive dashboard which is hosted online like age, sex, bp level, sugar level etc.**

#### 8.2 OFFLINE

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

Based on the output generated suitable care must be taken i.e when the dashboard recommends to consult a doctor we need to immediately look for the same or we can show the general report to a doctor for normal consultation.