**Project Title:** Early Detection of Chronic Kidney Disease using Machine Learning   **Project Design Phase-I** - Solution Fit Template   **Team ID:** PNT2022TMID06735

**Define CS, fit into CC**

### 1. CUSTOMER SEGMENT(S) — CS

Kavya is a 50-years-old diabetic patient, and has been observing many unusual symptoms recently like metallic-taste, high blood-pressure. She also has a family history of chronic kidney disease and wants to know if she is hereditarily affected by CKD.

### 6. CUSTOMER CONSTRAINTS — CC

People are always skeptical about being diagnosed fearing it might cost them a fortune to get treated, as it would involve a lot of tests and medical procedures to cure the disease, so people consider better not to be diagnosed. People with less awareness get diagnosed with CKD only when the symptoms get worse and becomes more difficult to treat and is more deadly.

### 5. AVAILABLE SOLUTIONS — AS

Kavya can consult a doctor, stating that she has been facing some unusual symptoms recently, following the prescription she could take tests to discover if she has CKD or not.

**Explore AS, differentiate**

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

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

CKD can be fatal to health and a person has to change their lifestyle and can face unprecedented issues like
- Vomiting.
- Loss of appetite Fatigue and weakness
- Sleep problems.
- Urinating more or less.
- Decreased mental sharpness.
- Muscle cramps.
- high blood pressure

### 9. PROBLEM ROOT CAUSE — RC

Common causes of CKD include diabetes, high blood pressure, obesity etc. Though kavya is already diabetic, she followed a routine of unhealthy lifestyle like smoking, sedentary life, and having a sweet tooth. All these habits, could have played a major role, given that she has a family history of CKD.

### 7. BEHAVIOUR — BE

Kavya has been trying to change her habits and include healthier foods, and develop a healthier lifestyle like going for workouts etc. She has also been going to a rehabilitation center to get rid of her smoking habits.

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

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**Identify strong TR & EM**

### 3. TRIGGERS — TR

Kavya has noticed her change in her appearance which has caused her to develop insecurities. She has also lost her appetite, and developed insomnia and she feels anxiety, anger, worry and stress.

### 4. EMOTIONS: BEFORE / AFTER — EM

**BEFORE:**
Kavya was incompetent to decide if she has been affected by the disease and this caused her to feel distressed and uneasy.

**AFTER:**
Kavya, after she has been identified has a better understanding of what the disease is and feels more secure about the decisions, she should take to face CKD.

### 10. YOUR SOLUTION — SL

The proposed solution is to identify the chronic kidney disease using machine learning techniques, in its earlier stages to facilitate timely treatment which would reduce the cost of the treatment significantly and also the fatality. In reality, it would be feasible as only a prescribed number of tests would be taken and based on it the disease can be predicted.

### 8. CHANNELS of BEHAVIOUR — CH

**8.1 ONLINE**
Kavya browsed online about the unusual symptoms and developed her suspicions for CKD and tried to alleviate her ailments using home treatments.

**8.2 OFFLINE**
Kavya attends awareness programs to find out more about CKD and tries to conclude if she is affected, she later approaches a doctor to confirm her suspicions of CKD.

**Identify strong TR & EM**