

**Project Title: Visualizing and Predicting Heart Diseases with an Interactive Dashboard**  
**Project Design Phase-I - Solution Fit**

**Team ID: PNT2022TMID18098**

**1. CUSTOMER SEGMENT(S)**

**CS**

- Senior citizens
- Hospitals
- Pharmaceutical agencies
- Smokers
- Alcoholics
- Diabetes patients
- Hypercholesterolemia patients
- Hypertension patients
- Thrombosis patients
- Obese persons
- Peripheral artery disease patients
- Angina patients

**6. CUSTOMER CONSTRAINTS**

**CC**

- Instant network connectivity
- Presence of good-condition communication devices like smartphones and laptops
- Financial constraints to consult specialists
- Lack of awareness about heart disease
- Complex and expensive scanning methodologies
- Psychological problems
- Lack of hope in treatment

**5. AVAILABLE SOLUTIONS**

**AS**

- Manual data visualization and prediction are very tedious
- Consult doctors (heart specialists), but it requires financial stability
- Quit smoking
- Restrain from alcohol
- Practice a healthy lifestyle with daily exercises and a nutritious diet plan
- Take cholesterol tests periodically

**2. JOBS-TO-BE-DONE / PROBLEMS**

**J&P**

- The data used for prediction should be accurate and reliable.
- If data is skewed, then the prediction is also skewed
- Predictions should be done based on various metrics such as blood pressure, cholesterol levels, heartbeat rates, etc. that require complex integration
- Risk of lives depends on further medical support
- Timely alerts help in the prevention of the sudden onset of cardiac arrests

**9. PROBLEM ROOT CAUSE**

**RC**

- Difficulty in predicting heart disease at earlier stages
- Lack of awareness about physical fitness
- Genetic problems
- Lifestyle and eating habits
- A buildup of fatty plaques in the arteries is the most common cause of coronary artery disease.
- Obesity
- Alcohol and Smoking habits
- Stress, anxiety, depression and psychological problems

**7. BEHAVIOUR**

**BE**

- Look up on the internet to find answers
- Visit healthcare specialists
- Take advice from friends and family
- Physical activity helps to lower the risk of heart disease.
- Adopting a healthy diet can help in improving blood pressure and cholesterol and also reduces the risk of diabetes.
- Reduction of intake of alcohol and cigarettes
- Get quality sleep
- Prioritizing mental peace
- Develop unwanted mental trauma and anxiety about the aftermath of disease onset
- Falling into wrong assumptions and choosing the instant solutions that have worse side effects

Focus on J&P, tap into BE, understand

Focus on J&P, tap into BE, understand

<p><b>3. TRIGGERS</b> <span>TR</span></p> <ul style="list-style-type: none"> <li>• Insufficient ways to handle huge amounts of datasets</li> <li>• Lives depending on medical support</li> <li>• Symptoms such as chest pain, shortness of breath, etc.</li> <li>• Lifestyle modifications</li> <li>• Need to search for heart specialist at affordable price</li> <li>• Need to apply for health insurance</li> <li>• Anxiety and destructive curiosity</li> <li>• Others getting treated due to earlier detection</li> </ul>	<p><b>10. YOUR SOLUTION</b> <span>SL</span></p> <ul style="list-style-type: none"> <li>• The data is visualized with the aid of the IBM Cognos Analytics Tool for providing better insight into patients' health so that doctors could make better decisions</li> <li>• With the notable technology of AI/ML and the given various metrics, heart diseases are predicted at an earlier stage and the same is displayed to the user in an interactive dashboard</li> <li>• Healthy lifestyle habits — such as eating a low-fat, low-salt diet, getting regular exercise and good sleep, and not smoking are user-specific suggestions are given</li> <li>• Surgeries depend on the type of heart disease and the amount of damage to the heart, so suitable medical facility centers and specialized doctors are recommended</li> </ul>	<p><b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span></p> <p><b>8.1 ONLINE</b></p> <ul style="list-style-type: none"> <li>• Surfing the internet for disease-related information</li> <li>• Using apps that provide fitness suggestions</li> </ul> <p><b>8.2 OFFLINE</b></p> <ul style="list-style-type: none"> <li>• Getting to know other people suffering from similar issues</li> <li>• Visit doctors for a professional opinion</li> <li>• Increasing the overall health conscious</li> </ul>
<p><b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span></p> <p>Before</p> <ul style="list-style-type: none"> <li>• Fear of being attacked by diseases that don't have improved treatments</li> <li>• Confusion and lack of clarity about one's health conditions</li> <li>• The anxiety of being hospitalized and the financial stress</li> </ul> <p>After</p> <ul style="list-style-type: none"> <li>• Clarity about the disease and its severity</li> <li>• Peace of mind due to earlier predictions</li> <li>• Financial stress relief</li> </ul>		