**Project Title: Project Design Phase-I** - **Solution Fit Template Team ID: PNT2022TMID24697**

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

**Explore AS, differentiate**

**Deﬁne CS, ﬁt into CC**

As the medical waste is disposed of in the inlet, it is passed on to the chain conveyor belt, then the DC motor activates and therefore the conveyor belt starts moving. The wastes are segregated into five kinds i.e. metal, dry, wet, glass, and incinerate wastes. Depending on the type of waste, the sensors detect the waste, and the waste gets segregated into particular bins accordingly

**AS**

**5. AVAILABLE SOLUTIONS**

Medical care is vital to our life and health. Improper segregation of medical waste from the point of origin can trigger a domino-like effect on the environment that incurs dangers to people, animals, or soil and water sources. If not properly contained, segregated, and incinerated through on-site or off-site incineration, environmental hazards associated with improper healthcare waste management can contaminate the air we breathe through dangerous airborne particles.

**CC**

**6. CUSTOMER CONSTRAINTS**

**CS**

**1.CUSTOMER SEGMENT(S)**

* Govt. hospitals/private hospitals/nursing homes/dispensaries.
* Primary health centers.
* Medical colleges and research centers
* Veterinary colleges

**Explore AS, differentiate**

**Define CS, fit into CC**

**BE**

**7. BEHAVIOUR**

Step 1: Set up the microcontroller and all of the sensors.

Step 2: Switch on the ESP8266 and initialise the SIM.

Step 3: When Wi-Fi is open, the mobile device connects to the network using an IP address.

Step 4: When the height and weight of the bins exceed the margin, an SMS message is sent.

Step 5: Using the IP Address on the HTML tab, you can check the status of the bins.

**RC**

**9. PROBLEM ROOT CAUSE**

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It is noted that the medical waste without being properly segregated is dumped in an open area. The household wastes are being contaminated by the openly dumped medical wastes. not only the municipal workers but also the public is facing a great factor of risk due to this improper practice of managing medical waste

**J&P**

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

In the wake of urban development with increases in population, the number of healthcare facilities is attempting to keep up, resulting in a large-scale generation of biomedical waste. Currently, improper segregation of medical waste is resulting in exposing patients, health workers, and waste managers to infections, toxic consequences, and air-pollution. The different forms of medical waste and its derivatives include nonhazardous, pathological, radioactive, infectious, chemical, cytotoxic, and pharmaceutical wastes.

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**Identify strong TR & EM**

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| **Identify strong TR & EM** | **3. TRIGGERS TR**  The Biomedical Waste Segregator is a piece of automated machinery that sorts waste into four categories: metal, glass, dry, and wet. The suggested framework would be capable of monitoring and managing the solid waste amassment process as well as the total amassment process. To detect metallic waste, an inductive proximity sensor is utilized. Dry and wet waste is disunited utilizing a blower system. A microcontroller controls the timing and rotation of the conveyor belt. This contrivance additionally has a feature that sends an admonition SMS if a bin is loaded. | **10. YOUR SOLUTION SL**  The conveyor belt motor engages as the waste arrives, and the conveyor belt commences to move. Many of the motors and controls, as well as the microcontroller, have been switched on. With a significantly extending people and in this Covid pandemic, it is extensively more basic to be benevolent concerning how well we, individuals, manage our prosperity and environment. Considering the insights, it is seen that authentic clinical trash evacuation is especially expected for a spotless environment. The modernized waste segregator is a capable and monetary waste combination structure with a base proportion of human mediation and besides makes no risk human life. Using a vehicle line makes the system significantly more accurate, monetarily canny, and besides clearer to put in and use at a local level. Segregating these misfortunes at a local level in like manner will be timesaving. The proposed structure fulfils the requirement for reliable watches out for garbage content in the containers.It helps with disposing of the waste material before it floods from the canisters. So standard noticing and recommending make the structure significant in waste the board. This prompts an immaculate city for better living. | 1. **CHANNELS of BEHAVIOUR CH**   Conclusively, the wastes are deposited in the congruous containers, consummating the segregation process. When the dustbin level reaches 50% the yellow led which is annexed to the bins gets turned on. If 75%, green led gets turned on. If 90%, the red led commences blinking, and if 100%, the red led gets turned on, and then the SMS alert will be activated. When the bin gets filled, by utilizing the wrapper the waste gets wrapped automatically. This system withal has a self-cleaning system of a conveyor belt. The conveyor chain enters the conveyor cleaner and being engaged by the hold-down bracket. The hold-down bracket guarantees that the chain makes full contact with the scrubbing belt, which rotates in the antithesis direction. The conveyor chain is squeegeed by a spring-loaded neoprene blade as it exits the conveyor cleaner afore being returned to the conveyor line. The conveyor belt is swept in this manner. |  |
| **4. EMOTIONS: BEFORE / AFTER EM**  The automated waste segregator is an efficient and economic waste collection system with a minimum amount of human intervention and also causes no hazard to human life. Employing a conveyor belt makes the system much more accurate, cost-effective, and also easier to put in and use at a domestic level. Segregating these wastes at a domestic level also will be timesaving. The proposed system meets the demand for constant checks on medical-waste content in the bins. It helps to dispose of the waste material before it overflows from the bins. This leads to a clean city for better living. |