Smart Waste Management System for Metropolitan Cities

Customer Journey

TEAM ID – PNT2022TMID26648

SCENARIO

Browsing, booking, attending, and rating a local city tour

Entice
How does someone initially become aware of this process?

Enter
What do people experience as they begin the process?

Engage
In the core moments in the process, what happens?

Exit
What do people typically experience as the process finishes?

Extend
What happens after the experience is over?

Steps
What does the person (or group) typically experience?

Entice	Enter	Engage	Exit	Extend
collect garbage Smart City technology evolved together with the developments in wireless sensor networks (WSN) and the Internet of Things	**seperate collection and sorting** Metropolitan City citizens People whose house near the trashcans.	**extensive uncontrolled dumping** The citizens can send the message about the smart dumpsters if any damage on the IoT device occured.	**fully digital and easy to access** Awareness, education, preparedness, and prediction and warning systems can reduce the disruptive impacts of a natural disaster on communities.	**they feel clean management system** Some trash bins are overfilled while others are underfilled by the trash collection time
separate waste Smart cities essentially combine the use of ICT to provide services for better living conditions inside cities.	**expanding the recycling industry** Trashvan Dirvers & Workers The dustbins need to empty after it got filled the overflowing needs to avoid.	**prevention** The current process of waste management starts with the waste being created by people in the cities and disposed in trash bins near its creation point.	**clean city and maintain itself** The user can contact our team if they feel any hardness while using the app.	**clean india system** The waste management services take care of a healthy environment allowing optimization of the utilities and prevent overloading the carrier for waste disposal.
alert message send to controlroom The current state of technology in the field of smart waste management involves the use of sensors that measure the fill level of the trash bin.	**the circular economy based as a resource** Monitoring the dumpsters and send the information about the garbage level to the authenticated person to empty the trashcans using arduino device.	**preparation of reuse** The lack of resources and capacities and a low level of knowledge and education emerged in all case studies as major root causes for several drivers of disaster risk.	**suitable infrature and maintenance easily** The device using here is help to update the content regularly and check the truthfulness.	
view details on trashcan The solution presented in this article focuses on the mitigation of these disadvantages by the implementation of RFID based trash identification system and additional weight sensor for improved fill level estimation.	**reliable collection and better landfill sites** The sensors senses the amount of waste in trashcans and the device sends the notification to the head office, they will come and collect the wastages.	**recycling** One is to think little of disasters and become defenseless The other is to fear disasters excessively and to be confused.		

Interactions
What interactions do they have at each step along the way?

- **People:** Who do they see or talk to?
- **Places:** Where are they?
- **Things:** What digital touchpoints or physical objects would they use?

Entice	Enter	Engage	Exit	Extend
all human produce municipal solid waste garbagebin overflows monitoring by the ultrasonic sensor garbage produce in different area in a city vvarious widely urbanwaste collection is expendicture on government budgets	checking the status of sensor sensing the level of bins application to send feedback	website to monitor the trash can analyse status of dustbiin easily report the current status of garbage	internet is neccesary to use the webapp the device may send wrong information feel easy to monitor the waste	it reduces the fuel cost for travelling sensor can be damaged when collecting garbage

Goals & motivations
At each step, what is a person's primary goal or motivation? ("Help me..." or "Help me avoid...")

Entice	Enter	Engage	Exit	Extend
clean india make waste free environment protection of public health encourage the recycling industries	development and improvement of clean technology reduce ,recycle,and to reuse encourage the adoption of sustainable production and consepton patterns	the environment to support the economic development and superior quality of life waste can be solid,liquid or gases each type has different methods of disposal	each type has different types of management industral,biological waste or organic and biomedical waste its reduce the dangerous effect	a big part of waste management deals with municipal solid waste well maintained area

Positive moments
What steps does a typical person find enjoyable, productive, fun, motivating, delightful, or exciting?

Entice	Enter	Engage	Exit	Extend
become a smart city enhance safety reduce man power	effective way to keep the clean city optimization of resources scarb metal reuse	quality control improvement and process monitoring exchange of waste shipping to the point of use	reduse harmfull waste water zero waste reduce the use of packaging material	protect the environment increase the fertility of the soil

Negative moments
What steps does a typical person find frustrating, confusing, angering, costly, or time-consuming?

Entice	Enter	Engage	Exit	Extend
jobless increasing cost of the dustbin difficult to maintain the dustbin	soil contamination water contamination air contamination	human damage harm towards animal and marine life extreme weather pased by climate change	loss of habitats incase of any short circuit sensor affect by water	incase of any malfunction some cloud warning issue

Areas of opportunity
How might we make each step better? What ideas do we have? What have others suggested?

Entice	Enter	Engage	Exit	Extend
smart waste bins waste level sensor	AI recycling robots garbage truck weighing mechanism	pneumatic waste pipes solar powered trash compacters	E-waste kiosk recycling apps	waste management program sustainability development