

TIME TO CONNECT



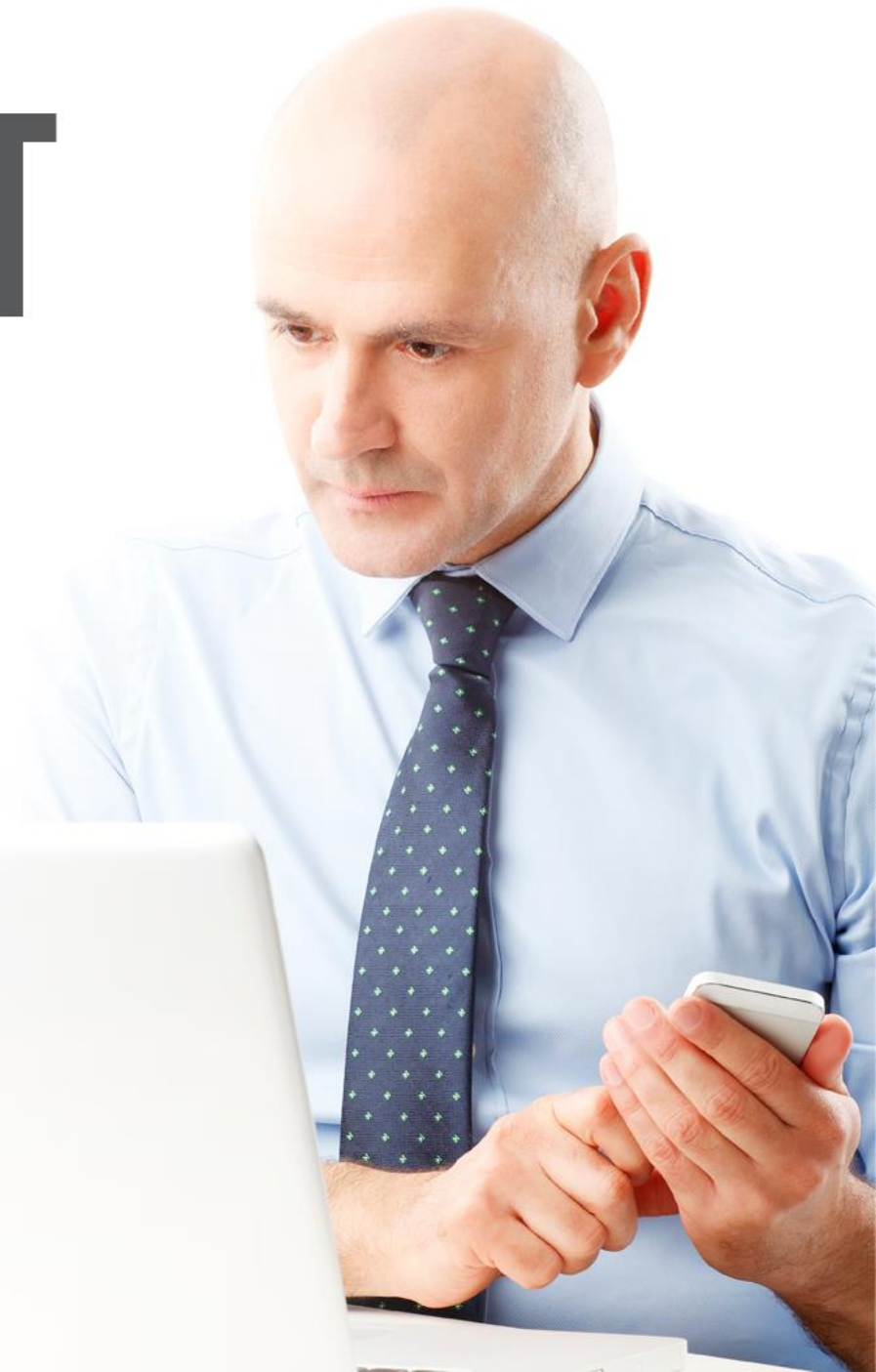
OATUG FORUM

O N L I N E

APRIL 20 - MAY 1, 2020

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Emerging Technologies Special Interest Group

Smart Cities Initiatives

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Session ID:
12442

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04/27/2020 3:30 – 4:30pm EDT

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About the speaker

- Oracle Associate ACE
- Over 22 years of experience working with Oracle EBS and Oracle technologies, focusing on implementing, designing, developing and maintaining of Oracle EBS since 2002.
- Specializing in Supply-Chain modules implementations and solutions since 2013
- Have worked 7 years with Oracle Corporation for the EBS product development
- Currently the Lead Oracle Apps Analyst at Siemens Corporation
- Board Member of Texas-Louisiana Oracle Applications & Technology User Group(TLOATUG)
- Active member in multiple OATUG Special Interest Groups(SIGs)

Agenda

- Overview of Smart City
- How the technology helps the smart city initiatives?
- Smart Parking System Use Case
- Smart City Initiatives

Overview of Smart City

What is a Smart City?

- Solving urban problems using modern technology like IOT/AI/ML/Big Data/Cloud.
- A smart city is an urban area that uses different types of electronic Internet of things (IoT) sensors to collect data and then use these data to manage assets and resources efficiently.
- This includes data collected from citizens, devices, and assets that is processed and analyzed to monitor and manage traffic, transportation systems, power plants, water supply networks, waste management, crime detection, information systems, schools, libraries, hospitals and other community services.

Overview of Smart City Initiatives

What does a Smart City do?

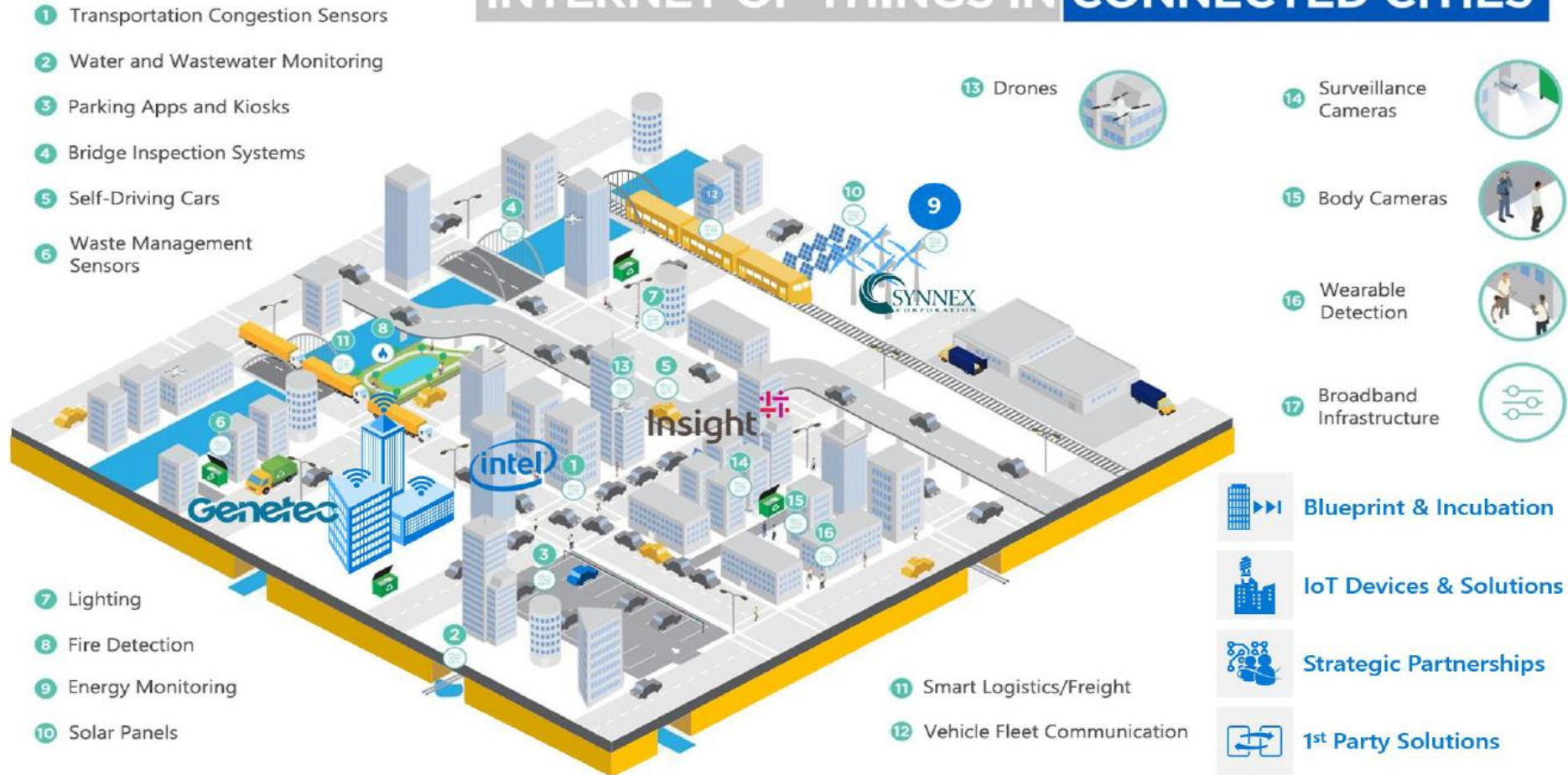
- Oftentimes, a mobile app is provided to give immediate access to data, communication channels, and more so that people can do everything from avoiding traffic jams, to finding a parking spot, and reporting a pothole or an overflowing dumpster.
- The smart city uses data and emerging technology to improve the quality of life for citizens, share information with the public, drive economic growth and build a more inclusive society.

Why do Smart Cities matter?

- Urban migration

How Technology Helps the Smart City Initiatives?

INTERNET OF THINGS IN CONNECTED CITIES



How the Technology Helps the Smart City Initiatives?

- **Technology**
 - IOT sensors, Surveillance cameras, Drones
 - Cloud Infrastructure → Gathers massive data
 - AI & Machine Learning
 - Big Data & Analytics
- **IOT & AI are the key technologies for the smart city applications**
 - Application centric sensors and advanced processing software translates raw data into viewable & actionable information including emergency notifications, alerting the public/fire/law enforcement agencies etc.,
 - Collaboration of smart city applications

Smart Parking System Use Case

- Integrate sensor technology into parking lots as a way to save citizens time and manage space more efficiently
- The idea would be to eliminate the search time for a parking space and encourage better space management.
- A smart parking system would not only be aware of the occupancy status of each parking space, but also be able to guide the user to using occupancy sensors, a server device, user touch point on smartphone or tablet, reserve the space and virtual payment methods.

Smart Parking System Use Case

Architecture:

i. Sensor Node – Sensors and Red/Green LEDs

- Placed on every parking spot
- Sends data to middle-wear micro controller IOT device by using Wi-Fi

ii. Fog Node (Microcontroller/Gateway Device):

- Collecting sensors data using Wi-Fi
- Does filtering on the collected data and processes locally
- Sends process data to the Cloud

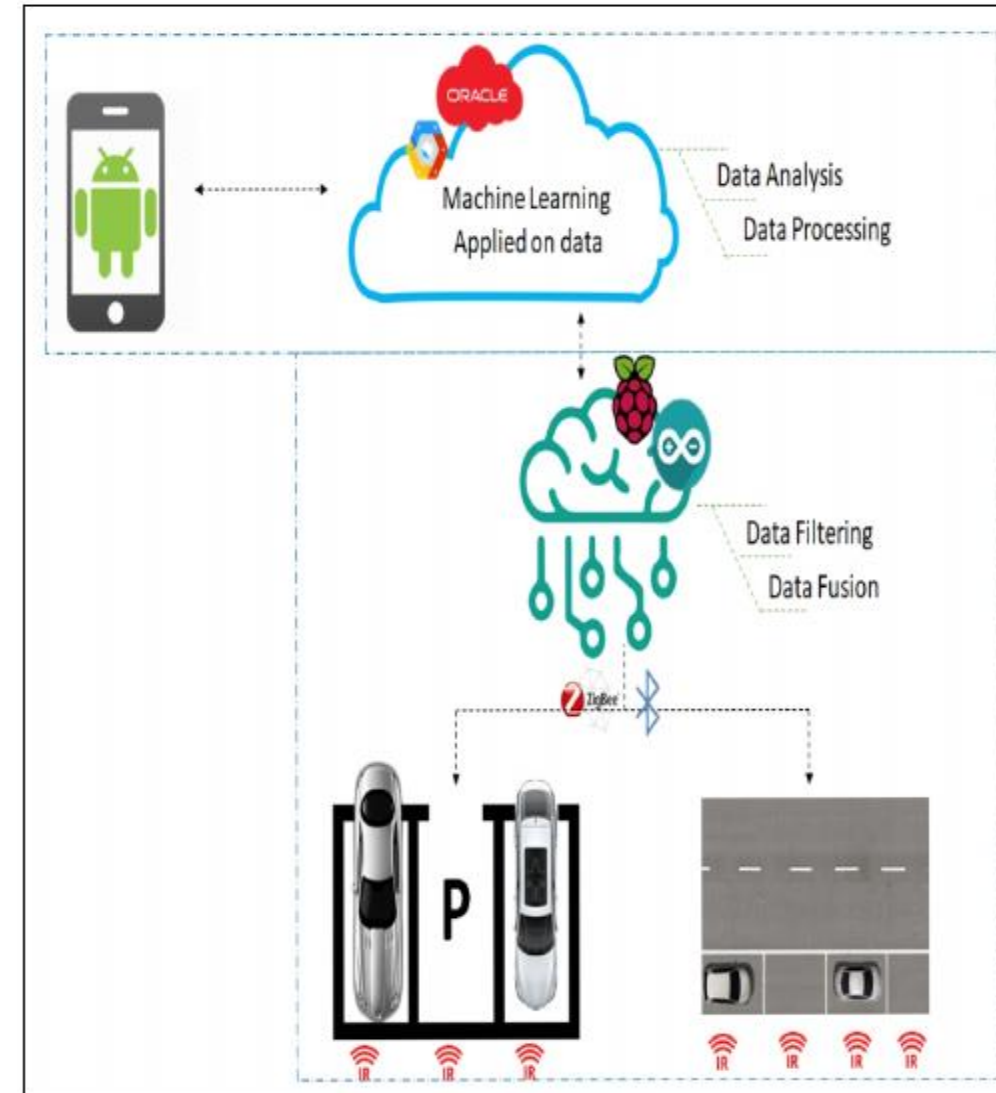
iii. Cloud Node:

- Receive the processed data from the fog node(Microcontroller)
- Processes the received data using ML algorithms and stores it
- Send the info to the user's mobile application

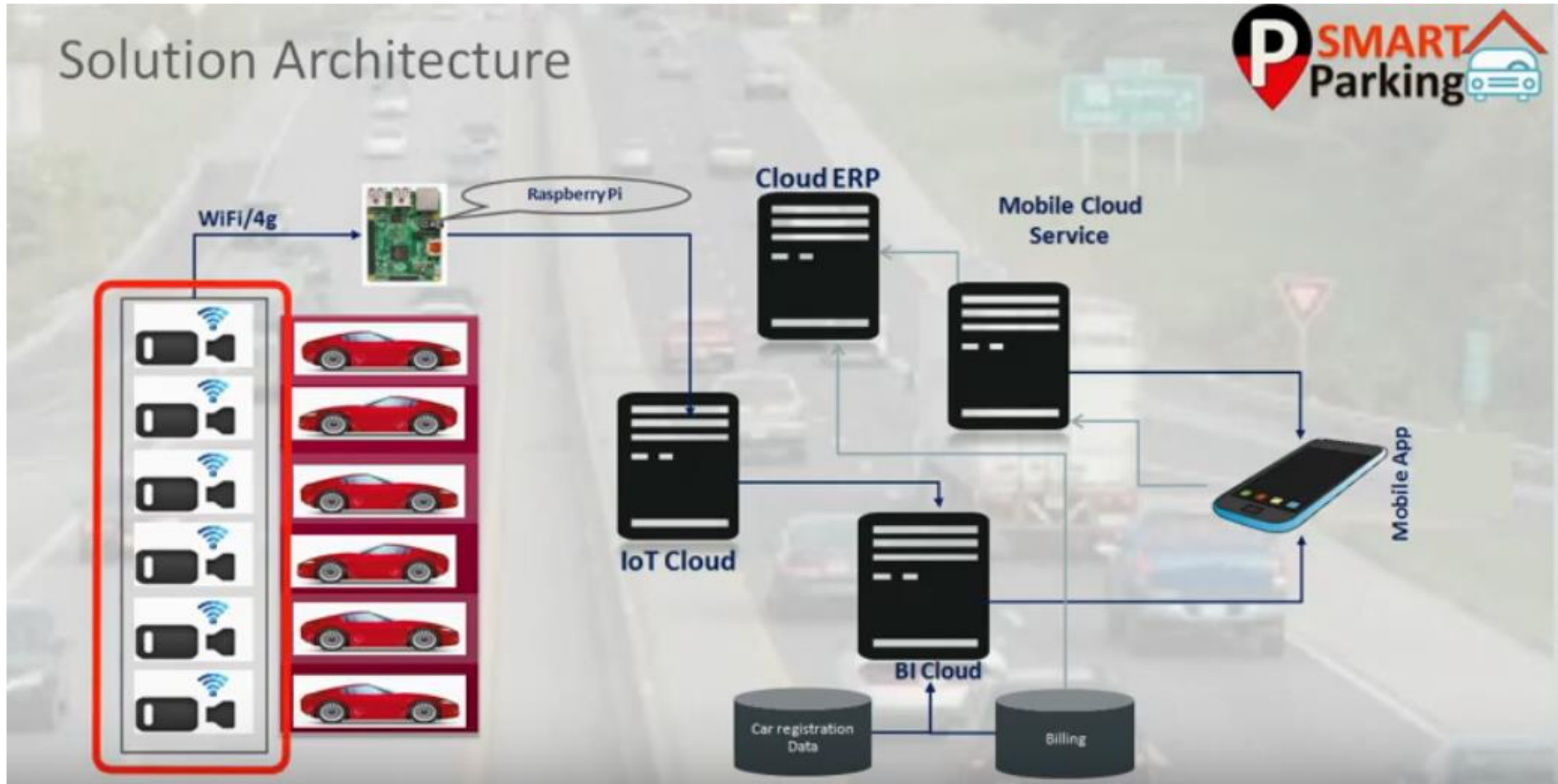
iv. Mobile Node:

- Mobile application provides users with the real time parking space availability

Services: Parking monitoring, Reservation, Directions and Payment Methods



Smart Parking System Use Case



Smart City Initiatives - Examples

AREA	Smart City Initiative
TRANSPORTATION	Dockless Bikes and Scooters
	Parking pay by plate(phone)
	Parking OR Parking Analytics
	Autonomous Transit Circulator
PUBLIC SAFETY	Living Lab - Installation of devices, software to benefit public safety, private security, traffic mgmt, business and public operations
	Emergency Alerts
	Firefighting Drones
TRAFFIC	Traffic Monitoring & Control Public Transportation
RESILIENCY & SUSTAINABILITY	Flood Detection Sensors
	Sanitary Sewer Outflow Monitors
	Mobile Air Quality Sensors

Smart City Initiatives - Examples

AREA	Smart City Initiative
Resiliency & Sustainability	Water Innovation Hub
	Bridge to Clean air
	Roadway Flood Warning system
	Smart Grease Trap Program
	Smart Water metering
Engagement	Chatbot initiatives to get city related info
	Prediction Analysis – Illegal dumping cameras for law enforcement purposes



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