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IOT BASED SMART CITIES

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(3PM-5PM)

By Tarakanta Jena

Smart city : Shaped by people,
 Shaped by new ideas - Future city
 Developed Urban areas,
 Economy, Environment, Education.

Why we focus on cities.

- 1) More than half the world lives in cities.
- 2) Cities are the forefront of global innovation.
- 3) Cities have been the centre of civilization, life and knowledge for centuries.

Earlier → cities: By Product of Industrialization

Today → cities: Nodes for Economic Growth.

City Agenda / City Governance

- City service
- People
- Business.
- Water
- Energy.
- Transport

Smart city → Promote healthy and decent quality, infrastructure, clean and sustainable environment, E-governance, citizen services, energy management, water management, waste management, mobility.

Basic Aspects of smart cities:

- 1) Adequate water supply.
- 2) Electricity supply (24x7)

- 3) Sanitations, solid waste management.
- 4) Public Transport system.
- 5) IT connectivity.
- 6) Housing facilities at affordable rate.
- 7) E-governance.
- 8) RTO services.
- 9) Environment.
- 10) Safety and Security.
- 11) Health facilities.

South America

Exciting city / hyper growth.

City wide enrollments.

Transportation, Security system.

Singapore - ^{High} Smart traffic management.

Mercilona - parking system excellent.

New York -

Smart street light system / traffic Mgt.

Green cities: waste water, energy, waste management.

Biodiversity, organic.

3 Types of Smart cities.

- 1) R.O.I. Return on Investment
- 2) Carbon-driven. - E-bike, E-car, (CNG)
- 3) Vanity-driven.

Five
1) Sm

Five major Sector in Smart Cities

1) Smart Energy

- Smart Meters.
- Demand Response
- Electric vehicle infrastructure
- Distribution generation integration.
- Co-Generation -
- Renewable Generation

2) Smart Transport

- 1) Intelligent transport system.
- 2) Tolling congestion
- 3) Smart parking
- 4) Public Transport system information sharing.
- 5) Low emission vehicles.
- 6) Smart parking.
- 7)

3) Smart Water Waste Mgt

- 1) Smart water meter.
- 2) Distribution network control, and detection. (GIS)
- 3) Storm and flood management

4) Smart Social

- 1) E-governance
- 2) Remote social Infrastructure, education
- 3) Safety & Security.

5) Smart Buildings.

Large scale urbanisation Several Problems!

Trabbi, Power, Water, Healthcare, only 5% cover Health Insurance

Ayush Yojana

Smart Education
Smart Health.

(PPP Model)
Public-Private-Partnership

Criteria for Smart cities.

- 1) Population.
- 2) State Capital
- 3) Urban Reforms.
- 4) Revenue Collection.
- 5) Literacy Levels.
- 6) Capacity of municipal bodies.

Smart Cities.
 started UPA
 Govt. 2006
 Delhi - Mumbai
 Industrial
 Corridor.

24 - cities
 06 - states
 Indo-Japan
 Project

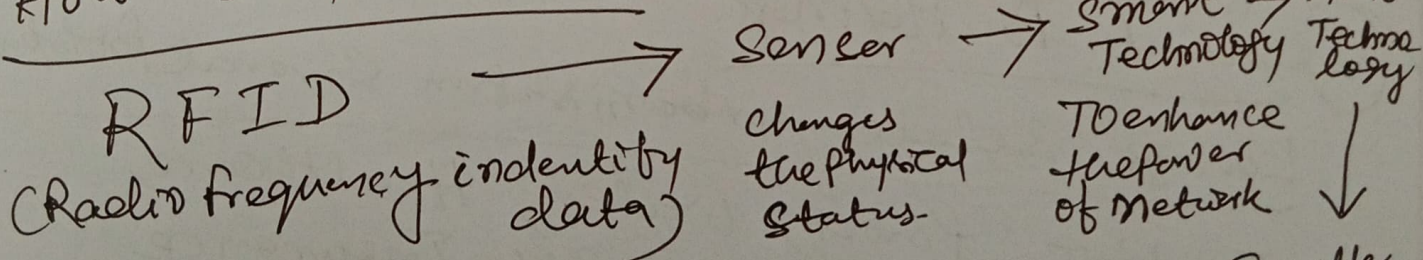
IOT (Internet of Things) / objects.

Anything connected with the internet both hardware and software. Internet connectivity. Things to things data will exchanged.

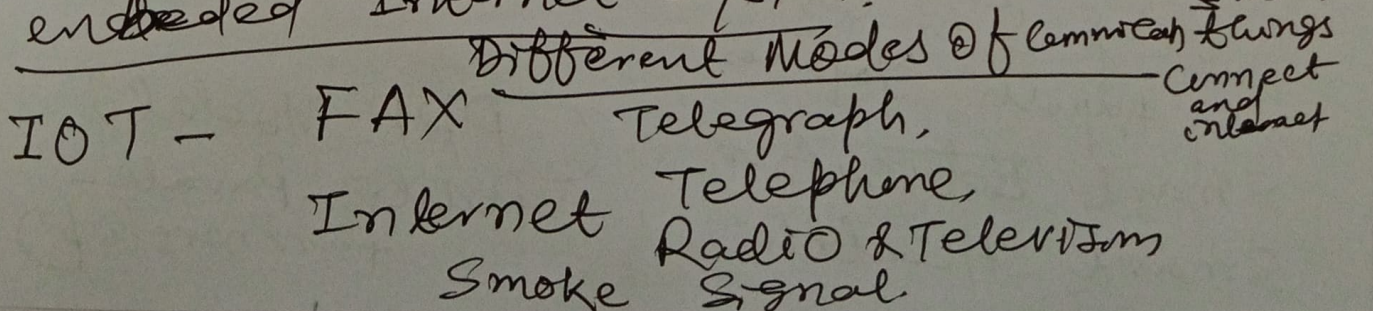
IOT that analyse, technology, connected. Smart Sensors.

- Measures the data.
 - store the data.
 - Analyse the data.
 - communicate the data.
 - Act.
- IOT extends object.
- 1) Wireless system.
 - 2) Smart chip.
 - 3) Smart phones.
 - 4) Wi-Fi system.

How IOT works.



Embedded Internet System.



I.O.P - Internet of People.

- mail.
- social sites.

Anything to Anything

Everything to Everything.

Wels.

Machine to Machine
Human to Human

Pre Internet (Human to human)

Fixed and mobile telephone

SMS. (Internet of content)

WWW

- World wide web

^a (Internet of services)

Web 2.0

e-Productivity

- email.
- information.
- Entertainment

(Internet of People)
Social Media

- 1) SKYPE.
- 2) Facebook.
- 3) YouTube.

Internet of Things. (Machine to Machines)

- identification, tracking, monitoring, metering.
- Automation, actuation, payment

IOT- Perspective

- Any Time. → on the move
- Any Place → outdoors and indoors.
- Nights and Day time

Concept of IOT:

The internet of things (IOT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

Components of IOT:

- ① Sensors/devices,
- ② connectivity,
- ③ Data Processing
- ④ User interface.

How IOT works: