

Application of IOT In Designing The Future Smart World

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Abstract- With the rapid development of science and technology, the world is becoming smart. Living in the smart era people is tending to use modern technologies. In this smart future era, concept of IoT is playing a key role with advanced developments. In this paper, key introductions to the ICT, Green IOT, applications of Internet of Things are discussed

Keywords- IoT-Internet of Things, Future era, ICT-Information and Communication Technologies, Green IOT



I. INTRODUCTION

Internet of things is a network of physical objects or things embedded with electronics, software, sensors and network connectivity which enables these objects to collect and exchange data and Tends to change the phenomenon of life as the internet changes after 1990.

IoT integrates several different universal things that are ceaselessly producing information about the physical world. IoT uses the practical programming links for accessing to sensor and activators. The numbers of IoT devices are increasing from day to day. At present, iot models are based on human-things interactions but in future, the communication will be done by the things-to things interaction so that things provide services for human benefits.

IoT means connecting any device to the Internet via a switch or control. It includes everything from mobile phones, headphones, machines, systems and lamps – to wearable devices and more.

It is a wide network of connected things includes people as well establishing following connections.

1. People – to - people.
2. People – to - things
3. Things – to – things

II. SMART WORLD

Smart World is imagined as a future possibility of things which can automatically interact with the people and serve them. We are with world full of new technologies and opportunities – using skype, multi-touch tablets, mobile apps, 3D printers and drones. Modern technologies are around us and they are performing many tasks with the human interference. The new emerging technologies are ARTIFICIAL INTELLIGENCE, MACHINE LEARNING and INTERNET OF THINGS etc.,

All aspects regarding people’s cyber, social, mental and physical world will be interconnected and intelligent in smart world. It has support to the world through various applications like home automation, ZigBee , Big Data and auto-id such as RFID.

III. TRANSFORMATION TO SMART WORLD

2005:

1. Using switches we used to operate by going near to machine at first

2015: Machine to Mobile

2. In advanced years we are operating with our mobile phones etc from the place where we are.

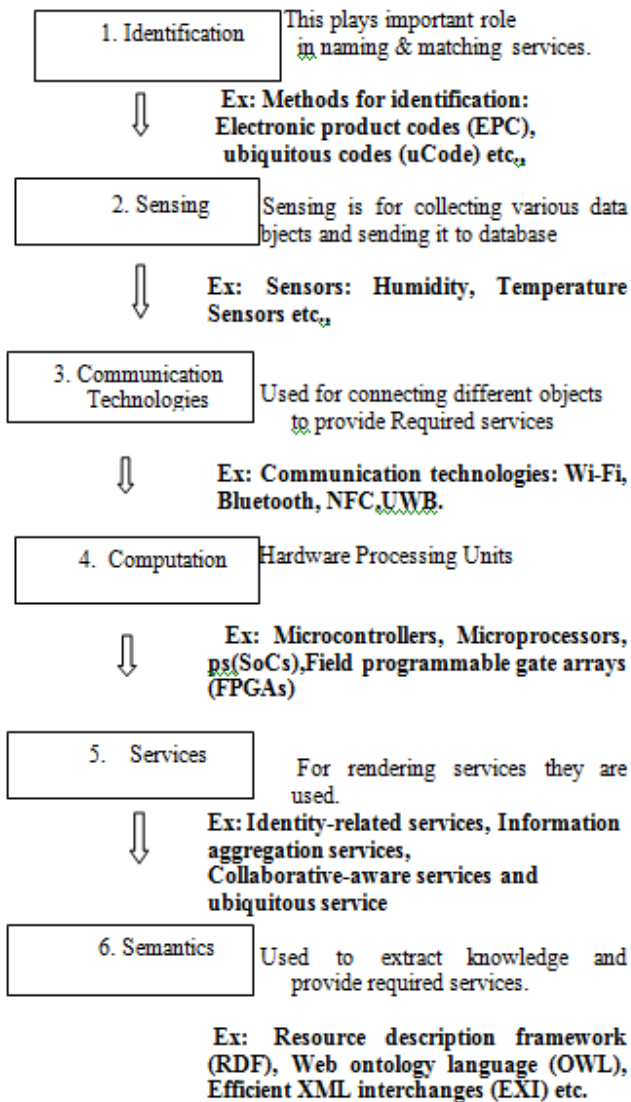
2025: The Smart World

3. But in upcoming years, everything will be automatically managed with the help of sensors.

Ex: Smart Home,
Smart Walls,

Following are the elements of IoT (6 ELEMENTS)

IOT = Identification+ Sensing + Communication Technologies + Computation + Services+ Semantics



IV. IOT ARCHITECTURE

There are three architecture layers in IoT. They are as follows:

1. The client side (IoT Device Layer).
2. Operators on the server side (IoT Getaway Layer).

3. A pathway for connecting clients and operators (IoT Platform Layer).

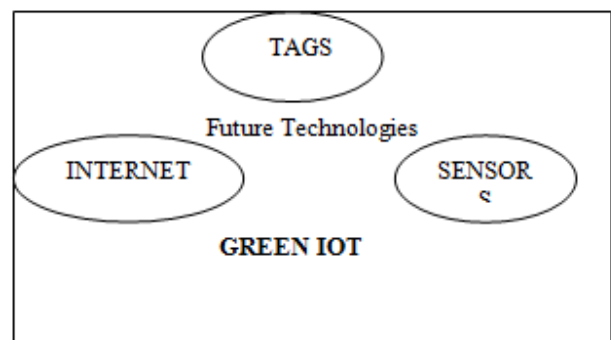
1. **IoT Device Layer:** This layer is for sensors and actuators. It takes care about the wired and wireless connections.
2. **IoT Getaway Layer:** In this layer, Internet Gateways and data acquisition systems are managed.
3. **IoT Platform Layer:** Analytics, pre-processing of IT and management of data center or cloud is done in this layer.

V. ICT ENABLING GREEN IOT

Information and communication technologies (ICT) is emerging technology which connects things with unique address and connects with other devices to interact and similarly green IOT is the concept of maintaining the smart world, by reducing the energy consumption of IoT.

Information Communication Technologies are as follows:

1. Radio Frequency Identification (RFID).
2. Wireless Sensor Networks (WSN).
3. Cloud Computing (CC).
4. Machine 2 Machine (M2M).
5. Data Centre (DC).
6. Wireless Personal Area Networks (WPAN).
7. Wireless Body Area Networks (WBAN).
8. Neighbourhood Area Network (NAN).



Internet of Things Applications:

1. Smart Home
2. Industrial Automation
3. Smart healthcare
4. Smart Grid
5. IOT in Agriculture
6. Health care
7. Energy Management etc.,

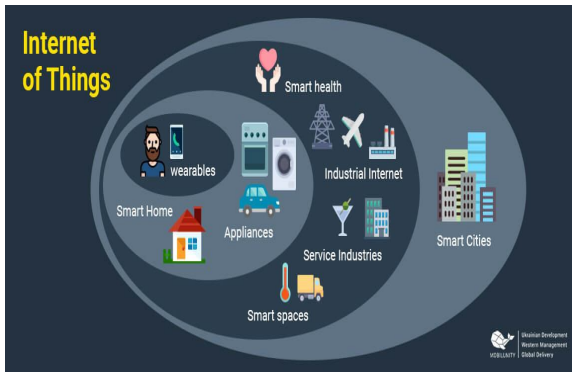


Fig represents Applications of IOT in future Smart World

VI. CONCLUSION AND FUTURE WORK:

IoT plays a vital role in designing future smart world.

Using IoT designing smart world plays a major role. Energy efficiency is the key for the design and development of IoT. Use of IoT reduces the effect of greenhouse effects as well by the optimization of the IoT greenhouse footprint known as Green IoT. Life Cycle of Green IoT should focus on GREEN DESIGN, GREEN PRODUCTION, GREEN UTILIZATION & GREEN RECYCLING to have less effect on the environment. This is in future we can add green IOT techniques to smart IoT.

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