Introduction to IoT (Internet of Things)
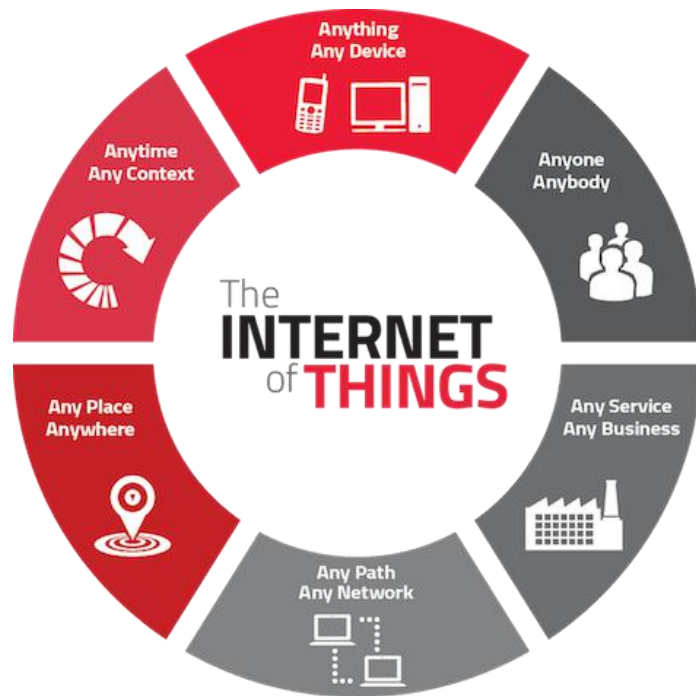
What is IoT?

The Internet of Things (IoT) is the system of inter connected computing devices, objects, mechanical and computerized machines, vehicles and other devices embedded with electronics, sensors, network connectivity and software to collect and interchange data.

History of IoT

Let's start with the history of IoT

History

The Global Standards Initiative on Internet of Things defined the IoT as a global infrastructure for the information society in 2013. The IoT allows devices to be controlled remotely across the existing network infrastructure. It creates an opportunity for direct integration of physical world into the computer-based systems.

The concept of a smart devices network was discussed as early as 1982. Modified coke machine at Carnegie Mellon University became the first appliance that was Internet-connected. It was able to report the inventory and newly loaded drinks were cold.

The Internet of things (IoT) concept became popular in 1999, through the Auto-ID Center at MIT and related market-analysis publications. RFID was seen by Kevin Ashton, who is one of the founders of Auto-ID Center.

Everything is uniquely identifiable through its installed processing framework however it can interoperate inside the current Internet infrastructure. Specialists estimate that in 2020, the IoT will comprise of around 30 billion objects.

Advantages of IoT

Here are listed some advantages of IoT
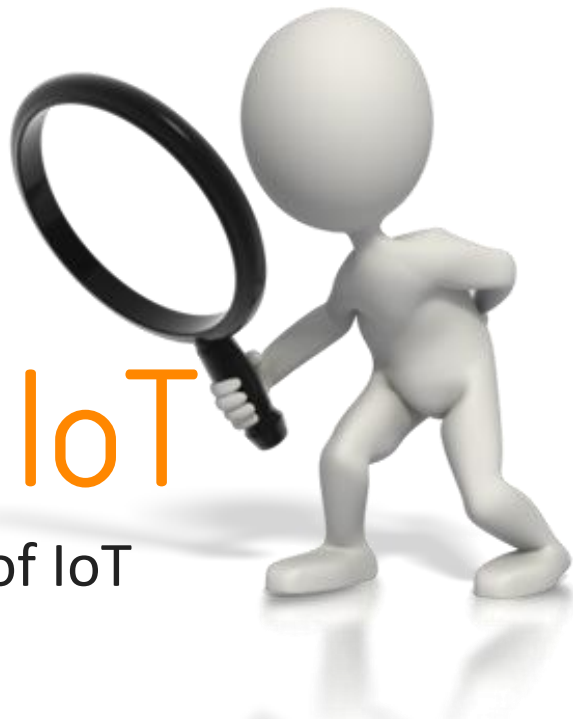
Advantages of IoT

Communication

IoT is the concept of communication between devices. It is also known as Machine-to-Machine communication. The physical devices are able to stay connected through it and because of this the total transparency is available with the best quality and less inefficiencies.

Automation and Control

There is extensive amount of automation and control in the work due to objects are connected and controlled centrally and digitally with the wireless infrastructure. Machines are able to communicate with each other faster without human Interference.

Information

IoT helps to make better decisions due to more information. It helps to make decision for what to buy at grocery store or if your company has widgets and supplies.

Saves Time

As given in the previous examples, IoT can save your important time. In the today's modern life time is money and we all can use more time.

Advantages of IoT

Monitor

The second most clear advantage of IoT is the monitoring. You can know the exact quantity of an object or the quality in your home. It can also provide another information that you haven't collected previously. It helps you to knowing that you are low on milk, expiration of products or printer ink so that you can save your another trip to the store in near future.

Saves Money

The one of the biggest IoT advantage is saving money. Internet of Things is very widely adopted where the price of the monitoring equipment is less than the amount of money saved. IoT proves that its very helpful to people in their daily routines as it makes the appliances communication effective by saving and conserving energy as well as cost.

Better Quality of Life

IoT provides you comfort, convenience and better management for living quality life.

Technologies that Enable Internet of Things

Technologies that Enable IoT

Big Data

As more smart objects are connected, more data is collected from them for performing analytics to determine trends. Big data is the fact that IoT systems must deal with ancillary data that is needed not only the smart objects data to perform such analytics properly.

Mobile Networking (Wifi)

In the fastest growing Internet of Things applications all from electronics to industrial machines as well as sensors are getting wirelessly connected to the Internet. Preferring the right wireless connectivity for an IoT application can be quite tough. So its necessary to choose the right one for it because network connectivity must reach wherever the device exist.

Sensors

The main functionality and utility of the IoT are sensors studded in smart objects. These sensors are competent to detect incidents or changes in a specific quantity.

Technologies that Enable IoT

Cloud Computing

Cloud computing accesses computing resources via Internet rather than traditional systems where registering equipment is physically situated on the premises of the user and any software is installed on such nearby equipment.

There are three service models of Cloud computing, Software as a Service (SaaS), Infrastructure as a Service (IaaS) and Platform as a Service (PaaS). These models are very important to the IoT as it permits any user with a browser and an Internet connection to convert smart object data into actionable intelligence.
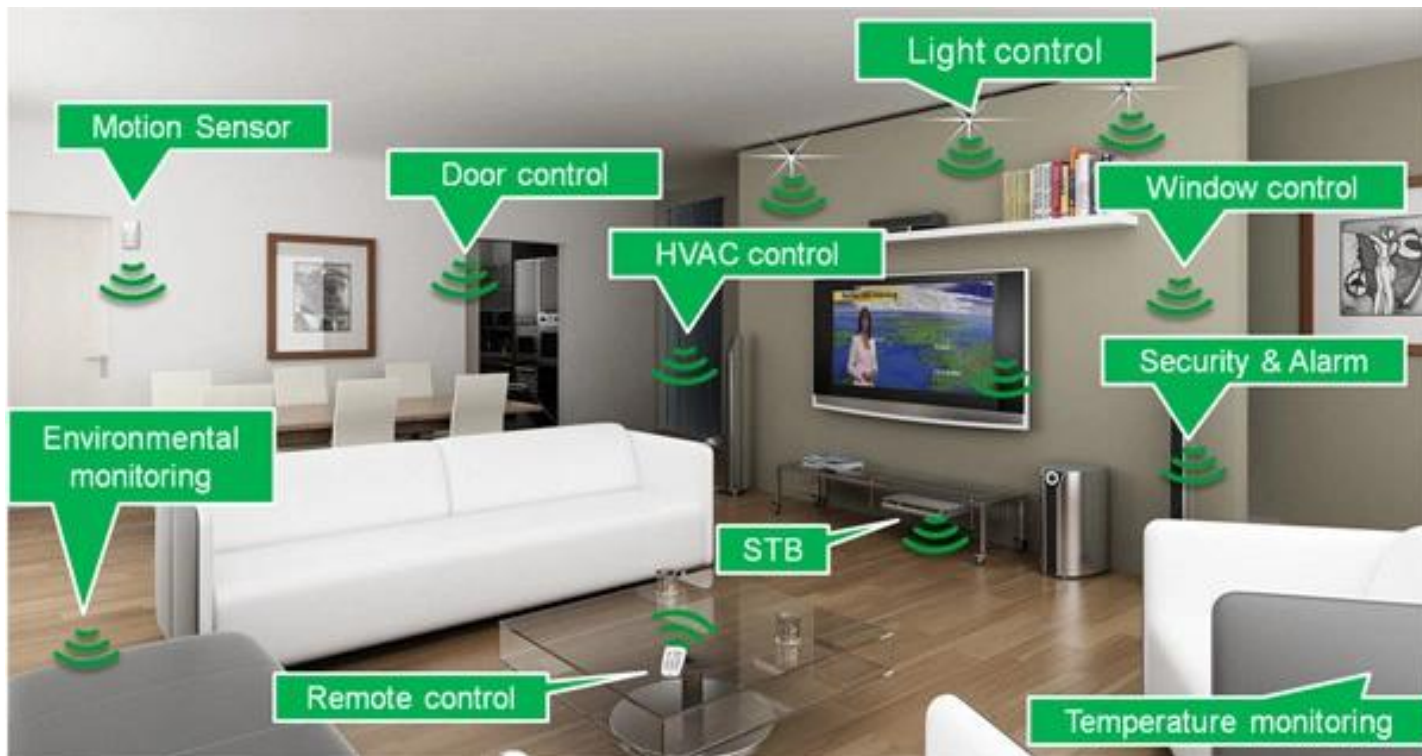
Mobile devices

Existing smart phones holds major promise for the IoT applications. Millions of consumers carries mobile devices around the world that contain necessary technology to enable mobile IoT use cases.

Bluetooth rttechnology is used for other **IoT applications**. It allows communication between sensors and other equipment in 30-meter range.

6 Top Growing Industries of IoT Deployment

Manufacturing

Education

Transportation

Utilities

Retail

Consumer Electronics & Cars
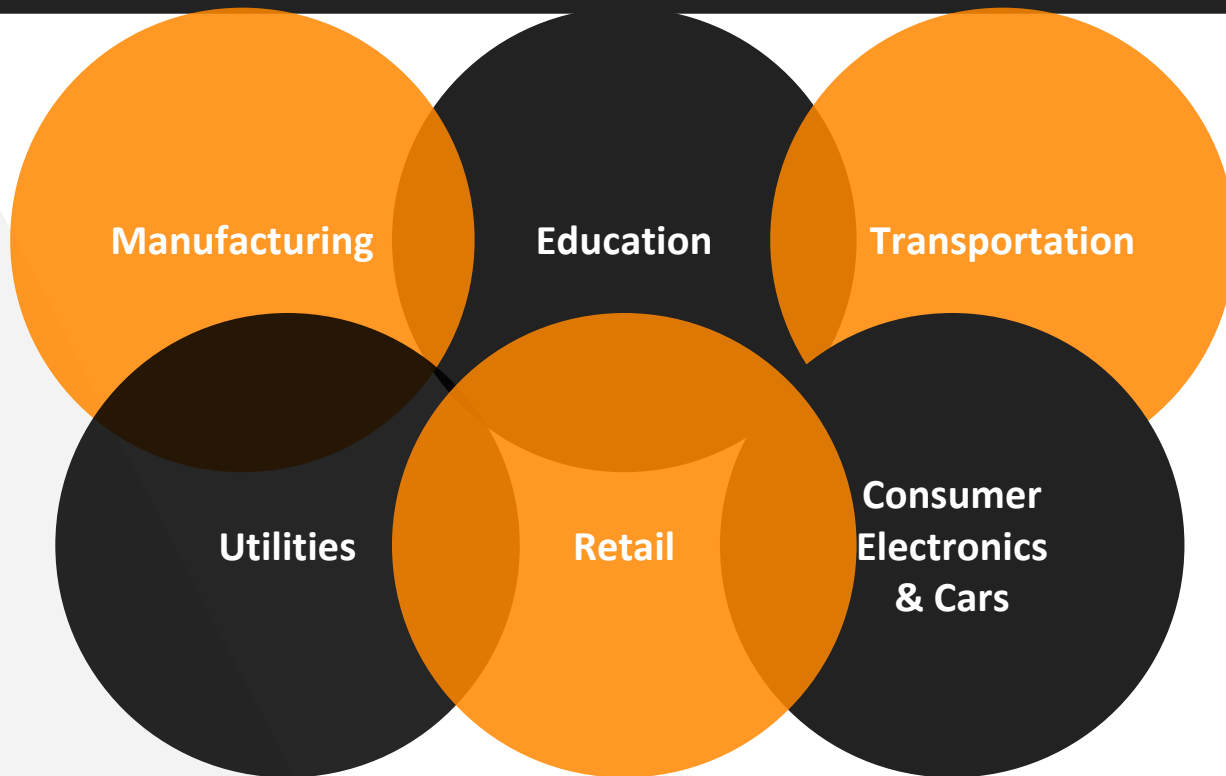
The Future of IoT

Top Applications of IoT

- ➢ **Wearable**
- ➢ **Smart home**
- ➢ **Smart city**
- ➢ **Industrial internet**
- ➢ **Connected car**
- ➢ **Smart grids**
- ➢ **Digital health**
- ➢ **Smart supply chain**
- ➢ **Smart retail**
- ➢ **Smart farming**

THANKS!

Any questions?

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