A Review Paper on Internet of Things

Samiksha Sharma
Department of Electronics & Communication
Vivekananda Institute of Technology, Jaipur
Jaipur, India

Abstract: **The main emphasis in this paper is an overview about what IOT means, its applications, affordability, security, need, advantages, few companies working on this technology and is it beneficial or not and are the results fruitful.**

INTRODUCTION

Internet of things means connecting devices or some other equipment to internet. In this, every device have Unique IP address and these devices communicate which each other through some network that may be wired or Ethernet (wireless). Wireless protocols like wifi, Bluetooth, zigbee etc acts as a communicating network for the IOT devices. Companies in India working on this technology are covey, toy mail, car IQ etc. Now come to the connectivity part, in this it tells us about how a device is connected to another device and what the range of that device and all is. We have many networks like local area network (LAN),personal area network(PAN), and wide area network(WAN) so these are all networks through which we connect to the IoT. As for PAN if I talk about its range than it is restricted for transferring data in small or a particular area. Examples are smart phone, laptop, computers and for digital assistance. WAN if we want to know its range then I guess sky is the limit. But if I connect a device to Bluetooth and that too for a tracking purpose then it will be difficult to implement as beyond some range it will not work out and if I go through a smart tracking system it will cost around $13 or more. That means for a month, only for tracking purpose a person has to pay Rs850 or more which maybe out of budget for many people. There are devices which costs are very high and a single person can't afford its price so the concluding part is that all methods of connectivity at this stage are not feasible and cost efficient. In this paper main focus is on the advantages, where iot based devices are working and some devices had been tested, upcoming projects etc.

As I have already mentioned about its connectivity and communicating network lets move to where it is actually in progress. Few months back two students Joshita Bagde and Nikhil Jamdade of IIT Kanpur with their guide Dr. J Ramkumar completed project i.e., smart bed and donated it in one of the hospital of Kanpur for Aam Aadmi and for their excellence they had won award named Gandhian Young Technological Innovation Award at Rashtrapati Bhawan. This bed records the sleeping pattern of patient, monitors the BP automatically, also tells us about th coughing problems and have many advanced features.

Under Smart City, project based on Smart Solid Waste Management has been tested at Ahmedabad. Under this project by decomposing the waste through plasma technology(changing of states) organic manure will be made and power will also be generated through this for the GIFT(Gujarat International Finance Tee City).

Delhi will be the first city to have Smart Traffic light system in India. In this the color of the lights will be based on the volume of vehicular and pedestrian's traffic and it will not be time based. Cost of the recent traffic light system is 8-10 lakhs with the additional 4 cameras at the square. The upcoming project will cost around 10-12 lakhs not making any big difference but also reducing many problems.

So as far as I have studied about IOT one thing is clear that it reduces human intervention and with this it is also increasing accuracy.

Now as we are familiar with this term IoT then we should also know about its founder or by whom it is invented. This was given by Kevin Ashton,later MIT's Auto ID Center, in 1999. It was founded in 1997 and seventh series of International Telecommunication Union (ITU). In 2005, some technologies related to IoT was founded. The First International Conference on IoT was held in 2008 at Zurich.

Applications:-

1. Infrastructure Management:-
   - Controls critical infrastructure like bridges to provide access to ships.
2. Environmental Monitoring:-
   - In this warning systems are there which when necessary notifies us about the danger like Tsunami, Earthquake etc.
3. Agriculture:-
   - Controlling temperature, rainfall, humidity etc.
   - Farmers can detect which areas have been fertilized. If land is too dry and predict future yield.
4. Medical and Health Care:-
   - Monitors BP, heart rate etc. and notifies us about the risk
5. Transportation:-
   - Smart Traffic Control
   - Smart Parking
   - Electronic tool collection

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