Future of IOT

Ashwini Ambadas Thikekar[1] ,Tanaya Tarun Ghosh[2]

[1, 2] ASM's Institute of Management and Computer Studies, Thane, India

Abstract- *And now as we are a heading in life, we are experiencing many changes around us. One of the major change we are experiencing is through technology. Technology has come far-ahead. No matter how you perceive it but nowadays it has been headed towards automation. Smallest of smallest things has been done today with tech.As we know,tech was discovered to make our lives easier.Now we all have been rather becoming lazy.And this is the reason we can say that future will be in the hands of automation.And we can see it happen right now as we are having this small tech-savy machines at our homes which are making our works more easier and comfort. For eg,Amazon Echo,Smart Refrigerators, Smart Lights etc....These things are always referred as SMART things. And hence the creativity of this new era is boundless, with its amazing potential to ease and improve our lifestyle. In this, we are going to see the utility , applications, possibilities, and the evolution of IOT.*

Keywords*-* IOT, History, Evolution, Architecture, Applications,

I. INTRODUCTION

Basically what is IOT. The IOT is the network of connecting machines-like it can be anything vehicles,devices,sensors and the most important thing network connectivity which enables to exchange the data. When we try to connect each and everything with internet it is called internet of thing (IOT).Now within few years,IOT has become the important technology in 21st century.And by the IOT has increased its popularity we can definitely say that IOT is future. The IOT is slowly regarded as a little turning phase in Internet Evolution. And by this IOT it will be more easy and reliable to connect and link the ordinary and littlest devices to internet to achieve various goals. And this Internet is an continuous evolving thing. As we knew that internet is a simple network of computer, but due to its vast evolutions it has now became the network of devices, and IOT is a connection of networks ,networks with network. And Nowadays, each and every device like may be it's a mobile,toy, a car,vehicles,our home appliances,buildings,and much more through which we share informations. In todays world,the use of internet applications has been increased.And its demand is huge too.So by this,IOT can be used to create a variety of applications. And regardless of their sizes,their properties,their functionalities these small devices can do each

and every mechanism maybe their positioning,monitoring,processing,real-time operations. And within this few years,there has been a vast changes in Internet capable devices. We can easily see them like our Smartphones,Watches which tells about our walk mins and more,headsets and many more. And with these things only IOT has the chance to grow in vast in coming days.
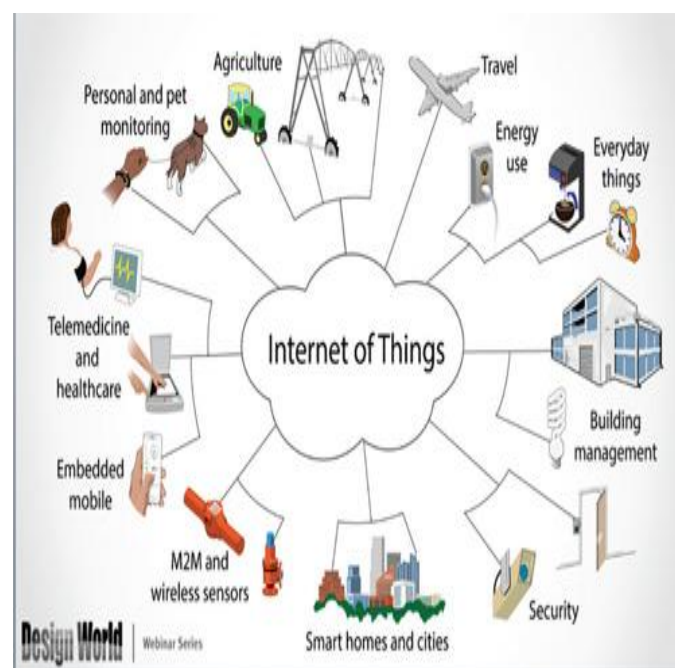

Fig1.Internet of Things.

II. HISTORY

This concept was actually discussed in year 1982,It was a smartdevice with modification of Coca-Cola vending machine at Carnegie Mellon University which became the first ARPANET appliance.It was made to check that whether the loaded drinks are cold or not.

In the year of 1999,a British Technologist Kevin Ashton came up with the thing called IOT(Internet Of Things).He wanted to create a network that will not only connect people but many other objects too..This is the thing which we have only imagined in Science-fiction movies.But today it is the reality.
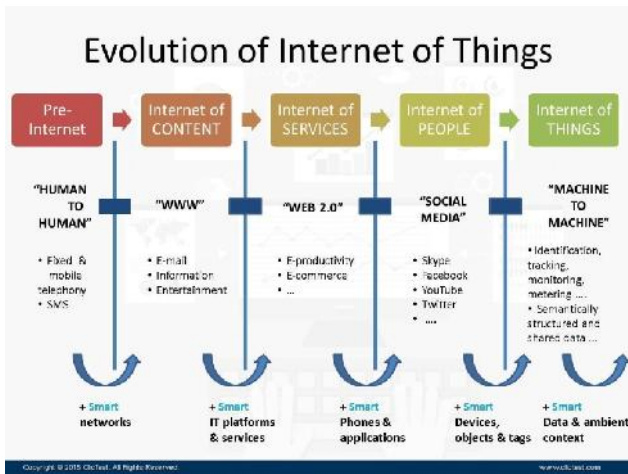
III. EVOLUTION OF INTERNET

Fig.2Evolution of Internet of Things.

- PreInternet:-The Era with no Internet, only human to human communication was available. It was through fixed telephonic and sms.
- Internet Of Content:-This was the era when we just started using WWW and we just started with little email system.
- Internet of Services:-This was the time, when the actual Internet came to use, and this became the game changer, where the e-business like e-commerce started.
- Internet Of People:-Time when communication was not held through only phone and sms but was realtime,It was time when social media born ie,Facebook,Orkut etc
- Internet of Things:-Its time for machine to machine communication. where IOT begins.
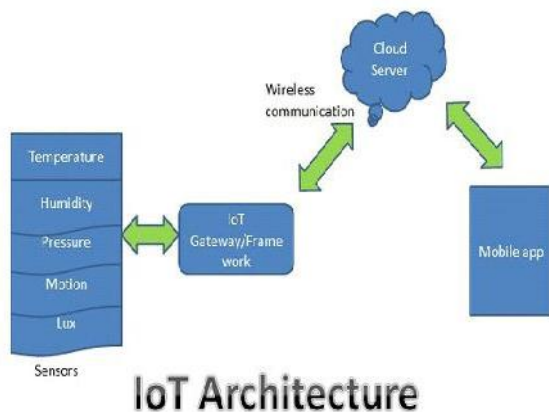
IV. IOT ARCHITECTURE

Fig.3 IOT Architecture

There are 4 stages in IOT Architecture.

1. Sensor
   First stage includes sensors,actuators and their working in collection of data.

2. Networking.
   Second stage is networking in combining and converting analog data to digital data.

3. Processing.
   All the data which were collected are preprocessed and analysed properly before they can send them for further use.

4. Application.
   Last layer, Application in this where it will get used like Healthcare, Agriculture,etc.

V. FUTURE SCOPE

Future of IOT-

It is said that in year 2018, the Communications segment accounts for the bulk of IoT devices followed by the Consumer and Commercial & industrial electronics segments, which account for 5.9 billion and 5.4 billion units respectively. And by the year 2025,the active IOT connected devices will reach upto 21.5 billion units.

From this we an say that Future of IOT has capacity to be limited. And advances to internet will be accelerated through increased network, AI, and the capacity to deploy, automate, orchestrate.
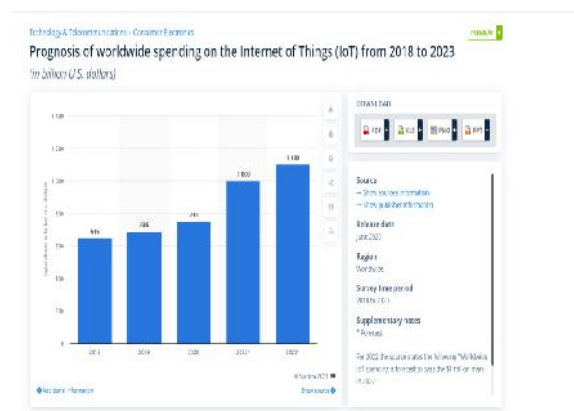
VI. STATISTICS.

Fig.4 Statistics

IOT is mainly powered by 3 technologies AI,5G and Big Data.

And when AI and IOT is combined we can see the future.

And the Fusion of AI and IOT we get AIOT.

Nowadays, AIOT is becoming more main stream, and we it transforms the ways in which we are living and processing data.

Fig.5 Future of IOT

AIot: Actually IOT has made us discover our lives newly, but by adding AI to it, we can get the 100% benefit.

We can already see,the applications like from our basic applications to our fitness trackers to its wide reach to business,companies and urban planning. By viewing the bond between AI and IOT and their increasing partnership means a smarter future which is beyond imagination.

AI+IOT=Power of Innovations.

IOT uses internet to communicate, transmit, exchange data of our day-to-day activities. Everyday it collects about 1 billion GB of Data.

By 2025,it is estimated that there will be 42 billion IOT connected devices globally. It is real, that these numbers will grow incredibly huge and data related to these will be vast too, So that's where AI helps in learning capabilities to connecting IOT.

The IOT is emerging with 3 technologies

1)AI- AI is used programmable functions and methods which makes devices to learn, interact, process all the informations like human.

2)5G Networks-5G Networks are the latest and fastest mobile netwoks, with zero lag for data processing real-time.

3)Big Data-Huge volume data which is being processed from different Internet sources.

VII. APPLICATIONS

1.Wearables

Wearable devices like smart watch which continuously monitor and track the human activities. This not only helped the health sector but also the fitness and sports. According to leading tech research from Gartner, the Global wearable device market will be generating around $87 billion more revenue than 2023.
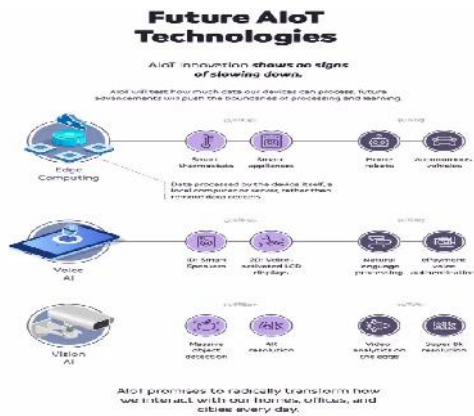
2.Smart Home

Nowadays households not limited to only movies where only there applications responds to there commands. Smart homes are able to command appliances, tv devices, lights and many more. Eg.Alexa.

This brings more additional perks for energy efficiency.This will result, the smart home market can see compound annual growth rate(CAGR) of 25% between 2020-25,to reach $246 billion.

3.Smart City

As days are passing more people will gather from rural to cities.Cities are getting more improved and better and safe place to live.Innovations for smart cities will make more investments like public safety,transport,and energy.

And the practical use of AI is already seen in Delhi which is more congested. Intelligent Transport Management System (ITMS) is in use to make 'real time dynamic decisions on traffic flows'.

4.Smart Industry

Day by day Industries are increasing and from manufacturing to mining everyone needs automated machines to save time and work with zero error.And Gartner has estimated that 80% of industries will adopt IOT projects by 2022.

AIOT is only helping us to move to a better future.

Category	Today	Tomorrow
Edge computing	Smart thermostats Smart appliances	Home robots Autonomous vehicles
Voice AI	Smart speakers	Natural language processing (NLP) ePayment voice authentication
Vision AI	Massive object detection	Video analytics on the edge Super 8K resolution

Fig.6 Future Application

VIII. CONCLUSION

In this,IOT has definitely promised for more better and bright future.

Various countless applications,their functionalities are making our lives better.

REFERENCES

[1] www.statista.com/topics/2637/internet-of-things/#dossierSummary
[2] www.tibco.com/reference-center/what-is-iot
[3] Weforum.org/ai-fusion