INTERNET OF THINGS

The Internet Of Things (IoT) is a computing concept that describes the concept of everyday physical objects being connected to the internet and being able to identify themselves to other devices. The term is closely identified with RFID as the method of communication, although it also may include other sensor technologies, wireless technologies or QR codes. Every kind of technology has taken a steady pace in our world till the first debut of modern computer three to four decades ago. For example, taking about 12 million years of human being to learn from hunting stones to burn them and cooking them through fear of animals. But now, every year technology completely transforms our lives. Like in 1996, Pager started in India, but within a year, mobile phones came and Pager's end was complete. Many other Internet connected devices that interact with each other are called Internet of Things [IoT].

Under Internet of Things, more and more devices like traditional cameras, securitycameras, wearable electronic devices, and GPS have been added to the Internet from laptops, tablets and smartphones, such as the Internet. Similarly, in the last few days, mobile apps played their dunk and the world understood that all these apps would do the same, but the fast pace of information technology has changed everything. This time, we have come up with an Internet enabled device, not a smart watch, a TV or a smartphone, we are talking about the devices that can think and work from their mind. And have emerged with them there is a concept under which the self-perpetuating electronic devices connected to the Internet can do some work ahead of time through the Internet.

What is the innovation of the Internet of Things in our lives?

For example, how good would be if a fridge picks itself in order to give the order for the finished item itself to a store, or by seeing your vehicle, security cameras open the lock of the garage to the security system of your house and shutter mechanism to shutter . Order to open and to turn the garage lights on. The prototypes of such cars have become such that you can park in the parking lot by taking yourself off the office and park yourself at the parking spot and if you are getting an indication from the mobile, come to your service. This can be a plot of Hollywood film with a science fiction to hear, but now that we have reached such a close proximity, many such tools have even stepped in the real world. For example, today such devices are actually in the market, by controlling your mobile phone, you can turn off or turn off the lights-fans or ACs of any room in your home.

·Convenience and time saving:

As you might have understood, Internet of Things is the beginning of an era in which sensible tools will fulfill your every need ahead of time. The example of a car parked on its own, the system of the car connects with parking equipment and finds out the empty space there and takes the car to the place by looking at the building's map. Using the ability to go around it, the car stands at that empty space. In this example, the tools demonstrated the ability to get information from the Internet, its direction and work from other devices. Similarly, many smart gadgets combined with each other, the methods and choices of your shopping in shopping malls (when you were alone then what kind of products went to frequently, what products you paid more attention to when you were with the family, which clothing depending on what you looked up and what color you are looking at etc.), you will be able to advertise exactly for you.

·Challenges are new:

With the increasing features, these tools will also bring challenges to our world, as you have seen in Terminator-3. By becoming a self-made computer network becomes a threat to the whole world of its boss. If mankind does not have effective control over the smartness of Smart Devices, then these devices capable of working together in the number of billions of people, can actually show us the horizons on earth. But before reaching this position there are many more challenges that are yet to be found. For example, if your security system is designed to work with your mobile, but you also want to control it through a computer, then the company's customer care might not provide you the full solution. Smart devices run with code of coding techniques, compatibility with hardware of coding, or with electronics, and no standard has been set for their construction or development. In many parts of the world scientists and researchers are working together to determine the standards for Internet of Things. But while keeping these standards in mind, we will have to see that some types of equipment are never made for certain types of work. As a smart device can never order a 3-D printer to make a gun it is necessary that it can never talk to the 3-D printer and it should be fixed at the level of our standards. Although the Internet of Things has not yet fully developed, there are so many devices coming in the future. According to wikipedia, 30 billion items will be available under Internet of Things. Like self-drivingcar, it is an example that will be fully connected to the internet. Apart from all this, it will be very helpful in many areas such as agriculture and medicine, and life style will get much better in the coming time.

Let us see dive a little into Scope, Working and upcoming IOT Projet of our team...

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Internet of Things (IoT)

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IoT is basically is a concept or a technology which aims to connect all the devices to the internet and help them communicate with each other using the Internet as a medium Now these devices can be anything .It could be TV, it could be Mobile phone it could be a Watch, even your car as such anything that can be connected to the Internet can be considered as device for Internet of Things. The intention of using Internet as a medium of communication it to help you achieve a wider and greater reach with respect to these devices , Again the end aim of Internet of Things is to help you create a smart world out there.

What is the scope of IoT?

Internet of Things can connect devices embedded in various systems to the Internet. When devices/objects can represent themselves digitally, they can be controlled from anywhere. The connectivity then helps us capture more data from more places, ensuring more ways of increasing efficiency and improving safety and IoT security.IoT is a transformational force that can help companies improve performance through IoT analytics and IoT Security to deliver better results. Businesses in the utilities, oil & gas, insurance, manufacturing, transportation, infrastructure and retail sectors can reap the benefits of IoT by making more informed decisions, aided by the torrent of interactional and transactional data at their disposal.

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How the Internet of Things Works ?

The Internet of Things (IoT), also sometimes referred to as the Internet of Everything (IoE), consists of all the web-enabled devices that collect, send and act on data they acquire from their surrounding environments using embedded sensors, processors and communication hardware. These devices, often called "connected" or "smart" devices, can sometimes talk to other related devices, a process called machine-to-machine (M2M) communication, and act on the information they get from one another. Humans can interact with the gadgets to set them up, give them instructions or access the data, but the devices do most of the work on their own without human intervention. Their existence has been made possible by all the tiny mobile components that are available these days, as well as the always-online nature of our home and business networks.Connected devices also generate massive amounts of Internet traffic, including loads of data that can be used to make the devices useful, but can also be mined for other purposes. All this new data, and the Internet-accessible nature of the devices, raises both privacy and security concerns.But this technology allows for a level of real-time information that we've never had before. We can monitor our homes and families remotely to keep them safe. Businesses can improve processes to increase productivity and reduce material waste and unforeseen downtime. Sensors in city infrastructure can help reduce road congestion and warn us when infrastructure is in danger of crumbling. Gadgets out in the open can monitor for changing environmental conditions and warn us of impending disasters.These devices are popping up everywhere, and these abilities can be used to enhance nearly any physical object.

IoT Projects

IoT has been all the rage over the past couple of years. The extensive use of sensors and wireless connectivity among devices has increased to the trend. The increase, brings in turn, easily available technology for hobbyists to explore. Connecting everything to everything seems like a good idea.

1.Smart City

2018's Smart City IoT projects will focus on improving the lives of people that live in the world's biggest metropolises.
This technology will help to streamline transportation, by collecting massive amounts of data regarding traffic, parking lots, and public transit.
Thanks to Smart City projects, delayed trains and sitting in hours of traffic may be a thing of the past.These technologies even use cameras to monitor the traffic flow. This means that traffic lights will operate according to the levels of congestion. Public transit riders will get real-time updates regarding when a bus or subway will arrive.Smart City technology will also influence the overall infrastructure of a city. This helps to improve predictive maintenance estimates. It also assists in the control of potential public health crises, and creates better city planning strategies.

2. Home Automation

IoT is rapidly transforming the destiny of devices which are placed at a core with a specified task in our world. These devices can interact among themselves and with humans. The extensive use of sensors is just one of the distinctive factors. That being said, there are various techniques to implement gesture control for home appliances too. Hand gestures are simple and easy to implement while using electronic components which are mentioned in this next IoT project.

3. Healthcare Innovations

Smart technology doesn't just benefit your business.The latest IoT projects can even help to save lives.In fact, IoT healthcare is stated to be a $117 billion industry by 2020. IoT can help to keep better patient records, manage and optimize workflow and appointments. It can even work with your medical devices for more precise results.

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4. ADN Voice Technology

Though AI-based ADN Voice Technology has been on the horizon 2017 was the year it came to the mass market.In 2018, it will only continue to grow.IoT projects that offer voice-led Operating Systems will soon become a part of daily life. They won't just be a gadget that only the tech-obsessed can't live without.'Amazon's Alexa will likely become the most popular piece of ADN Voice Technology, outpacing even Siri and Google Assistant. To make driving safer, Alexa will be integrated into cars. In fact, it's already included in some Ford vehicles.This way, drivers can ask for directions or change the music without taking their hands off the wheel.For added convenience, you can can use Alexa and other ADN Voice Technology to control your Smart Home. You'll be able to turn on your lights, adjust your thermostat, and much more.You can even play music, make telephone calls and conduct voice-based Internet searches. Or, you can do a quick 7 Minute Workout.

5. AI & Machine Learning

The goal of Machine Learning-based IoT projects is to help brands to collect massive amounts of data. Then, they analyze that data to increase operating efficiency and customer experience.One of the most popular examples of Machine Learning in action was Microsoft's Tay AI bot. Its goal was to learn about how 18-24-year-olds behave on social media, then replicate those behaviors.How?By identifying the most common behaviors, then replicating them. There are two options for how this Machine Learning can take place: Supervised and Unsupervised.learning means that these machines work to discover which behaviors are the most common. It then ranks those behaviors and other data in order of importance and influence. Essentially, these machines monitor the the "real world."Supervised learning takes place within specific sets of data, memorizing and analyzing the desired outcome.This way, a machine can learn to repeat it on its own.Luckily smart technology can help to make it much easier. There are efforts in place to streamline communication with insurance companies, ensure patients know what is and isn't covered, and to keep track of medical billing processes.Additionally, smart healthcare devices will use predictive analytics, often based on the information collected from the devices referenced above. This helps to ensure that patients schedule routine check-ups or follow-up appointments.

Collecting Medical Data From Devices

For example, how can doctors and other healthcare professionals use the data from a patient's FitBit to help them monitor their health and potentially diagnose illnesses?Additionally, how can smart devices that measure other vital signs, like blood pressure and glucose levels, help doctors to keep an eye on their patients. It does all this while also allowing the patient to take an active role in their own healthcare.Improving Records, Scheduling And Insurance Sorting through insurance claims can be a nightmare for patients and medical professionals alike.Luckily smart technology can help to make it much easier. There are efforts in place to streamline communication with insurance companies, ensure patients know what is and isn't covered, and to keep track of medical billing processes.Additionally, smart healthcare devices will use predictive analytics, often based on the information collected from the devices referenced above. This helps to ensure that patients schedule routine check-ups or follow-up appointments.

Change in Communication Technologies
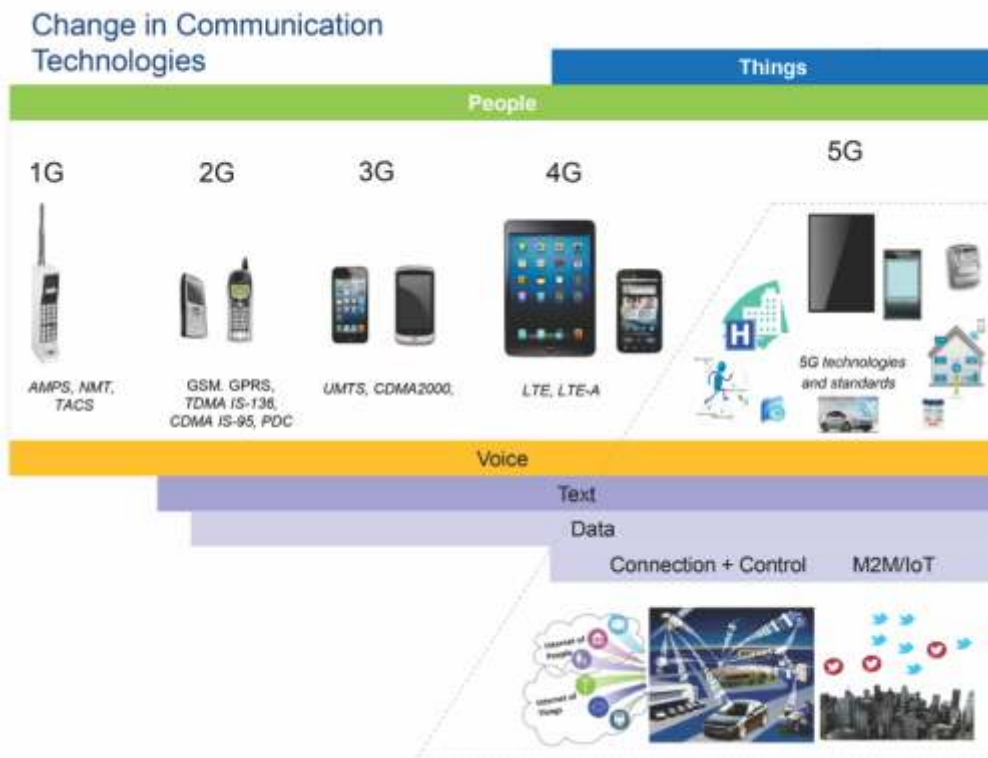
Why do connected devices need to share data?

An argument has been raised that only because something can be connected to the internet doesn't mean it should be, but each device collects data for a specific purpose that may be useful to a buyer and impact the wider economy.

Within industrial applications, sensors on product lines can increase efficiency and cut down on waste. One study estimates 35 per cent of US manufacturers are using data from smart sensors within their set-ups already. US firm Concrete Sensors has created a device that can be inserted into concrete to provide data on the material's condition, for instance.

"IoT offers us opportunity to be more efficient in how we do things, saving us time, money and often emissions in the process," Evans says. It allows companies, governments and public authorities to re-think how they deliver services and produce goods.

"The quality and scope of the data across the Internet of Things generates an opportunity for much more contextualised and responsive interactions with devices to create a potential for change," continued Gorski. It "doesn't stop at a screen".

Wings of Hope

IOT is also helping in the remote monitoring of the patients. With the devices which are fitted with sensors, the hospital can get to know if there are sudden changes in the vital functions of the person and can reach out proactively. This can be a big advantage to people who are living alone. Here also, if there is a sudden interruption in the daily activity of the person, alerts can go to family members/doctors and much needed help can be provided in a short span of time. When I look around, I find most of my colleagues who work in Gurgaon have parents living in other cities. This can be a great help to them;it will connect not just families, but also hearts! in the above cases, the information collected over a period of time on the cloud can also help doctors in arriving at the correct solution as they have more data points analyze. Almost every day, we look for our remotes and keys in our home. There are some devices which use short-range signals like Bluetooth to digitally tether critical items to our smartphone. We can get an instant alert if we just start to leave something behind. The mobile app can guide us back towards that. One can start the tea/coffee machine from the comfort of one's bed in the morning, and run the dishwasher while struck in Gurgaon or Bangalore traffic!

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