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How Internet of Things (IOT) Will Affect the Future - A Study

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Abstract: Internet of Things also known as IoT, is an emerging technology which integrates computers with human, animals and all the things across the globe through a common channel of internet. A device hardware which is been embed with particular software to interconnect and inter communicate with one device to another device to receive and sent the information through the channel to store analysis and reflect the data. It is been assumed that by the year 2020 approximately 50 million devices would be connected. As the no. of devices gets increasing the effect of technology will reflect back to human's life. Human now-a-days are very dependent on technology. Everything is been digitalized. Digitalization has both effects and side-effects. And nothing can be compared and contrasted. It's up to the use of technology either in positive way of in negative way.

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I.   INTRODUCTION

Internet of things a term which is expanding exponentially by its features and its quality to improvise the life of human beings and to live a better and comfort life with less efforts and maximum benefits. Soon or later Internet of Things (IoT) will take over the world with its advance characteristics of simple to adopt and easy to use. Nearly every object is now connected to the internet which sends and receives information and the device can also analyse information and can suggest a good option to choose from many.

Internet of Things (IoT), has occupied the human in such a way that, every device that's being manufactured is designed in such a way that it directly or indirectly supports the features of IoT. Smart wearable devices to make a smart city, IoT are going to be the next big technological advancement. IoT works on the principal of collecting storing and analysing of information and reporting back the information according to the observations and set of priorities.

Imagine a world connected to internet and you are been placed globally, you can be monitored and you can monitor the things of your own and can give instruction to the devices connected away from you.   You can receive information sitting in any part of the world if there is any disturbance at your home or workplace. IoT has occupied all the markets ranging from home appliance to medical equipments and business stations all aspects of life in been covered under the concepts and implementation of IoT.
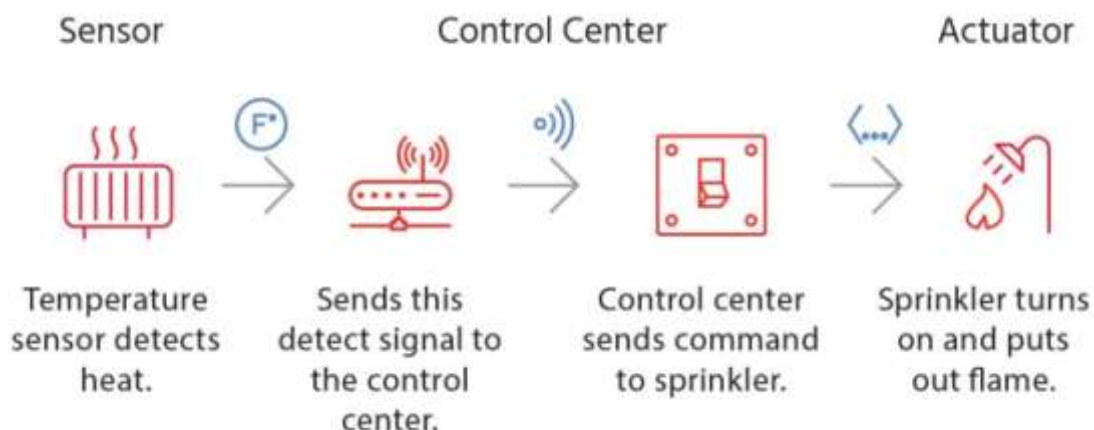
According to a survey analysed be Internet of Things (IoT) Asia, the acceptance of IoT technology in Asia ranges from 157.8%, as Singapore to 1.2%, as Thailand, where as India, stands last second in the list with the adoption of the IoT with readiness of 8.1% and Malaysia with 34.8%, respectively. Everything is now connected to the internet even the personal devices that we are using shares information with the internet. The best example is GPS, you can be located to anyone anywhere through he/she has not requested to show the availability.

FEATURES OF INTERNET OF THINGS (IOT)
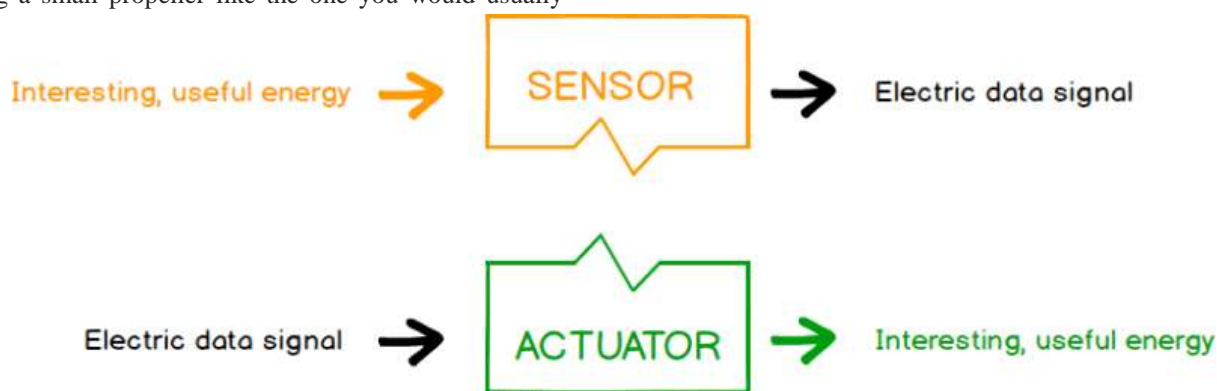The following features of Internet of Things and plays are prominent role

SENSORS AND ACTUATORS
Sensors are actuators are the essential part of the IoT device which sends and receives the information. Sensors are device which converts one form of energy into another form of data. For example a microphone is a sensor that takes vibration energy (sound waves) and converts it to electrical energy in a useful way for other components in the system to correlate back to the original sound.

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Temperature sensor detects heat. → Sends this detect signal to the control center. → Control center sends command to sprinkler. → Sprinkler turns on and puts out flame.

There are different types of sensors, some of them are the Flow sensors, temperature sensors, voltage sensors, humidity sensors, etc. For example, there are multiple ways to measure the same thing, like airflow might be measured by using a small propeller like the one you would usually see at a weather station. Alternatively, as in a vehicle measuring the air through the engine, airflow is measured by heating a small element and measuring the rate at which the element is cooling.

Interesting, useful energy → SENSOR → Electric data signal

Electric data signal → ACTUATOR → Interesting, useful energy

PROCESSOR

Today, many products the forum has used standard processors or microcontrollers (MCU's), but the market is still quite new. While industrial devices, such as smart meters, can cost more than $ 100, consumer devices require lower prices to allow expected growth. As BOM costs, or additional in the case of a tool or car, and less than $ 10, low-cost processors and chips are required. In many cases, wireless processors and chips come from the same vendor or are integrated into the same chip. This approach simplifies system design and reduces costs.

Many manufacturers have built chips or delivered products that include processors and wireless communications. Depending on the destination application, this type of connection may be Wi-Fi, Bluetooth, ZigBee, Sub-Protocol 1GHz or narrow cellular protocol that appears as NB-Technologies operations. The Process and Wearable Device Technologies focuses on the new product categories that appear on the Integrated Objects Internet Wizard.

ENERGY EFFICIENCY

The Internet of Things (IoT), application can consist of simple monitoring applications such as temperature measurements in buildings for complex applications such as full-time energy provision on campus. Internet connections may be needed offline, where the information is changed daily, on-demand, or online allows real-time control. Building control applications can provide efficient energy consumption in buildings while ensuring comfort (heat, electricity, etc.) for passenger building. Traditional solutions use complex building management systems (PMS) that are interlinked with flex (programmable logic controllers) that send commands to controllers based on sensor data. Such a system should take into account such parameters as meteorological forecasts or real-time energy costs.

The impact of Internet things on energy efficiency

Process techniques are not just a development of the current situation where the device can be operated remotely; it is a great distraction for energy efficiency applications by many aspects:

Number of connected objects: around 2020, 26 billion units will be installed 2, although some cannot be used for energy efficiency applications.

Business Opportunity: $ 300 billion in additional business by 2020.

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Object properties: Not only smart gadgets, but also very easy things LED bulbs.

Technology and architecture are based on a technical ecosystem: integrating integration into a single resource environment will be less common.

Revolution sensor: IP camera, geographical location, personal contextual information of devices such as portable sensors.

"Big data" disabled: the ability to collect large amounts of unstructured data, analyze, and then predict future behaviour.

Smartphone's and applications are the main user interface for Internet of things.

COST EFFECTIVENESS

The IoT system has benefited greatly from the collection of local data. More detailed location of data, business results can be better. Therefore, it is important that sensors techniques are cost-effective processes to allow for widespread use and reduce overall business costs. Because of this desire to increase the size of the dispersion unit, the connected sensor must be as low as possible - competitive cost for the devices of other products with the same hardware features and capabilities.

For example, for some applications, operating costs can be capital expenditures for the cost of the sensor, especially if the "vehicle" is in a very remote location. Very low power solutions that reduce the time between battery replacement or self-energy by harnessing the energy of your environment is a proven way to significantly reduce slight increase to capital expenditure.

In some applications processes techniques, the best quality and best sensors in sensors can reduce the number of sensors used, thanks to the ability to increase the distance and the ability of sensors. Often, devices capable of compressing or reducing sent data can have a significant impact on reducing the use of wireless data and connection costs (such as satellites and cell phones) or switching switches to a more cost-effective wireless connection such as moving from cell to satellite.

QUALITY AND RELIABILITY

Quality depends on the result analysis of the application and testing an application is measured upon the request it receives and response it gets from the device. If the response from the devices matches the results expected then the device has quality of services and is reliable. The more the device is reliable effective the outcome of the device will be. And the results will be accurate and trust worthy.

SECURITY

IoT devices are connected to a network through internet and all the devices receives and sends information to the internet and to the network. The data being exchanges will always be under threat of security. Security concern are due to the following reasons firstly the technological gaps in devices secondly immature type of security, thirdly combination of hardware to the software and lastly the up gradation of the software at an embedded device.

Security is always a concern and will always remain a concern to the devices connected online and to the devices being used online. The data is either been encrypted with a key and to the other end is been decrypted at the other end. Another measure is before sending the data to the network the data is converted to cipher text and again it is been encrypted in the network process.

INTERNET CONNECTIVITY

Every IoT devices is connected to a network through a medium called the internet. Every device which is connected to internet and has an IP address is considered to be an IoT device.

EFFECT OF IOT ON FUTURE ON TECHNOLOGY

The major part which will be mostly affected by IoT is technology. There is a drastic change in the adoption of IoT. According to a survey analysed be IoT Asia, the acceptance of IoT technology in Asia ranges from 157.8%, as Singapore to 1.2%, as Thailand, where as India, stands last second in the list with the adoption of the IoT with readiness of 8.1% and Malaysia with 34.8%, respectively. The increase in the production and usage of smart devices and decrease in the data charges is the peek sign that soon or later we are going to be digital or we will be digitalized as an individual, i.e. the place in which we live or the city in which we live will soon be digital city.

We can control our home away from a far away land just under your fingertips. Technology has advanced in such a fashion that smart homes has come into existence, where in you will be able to control monitor your house just by a click.

Another side of the technology is that the data been on the network can be misused or can be used against you. If the data is not been secured in a proper way. As IoT is connected to a network the possibility of attack on the network is also predictable. The attacks can be so serious that, the company might run out of or go bankrupt. Recent times the attack on Ukraine power unit or the attack on cyber security of German steel mill or the attack on the people's security camera to spy on them are the examples

ON MEDICINE

Internet of Things (IoT) has occupied the field of Medicine with latest wearable gadgets to monitor the health of the patient and to suggest medicines periodically without the visits of the doctor to home. IoT can also be life saving, if

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person meets with an accident and need to be taken to the hospital then with the help of IoT device, the patient treatment can start as soon as he reaches the hospital. With the help of IoT the information of the patient will be sent to the hospital and proper arrangements can be made before the patient reaches the hospital.

A case was been registered in Arkansas, when a group of youngsters died while watching a football match. It's been suspected that the death of youngsters was due to strangulation and drowning. Later Investigation predicts the devices that were been used was controlled by some third person.

ON TRANSPORTATION

IoT is also been experimented on transportation that we soon will have a car without a driver. And experiments shows the positive outcome and results and has less chances of endangering the life of human due to over speeding. Malaysia has the train without a driver, which is operated by a person sitting far away at the office from the train.

Relying on technology sometimes can be dangerous. It's good to have a car without a driver but it's difficult to deal with an automated car in extreme and unavoidable circumstances. It gets difficult to get out of a car or a train when the situation is worse and nothing can be done.

ON COMMON LIFE

Humans always wanted to live a comfort life and had found different method to live. Now humans are relaying on artificial intelligent devices which help them ease their work home or away. Human has created smart devices, smart homes, and Smart Street light. Now humans are striving to have a smart city. Smart devices have given humans a sigh of relief from doing difficult task easily.

ON TRADE

IoT is gaining the market due to its advantages but also lack in term of security. IoT is accepted as the intelligent device which can receive and analyse and generate the outcome of the process, industries are accepting the role of IoT to reduce their efforts and to increase the productivity and profitability and can produce good according to the requirement of the customers which saves time and material of the industry.

II.   CONCLUSION

Internet of Things (IoT), has helped humans to live with ease and to live a comfortable life. But also has trouble the humans in different ways in terms of security of the data and misuse of the data. Precautionary measures are taken to avoid the threat to the data and to maximise the data security. IoT is very helpful and also very harmful to the humans in different aspects and different conditions. IoT has

helped human and will always help in advancements of technology and to improve quality of life.

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