# Internet of things and emerging technologies:what the future holds.

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## ABSTRACT
This paper focused on the internet of things and emerging technologies with whatthe future holds. It discussed the roles of internet of things, to include; easy accessto information and easy communication etc and emerging technology whichinclude computing of cloud technology, Nanotechnology, RFID, Sensor network. Italso discussed the problems associated with the internet of things and emergingtechnology, such as; insecurity issues, abuse of online information etc and thepossible solutions

## I.     INTRODUCTION
Internet has always been important to the society. The internet is a globalcollection of many different type of computers and computer networks that arelinked together (Ogbeta, L. Kelvin, 2013). It is also called international network.Just as a telephone you talk to someone on the other side of the earth who also hasa phone, the internet enable a person to exchange information with anothercomputers and user anywhere in the world. Some call the internet superhighway.As a road allows travel through different parts of a country, so the internet allowsinformation to travel through different interconnected computer network.

The internet of things is a network of machine that contain embedded technologywhich helps machines to communicate with one another through the internet.(Gartner 2002).

Emerging technologies is improving. It has lead to a wealth of informationavailable to anyone who is able to access the internet.

The internet is useful in many ways but communication and information sharingare the most significant.

The explosive growth of internet of things is changing our world and the rapiddrop in price of typical internet of things is allowing people to innovate new designand product at home. The growth in internet of things will far exceed that of otherconnected devices. By 2020, the number of smart phones tablets and Personalcomputer in use will reach about 7.3 billion unit.

## ORIGIN OF THE INTERNET
What is called internet today began with a project called ARPANET, which wasinitiated by the united state department of defense Advance Research ProjectsAgency. The original motive behind ARPANET, was to build a network capable ofcarrying military and government information from one point to another duringany nuclear war and to help scientist and researchers from widely dispersed(remote) area to work together by sharing scarce and expensive computers andtheir files. This need for internet arose when it became apparent that there was aneed for a bomb proof communications system during the cold war of the mid60's. however, the project, which was initiated in 1968, soon went wider than itsoriginal scope to become a project for building a large-scale network called, theinternet that we have today.

A concept was designed to link computers together throughout the united state.With such a system in place, large sections of the country are reached and messagecould still go through. The internet was actually an emergency communications system operated by the military department of defense's, Advanced ResearchProject Agency (ARPA). The whole operation was referred to as ARPANET. Withthe ARPANET computers were installed at every university in the united state thathad defense related military pipe-line to a communication tool for scientists. Asmore scholars came online, the administration of the system was transferred fromARPA to the National Science Foundation.

Years later, business began using theinternet and the administrative responsibilities were once again transferred.

## Concept of Internet of Things and Emerging Technology

The internet of things is the network of things or objects, devices, vehicles,building and other items embedded with electronics, software's sensor and networkconnectivity that enable these objects to collect and exchange data.

According to (Gartner, 2002), in the internet of things, there is an integration withinternet which implies that devices will use an IP address as a unique identifier.

Objects in the internet of things do not only deal with devices and sensorycapacities, but also provides actuation capacities example locks controlled over theinternet. Internet of things is interconnected with media, environmentalmonitoring, manufacturing, energy management, medical and health care system e.t.c.

(Philip, 1999) write that the internet of things offers immense potential forempowering citizen, making government transparent and broadening information access. This however, explains that privacy threats are enormous as is the potentialfor the social control and political manipulation. The internet of things intelligently connects humans, devices and system.

**Emerging Technology**: Is existing method, system and devices which are theresult of scientific knowledge being used for practical cloud technology andnanotechnology which came into existence through the idea of technologists.

## Application and Roles of Internet of Things and Emerging Technology

The internet plays a big part in the life of modern being. People rely heavily on theinternet for their education, trade, socialization and entertainment, among manyother important aspect of life. In the business, information sharing, advertisementand e-marketing e.t.c. have been made easy and stress free. The internet of thingssystem enables rapid manufacturing production.

Internet of things and emerging technology has made communication of every partof the world easier than it was. Social networking (a media of communication) hasgone vital. Information sharing and entertainment have taken a new role so thatany information and media activities (music, video call, electronic mail, You Tube,face book, twitter e.t.c) can be access and anywhere and anytime.

Evidently, the internet could be the biggest revolution in the communication world.The use of the internet of things and emerging technology for education is not justa national interest but a global concern. It has made writing of exam with computer possible and approved as it has a lot of advantages which includes; getting of resultminutes after submission of answer when writing with CBT, control ofmalpractices e.t.c Distance education (E-learning) has been made easy and hastaken education sector by storm. Different people at different geographicallocations get to learn the same thing at the same time, thanks to the internet. Videoconference is made easier via webcam. The internet allows researchers ineducation to get materials at all level from pre-school to post doctorial home workand other assignment like self guided learning are also easier anywhere. They aidin both formal and non formal education. The internet of things devices can beused to enable remote health monitoring and emergency notification systems.These health monitoring devices can range from blood pressure and heart ratemonitors to advances devices capable of monitoring specialized implants andadvance hearing aids. Specialized sensor can also be used to monitor the health andgeneral well being of citizen, while also ensuring that proper treatment is beingadministered via therapy. More and more internet of things platforms are comingup for antenatal and chronic patients, helping one manage health vital and reoccurring medication retirements. However, a lot have changed and the functionsof the internet are far wider than it was through during its conceptual stage. Theinternet provides ability of emails, get wide range of opinions, friendship and loveconnections have been made over the internet by people and many more.

The radio-frequency identification (RFID) are used for identification purposes. Ituses electromagnetic fields to automatically identify and track tags attached toobjects. The tags contain electronically stored information and collect energy froma nearby RFID interrogating radio waves. RFID tags are used in many industriesfor example, an RFID attached to an automobile during production can be used totracks it progress through the assembly lines. RFID tagged pharmaceuticals can betracks through the warehouses and implanted RFID microchips in livestock andpets allows positive identification of animals. This is all because of internet ofthings and emerging

technology. RFID tags also can be either passive or active orbattery assisted passive. The RFID can be used in different area and time as well.

Internet of things and emerging technology possess sensor network intelligentwhich takes some predefined action when it sews the appropriate input (light,heart, sound, motion). With the presence of intelligent sensors, given of digitalsignal, able communication with the signal, ability to execute logical functions andinstruction are made possible and quite easy for the internet of things and emergingtechnologies to work. For example, by using a connected sensor in an elevator, youcan manage the flow of passengers to alleviate wait times.

Subway system can use similar real time monitoring systems to know where thecars are and when they are running behind. The LEDS on wall as well inform thewaiting potential passengers that train is full and many more.

Internet of things and emerging technology also include "nanotechnology", whichdescribe the many ways that scientists can work with the actual molecules andatoms that makes up the world. Nanotechnology is being used in developingcountries to help treat diseases and prevent health issues. It is being applied to ordeveloped application to variety of individual and purification process such as,desalination of water, water filtering waste water treatment, construction materialsmilitary goods e.t.c.

The cloud computing technologies of internet and emerging technology is a primercloud solutions provider, offers full concept to completion private cloudimplementations either or premises or in data center of cloud services provides,cloud computing technologies specializes in cloud system aggregation, applicationintegration and management of cloud eco-system.

Cloud computing technologies create strategic advantages for user throughinnovation cloud technologies combined with effective and efficient businessprocess for competitive innovation capabilities. Cloud hosting services allows forconvenient on demand access to demand access to a shared pool of resources thatinclude networks, storage devices, servers and services. The user or clients havefull access to hypervisor cloud without need of modifying their application.

**Factors Militating Against Internet of Things and Emerging Technology**
No matter how good the internet of things and emerging technology might be,there are still certain things that make it bad or disadvantaged. Some of thesefactors are highlighted and discussed below. These are

- On the internet, you can access and download data and program files from a remote computer. The files so copied, if infested with computer viruses may destroy what you have on your computer.
- The use of social media platform to bully individuals is one of the worst aspects of the internet. People publish harmful comments and impersonate other people or create an online persona with the intention of committing crime. The spread of private pictures and information (including pornography) is another negative as aspect of the internet and actually affects teens and children.
- Once a user understands how to surf the internet efficiently, It becomes an addictive, other activities of the user will start to suffer.
- One of the biggest down fall of the internet is the spread of false information. This is especially a problem for open source websites that allows multi users to edit web pages. The spread of wrong information on the internet has lead to even a lot of unscrupulous business that have sprung up to take advantage of people.
- Hackers can use the internet for identity theft, the internet facilities fraud. Fake website often used to lure people into providing sensitive information used to steal identities. The internet also gives hackers the ability to steal banking information from shoppers who use online retail store. Hackers create viruses that get into your personal computer and run valuable data.
- Your privacy could be infringed on as an internet user. An unauthorized person for example, could read your mail.
- The internet also allows people to self-diagnose medical condition, which is not always in the person's best interest. Because the internet is full with false information, researching medical information online can have consequences. Some people are getting addicted to the internet and get to believe all information in it which get cause problems with their interaction of friends or colleagues.
- A lot of unwholesome things exist on the internet. The availability of computer phonographic materials on the internet is one of the unwholesome things.
- There is no control mechanism for managing bottleneck links. The internet has no obvious strategy for scheduling packs across the

bottleneck. Furthermore, the internet provides no differential service i.e all packets are treated the same. If the internet becomes congested, arbitrary packets will be lost. There is no easy way to distinguish between important traffic and less important traffic that must go through and which to come later

**Possible Solution**

Seeing all the benefits from the user from the use of the internet of things andemerging technology. Internet of things and emerging technology cannot bewashed away because of few challenges that is affecting it. It is therefore,becoming necessary for programmers to program writing to be verified beforebeing published to the public to reduce or avoid spread of false information.

In respect of security, there should be a collaboration for programmers to make adevelopment for theft and other crimes to be detected, in other to block or stop ordelete the process. This can reduce the hacking activity people do at times withoutreason to hurt others. Network monitoring tools may include a number of differentsoftware programs to watch various aspect of the internet when use.

Consequently, establishing internet of things with the limitation of people (withfull traceable identify) is nothing more than a waste of time and resources as well.Programmer, website or WebPages, should be written with a maintenance ofsecurity, replacement of parts and even rebuilding the entire system in some caseslike, when there are issues like a bully (false action) that is written to scare peopleonline or upload of private pictures and irresponsible videos e.t.c. there can be ablockage or limited to that site. This is to avoid the spread of such things on theinternet, which is quite not helping the nation.

Also, professionals in the field should brainstorm together in finding a way ofassessing not only the cognitive domains but effective and psychomotor domainsof growing programmes via internet of things and emerging technologies object.

Finally, change is imitable in any human society, but man is the agent of suchchange and if the changes occur so sudden the people are usually left behind tochange. Hence, change in internet of things and emerging technology in respect tothe means to be used should be a gradual process. Internet assessment bodiesshould employ a parallel change over which can break down the entire Nations ofinternet of things and emerging technology.

**What the future holds**

The growth in the internet of things and emerging technology will far exceed thatof other connected devices.
By 2020, the number of Smartphone tablets and personal computer in use willreach about 7.3 billion units, said Peter Middleton.
Gartner says in contrast, the internet of things will have expanded at much fasterrate resulting in a population of about 26 billion unit at that time.

Gartner predicts by 2020 component price will be so low, connectivity will bestandard even in processors.
Many of the connected device categories found in 2020 do not yet exist. The nearfuture will see an explosion of connected things across a wide range of industries,be it safety, security and loss prevention sensors, improved point of sale terminalsand various health and fitness devices and services.
In addition enterprises will make extensive use of internet of things and emergingtechnology, with products sold in markets as far-ranging as medical, industrial,agricultural, automotive and infrastructural.

## II. CONCLUSION

The internet of things and emerging technology is closer to being implementedthan the average person would think. In addition to the educational, commercial,personal and governmental uses of the internet, global use of the internet alsoinclude internet fraud, transmitting of illegal items and certain form of harassment.As we venture further into the information age, the nature of life is evidence thatfuture global development will undoubtedly depends on technologies advances,particularly in the communication.

Understanding the underline reasons certain types of technology are in use todayplays an important part in the overall use of technology movement will continue toevolve and since is evident that a complete understanding of technology isunnecessary for its utilization, only those who lack access will be left behind.

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