

The Impact Of Internet Of Things (IoT)

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Introduction

The field of Information Technology is revolving, and over the last few decades, a lot of changes have taken place. Cloud computing, mobile computing, the internet revolution and social media networks have been introduced and changed society. But the amazing technology that intends to change the world's communication and data collection techniques is the Internet of Things (IoT). The Internet of Things (IoT) is one of the major revolutions in Information Technology taking place in the modern world. Though it was discovered a few years back by Kevin Ashton, it has been on the verge of exploding of late. Previously, data used to be gathered physically by humans through scientific methods. However, the invention of IoT has changed the perspective and the way data are gathered and transmitted for use. The Internet of Things is the connection of different devices to transmit data to a central place. The concept of IoT is applied by installing an identifier or a sensor on devices and wireless connection so that it can collect information and transmit it in real time for analysis. For instance, NASA has sent robots to the moon and other planets to gather data and rely in real-time.

Research has established that IoT is a technology that scientists need to analyze its impact on the environment. According to Abendroth, Aaron and Nicholas (2015), IoT is universal in terms of implementation since it has been reported that even humans are implanted with devices to collect data and transmit it for analysis. Besides data analysis, the technology is also being used to enhance security through tracking of people and other devices. The IoT identifies where a device or a person is located anywhere in the world, and the transmission from any location can be appropriately analyzed (Abendroth, Aaron, & Nicholas, 2015).

Literature Review

How IoT has changed the environment

A lot of things have changed since the invention of IoT. Most people do not understand that drone is an example of IoT. According to Davies (2015), Drones are connected with sensitive camera to gather data and relay to the central server immediately for analysis. It is being sent to the battlefield and another unreachable environment to collect information that can be useful for the community.

Besides being used in battlefield areas, the system is used for security purposes to provide real-time video for various locations. Therefore, IoT has facilitated the improvement of security; it also provides consumers with an option to connect to homes, clothing, automobiles, accessories and other activities that are conducted daily so that monitoring them can be efficient. As stated by Davies (2015), IoT has

overhauled the way people interact with technology and also changed the way humans use and apply information technology in their daily lives.

The IoT has changed how enterprises conduct business and especially conducted market research and information about customers. It is noted that several organizations do not depend on the report from the distributors or supply chain. Davies (2015) illustrated that organizations have installed sensors at their warehouses and stores to monitor and remote the behavior of customers to allow them to understand the market segment (Davies, 2015).

Approach to the Need for IoT

IT companies must come to the realization of faster and more reliable internet to relay data to most servers across the globe and also must upgrade infrastructures to be able to provide IoT services, which is the latest technology being applied by several organizations. The IoT requires special standardization and codes for it to operate effectively, and therefore, it is important for IT companies must define the code and improve internet infrastructure so that IoT can operate without facing internet breakdown. It is noted that by 2020, all devices shall be interconnected to deliver data to specific destinations, and for this to operate, the industry will require several professionals in the field and the best equipment that can accommodate the intended flow of data. The installation of IoT requires servers, internet connection devices, sensors or identifiers that are connected. It requires an organization to conduct broad research to understand topology so that it can avoid frequent breakdowns that can interfere with the operations of devices under IoT.

An essential signpost of the basic importance of the IoT concept is the calculated activities of major ICT vendors or firms in the provision of IoT services. The organizations that provide telecom, industrial infrastructure, cloud computing networking, and enterprise systems must derive a strategy to offer IoT services. It will transform the broader economy to improve connectivity. Examples of some of the leading IT companies in the provision of IoT service are Amazon Web, AT&T, Ericsson, Cisco and IBM, which leads to the transformation of ICT worldwide (Lucero, 2016). It integrates devices together and allows them to share information efficiently.

The Future impact of IoT

It is predicted that IoT intends to alter the world, and by 2020, almost 26 billion devices shall be connected together. The IoT services are also expected to generate approximately USD 300 billion annually. The customers would be able to get customize products and sell at easily; they would also be able to travel without experiencing traffic jams since IoT would provide alternative routes when the car is connected to IoT. Above all, companies have started manufacturing cars that are connected at a central to offer self-driven services. Tesla and Google have launched self-driving cars to provide taxi services, and more are expected by 2020. The future computer system or internet connection is expected to be faster and more efficient to provide mass self-drive cars in populous cities like New

York and other cities where such services have been launched.

The IoT will also facilitate the tagging of human beings with sensors so that data related to various activities can be transmitted. According to Mohammed and Elmustafa (2017), IoT will allow physicians and doctors to monitor and track the health status of patients. The revolution of IoT will allow the installation of sensors and identifiers to anyone so that if there are any changes in the health status, information is sent promptly to the doctors for analysis and quick action. Therefore, customers would be healthier, safer and protected due to IoT devices (Mohammed & Elmustafa, 2017). The IoT is a greater change in the IT field, which intends to connect devices and allow them to exchange data as well.

The IoT will allow organizations to offer better services to customers after studying customers' behavior and the needs of the products. The technology is installed in shops and on customers to allow it to collect and deliver data appropriately (Khatu, Neethu, Pratik, & Syedali, 2015). These will allow companies to collect related data about customers so that a company can design a product or improve service delivery based on the results from the data analyzed. However, the intention of most researchers is to connect devices that were not previously connected, such as aircraft, cars, and others, to make sure that they can be traced and also gather data at the same time. According to Khatu, Neetu, Pratik and Syedali (2015), aircraft can be connected to other devices so that it can collect data related to weather and temperature as well, which can be useful in weather planning. It is expected that the internet will connect different sources of information such as mobile phones, computers, human being sensors, laptops and security devices so they can transmit data appropriately to the relevant servers. The IoT is expected to revolutionize the ICT industry to bring a change in business and how to manage business as well.

Challenges of IoT

The most challenging task of IoT is data protection and security of the system. It is noted that IoT involves the transmission of data over a long distance, and the data is likely to be compromised if not protected problem. The role of protecting IoT devices and network infrastructure is important for the future growth of technology. If the personal data of an organization is compromised, the company is likely to face lawsuits and hefty payments as a result of court cases. Therefore, an organization must secure IoT at the infrastructure level not only at the devices. The securing of data will ensure that it is impossible to hack the system and also access data gathered by devices connected to IoT.

The lack of technicians who are experts in the field of IoT is also a challenge for the growth of IoT, and therefore, there must be well-planned structures or plans to train enough support teams. It would not be possible to realize 2020 dream of connecting 26 billion devices if technicians are fewer in the industry. The traditional organizations lack the expertise to program chips and connect them until they can be able to communicate efficiently. It is important to note that the fact that several people and organization are getting connected to IoT, it is important to avail support and also build a good

secure network which can ensure that data are not breached, hacked and tapped so that data remain secure all times even when being transmitted.

Recommendation

It is recommended that ICT companies lay down a better infrastructure that can support the operations of IoT since its demands in terms of internet speed and support would be much higher compared to other services. For a company to offer IoT services to corporate and other firms in the market, security and efficient infrastructure is a must since the entire system can be compromised if the system is hacked. As stated by Gubbi and Slaven (2017), security implementation determines the safety of devices and information being transmitted, and therefore, secure data requires safety policies and system protection. It is also recommended for ICT firms providing or preparing to provide IoT services to businesses to upgrade network systems to fourth or fifth-generation technology, which can allow the sharing of huge amounts of data over a longer distance (Gubbi & Slaven, 2017).

Conclusion

The IoT is a major breakthrough in ICT, and it has brought several changes in the industry and is still expected to change the way businesses are connected. It has made sure that devices are connected and can collect and transmit data, therefore changing the way research is conducted. The system has been used by the military and other companies in the security sectors to improve the security of the country. It is also expected to change human interaction and provide the best alternative method for weather collection, which is vital for environmental management. The future of IoT depends on the internet and the expert, and therefore, it is essential to improve network infrastructure so that ICT providers have stable and reliable services that do not depend on distance and can provide IoT services across the world.

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