

The Comprehensive Survey on Fourth Industrial Communication Strategy Revolution of IoT

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Abstract - Communication is the term in which impact is more on Technical revolution on society and science, Technology. The fourth communication industrial strategy called Internet of Things, in which rapid development of Internet of Things (IoT) and Bigdata analytics are increased in various sectors such as Healthcare, automobiles, Business Intelligence and so on. IoT is an excellent and advancement in smart technological world. Integrated components are peoples, Things, Data, Processes, Internet and sensors. Basically IoT devices are connected to Internet Protocol (IP) network to global internet. In today's automation world is connected through a plenty of sensors. However, sensors make a major contribution of overhauling and renovating of Bigdata Analytics. IOT is making attain our lives in convenient and easy way and it is becoming a footprint of every section of human life with rapid increases in development of smart technology. In this chapter, our study and discussion are in order to support various industries in transformations. It seems effectively addressed how IOT is impacting to solve real-time problems. It is essence to comprehensively analyze how IOT to help different sectors of human life real world challenging solution with collaboration of commodity sensors. Due to these advantages, IoT become a promising approach towards better flexible organisation of things. Moreover, we defined the challenges of IOT to solve real time problems which provided by wearable sensor device for degree of freedom and time. This study will assist to understand a consolidation of wearable sensor, wireless communication in Internet of Things and IoT with cloud based concepts.

Key Words: Internet of Things, Wearable Devices, Healthcare, Wireless Communication, Remote monitoring.

1. Introduction

Evolving technology can be defined as use of knowledge for practical realtime experiments, works especially in industry. Technology is the integration of techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation.

IOT enables to distribute services to end users using cloud also and it covers mobile, wireless across resides of hardware and software [1]. The systematic observation, studying, behavior of physical and natural things referred as

science. IoT also needs and prerequisite and uses software tools for interoperability [2].

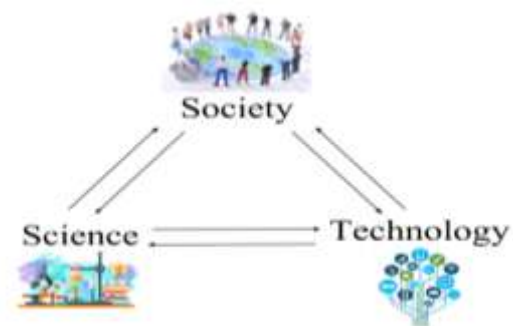


FIGURE 1: STS REPRESENTATION

Science and technology are intimately related and both had an immense impact on society. Advancements made in one can help further or improve the other. Society can influence the direction of scientific and technological advancements. The evolution of technology has made a significant impact on how we do business today – for better or worse. Technological evolution is a theory of radical transformation of society through technological development.

Utilization of smart devices using IOT growing yearly wise, by 2020 billions of devices can be associated with Intene [3] and control nodes in IOT with few milli seconds [4]. The exchange of resources or activities can be takes place between two nodes or ends can be referred as communication. 90 percent of the data generated by end points would be storing in cloud [5]. Generally language is a tool can be used to communicate between two or many entities, humans or nodes. The communication can be occurred in 3 possible ways but the 4th communication schema revolution called Internet of Things.

1. Human to Human
2. System to system
3. Human to system [or] system to Human
4. Between physical devices and Human

A. Man to man communication

The communication between two or more peoples can be occurred for that we use like Telugh, Hindi, and English etc.

B. System to system communication

The language machine level language can be used to communicate between two systems.

C. Man to system communication

To achieve communication between human and system the revolution of languages can be originated.

D. Between Devices and Human communication

The controlling of actions and activities, mechanisms can be accomplished with the help of sensors through Internet as intermediate platform or channel but not every cases would be referred as Internet if Things.

E. Fundamental operations of IOT can be

- Collection of data
- Processing the data
- Analysis of data and forwarding to actuators
- Control sensing based actuation

The features/properties of internet of Things can be a integrated system and it can serves us like an

- It's a portal
- It's a platform as a service
- It's a data aggregation
- It's an integration platform
- Anytime-any where

The Scope features, Reasons for growing

- Sensors availability with low cost
- Bandwidth availability
- Cheap processing

Forward vision monitoring and controlling

2. IOT KEY COMPONENTS



Figure 2: IoT schema representation

- Micro controllers
- Security and privacy
- Sensors
- Power and storage management
- Connectivity
- Actuators

3. IOT APPLICATION AREAS

- Tele medicine and health care
- Smart homes and cities, surveillance[6]
- Vehicle asset, person and pet monitoring and controlling
- Wearable smart devices
- Smart grid
- Industrial
- Smart retail
- Health
- Smart supply chain
- Smart farming
- transportation(logistics-highways-traffic-parking)
- Security and entertainment
- Defense
- Business intelligence
- Retail marketing systems

4. RISK FACTORS & IOT CHALLENGES

- Full Interoperability Of Interconnected Devices
- Providing Higher Degree Of Smartness
- Energy And Computation Power Utilized By Things
- Scalability
- Availability Of Low Cost Sensors And Actuators
- Protocols And Dealing, Controlling Groups Of Sensors And Address
- Society Impacts[6]
- Handling Massive Amount Of Data Generated By Sensors Impact Of Diy(Things That Are Readily Understood By People)
- Management Of Connected Objects
- Identification Of Heterogeneity(Identifying Which Sensor Technologies To Use)

- Increased storage capacity
- Increase data safety

Misconceptions of IoT cloud computing

- It is Reliant on Internet Connectivity.
- You Will Have to Seal with Recurring costs.
- There are issues of Security and privacy needs to be addressed.
- Limited Control of wearable devices.
- steal of information

5. BENEFITS OF IOT WITH CLOUD COMPUTING

Security in cloud computing is a major necessity to focus. Storing of data in cloud would be stored in encrypted manner. The all data would be transferred through Internet; so data security is of major giving priority activity focus in the cloud. Here we discussed few strategies for protecting data of cloud with IoT. In cloud with IOT data stored in cloud can be stored, accessed from anywhere, there should be to isolate data and protect it from client's direct access [6].

- Access Control
- Auditing
- Authentication
- Authorization

BenefitsOf IOTwith cloud can be impacts a lot

- Lower IT infrastructure, costs for users
- Improved performance
- Fewer Maintenance issues
- Instant software updates and access from anywhere
- Improved compatibility between Operating systems
- Backup and recovery
- Efficiency and Flexibility
- Performance and Scalability

6. CONCLUSION

The rapid development of Internet of Things (IoT) increased in various sectors such as Healthcare, automobiles, Business Intelligence and so on. IoT is an excellent and advancement in smart technological world and survey that using IOT strategiesgies for easy maintainance and can be considered as an alternative to traditional methods. Here we defined the capabilities of various communication schemas, challenges, applications and drawbacks of IOT. On the other way using smart Iot Wearble devices the manufactures of smart devices can easily collect the people personal information and they can sell in block markets also. Additionally empirical studies from victims who faced problems by using IoT smart devices and usually the intruders they can control our smart devies easily so there would be no confidentiality or pricacy can be most impacted issue. This study will assist to understand the consolidation of wearable sensor, wireless communication, challenges and applications in Internet of Things with all the observations made the statement that if there is an assurance from IOT devices manufactures and policies, laws, rules and regulations by the government to accomplish and provide services easily to the public.

7. FUTURE WORK

By considering this paper would helps us to understand overall hierarchy and abstraction of Inter of things, its impact on technological changes of the revolution. In future we can also investigate on concept of wearable devices available in industry its impacts and analysis using sensors and IOT related bands. Otherwise we can conduct case study on use of IOT in diifferent industrial applications and its achievements, environment realtime prediction using IOT sensors is also applicableto deal with real world problems.

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