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Internet of Everything (IoE): The New Way to Connect

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Abstract: ***Human try to communicate to physical system from last 50 years. Human–Machine communication is the communication observed between humans and physical system, from different instruction to the machine using different programming language. Now two different machines can communicate each other and also exchange information and perform actions without the manual assistance of humans. It is possible through using the different technology and internet. So, now every thing can connect to internet and communicate each other and this is the new way to connect: Internet of Everything. In this paper we will introduce what is IoE, and four pillars of internet of everything.***
Keywords: Internet of Things (IoT), Internet of Everything (IoE), Web, Sensor, Network

I. INTRODUCTION

Internet of Things (IoT) represents the next big step in the evolution of the internet, which brings along with it a change in the way we will gather, analyze and distribute data going forward. Market analysis predicts that the number of connected devices will increase from 25 billion in 2015 to 50 billion in 2020. In this context IoT becomes immensely important because it will revolutionize how we will live, learn, work, do business and entertain ourselves. Considering the current thrust on Information Communication Technologies and Electronic Sector Design and Manufacturing by Government of India, and in view of forthcoming Internet of Things Policy in India, there is an immediate requirement of building capacity and skills around Internet of Things. The Internet of Everything (IoE) brings together people, process, data, and things to make networked connections more relevant and valuable than ever before-turning information into actions that create new capabilities, richer experiences.

II. WEB AND INTERNET

The Internet is generally defined as a global network connecting millions of computers. More than 190 countries are linked into exchanges of data, news and opinions. Unlike online services, which are centrally controlled, by design, the Internet is decentralized. Each Internet computer, called a host, is independent. The Internet is not synonymous with World Wide Web. The Internet is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet. The World Wide Web, or simply Web, is a way of accessing information over the medium of the Internet. It is an information-sharing model that is built on top of the Internet. Web is start with Web 1.0 and using internet move to things i.e. internet of things (IoT) and now it's all over i.e. internet of everything (IoE).

III.INTERNET OF EVERYTHING(IOE)

The concept of the Internet of Everything originated by Cisco[1], who defines IoE as "the intelligent connection of people, process, data and things"[2], i.e. in Internet of things not only things is connected but also have connection in between people and things which generate data and specific process will handle this.

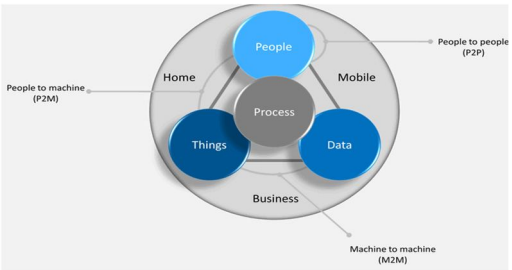


Fig. 1 IoE Communication

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The Internet of Everything is the next step in the evolution of smart things or object. Interconnected things or object in which the line between the physical object and digital information about that object is blurred [4]. IoT focuses only on wired or wireless sensor networks, In IoT machines communicating with other machines, and the data created as a result. It means that machine to machine communication. In IoT we add sensor and connectivity to things or object and it generate data. But as things add capabilities, such as context-awareness, increased processing power, energy independence, and as more people and new information are connected, then IoT becomes IoE a network of networks where billions, or even trillions, of connections create unprecedented opportunities and new risks[5]. Because in the Internet of Things, all communications are between machines/things, IoT and M2M are sometimes considered synonymous. But in IoE concept includes, besides M2M communications, machine-to-people (M2P) and technology-assisted people-to-people (P2P) interactions as shown is fig. 1.

IV. INTERNET OF THINGS (IOT) VERSUS INTERNET OF EVERYTHING (IOE)

The term "Internet of Things" coined by British entrepreneur Kevin Ashton in 1999 described connectivity among physical objects and no longer holds in its original form. It is now largely overlapped, confused and even mystified with the term Internet of Everything (IoE). IoE is considered a superset of IoT and Machine-to-Machine (M2M) communication considered a subset of IoT. Let's take a closer look into differences between IoT, IoE, and M2M, which has impacted consumers and businesses alike.

What is the Internet of Things (IoT)? Devices, computers, and machines were already connected by before the term Internet of Things. The IoT come with the concept ability to connect the unconnected physical object ,not only connect to internet but also ability to generating, transmitting and receiving data unless augmented or manipulated.

What is Internet of Everything? Although the concept of Internet of Everything emerged as a natural development of the IoT movement and is largely associated with Cisco's tactics to initiate a new marketing domain, IoE encompasses the wider concept of connectivity from the perspective of modern connectivity technology use-cases.

V. PILLARS OF THE INTERNET OF EVERYTHING (IOE)

IoE is based on four main pillars which shows that how IoE can be used effectively in different domains.

A. Things

Things are physical items that can be connected to both the Internet and people via sensors. Sensors give things a "voice": by capturing data, sensors enable things to become context-aware, providing more experiential information to help people and machines make relevant and valuable decisions.

B. Data

As things connected to the Internet evolve, they will also become more intelligent, thereby providing more useful information. Rather than just report raw data, connected things will soon send higher-level information back to machines, computers, and people for further evaluation and quicker decision making.

C. Process

Process plays an important role in how people, data, and things work together to deliver value in the connected world of IoE. With the correct process, connections become relevant and value is added because the right information is delivered to the right person, at the right time, in an appropriate way. Ensuring that young people have access to learning opportunities that meet their needs will make education more efficient, improve time to mastery, and motivate learners. Such opportunities will also increase student retention and the application of new knowledge, which is vital for future success in both work and society.

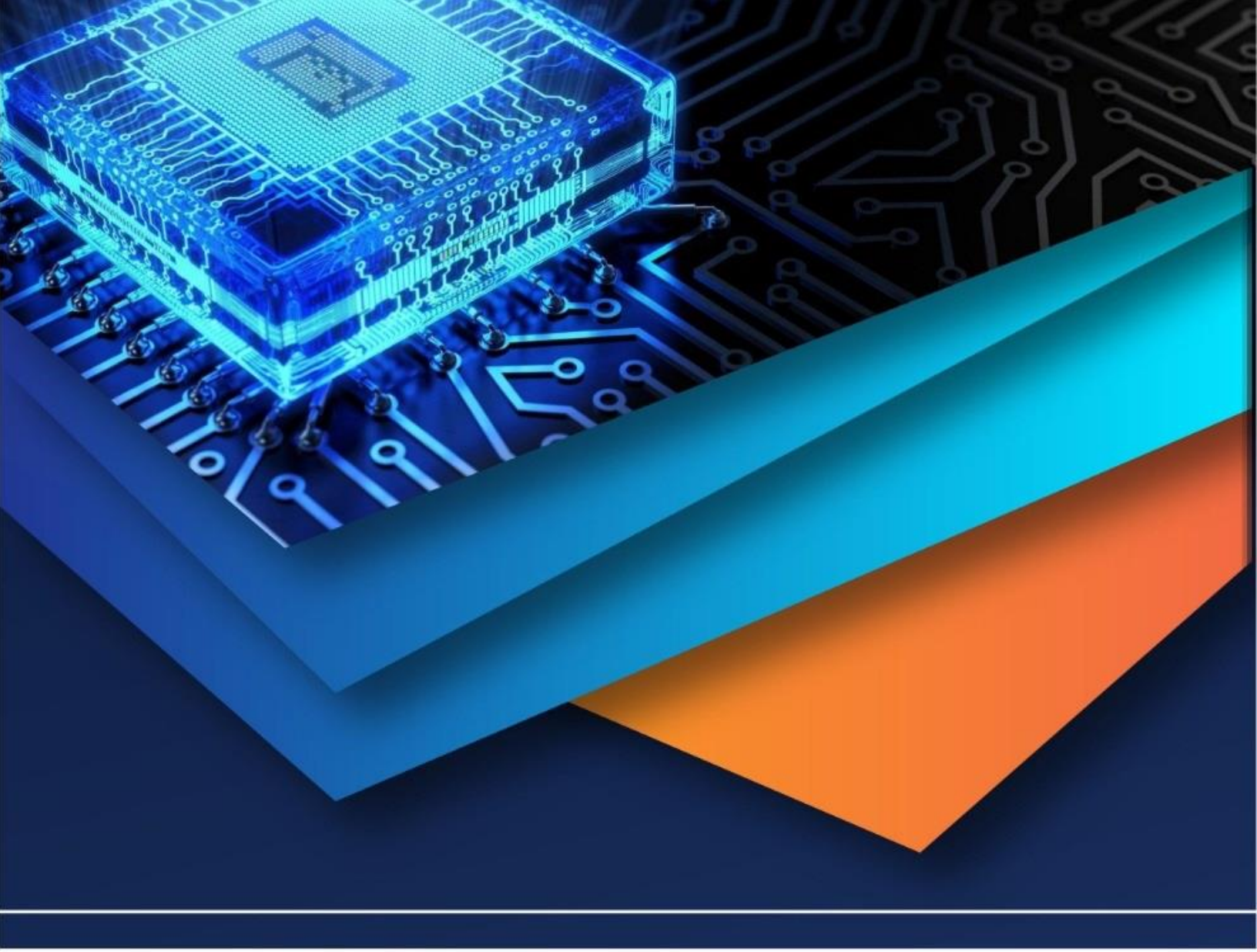
D. People

Today, most people connect to the Internet using multiple devices and social networks. It is too soon to predict the channels people will use to connect to the Internet in the future—what is certain is that through such channels, people will be hyper-connected.

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