EMERGING TRENDS IN INFORMATION TECHNOLOGY

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ABSTRACT

21st century has been defined by application of and advancement in Information Technology. Information Technology has become an integral part of our daily life. Information Technology can be defined as "The study, design, development, support or management of computer based information systems. Various technologies like Cloud computing, Mobile computing, social Media are growing very fast. Cloud computing enable us to share hardware and software resources as a service over the internet on the pay per use basis with any user over the Globe. Mobile computing helps us to access and process data on handheld mobile devices like smart phones, I-Pads etc. Social Media is also contributing to make this world a better place to live by raising issues of social importance. In this paper we will discuss about the various trends of information and communication technology like Cloud Computing, Mobile Computing, social Media and Internet of things(IOT) that is evolving very rapidly and also discuss their role in professional and social life.

KEYWORDS*: Information Technology, Cloud Computing, Mobile Computing, Social Media.*

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Introduction

New advances particularly in the field of information technology have brought new scientific gains to human beings. Today in the digital age, the society is dependent on computers in almost all its affairs. Information Technology has proven game changer in resolving economic and social issues. Information technology helps us to gather, handle and interconnect large volume of data and information. Various technologies in IT are growing very fast like cloud computing, mobile computing etc which is changing the way of doing the jobs. Through cloud computing we are able to get applications, platforms, as well as infrastructure over the internet. Internet of things is making almost every object IT enabled that can sense, process as well as transmit data among different objects in real time over the existing networks. This helps us to control the objects remotely and thus saving our time. Ubiquitous computing is the major area of research these days and in the coming years no of objects that are embedded with computing device will increase very fast.

Advancement and application of IT are ever changing. Some of the trends in the Information Technology are as:

Cloud Computing

Cloud computing is a recent advancement in IT that is emerging very rapidly .It is a pool of shared resources which includes server, storage, networks, services and applications that can be shared with individuals as well as with organization on pay per use basis in a cost efficient manner cloud computing services are usually owned and managed by the third party providers who deliver the services to the use.

- **Cloud Computing Services Software as a service (SaaS)**

It is very familiar type of cloud computing to the customers. software saas service is the topmost layer of cloud computing architecture which offers complete application to the customer over the internet. SaaS applications for business are CRM application like sale force, storage solutions like Google Drive, Drop box and productivity application suit like Google apps.

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- **Platform as a service (PaaS)**

It is the middle layer of cloud computing architecture which offers execution environment as a service for the software without any need of downloading software for the developers and users. Example: Microsoft Azure and Google App Engine.

- **Infrastructure as a Service (IaaS)**

Infrastructure as a service is the bottom layer of cloud computing architecture which offers sharing of the hardware resources through virtualization for executing services. The motive is to make resources such as storage, networks and servers readily available and accessible by the operating systems. IT provides on demand and pay per use basis services. Example: Amazon EC2, S3.

Types of Cloud Computing

- **Public Cloud:** In this type of cloud computing   no restriction on access of services are applied and no authorization techniques are   implemented in this model. It provides the   facility of long term data storage. Example:-Google app and Microsoft Azure.

- **Private Cloud:** This type of cloud computing is implemented with the firewall of the organization. This cloud is designed to provide same services and features sat that of public cloud but remove problems related to security issues, provides more security and control over the organizations data.

- **Community Cloud:** This provides the facility of sharing computing infrastructure among the organization of same communities. Example: Different branch of the same company working on the same project   share the work on the same cloud.

- **Hybrid Cloud:** It is the combination of one or more types of cloud deployment models. It ensures that an immediate increase in the requirement of computing resources can be handled efficiently. Examples of Cloud Computing E-mail:-It is the major service provided by the cloud by which people can communicate with each other while living at any place in the world. Examples of E-mail providers are Gmail, yahoo, hotmail etc.

- **Google Drive:** Thus is the major cloud computing service where all the data and information storage found online so that it can support cloud apps like Google Docs, Google slides and sheets etc. Drive us also suitable for mobile devices as different apps available on the Google play store.

- **Virtual Office:** Through cloud we can create and access office documents online without any installation of heavy software. Example: Google Docs, Microsoft office.

- **Google App:** This engine us a public cloud and provides services to build products ranges from simple websites to complex   applications.

- **Drop Box:** Drop box is an internet based life hosting service which allows the users to store data over the cloud and share it across the world. Drop box also provide facility of file synchronization through which   data stored in our computer can be accessed on any device thought cloud.

Mobile Computing

It allows the transmission of data, audio, voice through any wired or wireless network enabled device without having to connect to a particular physical location with the increase of the portal computing devices and desire to continuously connectivity to the internet without having to connect to a fixed location has increased the popularity of mobile computing. Recent advance in mobile computing like GPS, GPRS, LTE (Long Term Evolution),4G,Wi-Max are becoming very popular.

Mobile Computing Devices

- **Smart Phones:** It is a mobile device that provides interactive touch screen under interface to access various applications.

- **Personal Digital Assistance (PDA):** PDA is a handheld mobile device which works like personal information manager. It provides the facilities like computing synchronization, telephone; internet access etc.PDA also has the facility of audio capability which makes it a portable media player.

- **Wearable Devices:** Wearable devices are small sized digital computers which are usually used in behavioral modeling and health monitoring system. These devices are usually carried or worn on the body. Google Glass, Apple Smart Watch, Head mounted display are some examples of such devices.
- **Increased Productivity**: Users can do their work in a place where they feel comfortable in an efficient manner. This helps in increased productivity. Saves Time: As we are able to access any document from anywhere and anytime on our network enabled devices.
- **Flexibility**: Users are not restricted to work in a fixed location can get our job done from any location.
- **Entertainment:** Mobile devices are used for a variety of entertainment purposes like watching movies, songs, Playing games and much more disadvantages of Mobile Computing.
- **Security Issues**: Users usually dependent on the virtual private network (VPN) while working with mobile devices. These networks are not very secure and can be handled by some intruder.
- **Connectivity**: Internet Connection is required for mobile computing. Before starting of any task it is very essential to check that whether internet with appropriate speed is working or not.

Internet of Things (IOT)

Internet of things (IOT) is a network of interrelated physical computing devices, digital and mechanical machines, animals, objects or people that are assigned with unique identifiers and the ability to exchange data over the network without any human to computer or human to human interaction. A thing in the internet of things (IOT) refers to large amount of computing devices that can be a biochip transponder in a farm animal, Automobile with built in sensor to alert the driver about some problematic situation and a person with heart monitor implant. These types of devices are capable to collect data through sensors and exchange this data between devices over the network anonymous. Application of IOT includes building management, energy management, transmission management etc.

Conclusion

This paper presents an overview about the various recent advances in information and communication technology that is growing very rapidly. In this paper, technology like Cloud Computing, Mobile Computing, internet of things are discussed. All these emerging trends enables people to access data, Information anytime at any place without any need to connect to a particular location.IOT enables computing devices, chips to embedded with various types of real life objects and transfer data among these objects through existed network infrastructure.

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