

Mobile Communication and Its Application

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Abstract: Mobile communication is a technology that allows transmission of data, voice and video via a computer or any other wireless enabled device without having to be connected to a fixed physical link. It offers levels of mobility and services never available before. The earliest batch of mobile phones could only make and receive calls. Today's mobile phones, however, are packed with a lot of additional features such as Web browsers, games, cameras, video players and even navigational systems. Smart and advanced wireless communication environments represent the future technology and evolutionary development step in homes, hospitals, industrial, vehicular and transportation systems. This article discuss about mobile communication and some of its application. Applications like mobile banking, mobile entertainment, and how mobile communication is used in disaster relief.

Keywords: mobile, mobile communication, mobile phone, mobile banking, mobile entertainment.

I. INTRODUCTION

The word mobile means "capable of being moved". An electronic telecommunication device, often referred to as a cellular phone or mobile phone, is a wireless handheld device that allows users to make calls and send text messages among other features. It connects to a wireless communications network [1] through radio wave or satellite transmissions. A mobile phone may also be known as a cellular phone or simply cell phone. A mobile phone with highly advanced features is called a smartphone, while a regular mobile phone is known as a feature phone. It typically operates on a cellular network, which is composed of cell sites scattered throughout cities, country sides, and even mountainous regions. The term 'communication' refers to exchange of messages, information, thoughts, data, idea, news as by speech, signals, writing or behavior. It is the meaningful exchange of information between two or more participants and requires a sender, a message, a medium and a recipient, although the receiver does not have to be present or aware of the sender's intent to communicate at the time of communication; thus communication can occur across vast distances in time and space. Communication is a process of transferring information from one entity to another. Information can be a lot of different things depending on the context. The information can be words, gestures, drawings, songs, music, emails, blogs, forums, text messages, voice messages, poems, essays, books, newspapers and so on.

II. MOBILE COMMUNICATION

Mobile communication [1] is a technology that allows transmission of data, voice and video via a computer or any other wireless enabled device without having to be connected to a fixed physical link. Mobile computing has three components namely mobile communication, mobile hardware [2], and mobile software [2]. Mobile Communication network does not depend on any physical connection between two communication entities and have flexibility to be mobile during communication. It refers to the infrastructure put in place to ensure that seamless and reliable communication goes on. These would include devices such as protocols, services, bandwidth, and portals necessary to facilitate and support of the stated services. The data format is also defined at this stage and ensures that there is no collision with other existing systems which offer the same service. The signals are carried over the air to intended devices that are capable of receiving and sending similar kinds of signals. Mobile hardware includes mobile devices or device components that receive or access the service of mobility. Mobile hardware devices are basic mobile phones, smartphones, personal

digital assistants [3], laptop computers, tablet computers. Netbooks are a relatively recent development and most mobile devices now utilise touch screens screen technology. Mobile hardware continues to evolve. These devices will have receptor medium that are capable of sending and receiving signals to initiate communication. Mobile software is the program that runs on the mobile hardware. It deals with the characteristics and requirements of mobile applications and is the operating system of that appliance. It can be education software, productivity software, security software, browser software, internet software, multimedia software and various others.

III. APPLICATIONS

Mobile communication allows anyone to socialize with anyone from nearly anywhere. It enables business professionals to communicate with colleagues, staff and partners easily at all times. Mobile communication has transformed the media industry. It has opened a new opportunity for program makers, advertisers and video makers to access audience on the go. The ability of watching television via mobile is an innovation that has opened a new channel of communication in the media industry. Business communication has greatly eased with the advent of mobile communication. It enables colleagues or business partners to discuss business without necessarily holding meetings. Mobile phones also have in-built agendas, reminders and contact lists which make work plans and business communication faster. It also makes communication with suppliers and other branches instant. This prevents time wastage, inconveniences and incurring high cost on travelling expenses to business associates and suppliers. Mobile computing has changed the complete landscape of human being life. It enables user to work from anywhere as long as there is a connection established. The work can be accomplished without being in a fixed position. One can now access all the important documents and files from anywhere. A user can simply work efficiently and effectively from whichever location is comfortable and suitable, which results in enhanced productivity. It has also made it easier for field officer and researchers to perform their task without making unnecessary trip to and from the office to the field. Communication has enhanced to convey the information quickly to the consumers. Doctors, workers and other professionals working in remote areas can be in touch with medical [4] centres through mobile communication.

Mobile Banking [5] refers to providing banking and financial services with the help of mobile telecommunication devices. The services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customised information. It performs finance related functions on a mobile device like a smartphone or tablet. With the use of a mobile device, the user can perform mobile banking operations via call, website, text, or app. With mobile banking, users of mobile phones can perform several financial functions conveniently and securely from their mobile. User can check account balance, review recent transaction, transfer funds, pay bills, locate ATMs, deposit cheques, manage investments, etc. Mobile banking is available round the clock 24/7/365, it is easy and convenient and an ideal choice for accessing financial services for most mobile phone owners in the rural areas. User can make transactions or pay bills anytime. It saves a lot of time and is user friendly. Mobile banking may also be used to help in business situations as well as financial.

Mobile entertainment [6] includes communication and entertainment. Mobile entertainment is created as the convergence of both. It offers the growing ownership of smartphones, rise in mobile internet adoption and speed; and realization of mobile as a major distribution channel by content producers are the key drivers behind the massive growth in mobile entertainment. A product or a service may now be made available through many channels offering rich and interactive applications. Most mobile phone manufacturers have special models which are positioned as multimedia phones, such as music phones or gaming phones which offer multimedia-rich features. Such devices have pre-loaded applications for these features, and are also designed with buttons and controls for ease-of-use. Mobile phone acts as a learning device, for online collaboration, as a personal music/video player, for video-on-demand, digital TV, or as an e-book reader.

Music and Video Apps: These include video and audio players which play a variety of formats; remote control applications which play music track on computer, apps that let user buy and sync music from online stores and other devices, compose and record songs, personalized radio, digital TV, streaming of live scores and so on. Music and video are probably the most popular entertainment and multimedia apps, and a variety of apps can be designed based on need.

GPS and Navigation Apps: These include map and provide location-based services such as for example, search for beaches or restaurant, marine navigation and so on.

Social Networking Apps: These apps let the user connect and sign-in directly to their favourite social networking site and share photos/videos and updates.

News and Weather Apps: Read the newspaper on the phone or check the weather forecast. Many top news networks and papers give access to latest news on-the-go, including live streaming access.

Gaming- Sophisticated features of mobile phones and tablets have resulted in immersive games with engaging game-plays. There has been a significant change in the gamer profile as gaming no more is restricted to teenagers. Gaming applications are amongst the most popular entertainment apps.

TV- mobile apps have emerged as successful enhancement. In addition to allowing viewers to watch their favourite programs on-the-move thereby increasing eyeballs and TRP; the apps are also great tools for the channels to engage their audience through social media sharing, recording, information on stars, upcoming programs, teasers, reminder alerts and polls etc.

Movies- A mobile game based on the movie characters and mobile app with trailers, star cast interviews, release updates etc., have proven to be immensely successful in luring the audience and getting the cash registers ringing.

Brand Promotion- There is tremendous scope for brands to use mobile entertainment to engage with an exploding mobile connected consumer base and interact with them. And, businesses are slowly realizing the potential of promoting their brands through games and cater to their instant gratification for products and services. The mobile entertainment market has changed radically, in scale and shape, over the past few years. Mobile content once driven by value added services like ringtones, caller tunes, wallpapers etc., is now being driven by streaming videos, high-end gaming, social media tools and other entertainment apps.

A natural disaster is a major adverse event resulting from natural processes of the Earth, examples include floods, volcanic eruptions, earthquakes, tsunamis, windstorm and other geologic processes. It can cause loss of life, transportation, property damage, like fields, homes, vehicles which affects people's livelihood. The severity of a disaster is measured in lives lost, economic loss, and the ability of the population to rebuild. Mobile communication acts as a toolkit for disaster relief. Many road connections will cut off, train connections and phone and mobile phone lines gets disconnected. Mobile phone technology is driving not only communication but also increasingly emergency and disaster management by providing emergency kitties and emergency support services to crises populations. Mobile phones are mainly being used in emergency and disaster response and acts as back-bone of any emergency communications system. In a mobile communication, information is transmitted over parts of the electromagnetic spectrum rather than through wire lines or cables. This is important because in a disaster, infrastructure such as phone lines or switching trunks might be disrupted. Natural disasters happen everywhere around the world on an on-going basis. When they do, they disrupt lives, livelihoods, economies and political systems with both personal and strategic implications. Essentially, they turn life upside down, impacting everything that makes society work. Mobile communication supports early warning systems, private mobile radio, television, mobile phone, web portals, social media, and other platforms. It enables anticipation, preparation, warning, first response and on-going recovery when natural disasters occur. It helps to inform and coordinate individuals and communities in an effort to avoid or minimize impacts. It improves communication, collaboration, situational awareness, and response time. Most importantly, it allows the emergency operations centre to make the right decision.

IV. CONCLUSION

The possibilities are endless with the mobile communication. The user can work from the comfort of any location as long as the connection and the security concerns are properly managed. It will continue to be a core service in computing and Information Communication and Technology and offers personalised enhanced new services to users, with a wide range of requirements on data rate, quality of service, security, availability and various others to improve communication in every field.

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