

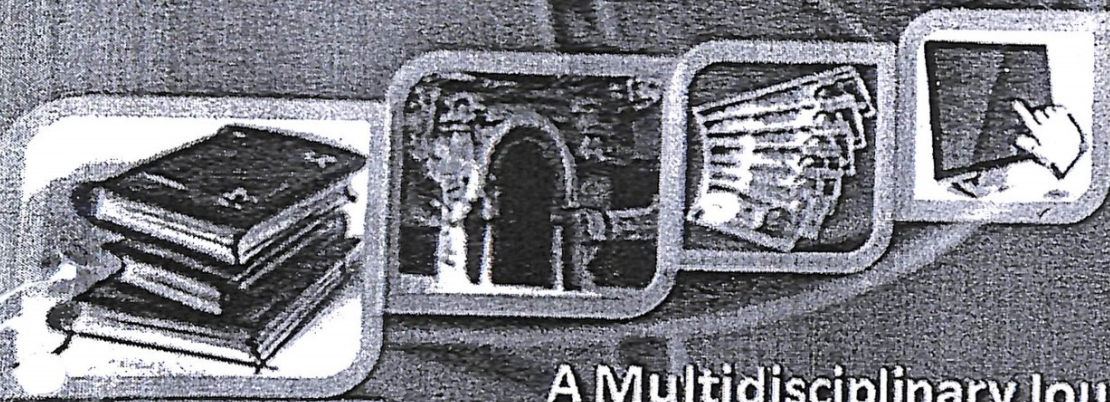
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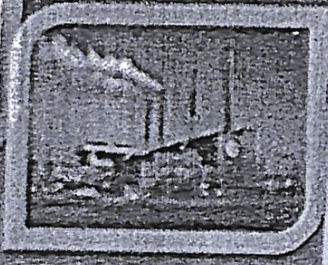
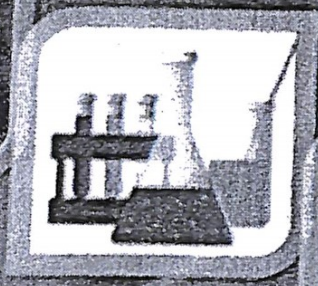
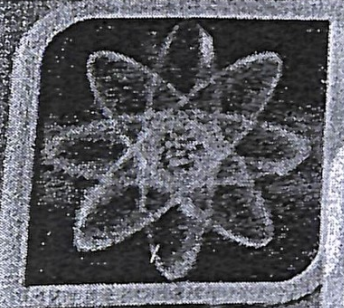
# THE RESEARCH VIEW

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# THE RESEARCH VIEW

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# MOBILE TECHNOLOGIES CHANGING TRENDS: AN OVERVIEW

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## Abstract:

Technology has fundamentally altered how we live and work as well as we learn together in the world of higher education. Mobile technology has been also influenced by the life style and culture of human being i.e. because of impact of Information Communication Technology (ICT) on each and every sector of life. Cell phones are used by millions and billions of users worldwide. In an environment where expenses continue to rise and profits continue to be strained, it's crucial for businesses that are investing heavily in new mobile solutions and social media to clearly understand if/how each initiative will contribute to growth and create value for customer. The purpose of this paper is to describe the changing trends of mobile technologies from 0G to 5G. This article is mostly focused on 5G technology features and benefits.

## Keywords:

## Introduction:

The present cell phones have it all. Today phones have everything ranging from the smallest size, largest phone memory, speed dialing, video player, audio player, and camera and so on. Recently with the development of Pico nets and Blue tooth technology data sharing has become a child's play. Earlier with the infrared feature you can share data within a line of sight that means the two devices has to be aligned properly to transfer data, but in case of blue tooth you can transfer data even when you have the cell phone in your pocket up to a range of 50 meters. The creation and entry of 5G technology into the mobile marketplace will launch a new revolution in the way international cellular plans are offered. Wiki states that "a new generation of 5G standards may be introduced approximately in the early 2020s. However, still no transnational 5G development projects have officially been launched, and there is still a large extent of debate on what 5G is exactly about. Prior to 2012, some industry representatives have expressed skepticism towards 5G but the trends

clearly changed since 2012".

## Concept of 5G technology:

5G Technology stands for 5th Generation Mobile technology. 5G technology has changed the means to use cell phones within very high bandwidth. User never experienced ever before such a high value technology. The 5G technologies include all type of advanced features which makes 5G technology most powerful and in huge demand in near future. The gigantic array of innovative technology being built into new cell phones is stunning. 5G technologies which are on hand held phone offering more power and features than at least 1000 lunar modules. 5G technology going to be a new mobile revolution in mobile market. Through 5G technology now you can use worldwide cellular phones and this technology also strike the china mobile market and a user being proficient to get access to Germany phone as a local phone. With the coming out of cell phone alike to PDA now your whole office in your finger tips or in your phone. 5G technology has extraordinary data capabilities and has ability to tie together unrestricted call volumes and infinite data broadcast within latest mobile operating system.

## Generations of Mobile technology:

First Generation (1G) mobile phones had only voice facility. These were replaced by second generation (2G) digital phones which added fax, data, and messaging services. The third generation 3G has added multimedia with highest speed. 4G, which is also known as "beyond 3G" or "fourth-generation" cell phone technology, refers to the entirely new evolution. Developers are now going for 4G (OFDMA), which will provide internet up to the speed of 1 GBPS. 4G promises voice, data and high-quality multimedia in real-time form all the time and anywhere. The gigantic array of innovative technology being built into new cell phones is stunning. 5G technologies which are on hand held phone offering more power and features than at least 1000 lunar modules.



Different Standards Used in Different generation of Mobile Technologies

Technology /Features	1G	2G/2.5G	3G	4G	5G
Start/Deployment	1970/1984	1980/1999	1990/2002	2000/2002	Soon probably 2020
Data Bandwidth	2kbps	14.4-64 kbps	2Mbps	200Mbps to 1Gbps for low mobility	1Gbps and higher
Standards	AMPS	2G:TDMA, CDMA,GSM 2.5G:GPRS,EDGE, 1xRTT	WCDMA CDMA-2000	Single unified standard	Single unified standard
Technology	Analog Cellular Technology	Digital cellular Technology	Broad bandwidth CDMA,IP, Technology	Unified IP and	Unified IP and seamless combination of broadband, LAN/WAN/PAN/WLAN and www
Service	Mobile telephony (Voice)	2G: Digital voice, Short messaging 2.5G: Higher Capacity packetized data	Integrated high quality audio, video, and data	Dynamic Information Access, wearable devices	Dynamic Information Access, wearable devices with AI capabilities
Multiplexing	FDMA	TDMA, CDMA	CDMA	CDMA	CDMA
Switching	Circuit	2G:Circuit 2.5G Circuit for access networks and air interface; Packed for core network and data	Packed except circuit for air interface	All packet	All Packet
Core Network	PSTN	PSTN	Packet network	Internet	Internet
Handoff	Horizontal	Horizontal	Horizontal	Horizontal and Vertical	Horizontal and Vertical

(\*Source: Division of Computer Engineering, SOE, CUSAT)

The First Generation: "1G" mobile phones were based on the analogue system. The introduction of analogue systems in late 1970 was quantum leap in mobile communication. The prominent ones among 1G system were Advanced Mobile Phone System (AMPS), Nordic Mobile Telephone (NMT), and total access communication system (TACS). These devices help to carry out 800 MHz frequency band.

The Second Generation: The 2G Second Generation emerged in 90's in Europe. GSM provides voice and limited data service and uses digital modulation of for improved audio quality. Supplementary services such as fraud prevention and encryption of users' data become standard features, comparable to those in fixed networks. It offers digital voice at a relatively low speed with very little



bandwidth left over for data.

**The Third Generation:** The 3G was launched in 2000. It is third generation of mobile and it is meant to be the newest multimedia technology for cell phones. The 3g technology adds multimedia facilities to 2G phones by allowing video- audio and graphics applications. The idea behind 3G is to have a single network standard instead of the different types adopted in US, Europe and Asia.

**The Fourth Generation:** The 4G provides mobile ultra broadband internet access through USB wireless to Smartphones. This technology is supported cloud computing, mobile web access, IP telephony, high definition mobile TV, video conferencing and 3D televisions. It gives speed upto 1Gbps for low mobility.

**The Fifth Generation:** This technology is not officially announced but the sources said that this generation launched probably in 2020. The 5th wireless mobile multimedia internet networks can be completed wireless communication without limitation, which bring us perfect real world wireless – World Wide Wireless Web (WWWW). 5G is based on 4G technologies, which is to be revolution to 5G. The 5th wireless mobile internet networks are real wireless world which shall be supported by LAS-CDMA, OFDM, MC-CDMA, UWB, Network-LMDS and IPv6.

#### Features of 5G technology:

- 5G technology offer high resolution for crazy cell phone user and bi-directional large bandwidth shaping.
- The advanced billing interfaces of 5G technology makes it more attractive and effective.
- 5G technology also providing subscriber supervision tools for fast action and reduce errors.
- 5G technology offer transporter class gateway with unparalleled consistency.
- Through remote management offered by 5G technology a user can get better and fast solution.
- The 5G technology also support virtual private network.
- The uploading and downloading speed of 5G technology touching the peak. The 5G technology network offering enhanced and available connectivity just about the world

May be in coming days 5G technology takes over the world market. 5G Technologies have an extraordinary capability to support Software and Consultancy. The Router and switch technology used

in 5G network providing high connectivity. The 5G technology distributes internet access to nodes within the building and can be deployed with union of wired or wireless network connections. The current trend of 5G technology has a glowing future.

**Conclusions:** The 5G technology brought the changes in speed, connectivity and reduces errors. A new revolution of 5G technology is about to begin because 5G technology going to give tough completion to normal computer and laptops whose marketplace value will be effected. In this article we a short review of 5G technology and the mobile generation explains in shorts.

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