

## 5G – The Emerging Technology

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**5G technology** has the capability to impact people's lives. Imagine a doctor being able to connect to the medical devices of his patients or autonomous cars being able to connect with other cars, roads and cities they navigate. All this can be made possible by the implementation of 5G. It will connect everything to everything (X2X), implementing massive Internet of things (IoT).

The usage of mobile phones is increasing day-by-day and there is no end to it. Due to the rapid growing demand of high data rate and unlimited users, there has been a need of fifth generation (5G) of mobile communication which is an emerging technology. One can find a huge potential and big opportunities in this field.

### Why the need for 5G?

- 3.4 billion people had broadband in 2014, out of which about 80% were mobile broadband users and majority were served by High-Speed Packet Access (HSPA) or Long-Term Evolution (LTE). As per estimation, 4G network will no longer be able to control the mobile traffic in upcoming years.
- Mobile subscriber's increasing demand for high-speed applications and seamless connection will lead to high bandwidth requirements that would not be satisfied by 4G.

### Features of 5G

- Provides higher data rates, upto 20 Gbps
- Much lower latency, 1ms
- Increased capacity as the network expands
- Increased bandwidth, upto 40GHz

A study conducted by Infosys reveals that 5G provides multiple techniques to make a network better and faster. Many operators are focusing their long-term strategy on 5G development. For example, North America shows exponential growth in adoption of 5G for the coming years as shown in figure1. The study shows that the current telephone companies will invest billions of US dollars in infrastructure development.

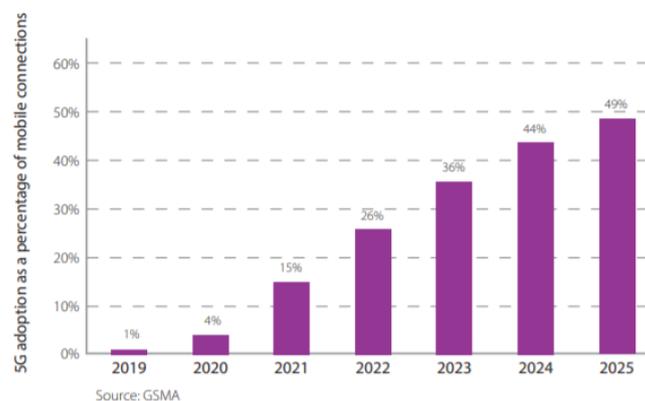


Fig 1. Forecasted exponential growth of 5G adoption (North America, 2019-2025).

In 5G, the research is related to the development of World-Wide Wireless Web (WWWW). 5G technologies will include all types of advanced features which will make it, the most dominant technology in the near future.

The United States, China and South Korea are expected to be among the first to install 5G networks.

The B. Tech and MBA Tech program in Electronics and Telecommunication facilitates the learning of new technologies such as 5<sup>th</sup> Generation Mobile Technology, Software Defined Network, Massive MIMO, etc. to name a few and ensures that the students learn the latest technologies, helping them progress further.

#### References

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