

## 5G

In the race of wireless technology, with an exponential increase in the demand of the users, 4G has now been replaced with its upgraded version of 5G wireless technology. 5G is expected to be the next game-changer in Information and communications technology with its promising improvement in internet speeds, downloading, and energy efficiency, better security which is several times faster than the existing wireless technologies (1G, 2G, 3G, and 4G) and has the ability to accommodate billions of connected devices in the coming years. It is important to know the advantages and disadvantages of 5G technology in detail.

### Advantages of 5G:

**High speeds:** 5G works faster on mobile phones and other devices when compared to 4G and 4G LTE. It allows users to download movies, videos, and music in seconds as opposed to minutes. The network has 20 Gbps speed enabling organizations to use the same for services such as automation, advanced web conferencing, etc.

**Low latency:** 5G has low latency when compared to 4G that will support new applications such as AI, IoT, and virtual reality efficiently. Not only that, it enables mobile phone users to open a webpage and browse things without any hassles.

**Increased capacity:** 5G has the capacity to deliver up to 100 times more capacity than 4G. It allows companies to switch between cellular and Wi-Fi wireless strategies that will help a lot to experience better performance.

**More bandwidth:** One of the main advantages of 5G is that it increases more bandwidth that will help transfer the data as soon as possible. Furthermore, mobile phone users can ensure a faster connection with more bandwidth after choosing a 5G network.

**Powering innovation:** 5G technology is the perfect choice for connecting with a whole range of different devices including drones and sensors. It gives ways to power the adoption of IoT allowing industries to enhance their productivity and other things.

**Less tower congestion:** 4G cellular networks often get congested which will result in various problems while accessing important data. On the other hand, 5G networks allow users to avoid them due to better speed and more bandwidth.

### Disadvantages of 5G:

**Limited global coverage:** The main disadvantage of 5G is that it has limited global coverage and is available only in specific locations. Only cities can benefit a lot from 5G network and remote areas may not get the coverage it for some years. Moreover, the expenses for setting tower stations are high when compared to other networks.

**Decreased broadcast distance:** Although 5G works fast at high speed, it won't travel as far when compared to 4G. Moreover, tall buildings and trees may block the frequency of the 5G network that will result in various problems. Therefore, it requires more towers for coverage that is time-consuming and expensive. Rain can also cause problems to 5G coverage that needs more protection.

Upload speeds: 5G technologies allow mobile phone users to ensure high download speeds. On the other hand, the upload speeds are not over 100 Mbps when compared to 4G. Furthermore, mobile phones need better battery technology while using a 5G connection. Many phone users say that they experience more heat on their devices while running 5G.

Weakened device batteries: Phones that use a 5G connection will result in a huge battery drain that reduces the lifespan to a large extent. Hence, manufacturers need to invest in new battery technologies to protect the battery from damages and other problems.

Cyber security: Cyber security is one of the drawbacks of 5G because it will result in hacking. The expansion in the bandwidth enables criminals to steal the database with ease. Moreover, it uses software that leads to vulnerable attacks.

Lack of encryption early in the connection process: 5G lacks encryption and hackers can plan their attacks with more precision that will affect the companies to a large extent. On the other hand, efforts are being taken to improve the security along with the initial rollout of 5G. Keeping all IoT devices updated with security patches will help overcome the problems with optimal results.

**-Prof. Archana Ingle**