

## **Introduction**

5G will elevate the mobile network to not only interconnect people, but also interconnect and control machines, objects, and devices. It will deliver new levels of performance and efficiency that will empower new user experiences and connect new industries.

What are the benefits of 5G?

- 1) Much higher data rates (1-20 Gbit/s), enabling consumers to download content more quickly.
- 2) Much lower latency (1 ms), allowing users to experience less delay/lag when requesting data from the network
- 3) Increased capacity as the network expands.

What services and use cases do you see for 5G?

- 1) Enhanced Mobile Broadband
- 2) Mission-Critical communications
- 3) Massive Internet of Things

How fast is 5G?

A: Per IMT-2020 requirements, 5G is expected to deliver peak data rates up to 20 Gbps.

## **Analysis Methodology**

Challenges

- 1) Multiple Services – The challenge of standardization to provide dynamic, universal, user-centric, and data-rich wireless services to fulfil the high expectation of people.
- 2) Infrastructure – Researchers are facing technological challenges of standardization and application of 5G services.
- 3) Communication, Navigation, & Sensing – 5G technology has strong computational power to process the huge volume of data coming from different and distinct sources, but it needs larger infrastructure support.
- 4) Security and Privacy – This is one of the most important challenges that 5G needs to ensure the protection of personal data. 5G will have to define the uncertainties related to security threats including trust, privacy, cybersecurity, which are growing across the globe.
- 5) Legislation of Cyberlaw – Cybercrime and other fraud may also increase with the high speed and ubiquitous 5G technology. Therefore, legislation of the Cyberlaw is also an imperative issue.

## **Arguments and Details**

There are several reasons why we should implement 5G as soon as possible.

- 5G is a unified platform that is more capable than 4G

While 4G LTE focused on delivering much faster mobile broadband services than 3G, 5G is designed to be a unified, more capable platform that will not only elevate mobile broadband experiences, but also support new services such as mission-critical communications and the massive IoT. 5G will also natively support all spectrum types (licensed, shared, unlicensed) and bands (low, mid, high), a wide range of deployment models from traditional macro-cells to hotspots.

- 5G uses spectrum better than 4G

5G will also get the most out of every bit of spectrum across a wide array of available spectrum regulatory paradigms and bands — from low bands below 1 GHz, to mid bands from 1 GHz to 6 GHz, to high bands known as millimeter-wave.

- 5G is faster than 4G

5G will be significantly faster than 4G, delivering up to 20 Gigabits-per-second peak data rates and 100+ Megabits-per-second average data rates.

- 5G has more capacity than 4G

5G will support a 100x increase in traffic capacity and network efficiency<sup>1</sup>.

- 5G has lower latency than 4G

5G has significantly lower latency to deliver more instantaneous, real-time access: a 10x decrease in end-to-end latency down to 1ms<sup>1</sup>. Conclusion

## **Conclusion**

In conclusion, 5G will lead to one of the biggest technological transformation of our lifetime, with unlimited possibilities. Not only will it transform lives, but it will also help save them with optimized emergency services such as the reduction of car accidents.

## **Recommendation**

The new data-sharing network that defines so many technical applications would be almost impossible without 5G. Because it transmits data more efficiently, 5G has the potential to be 40 times faster and suffer shorter lag times than the current 4G standard. That speed is critical for autonomous cars, where timely decisions need to be made to avoid crashes.

Real-time data is used to control self-driving cars and change their behavior on the basis of observations. Image: VTT Technical Research Institute of Finland

5G will also be able to transmit video instantly over long distances, allowing one vehicle to share live images with many others.

**Stakeholder agrees but doesn't commit**

5G represents a great opportunity. There are many ways 5G can help health and human service providers meet key needs, lower costs and improve quality of care. Essentially, 5G can be a crucial component of any effort to address needs and better serve individuals and families.

**Stakeholder looks for holes in the presentation**

It is very clear from the presentation how important is 5G. but, there must be some downfalls too associated with 5G which was brought into picture. To form a more informative decision on any innovation, it is important to know every aspect of it.

**Stakeholder says proposal doesn't meet the company's high standards**

The presentation didn't help us enough to form a conclusion. It is suggested to do another presentation which is focused more on real life impacts of 5G rather than what it is and what fruits it will bring in.

**Core message and call-to-action**

Innovations and new technologies are changing the world and the daily lives of each and every one of us. Many things that were mere visions of the future yesterday are now reality. Meanwhile, we are surrounded by technology at every moment of our lives. The 5G train is on its way, If we don't jump in right now we may never can.