WILL 5G BE A GAME CHANGER FOR PAKISTAN - ARE WE READY?

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What 5G is?

5G, the fifth-generation cellular network is the latest development in the field of IT that provides a whole range of new experiences. This novel global wireless standard is meant to deliver multi-Gbps peak data enabling a network that can connect multiple devices including machines. For consumers, 5G will ensure better user capability through low latency, high speed, and more reliable connectivity. 5G is expected to increase speed by 20 times, lower latency by 10 times, and increase the density of devices connected per square kilometer by 10 times in comparison with 4G (Figure 1).

5G will not only be a game-changer in the telecommunication sector but it will enhance the productivity of the whole economy as well. It will bring new experiences for the network ecosystem with massive upscaling in connectivity, bandwidth, and data transfer. The impact of this upscaling will ultimately lead to momentous effects on all the other sectors of the economy. Especially in the ones that are rapidly adopting smart digitized processes and have different network requirements. The enhanced mobile broadband and low latency communication will bring about limitless opportunities and possibilities for vital sectors that require instant decisions like traffic control, health, manufacturing, agriculture, energy, transportation, education, and tourism, among others. International Telecommunication Union (ITU) has already identified three broad categories of use cases (Figure 2)

- Enhanced Mobile Broadband (eMBB)
- Ultra-reliable and Low-latency Communications (uRLLC)
- Massive Machine Type Communications (mMTC).

Figure 1
Source: International Telecommunication Union (ITU).

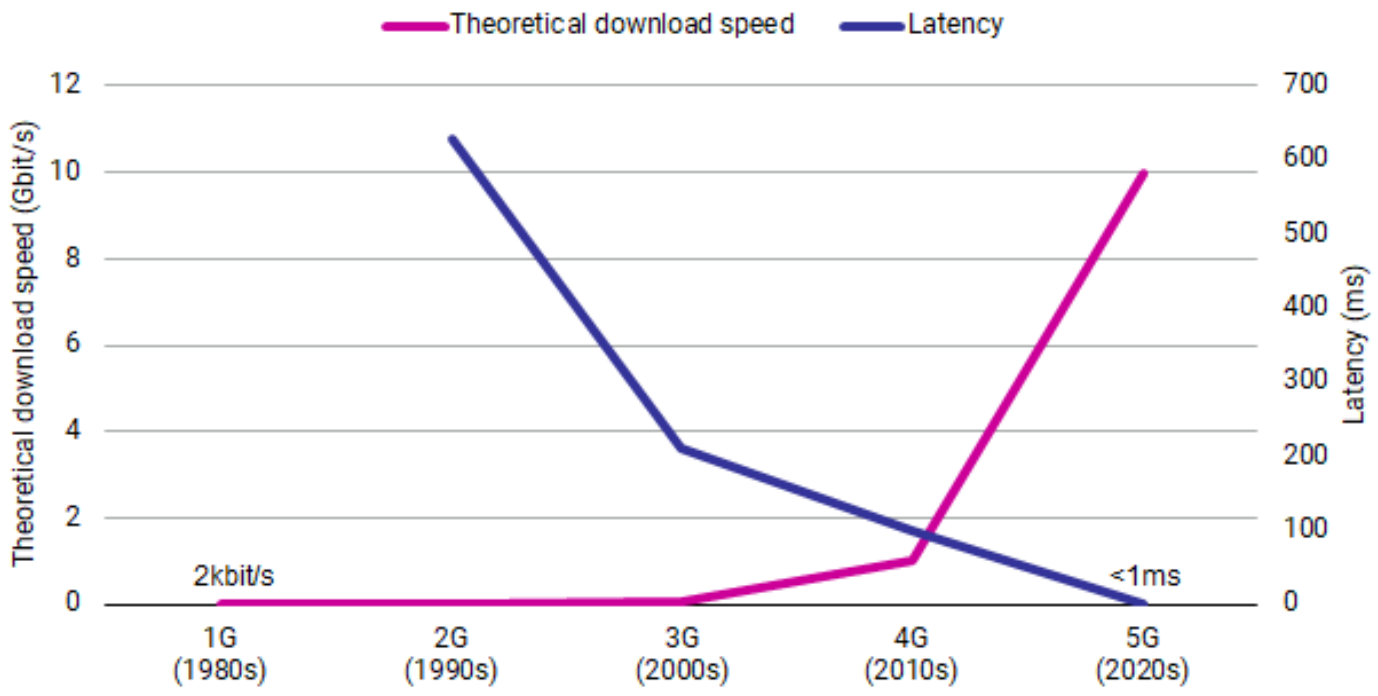
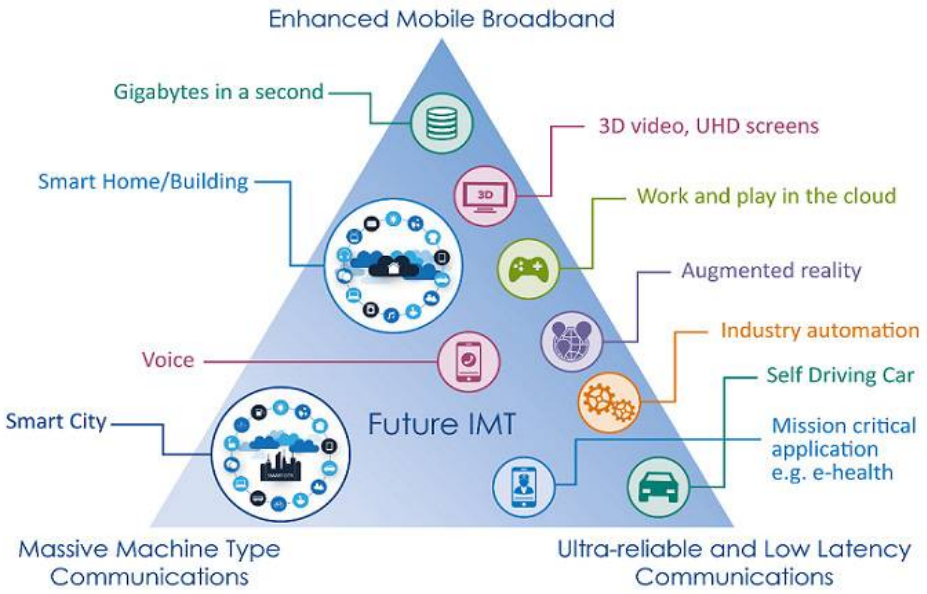


Figure 2
Source: International Telecommunication Union (ITU).



Box 1
Wake-up call

- 89% of the population in Pakistan cannot afford internet, IMF
- Pakistan has been ranked 90th out of 120 countries on the Inclusive Internet Index 2021 by the Economist Intelligent Unit (EIU).
- Pakistan falls into the last quartile of the Global Internet Index countries overall & it ranks 24th out of 26 Asian countries.
- World Bank data (International Telecommunication Union and World Telecommunication/ICT Indicators Database) shows that 17% of Individuals in Pakistan used the Internet in 2019.
- The number of internet users in Pakistan increased by 11 million (+21%) between 2020 and 2021.
- Internet penetration in Pakistan stood at 27.5% as of January 2021.
- The internet is supplied by 6 submarine optical fibers and four operators in Pakistan. The internet coverage through mobiles is 85% + population but there are approximately 35% of people that have no access to any signal no 2G, 3G, 4G, 5G. The voice for better internet at an affordable price is surging.

State of Pakistan Economy

- The download speed during the 5G trial in Pakistan was reported to be 1.685 gigabits per second.
- 5G will help the digitalization of Pakistan by connecting people with robust purpose-built technology opening up opportunities for industries as well as individuals. They are expected to benefit from future innovations in distance learning, public safety, manufacturing, transportation, and health, etc.
- The introduction of e-governance will enhance the enabling role of the government and bring about transparency and efficiency in processes.

5G will increase the demand for fiber as each building needs a fiber connection and a small antenna/ base station for a cellular company. It will increase demand for mobiles that are compatible with 5G technology and we also need new devices to operationalize 5G in our country. In the case of Pakistan, we are yet to capitalize on our investment in 4G. We should opt for a technology that is relevant to the country. Korea went for 5G when they had an 80% penetration of 4G handsets. In our country, around 60% of the users do not have the 4G devices; the 4G was introduced 10 years back. We need another 3-4 years to get used to 4G. To develop a fully compatible ecosystem with 5G we require an up-gradation to the latest technology from both customers and operators. Even if the Spectrum is available in our country, 5G will be more expensive as the companies will need to upgrade their apparatus. This will put pressure on existing companies. The four operators provide 4G but 50% of our Sims sold today are 2G and 50% of our handsets are sold in the market can hardly support 2G. The benefit of utility comes in when the number of users is high. Providing 5 G to a small privileged community will be suboptimal while investment in 4G will improve service quality many times.

Figure 3
Source: International Telecommunication Union (ITU).

Source: PTA website.

With the existing infrastructure, a lot is going on like vehicle tracking, driver behavior, app economy, and weather and pricing information to farmers, etc. that has increased their productivity. Instead of 5G, we need to more focus on e-commerce that is more valuable for the economy of Pakistan. Easy paisa is working exceptionally well but still, we face issues in online payments. People are not comfortable with online or digital payment even now and there is a natural evolution and adoption of the latest technology so let the market decide. One strategy could be to move gradually up the ladder.

Box 2
Wake-up call

Challenges

- 30% higher tax on broadband compared to luxury products
- 50% of customers still using 2 G
- 90% of handsets made in Pakistan are feature phones.
- High Taxes on smartphones.

On the one side we are promoting 5G technology but on the other side producing phones for 2G technology and this creates huge problems in the adoption of latest technologies. We close internet devices/cell phone signals in any political event for security reasons and it affects business. The latest orders by the Punjab government to block SIMs if anyone refused vaccination are very alarming. Which business plan will be viable in this situation? We should think about why investment is coming in India but not in Pakistan by major investors like Google and Facebook.

Box 3
Wake-up call

Advocacy and support for a digital Pakistan:
Improve internet access: Review taxation on broadband and devices
Eliminate Cash: Preference to digital payments through tax incentives
Value Chain Enhancement: Internalize digitalization agenda within the private sector
Stop Cell phone Blockages: for security reasons.

Global Positioning

- Pakistan has been ranked 90th out of 120 countries on the inclusive internet index 2021 by the Economist Intelligent Unit and it stands well behind India, Bangladesh, Nepal, and Sri Lanka.
- In-network readiness index, UNCTAD's e-commerce index, Pakistan comes after Bangladesh, India, Sri Lanka, Iran, Thailand, and Malaysia.
- In the UN department of economic and social sciences, e-government development index, Pakistan ranked below Myanmar, Nepal, Bangladesh, and India.
- In the telecommunication infrastructure index of UNDESA, Pakistan is behind India, Bangladesh, Nepal, and Myanmar.
- In the world economic forum index of 141 countries, Pakistan is at 110th, again behind Nepal, Bangladesh on Sri Lanka, and India. In the ICT development index from September 2019, Pakistan is behind Bangladesh, Nepal, Myanmar, and India.

Way Forward

Digital communication has a major role to play in economic development and growth both in developed and developing countries. The poor connectivity and accessibility hampers the productivity of the businesses and creates further divides in the economy. There is a common consensus in the developed countries that we need greater coverage and consistent accessibility rather than high-speed data transfers. The universal coverage should be taken up either as a basic right addressing the divides in the society or industrial policy of the developing countries.

According to a World Bank study, the cost of reaching universal access by 4G in developed countries requires 1.6 trillion USD which amounts to 0.6 % of the GDP. In Pakistan, like other developing countries, the budget is severely constrained by major challenges of debt servicing, poverty eradication, universal health, and education. Amidst all the challenges, Pakistan has allocated 0.83 % of its PSDP to science and information technology for the FY2022. This has no comparison with the amount required for universal access of 4G.

Based on the existing GDP per capita and population density, we need to determine the most suitable technology for Pakistan's digital landscape rather than leapfrogging to 5G. The mix of two technologies can be the best policy option also. The policymakers can then ensure the efficiency of the "best suitable technology or technologies" via timely investment incentives and a favorable regulatory framework. This would reduce financial pressure both on the government and the cellular companies.

The 5G is in an embryonic stage of development in most of the countries, yet the discussion is intensifying over the cost-effective rollout of the technology in Pakistan which is the new global wireless standard. This is very challenging for the governments of developing countries. The factors that have contributed to the cost-effective rollout of the 5G technology amounts to standardization of LTE, enhanced spectrum efficiency, and allocation of additional spectrum. Pakistan though believing in digitization as a pillar of growth has yet to materialize on 4G LTE and existing spectrum auction. The 5G seems to be a distant reality.

A highly competitive and open market without undue regulatory duties for smartphones and devices is required that would enhance the penetration of 5G. The "Suzuki mobile" plan needs to be revisited. The restrictions on internationally standardized mobiles and devices to protect local production leads to inherent inefficiencies as per experiences in the automobile sector.