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5G has been a raging topic of discussion of late, with the industry and the government working hand in hand to lay the ground for its commercial deployment. The signs are clear that India aspires to be a 5G-ready nation by 2020 and steps are being taken to realise the goal on time. 5G, the futuristic opportunities it would open up and how it will be a catalyst for change have become the themes of symposiums, conferences and forums.

Discussions on 5G inevitably revolve around its unique use cases, especially in the Indian context, which were hitherto presumed to be impossible and fictional. Technologies such as driverless cars, smart transportation and logistics, smart farming, drone patrolling for road safety, holograms and remote robotic health care are expected to enter our world and become more and more pervasive by the day.

ICT industry is collaborating extensively for furthering the cause of 5G and providing the much-needed impetus to other innovations that are set to drive the shift – internet of things (IoT), machine-to-machine (M2M), artificial intelligence (AI) and augmented reality (AR), amongst other technologies. A case in point is Ericsson's plan of starting to export 5G-ready equipment from India as "Made in India, for the world". The telecom major has established India's first Centre of Excellence and Innovation Lab for 5G at the Indian Institute of Technology (IIT), Delhi. Similarly, Intel inaugurated the Intel India Design Centre, its new research and development (R&D) facility for 5G and AI in Bengaluru. The centre plans to employ 3,500 researchers and staff, with an expected investment of Rs 12 billion.

The government too has clearly voiced its intention to make India 5G-ready and to this end, the Department of Telecommunications (DoT) had partnered with IIT Chennai to set up a one-of-its-kind test bed for 5G. The engineering institute will conduct R&D around 5G-based technologies such as IoT, AR and M2M. Rapid economic growth, brilliant technological advancements and the combined efforts of the government and the industry will ensure that India adopts 5G early. The industry is keen to make India a world leader in next-gen technologies and the setting up of the 5G India Forum is a confident step towards this goal. This forum has been collaborating with experts from around the globe and discussing challenges and opportunities to make India 5G-ready well in time.

It must be noted that 5G is not just about faster data speeds and top-notch connectivity, but it would actually foster use cases that were hitherto unthinkable. The innovations would demand

sizeable investments also, but the returns are so gratifying that industry stakeholders are not holding back from giving it their all. 5G will mark a watershed moment in India's technological journey and will revolutionise the communication industry for all times to come. Not only will 5G up the ante manifold for domains such as health, agriculture, education, logistics, manufacturing, vehicle-to-everything evolution, smart grids, smart cities and smart homes, it would also catapult India's transformation into a veritable digital economy by ushering in new business models and opening up new opportunities.

After all, India's dream of digital empowerment cannot be dissociated from smart telecom and smarter internet infrastructure. As per industry estimates, by 2030, there would be 22.7 billion connected devices in the consumer electronics segment alone. The automotive and medical sectors will come a close second, accounting for 928 million and 406 million devices respectively. In the agricultural sector, for example, farmers installing smart sensors in farms will be able to aggregate information on soil status, humidity and temperature. This will provide updates on a real-time basis, which will further help in keeping a check on crop health.

In this 5G endeavour, spectrum efficacy cannot be ignored. Different use cases will demand different frequency bands, both licensed and unlicensed. With IoT making its foray in a robust manner, more and more devices will get connected to the internet. Demand for spectrum allocation is, therefore, expected to spiral. The National Digital Communications Policy, 2018 has recognised spectrum as a natural resource and has vowed to ensure adequate availability and efficient usage, and establish a fair and transparent allocation method for service providers. Since spectrum costs are high, the policy has also recommended optimum pricing models so that citizens have easy access to digital communication services that are affordable and sustainable.

As the country gears up for commercial deployment of 5G networks by early 2020, operators are ready, the wherewithal is in place and the intent is vigorous to leverage 5G, targeted at achieving India's Sustainable Development Goals. With an anticipated collective economic impact of \$1 trillion by 2035, the importance of 5G and its implication for India's true digitalisation cannot be discounted.

In the coming five to seven years, over \$100 billion worth of investments will be required to deploy 5G infrastructure and the government is leaving no stone unturned in formulating an action plan. The stage is now set and once implemented commercially, the new technology will unleash several high-octane revenue channels for service providers.

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