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5G AND BEYOND:
THE DIGITAL FUTURE

Discussion around higher speed and performance of 5G over its predecessors tend to miss the forest for the trees. Studies reveal greater RoI over short term from private networks

As India races into a digital future, 5G will assume a critical role in not only enabling enhanced and specialized applications of increasingly modern communications technology, but also, for the first time, provide new types of socio-economic benefits in many industry verticals. Not only does the technology offer the means to connect users to a high-performance network, it also enables use cases that offer greater and unprecedented value.

While the advent of the public internet offered connected users a revolutionary way to exchange information, it was in a largely static form. It was, however, a significant departure from the technology of the day and ushered in an unimaginable era of innovation and progress across sectors and economies. With ever increasing demand and potential of video services, 5G is poised to usher in a similarly significant evolution from 4G. Its ability to carry large amounts of traffic make it an ideal vehicle for the distribution of video-based applications and services for the growing urban appetite as well as for the accelerated adoption of communications services in rural areas.

The real time features of the technology enable industrial use cases that enhance networks' ability to

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address challenges faced by businesses around the world. It is perhaps for this reason that conversations about industrial 5G tend to evolve into discussions about industry 4.0.

Recently, Nokia CTO Randeep Raina made a compelling case for 5G as not only the fifth iteration of mobile communications technology for humans, but also as the first true generation of communications technology fit for machines. This is a great expression of the uniqueness of 5G. The ability to integrate machines into communications networks is not novel, but 5G is the only communications technology that comes close to offering a level of performance and mobility deemed suitable for use in modern machine-to-machine and internet of things (IoT) use cases. With increasing demand for real-time connectivity across demographics, devices, sensors and automation protocols, successful

applications of industrial 5G will deliver solutions that effectively capture the value up for grab.

Much of the cynical prognostication around the development of adoption of 5G in India draws comparisons with the lacklustre performance of 3G technology in the nation, the lack of a large-scale business case for public 5G, or the fact that no trials have even taken place yet. While it is true that many nations began the testing of significant 5G rollouts over two years ago, it is also true that their experiences offer crucial lessons for others now seeking to rollout such networks, obviating, to a large degree, the need to carry out expensive trials.

It is also true that a large scale 5G business case has so far eluded providers in markets where limited deployments have been in existence for over a year. At the same time, as also pointed out in a 2020 Ericsson consumer and market insight report, even in a pandemic hit global economy, one out of every three early adopters is still willing to pay a 20% premium for 5G.

Additionally, it is important to note that numerous applications of 5G private networks are revealing better returns on investment than public 5G over the near term.

5G can be effectively deployed in a range of environments to an equally wide variety of ends. For manufacturing, the technology can help optimize connectivity to industrial control equipment, enable real time control of robotic equipment, provide reliable video training and support to workers across the facility, integrate reporting of process efficiency using video and sensors, as well as AR applications that provide support for critical industrial processes. Current robotics and automated machine protocols are routinely connected using Wi-Fi, limiting their movement through the factory floor, a limitation of technology and application that can be adequately addressed by 5G. Companies such as Siemens

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and others are aggressively pursuing such designs and are investing in infrastructure and spectrum. Volkswagen aims to deploy 5G across 122 factories by 2021.

5G networks can also be deployed in a private setting for a wide variety of healthcare applications. The data generation and harvesting capabilities of modern technologies enabled by 5G can drastically improve healthcare outcomes. At a minimum, the technology would allow for seamless video based remote diagnoses. At its peak, it would enable the administration of remote surgical procedures. Given the large number of devices and data endemic (no pun intended) to the practice of healthcare, the use of 5G to collect, process and act upon insights is bound to be invaluable.

Service providers should also pay attention to the needs of educational institutions, as well as the role of private 5G networks in educational and corporate campus settings.

The nature and reliability of 5G help it create immense value when applied in special scenarios and is a clear opportunity for service providers to partner with technology companies to enable such rollouts till public 5G reaches a significant level of market maturity. According to Ericsson, "Service providers can directly generate USD 131 billion by 2030, from digital service revenues by proactively developing and marketing 5G use cases. Key opportunities lie with enhanced video, advertising, in-car connectivity and extended reality."

In its report "Industries and enterprises are ready to reap the benefits of 5G", Omdia reveals that of the global enterprises surveyed in its study, 71% believe that 5G networks are set to have a significant impact on their business and help create new commercial and business models. It also reveals that nearly three fourths of the globally surveyed telecommunications service providers believe that most 5G revenues will be derived from B2B, B2B2C or government/smart cities opportunities. The report concludes that telcos can "become 5G ecosystem orchestrators and be the anchor provider of solutions that will indeed include traditional core connectivity but which will extend and encompass applications and services required in the 5G era", and that capturing this value would rest on securing and fostering key partnerships with an ecosystem of alternative providers, system integrators, and application developers.

For India to realize its digital vision, it must now look to 5G and beyond. As the first truly fit-for-purpose communications technology that can be effectively deployed for machines, 5G will enable staggering levels of operational efficiency in a wide variety of industries. For retail consumers, the technology would offer unparalleled connectivity that can cater to a media heavy digital lifestyle. 5G can also be suitably deployed in rural settings for the development of community led approaches that maximise local impacts, making it ideal for furthering the rural development agenda.

A proactive approach to the development of technologies that lie beyond 5G is essential for the preservation of India's digital ambitions. Cultivating a business-friendly environment for investments, both domestic and foreign, ensuring domestic technology development as well as participation in global standardization efforts will be crucial, since 5G would indeed be the threshold for new generations of development and opportunities and propel us into a future previously limited to science-fiction.

India must ensure a development-focused but business-friendly approach to successfully reap the rewards associated with assuming a leadership role in the emerging exciting digital world. 🪔

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