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The Digital Accelerate

The 5G story

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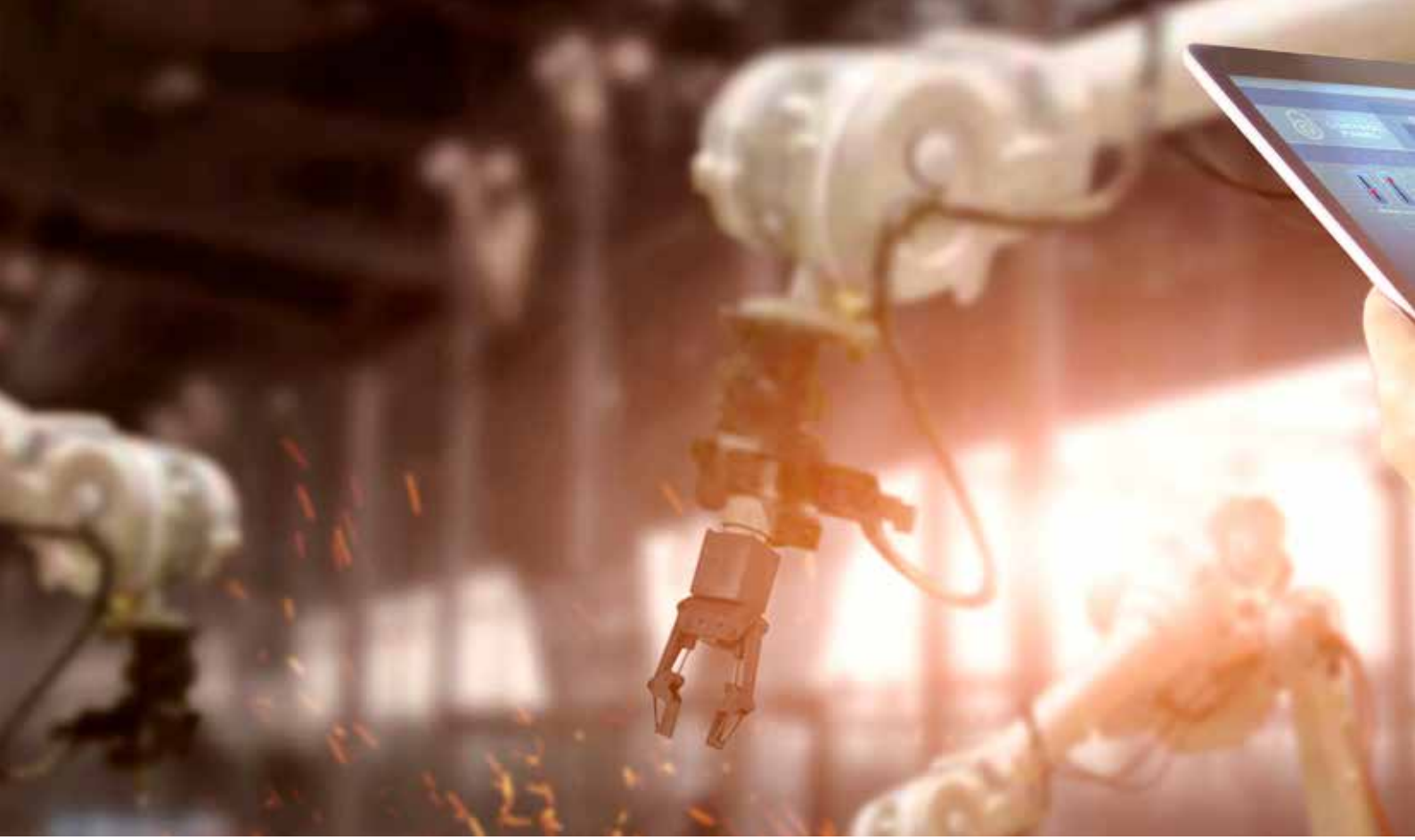


Introduction

Fifth-generation or 5G is a much-awaited ultra-high-speed wireless broadband technology which is expected to provide a whole new level of mobile internet connectivity, offering faster speed and more reliable connections on smartphones and other devices. It is also expected to be instrumental in advancing other technological revolutions like the internet of things technology (IoT), robotics and artificial intelligence.

With 2G technology, the users got voice calling and text messaging, while 3G technology facilitated internet usage on mobile phones. With a higher broadband speed, 4G technology advanced the app ecosystem. Now, 5G is expected to considerably multiply the broadband speed, thus enabling secure connectivity beyond our smartphones to cars, appliances and gadgets. It is also expected to make machine-to-machine (M2M) communication possible, enabling industrial transformation.

5G primarily has two distinct characteristics: low latency and high throughput. Latency is the time taken by data to move from one point to another over a network, which in 5G is reduced to a minimum of 1 millisecond compared to 4G where latency is 50 milliseconds. High throughput supports large amounts of data flowing on the network.

5G networks may help power a rise in IoT by providing the infrastructure needed to swiftly carry huge loads of data, resulting in a smarter and more connected world. The high speed offered by 5G may make possible tasks like autonomous driving, remote surgeries and prompt disaster response, which seem impossible today. Such tasks essentially require secure and reliable connectivity, and low latency. 5G may also energise industrial transformation through M2M technology, mobile robots, time-sensitive networks, etc.

5G is also expected to support the government's Smart Cities mission by enabling them to collect and process data more effectively, and allowing them to proficiently monitor and control city resources and provide better services to occupants.

5G roll-out

Certain countries will roll out 5G networks this year, while others may get 5G ready by 2020, offering gigabit speeds, greater capacity and ultra-low latency. South Korea, Japan, Australia, USA, China, France and Germany are said to be targeting 5G roll-out by late 2019 or early 2020.

The roll-out of 5G in India may happen sometime in the latter half of 2020. However, the existing telecom companies are grappling with challenges such as rising debts and narrowing profit margins since the launch of telecom services by newer players. They need to gear up for 5G adoption and at the same time focus on their financial health, overcome challenges in getting fresh borrowings and deal with reducing average revenue per user (ARPU). They will also require large investments to update their existing telecom infrastructure to 5G, while newer players, on the other hand, would have already factored these aspects in their roll-out plans.

Another potential challenge before rolling out 5G in India is the readiness of the ancillaries and the ecosystem. To be 5G-ready, support in the form of service platforms, delivery models and availability of devices, among other niche services, will be needed from ancillaries.

Other reasons for the delay in India rolling out 5G could be a weak overall fiber network infrastructure, the absence of business case and a dearth of internet-enabled equipment and gadgets. High reserve prices for spectrum could also potentially impact the appetite of telcom players for 5G.

Today, India with more than a billion mobile phones and other connected devices, and more than half a billion internet users, has the highest mobile data consumption. At this pace of growth, it is estimated that India's digital economy will potentially reach $1 trillion by 2025. The access to digital India is no longer limited to a privileged few.[1]

The government took cognizance of modern technological advancements in the telecom sector such as 5G, IoT, M2M communication, etc., and considered the need to introduce a customer-focused and application-driven policy for the

1. National Digital Communications Policy – 2018

sector which could support digital India by addressing emerging opportunities for expanding not only the availability of telecom services but also telecom-based services. Accordingly, in September 2018, the Union Cabinet - chaired by Prime Minister Narendra Modi - approved the National Digital Communications Policy (NDCP), which replaced the National Telecom Policy of 2012. NDCP focuses on achieving certain strategic objectives by 2022. It aims to provide the push required to attain broadband reach, create more job opportunities, train manpower to up their skill set, expand IoT, establish a comprehensive data-protection regime, enhance the contribution of the digital communications sector in India's GDP and attract further investment in the telecom sector. Its target is to fulfil the information and communication needs of citizens and enterprises by providing robust infrastructural support.

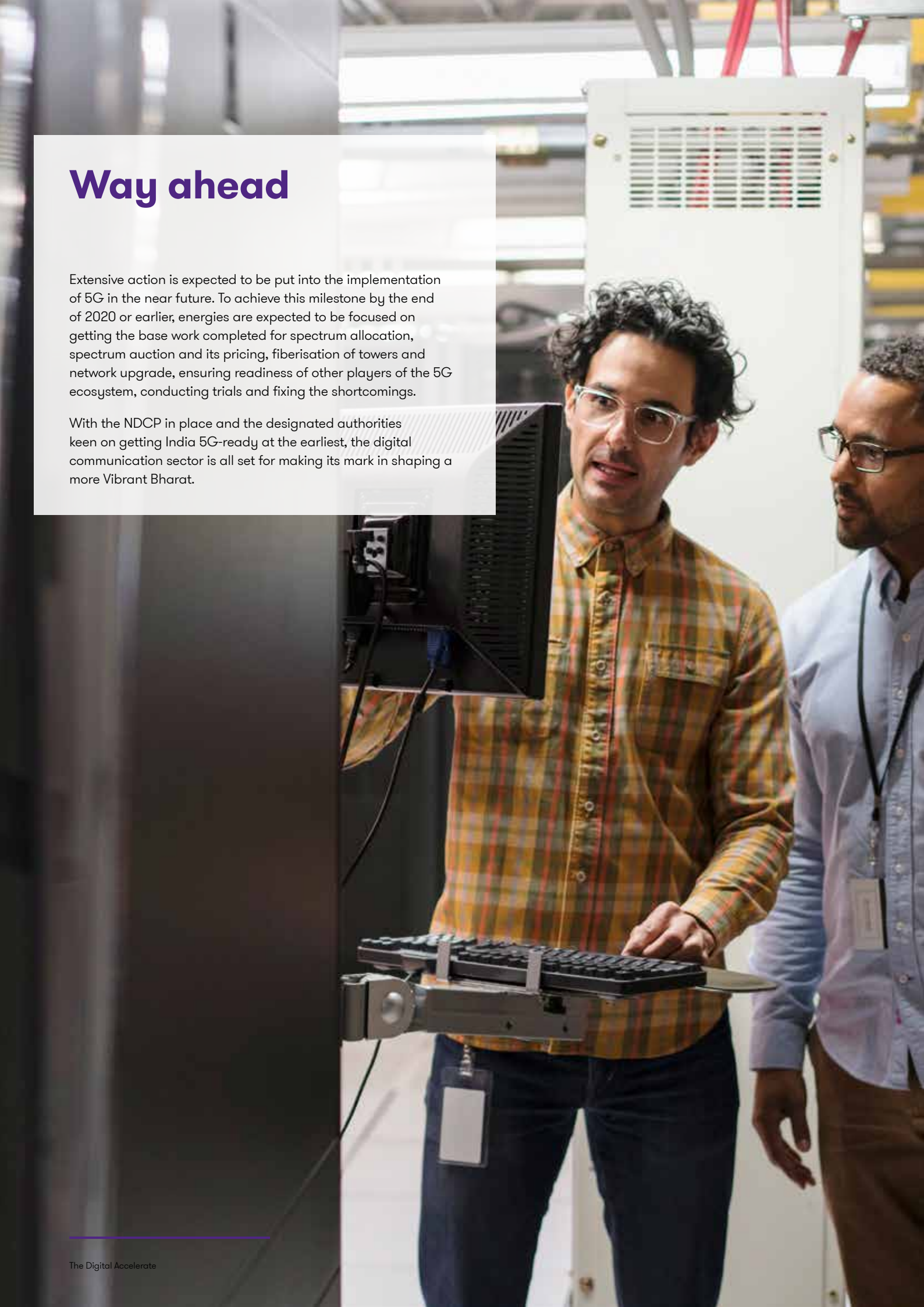
NDCP's strategic objectives are envisaged to be attained through its missions like Connect India, Propel India and Secure India. Connect India aims to promote broadband for all as a tool for socio-economic development while ensuring service quality and environmental sustainability. Propel India aims to promote the power of emerging digital technologies, including 5G, AI, IoT, cloud and big data, to enable provision of future-ready products and services, and to catalyse the fourth industrial revolution. Secure India aims at ensuring sovereignty, safety and security of digital communications.

To achieve these objectives, various strategies have been charted under NDCP. Under the Connect India mission, strategies such as BharatNet, GramNet, NagarNet and JanWiFi aim at providing the push required to have broadband connectivity in rural and urban areas. The Fiber First initiative purposes to take fiber to homes, enterprises, etc. It also aims to promote collaborative models of public-private partnerships, as necessary, for the provision of shared ducts and infrastructure. The Propel India mission promulgates various strategies to enable next-generation technologies. It proposes to recognise communication systems and services as essential connectivity infrastructure at par with other connectivity infrastructure like roadways, railways, waterways, airlines, etc. for development of India and enable low-cost financing for the development of communication infrastructure. It also proposes to reform the licencing and regulatory regime to catalyse investments and innovation, and enable high-speed internet, IoT and M2M by roll-out of 5G technologies. The Secure India mission aims at ensuring digital sovereignty, safety and security of digital communications by establishing a strong, flexible and robust data-protection regime by devising harmonised communications law and policy relating to privacy and data protection in India.

Way ahead

Extensive action is expected to be put into the implementation of 5G in the near future. To achieve this milestone by the end of 2020 or earlier, energies are expected to be focused on getting the base work completed for spectrum allocation, spectrum auction and its pricing, fiberisation of towers and network upgrade, ensuring readiness of other players of the 5G ecosystem, conducting trials and fixing the shortcomings.

With the NDCP in place and the designated authorities keen on getting India 5G-ready at the earliest, the digital communication sector is all set for making its mark in shaping a more Vibrant Bharat.



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