

Technology and Telecom Trends: 2020

In line with global counterparts, technological advancements and innovations are rapidly transforming the business landscape in India. India is undergoing a phase of disruption and is expected to witness a massive digital transformation over the next few years. Digital adoption poses an enormous opportunity for companies that leverage the right technologies at the right time. The digital trends expected in the foreseeable future are as follows:

The coming of 5G

The high speed, ultra-reliable, low latency next gen network technology is poised to unleash several disruptive possibilities, which were earlier thought to be unrealistic and impossible. Many emerging technologies such as AI, AR, and VR are all set to make faster inroads once 5G and 5G enabled technologies come to the forefront. In fact, 5G's collective impact on India's economy is estimated to touch a whopping \$1 trillion by 2035. 5G is expected to have a deep lasting impact on India as new opportunities will open up a plethora of business possibilities, be it in the domains of transport and logistics, healthcare, education, smart manufacturing and smart cities. In fact, 5G is poised to be the core technology that will enable India's digital transformation, by providing different types of services in India, such as rural broadband, enhanced broadband in urban areas, enabling smart cities through support for IOT, and enabling critical communication through support for ultra-reliable low latency communication. 5G will also find widespread use cases in rural India, such as smarter crop management, disaster management, education for all, etc.

In order to provide the much needed impetus for faster implementation of 5G in India, the Government has established 5G High Level Forum (5G HLF). The institution, in its report, has made recommendations on various aspects including spectrum, trials, regulatory measures, standardizations, etc. for timely implementation of 5G in India. TSPs are also excited about 5G's immense potential and are conducting trials actively across the country.

With 5G and IoT/M2M coming to the fore, more data flows will happen within networks and ecosystems. AI technologies will emerge to make sense of the big data, draw out insights by intelligently analysing the data, which will further contribute to adept data-based decision engineering by businesses. IoT, AI, Machine Learning and big data analytics will form crucial part of the entire business environment of a tomorrow, which is not too far away.

Internet of Things (IoT)

Even though, India's IoT journey began much later, the country's installed base of connected units is expected to grow at much faster rate. IoT units in India are expected to see a rapid growth of ~32X to reach 1.9 billion units by 2020.

All three big telcos are focusing on NB-IoT deployment. The National Digital Communications Policy 2018 has also envisaged a goal to expand IoT ecosystem to 5 Billion connected devices. However, India's IoT market is highly fragmented with numerous players operating across the value chain. Going forward, Industries such as

utilities, Manufacturing, Automotive and Transportation & Logistics, Healthcare, Transport, Consumer Durables, Smart Meters and Agriculture are also expected to make significant progress in IoT adoption.

Strategies are also being developed to accelerate Industry 4.0, by creating a roadmap for transition to Industry 4.0 by 2020 and establishing a multi-stakeholder led collaborative mechanism for the said transition.

Network Functions Virtualization

As India prepares the ground for large scale 5G rollouts, operators will be pushed to adopt new network architecture (centralized control with dynamic flexibility and programmability), and virtualization (hardware-free cost-effective) of networks.

Artificial Intelligence

The integration and deployment of AI with multiple sectors gathered momentum in 2019, driven by their numerous benefits, flexibility and rising acceptability. For the telecom operators, solutions based on AI provide many opportunities in areas like applications, services and underlying infrastructure. All telcos have been steadily integrating AI based technology with their operations to improve customer services and reduce turnaround time.

Accenture estimates that AI will boost India's annual growth rate by 1.3 percentage points by 2035. The country appears to be relatively well positioned to take advantage of the AI disruption by virtue of its advanced IT sector and large demographic potential. It is therefore safe to say that India is poised to establish itself as the global hub for AI related activities in the coming years. Moreover, with 5G coming to the fore, machine learning and advanced analytics will permeate deeper into our world. As more and more devices get inter-connected, multi-functional, platform agnostic, intuitive and interactive, these devices will define our future, with AI forming the pivot.

Robotic Process Automation

In the manufacturing sector, 5G will enable use of robotics for precision manufacturing, particularly where humans cannot perform these functions safely or with the necessary precision. Many big IT behemoths and even the banking sector today have already started using this technology to reduce costs. Proof of Concept (POC) is being conducted across various industries and deployment of bots is expected to happen on a very scalable level in India, across sectors such as banking and financial services, telecom and the healthcare.

As per a report released by the International Federation of Robotics (IFR) in January 2019, sales of industrial robots in India reached the new record of 3,412 new units in 2017. That is an increase of 30 percent compared to the previous year (2016: 2,627 units). As industries increase their spending on expanding production capacities and modernisation, an accelerated and strong robot sales growth is expected between 2018 and 2021.

Wearable Technologies

The Indian ecosystem is just experiencing the advent of wearable technology. While the initial focus is mainly on the fitness and healthcare sector, there is a lot of scope for innovation in the existing product line – such as gamification, introduction of social incentives to encourage community / group adoption as well as building an augmented product by providing a comprehensive set of services and charging based on usage.

As per IDC's Quarterly Wearables Tracker, smart wearables saw two successive quarters of double-digit growth and shipped 102,000 units in the 2018Q3, making it the first quarter to cross the 100,000 units shipment mark in the country. The overall Indian wearables market saw a 17% year-over-year (YoY) growth in the third quarter of the year as vendors shipped a total of 897,000 units in the country.

Blockchain

Even though financial players were the first movers to capitalize on Blockchain technology, sectors like telecom, healthcare and life sciences, travel and hospitality, and energy, are also keeping a close watch on the potential of Blockchain use cases to positively disrupt their traditional business models. As per the World Intellectual Property Organization's (WIPO) survey, India is ranked sixth in the list with a total of 67 patents approval in 2018.

The telecom sector in India is banking on Blockchain technology to build new revenue streams and lower operational costs. Blockchain can be used in data and content monetisation. The Industry along with TRAI is in the process of adopting the use of Blockchain for curbing unsolicited calls. TRAI has also suggested the use of Blockchain for improving to MNP process. Telecom service providers are also looking to adopt this new technology for digital identity verification, Digital asset transaction and in the remittance markets, among others.

Emergence of New age Entrepreneurs on Mobile Data Usage

Mobile data usage will continue to surge, driven by the growth in OTTs. It is expected that the mobile Data traffic will increase to 12 EB per month by 2024 with a CAGR of around 26% between 2018 and 2024. Ericsson estimates that smartphone subscriptions in India will reach to 1000 mn by 2024 with a CAGR of 10% and TSPs will need to invest in the network to meet the challenges of growing data traffic. It is projected that around One lakh Crore investment is required in the next three years to meet the fiberization requirement of the industry. In order to meet this target, the National Digital Communications Policy 2018 has envisaged attracting investments worth US\$ 100 billion in the telecommunications sector by 2022.

The policy document expects to establish India as global hub for cloud computing, content hosting/delivery and data communication systems and services. Leveraging AI and Big Data in a synchronized and effective manner can enhance the overall QoS, spectrum management, network security and reliability. NDCP further highlights strategies such as restructuring of C-DoT, simplifying process/approvals etc. in order to promote Research and Development in Digital Communication Technologies.

Further, in the era of 5G, AI, social media, etc, data privacy and security issues have also gathered steam. To this end, the NDCP has a comprehensive strategy for network preparedness, disaster response relief, restoration and reconstruction. The strategies also include developing a Unified Emergency Response Mechanism and enhancing the Public Protection and Disaster Relief (PPDR) plan for India.

Going forward, more trials of advanced radio technologies for 5G and their relevant use cases will take place as 5G standardisation gathers augmented momentum. As Artificial Intelligence (AI) and machine learning proliferate hand in hand with 5G, data-driven medicine, digital monitoring of health and well-being and many other similar smart conveniences' will take the centre stage.

Considering the Government's thrust towards unravelling a digitally empowered nation through the ambitious Digital India program, these trends will further shape our future by introducing several transformative advancements in the sphere of business ecosystems, utilities, conveniences' applications and services. All these and more would better our lives in several ways, which was hitherto unfathomable.

This is to be attributed to Mr. Rajan S Mathews, DG, COAI.
