

## India must aim to be amongst the top 10 countries in broadband experience in the next 5 years: BIF

**New Delhi, 14<sup>th</sup> September 2020:** Broadband India Forum (BIF), the leading independent Think-Tank and Policy Forum for Digital Communications in the country, organised a session of The Digital Dialogues on the critical topic of **"Quality of Experience in Broadband"**. **Shri SK Gupta, Secretary, Telecom Regulatory Authority of India** was the Chief Guest on the occasion. **Dr. Rajat Kathuria, Director & Chief Executive, ICRIER; Mr. Bharat Bhargava, ASEAN Industry Market Leader (TMT), EY; Mr. Udai Mehta, Deputy Executive Director, CUTS International; and Mr. Chandrasekar Ramamoorthy, Co-Founder, Mozark,** participated as Guest Speakers and shared their deep knowledge and insights on the subject. **BIF also facilitated the release of a White Paper on 'Connected Experiences' developed by Mozark,** during the session.

Providing high-quality data connectivity has never been more important for India. Even as Covid-19 has adversely affected the economy, a large part of the high skilled services economy continued undisrupted, thanks to broadband connectivity. When it comes to quality of experience though, India ranks at 78 in a list of 108 countries (lower than all other BRICS nations) on mobile broadband network speeds (as per 5GMARK). As the country moves towards 5G where services will be even more data centric, it is essential to create a modern Quality of Experience/Quality of Service (QoE/QoS) regulatory regime that incentivises all stakeholders to focus on improving the quality of connectivity.

**BIF President, Mr. TV Ramachandran,** shared on the occasion, *"While India has done well to significantly increase the reach of connectivity to its citizens, when it comes to quality of broadband, there lies much scope for improvement. We must set an ambitious target of being amongst the top 10 countries when it comes to broadband experience in the next 5 years. To do this, all the players have to come together and achieve this common mission. Telecom service providers need to significantly expand their infrastructure, regulators need to create enabling environments, digital infrastructure providers such as content delivery networks need to expand their footprint, and the Government (both Centre and States) should endeavour to improve the connectivity experience in their respective geographies."*

Digital transformation has had a positive impact on many different businesses. From local *Kirana shops* going online and delivering produce to the home, to factories using robots, connectivity is playing an integral role in every business activity. Technologies such as 5G, Wi-Fi 6, and IoT will accelerate this journey. It is estimated that there will be 46 billion connected devices in the world by 2025 (IDC). Many of these devices will have critical quality of experience requirements. For example, for digital TV to support broadcast channels, the latency must be much lower than what it is today. Similarly use cases such as factory automation or mission-critical robotic healthcare will need low latency networks. Technologies such as network slicing will allow telecom operators to provide SLAs specific to use cases. Unlike today's networks that are designed to provide best-effort quality of experience to all its customers, the networks of the future are likely to be an amalgamation of thousands of slices, each serving a different use case, which requires a different quality of experience. Delivering such a high-quality experience would need telecom operators to expand infrastructure while cloud providers and content delivery networks (CDNs) must expand their footprints across the country to ensure low latency in the geographies where the application is accessed. Edge computing and caching infrastructure need to penetrate the country beyond metros.

Application owners need to architect their apps to become more network-aware and make dynamic decisions on optimizing their interfaces and federating computing to ensure lower latencies.

The White Paper on '**Connected Experiences**', co-authored by Mr. Chandrasekar Ramamoorthy and Mr. Sourabh Chowdhury of Mozark examines the concept of end-user quality of experience measurement in detail and how networks, CDNs, and application owners need to come together to deliver a superior connected experience. It specifically provides deep research based observations on the state of video, network and conferencing experiences in India.

Traditionally, quality of connectivity has been measured using a simple quality of service (QoS) measure called network speed (or downlink throughput). However, every use case has a different QoS requirement. For example, a Video-on-demand streaming requires high initial peak throughput for filling up the initial buffer but subsequently the requirement to refill video buffers drops. For video conferencing though, the consistency of network speeds is more critical than peak network speed. Moreover, data access happens predominantly through the mobile network in India. Given the high population density, high per capita data consumption, and low per capita spectrum availability, focusing on simple measures like network speed will require levels of infrastructure spending that may be unrealistic for India. Thus, we must look at smart measures to deliver quality of connectivity. For example, to deliver a world-class video experience, the network needs to deliver speeds of 14 Mbps which is something imminently achievable rather than chasing speeds of 50 Mbps that just shows us as one of the top countries in a network speed ranking and may drive us down the path of wasteful infrastructure investments. Focusing on end to end-user experience metrics by use case rather than last-mile network speeds, incentivises stakeholders such as cloud providers, CDNs, and application owners to contribute to improving the quality of connected experience across the country.

Going forward, India must aim to be amongst the top 10 countries that are leveraging new technologies to deliver a superior connected experience to its citizens. In order to deliver high-quality data connectivity across the country, India must set itself realistic targets on the quality of connectivity.

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### **About Broadband India Forum**

Broadband India Forum (BIF) functions as a policy forum and think-tank that works for the development & enhancement of the entire broadband ecosystem in a holistic, technology-neutral and service-neutral manner. BIF has established itself as a thought leader and a credible and effective voice, to help propel the nation to achieve the country's ambitious vision of creating a Digital India. To achieve this, BIF works to promote the rapid development of policies, so as to facilitate affordable and high-speed ubiquitous broadband throughout the country.

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For further information, please contact:

Kaustuv Sircar – [kaustuv@broadbandindiaforum.com](mailto:kaustuv@broadbandindiaforum.com) / +91-9999326911 / +91-7003157047