

BROADBAND Bits & Bytes

A BIF Communiqué



**Broadband
India
Forum**

...enhance, expand & usher the true value of broadband

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M.F. Farooqui

Chairman,
Broadband India Forum



**MANY DEVELOPING
NATIONS ARE WORKING
HARD TO UNIVERSALISE
THE REACH OF IN ORDER
TO CATCH UP RAPIDLY
WITH THE DEVELOPED
ECONOMIES”**

Foreword

Broadband India Forum (BIF) as a policy think tank is committed to play its pivotal role for increasing the reach of broadband to every corner of Indian society and achieving the objectives of Digital India. Broadband plays a substantial role in catalysing economic growth, especially in today's era of mobile telecommunication. Broadband is a leading growth enabler in countries which have realised its importance. Not surprisingly, therefore, many developing nations are working hard to universalise the reach of Broadband in order to catch up rapidly with the developed economies.

In fact, adoption of ICT-enhanced policies is one of the top agendas for our Government today. When we think of the exponential speed and scale of expansion of social media or a service, we have to believe that it is equally possible to rapidly transform the lives of those who have long stood on the margins of hope. And BIF is committed to making every effort to ensure that technology is accessible, affordable, and adds value to the lives of Indian citizens. BIF is consistently taking up the issues and concerns faced by the Broadband sector with the Regulators and concerned Government Departments.

The Quarterly Newsletter is a vital initiative attempting to showcase activities and achievements of BIF. We, in the forum, are thankful to all our contributors who have always been pillars of strength for us. We do sincerely hope that this newsletter will fulfil the need for timely, accurate and path-breaking information.

We are hopeful that the BIF will emerge as effective forum to help propel the nation to achieve the country's ambitious vision of Digital India. The Forum aims to make the Indian Telecommunication sector as one of the most advanced and affordable in the world.

A handwritten signature in dark ink, appearing to read 'M.F. Farooqui', written in a cursive style.



TV Ramachandran

President,
Broadband India Forum



**BIF IS DEDICATED
TO ENHANCE THE
POTENTIAL OF THE
ENTIRE ECOSYSTEM
TO DELIVER BROADBAND
ACROSS THE WHOLE
OF INDIA”**

From the President's Desk

Dear Readers,

Welcome to the **Third Edition** of our Quarterly Newsletter – Broadband Bits & Bytes on trends and perspectives related to Broadband sector in India. The Newsletter focusses on all the key areas such as spectrum and licensing, content and applications, SatCom, infrastructure, security, new technologies and innovations, which could lead to proliferation of Broadband in India.

BIF is dedicated to enhance the potential of the entire ecosystem to deliver broadband across the whole of India. BIF's mission is to support and enhance all policy, regulatory & standards initiatives for the proliferation of high quality broadband in the country in a technology-neutral and all-inclusive manner. We have, in the short time frame of less than three years, contributed to several regulatory and policy consultations and been working closely with all concerned Government agencies providing credible inputs on Broadband to assist and facilitate the process of policy making.

The Newsletter is divided into several sections. In the **“Spotlight”** section, the focus for this Edition is capturing the highlights of 2017 and expectations from 2018 with a focus on National Telecom Policy 2018. We discuss the key concerns of the broadband sector and BIF recommendations on how the policy can play a pivotal role in increasing the proliferation of broadband in India. We have views on the policy challenges those exist for Telecom Sector in India and how to overcome these challenges in the **“Industry Speak”** section, and I would like to thank the industry experts personally for sharing their valuable thoughts. In our **“Newsflash”** section, we have summarized the significant happenings in the Broadband sector over the last quarter. In the **“Events”** section, we give you a glimpse of the past and proposed BIF Events.

In an effort to make this newsletter more useful to you, we would appreciate your comments and suggestions that you may have on this issue as well as topics that you would like us to feature in the forthcoming issues.

We hope you enjoy reading this issue!

A handwritten signature in black ink, likely of TV Ramachandran.

Spotlight: The year that was and the year that will...

2017 would truly go down in the annals of Indian telecom not only as the great year of contrarian happenings – of turbulence and disruption, but also of a shower of unimaginable customer benefits, of financial stress and much-needed consolidation, a remarkable technological leap to 4G; of decline in voice but phenomenal rise in data and, last but not least, India making giant strides – to pass milestones like a billion connections with lowest mobile voice and data tariffs, nearly 300 million smartphone users, over a hundred handset assembly units – to become indubitably the world's second largest telecom powerhouse.

The transformation in data uptake following the entry of Reliance Jio has been nothing short of remarkable. As per Kleiner Perkins, wireless data usage shot up over six-fold from about 200 million GB a month in June 2016 to 1.3 billion GB a month by March 2017. The year has seen not just a sharp increase in data usage but, importantly, a very big growth in data-based services (rich interactive apps), bandwidth intensive music and video streaming applications. India is now one of the biggest data consuming markets in the world.

For over a decade, experts and industry players have been bemoaning the fragmentation of the market due to too many players (about nine or more) whereas even the HHI Index calculated by the Regulator and DoT shows competition is optimum with four, or a maximum five, players. Expectedly, due to the excess competition, the viability of most of the operators was unsatisfactory and steadily worsening while there was a continuously-rising level of financial stress in the industry.

The entry of Jio saw a very sharp deterioration in the already unsatisfactory situation of the industry. The market leaders have seen a reduction of as much as 35 percent in operating profit and around a 10-percentage-points contraction in operating margins as they looked to match the cost of Jio's services, initially free and, later, in the form of ultra-cheap pricing. Incumbent operators rushed to cut tariffs as Jio offered free services for the first six months, and then offered cut-rate data services. It also offered voice calls for free. The price wars left operators struggling to repay debt even as Reserve Bank of India urged banks to set aside higher provisions to





deal with bad loans in the telecom sector. The entry of Reliance Jio triggered the direly-needed consolidation in the industry.

Among the most notable M&A deals since Reliance Jio started commercial services in September 2016 is the merger between the country's second largest provider Vodafone India Ltd and third ranked Idea Cellular Ltd, a combination that is set to create India's largest operator once the merger is completed. The merged entity would probably be one of the largest in the world, - second only to China Mobile. Reliance Communications Ltd's future course is uncertain after the merger of its wireless business with Aircel Ltd has failed to go through. In February, Telenor sold its Indian operations to Bharti Airtel and in October, Tata Tele sold its business to Bharti where Bharti virtually paid nothing. Indian telecoms are thus, at long last, attaining the desired HHI level of four - paving the way for improved financial health and sustainability.

The year also witnessed the commencement by DoT of the great task of revising the National Telecom Policy to be released in 2018. DoT has begun a very comprehensive exercise for collecting, collating, analyzing input on various areas that will have a bearing on Telecom Policy and formed 12 sub-groups. BIF provided its detailed and actionable recommendations. These recommendations on

spectrum, licensing, broadband infrastructure, Satcom, content and applications, privacy and security, rural digital initiatives have all been given under the over-arching principle of achieving Digital India. In my view, NTP 2018 assumes far higher importance than even the great epoch-making NTP'99 which was the main reason for catapulting Indian mobile telecommunications from about one million connections to today's awesome level of about 1200 million connections today, second highest in the world. Like in 1999, India is today poised at a very critical juncture and the nation's socio-economic progress will depend on some crucial decisions regarding the way forward in telecom which need to be made through a new telecom policy - NTP 2018. Only a new policy can bring the changes that can propel our country to a leadership position in the new digital economy.

On the regulatory side, too, there was a plethora of comprehensive consultations, recommendations and regulations like in no single year ever before, - as many as twenty of them. There was a Mobile Termination Charge Regulation that crashed charges by over 50 percent to 6 paise per minute, causing much tumult in the industry. Other noteworthy recommendations include, interalia, on liberalization of public wi-fi which is a pre-requisite for broadband proliferation and Digital India, Ease of Doing Telecom Business, Internet Telephony, M2M

Communications, and, importantly, on Net Neutrality. The last-mentioned Recommendation was the conclusion of a massive 2-year exercise and has, most unambiguously, upheld the Open Internet principle and reaffirmed the commitment to Net Neutrality.

2017 was also the launchpad of another great ambition for the future, – namely, 5G. In a most admirable initiative, the government has set up a 24-member high level forum for 5G India 2020. As widely recognized world over, 5G is the next technological frontier which takes us to a brave new world involving IoT everywhere, fixed mobile convergence, artificial intelligence, virtual reality and augmented reality etc, that is several orbits above the incremental steps of 2G to 3G to 4G. For India, 5G will fundamentally impact the various national mission mode projects. It would provide a new dimension to the Digital India, Smart Cities, and Smart Village missions. It could potentially make huge contributions to Make in India and Start-Up India missions also. The objective in setting up this High Level 5G Forum is to position India as a globally synchronized participant in the design, development and manufacturing of 5G based technology, products and applications. The terms of reference of this multi-stakeholder Forum are: To develop the vision, mission, and goals for 5G India 2020 and to evaluate, approve roadmaps and action plans for 5G India 2020. The first meeting of this body was on December 13, 2017. Thus, Indian telecom close 2017 with a firm eye on the future.

Where is Industry headed to in 2018?

We believe that 2018 will mark the beginning of much brighter prospects for Indian telecom on several fronts.

With significant consolidation getting completed in 2018, the bloodletting tariff battles will gradually cease and the telecom industry will start experiencing much-needed financial relief.

The New Telecom Policy 2018, expected around April 2018, will hopefully usher in a completely new perspective to telecom by transcending it from the voice era to that of data and data-based services.

Two clear phenomena have emerged. One, the data segment is going to grow stronger and the broadband sector will witness tremendous growth in terms of wireless connectivity, wi-fi hotspots as well as fiber layout. Two, the quality of customer experience and quality of networks will determine the success of players in the market.

The other important issue will be how companies use their platforms to create fresh revenue streams.

Last, but not the least, India would have charted its way forward to the 5G world and given a huge impetus to innovation, manufacturing, and entrepreneurial initiatives. We expect that India would further consolidate and improve its position in the global digital rankings.





Industry Speak: What policy challenges exist for Telecom Sector in India? How can we overcome these challenges?

Dr. Mahesh Uppal
Advisor, BIF



"NTP 2018 would be truly pathbreaking if it could genuinely liberalize the telecom sector. Any player should be allowed to provide any service that consumers need, subject to upholding consumer interest and national security."

The policy must remove levies like licence fees, spectrum usage charges etc. to incentivize coverage and economic growth. All players, like their counterparts in other businesses, must be subject to taxes instead of upfront levies."

"Broadband will affect every aspect of our lives; professional, personal and societal. Given the importance of BB, critical focus areas in NTP 2018 must include BB infrastructure fund at the union budget similar to other infrastructures and measures related to ease deployment of BB infrastructure that can create fast access to all with high bandwidth. This will lead us closer to our commitment towards SDG goals and India's socio economic strength will grow. Implementation framework of BB infrastructure by far should be the biggest focus of NTP 2018."



Swati Rangchari
Chief Corporate
Affairs Officer,
Sterlite Technologies
Limited

"We hope the telecom policy will enhance operational efficiency by addressing issues like double taxation resulting out of the current 'revenue share' based licensing model."



Parag Kar
Vice President,
Government Affairs,
India & South Asia,
Qualcomm

"The forthcoming National Telecom Policy is an opportunity for building a forward looking regulatory regime that propels India to the position of a world leader in the development and faster adoption of new services and technologies through permission less innovation. India has been supporter of multi-stakeholder Internet governance model and this commitment will help Internet services and Internet based app economy to continue growing and surpass the figure of USD 280 billion that a recent research predicted it will contribute to India's GDP by 2020."



Ashwani Rana
Head of Connectivity
Policy, South & Central
Asia, Facebook



Newsflash: Updates and Achievements

SPECTRUM & LICENSING

- ❖ BIF spectrum and licensing committee submitted comprehensive inputs to DoT for National Telecom Policy 2018.
- ❖ BIF attended and contributed to TRAI Open House on Consultation on Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz bands.

SATCOM

- ❖ 3rd International Satcom Summit was organized by BIF on 13 Dec 2017, graced by Shri Manoj Sinha, Hon'ble Minister of State for Telecom, Shri R S Sharma, Chairman, TRAI and Smt. Aruna Sundararajan, Secretary, DoT, with participation of domestic and international delegates from global satellite service operators, global inflight connectivity firms as well as top VSAT operators in India.
- ❖ As a part of the Satcom Summit, 1st International Satcom Industry CXOs roundtable was held with Indian Government, graced by Smt. Aruna Sudararajan, DoT Secretary and participated by CXOs from more than 10 International companies.
- ❖ As a part of the Satcom Summit, BIF White Paper on Satellite Broadband & Digital India was released.
- ❖ NTP 2018 workshop was conducted by BIF between BIF members and top TRAI and DoT Government officials headed by Smt. Aruna Sundararajan, Secretary, DoT, in order to promote liberalization of Satcom policy in India.
- ❖ BIF submitted responses and participated in TRAI open houses on uplinking and downlinking of Television Channels in India.

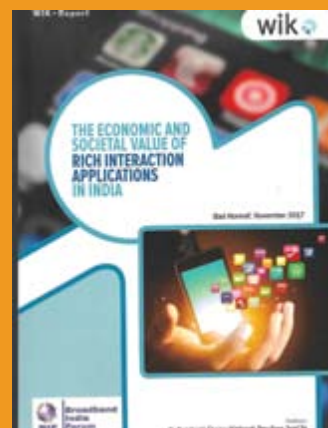
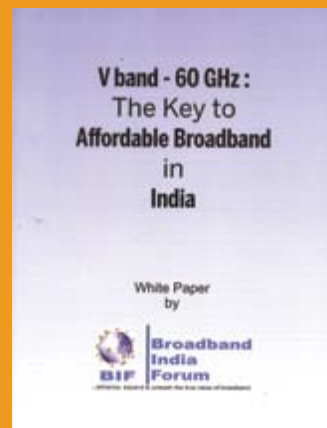
CONTENT & APPLICATION

- ❖ TRAI released Recommendations on Net Neutrality on 28 Nov 2017.
- ❖ BIF released its joint study with WIK titled, "The Economic And Societal Value of Rich Interaction Applications In India" on 16 Nov 2017. The report uses consumer surplus method to measure the socio-economic impact of Internet based content and applications
- ❖ BIF Content and Applications committee submitted its inputs to DoT for National Telecom Policy 2018.

OTHERS

- ❖ TRAI released a Consultation Paper on Promoting Local Telecom Equipment Manufacturing on 14 Nov 2017.
- ❖ TRAI released Recommendations on Regulatory framework for Internet Telephony on 24 Oct 2017.
- ❖ TRAI released a Consultation Paper on 'Next Generation Public Protection and Disaster Relief (PPDR) communication networks on 9 Oct 2017.
- ❖ BIF held a week long workshop consisting of five sessions with DoT detailing rigorously its position and recommendations on various aspects for the new Telecom Policy. The recommendations have been developed through a bottom-up multi-stakeholder process using the committee structure of BIF. Recommendations were broken into 5 capsules mapped onto various DoT Working Groups
- ❖ BIF has submitted its input to TRAI Consultation Paper on Ease of Doing Business in India.
- ❖ BIF submitted responses and participated in TRAI Open House on NTP 2018.

Reports & White Papers from BIF



Interesting Articles

BELOW ARE THE ARTICLES AUTHORED BY BIF PRESIDENT, MR. TV RAMACHANDRAN WHICH HAVE BEEN PUBLISHED IN LEADING BUSINESS DAILIES:

- ❖ Unleashing the power of cable broadband. [\[LINK\]](#)
- ❖ Budget 2018: An Excellent Overall Exercise But, For Telecom , ‘Yeah Dil Maange More’.... [\[LINK\]](#)
- ❖ 5G – The Way Forward. [\[LINK\]](#)
- ❖ Broadband in India: Without the right speed, term is a misnomer; see how. [\[LINK\]](#)
- ❖ Telecom sector in India: Levies imposed need GST like template. [\[LINK\]](#)

FEW OTHER ARTICLES THAT YOU MAY FIND INTERESTING:

- ❖ Broadcasters, DPOs oppose TV channel auction proposal. [\[LINK\]](#)
- ❖ 5G Spectrum in 3.5 GHz band should be assigned “Pan-India” and not “Circle by Circle”, but why? [\[LINK\]](#)
- ❖ How to price spectrum properly: If reserve price fixed scientifically, there will be no talk of favouritism. [\[LINK\]](#)
- ❖ TRAI’s recommendations on in-flight connectivity will favour consumers. [\[LINK\]](#)
- ❖ BIF report highlights challenges faced by mobile handset manufacturing sector in India. [\[LINK\]](#)



Events:

Past Events

India Satcom 2017



- ❖ The event was graced by the VVIPs – Shri Manoj Sinha, Hon'ble Minister of Communications (IC) & MOS, Ministry of Railways, Shri R S Sharma – Chairperson, TRAI, Smt. Aruna Sundararajan, Secretary, DoT and other leading dignitaries.
- ❖ Participation from the Government, Regulator, Academia, Satellite Operators, Teleports, VSAT players, Broadcasters, etc.
- ❖ More than 100 delegates participated the summit from all around the globe.
- ❖ The 1st International Satcom Industry CXO roundtable with Indian Government was held where CXOs from more than 10 International companies participated. The extremely vibrant and interactive CXO roundtable enabled CXOs to address their issues and concerns as well as their wish list face to face with Secretary, DoT.
- ❖ Highly educative & interactive session on In-flight Connectivity.
- ❖ White Paper on Satellite Broadband & Digital India was released.

“It is time to take a fresh approach” to Satcom policy.

Shri Manoj Sinha

Hon'ble Minister of Communications (IC)
& MOS, Ministry of Railways

“Government is committed to ensuring that commercial satellite operations are not hindered. They are indeed encouraged and promoted for reaching the unreachable”.

Ms. Aruna Sundararajan

DoT Secretary

“I understand that broadcasting has a problem as many agencies involved. I can tell those present here that we are working with MIB to create a single software for approvals and permissions.”

Shri R B Prasad

Joint Wireless Advisor, DoT





Launch of BIF-Wik Report - The Economic And Societal Value of Rich Interaction Applications In India



Launch of BIF-TARI Report - Mobile Telephony in India



Signing of MoU with The European Telecommunications Standards Institute



Signing of MoU with Macquarie University

Events:

Upcoming Events

5G India 2018

5G network

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SUPPORTING INDUSTRY ASSOCIATIONS

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5G India 2018

2nd INTERNATIONAL CONFERENCE
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CONFERENCE HIGHLIGHTS

- ★ Emerging Technology in a 5G Future
- ★ NFV/SDN based 5G Architecture & Requirements
- ★ The role of fiber in 5G backhaul and GPON technologies
- ★ Network for the Digital Future
- ★ IoT Market Evolution
- ★ Mobile Backhaul Networking Challenges
- ★ 5G Architecture and design
- ★ Mobile cloud computing in 5G

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India Satcom 2018



Chief Guest*



MR. MANOJ SINHA

Hon'ble Minister of Communications (IC)
& MOS, Ministry of Railways

SPECIAL GUESTS OF HONOR*



Mr. R S Sharma
Chairman, TRAI



Mr. Amitabh Kant
CEO, NITI Aayog



Ms. Aruna Sundararajan
Chairman, Telecom
Commission & Secretary, Telecom

Other Eminent Speakers*

Shri N. Sivasailam
Special Secretary, Telecom

Shri S K Gupta
Secretary, TRAI

Mr. U K Srivastava
Pr. Advisor, (NSL) TRAI

Mr. K Krishna
Vice President and CTO,
Hughes Communications

Mr. Abhishekh Malhotra
Bharucha & Partners

Shri Joe Welch
Chairman, CASBAA

*Invited

Shri Paritosh Saha
Vice President, STAR India

Shri P K Garg
Ex WA & Chairman, RRB, ITU

Shri. Rajesh Mehrotra
Ex Sr. Expert, Space Services Dept, ITU

Shri P J Nath
Managing Director, Nelco Ltd.

Shri Gaurav Kharod
Country Head, Intelsat India

Shri Sathya Narayanaswamy
Country Manager, Viasat

India Satcom 2018 organized by Broadband India Forum (BIF) offers you a unique opportunity to access key decision makers and business leaders driving the development of satellite broadband in India. Register today to gain the knowledge and contacts you will need to make your organisation part of this growing market for satellite communications services in India.

Join Us in New Delhi for India Satcom 2018 to:

- ❖ Learn about opportunities to provide Satellite Broadband across urban and rural India.
- ❖ Talk with key Government decision makers on policy formation, regulations and infrastructure rollouts.
- ❖ Attend sessions which deliberate upon Role of Satellite Communications for Digital India, Satcom Innovations: New Markets, Applications & Technologies, Satcom Mobility: Planes, Ships, Trains & Connected Cars, LEOs, MEOs & More: Next Generation Satellite Constellation & Affordable Broadband, FDI & Local Manufacturing (Make in India), CXO Roundtable, Space Activities - Laws & Regulations, Ease of Doing Business and other topics.

Why Attend?

- ❖ Unique networking opportunities with government officials, business leaders and executives from the world's major satellite operators, manufacturers and equipment providers.
- ❖ Create awareness within the Government at all levels regarding importance of the role of Satcom in providing broadband pan India including rural India.
- ❖ Get access to key decision makers in the Government on matters related to policy, regulation & business opportunities in Satellite Communications.
- ❖ Attend panel discussions on Market Growth, Policy & Regulatory Issues, Role of Satcom in Digital India, Ease of Doing Business, Satcom Mobility & other related topics.

Who Should Attend?

- ❖ Satellite Operators
- ❖ Satellite Manufacturers
- ❖ Broadband Service Providers
- ❖ Internet Service Providers
- ❖ VSAT Manufacturers & Distributors
- ❖ Value-added Service Providers
- ❖ Manufacturers
- ❖ User Organizations (Banks, Oil & Gas, Defense, Security Forces, etc.)
- ❖ DTH Service Providers
- ❖ Government Representatives
- ❖ Spectrum & Regulatory Experts
- ❖ Attorneys & Consultants
- ❖ Telecom Service Providers
- ❖ Broadcasters



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Our Esteemed Members



Panel of Principal Advisers



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Dr. Kuldip Singh



Mr. B K Syngal



Dr. Mahesh Uppal



Dr. B M Baveja



Mr. J V Ramamurthy



Mr. D P Singh



Mr. Abhishek Malhotra



Mr. Rajesh Mehrotra



Mr. K V Seshasayee



About Broadband India Forum



Mr. Anil Prakash
*Director General
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 seeks to be 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 to promote affordable and high speed ubiquitous broadband throughout the country.

Registered as IPTV Society, its brand - BIF was formed in October 2015 and is a fairly nascent but dedicated Forum with participation from all stake holders, including Technology Providers, Telecom Operators, Internet Service Providers, Value-Added Service Providers, Satellite Operators and service providers, MSO, startups and professional entities as well as seasoned Industry professionals who are familiar with different technologies, operations, regulations and policies.

The Forum's senior leadership team includes renowned and respected professionals from background of Industry, Regulator and Government.

1. Mr. Shyamal Ghosh, Former Secretary-Telecom and co-founder of IPTV Society, is the Chairman Emeritus.
2. Mr. M. F. Farooqui, IAS (Retd.), former Secretary-Telecom, is the current Chairman
3. Mr. T. V. Ramachandran, Hon. Fellow of the IET (London), former Resident Director-Regulatory Affairs

and Government Relations, Vodafone, and first Director General of COAI, is the President of the Forum.

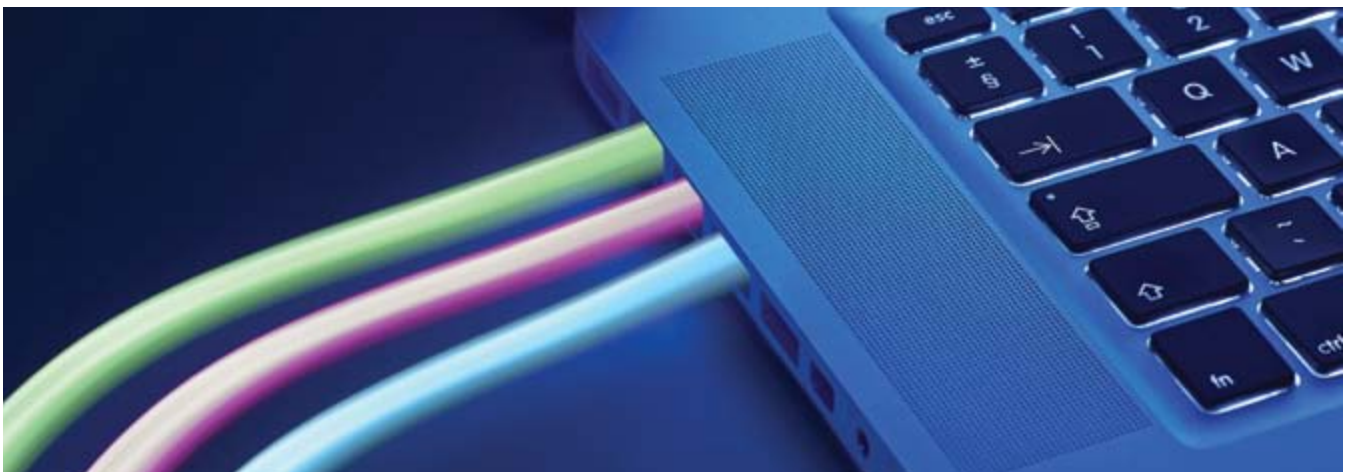
4. Mr. Parag Kar, Sr. VP Govt. Affairs, India and South Asia-Qualcomm and Mr. Ashwani Rana, Head Connectivity Policy-Facebook are current Vice Presidents.
5. Mr Anil Prakash is the Director General.
6. Mr. S. N. Gupta, seasoned technocrat and senior luminary who has worked in DoT and as a Principal Adviser to TRAI (Regulator) is the Treasurer.

BIF functions through many specialist committees for the advocacy, coordination, facilitation and promotion of all activities with the objective of furthering the goals of the National Telecom Policy in Spectrum and Licensing, Telecom Infrastructure, Rural Digital Initiatives, Content & Applications, Privacy, Trust & Security, SatCom and Technology Innovations & New Initiatives.

The activities of the Forum broadly relate to coordination, promotion and formulation of expert opinion on topical subjects related to Broadband. To act as a bridge between Industry on one side and Government and the Regulatory Bodies on the other, front ending several issues related to policy & regulation.

"I am proud to be associated with Broadband – Bits and Bytes. This is the third edition of the Newsletter and our endeavor is to keep you updated with latest technology, standards, innovation, policy and regulation, which embark on and facilitate speedy and affordable broadband proliferation in the country."

- Anil Prakash





**Broadband
India
Forum**

...enhance, expand & usher the true value of broadband

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