

BROADBAND Bits & Bytes

A BIF Communiqué

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Shyamal Ghosh

Chairman Emeritus – BIF and
Founder – IPTV Society

Message from Chairman Emeritus

Broadband India Forum is fully committed to proliferation of Broadband and empowering Indian citizens. Broadband Infrastructure is now considered pivotal for progress and accelerated growth and the objectives of Digital India rest on the foundation of Broadband infrastructure. It is a given that strong and extensive fibre backhaul will support a data intensive high capacity and high speed mobile broadband ecosystem. BIF is making every effort to ensure that efficient and economical broadband reaches every consumer.

The forum has consistently worked to promote the rapid development of policies to promote affordable and high speed ubiquitous broadband throughout the country. It has done so by taking up the issues with TRAI, DoT, MeitY and other Government Departments and regulators. The forum is working comprehensively on areas such as spectrum, licensing, broadband infrastructure, net neutrality, machine to machine communications, V Band, Wi-Fi, Satcom, etc.

This Quarterly Newsletter is an attempt to showcase the achievements of BIF and also provide an update on areas that directly or indirectly impact the broadband industry in India. We are thankful to all the 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.



**BIF IS MAKING EVERY
EFFORT TO ENSURE
THAT EFFICIENT
AND ECONOMICAL
BROADBAND REACHES
EVERY CONSUMER"**



TV Ramachandran
President,
Broadband India Forum

From the President's Desk

Dear Readers,

Welcome to the **Second 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 two 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 sector in focus for this Edition is Content and Applications. We discuss the huge socio-economic impact of Rich Interaction Applications in India. We have views on the challenges – policy, regulatory, business and technological, those exist for user data 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 **"Upcoming Event"** section, we give you a glimpse of the proposed annual BIF Event on SatCom.

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 belonging to TV Ramachandran, the President of Broadband India Forum.



**BIF EFFECTIVELY
FUNCTIONS AS A
THINK TANK AND
POLICY FORUM"**



Accelerating Satellite Broadband for Inclusive Growth

India Satcom 2017 organized by the 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 company part of this growing market for satellite communications services.

Join Us in New Delhi for India Satcom 2017 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 Satcom Mobility and Inflight Communications, Ease of doing Business in Satcom, Role of Innovations, New Technologies in Digital India, Satcom Broadband for Inclusive Growth 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.

Who Should Attend

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

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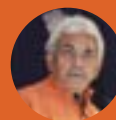
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Chief Guest



MR. MANOJ SINHA

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

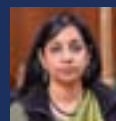
Special Guests of Honor



Mr. RS Sharma
Chairman, TRAI



Mr. Amitabh Kant
CEO, NITI Aayog



Ms. Aruna Sundararajan
Chairman Telecom Commission & Secretary Telecom

Other Eminent Speakers*

Mr. UK Srivastava
Pr. Advisor, (NSL) TRAI

Shri Shashi Ranjan Kumar,
IAS, Joint Secretary (T), DOT

Mr. Gautam Sharma,
Managing Director, Inmarsat India

Mr. Abhishekh Malhotra
Bharucha & Partners

Mr. Victor Brault
Regional Marketing Director, Asia Pac & India, Global Eagle Entertainment

Mr. Carlos Nalda
LMI Advisors

Shri Joe Welch
Chairman, CASBAA

Shri Barrie Woolston
Chief Commercial Officer, AsiaSat

Shri Paritosh Saha
Vice President, STAR India

Shri PK 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

Please contact:

Mr. Anil Prakash
Director General
Broadband India Forum Suite 312-A
Deep Shikha Building, 8 Rajendra Place,
New Delhi - 110 008

Spotlight: Pathfinding ICRIER Study finds Huge Economic Potential of Indian App Economy

... INR 18 Lakh Crores Per Annum Benefit to Nation seen by 2020!!

The growth of the app economy is nothing short of extraordinary in India. App Annie recently ranked India as the fourth largest app economy in the world. With over 94 percent subscribers connecting to the Internet on their mobile phone, it is no surprise that India is leading the global phablet revolution. Internet and Internet-based applications have drastically and quickly transformed the architecture of economic activity. Their evolution had regulators of legacy services such as telecommunications, cable and broadcast, commercial public transport, etc. scrambling to manage disruption. Other stakeholders participating in related industries such as advertising have also had to adapt to this new revolution.

First of its kind, the ICRIER study attempts to measure the socio-economic impact of Internet usage and most importantly, that of Internet based applications on the country's GDP and outline recommendations for sustained growth. As per the study, a 17% increase in the total internet traffic in India in 2015-16, contributed to an increase of Rs. 7 lakh crore in Gross Domestic Product (GDP), of which at least INR 1.4 lakh crores (US\$ 20.4 billion) was due to Internet based app services. This puts the Internet's contribution to India's GDP at about 5.6% in 2015-16. The contribution is estimated to grow to nearly 16% of the country's GDP by 2020 or INR 36 lakh crores (USD 534 billion), of which apps will contribute about half.

While there have been some studies elsewhere that have attempted to capture the impact of this phenomenon and global growth elasticities have been estimated, this is the first time such a specific and meaningful exercise has been conducted in India. As a departure from previous research in the area, this study measures growth elasticity based on Internet usage rather than Internet penetration, as has been done in the past. The measure of usage versus user elasticity allows for estimation of user engagement on the Internet versus that of just being connected to the Internet. This study deployed an instrumental variable regression on a panel data set of 19 Indian states and 23 countries respectively. The growth co-efficients of usage, a first for India, are a starting point to understand the magnitude of impact of app-based usage. The estimates on internet usage were moderated to reflect app-based usage using assumptions on the contribution of apps to the Internet Economy in India. Internet usage was measured with CISCO VNI data on total Internet traffic and mobile Internet traffic.

The study further fortified the substantial economic impact generated by the econometric analysis with a micro-level understanding of the pathways of impact generation using a



selection of 16 case studies of different apps in India. Each selected app addressed a unique market need, either left unresolved by the market and/ or government intervention. The apps contained a mix of those that cater to the general population, specifically urban or rural users, those that are specific to a limited location and those that cater to specific vulnerable groups. The case study discussions measured

the scope and magnitude of impact created by different apps and also identified challenges to growth.

The study showed that a single app often delivered multiple socio-economic impacts; sometimes a combination of economic and social development and sometimes different aspects of economic growth or social upliftment. The broader socio-economic impacts captured by the case studies are summarized below:

- ❖ **Potential for increased income:** Urbanclap – Income for service providers within some categories increased by upto 4 times
- ❖ **Access to information and reduced asymmetry:** Practo – Created a fresh database of verified doctors based on specialization and patient feedback
- ❖ **Impact on the social perception and self-image of the differently-abled:** Inclov – Facilitated matchmaking for the differently-abled and transformed physical spaces into accessible areas for the differently-abled

- ❖ **Job Creation:** Inclov – Partnered with hotels to create employment for the differently-abled. Direct employment by each of these apps, including PayTM and MMT, which work with a team of over 1000 employees each
- ❖ **Efficiency in Service Delivery (One stop shop for multiple services):** MP mobile and Umang – Integrated multiple government services under a single platform
- ❖ **Providing smaller businesses/individuals a platform to market their product/service:** MakeMyTrip (MMT) – Certification program enabled budget hotels to generate business through the MMT platform
- ❖ **Encouraging disintermediation and lowering cost to buyers and sellers:** farMart – Platform enabled demand-supply match lowered cost of equipment leasing by upto 20%
- ❖ **Popularising use of vernacular languages:** Mooshak – Changing social perceptions on the use of local languages within a society where the use of English is more fashionable
- ❖ **Enabling women's safety:** Truecaller – Caller identification has helped women manage and block calls from unwanted numbers/people



The case studies also identified potential challenges that might limit the future growth of the app economy. The study categorized these as demand and supply side challenges. On the supply side, most apps were affected by the limited availability of network infrastructure or Internet connectivity in the areas they opt to serve. Moreover, app design needed to allow light versions that operate even in poor networks and on lower cost smartphones. Demand side challenges identified were largely associated with the availability of content in regional languages. With a huge non-English speaking user base, even for e-governance apps such as MP Mobile the dominance of English is restricting the use of apps by people in semi-urban and rural areas. Data privacy also emerged as a huge concern among app users. App development and app design must address this rising need with caution, especially in case of digital payment apps.

Apps have facilitated the creation of business models, which require regulators to think beyond the comfort of traditional businesses that operate in physical spaces and require physical movement of goods and services. The emergence of digital media, e-pharmacies, etc., falls outside the regulations within which each of these sectors currently operates. Services delivered through many such apps are limited in the absence of clarity on regulations. As apps become core to many businesses, sectoral policies must also align themselves to allow smooth functioning and integration of apps into the economy.

Policy challenges arise in the natural course of innovation and disruption. Apps too have stirred policy debates surrounding regulation of Over-the-Top (OTT) services, which broadly refer to services that are delivered using existing

Internet infrastructure and connectivity provided by a third party. However, this study suggests that in a rapidly changing industry such as the app economy, rather than stringent regulation through rule-making and adjudication, informal tools or 'agency threats' are particularly useful. In conditions of uncertainty, making long-lasting laws that are likely to be designed without being able to anticipate the future evolution of the sector could subsequently stifle innovation. Under such conditions more informal tools of regulation may better serve the needs of the growing economy.

The debates surrounding policies for OTTs and apps are far from settled. However, it may be considered that in the case of new generation internet based application services that have a significant socio-economic impact, it would be ill advised to pass hard rules applying across the sector. Careful and planned approaches to soft law can be attempted and later developed into more firm rules as the sector matures. Regulation, globally, is evolving to strike the right balance between protecting

consumer/business interests and encouraging the ecosystem to innovate further. India needs to chart its own course from a policy/regulation perspective considering the significant higher impact on its economy. It needs to resist the temptation to follow global precedence or come up with defining laws without its active stakeholder discussion.

Inarguably, the stupendous growth of the app economy in India and globally represents a significant discontinuous change in human socio-economic evolution. The above study not only establishes the economic impact of the sector, it also explores the myriad pathways through which the app economy generates positive socio-economic value for citizens. Further, the study shows that apps provide an efficient and effective way to reach particular vulnerable segments of society, fill market gaps and correct specific market failures. Any policy formulation for the sector must thus ensure that above all, it does not stifle the vibrant and innovative forces that drive this disruption.

Industry Speak: What policy, legal, business and technological challenges exist for user data in India? How can we overcome these challenges?



Abhishek Malhotra
Principal Adviser (Hony.),
BIF

"The popular perception is that with the Supreme Court judgment declaring the Right of Privacy to be a fundamental right, the debate around Privacy has been put to rest. Far from it. Now that the Right has received highest recognition by the highest court in the country, the limits and contours of this "NEW" right are to be tested. And there is no dearth of platforms for the stress tests on the Right of Privacy to be carried out. The Apex Court is to soon hear the WhatsApp case on whether there can be court interference on the private contractual relationship of parties leading to personal data disclosure; Close on the heels, there is the big daddy case that started it all - The constitutional validity of making AADHAR mandatory. Finally, we await the outcome of consultations and recommendations of the newly appointed committee on whether or not there is a need for a legislation on DATA PRIVACY. All in all, interesting and trying times ahead."

"A customer would use data (or any other service), if it is (i) easy to use, (ii) affordable/value for money, (iii) useful to improve the quality of life. Hence, the content and applications have to be available in vernacular languages or in pictorial/icon format, which people can easily understand. Hence, the requirements of the users have to be identified in a realistic manner and suitable services/applications made available to meet those requirements."



P K Garg - Principal
Adviser (Hony.), BIF

For the growth of digital economy, one main challenge is the cyber/data security and the consequent trust of the users that their money/goods are safe with digital transactions. Access to various public networks e.g. Wi-Fi at railway stations, airports, etc. should be relatively easy, while ensuring reasonable safety for data being exchanged by users. The cost of devices as well as data tariffs has to be affordable and reasonable data speeds ensured by the network to provide a satisfactory experience for the users. The government and regulator have to play the role of facilitators, so that various service & application providers as well as content providers can adopt innovative approaches to meet customer requirements and that too economically."

Newsflash: Updates and Achievements

SPECTRUM & LICENSING

- ❖ BIF spectrum and licensing committee is working comprehensively on submitting inputs to DoT for National Telecom Policy 2018.
- ❖ BIF has submitted its input to TRAI Consultation Paper 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

- ❖ India's date with moon set for March 18, ISRO ready to launch Chandrayaan
- ❖ Why the IoT won't survive without Satellite
- ❖ Small Satellites are driving growth in the space market
- ❖ BIF Satcom committee is working comprehensively on submitting inputs to DoT for National Telecom Policy 2018.

CONTENT & APPLICATION

- ❖ BIF released its joint study with ICRIER titled, "Estimating the Value of New Generation Internet Based Applications in India".
- ❖ BIF is jointly working on a research paper on socioeconomic impact of Internet based content and applications with WIK using consumer surplus method. (Report launched on 16 Nov 2017, more details in next issue of Newsletter).
- ❖ The Second Edition of IoT India Congress 2017 was held in Bangalore in Sep 2017.

- ❖ BIF Content and Applications committee is working comprehensively on submitting inputs to DoT for National Telecom Policy 2018.
- ❖ BIF has submitted its input to TRAI Consultation Paper on Data Security and Privacy.

OTHERS

- ❖ BIF is working rigorously on Recommendations for NTP 2018 being developed through a bottom-up multi-stakeholder process using the committee structure of BIF. Recommendations are 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 has submitted its input to TRAI Consultation Paper on Local Manufacturing



Launch of BIF-ICRIER Report - July 2017

White Papers from BIF



Interesting Articles

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

- ❖ Telecom IUC charges: What is really beneficial for mobile phone users? [\[LINK\]](#)
- ❖ Broadband data worth Rs 1900 crore wasted annually [\[LINK\]](#)
- ❖ Effective consumer Broadband labels the need of the hour [\[LINK\]](#)
- ❖ Broadband through Cable Networks [\[LINK\]](#)
- ❖ Telecom Disparity: US spectrum 9 times cheaper than India even though auction revenue was double [\[LINK\]](#)

FEW OTHER ARTICLES THAT YOU MAY FIND INTERESTING:

- ❖ TRAI's net neutrality recommendations favour consumers: Broadband India Forum [\[LINK\]](#)
- ❖ India's internet economy driven by apps to contribute 16% to India's GDP in 2020: Study [\[LINK\]](#)
- ❖ Internet-based app services in India to contribute Rs 18 lakh crore by 2020 [\[LINK\]](#)
- ❖ India bright on 5G and IoT; likely to have 5G from the day of roll out [\[LINK\]](#)

Upcoming Event

International Summit - “India SatCom”

India SatCom 2018 – 4th International SatCom Summit – to be organized by the Broadband India Forum, offers 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 company part of this growing market for satellite communications services.

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The 4th International Summit -
India SatCom date to be announced soon!

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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. TV 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.

"It is indeed my pleasure to be associated with Broadband - Bits and Bytes. It would be our endeavor 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."

Our Esteemed Members



Panel of Honorary Principal Advisers



Mr. P K Garg



Dr. Kuldip Singh



Mr. B K Syngal



Dr. B M Baveja



Dr. Mahesh Uppal



Mr. J V Ramamurthy



Mr. D P Singh



Mr. Abhishek Malhotra



Mr. K V Seshasayee



Mr. Rajesh Mehrotra



Newsletter Development Team:

Avi Gutgold, Garima Kapoor, Arun Mukarji and Debashish Bhattacharya

Publisher:

Anil Prakash, Director General, Broadband India Forum, Suite 312-A, Deep Shikha, 8 Rajendra Place, New Delhi-110008

Find us on:



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For information regarding permission, write to Mr. Anil Prakash, Director General, Broadband India Forum, Suite 312-A, Deep Shikha, 8 Rajendra Place, New Delhi-110008.