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#### Delivering Broadband Quickly

Dear Sir,

The GSMA welcomes the opportunity to submit its views on the consultation paper issued which discusses the issues contributing to broadband penetration in India.

As a global body, GSMA is aware that Broadband is rising up the agenda for business leaders and policy makers alike. It has become evident that the quality and coverage of a country's telecoms infrastructure is now a key competitive differentiator in the global economy. Broadband connectivity is already delivering significant benefits in markets across the region, in both economic and social terms.

The Government can help overcome key barriers to the demand of mobile broadband services such as awareness, availability of local content and digital literacy by promoting skills and a broad selection of digital content available in local languages. For example, the development of e-Government services can help increase mobile broadband penetration.

To address both the supply and demand side barriers of consumer's adoption of mobile internet, GSMA has launched the Digital Inclusion (DI) programme to enable conditions to connect an additional one billion of the world's population to the mobile internet by 2020. The digital inclusion programme will collaborate with mobile operators, Governments, internet players and NGOs to increase mobile internet penetration and usage. Reducing the digital divide will improve social and economic opportunities to progress development.

Below are GSMA comments to some key issues raised in the public consultation:



## National Optical Fibre Network (NOFN)

Q7. Are PSUs ideal choices for implementing the National Optical Fibre Network (NOFN) project?

Although broadband deployment has been realized through the efforts of the private sector, there are a number of policy and regulatory factors that impact the penetration and roll-out of mobile broadband. Therefore the Government of India can play an essential role in ensuring the adoption of a stable regulatory and legal framework by:

- Creating a level playing-field among the different actors present in the market,
- Establishing adequate spectrum policy and reasonable spectrum allocation,
- Incentivizing investment and ensuring sustainable competition level.

Government should consult with operators when defining targets, use of funds and sharing project details/location of fibre for greater participation of private players in the implementation of projects.

Government should therefore foster the development of backbone/fibre networks by coordinating with the private sector, by enabling public-private partnership (PPP) schemes, as mobile broadband networks require high bandwidth backbones to support rising volume of traffic.

## Right of Way (RoW)

Q11. What are the major issues in obtaining right of way for laying optical fibre? What are the applicable charges/ constraints imposed by various bodies who grant permission of right of way? In your opinion what is the feasible solution?

GSMA believes that the faster roll out of broadband services should be supported by explicit, consistent planning approval processes for mobile base stations across the country to ensure that networks can be deployed without lengthy delays. To fulfil its objectives, the new Government should introduce mechanisms to reduce bureaucratic inefficiencies, including 'one-stop shop' approvals.

To be specific, the GSMA would want the following to be taken into considerations while drafting the recommendations:

- Treatment of uniform tower, fibre laying guidelines and standardization of RoW rates, enforced throughout the country;
- Provision of essential utility services: grid power;
- Availability of electricity as a priority and at more favourable rates (and not commercial)

The GSMA recommends that the new Government works closely with the mobile operators to develop guidelines (i) to extend above infrastructure sector benefits to the telecom sector and (ii) to simplify the RoW policy to enable smooth co-ordination between the service providers and local bodies for faster roll out of services.



## SPECTRUM

Q17. How much spectrum will be required in the immediate future and in the long term to meet the target of broadband penetration? What initiatives are required to make available the required spectrum?

Q18. Are there any other spectrum bands apart from the ones mentioned in Chapter-2 to be identified for provision of wireless broadband services?

Q19. What are the measures required to encourage Government agencies to surrender spectrum occupied by them in IMT bands?

Q20. What should be the time frame for auctioning the spectrum in 700 MHz band?

According to the ITU, the introduction or adoption of a broadband plan can lead to a 2.5% higher fixed broadband penetration rate, and 7.4% higher mobile broadband penetration, on average. The difference in those figures reflects the key role of wireless technologies, which can be deployed more quickly and at lower cost, thereby enabling countries to meet their broadband targets.

Rolling out mobile broadband successfully is intrinsically linked to the amount of spectrum available to mobile operators. In South Korea, mobile operators have deployed LTE in several different frequency bands, boosting coverage and uptake. At the end of 2013, South Korea was the most advanced LTE market worldwide with more than 29 million LTE connections - 52% of the country's connections base. In a sharp contrast with many other developed (e.g., Australia) and emerging (e.g., Indonesia) countries, India is yet to allocate a comparable amount of spectrum to mobile in any band.

Spectrum has a substantial economic value. Spectrum is also a limited and valuable resource—effectively a scarce natural resource—that must be utilised to maximise economic and social benefits for their citizens. The GSMA believes that an 'efficient allocation' of spectrum would mean placing spectrum in the hands of those able to create greatest overall benefit from it, including the Government agencies present in the existing globally harmonised mobile bands. These agencies being moved to other bands can be easily compensated from some part of the auction proceeds.

Today, the explosion in mobile applications, services and mobile devices (including smartphones and tablets) is driving demand for rich content, producing incredible volumes of data traffic across mobile networks in India. This steep trajectory of mobile data demand, combined with the continued growth of mobile broadband networks, underlines the mobile industry's call for additional spectrum allocations. Based on our calculations, GSMA recommends that, on average, a total of 1600–1800MHz should be identified for IMT, including existing allocation. The amount needed for each national market will vary depending on differing levels of data demand and national priorities, however, due to the high user density of major cities in India, and its technology savvy population, GSMA expects India to be at the high end of this range.



By 2017, around 250 million of 1.1 billion mobile connections in India are projected to be on 3G and 4G<sup>1</sup>. To meet these projections, the mobile industry requires additional spectrum allocated at reasonable prices and in line with internationally harmonised band plans:

- 2100 MHz: Additional spectrum to mobile operators in the 2100 MHz band is most critical to meet the rising data demand and support mobile broadband growth in India. This will ensure that Indian citizens can fully enjoy the benefits that 3G mobile services bring to society. The DoT should therefore take urgent steps to migrate current users, mainly Defence, from the band to make available the remaining spectrum for mobile communications in line with internationally harmonised band plan (2x60 MHz). This priority has been outlined by the mobile industry on various occasions in the last six months.
- 700 MHz: The release of the 700MHz band following the APT band plan will also be important for the cost effective deployment of mobile broadband in India in the long term. With 2x45 MHz made available as a fresh contiguous large blocks of spectrum at appropriate prices, will enable operators to deploy and run the network efficiently. For a price sensitive country like India, the development and availability of the ecosystem plays a major role. In view of this, it is very important for the Government to publish the spectrum roadmap and bring clarity to the industry and investors. Therefore, the release of this spectrum (after 2100 MHz) in a large market such as India will strongly add to the growing ecosystem and help generate economies of scale to bring prices down.

Furthermore, in advance of the World Radiocommunication Conference 2015 (WRC-15), ITU study groups have studied how much and what spectrum suitable for mobile broadband services will be needed to meet the demand in the future. Given India's leadership in the region, the Government of India will have a great opportunity to help shape the future of the mobile industry by addressing the critical need for additional spectrum for mobile broadband by 2020, and beyond, at WRC-15.

The GSMA is therefore proposing a number of suitable frequency ranges to be considered as potential candidate bands for IMT:

- Sub-700MHz UHF (470–694MHz): In countries with huge geographic area such as India, the UHF spectrum below 700 MHz will be important for providing wide coverage to these rural areas beyond 2020 for high quality mobile broadband services. Broadcasting services requirement should be assessed and could potentially be maintained in a smaller amount of spectrum using the latest broadcast technology and coding solutions.
- L-Band (1350-1400 & 1427–1525MHz): This band is capable of delivering additional capacity and coverage over relatively large areas, including inside buildings. A portion is already allocated to the mobile service worldwide (with strong support from regional groups like CITELE, CEPT and under review in APAC) and another is reserved for digital radio broadcasting, but is largely unused, creating an ideal basis for a wider mobile allocation. Radar and aeronautical telemetry can continue to operate in this spectrum.

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<sup>1</sup> GSMA Intelligence, Q42017



- 2.7–2.9GHz: This would provide important extra mobile capacity. In some countries, it is primarily used for civilian and military aircraft navigation and radar-based location as part of air traffic control systems. However, research shows that the band is under-utilised, particularly in South Asia, creating the potential to allow the mobile service to operate in a portion of this band.
- C-Band (3.4–3.8GHz & 3.8-4.2GHz): Due to the size of the band, this provides a unique opportunity to deliver very fast mobile broadband services. This would be very useful for dense urban areas in Indian cities and hence very important for India to progress decisions for availability of larger bandwidth at WRC-15. It is largely used for satellite services; however, recent technological developments mean alternative satellite spectrum (such as Ku and Ka band) is able to deliver improved performance and cheaper services. Other regions, Africa and Latin America are also considering part of the band for IMT. CEPT indicated clear support for the band 3.4-3.8 GHz, and is also discussing possible support for 3.8-4.2 GHz.

GSMA therefore requests TRAI to recommend above bands for future use because the frequency ranges above represent credible options<sup>2</sup> since they could be used in most markets across all three ITU Regions creating internationally harmonised spectrum. This will lower the cost of equipment, enable roaming and reduce international interference. At the same time, national administrations will have the flexibility to assign the amount they choose rather than having their future confined by existing allocations.

The GSMA also agrees with the Authority to make available spectrum in 2.6 GHz band for mobile services as per ITU option-1. The Government of India therefore needs to ensure that they allocate spectrum in a way that encourages the rapid deployment of mobile broadband infrastructure by making available sufficient quality spectrum (with sufficiently large blocks) to deploy cost-effective mobile broadband networks.

#### Other Policy Issues

##### Making Broadband Affordable

The affordability of broadband access plays a critical role in broadband take up and it can prove a key barrier to extending access to broadband in a developing country like India. The Government needs to ensure that telecom operators are incentivised to invest in new network infrastructure and services. To be specific, the Government should consider how to phase out sector-specific taxes and fees that impact the business case for deploying broadband infrastructure.

- Depending on the structure of services in each country, the revenue raised through taxation of ICT services and devices are generally likely to be less than the broader economic returns from greater use of telecommunication services benefiting the population and economy as a

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<sup>2</sup> ITU-R JTG 4-5-6-7 has concluded sharing and compatibility studies in relation to these bands, and results from these studies shows that they are feasible for use by IMT in many circumstances, and remained candidate bands for consideration for WRC-15.



whole. India has however imposed several taxes on the mobile industry and/or its customers above and beyond the standard taxes that apply across the economy. These multiple taxes are counter-productive as they curb the roll out of infrastructure and services that are a key enabler for the wider economy. In effect, taxation limits the positive impact of mobile broadband on economic & social development, employment, productivity and the lives of citizens.

Therefore, there is a need to rationalise the cost structure of the mobile sector in India, by lowering the burden of levies. Further benefits could be realised by reducing spectrum usage charges in all the upcoming spectrum auctions, where the value of spectrum is now already being more than captured by the auction mechanism.

- Government should review the Universal Service Fund mechanism to determine whether it is effectively supporting the provision of broadband. Research by the GSMA has found that many universal service funds are, in fact, counterproductive as they typically levy fees on the telecoms sector and damage the business case for investment in new infrastructure. In India, urgent attention should be given to gradually reducing the (Universal Service Obligation Fund) USOF levies, which reflect historical rates and do not take into account India's tremendous growth in mobile connectivity in recent years. India has one of the world's highest levies at five per cent (compared to, for example, one per cent in Brazil and 2 percent in Colombia).

#### Conclusion

Realising the full potential of broadband to increase national competitiveness and empower citizens depends on a strong partnership between government, industry and other stakeholders.

To ensure this vision becomes a reality, it is vital to ensure affordability and create the necessary supportive ecosystem for mobile broadband, including: a conducive regulatory environment; availability of additional spectrum at reasonable cost; access to fibre and backhaul infrastructures, affordable devices; taxes and more local language content.

I remain at your disposal to answer any questions you may have on the above.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Sandeep Karanwal', is written over a blue horizontal line.

Sandeep Karanwal  
Director, GSMA India