

Broadband India Forum (BIF) has highlighted that as a result of legacy issues, which includes unreasonably high reserve prices in previous auctions, India has incurred approximately Rs 5.4 trillion (around \$756 billion) in economic losses. Every unsuccessful mobile spectrum auction has severe implications not only in terms of spectrum remaining unsold but also in terms of valuable economic benefit lost as a result of this unsold spectrum remaining idle.

In the last auctions held in October 2016, which was India's largest spectrum sale, more than 1,300 MHz of radio spectrum (approximately 59 per cent) remained unsold, leading to significant unrealised potential. Taking all the six auctions held since 2010 together, only about 60 per cent of the spectrum put up for auction has been sold. Adopting a conservative approach, India had 762 million active mobile connections in 2016, served by over 3800 MHz of spectrum allocated to licensees. This indicates that the idle spectrum with government could enable connectivity for roughly 278 million additional active connections. 278 million active connections correspond to 21 per cent of the total Indian population. If 10 per cent increase in tele-density leads to an increase of 1.9 per cent in GDP (applying the results of the ICRIER India specific economic impact study), the financial cost of this idle spectrum can then be estimated to be Rs 5.40 trillion, or over 160 per cent of the financial benefit of Rs 3.30 trillion from all spectrum auctions so far.

The socio-economic relevance of the technology and of such a figure is significant, especially for a nation like India, which is aspiring towards a Digital India paradigm. It is also important to take note that this estimated increase in national GDP is over and above the increase that accrues to the national exchequer in exchange for the rights to use radio spectrum. Due to our very high reserve prices in past auctions, we have accumulated huge unsold spectrum and thereby lost to the nation and the public as much as Rs 5.40 trillion and consumers have lost out on quality of services.

T.V. Ramachandran, President, BIF commented, "We have maintained that spectrum's greatest value comes through its usage, rather than from the direct short-term revenues accrued through its sale. One must note that spectrum price in India is inarguably the single most important factor that can translate the auction into a success or failure. However, the true purpose of setting a reserve price for spectrum is to deter non-serious players from participating in the auction, but at the same time, ensuring a rational price point be offered, so as to enable discovering a vibrant realisation of the true market price, and successful participation from committed companies. This purpose should not get mislaid in the pursuit of short-term financial gains. In the context of the upcoming 5G spectrum auctions, it is imperative that we consider

learning's from the past and recalibrate the auctions in a manner that sets reserve prices at reasonable rates to facilitate maximum auction participation, and maximise the sale of spectrum so that an optimal combination of both direct and indirect benefits is realised.”

Moreover, the quantum of 5G spectrum that has been allocated for the upcoming 5G spectrum auctions is not enough for a country of India's size and density. The amount of spectrum being made available for 5G in India is 175 MHz, which is almost half of the USA. Additionally, the present 5G Reserve Price (3.5 GHz band) at RS 4.92 billion/MHz is also significantly in deviation with international norms. In absolute terms, the recommended reserve auction price is 5 to 6 times higher than other countries. Instead of just comparing the absolute prices, we need to look at the same relatively and compare them on the revenue generating potential of spectrum in different countries, i.e. in terms of ARPU adjusted USD cost per MHz per population, which is considered a more appropriate benchmark for Telecom for country wide spectrum price comparisons. 5G spectrum price in India is about 4 times higher than in UK and South Korea in terms of ARPU, and 8-9 times more than in Spain and Finland. On an average, India 5G Spectrum Price is 4 times higher as compared to other countries. Both these problems pose a significant challenge to the efficient and effective 5G uptake in the country going forward.

BIF believes that some of the fundamental issues facing the telecom industry are yet to be addressed in this context (please refer to annexure 1), including:

- No real discovery of market price in past auctions
- Continuously rising Reserve Prices
- Reserve Price calculation methodology does not rely much on fresh valuation
- Basis of valuation models is unclear
- 700 MHz price: calculation error and outlier effect

- 5G reserve price too high and way out of international norms

It should be noted that even the ICRIER independent report has concluded that the TRAI recommendations and the auction design/rules need to be reviewed.

Stakeholders need to assess the current situation with regards to spectrum auctions not just in the context of pricing but also availability. India requires more spectrums to support surging data traffic. India now has the highest data traffic in the world, but has one of the lowest spectrum allocations therein. Many developed nations across the world have assigned spectral resources far in excess of the quantum that is available to Indian operators. India has 175 MHz of spectrum, much far behind 370 MHz in the United States, 296 MHz in France and 260 MHz in China. For a country with a large population, highly inadequate fixed line connectivity and rapidly growing mobile usage, this is an enormous problem that constrains the coverage as well as quality of services.

The country is looking up towards the Digital Communication Commission (DCC), the policy making body, to come up with an enabling policy decision, focused towards strengthening the Digital India dream. The present scenario is analogous to that in 1999, when a bold policy decision by the government helped break away from the past legacy issues and introduced the game changing National Telecom Policy 1999. The results were evident as it propelled the growth of mobile telephony across the nation, and placed India on the global map. We are hopeful that such precedence would inspire a positive outcome for the forthcoming auctions, paving the path towards an empowered and dynamic Digital India.

Annexure 1:

### Spectrum Pricing - TRAI's Recommendations on Auction of Spectrum

1. No real discovery of market price in past auctions: The success of an auction is determined by two factors – the ability to sell a large proportion of spectrum up for auction, and the market/clearing price being significantly above the reserve price so that auction process discovers the true market price of the spectrum. Taking all the six e-auctions held since 2010

together, only about 60 per cent has been sold. For the spectrum that was sold, the average sale price was hardly 5 per cent above the reserve price, i.e. there was hardly any market discovered price in India.

2. Reserve Prices continuously rising: Reserve Price has been increasing significantly throughout the years due to linking of previous auction price and applying indexing over it, and has never been curated across bands & circles. The value of licensed spectrum is not proportional with the market realities. There is no correlation of value amongst different bands in same circle as well as band-wise correlation amongst various circles.

3. TRAI Methodology of calculating Reserve Price does not rely much on fresh valuation: The reserve prices can be referenced back to last auction only if it is not more than one year old. In case spectrum is auctioned after a gap of more than a year of last auctions, spectrum must be valued afresh to take into account the current market structure and condition. But, TRAI has referenced the price to last auctions and though fresh valuation has been computed for each circle, it is not applied to all circles. For instance, in 1800 MHz, for 19 out of 22 circles (more than 80 per cent), fresh valuation is not used. The last auctions happened in 2016 and more than 3 years would have lapsed by the time the new auction takes place, so it should not be referenced to the last auction.

4. Basis of valuation models: In the current recommendation of TRAI on spectrum pricing, no supporting information has been provided, viz. assumptions and inputs taken into the various valuation models.

5. 700 MHz price: TRAI inadvertently erred in determining the Reserve Price of 700 MHz Spectrum in 2016. The error was on account of two factors – calculation error and outlier effect. This resulted in reserve price set for 700 MHz band at 4x of 1800 MHz reserve price. This led to entire 700 MHz spectrum remaining unsold which constituted approx. 60 per cent of the overall quantum of offered spectrum for the auction. The Indian 700 MHz reserve price was effectively 46 times more than the US auction price of 600 MHz. This error has been corrected in the last recommendation by reducing the factor to 2x of 1800 MHz but even after the reduction, the price of 700 MHz is still out of line with international norms.

6. 5G reserve price: 5G, being a completely new technology, is also evolving internationally, and there is no background information available and no base data to work upon. The present 5G Reserve Price (3.5 GHz band) recommended by TRAI is out of line with international norms.

The average price of 5G band auctioned in 4 countries – South Korea, Spain, UK and Italy comes out to be Rs 84 Cr/MHz. The TRAI recommended price for the same band is Rs 4.92 billion /MHz (5 to 6 times higher). TRAI has used the indexed price of the 1800 MHz band (of the 2016 auction) to arrive at the price of 3.5 GHz band and has rejected the ground up valuation, even though these numbers were significantly lower than the last auction price.

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