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## **5G auctions - paving the way for tele surgery, internet of things**

### **Why in news?**

India's much-awaited 5G spectrum auctions concluded with the spectrum being acquired by the three incumbent telecom operators and one new entrant.

### **Why are the recently concluded 5G spectrum auctions significant?**

- 51,236 MHz of the spectrum was acquired during the auction for a total consideration of ₹1.50 lakh crore.
- The spectrum auction marks a turning point for India's telecom market.
- 5G technology will enable the delivery of critical services such as telesurgery and the Internet of Things over a mobile network with unprecedented efficiency.
- Globally, many countries including the US have already launched 5G services.

### **What did telecom service providers shop for?**

- Spectrum in three bands, namely, low (constituting of 600, 700, 800, 900, 1800, 2100, and 2500 MHz bands), mid (3300 MHz), and high (26 GHz - 1 GHz equals 1000 MHz) frequency bands were put up for auction.
- The low band spectrum is popular for providing wider coverage, however, the speed and latency might just be an incremental upgrade over 4G.
- Speed is subject to the proximity to the source.
- Additionally, signals from the low-band spectrum can travel through windows and walls which is not the case with the high-band.
- The high band spectrum can provide speeds of up to two Gbps but is unable to travel longer distances, at times, less than a mile.
- The mid-band spectrum falls somewhere between the low and high band spectrums.
- It can carry sizeable data over longer distances and maintain increased speeds.
- While making bids for spectrum, telcos take note of their existing financial position and priorities.
- Thus, not all spectrum on offer is acquired.

### **When can consumers in India start using 5G services?**

- Indian consumers can hope to get 5G services in metro areas to start with by October.
- But operators still have a tough road ahead when it comes to execution.
- They have an extremely expensive Capex cycle ahead of them for the next few years.

- The pricing dynamics in India are usually slow-moving amid resistance to paying premium prices for telecommunication services.
- This means that the transition to 5G services could be slow moving and restricted to certain urban centers for the next few years.
- The initial launch of 5G is likely to be restricted to one or two major metros.

### **Will users need new handsets for 5G services?**

- The user's mobile handset must be enabled with 5G capabilities.
- 5G-enabled mobile handsets are usually more expensive.
- According to a recent report by CounterPoint Research, only 15 to 20 percent of handsets currently sold in India are 5G ready.

### **What upgrades are necessary for 5G implementation?**

- The mass roll-out of 5G is likely to take some time.
- It may happen only in the next fiscal since telcos need to first upgrade fiberisation.
- They also need to launch commercial services in at least one city of each circle by the end of the first year of acquiring the license, as per roll-out obligations.

### **Will the service be expensive compared to 4G?**

- Given the massive Capex demands, 5G telecom plans will also be more expensive.
- The first consumers for 5G will be in urban areas and people who can afford expensive smartphones and premium tariff plans.
- Given the geopolitical uncertainties as well as the consequent macro and supply chain uncertainties, the road towards a mature and all-pervasive 5G network is a long one.
- Consequently, telecom operators also have to take the call regarding whether they should conduct a slower or aggressive rollout of 5G services.
- All indicators suggest that the evolution to a mature 5G ecosystem will be a slow one.
- Ultimately the Indian consumer should get used to the idea of paying more for telecommunication services.
- Since Jio's 4G revolution, India has enjoyed some of the cheapest tariffs across the globe.
- Leading up to the auctions the industry already took a 20 percent hike in tariffs last winter.
- Given that telcos were more aggressive in the auctions than expected, analysts predict that the telecom industry is preparing for another bout of tariff hikes.
- 5G mobile plans and the surrounding ecosystem will also become expensive going ahead.
- Operators are likely to charge a premium for 5G services.
- However, 5G or no 5G, mobile subscribers will be paying more for the services.

### **Which operator is better placed to offer 5G services?**

- Nearly 60 percent of the spectrum sold by value was bought by Reliance Jio for ₹88,100 crores.
- Jio is the only operator to acquire spectrum in the all-important 700MHz which was

priced so high that no other player could acquire it.

- The premium band is known to improve indoor and rural coverage as well as possessing the ability to penetrate through walls and properties more effectively.
- This gives Jio a massive advantage over other players because 700 MHz is considered to be best for indoor coverage.
- In addition, Jio has amassed the highest amount of 5G spectrum in 3.3GHz and 26GHz.
- Its nearest rival, Bharti Airtel bought spectrum worth ₹43,100 which will help it to become the only other pan India 5G operator.
- Weighed down by dues, Vodafone Idea was subdued in its auction play and bought 5G spectrum only in certain circles.

### **What about the new player in the fray, Adani?**

- Adani bought a limited spectrum of 26MHz- specifically for private network services.
- Private networks are another use case that telecom operators are exploring for 5G.
- In this domain, they have competition from players that usually do not dabble in telecommunications.
- This includes Adani, Tata, and other tech majors.
- The company would provide private network solutions with enhanced cyber security in its airports, ports and logistics, power generations, transmission, distribution, and various manufacturing operations.

### **What is the way forward?**

- Telecommunications in India is a price-sensitive and competitive market.
- The sector is capital-intensive and has to consistently invest in upgrading technologies and improving services.
- However, 5G may not mean much for rural India.
- Telcos are likely to block the entry of other firms into the private network space.
- Voice and data services will however provide the most revenue for 5G in the near term.
- It all depends on how telcos utilize the spectrum they have purchased and how soon the government firms up regulations on private networks.

### **Reference:**

1. <https://www.thehindubusinessline.com/opinion/explainer-5g-auctions-paving-the-way-for-telesurgery-internet-of-things/article65741210.ece>
2. <https://www.thehindu.com/business/Industry/explained-how-will-the-5g-spectrum-sale-impact-the-sector/article65736547.ece>



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