

## Spectrum Auctions February 2014 – Need Vs. Greed

After a lull of two years, telecom sector is back with a bang, showcasing its potential through the recently concluded pricey spectrum auctions. Since the cancellation of 122 licenses by the Supreme Court, auctions held in November 2012 and March 2013 turned out to be damp squibs with minimal participation, hinting at almost a boycott from the players. The idea of paying for the spectrum was new to the Indian Telecom landscape, taking its own time to sink in. The February 2014 auction was of primary importance from two aspects – one, it marked the entry of Reliance Jio into the mainstream telecom market and two, reduction in reserve price by the government which was earlier a contentious issue for the operators. Government was the biggest beneficiary of the auction process as it could sell almost 80% of the spectrum collecting Rs. 612 billion at end of 10-day long auctions.

### Highlights of the Auction

- Out of the total 8 qualified bidders, 7 participated in the auctions except Tata Teleservices. All the circles received bids unlike the auctions in November 2012 and March 2013.
- Bharti Airtel, Vodafone, Idea, Reliance Jio Infocomm (RJio), Telewings, Aircel, Rcom received spectrum in 15, 11, 14, 5, 5 and 1 circles respectively in the 1800 MHz band. Bharti Airtel, Vodafone and Idea received spectrum in 3, 3 and 1 circle in the 900 MHz band.
- Aggressive bids were received in the 900 MHz spectrum range as Bharti and Vodafone secured spectrum in all three metro circles whereas Idea could enter into Delhi circle where it did not have the spectrum in that band.
- For the first time, price for spectrum in 1800 MHz band in the Maharashtra circle (from Category A) crossed that for Mumbai (Metro circle) to become the second most expensive circle to own.
- In the 1800 MHz range, 11 out of 22 circles witnessed almost a double digit increase in spectrum price over the reserve price. Price overrun was extremely high for spectrum in 900 MHz for Delhi, Mumbai and Kolkata circles witnessing a bid price which was higher by 106%, 72% and 56% respectively over the reserve price.
- Out of 403.2 MHz spectrum put up for sale in the 1800 MHz range, 307.2 MHz (i.e. 76%) was sold with 5 circles (Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh and Assam) witnessing complete sale of the spectrum. The entire 46 MHz of spectrum in the 900 MHz band was sold.

**Results of Spectrum Auction – February 2014**

Spectrum in 1800 MHz in Delhi, Mumbai, Gujarat, Maharashtra, UP (W) and Assam circles received considerable premium over their reserve price while the same is true for all three circles in the 900 MHz range. C-Category circles witnessed highest unsold spectrum in the 1800 MHz range. The intensity of competition was the highest in the 900 MHz range where the incumbents put up a tough fight to retain the spectrum and try to gain access to this more efficient spectrum wherever they don't have (e.g. Bharti Airtel in Mumbai and Idea in Delhi).

Spectrum Auctions in 1800 MHz												
	Circle	Winnig Price per MHz (Rs. Mn)	Increase over Reserve Price	Spectrum Won (MHz)						Spectrum Sold (MHz)	Spectrum unsold (MHz)	
				Bharti Airtel	Vodafone	Idea	RJio	Aircel	Telewings			Rcom
Metros	Delhi	3,640	66%	7.0	8.0	0.6	5.4				21.0	1.8
	Kolkata	730	-	5.0	8.0		5.0				18.0	8.8
	Mumbai	2,720	31%	6.0	8.2	2.0	6.6			0.6	23.4	1.8
Circle A	AP	1,630	-	8.8	0.6	6.0	5.8		1.4		22.6	0.0
	Gujarat	2,378	66%		4.4	1.6	6.0				12.0	0.0
	Karnataka	1,550	-	8.8	5.0	5.0	5.0				23.8	0.8
	MH	2,904	68%			9.0	5.0				14.0	0.0
	TN	2,080	-	5.0			6.2				11.2	19.0
Circle B	Haryana	270	-		2.4	6.0					8.4	8.0
	Kerala	520	-	5.0	7.0	10.0	5.0				27.0	1.0
	MP	504	17%	5.8		7.0	6.4				19.2	0.0
	Punjab	540	-	8.2	0.6	8.0					16.8	1.6
	Rajasthan	260	-	8.2	0.8			1.6			10.6	10.2
	UP (E)	640	5%		4.0			1.8	1.8		7.6	2.2
	UP (W)	950	53%						2.0		2.0	0.4
	WB	246	17%	4.4			5.6	1.2			11.2	1.8
Circle C	Assam	361	416%				5.4		6.0		11.4	0.0
	Bihar	431	16%						2.2		2.2	2.0
	HP	60	-	10.2							10.2	10.2
	J&K	61	22%	2.6				1.8			4.4	1.8
	NE	70	-	7.0		5.0	6.4	1.8			20.2	6.6
	Orissa	160	-	5.0			5.0				10.0	18.0
Total Spectrum		-	-	97.0	49.0	60.2	78.8	8.2	13.4	0.6	307.2	96.0
No. of circles				15	11	11	14	5	5	1		

Source: DoT and CARE Research

Spectrum Auction in 900 MHz											
Circle	Winnig Price per MHz (Rs. Mn)	% increase over Reserve Price	Spectrum Won (MHz)						Spectrum Sold (MHz)	Spectrum unsold (MHz)	
			Bharti Airtel	Vodafone	Idea	RJio	Aircel	Telewings			Rcom
Delhi	7,409.6	106	6	5	5					16.0	0.0
Mumbai	5,630.9	72	5	11						16.0	0.0
Kolkata	1,946.3	56	7	7						14.0	0.0

Source: DoT and CARE Research

### **Competition – A Shift from ‘Voice’ to ‘Data’**

Rising spectrum costs are putting huge burden on the operators’ profitability. In order to offset this, operators need to raise the tariffs in both voice and data. With a decline in competition, some pricing power has been returning to the operators over last few quarters. For most of the operators, difference between headline and realized tariff is 30-40% implying a scope for tariff hikes with reduction in discounted minutes, without touching the headline tariff. Since the middle of 2012, when 3G operators cut tariffs by more than 70%, competition has shifted from voice to data.

CARE Research believes the competition in the data space is going to get tougher with the entry of RJio in the 4G arena. Technology-neutrality of the spectrum has led to some of the operators stocking up more spectrum in the 1800 MHz range which can be effectively used for launching 4G services in the LTE-FDD band and there is a possibility of more 4G launches in the near future by operators who have not received BWA spectrum in 2010 auctions. CARE Research expects that the data tariffs are likely to expect pressure in the near term. However, the impact of decline in tariffs would be partly offset by the rising data consumption as Bharti Airtel, Idea and Rcom have witnessed data traffic growth of more than 100% in 2013.

### **Consolidation to receive a boost**

With clarity on M&A guidelines emerging, the activity is expected to gather momentum as witnessed by the recently announced acquisition of Loop Mobile by Bharti Airtel. Considering that the acquirer has to pay market price for the spectrum of the acquired company if the same is obtained through administered mechanism, CARE Research believes that spectrum will no longer be the driver for consolidation. But as the spectrum payouts become unaffordable to the weaker players, there would be a rise in M&A activity as the loss making players would try to exit the market.

### **4G – Beginning of LTE-FDD in 1800 MHz**

One of the other reasons for the excessive demand for the spectrum in the 1800 MHz is the rising appeal of the spectrum for launching 4G services in LTE-FDD band. Globally various spectrum bands like 700, 900, 1800, 1900, 2300, 2600 MHz are used for providing 4G services based on LTE. The most widely used band in network deployments for 4G continues to be 1800 MHz which is used in 43% of commercially launched LTE networks. At least two Indian operators, Bharti Airtel and RJio, have confirmed their intentions to use the spectrum in this band to provide 4G services based on LTE-FDD technology. This will reduce the ecosystem challenges expanding the device availability from international markets. Also it will facilitate easier international roaming for 4G subscribers.

This marks India’s entry into the LTE-FDD for offering 4G in addition to the already adopted LTE-TDD in 2300 MHz range. This will enhance the availability of devices in the Indian markets due to the convergence of bandwidth with global markets as the 1800 MHz LTE-FDD band has the second highest number of LTE devices available (Source: Global Mobile Suppliers Association).

**Auctions to burden the balance sheets; Data growth to compensate partially**

The total payouts at the end of fierce 10-day auction stand at Rs. 612 billion for the Indian Telecom industry. Bharti Airtel, Vodafone and Idea would shoulder 80% of this burden and it comes to 98% if we include RJio. The operators can pay 25% and 33% of the bid amount upfront in the 900MHz band and 1800MHz band, respectively, and the rest in 10 annual installments after a two-year moratorium.

Comparing annual revenues (adjusted gross revenue) of these operators for the 12 months ending in Sep. 13, the total payout comes to 55% of the revenue (excluding RJio), with highest being 79% for Vodafone.

The auctions are expected to put enormous burden in the near term on the stressed balance sheets of the telecom operators as the collective debt of the industry stands at Rs. 2.5 trillion on revenue of Rs. 1.5 trillion. The debt was primarily amassed during the 3G and BWA auctions in 2010 and subsequent roll out of the network.

Spectrum Auctions Payouts							
Players	For spectrum in 1800 MHz (Rs. Bn)	For spectrum in 900 MHz (Rs. Bn)	Total Outgo (Rs. Bn)	Revenue of 12 months ending Sep. 13 (Rs. Bn)	Outgo as a % of revenue	Upfront Payment (Rs. Bn)	Annual Outgo (Rs. Bn)
Bharti Airtel	99.1	86.2	185.3	333.8	56%	54.2	25.8
Vodafone	83.8	112.6	196.4	248.5	79%	55.8	27.7
Idea	70.1	37.1	107.2	175.0	61%	32.4	14.7
RJio	110.5		110.5	0.0	N.A.	36.5	14.6
Aircel	2.1		2.1	57.8	4%	0.7	0.3
Telewings	8.5		8.5	18.8	45%	2.8	1.1
Rcom	1.6		1.6	79.5	2%	0.5	0.2
<b>Total</b>	<b>375.6</b>	<b>235.9</b>	<b>611.5</b>	<b>913.3</b>	<b>55%</b>	<b>183.0</b>	<b>84.4</b>

Source: DoT and CARE Research

If we look at the Spectrum Payout per subscriber metrics, it is extremely high in Metro circles primarily on account of inflated payouts for 900 MHz spectrum, crossing Rs. 10,000 mark for Bharti Airtel and Vodafone in Mumbai. CARE Research has calculated average ARPU for Bharti Airtel and Vodafone in Delhi, Mumbai and Kolkata and they are Rs. 237, 238 and 155 respectively (Source: TRAI Financial data). If we compare this with payout per subscriber (spectrum payout spread over 20 years of the license period), it stands at Rs. 29.4, 42.6 and 18.5 for

Bharti Airtel and Rs. 30.5, 20 and 18 for Vodafone for Delhi, Mumbai and Kolkata circles respectively, which is around 10-15% of ARPU.

Considering the phenomenal growth of mobile data, as Bharti Airtel and Idea witnessed more than 100% Y-o-Y growth in traffic and data revenue in December 2013 quarter, there is tremendous upside potential if the operators decide to monetize the spectrum in 1800 MHz for starting 4G services. CARE Research estimates that within 3-4 years of launch, 4G subscriber base would constitute around 10% of the total subscribers with higher ARPUs than the average. This is based on the experience of 3G growth in India where for some of the leading operators, 3G subscribers constitute 7-8% of total subscriber within 3 years of launch, in spite of not having pan-India presence. The number would be even higher for Metro circles. Once the ecosystem is in place, 4G has a potential to quickly scale up in terms of data usage as it is more suitable for data intensive services like video streaming and enterprise applications. CARE Research believes that 2G, 3G and 4G would co-exist in India at least for next 4-5 year considering the maturity levels of these technologies and disparity among the subscriber group. With a right mix of 900 MHz and 1800 MHz spectrum, operators would be able to use 900 MHz for existing and upcoming voice and 2G data needs and reserve some 1800 MHz spectrum for 4G services.

Spectrum Payout - Annualised (Rs. Mn)								
	Circle	Bharti Airtel	Vodafone	Idea	RJio	Aircel	Telewings	Rcom
Metros	Delhi	3,496.9	3,308.4	1,961.6	982.8			
	Kolkata	863.7	973.2		182.5			
	Mumbai	2,223.7	4,212.2	272.0	897.6			81.6
Circle A	AP	717.2	48.9	489.0	472.7		114.1	
	Gujarat		523.2	190.2	713.4			
	Karnataka	682.0	387.5	387.5	387.5			
	MH			1,306.6	725.9			
	TN	520.0			644.8			
Circle B	Haryana		32.4	81.0				
	Kerala	130.0	182.0	260.0	130.0			
	MP	146.2		176.4	161.3			
	Punjab	221.4	16.2	216.0				
	Rajasthan	106.6	10.4			20.8		
	UP (E)		128.0			57.6	57.6	
	UP (W)						95.0	
	WB	54.1			68.9	14.8		
Circle C	Assam				97.5		108.3	
	Bihar						47.4	
	HP	30.6						
	J&K	7.9				5.5		
	NE	24.5		17.5	22.4	6.3		
	Orissa	40.0			40.0			
<b>Total</b>		<b>9,264.8</b>	<b>9,822.4</b>	<b>5,357.8</b>	<b>5,527.2</b>	<b>105.0</b>	<b>422.4</b>	<b>81.6</b>

Source: DoT and CARE Research

Spectrum in the efficient 900 MHz band was valued at almost double the price of spectrum in 1800 MHz as incumbent operators tried hard to retain their spectrum holding. Their aggression is partly in order to safeguard their investment in the network infrastructure related to 900 MHz from being obsolete. This has paved the way for a fierce battle for spectrum in the 900 MHz as more spectrum comes up for renewal over next couple of years. CARE Research estimates a total payout of Rs. 383.9 billion for the spectrum coming for renewal in 2015 and 2016, calculated on the basis of spectrum price paid during the February 2014 auctions.

Licences Expiring in 2015-2016						
No.	Circle	Player	Year of Expiry	Spectrum due for renewal (MHz)		Payout (Rs. Mn)
				900 MHz	1800 MHz	
1	Andhra Pradesh	Bharti Airtel	2015	7.8	2.2	29,014
		Idea	2015	6.2	1.8	23,146
2	Assam	Rcom	2015	6.2		4,476
3	Bihar	Rcom	2015	6.2	1.8	6,120
4	Gujarat	Idea	2015	6.2		29,487
		Vodafone	2015	7.8	2	41,853
5	Haryana	Idea	2015	6.2		3,348
		Vodafone	2015	6.2		3,348
6	Himachal Pradesh	Bharti Airtel	2015	6.2		744
		Rcom	2015	6.2		744
7	Karnataka	Bharti Airtel	2016	7.8	2.2	27,590
		Idea	2016	6.2		19,220
8	Kerala	Idea	2015	6.2	1.8	7,384
		Vodafone	2015	6.2		6,448
9	Madhya Pradesh	Idea	2015	6.2	1.8	7,157
		Rcom	2015	6.2		6,250
10	Maharashtra	Idea	2015	7.8	2	51,102
		Vodafone	2015	6.2		36,003
11	North East	Bharti Airtel	2015	4.4	1.8	742
		Rcom	2015	4.4	1.8	742
12	Orissa	Rcom	2015	6.2		1,984
13	Punjab	Bharti Airtel	2015	7.8		8,424
		Idea	2016	7.8		8,424
14	Rajasthan	Bharti Airtel	2016	6.2	2	3,744
		Vodafone	2015	6.2		3,224
15	Tamilnadu	Vodafone	2015	6.2	1	27,872
16	Uttar Pradesh (East)	Vodafone	2015	6.2	2	9,216
17	Uttar Pradesh (West)	Idea	2015	6.2	1.8	13,483
18	West Bengal	Rcom	2015	4.4	1.8	2,608
<b>Grand Total</b>		29		<b>184</b>	<b>27.8</b>	<b>383,897</b>

Source: TRAI & CARE Research  
 Note: Payouts - Bharti Airtel=Rs. 70.3 Bn, Vodafone = Rs. 127.9 Bn, Idea = Rs. 162.7 Bn, Rcom = Rs. 22.9 Bn

**Spectrum Auctions - Does this have a ‘Silver Lining’?**

On most of the counts, the spectrum auctions held in February 2014 look highly expensive and have paved the way for the costlier auctions in the years to come. At the same time, it has established ‘Spectrum as the most strategic asset’ for the operators. Top 3 operators (Bharti Airtel, Vodafone and Idea) along with RJio gulped almost 93% of the 1800 MHz spectrum and the entire 900 MHz spectrum, widening the divide between Top 3 (and RJio) and weaker ones even further. The higher spectrum prices, being unaffordable to the bleeding operators, would compel them to get acquired by the larger operators, leading to much needed consolidation in the Indian telecom

space. Wider participation in the spectrum auctions after two failed auctions and absence of litigations is leading towards more stable and clear policy regime in the sector.

Indian telecom market is on the doorsteps of data revolution after a lukewarm response to 3G for couple of years and the true value of spectrum as an asset is yet to discover. As the telecom crosses to new technology generation every decade, it will be short-sighted to value the spectrum on the existing voice and data offerings. Nevertheless, it makes sense for operators to block the asset for over next 20 years although it pinches now.

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