Telecom

Action begins on the 3G Auctions

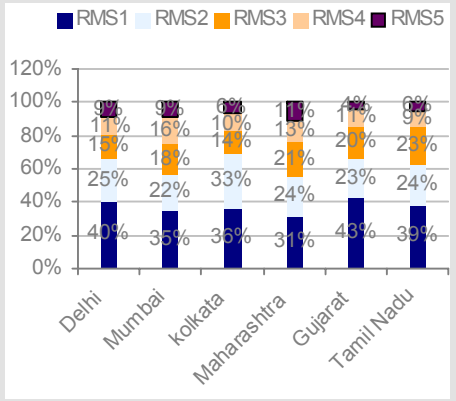
06 April 2010

The expectation that spectrum trading and M&A will be permitted later this year, we believe, will limit price irrationality in the forthcoming 3G auctions to only the Mumbai and Delhi circles. We feed aggregate revenues, number of slots, and cities' population concentration into our circle-wise DCF model to arrive at a US$1.6bn pan-India price. Bharti should win in most, perhaps all, circles, followed by Vodafone. We also met Kanwalinder Singh, Qualcomm's President for India and South Asia, one of the bidders in the BWA (broadband wireless access) auction, and present key takeaways.

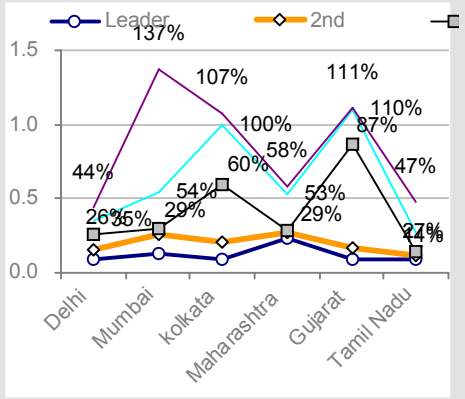
Imminence of policy changes should contain irrationality: We strongly believe that operators lining up to bid for 3G spectrum will consider that: 1) the immediate requirement is additional spectrum for voice, for which 2G spectrum may soon also be available through trading or M&A (if the policy changes in the direction recommended by the May 2009 Spectrum report; this, we believe, will soon be announced, at least by TRAI); 2) possible appropriately priced handset variations of dual technology phones (CDMA + GSM) which expand choices for 3G losers; 3) intra-circle roaming. These factors should prevent bid values from rising to irrational levels, except in Delhi and Mumbai and 4) BWA offers a second chance

Pan-India 3G spectrum to cost US$1.6bn: Based on our valuation of spectrum on a circle-wise basis, we arrive at a value of ~US$1.6bn that a potential operator like Bharti may have to shell out to ensure pan-India 3G coverage. This is the sum of the economic value of the spectrum for the 3rd (or 4th operator by revenue market share) topped up by a 'desperation premium'. The economic value is derived as per a DCF-based valuation, while 'desperation premium' is based on our classification of circles into different categories of bidding intensity, based on aggregate circle revenues, # slots, and population concentration in cities.

Bharti likely pan-Indian 3G player, with Vodafone winning in 16 circles: We believe that Bharti and Vodafone will pick up spectrum in most circles, shelling out US$1.56bn and US$1.4bn, respectively. The third 3G operator in other key circles will be shared by RCOM, Idea and Tata DoCoMo. Regional player Aircel, we believe, will bid aggressively in markets where it has strong revenue share. Our computation is that inclusive of BSNL / MTNL payments, the aggregate auction proceeds will ~US$8bn including BWA.



Revenue Market shares of the top 5 operators in the 'key' circles



Reserve price as a proportion of the GR (annualized), highlights the asymmetric payoffs to the leader, and other operators have to pay a much higher %

DCF assumptions, for determining the fair value. Our assessment yields an economic value of US$2.05bn for the market leader, ~30% of sales for Bharti (FY10 basis)

Assumptions summary	Rs mn
3G capex (Rs m, spread over 3 yrs)	41,400
Steady-state EBITDA on 3G	40%
Capex-to-sales (steady state)	12%
Terminal growth rate of cash flow	4%
WACC	12%
3G spectrum auction price (derived value of US$2.05bn, to yield a 0 NPV)	**96,585**

Source: IIFL Research

Pan-India winners in 3G auctions will have to pay ~US$1.56bn, and will stretch the balance sheets of major telcos

Company	No. of winning circles	Payout ($mn)
Bharti	22	1,560
Vod	15	1,434
Idea	8	518
RCOM	11	516
TTL	10	532
Aircel	5	218

Source: IIFL Research

GV Giri
(022) 4646 4676
gvgiri@iiflcap.com

Mudit Bali
(022) 4646 4672
mudit.bali@iiflcap.com

3G auctions: now looking certain, really

Of the nine bidders who have deposited earnest money corresponding to a pan-India bid, most seem to be gunning for pan-India spectrum. In our view, Bharti is the most likely operator, perhaps the only one, to get pan-India spectrum.

DCF for an upper bound for economic value of spectrum: We experiment with a DCF method, for Bharti, to fix an upper bound for economic value (since all players pay the same price for the spectrum, but the leader has a larger base of '3G-ready' subscribers to gain from, leading to an upper bound for economic value. Our calculation yields a price of US$2.05bn at a WACC of 12%, for 0 NPV for Bharti.

But, in a rational world, Bharti might not have to pay this amount as the other bidders might not find the same economic value from the spectrum. Ideally, Bharti should be paying the 'economic value' for the third operator in every circle (fourth operator in circles where there are four slots up for auction).

Figure 1: DCF assumptions for determining the fair value; our calculation yields an economic value of US$2.05bn for the market leader, ~30% of sales for Bharti (FY10)

Assumptions Summary	Rs mn
3G Capex (Rs m, spread over 3 yrs)	41,400
Steady State EBITDA on 3G	40%
Capex to Sales (steady state)	12%
Terminal Growth Rate of Cash Flow	4%
Weighted Avg Cost of Capital WACC	12%
3G spectrum auction price (derived value of $2.05bn, to yield a 0 NPV)	**96,585**
3G spectrum price as % of revenue (Gross Revenue)	**30%**

Source: IIFL Research

Figure 2: The DCF model corresponding to the assumptions in the previous table. Note that the spectrum value to sales at 0 NPV (US$2.05bn) is ~30% of revenue

Rs m	Y0 -	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Revenue Growth		10%	9%	8%	8%	8%	8%	8%
Revenue	321,601	353,761	385,600	416,448	449,763	485,744	524,604	566,572
Data %	9%	12%	15%	18%	21%	24%	27%	28%
Data Revenue	28,944	42,451	57,840	74,961	94,450	116,579	141,643	158,640
Incremental Data Rev		10,613	23,136	37,480	53,972	72,862	94,429	107,649
EBITDA %		-100%	0%	30%	40%	40%	40%	40%
EBITDA		-10,613	0	11,244	21,589	29,145	37,771	43,059
Capex	-13,800	-13,800	-13,800	-4,498	-6,477	-8,743	-11,331	-12,918
GFA (Rs m)	13,800	27,600	41,400	45,898	52,374	61,118	72,449	85,367
Depreciation %	10.0%	10.0%	9.0%	8.0%	8.0%	8.0%	7.0%	7.0%
Depreciation		2,760	3,726	3,672	4,190	4,889	5,071	5,976
Net Fixed Assets NFA	13,800	24,840	34,914	35,740	38,026	41,880	48,140	55,083
Depreciation % NFA		11.1%	10.7%	10.3%	11.0%	11.7%	10.5%	10.8%
Sales / NFA		42.7%	66.3%	104.9%	141.9%	174.0%	196.2%	195.4%
Spectrum								
Gross value of Spectrum	96,585	96,585	96,585	96,585	96,585	96,585	96,585	96,585
Amortization%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Amortization of spectrum		4,829	4,829	4,829	4,829	4,829	4,829	4,829
Net Carrying Value	96,585	91,756	86,927	82,097	77,268	72,439	67,610	62,780
Amortization% NCV		5.3%	5.6%	5.9%	6.3%	6.7%	7.1%	7.7%
EBIT		-18,202	-8,555	2,743	12,569	19,426	27,871	32,255
EBIT margin		-171.5%	-37.0%	7.3%	23.3%	26.7%	29.5%	30.0%
Tax Rate		10.0%	12.5%	15.0%	17.5%	20.0%	22.5%	25.0%
Working Capital								
WC Δ		-436	-1,465	-1,641	-1,781	-1,863	-2,127	-1,304
DCF								
FCFF	-110,385	-23,029	-14,196	4,694	11,132	14,653	18,042	20,774
NPV	0							
Price / sales (at 0 NPV)	30%							

Source: IIFL Research

Circle-wise analysis gives US$1.56bn value for pan-India 3G licence

Winning price is (economic value + 'desperation value') for the last slot in each circle: Based on Bharti's metrics, we decide a range for spectrum value as a % of gross revenue, and then add a 'desperation value' that operators will be willing to pay as a result of higher attractiveness in certain circles.

Figure 3: Market positions in different circles based on revenue market shares. Bharti leads in 13/22 circles and hence is in a position to make better use of 3G spectrum.

Circle	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
Andhra Pradesh	Bharti	Idea	Vod	RCOM	TTL
Assam	Bharti	Aircel	RCOM	Vod	TTL
Bihar	Bharti	RCOM	Idea	TTL	Vod
Delhi	Bharti	Vod	RCOM	Idea	TTL
Gujarat	Vod	Bharti	Idea	RCOM	TTL
HP	Bharti	RCOM	Idea	Aircel	Vod
Haryana	Vod	Idea	Bharti	TTL	RCOM
J&K	Bharti	Aircel	RCOM	Vod	TTL
Kerala	Idea	Vod	Bharti	RCOM	TTL
Karnataka	Bharti	Vod	RCOM	TTL	Idea
Kolkata	Vod	Bharti	RCOM	TTL	RCOM
Madhya Pradesh	Bharti	Idea	RCOM	TTL	Vod
Maharashtra	Idea	Bharti	Vod	TTL	RCOM
Mumbai	Vod	Bharti	RCOM	TTL	BPL
NorthEast region	Bharti	Aircel	RCOM	Vod	TTL
Orissa	Bharti	RCOM	TTL	Aircel	Vod
Punjab	Bharti	Idea	Vod	RCOM	TTL
Rajasthan	Bharti	Vod	RCOM	Idea	TTL
Tamil Nadu	Bharti	Vod	Aircel	RCOM	TTL
UP (East)	Vod	Bharti	RCOM	Idea	TTL
UP (West)	Idea	Vod	Bharti	RCOM	TTL
WB and AN	Vod	Bharti	RCOM	Aircel	TTL

Source: TRAI GR/AGR report, IIFL Research

In later sections, we build the value of the spectrum as sum total of the value of the spectrum in each of the 22 telecom circles classified on the basis of current competition intensity and revenue potential from 3G services. We do this for the third (or fourth) operator (by revenue market share) as that will decide the clearing price as per the auction rules (see Appendix).

Figure 4: Revenue market shares (RMS) of the top 5 ranked operators in different circles. The top 3 operators hold almost ~80-90% of the market

Circle	RMS1	RMS2	RMS3	RMS4	RMS5
Andhra Pradesh	45%	19%	14%	11%	10%
Assam	40%	30%	23%	6%	2%
Bihar	54%	22%	9%	8%	8%
Delhi	40%	25%	15%	11%	9%
Gujarat	43%	23%	20%	11%	4%
HP	56%	25%	8%	5%	5%
Haryana	29%	24%	23%	13%	12%
J&K	56%	29%	6%	4%	4%
Kerala	34%	25%	23%	11%	7%
Karnataka	56%	16%	10%	10%	7%
Kolkata	36%	33%	14%	10%	6%
Madhya Pradesh	33%	32%	25%	6%	3%
Maharashtra	31%	24%	21%	13%	11%
Mumbai	35%	22%	18%	16%	9%
NorthEast region	46%	37%	8%	7%	2%
Orissa	48%	23%	12%	10%	7%
Punjab	46%	21%	20%	8%	6%
Rajasthan	51%	26%	10%	8%	6%
Tamil Nadu	39%	24%	23%	9%	6%
UP (East)	36%	34%	15%	12%	4%
UP (West)	32%	26%	21%	14%	8%
WB and AN	42%	32%	14%	8%	4%

Source: TRAI GR/AGR report, IIFL Research

Economic value of spectrum for each operator will be governed by its respective revenue market share. We also look at the circle-wise

concentration of the top 100 cities in India, which are the potential 3G markets. Based on revenue potential and population, we classify them on the basis of competitive intensity in these circles.

Figure 5: The metro and 'A' circles constitute ~72% of the population in the top 100 cities of 143m and 52% of the total cities.

	No. of cities in top 100	Total GR of top 5 operators (2QFY10, $mn)	Population in the cities (m)	%age of total city population	Category*	Reserve Price/ Person (Rs)
Mumbai	1	395	20.871	14.5%	FTD	159.9
Delhi	1	461	18.363	12.8%	FTD	17.9
Kolkata	6	134	17.762	12.4%	GTH	18.5
Maharashtra	18	403	14.712	10.2%	KBS	226.8
Gujarat	6	306	9.182	6.4%	GTH	363.4
Tamil Nadu	7	451	8.409	5.9%	KBS	39.1
UP (East)	6	279	7.811	5.4%	GTH	162.5
Karnataka	7	378	7.429	5.2%	KBS	170.8
AP	6	406	6.895	4.8%	KBS	184.0
MP	7	218	6.264	4.4%	GTH	532.7
UP (West)	8	213	6.224	4.3%	GTH	203.9
Rajasthan	6	237	5.273	3.7%	GTH	240.7
Bihar	6	215	3.907	2.7%	SAP	854.2
Punjab	3	201	3.071	2.1%	GTH	1,086.5
Kerala	4	218	2.139	1.5%	GTH	1,560.3
J&K	2	36	1.268	0.9%	SAP	259.4
Orissa	2	90	1.183	0.8%	SAP	1,073.0
Haryana	1	101	1.056	0.7%	GTH	3,160.2
WB and AN	2	145	0.969	0.7%	SAP	3,444.3
Assam	1	77	0.810	0.6%	SAP	1,566.9
HP	0	34	-	0.0%	SAP	
NE Region	0	48	-	0.0%	SAP	

Source: IIFL Research. * 'Fight Till Death' (FTD), 'Kill But Survive' (KBS), 'Good To Have' (GTH) and 'Someone, Anyone, Please' (SAP).

On the basis of population concentration in cities and total gross revenue, we classify the different circles as "Fight till death", "Kill But Survive", "Good to have" and "Someone, Anyone, Please".

FTD – 'Fight Till Death' circles: These are primarily metro cities Delhi and Mumbai. As seen in the table, the metros constitute the majority population in the top 100 cities.

KBS – 'Kill But Survive' circles: These are circles with high competitive intensity, but certainly less than the 'Fight Till Death' circles. Also, current revenues and city concentration in these circles are substantial. These include Maharashtra, Tamil Nadu, Andhra Pradesh and Karnataka.

GTH - 'Good to have' circles: These are the trophy circles, where the desperation factor is not huge, but incumbents will prefer to gain access to these based on promising demographics.

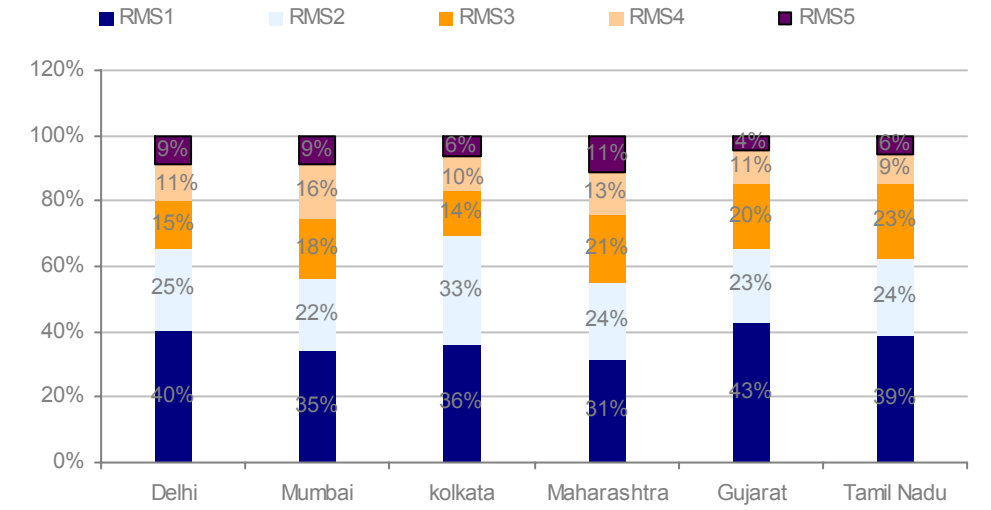
SAP - 'Someone, Anyone, Please' circles: We assign a "0x" desperation factor, and hence believe only the reserve price will be paid for these circles. These circles are primarily important for pan-India operators/regional leaders, or as consolation prizes for the losers.

Figure 2: Winning price estimation criteria

	Economic Value	Desperation Value	Circles
Fight Till Death (FTD)	45% of 3rd operator revenue	45% of the Δ between 2nd and 3rd operator	Mumbai, Delhi
Kill But Survive (KBS)	40% of 3rd operator revenue	40% of the Δ between 2nd and 3rd operator	Maharashtra, TN, Karnataka, AP
Good To Have (GTH)	30% of 3rd operator revenue	30% of the Δ between 2nd and 3rd operator	Kolkata, Haryana, Guj, UP(E), UP(W), MP, Rajasthan, Punjab and Kerala
Someone, Anyone, Please (SAP)	25% of 3rd operator revenue	25% of the Δ between 2nd and 3rd operator	HP, NE, Assam, WB, Orissa, J&K and Bihar

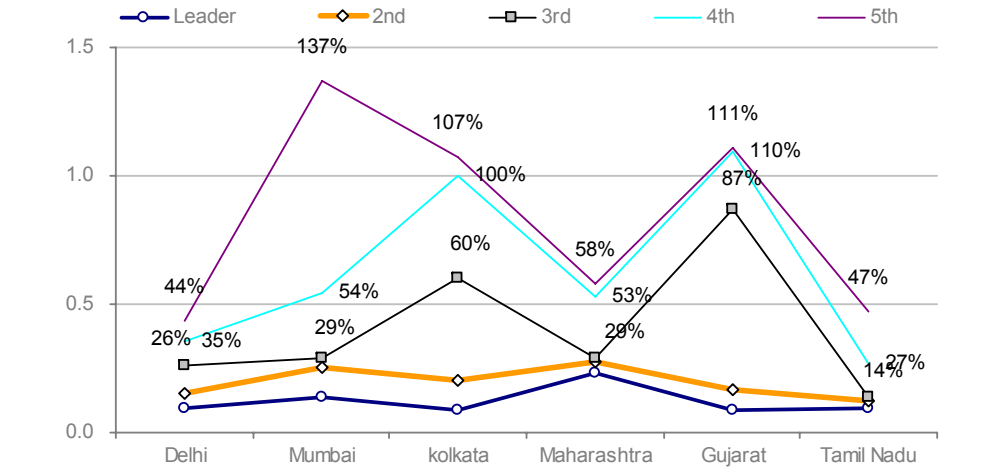
Source: IIFL Research. For circles where there are 4 slots (Bihar, HP, J&K, Punjab and WB) read 3rd operator as 4th for calculating economic value, and Δ between 4th and 5th operator for Desperation Value

Figure 6: Revenue market shares of the top 5 operators in some key circles



Source: IIFL Research, TRAI GR/AGR report

Figure 7: Reserve price as a proportion of the GR (annualised), highlights the asymmetric payoffs to the leader, and other operators have to pay a much higher %



Source: IIFL Research, TRAI GR/AGR report

Figure 8: Summary of our model, where the economic value is arrived at an approximate circle-wise DCF for the 3rd/4th player payoffs from the spectrum. The desperation value is the difference between the economic value for the 2nd/3rd operator and the 3rd / 4th operator for 3 slot and 4 slot circles, respectively.

	Slots	Reserve Price ($mn)	Economic Value ($ mn)	Desperation Value ($ mn)	Winning bid ($mn)	Multiple on reserve price
Andhra Pradesh	3	71	90.9	34.6	125.5	1.8x
Assam	3	7	17.5	-	7.0	1.0x
Bihar	4	7	18.4	-	7.0	1.0x
Delhi	3	71	121.2	89.5	210.8	3.0x
Gujarat	3	71	72.9	10.0	82.9	1.2x
HP	4	7	2.9	-	7.0	1.0x
Haryana	3	27	23.4	-	27.0	1.0x
J&K	4	7	2.0	-	7.0	1.0x
Kerala	3	27	49.5	-	27.0	1.0x
Karnataka	3	71	62.4	37.1	99.4	1.4x
Kolkata	3	27	22.4	31.5	53.9	2.0x
Madhya Pradesh	3	27	65.4	18.4	83.8	3.1x
Maharashtra	3	71	137.3	14.6	151.8	2.1x
Mumbai	3	71	129.1	27.8	156.9	2.2x
NorthEast region	3	7	3.7	-	7.0	1.0x
Orissa	3	7	10.4	-	7.0	1.0x
Punjab	4	27	47.7	2.4	50.1	1.9x
Rajasthan	3	27	27.8	45.8	73.6	2.7x
Tamil Nadu	3	71	166.7	3.4	170.1	2.4x
UP (East)	3	27	50.3	61.8	112.1	4.2x
UP (West)	3	27	53.0	12.9	65.9	2.4x
WB and AN	4	27	20.7	-	27.0	1.0x

Source: IIFL Research, TRAI GR/AGR report, US$-INR @ 46.5

Figure 9: Bharti should win pan-India spectrum, Vodafone in 15 circles, Idea 8, RCOM 11, TTL 10 and Aircel 5.

Circle	2QFY10 Circle GR ($mn)	Winner 1	Winner 2	Winner 3	Winner 4
Andhra Pradesh	406	Bharti	Idea	Vod	
Assam	77	Bharti	Aircel	RCOM	
Bihar	215	Bharti	RCOM	Idea	TTL
Delhi	461	Bharti	Vod	Idea	
Gujarat	306	Vod	Bharti	TTL	
HP	34	Bharti	RCOM	Idea	TTL
Haryana	101	Vod	Idea	Bharti	
J&K	36	Bharti	Aircel	RCOM	Vod
Kerala	218	Idea	Vod	Bharti	
Karnataka	378	Bharti	Vod	TTL	
Kolkata	134	Vod	Bharti	TTL	
Madhya Pradesh	218	Bharti	Idea	TTL	
Maharashtra	403	Idea	Bharti	Vod	
Mumbai	395	Vod	Bharti	TTL	
NorthEast region	48	Bharti	Aircel	RCOM	
Orissa	90	Bharti	RCOM	TTL	
Punjab	201	Bharti	Idea	Vod	RCOM
Rajasthan	237	Bharti	Vod	RCOM	
Tamil Nadu	451	Bharti	Vod	Aircel	
UP (East)	279	Vod	Bharti	RCOM	
UP (West)	213	Idea	Vod	Bharti	
WB and AN	145	Vod	Bharti	RCOM	Aircel

Source: IIFL Research, TRAI GR/AGR report. Winner 1-4 not ranked in any specific order

Figure 10: Bid value estimates operator wise

Company	No. of winning circles	Payout ($mn)
Bharti	22	1,560
Vod	15	1,434
Idea	8	518
RCOM	11	516
TTL	10	532
Aircel	5	218

Source: IIFL Research

Immediate use of 3G spectrum largely for voice: We believe that large operators, including Bharti and Vodafone, have seen falling/flat revenues in the metro circles, partly because of traffic bottlenecks caused by insufficient spectrum. Over the period 2QFY09 to 2QFY10 (when the tariff wars hadn't taken off in earnest), Bharti's gross revenue in metros had fallen by 0.5%, while that of Vodafone had seen marginal growth of 2.4%. Over the same period, Bharti's total gross revenue grew 9.6% and Vodafone's by 12%.

We believe that even though there was heightened competitive activity in these circles post this period, the bigger players have remained constrained in their ability to grow revenue in the metros owing to spectrum inadequacy. 3G is hence being primarily looked at as a way to ease voice traffic bottlenecks in the immediate future. However, there are still six months to go before 3G spectrum is awarded, so we believe this situation will worsen in the interim.

Expect meaningful data revenues only from FY13: Most operators are still sceptical of the 'readiness' for 3G in the Indian market, since recent trends suggest a preference for cheaper schemes that may offer lower data rate speeds. Therefore, from rolling out services and drawing in better realisations through higher data usage might take 20-24 months. Also, data revenue growth will be more localised, with the metros leading the way, along with circles such as Punjab, where there is higher spending proclivity on 'fun' products.

3G losers will have BWA to fall back upon: BWA spectrum will be a valuable source to provide data services, with the advantage of leveraging the TD - LTE (Time Division duplexing - Long-Term

Evolution) technology. This technology allows downloads at more than 100Mbit/s, and has a superior upgrade path from conventional technologies vis-à-vis Wimax. Since BWA auctions will happen after 3G auctions, there will be better clarity on the valuations that these can draw, but broadly, we expect BWA slots to go for 50% of 3G slots on average.

Most winning operators to see stretched balance sheets post 3G auctions: Bharti, post the Zain acquisition, will have a debt-to-EBITDA of greater than 2.5x. Also, Vodafone and RCOM have ~US$4bn of debt each, and the 3G auctions will stretch their balance sheets. For these reasons, we do not expect irrationality to take bids for pan-India spectrum to irrationally high levels such as US$2.5bn and up.

We also met Kanwalinder Singh, President of Qualcomm in India and South Asia. Key takeaways:

On Qualcomm's plans on India's BWA auction

Qualcomm has a history of participating in spectrum auctions to expedite commercialisation of new wireless technologies. TD-LTE is compatible with 3G WCDMA/HSPA and EV-DO for a seamless broadband experience in-country and while roaming globally. Also, when it comes to data, the quality needs to be extremely good. So Qualcomm's plan seems to fit in with this.

On 3G devices price points

Qualcomm wants 3G devices at three different price points for mass market adoption:

- Rs10,000 for a smart phone with all the available features.
- Rs5,000 for regular 3G feature phone with good 3G voice experience, Internet applications and VAS. This would expand the market.
- Rs2500 for 3G dongles.

On voice quality with 3G

Voice would increasingly be a factor of scale; 3G would bring high-quality voice. Operators would be able to retain premium subscribers based on superior data as well as voice offerings and churn from other (non-3G) operators.

On expected data as a % of total revenue

In India, the % should accelerate from the current 10-15% to 25-40% in the next four to five years.

On the challenges on the way to 3G

Leveraging 3G to make high-quality voice and data available and overcome quality problems would be optimal for operators. If it's a smartphone, the browser has to be top-notch; the e-mail and TV experience has to be the best. Finally, operators have to do alternative devices like smartbooks also.

On WiMax

Qualcomm has some intellectual property rights in OFDMA, and is a proponent of LTE. Qualcomm is not promoting WiMax, as the Wimax ecosystem has weakened (as it doesn't interoperate with current networks).

On whether 3G can be a mass-market offering

While some voices say that 3G will be only an elite service, it will actually be a nationwide service and Qualcomm is working on the applications, utility and value to make it a mass market. Healthcare, mobile banking and computing are among the key areas which 3G will benefit at a national level. Before things start, it is easy to be pessimistic. Over the next five years (after the spectrum auctions end), a very fundamental change in the telecom landscape will happen.

Advantages from an Indian point of view of leapfrogging?

Leapfrogging is not a sensible strategy. Unless networks are grown methodically from one technology to the next, from cities to national level, gains cannot be maximised. New technology has to be layered on top of existing technology. Also, shifting a voice-focussed organisation to data, by itself, is a major task. The key for the incumbents is to shift the mindset, from voice to data. The computing story in India is however a leapfrogging story, because the country is starting from scratch. Qualcomm is working on alternative computing devices which will connect Indians, based on cloud computing. Devices may be smartbooks, Kayak and combinations…

Appendix: Summary of auction rules

- Reserve price is the starting floor price that will be raised in subsequent rounds.
- In the initial stages, the bid will be raised by 10% till the difference between the number of bidders and the number of slots is reduced to three.
- Subsequently, the bid will be raised by 5% in each round. When the difference between the number of slots and number of active bidders is one, the bid increment is 1%.
- All circles will undergo auctions simultaneously to enable bidders to switch from one circle to another. An important clause is that increments will keep happening till all circles reach a stage of equilibrium (bidders equal to slots).
- Hence, even if certain circles gain equilibrium earlier than others, the increment in bid amount will continue till all circles reach equilibrium.
- For any circle, increments and bidding will stop only when number of bidders falls to less than the number of slots in all circles.
- Every bidder would be allotted a time of 20 minutes to respond to the latest bid amount price, and would be unaware of the positions of other bidders.

Key to our recommendation structure

BUY - Absolute - Stock expected to give a positive return of over 20% over a 1-year horizon.
SELL - Absolute - Stock expected to fall by more than 10% over a 1-year horizon.

In addition, **Add** and **Reduce** recommendations are based on expected returns relative to a hurdle rate. Investment horizon for **Add** and **Reduce** recommendations is up to a year. We assume the current hurdle rate at 10%, this being the average return on a debt instrument available for investment.

Add - Stock expected to give a return of 0-10% over the hurdle rate, ie a positive return of 10%+.
Reduce - Stock expected to return less than the hurdle rate, ie return of less than 10%.
