

# India Telecoms

All spectrum is not created equal

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## Disclaimer & Disclosures

This report must be read with the disclosures and the analyst certifications in the Disclosure appendix, and with the Disclaimer, which forms part of it

- ▶ **Lower spectrum (900 Mhz) is better than higher spectrum (1800 Mhz) – larger cover area-fewer base stations**
- ▶ **Bharti's greater access to 900 MHz drives longer-term margin benefits of c12-20% and allows for higher market share in rural India**
- ▶ **We are cautious on the sector given the competitive environment, with Bharti as our only OW(V)**

Spectrum is the critical issue for the long-term success-failure of Indian telecom operators. Spectrum constraints are a structural impediment to industry growth, but there are significant differences in both the quantity and quality of spectrum by operator. This report analyzes how differences in the quality of spectrum will impact subscriber growth, profitability, and industry structure.

We argue 900 MHz GSM spectrum is the most attractive mobile wireless spectrum in India given the combination of larger coverage area and lower base station requirement. Our analysis indicates that 900 MHz operators have 12-20% higher EBITDA margins than 1,800 MHz operators. The structural spectrum advantages also result in lower capex and better balance sheets.

Bharti is the best positioned wireless operator in India vis-a-vis this spectrum advantage, with 900 MHz spectrum in 13 service areas vs. RCOM with 8. This spectrum advantage will be particularly important in rural India, given low population densities and incomes. Roughly 70% India's population is rural and rural subs growth is the primary, near to medium term growth driver of Indian telco earnings.

We are cautious on the Indian telcos sector given the damage caused by RCOM's aggressive GSM roll-out and high level of regulatory uncertainty. We believe spectrum, coverage and balance sheet constraints will drive industry consolidation on a 2-4 year view. Bharti retains significant structural advantages, but the price war and rupee depreciation will impact Q4 earnings. We retain our Neutral (V) rating on RCOM, given our scepticism on its GSM strategy, tower roll-out and capex guidance. We also retain our Neutral (V) on Idea Cellular, MTNL and Underweight (V) on Tata Tele Maharashtra.

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# Investment summary

- ▶ We identify Bharti as the long-term winner on the back of its ability to monetise 900MHz spectrum
- ▶ We believe consolidation in India's wireless space is unlikely in the short term and competitive intensity will remain high
- ▶ We remain sceptical about all the new entrants; our analysis suggests further tariff cuts are both unlikely and unsustainable

## India's wireless market is changing

Until 2007, India's rapid wireless subscriber growth was attributed to huge demand and a favourable regulatory regime. That story, in our view, has started to change; while new subscribers are still signing up in their millions, established GSM operators complain they are paying a high price for being efficient and driving affordability. The regulator has penalised the incumbents by making it harder for the big players to gain additional spectrum in order to accommodate new entrants to this already crowded market (there are now more than 10 operators in India).

When licences were issued to new players in 2007, the regulator essentially changed the nature of the sector by lowering entry barriers. The recent approval of Mobile Virtual Network Operator (MVNO) business models supports our argument. A MVNO does not own its own spectrum or network infrastructure, but makes business arrangements with mobile operators to buy minutes of use (MOU) for sale to their own customers. Meanwhile, the entry of these new

players has led to regulatory changes, the recent revision of termination being a case in point.

All this has resulted in a PE de-rating of the sector. In 2008 the major concern was about regulation, this year it is tariff wars and rising competition.

This thematic report provides a framework for understanding India's telecom market in light of recent developments. In short, we believe the key to success for large GSM operators is access to 900 MHz spectrum, which is more efficient (it covers a greater area) and cheaper to run (fewer base stations are needed) than the higher frequency 1,800 MHz.

Other variables such as volume (Bharti has 91m subscribers), early mover advantage (the ability to attract high ARPU customers) and aggressive capex are also important factors. But in our view it is 900 MHz spectrum (or lower) that will make the big difference because:

## 1. Higher EBITDA margins

Our analysis suggests that operators with access to lower frequencies enjoy c20% higher EBITDA margins than those using 1,800 MHz. The differential is 12%, with average revenue per user (ARPU) making up the balance. This higher margin is hugely attractive in the current landscape that is characterised by intense competitive, lower revenue yields and a bloated cost structure.

## 2. The rural factor

Some 70% of India's population is rural and c95% of villages have populations of below 5,000, so operators need to use 900 MHz to run a viable business. Lower frequency spectrum covers greater areas and requires fewer base stations. Operators using higher frequencies such as 1,800 MHz need 1.5-2x the number of base stations to cover the same area.

As volume is vital in this business, it is the operators that can dominate the rural market that will have a competitive edge. At the same time, the government wants to increase rural mobile access, so we think there is a good chance operators will be offered incentives to improve penetration rates outside urban areas.

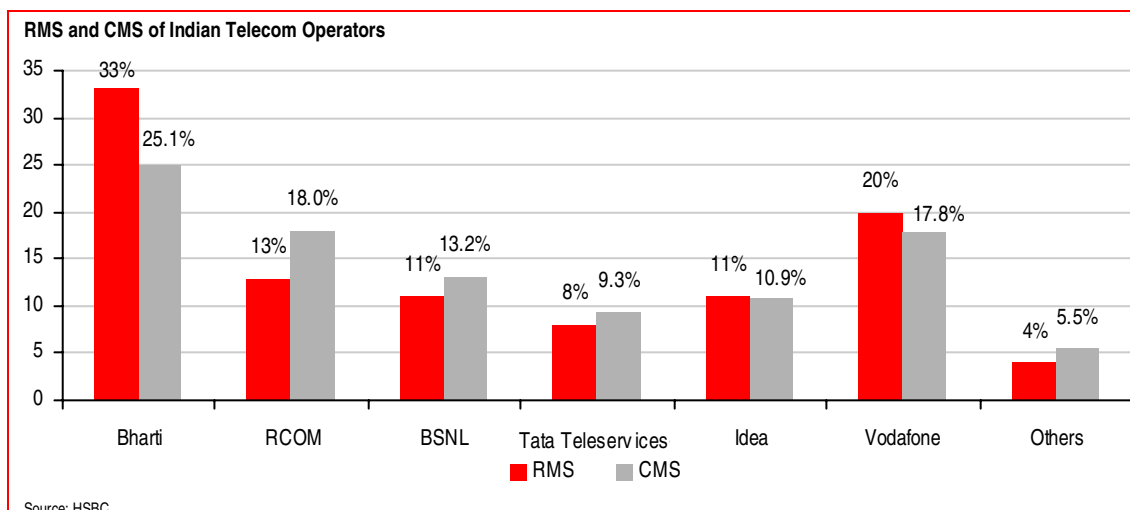
Indian villages are not what they used to be: 70%

of the population, 56% of income, 64% of expenditures, and 33% of savings come from rural India. This group's share of spending on consumer goods and durables is between 30% and 60%. With urban teledensity at c75% and rural at c15%, we believe incremental subscriber growth will come from rural markets. By FY20, we estimate that total mobile penetration will be c59%, rural teledensity will be c41% (379m subsidiary, with 60% of incremental net additions rural) and rural wireless revenue will be around USD16bn.

Overall, we believe that among the established players Bharti will benefit most from 900 MHz. It has significantly more 900 MHz spectrum than its rivals; it uses this frequency in 13 service areas that cover 62% of the country, including 47% of the rural population. We also believe rural India – 70% of India's population live in villages – will be the next subscriber growth market.

## Consolidation

That fact that a couple of new players have recently teamed up with foreign partners reduces the chance of any near-term consolidation, in our view. Regulations also discourage domestic consolidation and allow foreign players to have a controlling stake (74% FDI).



Revenue market share of operators in 900 MHz

Operators	Jun-07	Sep-07	Dec-07	Mar-08	Jun-08	Sep-08	Dec-08
Bharti	34%	35%	36%	36%	39%	39%	40%
RCOM	16%	15%	17%	15%	14%	14%	13%
Idea	18%	17%	17%	18%	19%	19%	20%
Vodafone	27%	30%	32%	32%	34%	33%	34%
BSNL	12%	14%	12%	13%	10%	10%	10%
Aircel	26%	20%	19%	20%	20%	19%	19%
BPL	9%	9%	8%	8%	8%	9%	9%

Source: HSBC

However, we believe that the newcomers that are forced to use higher frequencies will be faced with unviable business models, which is why we think consolidation is inevitable in the long term.

The delay in consolidation will likely keep competition at a very high level, thus we think investors should focus on revenue market share rather than subscriber market share and traffic growth.

In our view, the introduction of 3G will also play a crucial role in the consolidation process. Access to 3G spectrum will free up huge amounts of capacity on GSM networks and allow operators to offer data services. This ability to offer enhanced services will see the big operators strengthen their grip on the market at the expense of the new entrants who may struggle to raise funds needed for expansion. Again, we think this will result in industry consolidation as smaller players will struggle to survive.

### Rural focus: Bharti looks best

The rural market, while vast and potentially very profitable, is also challenging. It requires high levels of capex, which suggests large operators, with their efficient, low cost business models, will have an advantage over new players.

As stated earlier, Bharti is in the best position to benefit from rural penetration because it has the most 900 MHz spectrum. Vodafone, Idea Cellular and RCOM do have access to 900 MHz in a few areas but their priorities lie elsewhere and funding constraints/scarcity of capital will prevent them from focusing on rural penetration. RCOM is rolling out

and improving GSM coverage in 14 additional markets, Idea is expanding GSM in seven new areas and Vodafone is expanding its operations in C category service areas.

In addition, Bharti is already doing a good job of maintaining their rate of subscriber additions, which allows them to be eligible for additional spectrum.

### CDMA will shift to GSM

We believe c87m CDMA subscribers will shift to GSM in the medium term now that lower tariff plans are available on GSM, the system used by most of India's operators. As price was one of the key attractions, we believe subscribers have little incentive to stick with CDMA, especially as more operators are switching to GSM.

### Tariffs

India's wireless subscriber growth story has been driven by low handset prices (USD15-20) and tariffs of less than USD1 cent a minute, the lowest in the world.

The cheap tariff means operators must have efficient, low cost business models. As the market is dominated by voice services, it makes it difficult for operators to differentiate their services, which, in turn, leads to pressure on tariffs.

We use a variable cost approach to measure the impact of the current price war. Based on the present RCOM GSM tariff plan, an operator stands to lose more than USD30,000 per base station in a year. Operators with 50,000 base

stations face losses of USD1.6bn per annum. This leads us to believe that charges will rise sooner rather than later.

## Remain cautious on sector; rural growth the key

The regulatory framework and the highly competitive nature of the industry prevent India's wireless space from being a defensive investment, despite robust subscriber and revenue growth.

We estimate sector capex at cUSD17bn in FY10, resulting in huge capacity additions and significant declines in overall returns. While a large part of the capex will be spent in urban centres, we believe the rural market will be the next catalyst for growth.

We do not think the market has fully grasped the size of this opportunity or the fact that rural India is not a level playing field. Again Bharti, with its 900 MHz spectrum advantage, should lead the way in increasing subscriber growth.

## Stock by stock views

We have no doubt that Bharti will benefit most from 900 MHz. It has significantly more 900 MHz spectrum than its rivals; it uses this frequency in 13 service areas that cover 62% of the country, including 47% of the rural population.

We retain our Overweight (V) rating but highlight that current price war implies near-term share price weakness; sharp depreciation in rupee in the present quarter may lead to earnings

disappointment in Q4.

We acknowledge that Idea Cellular may also have longer term structural advantages through its 900 MHz spectrum but its expansion in new markets may leave it overstretched and unable to focus on opportunities in rural India.

RCOM's recent rollout of GSM services in 14 additional service areas uses the 1800 MHz frequency, which requires higher capex. We retain our sceptical view on RCOM on back its inadequate tower deployment plans and funding constraints.

We highlight that both Idea Cellular and RCOM are high beta stocks, which we think is a reflection of their stretched balance sheets. In our view, high levels of net debt are not attractive in the current market.

We retain our Neutral (V) rating on MTNL as we view it as a defensive in a volatile market on back of its cUSD950m of cash and c6% dividend yield. We have retained our UW (V) on TTML in light of its stretched balance sheet and its complex transition to GSM.

## Possibilities of incremental spectrum in lower frequencies

Apart from 900 MHz, spectrum in the 800 MHz band and 450 MHz can be used for rural coverage. However, at present CDMA operators use the 800 Mhz spectrum and regulators have identified use of 450 Mhz for CDMA-based 3G services. We believe re-farming spectrum on 800 Mhz is complex as it is being used by CDMA

### Valuation and Rating

Company	Ticker	CMP (INR)	Rating	TP Upside (INR)	Mcap (USDbn)	PE		EV/EBITDA		ROE		EPS growth		EBITDA growth		EPS CAGR 3 Years	EBITDA CAGR 3 Year	Net Debt/ EBITDA	Subs in m	
						FY10e	FY11e	FY10e	FY11e	FY10e	FY11e	FY10e	FY11e	FY10e	FY11e					
Bharti	BHARTI.IN	569	OW(V)	786	38%	22.5	11.6	9.6	6.3	4.9	26%	24%	12%	20%	12%	21%	17%	16%	-0.11	91.1
RCOM	RCOM.IN	159	N(V)	180	13%	6.7	7.3	7.6	5.7	5.3	14%	12%	-20%	-4%	9%	13%	-7%	12%	3.02	69.6
Idea Cellular	IDEA.IN	46	N(V)	48	4%	3.0	14.6	11.0	5.0	3.4	7%	9%	21%	33%	31%	46%	35%	33%	2.32	40.8
MTNL	MTNL.IN	65	N(V)	77	19%	0.8	16.2	18.0	-1.3	-1.3	2%	2%	10%	-10%	-10%	-3%	-1%	-5%	-8.00	4.08
Tata Teleservices	TTLS.IN	22	UW(V)	12	-46%	0.9	-12.3	-11.7	11.5	10.8	61%	39%	81%	5%	9%	7%	6%	8%	5.87	6.3

Source: HSBC

**Status of Technology, Presence and Roll Out of Indian Telcos**

Operator	Technology	Spectrum (MHz)	No. of Circles	Status of Rollout
Bharti	GSM	900	13	Pan India
		1800	9	
IDEA	GSM	900	7	Already launched
		1800	15	Present in 5markets, rollout in 2 in next 6months and rest by end of fiscal
RCOM	GSM	900	8	Pan India with both GSM and CDMA. However GSM expansion continues
		1800	14	
	CDMA	800	23	
Tata Teleservices Ltd.	CDMA and GSM	800 and 1800	23	CDMA pan India presence, pan India GSM rollout planned
Aircel	GSM	1800	23	Present in 7 markets, pan India GSM expected in 24 months
BSNL (Incl MTNL)	GSM	1800	23	Pan India
Datacom Solutions Pvt. Ltd.	GSM	1800	21	Not available, spectrum obtained recently
S Tel Ltd.	GSM	1800	6	na
Loop Telecom Pvt. Ltd./BPL Comm.	GSM	1800	22	na
Shyam Telelink Limited	CDMA	1800	22	Pan India rollout in next 12-18months
Etisalat-Swan Telecom Pvt. Ltd.	GSM	1800	13	na
Telenor -Unitech Wireless	GSM	1800	22	Pan India rollout in next 12-18months
Vodafone Essar Cellular Ltd.	GSM	1800	23	Pan India, recently launched in C circles

Source: HSBC, TRAI and DoT

service providers and with only 1x5 MHz being available on 450 Mhz, it is unlikely that there could be a potential change in the level playing field in terms of tapping the rural market, as any incremental spectrum from these bands is unlikely in the medium term. Moreover, there are also concerns over scale and availability of equipment and handsets on these bands.

# The 1,800 MHz problem

- ▶ Scale is linked to lower frequency spectrum allocations
- ▶ Operators using 1,800 MHz face higher capex burden
- ▶ They also face lower EBITDA margins

## Frequency allocations the key

India's crowded wireless market has just become even busier. RCOM and Aircel recently launched GSM services and three more operators (Telenor, Ehitsalad and Tata) are expected to soon follow suit.

This means that spectrum allocation becomes increasingly important in spectrum starved India. For example, compared to the global average of c17-20MHz of spectrum per operator, Bharti operates with an average of c7Mhz.

Here, we want to stress that not all spectrum is created equal and that access to lower frequencies holds the key to success, as it allows players to cover a greater area with fewer base stations.

This is particularly important for the vast rural market, where penetration rates are only 12%. We expect this market to contribute c60% of subscriber net additions in the next few years. Again, we stress that operators with lower frequency spectrum are in a much better position to make inroads into rural India.

We believe the ability of operators to monetise the rural market is the single most important issue that will separate the winners from the losers.

## Background

Mobile services in India started when two licences were issued in 1994-95. The technology used was

GSM with a spectrum allocation of 4.5 MHz (this was raised to 6.2 MHz in 2001). Up to that time, the third Cellular License spectrum was allocated in the 900 MHz band, and from the fourth Cellular License in the 1800 MHz band.

## Why lower frequencies lead to lower capex

### Propagation characteristics

Movement of frequency influences the way mobile networks are designed depending on the frequency band allocated. Propagation describes the way a signal travels through a medium, be it air, metal or bricks. The way that electromagnetic waves travel through the air or other mediums is a function of the frequency of the wave. The higher the frequency the greater the attenuation (i.e., high frequency signals travel shorter distances than low frequency signals for a given power input). High frequency signals tend to travel in straight lines while lower frequency signals can bend around objects.

Movement of frequency influences the way mobile networks are designed depending on the frequency band allocated, we explain it below in the Indian context.

The Wireless Planning Commission regulates the power output at antennae port to 20 watts, which corresponds to 42 dBm. Path losses depend on propagation coefficients and are limited by the



sensitivities of the mobile handsets and the BTS equipment. There are some additional factors like antennae gain and combiner losses that need to be factored in.

The cell radius achieved is a function of frequency and the max path loss permitted. Thus, a higher cell radius and fewer sites are required for 900 band as compared to 1800 band. Simple power budget calculations for 1800 and 900 bands show path losses of 146 dBm and 133 dBm, respectively, under similar conditions.

As a result, there is a margin in propagation path loss of 13 dBm in 900 as compared to 1800 bands. This means that the cell radius for 1800 band will be much less than 900 band. A cell radius in 900 will be roughly 15 to 20kms in certain traffic intensities and propagation. Given that this lower frequency spectrum covers a greater area more effectively, fewer base stations are required compared to a scenario in which the operator is required to deploy base stations in a higher frequency.

## Other advantages of lower frequencies

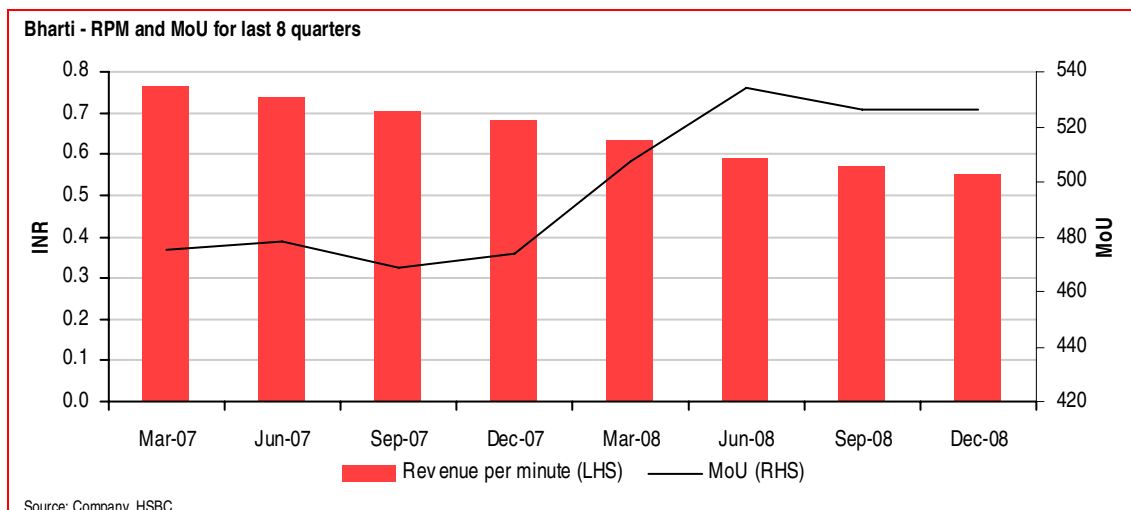
Another significant advantage with 900 MHz stems from the fact that they propagate through buildings better than 1800 MHz, which doesn't travel well through brick, making it poor for in-building coverage. This suggests that operators with frequency allocations in higher bands will need to make significant investments in indoor coverage.

As such the cost of constructing a GSM network are higher at 1800 MHz than at 900 MHz, since there will be a general need to have a greater number of cells at 1800 MHz in order to provide coverage in uncongested (rural) areas.

Considering only the impact of the differing propagation characteristics in rural areas, the average value of spectrum for cellular would be lower for spectrum in the 1800 MHz band than in the 900 MHz band.

## Beneficiaries

However, no single private operator has lower frequency coverage of the whole country. Bharti has 900 MHz spectrum in 13 service areas covering 62% of the population, including 47% of rural India. Idea Cellular, Vodafone and RCOM offer more limited 900 MHz services.



We believe that the rural market, with its low population density, gives Bharti a great opportunity to exploit its 900 MHz advantage. The benefits of 900 MHz tend to be diluted in urban areas due to the higher capacity requirements (because higher traffic, capacity sites are required).

**Telecom operating areas (circles): lower frequencies show best results in low population density towns**

Circles	Population (mn)	Population Density (Persons/km <sup>2</sup> )	Subscribers (mn)	Penetration (%)
Delhi	11.95	11,463	18.94	110%
Uttar Pradesh (West)	70.66	587	15.97	23%
Uttar Pradesh (East)	131.29	1,090	21.27	16%
West Bengal	80.22	904	12.58	17%
North East	38.85	148	2.57	19%
Assam	26.65	340	4.79	16%
Kolkata	7.78	9,920	9.67	78%
Bihar	82.99	880	15.5	12%
Orissa	36.70	236	6.7	17%
Andhra Pradesh	76.21	277	25.69	31%
Tamil Nadu	66.39	511	27.72	41%
Kerala	31.83	819	13.79	41%
Karnataka	52.85	276	19.76	34%
Maharashtra	96.75	314	25.56	28%
Mumbai	13.66	21,880	16.18	88%
Gujarat	50.67	258	20.45	36%
Madhya Pradesh	60.38	196	16.29	18%
Rajasthan	56.47	165	18.06	28%
Punjab	24.28	482	12.54	45%
Haryana	21.08	477	7.84	32%
Jammu & Kashmir	10.06	45	2.64	23%
Himachal Pradesh	6.07	109	2.68	40%

Source: TRAI

RMS, CMS and market position of operators as of Dec 2008

Category	Circle	Bharti				RCOM				Idea			
		Spectrum (Mhz)	RMS	CMS	Market Position	Spectrum (Mhz)	RMS	CMS	Market Position	Spectrum (Mhz)	RMS	CMS	Market Position
<b>A CIRCLE</b>	Andhra Pradesh	900	38%	31%	1					900	17%	17%	2
	Gujarat	1800	20%	18%	2					900	17%	17%	3
	Karnataka	900	53%	44%	1								
	Maharashtra	1800	24%	20%	2					900	27%	25%	1
	Tamil Nadu	1800	39%	23%	1								
<b>B CIRCLE</b>	Haryana	1800	21%	14%	2					900	19%	17%	3
	Kerala	1800	20%	14%	2					900	26%	27%	1
	Madhya Pradesh	1800	33%	24%	1	900	8%	13%	5	900	28%	25%	2
	Punjab	900	37%	28%	1								
	Rajasthan	900	43%	32%	1					1800	6%	6%	6
	Uttar Pradesh (East)	900	28%	21%	2					1800	7%	7%	5
	Uttar Pradesh (West)	1800	18%	13%	3					900	26%	22%	1
	West Bengal	900	28%	23%	2	900	5%	9%	5				
<b>C CIRCLE</b>	Assam	900	36%	26%	1	900	21%	26%	4				
	Bihar	900	50%	38%	1	900	11%	15%	3	1800	1%	2%	7
	Himachal Pradesh	900	45%	32%	1	900	15%	23%	3	1800	5%	4%	6
	Jammu & Kashmir	900	65%	50%	1								
	North East	1800	36%	29%	1	900	10%	16%	3				
	Orissa	900	40%	36%	1	900	11%	16%	3				
<b>METRO</b>	Chennai			24%									
	Delhi	900	38%	23%	1					1800	10%	12%	5
	Kolkata	900	31%	22%	1	900	2%	6%	6				
	Mumbai	1800	22%	16%	2					1800	2%	2%	7

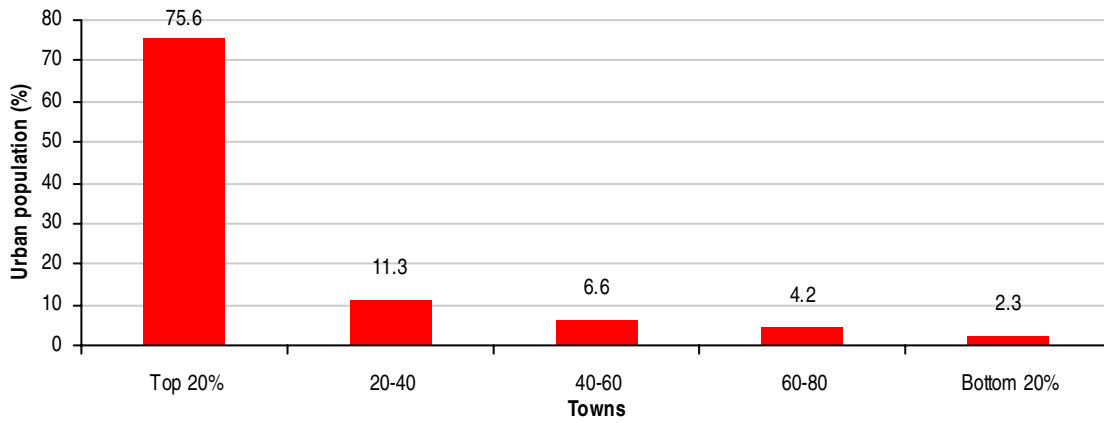
Source: HSBC

Indian Wireless subscriber estimates

Particulars ( Subs in m)	FY10e	FY11e	FY12	FY13	FY14	FY15
Urban Subscribers	318	344	364	379	391	401
Urban Penetration	83%	86%	88%	89%	90%	90%
Rural Subscribers	160	209	259	303	327	342
Rural Penetration	20%	26%	32%	37%	40%	41%
Total wireless subscribers	478	553	623	681	718	743
Wireless Penetration	40%	46%	51%	55%	57%	58%
Wireless Net Adds	92	75	70	59	37	25

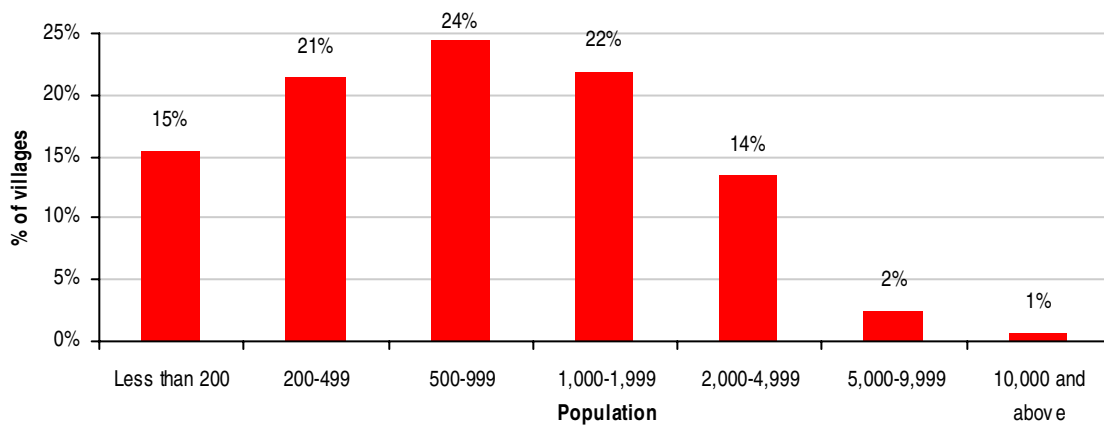
Source: HSBC estimates

Distribution of urban population across various towns



Source: TRAI

Population: Village distribution



Source: Census of India, 2001

# Frequencies and margins

- ▶ Fewer base stations imply higher EBITDA margins for telcos operating in 900 MHz
- ▶ Network opex (including tower rentals) drives margin differential
- ▶ Early-mover advantages have allowed operators with access to 900Mhz to enjoy significant margin upsides (12-20%)

## More towers, more opex

Lower frequencies require fewer bases stations, which mean less capex and lower operating expenses, boosting EBITDA margins. To illustrate this point, we have looked at EBITDA margins in Andhra Pradesh over a 10-year period, assuming a launch in year one.

On a standalone basis and only considering network opex, the EBITDA margin difference is c700bps. This has increased in the past 12-18 months with the evolution of companies that lease towers, thus converting network capex into opex.

Operators with 1,800 MHz spectrum pay more because they need more base stations. This means the margin difference for operators with lower frequencies is c11-12%.

## Plus the ARPU factor

The telcos that were the first to offer 900 MHz services attracted higher-end subscribers (see table). Thus, when the higher ARPU advantage is also added, we estimate the margin differential rises to c20%.

## Margin or ROI

We believe operators with spectrum allocations in higher frequencies face a trade off between profitability and margins.

An example of this is Bharti's operation in Gujarat where, despite using 1,800 MHz, its market share has increased from 15% to 18% over the past 12 months and revenue market share has risen 3.4%.

Spectrum (In MHz)- Bharti 900 MHz in 13 service areas, RCOM in 8 circles and Idea in 7 circles

Category	Circle	Bharti	RCOM	Idea	Vodafone	BSNL	Aircel	BPL
<b>A CIRCLE</b>	Andhra Pradesh	900	1800	900	1800	900		
	Gujarat	1800	1800	900	900	900		
	Karnataka	900	1800		1800	900		
	Maharashtra	1800	1800	900	900	900		
	Tamil Nadu	1800	1800		900	900	900	
<b>B CIRCLE</b>	Haryana	1800	1800	900	900	900		
	Kerala	1800	1800	900	900	900		
	Madhya Pradesh	1800	900	900	1800	900		
	Punjab	900	1800		1800	900		
	Rajasthan	900	1800	1800	900	900		
	Uttar Pradesh (East)	900	1800	1800	900	900		
	Uttar Pradesh (West)	1800	1800	900	1800	900		
	West Bengal	900	900		1800	900		
<b>C CIRCLE</b>	Assam	900	900		1800	900		
	Bihar	900	900	1800	1800	900		
	Himachal Pradesh	900	900	1800	1800	900		
	Jammu & Kashmir	900	1800		1800	900		
	North East	1800	900		1800	900		
	Orissa	900	900		1800	900		
<b>METRO</b>	Chennai				900	900		
	Delhi	900	1800	1800	900	900		
	Kolkata	900	900		900	900		
	Mumbai	1800	1800	1800	900	900		900

Source: HSBC

**Operators in 900 Mhz (Tower rentals assumed – No ARPU discount)**

	Year1	Year2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Particulars</b>										
Share of net Additions	9%	15%	20%	24%	27%	29%	30%	31%	32%	33%
Subs market share	9%	14%	16%	18%	19%	20%	21%	21%	22%	22%
ARPU	291	280	275	273	272	272	273	273	274	274
Revenue ( INR m)	657	3,625	6,551	9,212	11,529	13,500	15,157	16,541	17,706	18,693
<b>Costs ( as % of sales)</b>										
Spectrum and License Fee	8%	8%	8%	8%	9%	9%	9%	9%	9%	9%
Roaming and Access Charges	13%	13%	14%	14%	14%	14%	14%	15%	15%	15%
Employee Costs	12%	11%	10%	10%	9%	9%	9%	9%	8%	8%
Marketing	752%	136%	8%	8%	8%	8%	8%	8%	8%	8%
S&D	52%	44%	25%	16%	11%	8%	6%	5%	4%	3%
Network charges	21%	19%	19%	15%	14%	12%	10%	9%	8%	7%
Tower rentals	29%	28%	29%	24%	23%	20%	18%	16%	15%	14%
Number of towers leased	538	2,699	4,961	5,622	6,412	6,354	6,176	5,938	5,677	5,412
EBITDA Margins	-786%	-159%	-5%	12%	20%	28%	34%	39%	42%	44%

Source: HSBC

**Operators in 1,800 MHz (Tower rentals assumed – No ARPU discount)**

	Year1	Year2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Particulars</b>										
Share of net Additions	9%	15%	20%	24%	27%	29%	30%	31%	32%	33%
Subs market share	9%	14%	16%	18%	19%	20%	21%	21%	22%	22%
ARPU	291	280	275	273	272	272	273	273	274	274
Revenue ( INR m)	657	3,625	6,551	9,212	11,529	13,500	15,157	16,541	17,706	18,693
<b>Costs ( as % of sales)</b>										
Spectrum and License Fee	8%	8%	8%	8%	9%	9%	9%	9%	9%	9%
Roaming and Access Charges	13%	13%	14%	14%	14%	14%	14%	15%	15%	15%
Employee Costs	12%	11%	10%	10%	9%	9%	9%	9%	8%	8%
Marketing	752%	136%	8%	8%	8%	8%	8%	8%	8%	8%
S&D	52%	44%	25%	16%	11%	8%	6%	5%	4%	3%
Network charges	31%	28%	29%	23%	21%	18%	15%	14%	12%	11%
Tower rentals	44%	41%	43%	36%	34%	29%	26%	24%	22%	20%
Number of towers leased	807	4,048	7,442	8,432	9,618	9,531	9,264	8,908	8,515	8,118
EBITDA Margins	-811%	-183%	-29%	-7%	2%	13%	20%	26%	31%	34%

Source: HSBC

**Operators in 900 Mhz (Tower rentals assumed – ARPU premium assumed)**

	Year1	Year2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Particulars</b>										
Share of net Additions	9%	15%	20%	24%	27%	29%	30%	31%	32%	33%
Subs market share	9%	14%	16%	18%	19%	20%	21%	21%	22%	22%
ARPU	373	361	356	354	354	355	356	358	359	360
Revenue ( INR m)	844	4,672	8,471	11,947	14,994	17,600	19,803	21,656	23,221	24,557
<b>Costs ( as % of sales)</b>										
Spectrum and License Fee	8%	8%	8%	8%	9%	9%	9%	9%	9%	9%
Roaming and Access Charges	13%	13%	14%	14%	14%	14%	14%	15%	15%	15%
Employee Costs	12%	11%	10%	10%	9%	9%	9%	9%	8%	8%
Marketing	585%	106%	8%	8%	8%	8%	8%	8%	8%	8%
S&D	40%	34%	19%	12%	9%	6%	5%	3%	3%	2%
Network charges	16%	15%	15%	12%	11%	9%	8%	7%	6%	6%
Tower rentals	23%	21%	22%	19%	17%	15%	13%	12%	11%	10%
Number of towers leased	538	2,699	4,961	5,622	6,412	6,354	6,176	5,938	5,677	5,412
EBITDA Margins	-597%	-109%	11%	25%	31%	38%	42%	46%	48%	50%

Source: HSBC

# Rural business case

- ▶ Penetrating rural India is tough; c95% of villages have a population of less than 5,000
- ▶ Telcos with operations in 900 MHz have significant advantage
- ▶ Poor economics may force the regulator to revisit termination charges to compensate for rural penetration

## Tough market

With c70% of the population living in small town and villages where mobile penetration is only 12%, it is logical to assume that rural India will be the next big growth market. However, it is important to remember that rural India is largely fragmented, geographically vast and generally very poor. The table on page 18 suggests that c95% of villages have populations below 5,000.

The rural market also offers lower ARPUs (our assumption is INR150). We are also building in higher energy costs as the poor state of rural electrification will mean higher diesel charges.

## Coverage

Operators with lower frequency spectrum have a distinct advantage in rural India. Base stations for 900 MHz cover a radius of 15-20km, while those 1,800 MHz cover only 4-5km.

The cost implications are significant – you need at least 1.5-2x the number of base stations to run an efficient network on 1,800 MHz – and in our view this could make the difference between a profitable operation and one that loses money.

Our analysis suggests that telcos with 900 MHz require a target population size of 5,000 for each

base station, assuming a 35% long-term penetration rate (i.e. 1,500+ subscribers).

Termination charges have been brought down to 33%, but we believe the regulator may reconsider this when it comes to rural markets as an incentive to operators to build rural networks.

## Frequencies and rural business case

To illustrate the business viability in rural centres we have assumed two case studies under both frequencies

### Case 1- Business viability in village with population of c12, 000

We have assumed that operators in 900 MHz are able to rollout with the aid of three towers, while the operators on 1800 MHz need to invest in five base stations to cover the similar area. We have not built in for tower capex as we assume a rental model, however, we do factor in the active capex.

Except for this we have kept all other assumptions uniform. Our analysis suggests that IRR of an operator in 1800 is at 6% compared to 69% for an operator with 900 over a 10-year period. We note given the poor state of rural electrification we have assumed c20 hours of network running on



diesel. Poor IRR at end of 1800 operator highlights the challenges faced by him in penetrating rural India and monetising the opportunity.

## Case 2- Business viability in village with population of 5000

We have assumed that operators in 900 MHz are able to roll out with one tower, while operators in 1800 MHz need to invest in two base stations to cover the similar area.

Except for this we have kept all other assumptions the same. Our analysis suggests that IRR of an operator in 1800 MHz is at 1% compared to 19% for an operator with 900 MHz over a 10-year period. Our other assumptions are similar to that discussed above in Case1.

We note that we have not assumed any upside in ARPU on the back of early mover advantages. To sum up, our analysis proves the distinct advantage for operators with lower frequency in rural India.

## Technology innovations can surprise

According to news reports VNL, a Swedish-Indian start-up, claims to have developed a solar powered mobile network designed to serve rural populations in developing economies. Called WorldGSM, the product is low cost (about USD3,500) and consumes very little energy (100 watts, about the same as a light bulb).

Currently, in remote areas operators pair base stations – the radio transmitters that form the backbone of mobile networks – with diesel-powered generators and batteries. These are impractical and expensive: Fuel accounts for 65% of the cost of operating a typical base station, which costs anywhere from USD40,000 to USD70,000.

It has also been reported that Ericsson has installed some 40 base stations that run on bio-diesel, essentially recycled cooking oil. Alcatel-Lucent's solar base station requires about 750 watts to run, while Ericsson's solar base station needs about 600 watts.

These innovations could help drive rural penetration but this may be a long-term proposition.

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### Rural Sector: addressable population for operators in 900 MHz

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Operators	Addressable rural population
Bharti	47%
RCOM	33%
Idea	40%
Vodafone	43%

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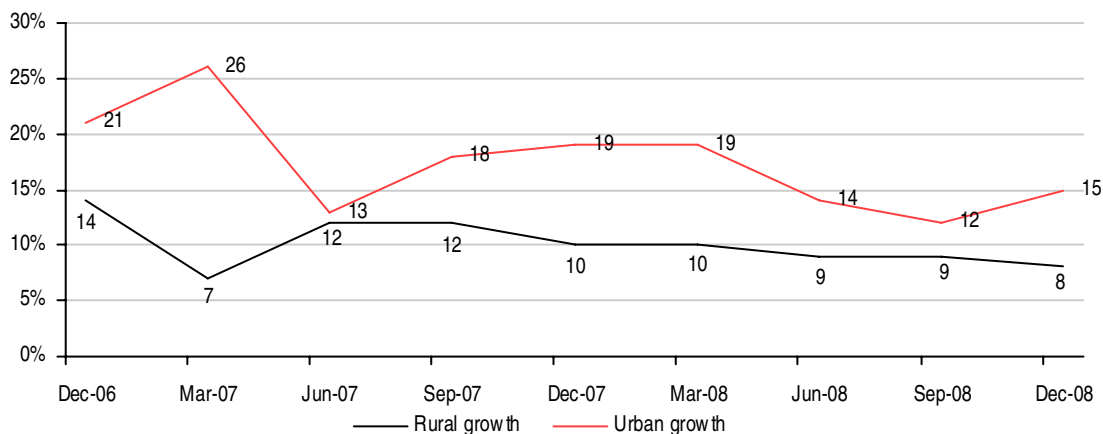
Source: TRAI and HSBC

**Rural vs Urban Telecom Statistics**

State Licence/Area	_ Wireline Subscribers (m) _		_ Wireless Subscribers (m) _		_ Population (m) _		_ Teledensity (%) _	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Delhi	0.0	2.4	0.0	17.5	1.3	24.1	0%	82%
Maharashtra	1.2	2.3	6.0	31.5	60.2	50.0	0%	68%
Gujarat	0.6	1.6	5.7	13.0	34.8	22.7	18%	65%
Andhra Pradesh	1.0	1.7	5.9	16.7	59.8	22.8	12%	81%
Karnataka	0.7	2.1	4.1	14.4	36.8	21.0	13%	79%
Tamil Nadu	0.8	3.0	4.8	22.7	32.4	35.1	17%	73%
Kerala	2.5	1.2	4.5	8.2	25.2	8.7	28%	107%
Punjab	0.6	1.1	3.6	8.9	17.0	11.1	25%	89%
Haryana	0.4	0.6	2.7	4.3	13.9	6.6	22%	74%
Uttar Pradesh including Uttranchal	0.6	2.2	10.0	22.7	153.5	43.0	7%	58%
Rajasthan	0.6	1.1	6.3	8.8	49.5	15.4	14%	65%
Madhya Pradesh including Chattisgarh	0.3	1.4	2.7	12.0	68.3	24.2	4%	56%
West Bengal	0.6	2.1	5.5	13.8	62.9	24.9	10%	64%
Himachal Pradesh	0.3	0.1	1.5	0.9	5.9	0.7	31%	138%
Bihar including Jharkhand	0.5	0.9	2.9	10.3	107.6	16.9	3%	67%
Orissa	0.3	0.5	2.3	3.5	33.3	6.5	8%	61%
Assam	0.1	0.3	1.2	3.2	25.3	4.3	5%	82%
North East	0.1	0.2	0.4	1.9	10.3	3.1	5%	70%
Jammu & Kashmir	0.0	0.2	0.7	1.8	8.3	3.0	9%	67%
<b>All India</b>	<b>11.3</b>	<b>24.9</b>	<b>70.8</b>	<b>216.0</b>	<b>806.2</b>	<b>343.9</b>	<b>10%</b>	<b>70%</b>

Source: TRAI

**Quarterly growth rate of rural and urban wireless subscribers**



Source: TRAI

**Business case of an operator with 900 MHZ in rural market with population of 12,000**

Particulars	FY09e	FY10e	FY11e	FY12e	FY13e	FY14e	FY15e	FY16e	FY17e	FY18e	FY19e	FY20e
Population	12,000	12,120	12,241	12,364	12,487	12,612	12,738	12,866	12,994	13,124	13,255	13,388
Avg Subs	900	2,036	2,479	2,866	3,206	3,506	3,770	4,005	4,214	4,401	4,570	4,722
ARPU (INR)	150	155	160	163	166	168	170	172	174	176	178	180
Revenue (INR mn)	1.62	3.80	4.75	5.60	6.38	7.07	7.71	8.28	8.81	9.31	9.76	10.20
<b>Costs as a % of revenue</b>												
NW opex as a % of revenue	50%	21%	17%	15%	26%	23%	21%	30%	28%	26%	25%	24%
Other opex as a % of revenue	37%	28%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%
EBITDA (INR mn)	0	2	3	3	3	4	4	4	4	4	5	5
EBITDA Margins (%)	13%	51%	56%	59%	48%	50%	52%	43%	45%	47%	48%	49%
IRR	69%											

Source: HSBC

**Business case of an operator with 1800 MHZ in rural market with population of 12,000**

Particulars	FY09e	FY10e	FY11e	FY12e	FY13e	FY14e	FY15e	FY16e	FY17e	FY18e	FY19e	FY20e
Population	12,000	12,120	12,241	12,364	12,487	12,612	12,738	12,866	12,994	13,124	13,255	13,388
Avg Subs	900	2,036	2,479	2,866	3,206	3,506	3,770	4,005	4,214	4,401	4,570	4,722
ARPU (INR)	150	155	160	163	166	168	170	172	174	176	178	180
Revenue (INR mn)	1.62	3.80	4.75	5.60	6.38	7.07	7.71	8.28	8.81	9.31	9.76	10.20
<b>Costs as a % of revenue</b>												
NW opex as a % of revenue	101%	43%	34%	29%	38%	35%	32%	39%	37%	44%	42%	40%
Other opex as a % of revenue	37%	28%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%
EBITDA (INR mn)	-1	1	2	2	2	3	3	3	3	3	3	3
EBITDA Margins (%)	-37%	29%	38%	44%	35%	38%	41%	34%	36%	29%	31%	33%
IRR	6%											

Source: HSBC

**Business case of an operator with 900 MHZ in rural market with population of 5,000**

Particulars	FY09e	FY10e	FY11e	FY12e	FY13e	FY14e	FY15e	FY16e	FY17e	FY18e	FY19e	FY20e
Population	5,000	5,050	5,101	5,152	5,203	5,255	5,308	5,361	5,414	5,468	5,523	5,578
Avg Subs	375	848	1,033	1,194	1,336	1,461	1,571	1,669	1,756	1,834	1,904	1,968
ARPU (INR)	125	129	132	135	136	138	139	140	141	142	143	143
Revenue (INR mn)	0.56	1.32	1.64	1.93	2.19	2.42	2.62	2.80	2.97	3.12	3.26	3.38
<b>Costs as a % of revenue</b>												
NW opex as a % of revenue	145%	62%	50%	42%	37%	34%	31%	29%	27%	26%	25%	24%
Other opex as a % of revenue	22%	21%	22%	23%	24%	24%	24%	25%	25%	25%	25%	25%
EBITDA (INR mn)	0	0	0	1	1	1	1	1	1	2	2	2
EBITDA Margins (%)	-67%	17%	28%	35%	39%	42%	44%	46%	48%	49%	50%	50%
IRR	19%											

Source: HSBC

**Business case of an operator with 1800 MHZ in rural market with population of 5,000**

Particulars	FY09e	FY10e	FY11e	FY12e	FY13e	FY14e	FY15e	FY16e	FY17e	FY18e	FY19e	FY20e
Population	5,000	5,050	5,101	5,152	5,203	5,255	5,308	5,361	5,414	5,468	5,523	5,578
Avg Subs	375	848	1,033	1,194	1,336	1,461	1,571	1,669	1,756	1,834	1,904	1,968
ARPU (INR)	125	129	132	135	136	138	139	140	141	142	143	143
Revenue (INR mn)	0.56	1.32	1.64	1.93	2.19	2.42	2.62	2.80	2.97	3.12	3.26	3.38
<b>Costs as a % of revenue</b>												
NW opex as a % of revenue	145%	62%	50%	42%	75%	68%	62%	58%	55%	52%	50%	48%
Other opex as a % of revenue	22%	21%	22%	23%	24%	24%	24%	25%	25%	25%	25%	25%
EBITDA (INR mn)	0	0	0	1	0	0	0	0	1	1	1	1
EBITDA Margins (%)	-67%	17%	28%	35%	2%	8%	13%	17%	20%	23%	25%	26%
IRR	1%											

Source: HSBC

# A tough market

- ▶ Our base case analysis for new entrants suggests EBITDA breakeven unlikely before 10th year of operation
- ▶ New players have spectrum allocations in 1,800 MHz band; they face a significant structural disadvantage
- ▶ TRAI's recommendation prevent new players monetising spectrum; will find little value post 3G auctions

## New entrants unviable

We continue to believe that consolidation in India's wireless space is inevitable and the recent issue of new licences will only delay the process. It is important to note that all the new entrants have been allocated 1,800 MHz spectrum which will make building a viable business model that much more difficult.

Our base case for the new entrants factors in the roll-out conditions stipulated by the regulator. These obligations imply that the metro areas of Delhi, Mumbai, Kolkata and Chennai should be covered within a year of spectrum being allocated.

In non-metro areas, operators must ensure that in the first phase 10% of District Headquarters are covered in the first year. In the second phase, 50% needs to be covered within three years.

On this basis, we are assuming that new players will have to deploy at least 50,000 towers by the end of year 3.

## New entrants face a J curve

Apart from the challenging economics of operating on 1,800 MHz, we believe new entrants also face cumulative "J-curve" losses – the negative earnings suffered by many new enterprises before they mature.

These players are entering a very tough market. The established operators enjoy increasing economies of scale as well as access to lower frequency spectrum. We believe the newcomers are underestimating the difficulty of the terrain they are entering.

The new players will likely target the big urban markets but we think luring subscribers away from established operators will be more difficult than they think. We also believe they are being too optimistic about the impact of mobile number portability (MNP).

**New Players: Base Case**

Particulars	Year1	Year2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Share of net Additions	5%	8%	9%	11%	12%	13%	13%	14%	14%	14%
Subs market share	1%	1%	2%	2%	3%	3%	4%	4%	4%	4%
ARPU	199	195	196	197	200	202	205	208	210	212
Revenue ( INR m)	7,014	15,306	24,027	32,741	41,227	49,395	57,232	64,767	72,048	79,129
<b>Costs ( as % of sales)</b>										
Spectrum and License Fee	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Roaming and Access Charges	25%	24%	22%	22%	21%	20%	20%	19%	19%	19%
Employee Costs	20%	17%	14%	12%	11%	10%	9%	9%	8%	8%
Marketing	70%	32%	8%	8%	8%	8%	8%	8%	8%	8%
S&D	75%	42%	28%	20%	15%	11%	9%	8%	6%	6%
Network charges	54%	58%	47%	38%	32%	28%	26%	23%	21%	19%
Tower rentals	82%	90%	76%	64%	55%	50%	46%	44%	41%	38%
Number of towers leased	15,000	35,000	45,000	50,000	52,000	55,000	58,000	60,000	60,000	60,000
EBITDA Margins	-235%	-171%	-96%	-64%	-41%	-27%	-18%	-11%	-3%	2%

Source: HSBC

**New Players – Bull Case**

Particulars	Year1	Year2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Share of net Additions	5%	9%	12%	15%	17%	18%	20%	21%	22%	22%
Subs market share	1%	1%	2%	3%	4%	4%	5%	5%	6%	6%
ARPU	199	195	196	197	200	202	205	208	210	212
Revenue ( INR m)	7,014	16,989	28,334	40,222	52,196	64,024	75,612	86,944	98,053	108,987
<b>Costs ( as % of sales)</b>										
Spectrum and License Fee	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Roaming and Access Charges	25%	24%	22%	22%	21%	20%	20%	19%	19%	19%
Employee Costs	20%	17%	14%	12%	11%	10%	9%	9%	8%	8%
Marketing	70%	29%	8%	8%	8%	8%	8%	8%	8%	8%
S&D	75%	46%	31%	22%	17%	13%	10%	9%	7%	6%
Network charges	54%	52%	40%	31%	25%	22%	19%	17%	15%	14%
Tower rentals	82%	81%	65%	52%	43%	38%	35%	33%	30%	28%
Number of towers leased	15,000	35,000	45,000	50,000	52,000	55,000	58,000	60,000	60,000	60,000
EBITDA Margins	-235%	-156%	-80%	-48%	-25%	-11%	-2%	5%	12%	17%

Source: HSBC

# 3G's key role

- ▶ GSM incumbents will be able to differentiate services post launch of 3G services
- ▶ Access to 3G spectrum will allow significant capacity to incumbents; add to their overall scale benefits
- ▶ We expect 3G auctions by early next year and rollout of 3G services by early 2011

## The 3G equation

We believe the ability of new players to compete will be weakened even further after the launch of 3G services. We now expect the delayed 3G auctions to take place early next year, with spectrum being allocated within four months of the auctions.

The global credit crunch is likely to keep foreign players away from 3G auctions, leaving the field open for the big GSM operators, who should be able to offer 3G within nine months of receiving their spectrum allocations. By our calculations, 3G should be up and running by early FY11e.

GSM operators will then be able to differentiate their services for the first time through data offerings. It will also free up huge amounts of capacity and ease network congestion on their 2G networks. These operators already have large numbers of base stations in the high density big cities which will be the key markets for 3G. This means they will be able to provide more bandwidth on their 3G platforms, in turn improving service to higher ARPU subscribers.

## 3G spectrum means capacity

To understand what 3G offers to Indian operators we consider a very simple GSM network with static channel allocation of 5 MHz spectrum, which provides us with 28 Erlangs per sector. (An Erlang is a unit of telecommunications traffic measurement. In practice, it is used to describe the total traffic volume of one hour.)

On a similar line, if we consider WCDMA network with 5 MHz of spectrum we get around 75 Erlang per sector.

From a coverage perspective the maximum cell radius is about 3-5 kms for both WCDMA and spectrum in the 1800 MHz band.

# Consolidation

- ▶ We believe consolidation will be driven by difficulties in achieving national coverage
- ▶ Telcos using 900 MHz in rural areas will have the advantage
- ▶ In our view, consolidation will be gradual, which implies that competition will remain intense

## It will take time

We believe consolidation is inevitable and India will eventually end up with 4-5 telecom operators at a national level. However, this process is likely to take time, especially as the regulator discourages mergers.

Over time, the two key factors will be coverage and spectrum (or the lack of them). On the one hand, new entrants and likes of RCOM and Aircel and Tata face the daunting task of expanding GSM service on the crowded 1800 MHz band. On the other, Bharti and Vodafone are starved of spectrum.

Buying smaller rivals would be one way of acquiring new spectrum but we think the likes of Bharti and Vodafone will prefer to conserve their cash to spend on 3G. Anyway, both operators are adding enough subscribers to be able to claim additional 2G spectrum.

Quite simply, India's operators have learnt to live with spectrum constraints, so consolidation will have to wait, especially as the regulator has recommended a 3-year lock in period for new entrants.

## How will it happen?

Sooner or later, individual operators will probably realise that they need to form alliances or joint ventures to provide sufficient coverage. This would be subject to government approval but given that the authorities are struggling to provide enough spectrum they may be forced to revisit the regulations regarding consolidation.

The emergence of tower companies has also slowed the process. They allow new players to roll out services quickly and reduce capex.

## Indian airlines and telecoms

India's telecom sector has a lot in common with the country's airline industry. They are both capital intensive, highly competitive and have seen the entry of new regional players.

The airlines, however, have seen the start of the consolidation process (Air Deccan merged with Kingfisher Airlines and Jet Airways acquired Air-Sahara). This was largely driven by tariff price wars, a recurring feature of the telecom business.

Whether the telecom industry follows the same road remains to be seen. Small airlines can offer cut price

deals but it works the other way in telecom, where big players have the scale to undercut the competition.

## Capital is scarce

When the dot.com bubble was in full swing, any number of telecom projects got funded around the world. New entrants lined up to take on the established operators, often by simply duplicating their infrastructure.

With the easing of entry barriers by the regulator, India's wireless space is witnessing a similar phenomenon. This time, however, capital is scarce, making life difficult for the new players. Apart from their better balance sheets, the big GSM players already share infrastructure, allowing them to increase coverage, particularly in commercial business districts.

While foreign players have entered the Indian market by teaming up with new domestic entrants, we think the impact of global credit crunch will force them to think more conservatively.



# Downsides to tariff

- ▶ Our analysis suggests that new players (including RCOM, Aircel) can't compete on tariffs in the longer term
- ▶ We use a variable costing model to assess further possible cuts in tariffs
- ▶ We believe lack of scale will limit the ability of some new operators to sustain a price war

## Tariff wars

Our analysis attempts to capture the impact of any further tariff cuts. We use the variable cost approach and price minutes on the basis of running costs per base station.

### Further downside to tariffs are limited

Cost heads	Amount ( INR)
Interconnection	28,800
Network costs per BTS –including tower rentals	55,000
Employee costs ( allocation of employee costs per tower)	85,000
Subscriber acquisition costs – amortized over two month	105,000
Admin charges – percentage of employee costs	8,500
License and spectrum charges	19,200
Variable costs per BTS per month ( INR)	301,500
Subscriber per BTS( max)	1200
ARPU required per subs	251
Blended prepaid ARPU as per TRAI Spe-08 data ( INR)	189
Gross rate per Outgoing minute in Sep 2008	1.08
Assuming current RCOM GSM rates – gross rate per OG rate	0.58
Assuming decline in OG ARPU keeping usage constant	-47%
Implied ARPU on back of new OG rates	100
Building in usage growth and INR15 of VAS per sub	140
Discount to desired ARPU for recovery per BTS	-44%
Loss per month per BTS in INR m	0.13
Loss per BTS per annum in INRm	1.60
Loss over 50,000 base stations in USD bn	-1.6

Source: HSBC analysis

Using the current RCOM GSM tariff plan (local calls at INR0.5 a minute, long distance calls at INR1), we estimate a loss per base station of more than USD30,000 a year. This means operators with 50,000 base stations face losses of USD1.6bn a year.

## Our key assumptions

- ▶ We have assumed that a base station can accommodate a maximum of 1,200 subscribers. This is a fairly optimistic assumption for a new entrant.
- ▶ We use RCOM's current GSM tariff plan as the basis for our analysis.
- ▶ We have assumed INR15 ARPU.
- ▶ Our network costs assumptions include tower rentals of INR33,000 per slot.
- ▶ We are not factoring in carriage charges, roaming charges and any capex recovery.

# Company highlights

- ▶ Bharti Airtel
- ▶ Idea Cellular
- ▶ RCOM
- ▶ MTNL
- ▶ Tata Teleservices (Maharashtra)

# Bharti Airtel

- ▶ Bharti is the best placed operator; it has access to spectrum in the 900MHz band in 13 service areas
- ▶ Bharti's 900 MHz operations account for 47% of total rural population; well placed to exploit rural opportunity
- ▶ Reiterate OW (V) and retain TP of INR786; rising competitive intensity remains is the key downside risk

## Remain positive

Bharti has all the attributes we believe are necessary to be a winner in India's telecom sector – it has scale, a strong balance sheet, the best spectrum mix and is well placed to prosper in the huge rural market.

In our view, its trump card is its access to 900 MHz spectrum in 13 services areas that cover 62% of the country, including 47% of the rural population. We think the rural market will be next subscriber growth market and Bharti is well placed operator to cement its position as market leader.

We acknowledge that the advantages of having operations in 900 MHz are already reflected in Bharti's EBITDA margin. However, we also believe Bharti will emerge stronger from the current price war, especially as competitors will have to spend up to 50% more capex to match its coverage. The current credit crunch will also only favour Bharti.

In our view, the lower revenue yields and bloated cost structure of running networks on 1,800 MHz

will reduce the ability of the competition to sustain aggressive pricing plans.

Players like Bharti will have better yields on the back of their higher EBITDA margin. With its large subscriber base, Bharti is able to generate 1.2bn minutes per day.

## Rural penetration

Given that rural penetration is still low and urban markets will soon be saturated, the focus will shift to the countryside. We believe operators with access to spectrum in 900 MHz are best placed to tap rural markets.

## Protecting revenue market share

We believe one of the key tasks for Bharti is to protect its current revenue market share, given the intense competition in urban and commercial business districts. We believe Bharti's integrated operations will allow it to retain high-end subscribers.

We believe investors should note that most of the new entrants will lack extensive network coverage. This will make it difficult to attract high ARPU customers from big operators like Bharti.

Bharti also spends more on its networks. Bharti is likely to invest USD3.5bn in FY10e (despite the presence of tower companies) in comparison to RCOM's USD2.5bn. This is despite the fact that RCOM is still in the early stage of operations.

In a recent TV interview (CNBCTV18), Bharti management highlighted its priorities for emerging markets as and when the company revisits its international expansion plans. Bharti has restated its preference to target existing operators rather than buy a licence.

We believe Bharti's international expansion strategy will be a function of its overall rural strategy and the timing of 3G auctions. We think international expansion will lead to a change in Bharti's investor base on back of the divergent view of the regional investors and domestic investors on the issue of international expansion.

However we do believe that at the end of the day what would matter is the NPV with every incremental dollar invested and at certain point of time rural dynamics despite favourable frequencies may get tough.

## CDMA and GSM

Regulations at present have not prescribed any standards for reporting subscribers. Given this, all operators tend to have their own definition for reporting subscriber churn and subscriber numbers. We believe some of the recent tariff plans in GSM have led to the phenomenon of dual SIM and is resulting in double counting of the subscriber base at the overall industry level.

One of the clear sources for dual reporting, in our view, will be movement of subscribers on the CDMA platforms to GSM. The appetite for CDMA products in a GSM centric market has largely been on the back of lower tariffs and attractive on net calling plans. Given the rising competitive intensity in GSM, the delta would get lower between the CDMA and GSM and

subscribers will have little incentives to stick to CDMA.

Apart from this, scale on CDMA will get lower with both the pan-India CDMA operators going with GSM, which in our view will make it difficult for operators to retain subscribers on the CDMA platforms. Moreover, we believe RCOM and Tata will find it difficult to continue investing in CDMA networks, over and above their GSM expansion plans and funding constraints.

Given the combination of lower tariff plans and tough operating dynamics, we believe c87m CDMA subscribers in the medium term will shift to GSM and will be a source of potential growth for GSM but definitely not for the industry as a whole.

## Near-term share price weakness

We believe the competitive intensity in the near term is likely to result in near-term share price weakness for Bharti. However, the longer term story remains most compelling. Another factor which happens to be a source of near-term worry for investors would be the sharp rupee depreciation which we believe may lead to near term earnings disappointment in Q4.

## Valuation and risks

We like Bharti on the back of its strong balance sheet, large scale, high ROE, protection from rural exposure and strong corporate governance. The current market favours companies with strong balance sheets, low leverage, large scale, and high ROE. It is in a stronger financial position than its peers, which face subdued EBITDA numbers on the back of rollouts in new markets and/or technology migrations.

We retain our target price of INR786 and Overweight (V) rating for Bharti. We value Bharti using a blended approach. Our fair value for the core business is INR645, which is 13.7x FY2010e core

**Bharti - Rural penetration sensitivity ( Assuming only 13 markets with 900 MHz)**

Particulars	FY10e	FY11e	FY12	FY13	FY14	FY15
Incremental rural revenue ( INRm)	67,943	159,309	256,788	345,391	399,910	437,492
Bharti Incremental Rural Revenue Share	24%	24%	24%	24%	24%	24%
Bharti share of incremental rural revenue (INR m)	15,967	37,438	60,345	81,167	93,979	102,811
Bharti Incremental EBITDA Share ( INR m)	3,193	11,231	21,121	32,467	42,291	46,265
Potential rural contribution to our existing mobile EBITDA estimates	15%	28%	40%	48%	52%	54%
Potential Rural EPS contribution ( INR)	0.8	3.0	5.6	8.6	11.2	12.2

Source: HSBC estimates, impact only for markets in 900 MHz

earnings based on a 15% premium to HSBC's Sensex target of 11.9x; the tower business is valued at INR141 using DCF, which reflects a 36% discount to recent transaction multiples.

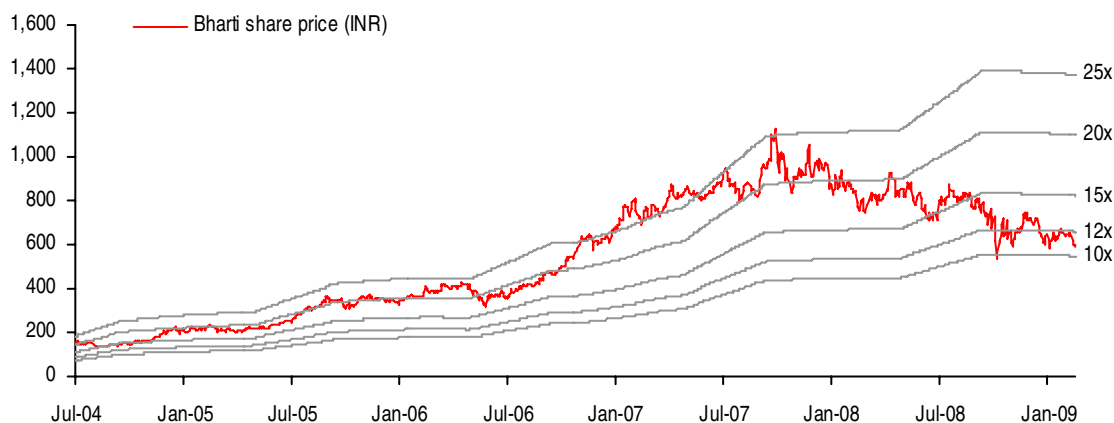
Risks include: an early implementation of MNP, rollout of flat rate plans, higher than estimated decline in margins on the back of rural penetration, lower termination charges, and higher spectrum charges.

**Bharti – HSBC v Consensus**

INRm	FY09e	FY10e	FY11e
<b>Sales</b>			
HSBC	370,279	447,110	528,192
Mean	371,800	448,624	513,052
High	390,519	310,679	373,107
Low	356,053	178,074	290,386
Variance	0%	0%	3%
<b>EBITDA</b>			
HSBC	150,289	168,900	203,744
Mean	151,583	186,367	219,617
High	157,582	197,803	231,877
Low	135,759	164,860	194,433
Variance	-1%	-9%	-7%
<b>Net Income</b>			
HSBC	83,678	93,347	112,290
Mean	84,302	104,763	121,795
High	90,991	115,586	135,194
Low	75,587	80,454	96,007
Variance	-1%	-11%	-8%

Source: HSBC

**Bharti PE Band - 2 Year Forward**



Source: HSBC

# Idea Cellular

- ▶ Idea enjoys longer term structural advantages of operating in 900 MHz in nine service areas (top slots in RMS in these markets)
- ▶ We believe the recently acquired two spice service areas, with spectrum in 900MHz, provides longer term upside
- ▶ Retain N(V) rating and TP of INR48; given margin concerns from rollout in new markets

## Spectrum benefits

Our point made earlier about the strong correlation between revenue market share and spectrum in the 900 MHz band is best proved in case of Idea Cellular. Idea, in all the seven markets (excluding the two recently acquired Spice service areas) where it operates on 900 MHz, happens to be in the top two slots in revenue market share.

Idea's recent acquisition of Spice has added to its portfolio of 900 MHz markets. Both Karnataka and Punjab, which accrue to Idea Cellular through Spice, have spectrum allocations in the 900 MHz band. We believe Spice was under-investing in these markets and post-merger there are some definite upsides for Idea Cellular.

## Karnataka circle provides upsides

We highlight that Spice (before being acquired by Idea Cellular) enjoyed a revenue market share (RMS) of 6% in KK circle and 20% in Punjab circle. While the ARPU on the overall circle basis for Idea Cellular is estimated at INR328, Spice

was operating at INR280, c13% lower than the circle average ARPU and 27% lower than market leader Bharti. We believe operations, in particular in Karnataka, have not had adequate investment and as such Spice has failed to monetize the benefits of operations in lower frequencies.

Idea's ability to disrupt the likes of Bharti and BSNL (state owned telco- Bharat Sanchar Nigam Ltd) will be limited until MNP (mobile number portability) arrives, meaning the ability to churn high ARPU subscribers is likely to be limited.

## Priority is pan India....

While it may gain in the longer term from operations in two service areas acquired by Spice, we believe Idea Cellular is more likely to prioritise investments in new service areas and prefers to gain footprints in pan-India. Idea recently procured spectrum in five more service areas (spectrum in 1800 MHz), which suggests that it holds GSM spectrum everywhere in India. Management says it will complete all new launches by the end of this calendar year.

We believe Idea's flexibility is limited, given its balance sheet, with FY10e Net debt/EBITDA estimated at 2.3x (excluding 3G). Moreover, 3G

auctions over the next 6-9 months could possibly delay GSM expansion plans.

Interestingly, markets where Idea is rolling out GSM happens to be in the 1800 MHz band and in a way dilutes its 900 MHz story, at least in the medium term.

Unlike other new players, Idea faces a daunting task of investing in a higher number of base stations in new markets. Unlike other new players, Idea faces the daunting task of investing in a higher number of base stations in new markets. It will have to bear EBITDA losses in these markets until it achieves critical mass, which in our view is unlikely over the near term.

To sum up, the pace of investment in new markets is likely to lead to EBITDA margin pressure in the near to medium term. However, Idea has longer term structural advantages in markets where it has access to 900 MHz. Nevertheless, margins are our key concern.

## Valuation and ratings

In our view, the key issue for Idea Cellular continues to be maintaining growth and profitability over the next few quarters. This concern has been aggravated by the rising competitive intensity and the likely downturn in usage as the economy slows. We highlight the fact that traffic growth is likely to become investors' key focus due to increased competition and a change in the rules of the game, whereby all subscriber-based metrics are set to lose their

relevance, in our view.

Tougher competition may make it more difficult for Idea to benefit from margin expansion in established markets, and even if this trend is short-lived it will likely still hurt near-term earnings.

Retain N (V) rating and target price of INR48. Our fair value estimate for the core business is INR30 on 9.5x FY2010e core earnings based on a 20% discount to HSBC's Sensex target of 11.9x; we value the tower business at INR18 using DCF, which reflects a 36% discount to recent transaction multiples.

Downside risks include a higher-than-estimated include decline in margins on the back of new rollouts and higher spectrum charges. The main upside risk would be lower license fees. Historically Idea Cellular has commanded a 52% premium to Sensex in the last one year and 43% over the last six months. Our 20% discount is based on Idea's lower ROE (c9% compared to our Sensex target RoE of 16%) and higher net debt/EBITDA (FY10e estimated net debt/EBITDA of 1.8x), despite one-year estimated earnings growth c21% higher than the 11% expected for Sensex earnings.

### IDEA (Spice) Punjab and Karnataka Circles (Dec-2008)

Circles	Annualised Revenue (INRm)	Average Circle ARPU	Idea (Spice) ARPU	Premium/Discount to Average ARPU	ARPU of Lowest Circle RMS Leader	ARPU	RMS of Leader	Idea (Spice) RMS	RMS Difference
Karnataka	77,804	328	284	-13%	392	215	53%	6%	-47%
Punjab	45,072	299	310	3%	404	176	37%	18%	-19%
<b>Total Annualised Revenue</b>	122,876								
<b>20% of annualised revenue</b>	24,575								
<b>IDEA FY10 Revenue</b>	159,315								
<b>% of revenues</b>	15%								

Source: HSBC

**Dynamics of Circles where IDEA operates at 1800 MHz**

Circle	Annualised revenue INR(Mn)	Circle Average ARPU in INR (Dec 08)	ARPU in INR of RMS leader	Circle's Lowest ARPU in INR (Dec-08)	Average Monthly subs run rate	Idea ARPU ( INR)
Rajasthan	50,015	231	308	127	776,016	246
Uttar Pradesh (East)	57,546	224	271	153	796,581	229
Bihar	37,921	202	262	91	667,976	542
Himachal Pradesh	7,944	245	345	99	98,083	298
Delhi	92,993	409	683	196	416,622	358
Mumbai	81,453	419	542	176	429,190	633

Source: HSBC

**Dynamics of Circles where IDEA operates at 900 MHz**

Circle	Annualised revenue INR(Mn)	Circle Avg ARPU in INR (Dec 08)	ARPU in INR of RMS leader	Circle's Lowest ARPU in INR (Dec-08)	Avg Monthly subs run rate (avg of overall 6 months)	Idea ARPU INR
Andhra Pradesh	89,350	290	367	180	810,863	296
Gujarat	61,270	250	281	166	499,001	261
Maharashtra	80,802	265	291	185	759,132	291
Haryana	22,883	243	255	159	255,053	265
Kerala	49,730	301	294	251	380,431	294
Madhya Pradesh	42,040	213	298	135	573,517	234
Uttar Pradesh (West)	42,624	224	269	159	487,872	269

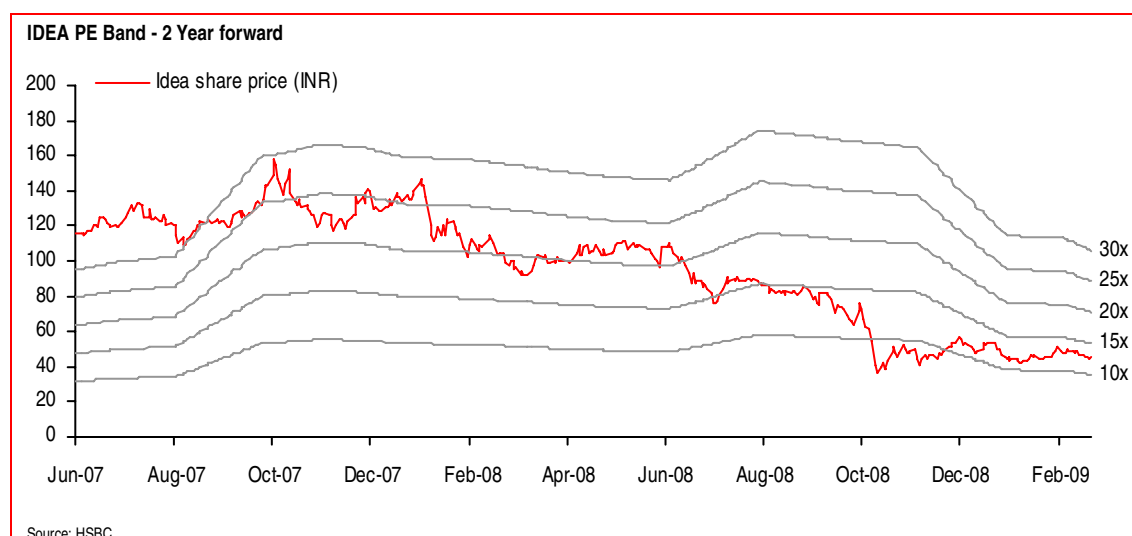
Source: HSBC

**Dynamics of Circles where IDEA has to roll out operations in 1800 MHz**

Circle	Average Circle ARPU (INR)	Subscriber Penetration (%)
Tamil Nadu	266	41%
Orissa	249	17%
Kolkata	248	78%
Assam	238	16%
North East	313	19%
Jammu & Kashmir	350	23%

Source: HSBC





**IDEA – HSBC v Consensus**

INR m	2009	2010	2011
<b>Sales</b>			
HSBC	100,824	159,315	208,796
Mean	101,748	141,637	171,537
High	107,959	164,183	209,465
Low	93,716	111,193	126,398
Variance	-0.9%	12.5%	21.7%
<b>EBITDA</b>			
HSBC	27,022	35,406	51,537
Mean	27,405	34,453	42,976
High	28,603	40,919	52,092
Low	26,291	27,277	33,702
Variance	-1.4%	2.8%	19.9%
<b>Net Income</b>			
HSBC	8,091	10,452	13,862
Mean	8,511	9,789	12,867
High	9,930	13,610	17,533
Low	7,110	6,758	10,269
Variance	-4.9%	6.8%	7.7%

Source: HSBC

# RCOM

- ▶ We remain sceptical about RCOM's GSM strategy
- ▶ We believe RCOM's tower deployment plans are inadequate and capex guidance is insufficient
- ▶ Remain N (V) and TP of INR180; RCOM has failed to monetize advantages of 900 MHz

## GSM expansion in 1800 MHz; remain sceptic

RCOM's recent rollout GSM services in 14 additional service areas have been on the 1800 MHz band, requiring RCOM to significantly invest in capex. Despite having a tower company, there are no operational synergies for RCOM, as the tower company is driven by anchor tenancy, given the absence of external tenants.

We are sceptical about RCOM's GSM plans and believe its tower deployment plans are inadequate. Despite spectrum availability in the 1800 MHz band and the fact that GSM incumbents continue to invest aggressively in networks, RCOM's rush to launch GSM with inadequate networks and value-destructive entry-level plans will likely depress margins over the next few quarters, in our view. Funding continues to be a dampener on RCOM's plans to hike investment and improve GSM coverage.

Low-value GSM products nibbling at its CDMA segment, and running both GSM and CDMA networks are likely to drag on wireless margins. Immediate 3G auctions may upset its long-term GSM objectives.

We highlight that RCOM's ability to churn high ARPU subscribers from the competition will be limited given its under investments in the network. In the medium term, we believe this will depend on a combination of mobile number portability, procuring additional spectrum and deploying additional towers, suggesting that the company is at least 12-18 months away from being a viable contender. However, given the higher capacity on 1800 MHz and the possibility of procuring incremental spectrum of 1.8 MHz, RCOM could take traffic share and marginal subscribers from GSM incumbents.

## Capex guidance

We believe the capex guidance provided by RCOM for FY10, at USD2.5bn, may be inadequate given operations in 1800 MHz. In our 9 March 2009 report '*No quick ways to get GSM to scale*', we cited that investment in towers will have a bearing on the longer term operating margins. The inability to have sufficient coverage will not put RCOM in position to capture ARPU subscribers. With free networks it will have to play the tariff game, which will prove to be value destructive for the industry and RCOM as well. However, things could change if RCOM can step up its tower deployments plans. Our bull case for RCOM assumes as many as 80,000 towers by the end of FY10.

## GSM in 900 MHz

While RCOM has access to good quality GSM spectrum in 8 services, its ability to monetize the inherent advantages of being on the 900 MHz spectrum have been muted. Our analysis suggests that, except for Himachal Pradesh, RCOM has not managed to gain revenue market share despite being on the 900 MHz spectrum.

## Valuation and risks

Our estimate of a 22% decline in FY10 earnings, plus the 74% decline in the share price over the last 12 months, suggests that RCOM has suffered a structural de-rating. We see no quick and easy catalyst to get the GSM business to scale and make it profitable. Receipt of additional spectrum on the back of a ramp-up in subscribers is unlikely to result in improvements in network coverage, although it would boost network capacity. We highlight that all longer-term structural re-rating factors, such as the ability to penetrate rural India, benefits from MNP, the ability to close the revenue market share gap with Bharti, and improvements in the realisation rates, are related to improving network coverage. Recent CDMA tariff plans support our concerns over cannibalisation and also reflect RCOM's shift to a yield-based approach. On the tower business, we remain sceptical about new entrants and believe incremental tenancy from new players provides limited upside of INR30 (versus estimated upside of INR50 if external tenancy stems from established players).

We retain our target price of INR180 (base case remains unchanged) – Our fair value for the core business is based on 8.3x FY10e earnings, c30% discount to the HSBC Sensex target of 11.9x, to capture declining earnings growth, accounting issues and execution risks.

We view unlocking of non-core assets and lowering of termination charges as near-term upside risks as and higher than anticipated competitive intensity as a key downside risk.

### RCOM – HSBC vs Consensus

INRM	FY09e	FY10e	FY11e
<b>Sales</b>			
HSBC	227,870	271,850	323,296
Mean	226,677	278,034	335,221
High	247,310	310,679	373,107
Low	150,859	178,074	290,386
Variance	1%	-2%	-4%
<b>EBITDA</b>			
HSBC	92,138	100,831	114,313
Mean	93,138	111,575	132,042
High	100,722	128,831	149,675
Low	87,750	100,638	114,313
Variance	-1%	-10%	-13%
<b>Net Income</b>			
HSBC	55,895	44,951	42,978
Mean	57,424	48,106	53,218
High	64,510	61,575	65,644
Low	50,341	31,449	41,236
Variance	-3%	-7%	-19%

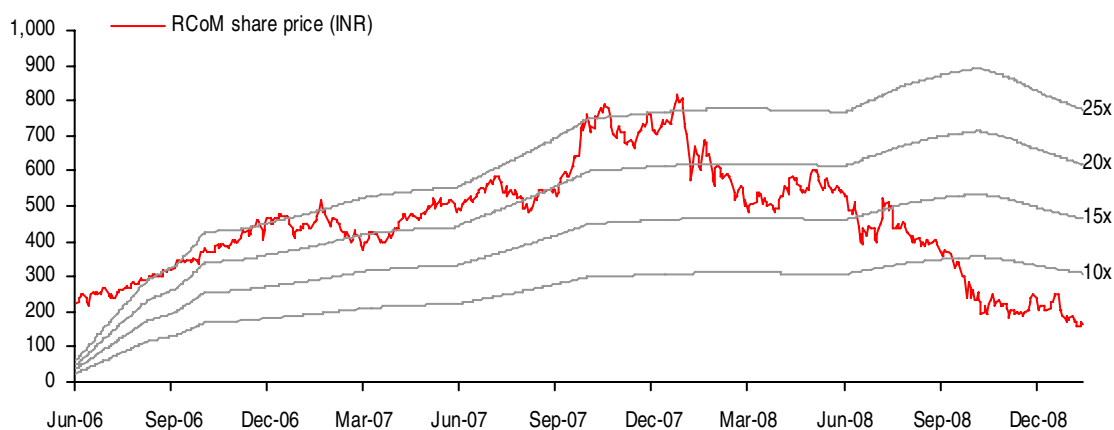
Source: HSBC

### RCOM RMS in GSM Circles

Circles	Jun-07	Sep-07	Dec-07	Mar-08	Jun-08	Sep-08	Dec-08	Market Position
Madhya Pradesh	8.6%	8.3%	8.3%	7.2%	7.7%	7.4%	7.9%	5
West Bengal	6.3%	5.9%	6.6%	5.2%	5.5%	5.8%	5.3%	5
Assam	21.7%	21.7%	22.6%	25.2%	23.8%	20.8%	20.7%	4
Bihar	15.1%	13.6%	13.8%	13.1%	13.6%	12.8%	10.6%	2
Himachal Pradesh	7.9%	10.7%	14.1%	13.8%	14.8%	15.2%	14.8%	3
North East	11.7%	14.5%	15.3%	14.2%	13.5%	13.4%	10.2%	4
Orissa	11.1%	13.9%	12.5%	11.2%	16.5%	13.7%	11.3%	3
Kolkata	2.7%	2.2%	2.4%	1.8%	1.7%	2.1%	2.0%	6

Source: HSBC

**RCOM PE Band 2 Year Forward**



Source: HSBC

**RCOM – Tower deployment plans**

	FY08		FY09		FY10e	Earlier Plan
	Actual	Planned	Revised Plan	Earlier Plan		
Towers	30,295	36,849	48,000	61,849	About 8,000 incremental towers by mid of next fiscal	70,445

Source: HSBC

**RMS, CMS and Market Position of RCOM as of Dec 2008**

Category	Circle	Spectrum (Mhz)	RCOM (CDMA)			Spectrum (Mhz)	RCOM (GSM)		
			RMS	CMS	Market Position		RMS	CMS	Market Position
<b>A CIRCLE</b>	Andhra Pradesh	800	11%	18%	4	1800			
	Gujarat	800	10%	14%	4	1800			
	Karnataka	800	11%	16%	3	1800			
	Maharashtra	800	10%	13%	4	1800			
	Tamil Nadu	800	10%	14%	4	1800			
<b>B CIRCLE</b>	Haryana	800	10%	15%	6	1800			
	Kerala	800	15%	18%	4	1800			
	Madhya Pradesh	800	13%	19%	3	900	8%	13%	5
	Punjab	800	6%	10%	5	1800			
	Rajasthan	800	9%	12%	4	1800			
	Uttar Pradesh (East)	800	13%	17%	4	1800			
	Uttar Pradesh (West)	800	13%	18%	4	1800			
<b>C CIRCLE</b>	West Bengal	800	8%	12%	4	900	5%	9%	5
	Assam	800	8%	10%	4	900	21%	26%	4
	Bihar	800	13%	15%	2	900	11%	15%	3
	Himachal Pradesh	800	8%	9%	4	900	15%	23%	3
	Jammu & Kashmir	800	1%	0%	4	1800			
	North East	800	8%	10%	4	900	10%	16%	3
<b>METRO</b>	Orissa	800	8%	10%	4	900	11%	16%	3
	Chennai	800	0%	0%	3	1800			
	Delhi	800	12%	16%	3	1800			
	Kolkata	800	16%	18%	3	900	2%	6%	6
	Mumbai	800	16%	21%	3	1800			

Source: HSBC

# MTNL

- ▶ Operational performance remains weak; organisational structure prevents MTNL from benefiting from scale
- ▶ Despite access to good quality 900 MHz spectrum in Delhi and Mumbai; MTNL struggles with poor revenue market share
- ▶ Remain (N) and retain TP of INR77; we view the company as a defensive in a volatile market

## Investment thesis

We continue to hold our cautious investment thesis on MTNL, reflecting an uncertain outlook in the medium term on the back of weak operational performance, fragmented quad play strategies and the debilitating institutional culture of state-owned enterprises.

Despite having operations in 900 MHz, MTNL's revenue market is only 4% in Delhi and 5% in Mumbai.

Telecom is a scale game and we believe that MTNL, in its current form, cannot benefit from scale. In our view, a merger with sister company BSNL would allow MTNL to benefit from scale, but delays in listing BSNL limit the possibility of this, as least in the near-term.

We are concerned about MTNL's move to 3G, as its wireless subscribers are not suitable for 3G services (MTNL's mobile ARPU is c50% lower than Bharti's ARPU), and we are also sceptical about MTNL's ability to churn subscribers from competitors. Moreover, payouts for 3G and WiMax spectra and higher regulatory levies limit the possibility that minority shareholders will

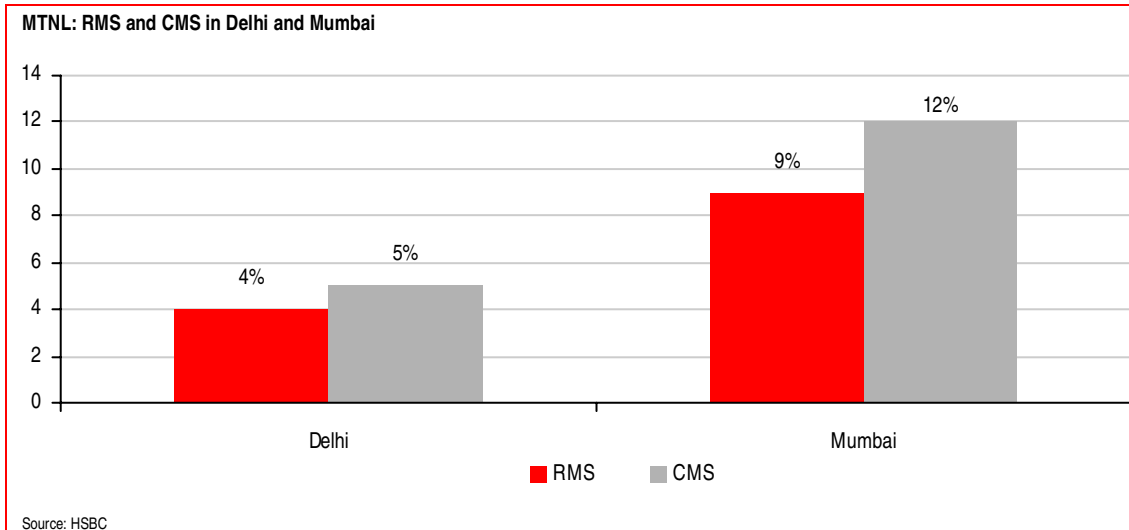
benefit from any form of special dividends, in our view.

## Fragmented broadband strategy

We are concerned about MTNL's fragmented strategy to tap opportunities in the retail broadband space. On the one hand it is investing in 3G and WiMax while on the other hand it is also attempting to invest in FTTP. In our view, MTNL is better placed to leverage its existing fixed line structure than to compete with private players in the wireless broadband space. However, its poor execution track record and the likelihood of overspending on capex are matters of concern.

## Valuations and risks

We believe MTNL has defensive qualities, with cUSD950m of cash and c6% dividend yield. Given the company's lack of earnings catalysts and its history of poor execution, we value MTNL at its FY10e cash balance of INR77 per share. At this target price, MTNL trades at 0.1x FY09e MV (ex cash)/Book Value (ex cash), a c95% discount to our sample of global fixed-line players.



An aggressive approach to broadband is an upside risk to our Neutral (V) rating, while early payouts for 3G spectrum is a downside risk.

# Tata Teleservices (Maharashtra) LTD (TTML)

- ▶ Recent rollout by Idea Cellular and RCOM in Mumbai negative
- ▶ GSM rollout in new markets on 1800 MHz band; faces significant structural disadvantage
- ▶ Retain UW(V) and TP of INR12; we remain cautious due to the stretched balance sheet and transition to GSM

## Facing a complex transition to GSM

We remain negative on the back of its move to launch GSM services and move to run dual networks. While RCOM is also moving from CDMA to GSM, unlike TTML it has the experience of running dual networks in seven markets. Given this, operational challenges for TTML are greater. In our view, as the GSM spectrum is in 1800 MHz, investment in towers is likely to be significant. Recent launches of GSM services by Idea Cellular and RCOM in Mumbai present a tough terrain for the company.

## Corporate restructuring holds the key

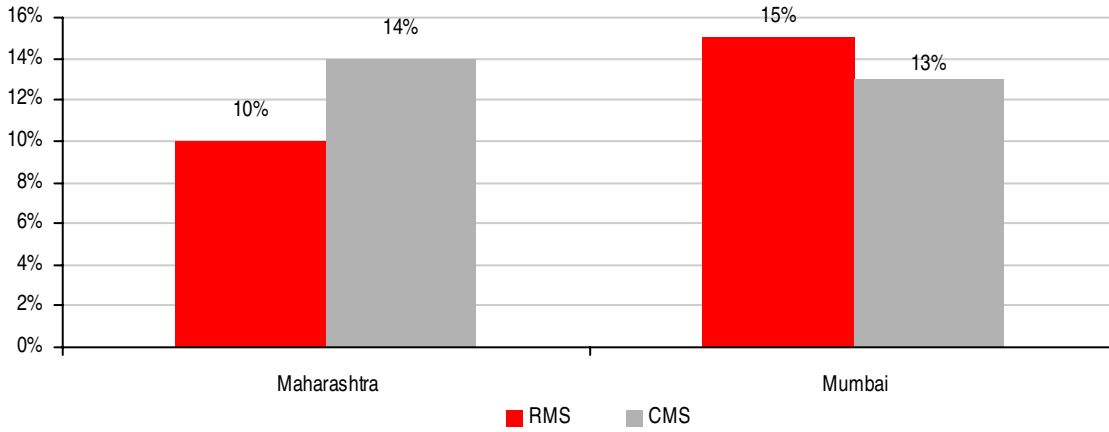
We have been highlighting that restructuring holds the key for the Tata Group in the telecoms business, as with TTML and Tata Teleservices in wireless and fixed-line, Tata Communications in

enterprise segment and Tata Sky in DTH, the group has all the essential breadth of telecom assets, but in a fragmented organisation structure. Interestingly, on the operational front, except for Tata Sky, the other three companies share a common brand, 'Tata Indicom'. Despite this, they do not have a unified organisation structure, which we believe stops them from leveraging their overall size. Worse yet, with this fragmented organisation structure they compete with integrated telcos like Bharti Airtel.

## Valuations and risks

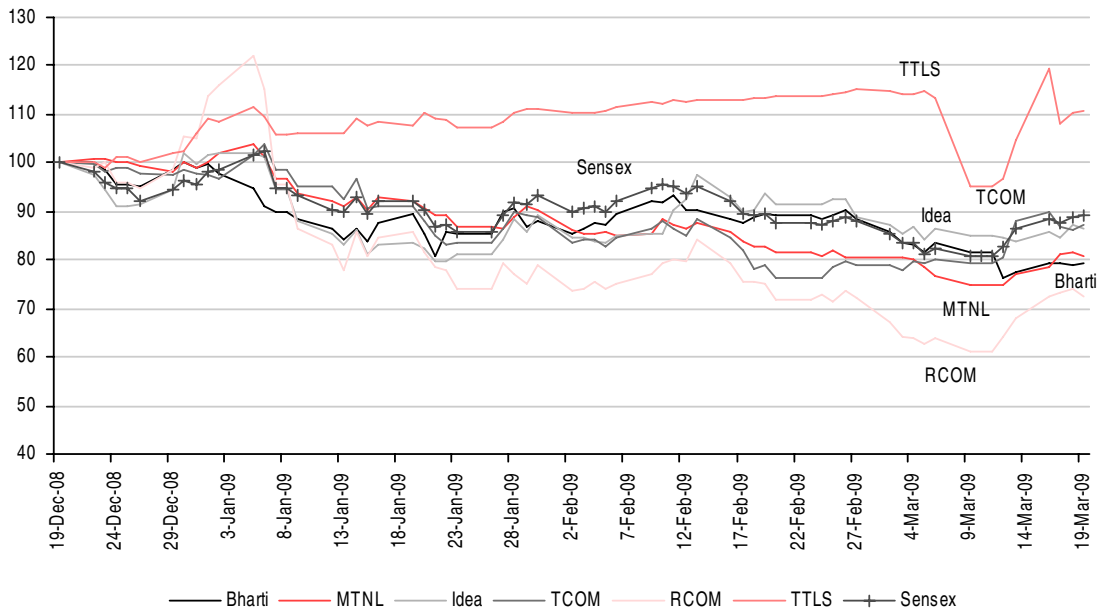
We reiterate our Underweight (V) rating. We use DCF to value the core business, which we value at INR12 per share. We are not assigning value to the tower business as there are no external tenants. We view corporate restructuring as the key upside risk.

Tata Teleservices: RMS and CMS in Maharashtra and Mumbai



Source: HSBC

Relative Performance of Indian Telcos Over Last 3 Months



Source: HSBC



# Financials

## Financials & valuation: Bharti Airtel

Overweight (V)

### Financial statements

Year to	03/2008a	03/2009e	03/2010e	03/2011e
<b>Profit &amp; loss summary (INRm)</b>				
Revenue	270,250	370,279	447,110	528,192
EBITDA	113,715	150,289	168,900	203,744
Depreciation & amortisation	-37,260	-42,551	-47,184	-53,279
Operating profit/EBIT	76,455	107,739	121,716	150,465
Net interest	-3,352	-9,897	-4,532	-1,555
PBT	76,536	97,272	117,325	151,327
HSBC PBT	73,102	96,575	117,325	151,327
Taxation	-8,378	-10,866	-20,540	-35,311
Net profit	67,008	83,678	93,347	112,290
HSBC net profit	63,574	82,981	93,347	112,290

### Cash flow summary (INRm)

Cash flow from operations	119,741	140,592	150,592	175,926
Capex	-138,467	-153,501	-111,126	-73,577
Cash flow from investment	-140,724	-158,249	-111,126	-73,577
Dividends	0	0	0	-47,250
Change in net debt	-744	-2,662	-58,780	-54,862
FCF equity	-21,012	-9,412	42,836	103,414

### Balance sheet summary (INRm)

Intangible fixed assets	40,247	40,128	39,422	38,787
Tangible fixed assets	313,407	332,771	443,994	464,927
Current assets	113,782	123,132	215,678	305,196
Cash & others	54,948	45,129	135,016	218,395
Total assets	472,643	554,109	758,096	868,604
Operating liabilities	149,982	183,102	196,295	213,677
Gross debt	97,063	84,582	115,689	144,206
Net debt	42,115	39,453	-19,327	-74,189
Shareholders funds	222,585	276,500	435,847	500,377
Invested capital	262,506	267,800	367,783	376,837

### Ratio, growth and per share analysis

Year to	03/2008a	03/2009e	03/2010e	03/2011e
<b>Y-o-y % change</b>				
Revenue	45.9	37.0	20.7	18.1
EBITDA	52.6	32.2	12.4	20.6
Operating profit	55.1	40.9	13.0	23.6
PBT	56.6	27.1	20.6	29.0
HSBC EPS	61.1	30.5	12.5	20.3

### Ratios (%)

Revenue/IC (x)	1.2	1.4	1.4	1.4
ROIC	29.6	33.9	31.6	32.9
ROE	35.5	33.3	26.2	24.0
ROA	18.6	19.8	15.8	15.1
EBITDA margin	42.1	40.6	37.8	38.6
Operating profit margin	28.3	29.1	27.2	28.5
EBITDA/net interest (x)	33.9	15.2	37.3	131.0
Net debt/equity	18.7	13.8	-4.3	-14.5
Net debt/EBITDA (x)	0.4	0.3	-0.1	-0.4
CF from operations/net debt	284.3	356.4		

### Per share data (INR)

EPS Rep (fully diluted)	35.35	44.14	49.25	59.24
HSBC EPS (fully diluted)	33.54	43.78	49.25	59.24
DPS	0.00	0.00	0.00	14.40
NAV	117.43	145.87	229.93	263.98

### Valuation data

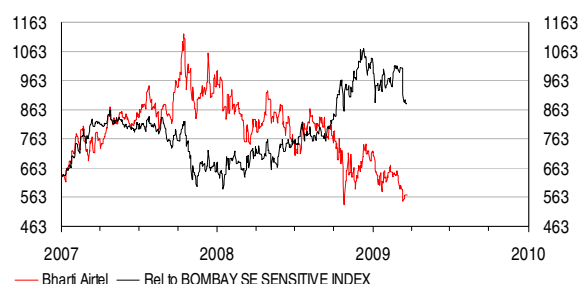
Year to	03/2008a	03/2009e	03/2010e	03/2011e
EV/sales	4.1	3.0	2.4	1.9
EV/EBITDA	9.9	7.4	6.3	4.9
EV/IC	4.3	4.2	2.9	2.7
PE*	17.0	13.0	11.6	9.6
P/NAV	4.8	3.9	2.5	2.2
FCF yield (%)	-1.9	-0.9	4.0	9.6
Dividend yield (%)	0.0	0.0	0.0	2.5

Note: \* = Based on HSBC EPS (fully diluted)

### Issuer information

Share price (INR)	569.40	Target price (INR)	786.00	Potent'l tot rtn (%)	38.0
Reuters (Equity)	BRTI.BO	Bloomberg (Equity)	BHARTI IN		
Market cap (USDm)	21,340	Market cap (INRm)	1,080,855		
Free float (%)		Enterprise value (INRm)	1117584		
Country	India	Sector	Wireless Telecoms		
Analyst	Rajiv Sharma	Contact	9122 22681239		

### Price relative



Source: HSBC

Note: price at close of 20 Mar 2009

## Financials & valuation: Reliance Communication

Neutral (V)

### Financial statements

Year to	03/2008a	03/2009e	03/2010e	03/2011e
<b>Profit &amp; loss summary (INRm)</b>				
Revenue	190,678	227,870	271,850	323,296
EBITDA	81,989	92,138	100,831	114,313
Depreciation & amortisation	-28,054	-39,972	-57,348	-66,942
Operating profit/EBIT	53,935	52,166	43,483	47,372
Net interest	3,997	7,576	6,400	1,442
PBT	70,761	58,097	49,883	48,814
HSBC PBT	57,933	59,742	49,883	48,814
Taxation	-2,836	422	-798	-1,464
Net profit	54,237	55,895	44,951	42,978
HSBC net profit	41,409	57,540	44,951	42,978

### Cash flow summary (INRm)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Cash flow from operations	45,058	57,800	98,400	142,910
Capex	-194,057	-150,125	-115,275	-71,362
Cash flow from investment	-202,744	-194,835	-150,125	-115,275
Dividends	0	0	0	0
Change in net debt	121,201	113,655	51,725	-27,635
FCF equity	-142,293	-76,617	-16,875	71,548

### Balance sheet summary (INRm)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Intangible fixed assets	35,654	35,654	35,654	35,654
Tangible fixed assets	523,126	686,776	779,553	827,886
Current assets	215,813	199,898	206,456	213,773
Cash & others	118,778	65,000	65,000	65,000
Total assets	774,593	922,328	1,021,664	1,077,314
Operating liabilities	156,213	253,405	251,931	287,867
Gross debt	258,217	318,094	369,819	342,184
Net debt	139,439	253,094	304,819	277,184
Shareholders funds	290,263	302,010	346,961	389,939
Invested capital	499,603	603,923	704,733	724,447

### Ratio, growth and per share analysis

Year to	03/2008a	03/2009e	03/2010e	03/2011e
<b>Y-o-y % change</b>				
Revenue	31.8	19.5	19.3	18.9
EBITDA	43.3	12.4	9.4	13.4
Operating profit	67.2	-3.3	-16.6	8.9
PBT	119.4	-17.9	-14.1	-2.1
HSBC EPS	32.8	39.0	-21.9	-4.4

### Ratios (%)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Revenue/IC (x)	0.5	0.4	0.4	0.5
ROIC	13.6	9.5	6.5	6.4
ROE	16.8	19.4	13.9	11.7
ROA	11.9	7.9	5.7	5.5
EBITDA margin	43.0	40.4	37.1	35.4
Operating profit margin	28.3	22.9	16.0	14.7
EBITDA/net interest (x)				
Net debt/equity	44.3	80.6	84.0	67.6
Net debt/EBITDA (x)	1.7	2.7	3.0	2.4
CF from operations/net debt	32.3	22.8	32.3	51.6

### Per share data (INR)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
EPS Rep (fully diluted)	26.43	27.24	21.90	20.94
HSBC EPS (fully diluted)	20.18	28.04	21.90	20.94
DPS	0.00	0.00	0.00	0.00
NAV	141.44	147.16	169.07	190.01

### Valuation data

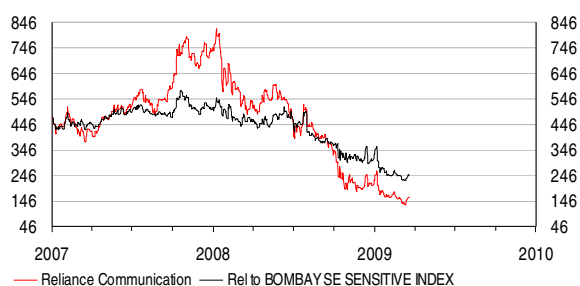
Year to	03/2008a	03/2009e	03/2010e	03/2011e
EV/sales	2.4	2.5	2.3	1.9
EV/EBITDA	5.7	6.3	6.3	5.3
EV/IC	0.9	1.0	0.9	0.8
PE*	7.9	5.7	7.3	7.6
P/NAV	1.1	1.1	0.9	0.8
FCF yield (%)	-43.6	-23.5	-5.2	21.9
Dividend yield (%)	0.0	0.0	0.0	0.0

Note: \* = Based on HSBC EPS (fully diluted)

### Issuer information

Share price (INR)	158.95	Target price (INR)	180.00	Potent'l tot rtn (%)	13.2
Reuters (Equity)	RLCM.NS	Bloomberg (Equity)	RCOM IN		
Market cap (USDm)	6,477	Market cap (INRm)	328,077		
Free float (%)		Enterprise value (INRm)	579,462		
Country	India	Sector	Diversified Telecoms		
Analyst	Rajiv Sharma	Contact	9122 22681239		

### Price relative



Source: HSBC

Note: price at close of 20 Mar 2009

## Financials & valuation: Idea Cellular Ltd

Neutral (V)

### Financial statements

Year to	03/2008a	03/2009e	03/2010e	03/2011e
<b>Profit &amp; loss summary (INRm)</b>				
Revenue	67,377	100,824	159,315	208,796
EBITDA	22,687	27,022	35,406	51,537
Depreciation & amortisation	-8,768	-13,679	-19,889	-26,749
Operating profit/EBIT	13,919	13,342	15,517	24,788
Net interest	-2,771	-4,812	-4,534	-10,351
PBT	11,148	8,531	11,137	15,385
HSBC PBT	11,148	8,531	11,137	15,385
Taxation	-726	-440	-685	-1,524
Net profit	10,422	8,091	10,452	13,862
HSBC net profit	10,422	8,091	10,452	13,862

### Cash flow summary (INRm)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Cash flow from operations	25,224	21,770	30,158	40,729
Capex	-59,768	-65,000	-60,242	-54,439
Cash flow from investment	-59,768	-65,000	-60,242	-54,439
Dividends	0	0	0	0
Change in net debt	30,312	-22,236	49,770	13,711
FCF equity	-40,578	-43,230	-30,055	-14,777

### Balance sheet summary (INRm)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Intangible fixed assets	17,953	46,225	48,370	48,345
Tangible fixed assets	89,271	135,047	195,496	223,211
Current assets	21,059	114,504	67,712	66,595
Cash & others	10,534	75,389	26,000	25,000
Total assets	128,283	295,777	312,633	339,205
Operating liabilities	27,022	49,650	53,671	53,671
Gross debt	65,154	107,773	108,154	120,864
Net debt	54,620	32,384	82,154	95,864
Shareholders funds	35,446	137,406	149,860	163,721
Invested capital	90,727	190,900	314,624	358,509

### Ratio, growth and per share analysis

Year to	03/2008a	03/2009e	03/2010e	03/2011e
<b>Y-o-y % change</b>				
Revenue	53.6	49.6	58.0	31.1
EBITDA	52.7	19.1	31.0	45.6
Operating profit	71.0	-4.1	16.3	59.7
PBT	119.0	-23.5	30.6	38.1
HSBC EPS	94.8	-34.2	21.4	32.6

### Ratios (%)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Revenue/IC (x)	1.0	0.7	0.6	0.6
ROIC	24.4	12.0	7.9	8.0
ROE	36.4	9.4	7.3	8.8
ROA	12.2	6.0	4.8	7.1
EBITDA margin	33.7	26.8	22.2	24.7
Operating profit margin	20.7	13.2	9.7	11.9
EBITDA/net interest (x)	8.2	5.6	7.8	5.0
Net debt/equity	154.1	23.6	54.8	58.6
Net debt/EBITDA (x)	2.4	1.2	2.3	1.9
CF from operations/net debt	46.2	67.2	36.7	42.5

### Per share data (INR)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
EPS Rep (fully diluted)	3.96	2.61	3.17	4.20
HSBC EPS (fully diluted)	3.96	2.61	3.17	4.20
DPS	0.00	0.00	0.00	0.00
NAV	13.48	44.31	45.40	49.60

### Key forecast drivers

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Penetration	0	0	0	0
Market Share	0	0	0	0
ARPU (INR)	287	262	246	244
MoU (Minutes)	378	411	394	398
Revenue per Minute (RPM, INR)	1	1	1	1
EBIT Margin	0	0	0	0

### Valuation data

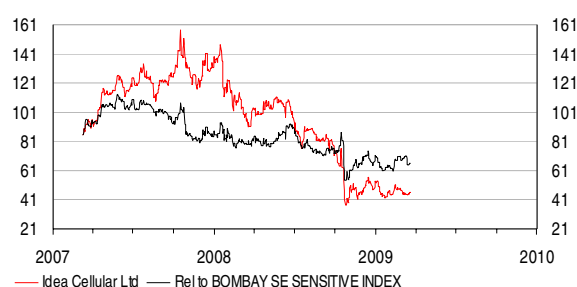
Year to	03/2008a	03/2009e	03/2010e	03/2011e
EV/sales	2.9	1.7	1.4	1.1
EV/EBITDA	8.7	6.5	6.3	4.6
EV/IC	2.2	0.9	0.7	0.7
PE*	11.7	17.7	14.6	11.0
P/NAV	3.4	1.0	1.0	0.9
FCF yield (%)	-28.3	-30.1	-21.1	-10.4
Dividend yield (%)	0.0	0.0	0.0	0.0

Note: \* = Based on HSBC EPS (fully diluted)

### Issuer information

Share price (INR)	46.30	Target price (INR)	48.00	Potent'l tot rtn (%)	3.7
Reuters (Equity)	IDEA.BO	Bloomberg (Equity)	IDEA IN		
Market cap (USDm)	2,834	Market cap (INRm)	143,534		
Free float (%)	100	Enterprise value (INRm)	175,918		
Country	India	Sector	Wireless Telecoms		
Analyst	Rajiv Sharma	Contact	9122 22681239		

### Price relative



Note: price at close of 20 Mar 2009

## Financials & valuation: MTNL

Neutral (V)

### Financial statements

Year to	03/2008a	03/2009e	03/2010e	03/2011e
<b>Profit &amp; loss summary (INRm)</b>				
Revenue	47,672	46,218	45,491	45,936
EBITDA	7,218	6,679	6,027	5,835
Depreciation & amortisation	-7,132	-7,186	-7,579	-7,767
Operating profit/EBIT	86	-508	-1,552	-1,931
Net interest	2,591	3,924	5,313	5,306
PBT	8,538	5,916	5,761	5,435
HSBC PBT	2,677	3,416	3,761	3,375
Taxation	-2,874	-1,752	-1,741	-1,629
Net profit	5,664	4,164	4,020	3,806
HSBC net profit	1,794	2,289	2,520	2,261

### Cash flow summary (INRm)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Cash flow from operations	24,866	26,295	11,695	11,497
Capex	-7,061	-10,180	-9,112	-8,284
Cash flow from investment	-7,061	-10,180	-9,112	-8,284
Dividends	-2,948	-2,583	-2,648	-2,714
Change in net debt	-15,770	-13,532	65	-499
FCF equity	-126	-1,264	594	1,265

### Balance sheet summary (INRm)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Intangible fixed assets	0	0	0	0
Tangible fixed assets	73,629	76,623	78,156	78,674
Current assets	145,590	154,075	153,813	154,230
Cash & others	39,726	48,302	48,238	48,736
Total assets	220,219	231,698	232,970	233,904
Operating liabilities	43,404	58,323	58,288	58,198
Gross debt	4,956	0	0	0
Net debt	-34,770	-48,302	-48,238	-48,736
Shareholders funds	117,366	118,882	120,188	121,213
Invested capital	136,089	124,073	125,444	125,969

### Ratio, growth and per share analysis

Year to	03/2008a	03/2009e	03/2010e	03/2011e
<b>Y-o-y % change</b>				
Revenue	-2.9	-3.0	-1.6	1.0
EBITDA	-10.3	-7.5	-9.8	-3.2
Operating profit	-92.9	-690.5		
PBT	-15.3	-30.7	-2.6	-5.7
HSBC EPS	227.5	27.6	10.1	-10.3

### Ratios (%)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
Revenue/IC (x)	0.4	0.4	0.4	0.4
ROIC	0.0	-0.3	-0.8	-1.0
ROE	1.6	1.9	2.1	1.9
ROA	2.8	2.0	1.7	1.6
EBITDA margin	15.1	14.5	13.2	12.7
Operating profit margin	0.2	-1.1	-3.4	-4.2
EBITDA/net interest (x)				
Net debt/equity	-29.6	-40.6	-40.1	-40.2
Net debt/EBITDA (x)	-4.8	-7.2	-8.0	-8.4
CF from operations/net debt				

### Per share data (INR)

Year to	03/2008a	03/2009e	03/2010e	03/2011e
EPS Rep (fully diluted)	8.99	6.61	6.38	6.04
HSBC EPS (fully diluted)	2.85	3.63	4.00	3.59
DPS	4.10	4.20	4.31	4.42
NAV	186.29	188.70	190.77	192.40

### Valuation data

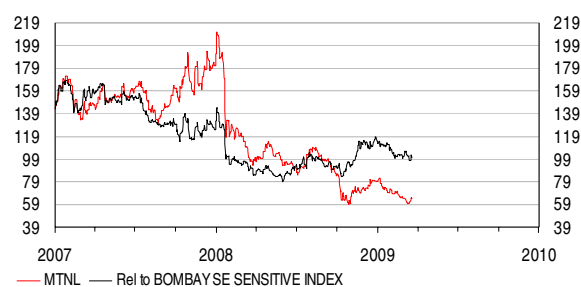
Year to	03/2008a	03/2009e	03/2010e	03/2011e
EV/sales	0.2	-0.3	-0.3	-0.3
EV/EBITDA	1.2	-1.8	-2.0	-2.2
EV/IC	0.1	-0.1	-0.1	-0.1
PE*	22.6	17.7	16.1	17.9
P/NAV	0.3	0.3	0.3	0.3
FCF yield (%)	-0.3	-3.5	1.6	3.5
Dividend yield (%)	6.4	6.5	6.7	6.9

Note: \* = Based on HSBC EPS (fully diluted)

### Issuer information

Share price (INR)	64.25	Target price (INR)	77.00	Potent'l tot rtn (%)	19.8
Reuters (Equity)	MTNL.NS	Bloomberg (Equity)	MTNL IN		
Market cap (USDm)	799	Market cap (INRm)	40,478		
Country	India	Sector	Diversified Telecoms		
Analyst	Rajiv Sharma	Contact	9122 22681239		

### Price relative



Source: HSBC

Note: price at close of 20 Mar 2009

## Financials & valuation: Tata Teleservices

Underweight (V)

### Financial statements

Year to	03/2008a	03/2009e	03/2010e	03/2011e
<b>Profit &amp; loss summary (INRm)</b>				
Revenue	17,896	21,952	24,980	26,619
EBITDA	4,855	5,875	6,405	6,864
Depreciation & amortisation	-4,394	-4,778	-6,333	-6,294
Operating profit/EBIT	462	1,097	73	570
Net interest	-1,710	-3,152	-3,518	-4,191
PBT	-1,248	-1,906	-3,445	-3,621
HSBC PBT	-1,248	-2,056	-3,445	-3,621
Taxation	0	0	0	0
Net profit	-1,248	-1,906	-3,445	-3,621
HSBC net profit	-1,248	-2,056	-3,445	-3,621

### Cash flow summary (INRm)

Cash flow from operations	4,798	3,223	3,374	2,779
Capex	-12,080	-8,781	-9,492	-6,655
Cash flow from investment	-12,032	-8,781	-9,492	-6,655
Dividends	0	0	0	0
Change in net debt	-2,533	5,558	6,118	3,876
FCF equity	-9,179	-5,708	-6,118	-3,876

### Balance sheet summary (INRm)

Intangible fixed assets	0	0	0	0
Tangible fixed assets	29,861	33,864	37,024	37,385
Current assets	4,552	4,869	4,990	5,056
Cash & others	345	500	500	500
Total assets	34,413	38,733	42,014	42,441
Operating liabilities	9,819	10,332	10,940	11,111
Gross debt	26,269	31,982	38,100	41,976
Net debt	25,924	31,482	37,600	41,476
Shareholders funds	-2,006	-3,911	-7,357	-10,978
Invested capital	24,249	27,901	30,574	30,829

### Ratio, growth and per share analysis

Year to	03/2008a	03/2009e	03/2010e	03/2011e
---------	----------	----------	----------	----------

#### Y-o-y % change

Revenue	25.9	22.7	13.8	6.6
EBITDA	60.5	21.0	9.0	7.2
Operating profit		137.5	-93.4	686.2
PBT				
HSBC EPS				

#### Ratios (%)

Revenue/IC (x)	0.7	0.8	0.9	0.9
ROIC	1.9	4.2	0.2	1.9
ROE	47.8	69.5	61.2	39.5
ROA	1.5	3.4	0.2	1.4
EBITDA margin	27.1	26.8	25.6	25.8
Operating profit margin	2.6	5.0	0.3	2.1
EBITDA/net interest (x)	2.8	1.9	1.8	1.6
Net debt/equity	0.0	0.0	0.0	0.0
Net debt/EBITDA (x)	5.3	5.4	5.9	6.0
CF from operations/net debt	18.5	10.2	9.0	6.7

#### Per share data (INR)

EPS Rep (fully diluted)	-0.66	-1.01	-1.82	-1.91
HSBC EPS (fully diluted)	-0.66	-1.09	-1.82	-1.91
DPS	0.00	0.00	0.00	0.00
NAV	-1.06	-2.07	-3.89	-5.80

### Valuation data

Year to	03/2008a	03/2009e	03/2010e	03/2011e
EV/sales	3.9	3.5	3.3	3.2
EV/EBITDA	14.5	12.9	12.8	12.5
EV/IC	2.9	2.7	2.7	2.8
PE*				
P/NAV				
FCF yield (%)	-20.7	-12.9	-13.8	-8.7
Dividend yield (%)	0.0	0.0	0.0	0.0

Note: \* = Based on HSBC EPS (fully diluted)

### Issuer information

Share price (INR)	23.40	Target price (INR)	12.00	Potent'l tot rtn (%)	-48.7
Reuters (Equity)	TTML.BO	Bloomberg (Equity)	TTLN IN		
Market cap (USDm)	876	Market cap (INRm)	44,394		
Free float (%)		Enterprise value (INRm)	75876		
Country	India	Sector	Wireless Telecoms		
Analyst	Rajiv Sharma	Contact	9122 22681239		

### Price relative



Source: HSBC

Note: price at close of 20 Mar 2009

# Disclosure appendix

## Analyst certification

The following analyst(s), who is(are) primarily responsible for this report, certifies(y) that the opinion(s) on the subject security(ies) or issuer(s) and any other views or forecasts expressed herein accurately reflect their personal view(s) and that no part of their compensation was, is or will be directly or indirectly related to the specific recommendation(s) or views contained in this research report: Rajiv Sharma and Tucker Grinnan

## Important disclosures

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HSBC believes that investors utilise various disciplines and investment horizons when making investment decisions, which depend largely on individual circumstances such as the investor's existing holdings, risk tolerance and other considerations. Given these differences, HSBC has two principal aims in its equity research: 1) to identify long-term investment opportunities based on particular themes or ideas that may affect the future earnings or cash flows of companies on a 12 month time horizon; and 2) from time to time to identify short-term investment opportunities that are derived from fundamental, quantitative, technical or event-driven techniques on a 0-3 month time horizon and which may differ from our long-term investment rating. HSBC has assigned ratings for its long-term investment opportunities as described below.

This report addresses only the long-term investment opportunities of the companies referred to in the report. As and when HSBC publishes a short-term trading idea the stocks to which these relate are identified on the website at [www.hsbcnet.com/research](http://www.hsbcnet.com/research). Details of these short-term investment opportunities can be found under the Reports section of this website.

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## Rating definitions for long-term investment opportunities

### Stock ratings

HSBC assigns ratings to its stocks in this sector on the following basis:

For each stock we set a required rate of return calculated from the risk free rate for that stock's domestic, or as appropriate, regional market and the relevant equity risk premium established by our strategy team. The price target for a stock represents the value the analyst expects the stock to reach over our performance horizon. The performance horizon is 12 months. For a stock to be classified as Overweight, the implied return must exceed the required return by at least 5 percentage points over the next 12 months (or 10 percentage points for a stock classified as Volatile\*). For a stock to be classified as Underweight, the stock must be expected to underperform its required return by at least 5 percentage points over the next 12 months (or 10 percentage points for a stock classified as Volatile\*). Stocks between these bands are classified as Neutral.

Our ratings are re-calibrated against these bands at the time of any 'material change' (initiation of coverage, change of volatility status or change in price target). Notwithstanding this, and although ratings are subject to ongoing management review, expected returns will be permitted to move outside the bands as a result of normal share price fluctuations without necessarily triggering a rating change.

\*A stock will be classified as volatile if its historical volatility has exceeded 40%, if the stock has been listed for less than 12 months (unless it is in an industry or sector where volatility is low) or if the analyst expects significant volatility. However,

stocks which we do not consider volatile may in fact also behave in such a way. Historical volatility is defined as the past month's average of the daily 365-day moving average volatilities. In order to avoid misleadingly frequent changes in rating, however, volatility has to move 2.5 percentage points past the 40% benchmark in either direction for a stock's status to change.

Prior to this, from 7 June 2005 HSBC applied a ratings structure which ranked the stocks according to their notional target price vs current market price and then categorised (approximately) the top 40% as Overweight, the next 40% as Neutral and the last 20% as Underweight. The performance horizon is 2 years. The notional target price was defined as the mid-point of the analysts' valuation for a stock.

From 15 November 2004 to 7 June 2005, HSBC carried no ratings and concentrated on long-term thematic reports which identified themes and trends in industries, but did not make a conclusion as to the investment action that potential investors should take.

Prior to 15 November 2004, HSBC's ratings system was based upon a two-stage recommendation structure: a combination of the analysts' view on the stock relative to its sector and the sector call relative to the market, together giving a view on the stock relative to the market. The sector call was the responsibility of the strategy team, set in co-operation with the analysts. For other companies, HSBC showed a recommendation relative to the market. The performance horizon was 6-12 months. The target price was the level the stock should have traded at if the market accepted the analysts' view of the stock.

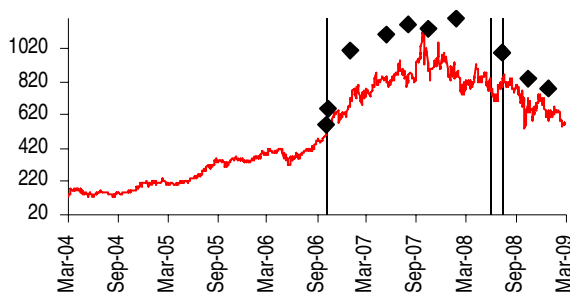
## Rating distribution for long-term investment opportunities

As of 24 March 2009, the distribution of all ratings published is as follows:

<b>Overweight (Buy)</b>	38%	(30% of these provided with Investment Banking Services)
<b>Neutral (Hold)</b>	38%	(30% of these provided with Investment Banking Services)
<b>Underweight (Sell)</b>	24%	(28% of these provided with Investment Banking Services)

## Share price and rating changes for long-term investment opportunities

Bharti Airtel (BRTI.BO) Share Price performance INR Vs HSBC rating history



Source: HSBC

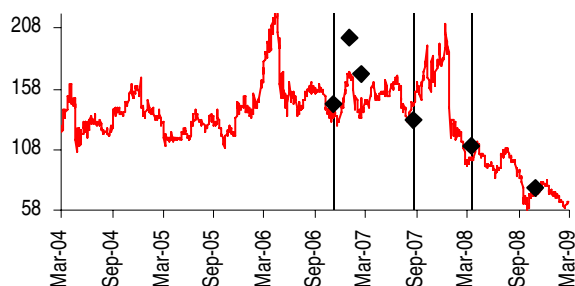
Recommendation & price target history

From	To	Date
Neutral	Overweight	23 October 2006
Overweight	Overweight	20 June 2008
Overweight	Overweight (V)	30 July 2008
Target Price	Value	Date
Price 1	560.00	23 October 2006
Price 2	660.00	02 November 2006
Price 3	1011.00	24 January 2007
Price 4	1110.00	04 June 2007
Price 5	1170.00	21 August 2007
Price 6	1140.00	07 November 2007
Price 7	1206.00	17 February 2008
Price 8	1003.00	30 July 2008
Price 9	1002.00	04 August 2008
Price 10	843.00	03 November 2008
Price 11	786.00	21 January 2009

Source: HSBC



MTNL (MTNL.NS) Share Price performance INR Vs HSBC rating history



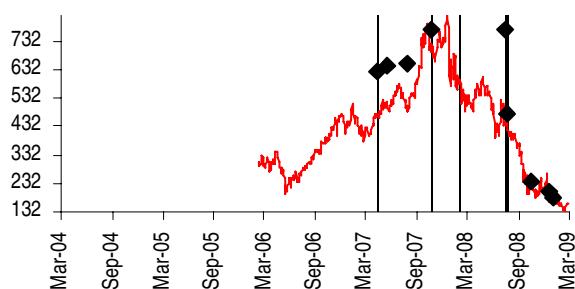
Source: HSBC

Recommendation & price target history

From	To	Date
N/R	Neutral (V)	24 November 2006
Neutral (V)	Underweight	12 September 2007
Underweight	Neutral (V)	08 April 2008
Target Price	Value	Date
Price 1	145.00	24 November 2006
Price 2	200.00	26 January 2007
Price 3	171.00	08 March 2007
Price 4	133.00	12 September 2007
Price 5	111.00	08 April 2008
Price 6	77.00	20 November 2008

Source: HSBC

Reliance Communication (RLCM.NS) Share Price performance INR Vs HSBC rating history



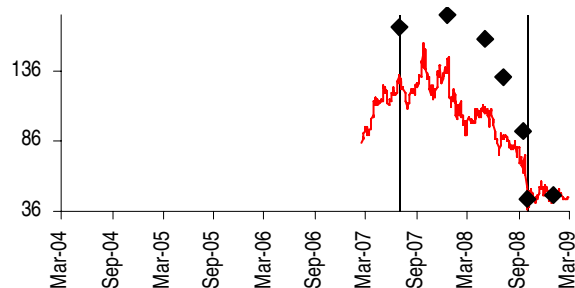
Source: HSBC

Recommendation & price target history

From	To	Date
N/A	Overweight (V)	03 May 2007
Overweight (V)	Neutral	15 November 2007
Neutral	Restricted	22 February 2008
Restricted	Neutral	04 August 2008
Neutral	Neutral (V)	15 August 2008
Target Price	Value	Date
Price 1	624.00	03 May 2007
Price 2	644.00	12 June 2007
Price 3	651.00	23 August 2007
Price 4	775.00	15 November 2007
Price 5	Restricted	22 February 2008
Price 6	775.00	04 August 2008
Price 7	475.00	15 August 2008
Price 8	235.00	05 November 2008
Price 9	202.00	13 January 2009
Price 10	180.00	27 January 2009

Source: HSBC

Idea Cellular Ltd (IDEA.BO) Share Price performance INR Vs HSBC rating history



Source: HSBC

Recommendation & price target history

From	To	Date
N/A	Overweight (V)	20 July 2007
Overweight (V)	Neutral (V)	28 October 2008
Target Price	Value	Date
Price 1	168.00	20 July 2007
Price 2	177.00	11 January 2008
Price 3	160.00	26 May 2008
Price 4	133.00	31 July 2008
Price 5	93.00	10 October 2008
Price 6	44.00	28 October 2008
Price 7	48.00	29 January 2009

Source: HSBC

**Tata Teleservices (TTML.BO) Share Price performance INR Vs HSBC rating history**

history



Source: HSBC

**Recommendation & price target history**

From	To	Date
N/A	Underweight (V)	13 March 2008
Target Price	Value	Date
Price 1	30.00	13 March 2008
Price 2	19.00	26 September 2008
Price 3	12.00	21 November 2008

Source: HSBC

**HSBC & Analyst disclosures**

**Disclosure checklist**

Company	Ticker	Recent price	Price Date	Disclosure
BHARTI AIRTEL	BRTI.NS	569.40	20-Mar-2009	6, 7
IDEA CELLULAR LTD	IDEA.BO	46.30	20-Mar-2009	4
RELIANCE COMMUNICATION	RLCM.NS	158.95	20-Mar-2009	1, 2, 5

Source: HSBC

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- 2 All market data included in this report are dated as at close 20 March 2009, unless otherwise indicated in the report.
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