See page 52 for Analyst Certification and Important Disclosures

Industry Report

EQUITY
RESEARCH:
INDIA

Telecommunications Services

13 April 2006

Asia Pacific

Ronie Ganguly, CFA
+91-22-5631-9887
ronie.ganguly@citigroup.com
Mumbai

Anand Ramachandran, CFA
Head of Regional Telecoms
+852-2501-2448
anand.ramachandran@citigroup.com
Hong Kong

Ratnesh Kumar
Head of India Research
+91-22-5631-9888
ratnesh.komar@citigroup.com
Mumbai

Indian Wireless

Higher, Faster, Stronger

- **Raising estimates on relentlessly robust subs growth: FY08 subs estimate up 28%, to 205m**
- **Target price for top-pick Bharti raised 11% to Rs500, HTIL target price up 23% to HK$16; Upgrading TTML to Buy**
- **VSNL downgraded to Hold for valuation reasons**
- **Infrastructure sharing, rural subsidies, rational competition should underpin sector profitability**

Figure 1. Indian Wireless Stocks — Valuation Snapshot

	Rating	Price	Target Price	EPS FY07E (Rs)	EPS FY08E (Rs)	EV/EBITDA FY07E (x)	EV/EBITDA FY08E (x)
Bharti	Buy, 1M	Rs405	Rs500	18.5	25.5	12.7	9.3
VSNL	Hold, 2H	Rs488	Rs530	20.5	22.3	14.0	12.7
HTIL*	Hold, 2M	HK$14.3	HK$16	0.1	0.4	9.7	7.7
TTML	Buy, 1M	Rs23.55	Rs32	–1.6	0.0	12.9	7.7
MTNL	Sell, 3L	Rs206	Rs97	8.0	6.4	7.2	8.0

* HTIL has a Dec year end = FY07 for others = CY06; all value in HKD
Source: Companies, Citigroup Investment Research estimates.
.

Contents

Investment Summary

India's wireless growth continues to surprise on the upside, leading us to raise our wireless subscriber estimate for the country to 205m in FY08 — implying 20% penetration. Profitability should remain strong for the sector amid rational competition, sharing of infrastructure and the rural subsidy scheme. Bharti is our top pick.

Positive on Indian wireless subs growth

The Indian wireless sector's brisk pace has again rendered our subscriber estimates conservative. Monthly subscriber additions have averaged 4.2m over the past six months. We are raising our estimate for India's wireless subscriber base by as much as 28% to include 4.8m-4.9m monthly additions in FY07-08, which take the total number of subscribers to 205m by FY08E.

Intense but rational competition driving margin resilience

We expect competition to stay keen but rational as we see operators focusing on optimizing scale efficiencies to cope with their fair share of the strong market growth. With prepaid subscribers consistently comprising a higher proportion of net additions, we expect MoU and ARPU to continue to trend down. That said, we continue to focus on profitability per minute as the key metric, which we think will continue to expand as operating leverage continues to kick in.

Infrastructure sharing and rural subsidy taking off

Infrastructure sharing and the rural subsidy scheme are two positives for the wireless sector. Infrastructure sharing could take telecoms operators' capex and network costs below our current estimates, and subsidies for expansion into rural areas could make the rural market as profitable as the urban coverage. Our current estimates do not factor in these potential positives.

Spectrum constraints and lack of consolidation are risks

The scarcity of spectrum and the absence of consolidation are both threats that could spoil the wireless story. Although the DoT has issued an order allowing 15Mhz of spectrum, a clear roadmap to free up the spectrum used by the defence forces is still missing. On the consolidation front, there's little to cheer. New players continue to enter the market, with Malaysian telcos being the latest entrants. Medium-term, it's tough for us to see any consolidation beyond a six-operator market.

Bharti is our top pick

The robust earnings growth prospects and the impressive execution track record continue to drive Bharti as out top pick. Following our subscriber growth revisions, we are raising our target price for the company to Rs500. The subscriber growth potential keeps us positively disposed to HTIL as well. We would accumulate the stock at lower than HK$13 levels but see the foreign shareholding limit at Bharti working in HTIL's favour as an alternative exposure to Indian wireless. Valuation concerns after a stock run-up lead us to downgrade VSNL to Hold even as we raise our target price to Rs488 from Rs450. Meanwhile, Tata Tele's stock price has come off, and we see initial signs of cash profitability. We are hence upgrading the stock to a Buy from Hold, with a target price of Rs32 (from Rs30 earlier).

Relentless Wireless Growth

- **Raising FY08 subscriber base estimate by 28%, to 205m, implying penetration of 20% by 2008**
- **Slowdown in metro markets unlikely over the next 12 months, with potential upside from “A” and “B” circles**
- **Operating leverage should shield sector profitability, despite a larger share of prepaid subscribers, and lower MoU and ARPU**
- **Positive regulatory direction — lower ADC, increased spectrum and direction in rural subsidy**

India’s wireless growth continues unabated

India’s wireless growth has been relentless. Back-to-back upside surprises have prompted us to raise our subscriber estimate. Monthly subscriber additions over the last six months were 4.2m, well ahead of our early December 2005 estimate of 3.2m monthly additions in FY07-08. The factors fueling this growth remain intact — wider coverage, and lower tariffs and handset prices. We had underestimated the pent-up demand in areas where services were recently launched. The community effect is showing through in urban areas, where new subscribers are coming onto the network and driving growth as well.

Figure 2. Monthly Subscriber Additions (Quarterly Average by Region), 1Q FY05-4Q FY06

	1Q FY05	2Q FY05	3Q FY05	4Q FY05	1Q FY06E	2Q FY06E	3Q FY06E	4Q FY06E
Metros	323,083	439,961	395,500	250,179	321,433	456,198	712,442	889,172
A	424,535	613,152	509,823	502,244	583,430	742,685	1,219,577	1,632,173
B	500,606	575,643	622,618	464,548	638,775	1,053,599	1,272,997	1,640,716
C	71,891	136,713	134,792	171,792	184,119	307,833	404,685	581,669
Total	1,320,114	1,765,469	1,662,733	1,388,764	1,727,757	2,560,316	3,609,700	4,743,730

Source: COAI, AUSPI.

We are now factoring in 4.8-4.9m monthly wireless subscriber additions in FY07-08. Our estimates call for 205m subscribers by FY08.

Figure 3. New Wireless Estimates

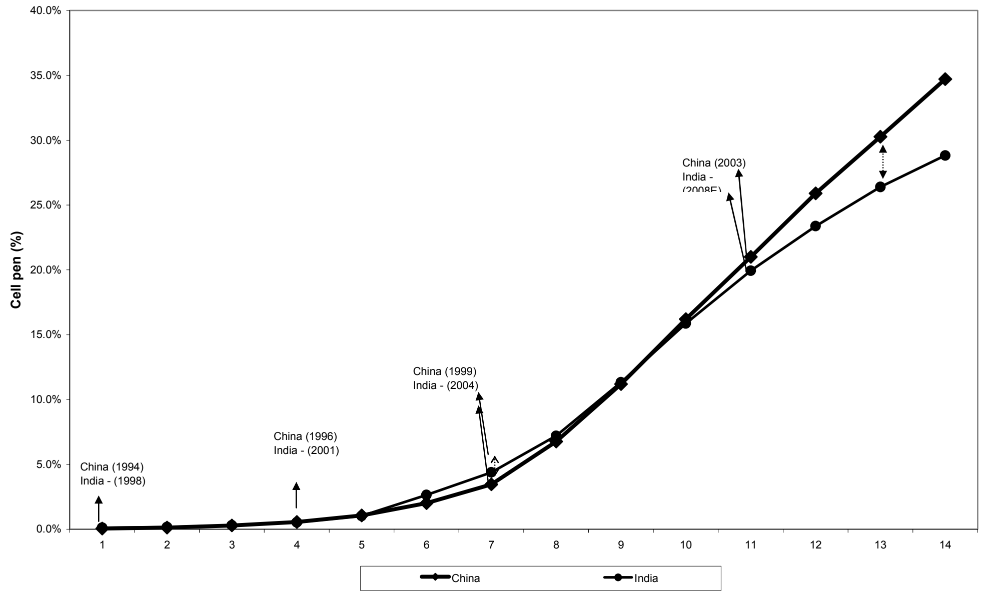
	FY07E			FY08E		
	Old	New	% Change	Old	New	% Change
GSM	90,573	110,275	21.8	116,949	151,781	29.8
CDMA	31,592	37,235	17.9	43,814	54,192	23.7
Total Wireless	122,165	147,510	20.7	160,763	205,973	28.1
Monthly net adds	3,100	4,832	55.9	3,216	4,872	51.5

Source: Citigroup Investment Research estimates.

China comparison

We continue to compare India’s wireless penetration with China’s on a five-year lag basis. On our revised estimates, we see penetration evolution in India matching that of China.

Figure 4. Penetration — India vs. China with a 5-Year Lag

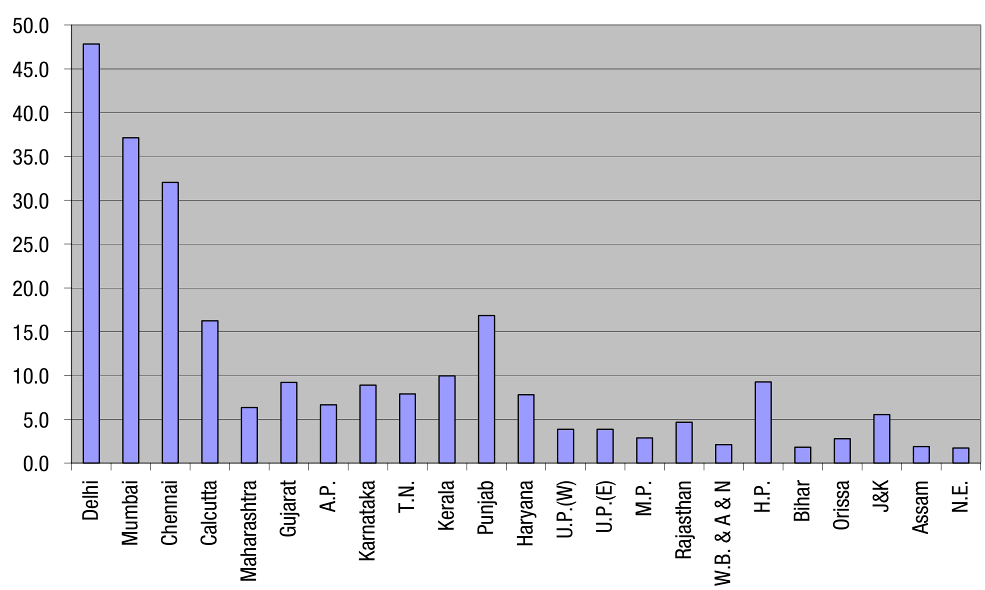


Source: Citigroup Investment Research estimates.

Can wireless penetrate further?

We do not expect any slowdown in metro circles' wireless growth over the next 12 months. Penetration in circles such as Mumbai and Delhi could be misleading, because these circles see a continuous influx of people. That said, these markets are no longer under-penetrated. As operators extend their footprint, we cannot completely rule out more upside surprises. Currently, 9 of 23 circles have double-digit penetration. Only the metro cities have penetration of more than 20%.

Figure 5. Indian Wireless Penetration by Circle



Source: COAI, AUSPI, Citigroup Investment Research estimates.

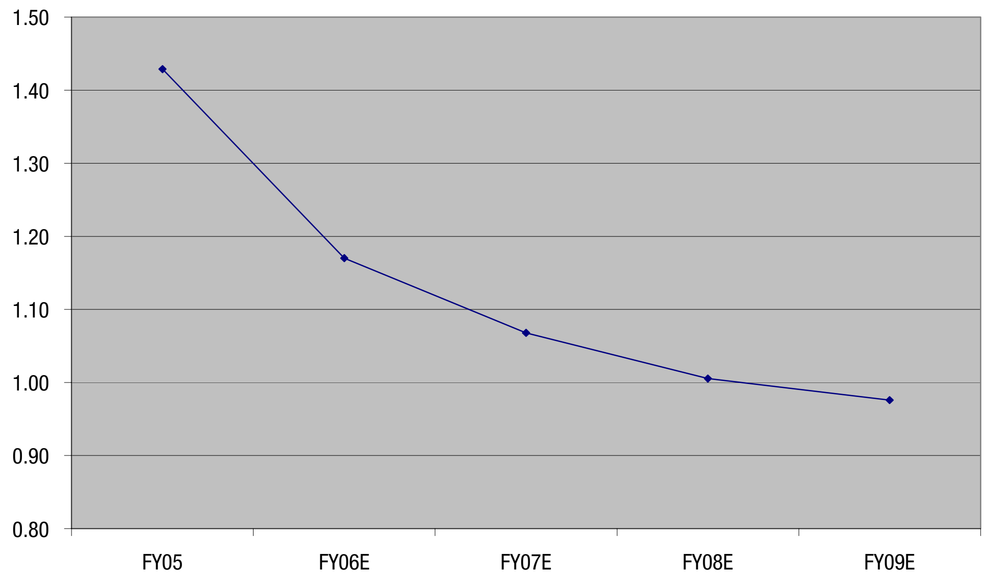
Handset prices trending lower

We expect handset prices to decline to Rs1,000 by FY07. We also see a broader development of the used-handset market, as we are fast approaching the replacement cycle of the “mobile adaptors”. These factors would keep entry costs low and foster growth of India’s wireless sector.

Tariffs already low

Bharti’s revenue per minute is below 3 US cents — among the lowest in the world. Nevertheless, we believe there is scope for charges to decline even further. For example, we expect some of the value-added charges, such as Caller Line identification protocol (CLIP), voicemail and roaming tariffs, to decline further. We are also factoring in around a 10% drop in tariff/minute.

Figure 6. Bharti — Revenue Per Minute, FY05-09E



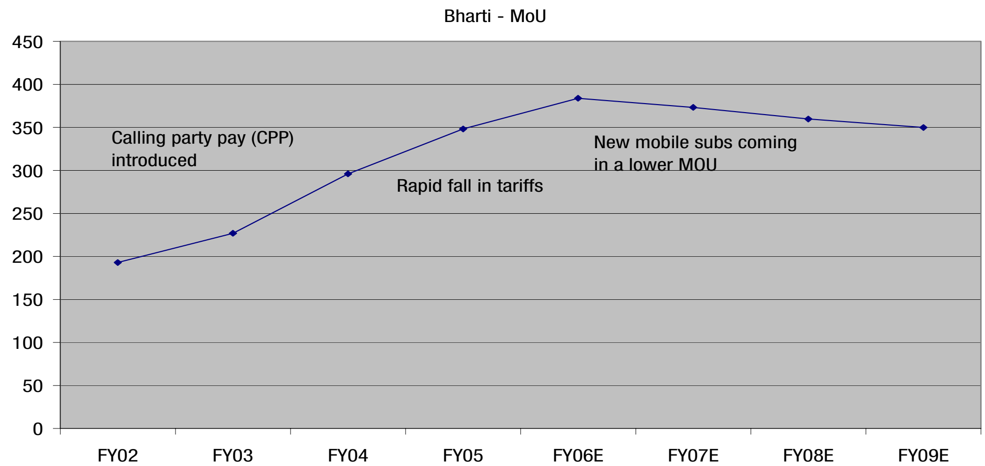
Source: Company data, Citigroup Investment Research estimates.

What does all this mean for operating parameters

The rapid increase in subscriber numbers is ushering in the following changes:

- There has been a shift toward the prepaid over the past six months for both Bharti and Hutch Essar. As operators expand coverage, they launch only the prepaid service in new areas to guard against bad debts. Operators tend to convert subscribers to postpaid after 9-12 months of operation. While this is a pragmatic approach, this trend means that the number of prepaid subscribers among the new additions would likely remain at a high 80%.
- MoU affects not only revenues, but also capex estimates. India’s MoU is among the highest in the region, with around 400 minutes of talk time a month. A small decline is likely on the cards as new subscribers come on board at lower MoU. Beyond FY10, we expect MoU to increase on lower tariffs.

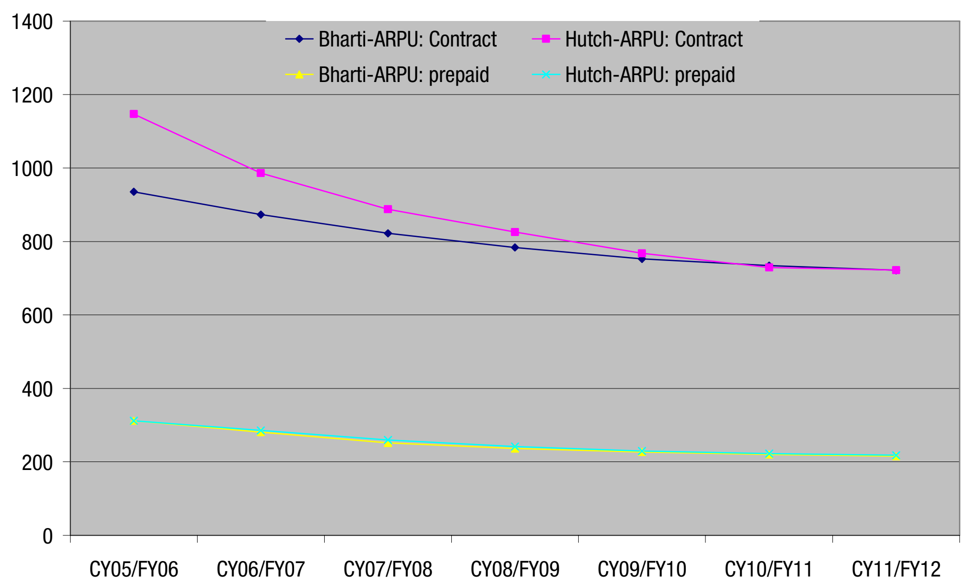
Figure 7. Bharti — MoU Estimate, FY02-09E



Source: Company data, Citigroup Investment Research estimates.

ARPU, in our view, is just a derived number. The more critical components for evaluating the mobile business are MoU growth, EBITDA/minute and capex/minute. ARPU, based on our analysis, will continue to decline. A larger number of prepaid subscribers would weigh blended ARPU down.

Figure 8. Hutch and Bharti — ARPUs, FY06-12E



Source: Company data, Citigroup Investment Research estimates.

Can regulatory changes foster further growth?

Although regulatory changes remain a concern for the sector, the major risks are likely behind us. The direction of regulatory changes has, in essence, been positive for the industry, and we expect more changes.

Access Deficit Charge (ADC) cut

The Telecom Regulatory Authority of India (TRAI) has shifted the ADC from a per-minute to a percentage-of-revenue basis. Additionally, its 1.25% is much lower than our expectation of 2.0-2.5%. There is a move to abolish the ADC charge and merge it with the Universal Service Obligation (USO) fund. We would view this as a positive change for the sector.

Higher spectrum

The Department of Telecom (DoT) recently announced a roadmap for operators to claim 15Mhz of spectrum, up from the current maximum of 10Mhz. Although this does not resolve long-term issues, it is a move in the right direction. We would view a move to implement this change by freeing up spectrum from defense usage as positive.

Rural subsidy — progress so far

Operators in India would have to increasingly focus on the rural markets when penetration in the urban markets crosses 40-45%, which we think is 9-12 months away. Ensuring connectivity in rural markets would entail high capex due to the absence of backhaul networks and the lack of steady power supply in the rural areas.

The TRAI has proposed subsidies for wireless operators to enable a faster network rollout in rural areas. The finance minister, in the budget, promised a subsidy of Rs15bn for rural connectivity. Infrastructure players have made presentations to the government on possible ways to use the USO fund for aiding wireless connectivity. We expect to see positive developments on this front over the next 3-6 months.

3G and Mobile Number Portability (MNP) not a priority

We believe 3G is at least two years away from launch in India — a 3G policy has yet to be formulated, spectrum issues are still uncertain and handset prices remain an issue. MNP has been in the news. The TRAI has recommended launch of MNP in metros by FY07. We think MNP is a non-issue in India, where the churn faced by mobile operators is high. CDMA’s inability to provide seamless global roaming means that operators will find it difficult to churn the high-ARPU customers from GSM easily.

Lower license fee

The TRAI’s recommendations on lower license fees and spectrum charges have so far not been accepted by the DoT. Note that the government has made more money through revenue sharing whenever tariffs have been lowered. We believe there is still enough elasticity even if prices are brought down 5%, as evidenced by history. Lower license fees would be positive not only for operators, but also for subscribers and the government.

Two Emerging Positives

> ➤ **Infrastructure sharing is taking off — will cut operators' capex and network costs**
>
> ➤ **Companies to start focusing on rural markets — regulator and government looking at ways to provide incentives**

Infrastructure sharing is taking off

We are at the first stage of large-scale infrastructure sharing by wireless operators. Barely few days after a minister announced formation of a group to study infrastructure sharing, GTL Infrastructure (GIL) announced plans of entering the tower-sharing business. Other global players such as American Tower and Crown Castle are also reported to be eyeing India.

The rationale for sharing infrastructure appears convincing:

- Currently, telecoms operators own almost all the towers they use. A lingering concern for the wireless sector has been the prospect of diminishing ROCE as companies expand their coverage.
- The scarcity of spectrum is forcing operators to explore infrastructure sharing.
- Lower revenue per minute and higher capex due to low spectrum would lead to greater passive element sharing going forward.

In a recent analyst meet, GTL mentioned that it has proposed to the Government of India a plan to set up towers using USO funds and then offering the tower on a rental basis to multiple operators. If this plan materializes, it would significantly ease our concerns over lower ROCE due to rural expansion.

We have not factored in any benefits from infrastructure sharing. According to GTL, sharing of passive elements by 2-3 operators could cut operator's network costs by 20-30%.

Signs of rural subsidy for wireless players

As operators expand their networks into the semi-urban and rural areas, capex/minute should temporarily rise due to the following reasons:

- Capex would be completely green-field. As such, infrastructure cost would be incurred for every Base Transceiver Station (BTS).
- Backhaul connectivity of BTS to the Base Station Controller (BSC) will be expensive due to non-availability of OFC backbones.
- Power shortage in rural India would lead to higher G&A costs.

The TRAI has looked into the issue of rural penetration and made recommendations to promote growth in rural areas. Currently, the divide between urban and rural penetration is markedly wide — and rising. Rural households could be a source of significant growth for wireless operators. The key issue here is the capital cost for setting up connectivity in these areas, mainly setting up the BTS as well as ensuring backhaul connectivity with the BSC.

Figure 9. Income Distribution in Urban and Rural Areas

Income Group	Rural Households (% of total)	Urban Households
Lower	58.87 (47.94%)	9.31 (18.96%)
Lower Middle	42.77 (34.83%)	16.58 (33.76%)
Middle to High	21.16 (17.23%)	23.22 (47.28%)
Total	122.81 (100%)	49.11 (100%)

Source: NCAER.

The TRAI has hence recommended the following:

- Providing subsidy for erection of the BTS from the USO fund
- Providing subsidy for alternative sources of power like diesel generation sets from the USO fund
- Mandate incumbent BSNL (or other infrastructure owners) to lease optic-fiber and wireless operators at a 30% discount to ceiling rates. Infrastructure providers to be compensated by the USO Fund
- Discounts in annual license fees and spectrum charges for rural rollout

These recommendations would, in our view, go a long way in rolling out wireless services in rural areas profitably. The finance minister has announced that Rs15bn from the USO fund would be used for rural expansion.

Risks: Spectrum and Competition

- **Lack of spectrum is a risk for the sector; defense ministry and government have not struck any plan to free up spectrum**
- **Competition remains keen, but strong growth means no irrational competition so far**

Spectrum: When will the scarcity end?

Spectrum continues to be a key issue for the Indian wireless sector. Lower spectrum would lead to increased capex and network charges. The DoT indicated recently a roadmap for operators to get 15Mhz of spectrum, up from the current 10Mhz. Although this would provide some near-term relief to wireless operators, bigger issues would have to be resolved sooner rather than later.

Details of spectrum problem and the DoT order

The DoT has specified that subscriber-based criteria would be followed in allocating spectrum above 10Mhz.

Figure 10. Details of the DoT Spectrum Order

	Initial (Mhz)		Current Maximum (Mhz)		Proposed - Increase 1 (Mhz)			Proposed - Step 2 (Mhz)		
	GSM	CDMA	GSM	CDMA	GSM	CDMA	Subs base needed (m)	GSM	CDMA	Subs base needed
Delhi and Mumbai	4.4	2.5	10.0	5.0	12.4	6.25	1.6	15	7.5	2.1
Chennai and Kolkata	4.4	2.5	10.0	5.0	12.4	6.25	1.0	15	7.5	1.3
A Circles	4.4	2.5	10.0	5.0	12.4	6.25	2.0	15	7.5	2.6
B Circles	4.4	2.5	8.0	5.0	12.4	6.25	1.6	15	7.5	2.1
C circles	4.4	2.5	6.2	2.5	12.4	6.25	0.9	15	7.5	1.2

Source: DoT, Citigroup Investment Research.

- DoT has maintained the 2:1 ratio of spectrum allocated to GSM:CDMA operators. Not surprisingly, the Association of Unified Service Providers of India was critical of the plan.
- DoT specifies that 40mE of traffic per in-roamer (in the Visitor Location Register) would also be considered in calculating the subscriber base. This was something that was ignored by the regulators in the past, and is relevant especially for GSM operators.
- The order does not define "active subscribers" clearly, ie, will subscribers in the grace period be included in the calculation or not.

Impact

Spectrum is a major constraint for the operators in 30-35 towns in the country. The above move would benefit operators in areas where they had already crossed the specified threshold, or are about to do so. We believe Bharti will be the biggest beneficiary, as it has exceeded the threshold of >10Mhz in three circles and is close to exceeding that level in two others in the near term.

Figure 11. Operators Eligible for More Spectrum Near Term

Status	Operator	Circle	Current subscriber base (m)	Months to reach threshold*	As of May 2005	Allocation by new Policy
Can immediately request allocation	Bharti	Delhi	2.01	Crossed	10.0	15.0
		Karnataka	2.00	Crossed	10.0	12.4
		Punjab	1.64	Crossed	8.0	12.4
	Hutch	Delhi	1.78	Crossed	10.0	12.4
		Gujarat	2.17	Crossed	8.0	12.4
	BSNL	UP (East)	1.59	Almost crossed	6.2	12.4
		Bihar	0.87	Almost crossed	6.2	12.4
Close to applying for more spectrum	Bharti	Andhra Pradesh	1.73	3	8.0	12.4
		Bihar	0.74	3	6.2	12.4
	Spice	Punjab	1.42	3	8.0	12.4
	Reliance	Delhi	1.49	3	5.0	6.25
	Hutch	Kolkata	0.94	2	8.0	12.4
		UP (East)	1.29	5	6.2	12.4
	BSNL	Kerala	1.52	1	8.0	12.4

Source: COAI, AUSPI, TRAI, Citigroup Investment Research.

Unanswered questions

What happens after 15Mhz?

The TRAI had estimated that Delhi would require a minimum of 60Mhz of spectrum to cater to the subscriber base by December 2007. There is no clarity beyond 15Mhz, which would create further uncertainties going forward.

Where is the spectrum?

A critical statement in the DoT order is *"spectrum allotment is subject to availability of spectrum"*. Though this order clarifies that operators can now apply for more than 10Mhz and specifies a roadmap, it says nothing about the steps to obtain the spectrum. In January, a defense ministry was quoted in *The Business Standard* as saying: "Owing to the large size of the Indian armed forces and budgetary constraints, it is not possible to modernise all at once, as five generations of equipment are always concurrently in service. Re-farming of spectrum will, therefore, be a slow process keeping a long-term perspective in mind. *Armed forces have a plan to replace the equipment, but not before using it till it was functionally obsolete (and not technologically obsolete)."* The defense ministry has commented that it may take them around 15 years to clear the spectrum. Such comments make us skeptical about execution of the DoT order.

Merger scenario uncertain

The proposed merger of Hutch Essar with BPL's Mumbai operation faces a constraint of spectrum. In the intra-circle merger norms in October 2003, TRAI mentioned that *"maximum spectrum that could be held by a merged entity should be capped at 15 Mhz per operator per service area for Metros & Category 'A' Circles and 12.4 Mhz per operator per service area in Category 'B' and Category 'C' Circles."* Unfortunately, despite the strong growth in the wireless sector, there has been no fresh guideline issued in this regard. Hutch and BPL have 3.2m subs combined in Mumbai.

Future of revenue share

The TRAI has recommended that the existing ceiling of 6% revenue share for spectrum charge be brought down to 4%. However, the DoT order does not accept the recommendation and prescribes enhanced revenue share of 5% and 6% (for 12.4Mhz and 15Mhz for GSM operators). It remains unclear whether or not DoT has fully rejected the TRAI recommendation.

Lack of consolidation

Most of the circles in the Indian wireless sector now have 5-7 players. Small players such as BPL and Escotel have already consolidated. We believe five players are in the Indian wireless sector for the long haul — Bharti, RCVL, BSNL, Hutch Essar and Tata Tele. Idea could be the sixth player. We factor in a sustainable market share for six players in our assumptions for Bharti and Hutch Essar.

Figure 12. Market Share and Penetration by Circle (Percent)

	Bharti	BSNL+MTNL	Reliance Info	Hutch - Essar *	Tata Tele	Idea	Others	Penetration
Delhi	25.9	11.7	19.3	23.5	8.8	10.8	0.0	56.17
Mumbai	16.6	13.5	19.3	45.0	5.6	0.0	0.0	43.88
Chennai	22.4	19.3	16.9	14.6	2.9	0.0	23.8	37.50
Calcutta	20.4	13.7	23.4	31.9	9.0	0.0	1.6	20.95
Maharashtra	20.2	17.4	17.9	11.3	5.9	27.4	0.0	7.67
Gujarat	14.3	14.9	13.7	37.5	2.5	17.0	0.0	11.51
A.P.	27.3	18.8	23.5	12.8	3.5	14.1	0.0	8.46
Karnataka	33.1	20.0	15.0	16.9	8.3	0.0	6.7	11.80
T.N.	15.9	25.9	13.8	8.8	5.9	0.0	29.7	9.89
Kerala	14.3	37.7	15.8	10.9	2.7	18.7	0.0	12.94
Punjab	33.3	7.4	10.7	13.1	4.6	0.0	31.0	19.38
Haryana	22.3	25.6	12.8	19.7	3.1	16.4	0.0	8.70
U.P.(W)	13.9	23.9	17.7	15.5	5.6	23.3	0.0	4.86
U.P.(E)	13.0	32.7	21.6	28.3	4.4	0.0	0.0	4.96
M.P.	13.6	29.8	21.8	0.0	0.7	19.8	14.3	4.39
Rajasthan	33.0	15.2	23.4	19.4	8.2	0.0	0.9	5.31
W.B. & A & N	13.1	30.3	14.0	21.4	9.1	0.0	12.2	3.45
H.P.	46.5	28.6	2.1	0.0	14.5	0.0	8.2	12.24
Bihar	29.4	30.0	19.1	0.0	4.9	0.0	16.5	2.72
Orissa	28.8	35.2	12.8	0.0	8.1	0.0	15.0	4.19
J&K	39.3	56.8	0.0	0.0	0.0	0.0	3.9	6.38
Assam	36.3	8.4	0.0	0.0	0.0	0.0	55.3	1.80
N.E.	26.1	57.9	0.0	0.0	0.0	0.0	16.0	6.48

Source: AUSPI, COAI, Citigroup Investment Research estimates.

What about the entry of Malaysian companies — Telecom Malaysia and Maxis — in India? We are not concerned about their entry at this point in time. By picking up stakes in Aircel and Spice, they have become dominant regional players. As they try to expand in India, they would face three critical issues:

1 The most lucrative subscriber base would have already been captured by the early entrants.

2 Entering big markets would entail constraints on spectrum. We believe spectrum is a constraint in 30-35 top cities in the country.

3 Operators that started operation by March 2005 have the benefit of Section 80 I (A) of the tax clause. They will get tax waiver of 100% for five years and 305 exemption for another five years.

We therefore believe these players will not be able to spoil the rational growth path of the Indian wireless sector in the medium term.

Company Section

BUY (1)
Medium Risk (M)

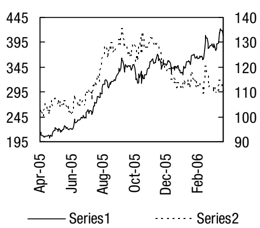
INDIA

Ronie Ganguly, CFA
+91-22-5631-9887
ronie.ganguly@citigroup.com
Mumbai

Anand Ramachandran, CFA
+852-2501-2448
anand.ramachandran@citigroup.com
Hong Kong

Note Released:	13 Apr 2006
Recommendation	
Rating:	1M
Target Price :	Rs500
Expected Share Price Return	23.4%
Expected Dividend Yield	0%
Expected Total Return	23.4%

Market Data	
RIC:	BRTI.BO
Price (12 Apr):	Rs401.65
52-Wk Hi/Lo:	Rs429.90/Rs192.45
Market Cap. (Mils.):	Rs781855/ US$17544
Shares Outst. (Mils.):	1893.8



Source: Datastream.

Performance (%):

	3M	6M	12M
Absolute	–1.5	41.6	62.7
Relative	–10.7	6.3	9.3

Source: Datastream.

Bharti Airtel Limited

Aiming higher

Summary

- **Raising target price 11% to Rs500:** We raise our country wireless monthly addition estimate to 4.8mn for FY07 and 4.9mn for FY08 (from 3.2mn). We think Bharti will maintain m/s at 21%. We raise FY08E EBITDA 12% and profit after tax 8%.
- **More subs, higher capex:** Bharti should add over 1mn subs (earlier estimate 0.7m adds) per month in FY07-08E, in our view. We also factor in higher prepaid mix for net additions. We raise wireless EBITDA 10% in FY07 and 16% in FY08. Additionally, our total capex estimate is now Rs64-66bn.
- **Cautious on long distance and enterprise:** We expect the long distance business will come under pressure from regulatory changes and increased competition. The enterprise business faces margin pressure from oversupply of submarine bandwidth. We cut FY08E long distance and enterprise EBITDA by 11% and 19%.
- **Our regional favorite – remain positive on Indian wireless:** Bharti remains our top pick given its superior execution track record.
- **Near-term drivers:** Continuing robust subs growth, better-than-expected results, clarity on spectrum allocation, subsidy announcement for rural expansion and FII limit hike.

Statistical Abstract

Year to 31 Mar	Net Profit (Rs Mils.)	FD EPS (Rs)	EPS Growth (%)	P/E (x)	EV/EBITDA (x)	Yield (%)
2004	5,075	2.74	–	NM	50.3	0
2005	14,978	8.08	194.9	50.1	26.5	0
2006E	2,1652	11.46	41.8	35.4	18.8	0
2007E	34,988	18.51	61.5	21.9	12.7	0.7
2008E	48,147	25.47	37.6	15.9	9.3	0.9

Source: Company, Citigroup Investment Research estimates.

Change in Estimates

	Sales (Rs Mils)		Diluted EPS (Rs.)			EBITDA (Rs. Mils)	
	Old	New	Old	New	% Chg	Old	New
2006E	117,935	117,430	12.53	11.46	(8.54)	45,025	43,312
2007E	158,096	168,670	18.09	18.51	(2.32)	63,421	65,070
2008E	200,533	224,564	23.77	25.47	(7.15)	82,515	88,359

Source: Citigroup Investment Research estimates

Raising target price to Rs500

We raise our target price for Bharti by 11% to Rs500. This is primarily due to strong revisions in our country wireless estimates. We estimate India will have 150mn subscribers by FY07 and 208mn subscribers by FY08. We expect Bharti will continue to be a leader in the wireless space, with a market share of c21%. We factor in over 1mn monthly wireless subscriber additions for Bharti in FY07 and FY08.

On the access business, we factor in growth from the new circles where Bharti has started service in the past six months. Bharti was present in 79 towns by 3Q06 and expects to go to 100 towns by FY06. While we factor in subscriber growth from new areas, we moderate our ARPU primarily because of dilution that will be caused from the subs in new areas.

While we remain bullish on our wireless and access sector expectations, we moderate our long distance and enterprise segment estimates. After easing of long distance norms and reduction of the license fee, we believe more players will enter this space. The government has reduced carriage charges that will put pressure on realizations. On the enterprise business front, we believe operation of SEA-ME-WE-4 and FALCON would create more margin pressure than previously thought. Global carriers such as BT are also reported to be increasing their focus on India (reported in Sify.com). Therefore, we think it would be difficult for Bharti to sustain margins at current levels.

Overall, we revise up FY08 EBITDA 12% and profit after tax 8%. The capex estimates for FY07-08 are now Rs64-66bn. Based on the changes, our new target price based on DCF is Rs500. Continuing robust subs growth, better-than-expected results, clarity on spectrum allocation, subsidy announcement for rural expansion and the FII limit hike are near term stock price drivers, in our view.

Bharti: Percentage Change in Estimates

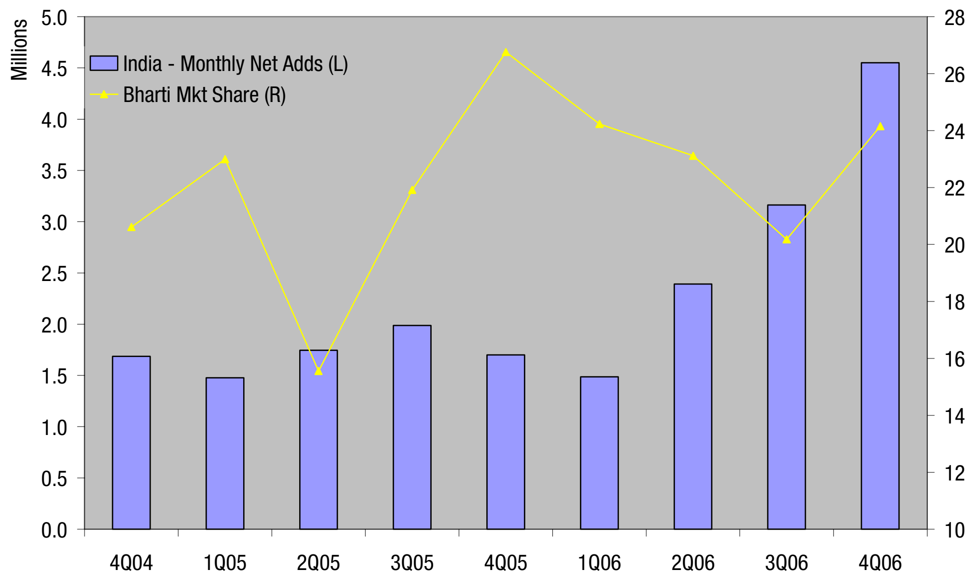
(%)	FY06E	FY07E	FY08E	FY09E
Subscribers ('000)				
Mobile	9.1	20.1	25.8	26.1
Fixed	–3.9	12.2	19.8	25.2
Revenue				
Mobile	0.7	9.5	15.5	19.0
Fixed	–4.6	3.0	11.7	15.6
Long Distance	–1.0	–4.4	–3.1	0.1
Enterprise	–2.2	–2.2	–2.2	–2.2
Total less elims	–0.4	6.7	12.1	15.5
EBITDA				
Mobile	–0.6	11.2	13.4	13.7
Fixed	6.5	10.0	24.1	26.2
Long Distance	–3.2	–14.7	–11.2	–6.1
Enterprise	–10.4	–19.8	–19.7	–24.7
Total less elims	–3.8	2.6	7.1	8.6
PBT	–4.6	3.8	8.8	6.8
PAT	–8.3	2.7	7.5	4.9
Capex	13.3	23.8	34.2	30.1

Source: Citigroup Investment Research estimates.

Raising subscriber estimates, yet again

Indian wireless subscriber additions have been strong, with an average of 4.2m additions over the past six months. This reaffirms our view that lower handset costs, expanding coverage and lower tariffs are driving penetration.

Bharti: Market Share in Wireless Net Addition in India



Source: Citigroup Investment Research.

Bharti has been able to maintain its run rate of additions in this growth segment. It has captured 22.5% of net additions over the past 6 months, which reflects the strong execution capabilities of the company. We revise our subscriber addition estimates for the company to over 1mn per month. This implies a 26% increase in FY08 subscribers.

Change in Subscriber Estimates

	2006E		2007E		2008E	
In '000	Old	New	Old	New	Old	New
Bharti Mobile Subs	18,116	19,765	26,530	31,864	35,085	44,127
Market Subscribers	84,962	91,936	122,165	149,922	160,763	208,385

Source: Citigroup Investment Research estimates

Moderating wireless operating estimates

Despite our earnings estimates lift, we moderate some of the operating variables. For instance, we believe strong growth in new areas will lead to a higher proportion of prepaid subscribers. We raise the percentage of prepaid new adds from 77% in FY07 to 85%. For FY08, we estimate this will fall to 82% as Bharti tries to convert the subscribers from prepaid to postpaid. This is the main reason behind the divergence of subscriber growth and revenue growth in our estimates.

Bharti – Mobile Business Estimates

	FY06E	FY07E	FY08E	FY09E	FY10E
Mobile Subscriber-year end ('000)	19,765	31,864	44,127	55,239	63,755
Blended ARPU	449	399	362	341	328
MoU	384	373	360	350	345
Revenue per min	1.17	1.07	1.01	0.98	0.95
Service revenue	82,857	123,458	164,867	203,570	234,440
Total operating expenses	–45,645	–65,220	–86,495	–106,345	–121,395
EBITDA ex license fee	38,326	59,374	79,531	98,407	114,227
License fee	–8,596	–13,191	–17,533	–21,736	–24,872
Adjusted EBITDA	29,730	46,182	61,998	76,670	89,355
EBITDA margin	35.4%	37.1%	37.3%	37.4%	37.9%

Source: CIR.

Comparison of Bharti and Hutch estimates

Bharti: Year to March Hutch Essar: Year to Dec	2006E 2005E	2007E 2006E	2008E 2007E	2009E 2008E	2010E 2009E	2011E 2010E
Subs						
Bharti	19.8	31.9	44.1	55.2	63.8	72.1
Hutch	14.5	25.2	36.5	47.1	55.7	63.5
ARPU: Contract						
Bharti	935.7	873	822	783.7	752.6	734
Hutch	1,147.0	986.4	887.8	825.6	767.8	729.4
ARPU: prepaid						
Bharti	312.2	281.1	251.8	236.5	226.8	220.4
Hutch	312	285.5	259.8	241.6	229.5	222.6
EBITDA %						
Bharti	35.4	37.1	37.3	37.4	37.9	38.5
Hutch	32.4	34.4	36.5	38.0	38.5	38.5
Capex (INR Bills)						
Bharti	45,967	52,405	52,337	46,462	38,825	36,354
Hutch	15,545	56,703	44,596	41,215	35,464	32,683
Capex to sales (%)						
Bharti	55.5	42.4	31.7	22.8	16.6	13.9
Hutch	27.5	60.0	32.0	24.0	18.0	15.0

Source: Citigroup Investment Research estimates.

Access business – Going strong

While Bharti's wireless business growth has been strong, many tend to ignore growth on the access side. Bharti added 59K subs in March 2006. In the past 6 months, the company added 48K monthly subs, more than double from a year ago. On the access business, we factor in growth from new circles where Bharti started service in the past 6 months. Bharti was present in 79 towns by 3Q06 and expects to enter 100 towns by FY06. While we factor subscriber growth from new areas, we moderate our ARPU primarily because of dilution from subs in new areas.

Bharti – Access Business Estimates

	FY06E	FY07E	FY08E	FY09E	FY10E
Fixed subs -year end ('000)	1,324	2,242	3,200	4,241	5,408
Blended ARPU	1,150	1,108	1,054	1,004	957
Revenue	15,042	23,713	34,421	44,815	55,407
EBITDA	3,909	7,510	11,871	15,667	19,987
EBITDA margin (%)	26.0	31.7	34.5	35.0	36.1

Source: Citigroup Investment Research estimates.

Long distance – Regulatory issues

The long distance business has seen quite a few meaningful changes in regulation over the past few months, including:

- TRAI has lowered the long distance license obligation, which should result in higher competition. As obtaining interconnect is a time consuming activity and it will take time for new entrants to establish themselves, we believe margin pressure will become more apparent in this segment.
- The long distance license fee has been lowered from 15% to 6%. This change on a standalone basis should have had a positive impact on margins. However, TRAI has at the same time capped realization per minute to Rs0.65/min. We believe the impact of lower realization will be more than the license fee cut.
- The ADC on long distance calls has been changed to 1.25% of AGR of non-rural revenues. This has led to an across-the-board decline in long distance tariffs. We believe this will result in stronger volume growth in the NLD segment.

Overall, we think volume growth in this segment could exceed expectations, although increased competition and lower realization per minute would lower Bharti's margins. We factor in an EBITDA margin of 32% in FY07-08E for this segment.

Enterprise business – Volume growth but pressure on margins

We expect the enterprise business to grow 30% and 25% in FY07-08, respectively. The commissioning of SEA-ME-WE-4 is the main driver behind the growth. Bharti will now have its own capacity on the Atlantic route, which would make its pricing more competitive.

We expect competition will intensify on this front. RCVL is looking at the enterprise business keenly after setting up its own landing stations for FALCON. RCVL, like Bharti and VSNL, will be able to provide integrated services to corporate customers. Also, global players such as BT are exploring the India offshoring opportunity. Thus, we believe there might be a dip in margins in this business from current levels. We factor in 33.5% EBITDA margin for this business in FY07-08, a 250bps drop from 36% currently.

Balance sheet – More capex

With the increase in subscriber estimates, we also raise our capex estimates for Bharti. We estimate capex of Rs64-66bn for FY07-08E and believe the company can easily meet this requirement by debt without dilution. Also, we estimate the company will turn FCF neutral in FY07 and FCF positive in FY08.

Quarterly estimates

Quarterly Estimates

	Q4FY05	Q3FY06	Q4FY06E	Y/Y %	Q/Q%	FY06E	FY07E	FY08E
Mobile Subs ('000)	10,984	16,327	19,765	79.9	21.1	19,765	31,864	44,127
Mobile ARPU	504	470	454	–9.8	–3.3	449	399	399
Revenue								
Mobile	16,165	21,742	24,599	52.2	13.1	82,857	123,458	164,867
Fixed	3,095	3,854	4,128	33.4	7.1	15,042	23,713	34,421
Long Distance	5,066	6,322	7,065	39.5	11.7	24,159	29,641	37,270
Enterprise	1,545	1,861	2,003	29.7	7.6	7,182	9,337	11,671
Total Revenues	25,871	33,779	37,796	46.1	11.9	116,317	167,534	223,406
EBITDA								
Mobile	5,652	7,932	8,764	55.1	10.5	29,730	46,182	61,998
Fixed	847	946	1,168	37.9	23.5	3,909	7,510	11,871
Long Distance	2,031	2,130	2,209	8.8	3.7	8,229	9,528	11,927
Enterprise	678	630	657	–3.1	4.3	2,644	3,122	3,911
Others	–239	–434	–			–1,200	–1,272	–1,348
Total EBITDA	8,969	11,204	12,798	42.7	14.2	43,312	65,070	88,359
EBITDA Margins								
Mobile	35%	36%	36%	1.9	–2.3	36%	37%	38%
Fixed	27%	25%	28%	3.4	15.3	26%	32%	34%
Long Distance	40%	34%	31%	–22.0	–7.2	34%	32%	32%
Enterprise	44%	34%	33%	–25.3	–3.1	37%	33%	34%
PBT	5,780	6,249	6,977	20.7	11.7	24,745	40,216	56,643
PAT	5,313	5,391	6,071	14.3	12.6	21,652	34,988	48,147

Source: Citigroup Investment Research estimates

Investment thesis

We rate Bharti Buy (1M) with a target price of Rs500. We believe continued robust wireless market expansion and Bharti's ability to capture this growth profitably will be the recurring theme for the stock. We estimate a FY06-09E earnings CAGR of 40.4%, or more than double that of the broader market. We believe competitive pressures, though intense, will continue to be rational. Additionally, most regulatory concerns are behind us and incremental news flow is likely to be positive. The strategic shareholding of Singtel, which the company has increased over time, leaves us comfortable with execution issues and new initiatives (such as electronic recharge, vendor tie-ups or a One Alliance partnership). The presence of Vodafone in the management board will add to the knowledge pool. Combined with strong brand presence and good corporate governance standard, Bharti appears a strong investment. The company has yet to realize the benefits of economies of scale, and we expect further strengthening of margins.

Valuation

Our 12-month forward target price of Rs500 is based on DCF, which suggests a fair value of Rs502 as of March 2007 (a WACC of 11.4%, a terminal growth rate of 4%, 1.1 beta, implying a terminal EBITDA multiple of 8x). We prefer DCF, as we believe the business model is still evolving and the wireless market continues to see robust growth. Our target price of Rs500 represents 19.6x FY08 P/E and 11.3x FY08 EV/EBITDA. We believe this is justified, as we forecast a 40.4% FY06-09E EPS CAGR for Bharti. We view the company as a defensive play against any sharp appreciation of the Indian rupee.

Comparison of Bharti Valuation with Hutch-Essar

	Hutch Essar (at DCF)			Bharti (at current price)			Bharti (at target price)		
	2006E	2007E	2008E	FY06E	FY07E	FY08E	FY06E	FY07E	FY08E
P/E	31.9	20.1	14.7	35.6	22.1	16.0	43.6	27.0	19.6
P/CE	21.3	13.3	10.0	20.9	13.8	10.2	25.6	16.9	12.4
EV/EBITDA	19.2	11.7	9.1	18.9	12.8	9.4	22.9	15.5	11.3
P/sales	6.6	4.5	3.6	6.6	4.6	3.4	8.0	5.6	4.2
EV/sub (US$)	698	449	331	874	549	393	1058	663	475

Source: Citigroup Investment Research estimates

Risks

Our quantitative risk-rating system rates Bharti Medium Risk. The risks that could prevent the stock from reaching our target price include competition-led tariff pressures, un-remunerative capex, overall market downside, and more telecom-related paper in the market.

Income Statement, FY04-FY08E (Rupees in Million)

	2004	2005	2006E	2007E	2008E
Rs MM (March year end)					
Fixed line voice	22,362	35,264	46,383	62,691	83,362
Mobile voice	30,795	52,976	82,857	123,458	164,867
Equipment sales	673	1,092	1,113	1,136	1,158
Others (Interseg elimination)	–5,510	–9,303	–12,924	–18,615	–24,823
Total revenue	**48,320**	**80,028**	**117,430**	**168,670**	**224,564**
Cost of goods sold	–647	–1,021	–1,650	–1,758	–1,878
Network	–15,174	–23,406	–45,958	–64,718	–85,889
Salaries	–3,647	–5,155	–7,863	–11,652	–15,725
Sales and marketing	–3,873	–6,655	–10,506	–15,431	–21,243
Total operating expense	**–27,342**	**–42,611**	**–61,583**	**–85,205**	**–111,970**
EBITDA ex license fee	20,978	37,417	55,848	83,464	112,595
License fee	–5,339	–7,730	–12,536	–18,394	–24,236
Adjusted EBITDA	**15,639**	**29,687**	**43,312**	**65,070**	**88,359**
Net finance costs	–2,380	–1,996	–3,235	–4,028	–3,950
Depreciation	–6,333	–9,908	–13,998	–19,538	–26,522
Amortization	–1,132	–1,056	–1,333	–1,288	–1,244
Operating profits	5,769	16,194	24,745	40,216	56,643
PBT	5,976	16,604	24,745	40,216	56,643
Tax	–901	–1,528	–3,093	–5,228	–8,496
Reported PAT	**5,075**	**14,978**	**21,652**	**34,988**	**48,147**
Minority interests	–	–98	–	–	–
PAT	5,075	14,978	21,652	34,988	48,147
EPS (Rs)	2.74	8.08	11.46	18.51	25.47
DPS (Rs)	0.00	0.00	0.00	2.70	3.80
Shares Outstanding (MM)	1,853	1,853	1,890	1,890	1,890

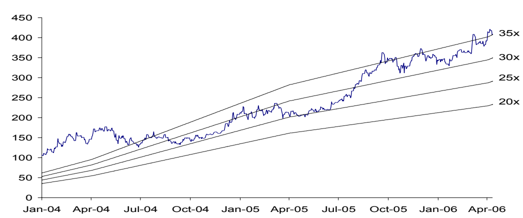
Balance Sheet, FY04-FY08E (Rupees in Million)

	2004	2005	2006E	2007E	2008E
Cash	1,305	3,087	4,014	731	3,270
Other current assets	10,474	16,115	15,546	23,345	30,844
Fixed assets	**99,971**	**131,809**	**172,649**	**216,138**	**254,047**
Investments	3,517	5,662	5,662	5,662	5,662
Deferred Tax Asset	–1,127	–1,183	–1,183	–1,183	–1,183
Other Non Current Assets	1,912	2,400	2,400	2,400	2,400
Total Assets	116,052	157,889	199,087	247,092	295,040
Current liabilities	29,477	51,245	55,424	68,164	75,020
Provisions	0	0	0	0	0
Long term debt	**36,965**	**37,803**	**52,803**	**58,803**	**59,803**
Other Non current Liabilities	3,694	7,776	7,776	7,776	7,776
Total liabilities	70,136	96,824	116,003	134,743	142,599
Shareholders' equity (Incl. minorities)	**45,916**	**61,065**	**83,084**	**112,349**	**152,441**
Book value per share (Rs)	24.77	32.95	43.96	59.44	80.65

Cash Flow Statement, FY04-FY08E (Rupees in Million)

Cash Flow Statement	2004	2005	2006E	2007E	2008E
Operating cash flow	13,779	32,583	44,966	64,783	79,219
Capex	20,755	26,982	56,171	64,316	65,674
Cash flow from Investing	–23,364	–29,938	–56,122	–64,298	–65,325
Cash flow from Financing	10,283	–860	12,082	–3,769	–11,354
Change in cash	699	1,784	927	–3,283	2,540

P/E Band Chart



Key Ratios, FY04-FY08E

	2004	2005	2006E	2007E	2008E
Growth					
Revenue (%)	58.4	65.6	46.7	43.6	33.1
Adj EBITDA (%)	106.7	89.8	45.9	50.2	35.8
EPS (%)	N.A	195.1	41.8	61.6	37.6
Profitability					
EBITDA Margin(%)	32.37	37.10	36.88	38.58	39.35
FCF Margin (%)	–28.42	–20.59	–13.43	–4.87	5.22
ROE (%)	13.52	26.26	27.67	32.29	32.40
ROA (%)	8.18	12.45	14.72	18.43	20.96
Gearing					
Debt / Capital (%)	85.3	77.4	72.4	69.2	59.5

Key Assumptions

	2004	2005	2006E	2007E	2008E
Revenue - Mobile					
Total Subscribers ('000)	6,761	10,984	19,765	31,864	44,127
% Prepaid Subscribers	79	75	80	81	81
ARPU prepaid	344	336	312	281	252
ARPU postpaid	1,316	1,030	936	873	822
MOU prepaid	211	243	286	292	283
MOU postpaid	656	695	730	701	680
Rev. per minute - prepaid	0.39	0.36	0.30	0.30	0.30
Rev. per minute -postpaid	0.51	0.31	0.30	0.30	0.30
Cost - Mobile					
Marketing Cost / Revenue (%)	11.0	11.2	11.1	11.3	11.6
License Fee / Revenue (%)	13.3	12.4	12.7	13.0	13.0
Balance Sheet					
Capex / Sales (%)	53	54	48	38	29
(Net Debt)/Cash	35,661	34,716	48,789	61,446	56,533
Dividend Payout (%)	0	0	0	15	15

Source: Company, Citigroup Investment Research estimates

HOLD (2)
Medium Risk (M)

HONG KONG

Anand Ramachandran, CFA
+852-2501-2448
anand.ramachandran@citigroup.com
Hong Kong

Hutchison Telecommunication Intl.

Indian wireless growth prospects sustains positive bias

Summary

- **Target price raised to HK$16** (from HK$13), primarily on higher subscriber growth estimates in India driving higher valuations for Hutch Essar.
- **Valuing Hutch Essar at US$12.2bn** implies a marginal discounted valuation relative to Bharti. India now represents 80% of HTIL's NAV.
- **We are positive on HTIL on three counts:**

1 Indian wireless growth prospects look good, while the imminent IPO is positive for sentiment.

2 Potential value accretion in Indonesia and Vietnam on a 2-3 year view.

3 An interested acquirer in Orascom lends good stock price support.

- We raise our earnings estimates 97%, 36% and 38% for 2006-08 to adjust for higher subscriber/earnings growth at Hutch Essar.
- Recent share price strength limits us to a Hold (2M). We would look to accumulate at around the HK$13 level.

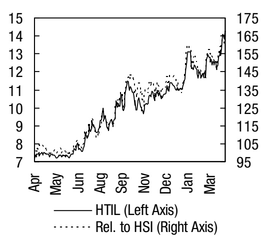
Note Released:	12 Apr 2006

Recommendation

Rating:	2M
Target Price :	HK$16.0
Expected Share Price Return	10.3%
Expected Dividend Yield	0%
Expected Total Return	10.3%

Market Data

RIC:	2332.HK
Price (11 Apr):	HK$14.50
52-Wk Hi/Lo:	HK$16.00/HK$6.60
Market Cap. (Mils.):	HK$68912/ US$8412
Shares Outst. (Mils.):	4753



Source: Datastream.

Performance (%):

	3M	6M	12M
Absolute	30.0	28.8	94.6
Relative	23.9	18.6	66.7

Source: Datastream.

Statistical Abstract

Year to 31 Dec	Revenue (HK$ Mils)	Net Profit[1] (HK$ Mils)	EPS (HK$)	EBITDA[2] (HK$ Mils)	EBITDA Growth (%)	P/E (x)	EV/EBITDA (x)	P/CEPS (x)
2004	14,845	–30	–0.007	4,154	14.5	NM	24.3	35.4
2005	24,356	–768	–0.166	6,752	62.5	NM	14.3	17.3
2006E	33,322	675	0.142	10,351	53.3	102.1	9.8	10.8
2007E	42,096	1,679	0.353	13,355	29.0	41.0	7.7	8.4
2008E	48,844	3,188	0.671	16,760	25.5	21.6	5.9	6.7

[1] as reported; [2] including proportionate associate EBITDA.
Source: Company data, Citigroup Investment Research estimates.

Earnings Revision

Year to	Net Profit (HK$ Mils.)		Diluted EPS (HK$)			EBITDA (HK$ Mils)	
31 Dec	Old	New	Old	New	% Chg	Old	New
2006E	343	675	0.072	0.142	96.9	9,522	10,351
2007E	1235	1,679	0.260	0.353	35.9	11,567	13,355
2008E	2316	3,188	0.487	0.671	37.7	13,817	16,760

Source: Citigroup Investment Research estimates.

Raising sum-of-the-parts based target price to HK$16

Our higher target price is driven by an increase in our DCF-based fair value estimate for Hutch Essar in India, as we incorporate higher wireless subscriber forecasts for India and hence Hutch Essar as well.

Our revised sum-of-the-parts estimate of HK$15.68 (from HK$13), which we round up to HK$16, is outlined in the figure below. The major change is the revision to Hutch Essar in India, which we now value at US$12.2bn (up from US$9.2bn). The increase is worth HK$3.05/HTIL share (given HTIL's 61.88% stake). Other changes include: 1) margin uptick to the business in Thailand, though it is still not enough to drive positive equity value; and 2) a rise in parent level debt, which we see as being driven by funding for the BPL acquisitions in India.

HTIL: Sum-of-the-Parts Valuation

	Tot eq. Val (US$m)	HTIL stake (%)	Stake value (US$m)	Stake value (HK$m)	Value/share (HK$)	Value/HTIL sh (HK$)
Partner Communications	1,280	52.5	672	5,208	1.10	Listed, based on market price
HGCH, Hong Kong	1,156	100.0	1,156	8,955	1.88	2006E end DCF estimate (WACC-10.0%; g=5%)
Mobile, Hong Kong	598	70.9	424	3,287	0.69	2006E end DCF estimate (WACC-10.2%; g =5%)
Hutch Essar India	12,200	61.9	7,550	58,510	12.31	2006E end DCF estimate (WACC-11.4%; g =4.0%)
Hutch CAT Thailand	0	66.5	0	0	0.00	Struggling to reach scale; high debt levels as well
Others (SL, Ghana, Vietnam, Indonesia)	0	50–100	0	0	0.00	Small or stating operation in 2006
Total value of equity stakes (1)			**9,801**	**75,960**	**15.98**	
HTIL debt to operating companies						
Mobile Hong Kong	NA	NA	266	2,062	0.43	Loan, repayable on demand
Parent Level Debt	NA	NA	–449	–3,489	–0.73	
Total value of debt (2)	**NA**	**NA**	**–183**	**–1,427**	**–0.30**	
Net asset value (1+2)			**9,619**	**74,533**	**15.68**	4752.5m shares outstanding

Source: Companies, Citigroup Investment Research estimates.

Value for Hutch Essar is in sync with what we estimate for Bharti

We expect 2006 will be a transition year for Hutch Essar for several reasons:

- The BPL Circles acquisitions are complete and were consolidated effective year-beginning 2005, but the BPL Mobile (Mumbai) acquisition is still awaiting regulatory approval. We factor in consolidation from 2H06.
- We expect integration of the BPL assets with Hutch's existing footprint will happen this year and some integration costs to be incurred before synergies start to kick in (likely from 2007).
- HTIL has indicated roll-out of seven new SpaceTel circles in 2H. We expect these will come with start-up losses as well.

Consequently, we believe our 2007 estimates offer a better comparison base on valuation (versus Bharti). The figure below highlights our valuation comparison between Hutch Essar (at our DCF-derived equity value of US$12bn) and Bharti (at the current price and our target price). Note that at our target price, Hutch Essar trades at a modest discount to Bharti's implied valuations. We believe this is warranted, as Hutch lags Bharti in its roll-out schedule and in view of Bharti's integrated status (versus Hutch's wireless centric business model).

Hutch Essar Versus Bharti: Valuation Comparison

	Hutch Essar (at DCF)			Bharti (at current price)			Bharti (at target price)		
	2006E	2007E	2008E	2006E	2007E	2008E	2006E	2007E	2008E
P/E	32.5	20.5	15.0	24.2	17.1	13.4	29.9	21.1	16.6
P/CE	21.7	13.5	10.2	15.0	10.8	8.5	18.5	13.3	10.6
EV/EBITDA	19.5	12.1	9.4	13.7	10.0	7.9	16.7	12.3	9.7
P/sales	6.7	4.6	3.7	4.9	3.6	2.9	6.1	4.5	3.6
EV/sub (US$)	709	456	336	680.9	548.9	462.9	831	668	564

Note : Calendarized valuations for Bharti. Bharti Share price as at 12 April, 2006: Rs410.70
Source: Companies, Citigroup Investment Research estimates.

The figure below outlines a comparison of the principal assumptions we use for Hutch versus what we use for Bharti's wireless operations – both are reasonably in sync.

Bharti Versus Hutch Essar: Most Estimates in Sync (Bharti Estimates Refer to Mobile Operations Only)

Bharti: Year to March	2006E	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E
Hutch Essar: Year to Dec	2005E	2006E	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E
Subs										
Bharti	19.8	31.9	44.1	55.2	63.8	72.1	78.4	84.2	87.3	92.6
Hutch	14.5	25.2	36.5	47.1	55.7	63.5	70.0	75.6	79.2	83.7
ARPU: Contract										
Bharti	935.7	873.0	822.0	783.7	752.6	734.0	721.8	714.5	711.6	709.5
Hutch	1,147.0	986.4	887.8	825.6	767.8	729.4	722.2	714.9	707.8	707.8
ARPU: prepaid										
Bharti	312.2	281.1	251.8	236.5	226.8	220.4	215.3	211.8	209.8	208.0
Hutch	312.0	285.5	259.8	241.6	229.5	222.6	218.2	213.8	209.5	207.4
EBITDA %										
Bharti	35.4	37.1	37.3	37.4	37.9	38.5	38.8	38.2	38.4	38.3
Hutch	32.4	34.4	36.5	38.0	38.5	38.5	38.5	38.5	38.5	38.5
Capex (INR Bills)										
Bharti	45,967	52,405	52,337	46,462	38,825	36,354	33,481	30,691	27,835	28,450
Hutch	15,545	56,703	44,596	41,215	35,464	32,683	31,110	30,913	32,651	31,633
Capex to sales (%)										
Bharti	55.5	42.4	31.7	22.8	16.6	13.9	11.8	10.2	8.8	8.6
Hutch	27.5	60.0	32.0	24.0	18.0	15.0	13.0	12.0	11.0	10.5

Source : Citigroup Investment Research estimates.

We are positive on the stock for three reasons

1. Indian prospects look good, with imminent IPO driving sentiment

- India is our favorite wireless market in the region. Subscriber growth is just starting to take off. We believe subscriber growth estimates continue to have upside bias.
- Management has not committed to a timetable for the Hutch Essar IPO. With the shareholding structure for Hutch Essar now FDI compliant, it nevertheless looks likely. As we believe expectations about an IPO are priced into HTIL's stock (given HTIL's indication that only 10% of Hutch Essar will be floated), further delays would likely disappoint and offer an entry opportunity.
- Our NAV estimate is based on an end-2006E DCF estimate. Moving the base a year ahead, we see equity value (end-2007) rising to US$13.8bn. This implies HK$13.84 for HTIL's 61.88% stake and drives our overall NAV estimate up to HK$17.22.

2. Value accretion in Indonesia and Vietnam on a 2-3 year view

We are incorporating no value for the businesses in Indonesia and Vietnam, as the operations are not due for launch until 2H this year. Given low penetration rates in both countries, we would need to see more signs of execution and think value will likely emerge over the next 2-3 years.

3. An interested acquirer in Orascom lends good stock price support

Orascom Telecom acquired a 19.3% stake in HTIL (from HWL) at HK$11 per HTIL share in December 2005. Orascom has a conditional right to purchase an additional 3.7% interest in HTIL (from HWL) over the next 12 months at a price not less than HK$11 per share. We think Orascom remains interested in enhancing its stake. However, how and when this happens, and whether HWL wants to sell down its stake further remains unclear.

Changes to assumptions in India

We have outlined our revised estimates for Hutch-Essar (see the two figures overleaf) and highlight the following points:

- Full-year results revealed one important feature: payment for the BPL assets was reflected in the 2005 accounts and assets were recognized as prepayments pending completion of the deal. In line with earlier indications, the acquisition was equity-financed at the Hutch Essar level. Debt associated with the assets will only be reflected upon consolidation of the assets (BPL Circles effective 2 January 2006; BPL Mobile post regulatory approvals, which we think will happen in 2H).
- Our revenue, EBITDA and net profit estimates for Hutch Essar are up 8-30% over 2006-08. We have also materially revised up our capex estimates to incorporate higher subscriber growth. We expect cumulative capex of US$3.2bn over 2006-08 (versus US$2.1bn earlier).
- Pending more detail on BPL asset accounts following realignment with HTIL's accounting policies, our estimates remain subject to review.
- We incorporate modest yoy EBITDA margin expansion for 2006 taking into account integration costs of the BPL assets and start-up losses for the seven new circles. Recall that costs associated with the re-branding exercise in India took off 100bps from full-year margins in 2005.

Indian Wireless and Hutch Essar: Subscriber Forecast Changes

Year to December	2004	2005	2006E	2007E	2008E
India cellsubs (m)	49.0	77.6	135.4	193.8	248.6
Penetration (%)	4.4	7.4	12.0	16.8	21.2
Hutch - market share (%)	14.6	14.7	18.6	18.8	19.0
Hutch Essar: Subs (YE. Mills)					
Contract	2.14	2.54	4.78	6.48	8.08
Prepaid	5.02	8.88	20.41	30.01	39.03
Total subs (Mills)	**7.16**	**11.41**	**25.19**	**36.49**	**47.11**
% pre-paid	*70.2*	*77.8*	*81.0*	*82.2*	*82.9*
ARPU (INR)					
Contract ARPU (INR)	1,354	1,147	986	888	826
Change YoY (%)	*–29.9*	*–15.3*	*–14.0*	*–10.0*	*–7.0*
Prepaid ARPU (INR)	326	312	285	260	242
Change YoY (%)	*–17.9*	*–4.3*	*–8.5*	*–9.0*	*–7.0*
Blended ARPU (INR)	604	522	427	374	343
Change YoY (%)	*–24.2*	*–13.5*	*–18.3*	*–12.2*	*–8.3*

Source: Company, Citigroup Investment Research estimates.

Hutch Essar: Financial Snapshot (Rs in Millions)

Financial snapshot (INRm)	2004	2005	2006E	2007E	2008E
Contract revenues	25,422	30,605	41,315	56,200	66,855
Pre-paid revenues	16,072	26,025	53,189	83,162	104,874
Total Revenues	**41,494**	**56,630**	**94,505**	**139,362**	**171,729**
EBITDA	**12,876**	**18,339**	**32,510**	**50,867**	**65,257**
EBITDA margin (%)	*31.0*	*32.4*	*34.4*	*36.5*	*38.0*
Depr and amortization	–5,013	–4,516	–8,463	–13,853	–17,189
EBIT (INRm)	7,863	13,823	24,046	37,014	48,069
Net interest expenses	–1,901	–2,205	–4,638	–6,241	–6,031
Profit before taxes	5,962	11,618	19,408	30,773	42,037
Current taxes	–614	–929	–1,553	–2,462	–3,363
Deferred taxes	–1,130	–581	–970	–1,539	–2,102
Profit after taxes	4,218	10,107	16,885	26,773	36,573
(Less) Minorities	–2,683	–5,286	–7,398	–11,731	–16,025
Profit attr to S/Hs (at HTIL level)	**1,535**	**4,821**	**9,487**	**15,042**	**20,548**
Capital expenditure	14,410	15,545	56,703	44,596	41,215
Capex to sales (%)	34.7	27.5	60.0	32.0	24.0
Total third-party debt (INR m)	29,846	33,159	87,159	91,159	81,159

Source: Company, Citigroup Investment Research estimates.

Earnings changes, target price revision

Largely because of higher estimates at the Indian operations, we raise our consolidated EPS estimates 97%, 36% and 38% for 2006-08, respectively (low base effect in 2006). Our EBITDA estimates are up 9%, 15% and 21% for the three years. As outlined earlier, these earnings changes drive a higher sum-of-the-parts value of HK$15.68, which we round up for a target price of HK$16.00.

Investment thesis

Our rating on HTIL is Hold/Medium Risk (2M) with a sum-of-the-parts driven target price of HK$16.00. In our view, the group's Indian assets (61.9% stake in Hutch-Essar) represent the single largest value driver at this stage. The group's recent M&A initiatives have led to the successful structuring of an all-India footprint and rank it #2 by market share. We believe this gives HTIL increased credibility as an alternative choice for exposure to the strong growth potential in the Indian wireless sector (our preferred wireless market in the region). Given HTIL's diverse range of assets (telecoms assets and operations in eight countries), we think NAV break-up better reflects the company's valuation than conventional metrics at this stage.

Valuation

Given the diverse range of assets in HTIL, we believe a sum-of-the-parts (SoP) analysis is best suited to value the company. There are three principal parts to our SoP analysis: (1) Partner (Israel) is listed and hence provides the clearest and simplest indicator to the value of HTIL's stake; (2) Hutch-Essar and the fixed line and mobile businesses in HK are the three significant unlisted parts. We value these on a fundamental DCF basis and check their valuations based on peer group trading multiples; and (3) outstanding shareholder loans to the operating companies.

As outlined in the figure below, we estimate NAV at HK$15.68/share, which we round out to our target price of HK$16.00. Our target price does not incorporate any holding company discount for two reasons. (1) Start-up of the Indonesian and Vietnamese operations is not in our estimates or NAV. We believe these would be earnings dilutive in the short term, but potentially (modestly) NAV accretive on longer-term DCF. (2) In the run-up to an IPO of Hutch Essar in India, we see positive stock sentiment for the stock, possibly supporting a modest premium to estimated NAV.

HTIL: Sum-of-the-Parts Valuation

	Tot eq. Val (US$m)	HTIL stake (%)	Stake value (US$m)	Stake value (HK$m)	Value/share (HK$)	Value/HTIL sh (HK$)
Partner Communications	1,280	52.5	672	5,208	1.10	Listed, based on market price
HGCH, Hong Kong	1,156	100.0	1,156	8,955	1.88	2006E end DCF estimate (WACC-10.0%; g=5%)
Mobile, Hong Kong	598	70.9	424	3,287	0.69	2006E end DCF estimate (WACC-10.2%; g =5%)
Hutch Essar India	12,200	61.9	7,550	58,510	12.31	2006E end DCF estimate (WACC-11.4%; g =4.0%)
Hutch CAT Thailand	0	66.5	0	0	0.00	Struggling to reach scale; high debt levels as well
Others (SL, Ghana, Vietnam, Indonesia)	0	50–100	0	0	0.00	Small or stating operation in 2006
Total value of equity stakes (1)			**9,801**	**75,960**	**15.98**	
HTIL debt to operating companies						
Mobile Hong Kong	NA	NA	266	2,062	0.43	Loan, repayable on demand
Parent Level Debt	NA	NA	–449	–3,489	–0.73	
Total value of debt (2)	**NA**	**NA**	**–183**	**–1,427**	**–0.30**	
Net asset value (1+2)			**9,619**	**74,533**	**15.68**	4752.5m shares outstanding

Source: Companies, Citigroup Investment Research estimates.

Risks

Given HTIL's loss-making status and imminent start-up businesses in Indonesia and Vietnam, we rate HTIL Medium Risk, although our quantitative risk-rating system, which tracks 260-day historical share price volatility, indicates a Low Risk rating.

The following risk factors could impede the stock from reaching our target price:

- HTIL is loss making with high debt and off-balance-sheet liabilities. The company does not intend to pay dividends in the foreseeable future.

- Strong competition. All of the company's various subsidiaries operate in competitive markets (Hong Kong, India, Thailand, and Israel), and the initiatives to grab market share by HTIL or the competition in these markets could rapidly alter the pricing environment and market equilibrium. In such markets, there is always the risk of adverse effects on profitability and cash flow for the operators. In addition, the 3G-business model in Hong Kong is still unproven in the telecoms industry. In the absence of any datapoints to persuade us otherwise, we remain cautious on 3G. We see a large impact on profitability from 3G rollout costs and SACs in the medium term, though SAC amortization would boost reported numbers a bit.
- Regulatory and policy restrictions in various markets. We note current policy and regulations limiting foreign shareholdings in India and Thailand to 74% and 50%, respectively. In Thailand, the NTC continues to pursue a telecom sector reform agenda, the final consequences of which are still unclear. In Israel, Partner's telecoms license imposes ownership restrictions, which if breached, could lead to loss of the license.

Conversely, if any of these risk factors has a significantly lower impact than we anticipate, the shares could rise above our target price.

HTIL — Consolidated Income Statement 2004-08E (HK Dollars in Millions)

Year to December	2004	2005	2006E	2007E	2008E
Hong Kong mobile (incl Macau)	3,714	3,837	3,953	4,071	4,085
Hong Kong fixed line	1,870	2,204	2,404	2,567	2,696
India	7,093	9,996	16,681	24,599	30,312
Thailand	1,219	1,045	1,083	1,153	1,232
Israel	–	6,612	8,442	8,475	8,667
Indon and Vietnam		–	30	429	970
Others	949	662	728	801	881
Total revenues	**14,845**	**24,356**	**33,322**	**42,096**	**48,844**
EBITDA - consolidated subsidiaries					
Hong Kong mobile (incl Macau)	362	769	1,165	1,069	1,341
Hong Kong fixed line	670	696	781	873	944
India	2,201	3,237	5,738	8,979	11,519
Thailand	–233	–15	130	231	333
Israel	–	1,981	2,786	2,966	3,033
Indon and Vietnam		–	–67	–643	–339
Others	–27	–218	–182	–120	–70
Total EBITDA - consol subsidiaries	**2,973**	**6,450**	**10,351**	**13,355**	**16,760**
% share of associates' EBITDA	1,181	302	–	–	–
EBITDA (incl associates)	**4,154**	**6,752**	**10,351**	**13,355**	**16,760**
Depr and amortisation					
Hong Kong mobile (incl Macau)	–886	–1,189	–1,231	–1,063	–1,003
Hong Kong fixed line	–476	–618	–468	–446	–439
India	–857	–797	–1,494	–2,445	–3,034
Thailand	–846	–529	–498	–377	–349
Israel	–	–1,149	–1,820	–1,783	–1,787
Indon and Vietnam		–	–98	–279	–355
Others	–52	–85	–107	–115	–125
Total depr and amort	–3,117	–4,367	–5,715	–6,508	–7,092
Associate depreciation	–428	–216	–	–	–
EBIT/Operating profit					
Hong Kong mobile (incl Macau)	–524	–420	–66	7	339
Hong Kong fixed line	194	78	313	427	505
India	1,344	2,440	4,245	6,534	8,485
Thailand	–1,079	–544	–368	–146	–17
Israel	–	832	966	1,183	1,247
Indon and Vietnam		–	–165	–922	–694
Others	–79	–303	–289	–236	–195
Total EBIT	**–144**	**2,083**	**4,636**	**6,847**	**9,668**
Share of associate/JV earnings	338	86	–	–	–
Net interest expenses and others	–1,015	–1,604	–1,712	–1,978	–2,006
Extraordinary profits/(losses)	1,246	–281	–	–	–
Profit before taxes and MI	425	284	2,925	4,869	7,662
Current taxes	–105	–229	–333	–553	–755
Deferred taxes	–80	–205	–504	–618	–740
Profit after taxes	240	–150	2,088	3,698	6,167
Minorities	–270	–618	–1,413	–2,019	–2,979
Net profit to shareholders	**–30**	**–768**	**675**	**1,679**	**3,188**
EPS (HK$)	**–0.007**	**–0.166**	**0.142**	**0.353**	**0.671**
DPS (HK$)	**–**	**–**	**–**	**–**	**–**
Payout ratio (%)	0.0	0.0	0.0	0.0	0.0

Source: Company, Citigroup Investment Research estimates.

HTIL — Consolidated Balance Sheet, 2004-08E (HK Dollars in Millions)

Year to December	2004	2005	2006E	2007E	2008E
Fixed Assets	20,228	24,591	37,893	44,795	49,822
Intangibles (incl G'will)	6,139	9,688	16,366	15,572	14,777
Deferred tax assets	844	918	1,974	1,954	1,907
Ass and JVs	1,846	2	1,417	1,417	1,417
Amounts due from rel cos	–	–	–	–	–
Long term deposits	79	416	93	93	93
Other non-current assets	5,261	10,833	5,333	5,035	4,753
Cash and equivalents	2,102	2,436	3,106	3,451	5,970
Restricted cash	10	1	27	27	27
Other CA	4,211	10,706	6,419	6,678	6,894
Total CA	6,323	13,143	9,551	10,156	12,891
Total Assets	**40,720**	**59,591**	**72,627**	**79,022**	**85,659**
Bank Loans	12,281	7,677	3,308	3,309	3,310
Other loans	1,316	11	802	802	802
Debentures	247	2	212	212	212
Other CL	6,852	10,781	7,210	6,955	6,744
Total CL	20,696	18,471	11,532	11,278	11,068
Long term loans	3,582	19,002	31,222	32,828	32,351
Amounts due to rel cos	–	–	–	–	–
Deferred tax liabilities	148	963	847	1,446	2,139
Pension obligations	–	–	215	215	215
Minority interests	1,036	3,652	5,637	7,678	10,577
Share Capital	1,125	1,188	1,188	1,188	1,188
Reserves	12,705	14,982	19,314	22,378	26,771
Exchange Reserve	–	–	–	–	–
Shareholders' funds	13,830	16,170	20,502	23,566	27,959
Total liabilities	**40,720**	**59,591**	**72,627**	**79,022**	**85,659**

Source: Company, Citigroup Investment Research estimates.

HTIL — Consolidated Cash Flow Statement, 2004-08E (HK Dollars in Millions)

Year to December	2004	2005	2006E	2007E	2008E
Profit before taxation	425	284	2,925	4,869	7,662
Interest and other finance costs	1,015	1,604	1,712	1,978	2,006
Dep and amort	3,117	4,367	5,715	6,508	7,092
Depr and amort - associates	428	216	–	–	–
Operating profit before D&A	5,346	6,471	10,351	13,355	16,760
Share of associates oper profit bef D&A	–1,181	–302	–	–	–
Stake disposal gains	–1,300	–	–	–	–
Int and other fin costs	–892	–883	–1,254	–1,619	–1,711
Taxes paid	–82	–217	–333	–553	–755
Change in working capital	35	–500	–192	–252	–157
Others	318	708	1,220	–467	–350
Operating cash flow	**2,244**	**5,277**	**9,793**	**10,464**	**13,787**
Capex	–5,387	–4,146	–13,494	–11,769	–10,528
Stake acquisitions	1,647	–4,041	–	–	–
Additions to sub acq costs	–728	–546	–429	–307	–263
Others	48	–1,029	–	–	–
Investing cash Flow	**–4,420**	**–9,762**	**–13,923**	**–12,076**	**–10,791**
Equity issuance/ buybacks	–	1,869	–	–	–
Dividends	–	–	–	–	–
Debt increase/(decrease)	3,802	2,125	4,449	1,607	–476
Amounts due to related cos	–1,513	–	–	–	–
Others	–4	825	350	350	–
Financing cash Flow	**2,285**	**4,819**	**4,799**	**1,957**	**–476**
Incr/(Decr) in cash	**109**	**334**	**669**	**345**	**2,519**
Cash - YB	**1,993**	**2,102**	**2,436**	**3,105**	**3,450**
Cash - YE	**2,102**	**2,436**	**3,105**	**3,450**	**5,969**

Source: Company, Citigroup Investment Research estimates.

HTIL — Key Valuation Metrics, 2004-08E

Year to 31 Dec	2004	2005E	2006E	2007E	2008E
P/E (x)	NM	NM	102.1x	41.0x	21.6x
P/CEPS (x)	35.4x	17.3x	10.8x	8.4x	6.7x
EV/EBITDA (x)	24.3x	14.3x	9.8x	7.7x	5.9x
Price to book (x)	4.7x	4.3x	3.4x	2.9x	2.5x
Price to sales (x)	4.4x	2.8x	2.1x	1.6x	1.4x
Price to EBITDA (x)	19.7x	10.5x	6.7x	5.2x	4.1x
Price to FCF (x)	NM	NM	NM	NM	16.5x
FCF yield (%)	NM	NM	NM	NM	6.1%
Dividend yield (%)	0.0	0.0	0.0	0.0	0.0
EV/invested capital (x)	2.7x	2.1x	1.7x	1.6x	1.4x
Net debt/EBITDA	4.55	3.71	3.11	2.51	1.82
Net debt to equity (%)	109.0	150.0	157.2	142.1	109.1
Total debt to equity (%)	124.2	165.1	172.3	156.7	130.4
Net debt to capital (%)	50.4	55.0	55.2	51.7	44.2
Total debt to capital (%)	57.4	60.6	60.5	57.1	52.8
EBITDA/interest expense (x)	2.9x	4.0x	6.0x	6.8x	8.4x
RoE (%)	–9.2	–3.0	3.3	7.1	11.4
RoIC (%)	–0.3	–2.5	5.7	8.0	11.3
RoIC-WACC (%)	–10.3	–12.5	–4.3	–2.0	1.3
RoA (%)	–0.4	3.5	6.4	8.7	11.3
Capex to sales (%)	36.3	17.0	40.5	28.0	21.6
Capex to EBITDA (%)	181.2	64.3	130.4	88.1	62.8
Depr to capex (%)	57.9	105.3	42.4	55.3	67.4

Source: Company, Citigroup Investment Research estimates.

BUY (1)
Medium Risk (M)

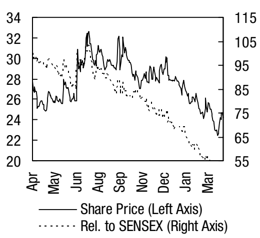
INDIA

Ronie Ganguly, CFA
+91-22-5631-9887
ronie.ganguly@citigroup.com
Mumbai

Anand Ramachandran, CFA
+852-2501-2448
anand.ramachandran@citigroup.com
Hong Kong

Note Released:	13 Apr 2006
Recommendation	
Rating:	1M
Target Price :	Rs32
Expected Share Price Return	35.9%
Expected Dividend Yield	0%
Expected Total Return	35.9%

Market Data	
RIC:	TTML.BO
Price (12 Apr):	Rs23.55
52-Wk Hi/Lo:	Rs33.65/Rs22.20
Market Cap. (Mils.):	Rs38658/ US$855
Shares Outst. (Mils.):	1641.53



Source: Datastream.

Performance (%):

	3M	6M	12M
Absolute	–4.7	–7.3	–14.6
Relative	–16.1	–27.6	–43.4

Source: Datastream.

Tata Teleservices (Maharashtra) Ltd

Underperforming stock but improving fundamentals

Summary

➤ **Upgrading TTML to Buy from Hold** and raising target price 7% to Rs32 given greater clarity on operational turnaround and more attractive valuations.

➤ **Switch from MTNL (Sell; ETR -48%) into TTML (ETR +36%).** MTNL has risen 56% in the past 6 months, while TTML has underperformed 14%. We believe TTML has much stronger growth, although both companies have similar coverage and are proxies for pan-India exposure. Ex-cash, TTML is 28% cheaper on FY08E EV/EBITDA and 33% on EV/Subs.

➤ **Visibility on operational turnaround:** TTML has achieved steady growth in the mobile segment, accounting for 14% of wireless additions over the past 5 months (since launch of "lifetime prepaid" offer). TTML should reach break-even on cash earnings by 1Q FY07 and profit after tax in FY08, one year ahead of our prior expectation.

➤ **Competition-related risk:** Key downside risks in our view are fierce competition-led pricing pressure in the Mumbai and Maharashtra markets and equity dilution from fresh capital raising.

Statistical Abstract

Year end March	Net Profit (Rs Mils.)	EPS (Rs)	Revenue (Rs Mils.)	Revenue Growth (%)	EBITDA (Rs Mils.)	EV / EBITDA (x)
2004	(2,697)	(1.9)	5,975	66.2%	547	NM
2005	(5,279)	(3.5)	8,075	35.1%	(661)	NM
2006E	(5,141)	(3.4)	10,989	36.1%	1,098	58.6
2007E	(2,654)	(1.6)	16,579	50.9%	3,916	13.1
2008E	53	0.0	22,282	34.4%	6,786	7.8

Source: Company, Citigroup Investment Research estimates.

Change in Estimates

	Sales (Rs Mils)		Diluted EPS (Rs.)			EBITDA (Rs. Mils)	
	Old	New	Old	New	% Chg	Old	New
2006E	10,914	10,989	–3.5	–3.4	–4.72	1,090	1,098
2007E	16,138	16,579	–2.4	–1.6	–31.95	3,653	3,916
2008E	21,494	22,282	–1.0	0.0	–103.13	6,276	6,786

Source: Citigroup Investment Research estimates

Key points

We upgrade Tata Tele to Buy/Medium Risk from Hold/Medium Risk in view of its operational turnaround. The company has improved its coverage and product offerings. As subscriber additions pick up, we believe operating leverage will surprise on the upside. We estimate TTML will be profit after tax (PAT) positive in FY08, one year ahead of our previous estimates.

We value TTML using: 1) DCF and 2) 9x FY08E EV/EBITDA. Our target price rises to Rs32 from Rs30. Recent underperformance of the stock offers an attractive opportunity to buy the stock, in our view. Compared with MTNL (MTNL.BO; price: Rs196.10; target Rs97), a peer in terms of coverage, we believe TTML is much cheaper with better growth prospects. We recommend switching out of MTNL and into TTML at these levels.

We expect the company will deliver strong financials in 4Q06 and 1H07, which should drive the stock. Additionally, we believe news flow about a merger with TTSL would likely increase as TTML turns operationally profitable

Improving coverage

Tata Tele has been investing rapidly to boost coverage to match the leaders in India's wireless market. As a late starter, Tata Tele has caught up quickly over the past 12 months with rollouts giving it coverage of nearly 2,000 towns. TTML covers over 150 towns in Maharashtra, which matches the market leaders.

Product innovation is encouraging

Though Tata Tele has been the last to ramp up wireless operations, it has been able to create a clear brand proposition, in our view. The focus of the brand is on "honest" tariffs with no hidden costs. The company has increased handset options and provides pre-activated domestic roaming to subscribers. Besides having launched prepaid FWTs that are used to promote Public Call Offices (PCO), TTML has also tied up with other Tata companies to launch co-branded products.

Strong subscriber numbers

We have noticed a slow but clear uptrend in the company's subscriber growth. Despite high volatility in monthly reported numbers, TTML has increased net adds by 3-6x since the beginning of the year.

We believe TTML will be able to garner 12-15% wireless net additions in the Mumbai and Maharashtra circles in the next two years, thereby taking overall market share to beyond 10%. We think these estimates have upside potential.

TTML's Share of Net Additions in Mumbai and Maharashtra

	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06
Mumbai net adds	101,455	83,909	106,142	112,362	187,136	145,453	270,527	244,000	261,937	270,906	308,408	240,506
TTML net adds	6,099	6,168	3,347	10,440	16,677	–11,411	37,076	66,303	38,730	29,544	17,527	34,013
TTML % of net adds	6.0	7.4	3.2	9.3	8.9	–7.8	13.7	27.2	14.8	10.9	5.7	14.1
Maharashtra net adds	199,717	183,881	162,326	150,934	160,238	59,223	159,578	180,849	263,757	293,868	161,900	400,582
TTML net adds	10,958	5,969	10,807	15,482	18,323	26,457	42,249	56,428	33,631	20,990	15,057	29,854
TTML % of net adds	5.5	3.2	6.7	10.3	11.4	44.7	26.5	31.2	12.8	7.1	9.3	7.5
Mumbai+ Maharashtra net adds	301,172	267,790	268,468	263,296	347,374	204,676	430,105	424,849	525,694	564,774	470,308	641,088
TTML net adds	17,057	12,137	14,154	25,922	35,000	15,046	79,325	122,731	72,361	50,534	32,584	63,867
TTML % of net adds	5.7	4.5	5.3	9.8	10.1	7.4	18.4	28.9	13.8	8.9	6.9	10.0

Source: COAI, AUSPI.

TTML Subscriber Addition Projections

	FY04	FY05	FY06E	FY07E	FY08E	FY09E
Mumbai net adds	31,040	1,437,811	2,332,741	2,265,469	1,990,420	1,783,641
TTML net adds	–3,577	37,627	254,513	317,166	318,467	285,383
TTML % of net adds	–11.5	2.6	10.9	14.0	16.0	16.0
Maharashtra net adds	132,468	1,260,187	2,376,853	5,503,603	6,171,729	5,482,253
TTML net adds	8,654	67,700	286,205	715,468	864,042	767,515
TTML % of net adds	6.5	5.4	12.0	13.0	14.0	14.0
Mumbai+ Maharashtra net adds	163,508	2,697,998	4,709,594	7,769,071	8,162,149	7,265,894
TTML net adds	5,077	105,327	540,718	1,032,634	1,182,509	1,052,898
TTML % of net adds	3.1	3.9	11.5	13.3	14.5	14.5

Source: COAI, AUSPI, Citigroup Investment Research estimates.

Processes are in place

TTML enjoys economies of scale in procurement of equipment, as it shares vendors with TTSL, as well as certain infrastructure and operational processes such as billing platform and in platforms. Moreover, they have a common marketing program under the "*Tata Indicom*" brand. With VSNL the company shares infrastructure. TTML offers integrated services to corporates and has been able to streamline its products and processes to leverage growth in subscriber additions.

Funding is partly fulfilled

Following completion of the rights issue, the company would have partly achieved the funding requirement for its expansion in FY07. TTML aims to issue two shares for every 25 shares held to raise Rs1.2bn. It has gained approval for another FCCB issue, but we do not factor this into our estimates. We factor in debt issuance for the company's expansion requirements, and would review this when there is more clarity on the capital raising. We estimate capex of Rs9bn for the next two years for its growth requirements.

Operating leverage to improve financials

As TTML improves its market share, we believe operating leverage will improve as roaming revenue kicks in for the full year, given that it has pre-activated roaming on the TTSL network. Handset subsidies will likely fall as well as CDMA handset manufacturers lower handset prices.

We forecast the EBITDA margin will rise from 9.7% in FY06 to c30% in FY08, similar to RCVL over the past 12 months. TTML has already set up coverage in over 150 towns, so we expect profitability will improve significantly as the network gets loaded. The company also benefits from the sharing of marketing and administrative expenses with TTSL.

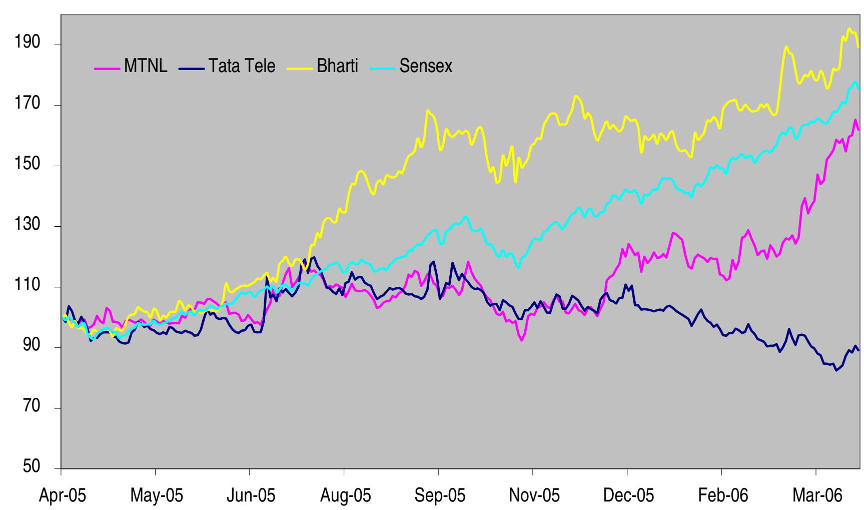
Change in Estimates

	Sales (Rs Mils)		Diluted EPS (Rs.)			EBITDA (Rs. Mils)	
	Old	New	Old	New	% Chg	Old	New
2006E	10,397	10,989	–3.6	–3.4	–4.72	668	1,098
2007E	15,805	16,579	–2.4	–1.6	–31.95	3,531	3,916
2008E	21,026	22,282	–1.0	0.0	–103.13	6,283	6,786

Source: Citigroup Investment Research estimates

Stock underperformance presents an opportunity

Share Price of Tata Tele Compared With Bharti, MTNL and the SENSEX



Source: Citigroup Investment Research.

TTML has been one of the few stocks in India that have underperformed in absolute terms over the past 6 months. While we appreciate that the concerns were real, we are seeing more and more signs that these concerns are dissipating. Operational fundamentals have improved and the valuation looks more attractive.

Merger news with TTSL building

The Chairman Mr. Ratan Tata has stated that TTML and TTSL will be merged over time. We believe that such a move is unlikely until both entities turn operationally profitable. Similar to our estimates for TTML, where we brought up our PAT positive year from FY09 to FY08, we expect TTSL will also benefit from better operating leverage. In addition, the two factors limiting TTSL's profitability in the past – bad debts and handset subsidies – have shrunk considerably. As TTSL approaches profitability, we think the likelihood of the two entities merging in the next year will likely gather steam. In our view, news of a potential merger would be a positive catalyst for the stock, as it would become a pan-India wireless proxy.

We recommend switching from MTNL

TTML and MTNL have a similar scale of operations (2 circles each) as well as offer a similar value proposition in the wireless segment – the lowest tariff with no hidden charges. Both could possibility merge with their parent/sister company (TTSL and BSNL, respectively), which would transform them into pan-India players. As such, we think it is more relevant to compare TTML with MTNL than with pan-India integrated players such as Bharti and RCVL.

The table below shows our comparison of TTML and MTNL. We make our calculation using market cap and gross debt, ex-cash considering that the cash on MTNL's books is unlikely to be returned to investors in the medium term.

Comparison of TTML and MTNL

	TTML	MTNL	Comments
Areas of operation	Mumbai and Maharashtra	Mumbai and Delhi	Delhi has 40% penetration, Maharashtra has 6% penetration
Fixed+FWT subs FY08 end	2.2	3.2	MTNL is losing fixed line subs to TTML's FWT business
Mobile subs FY08 end	3.0	3.0	Similar growth in wireless space - low price high value proposition for both
Total subs FY08 end	5.2	6.2	MTNL remains 20% larger in size, fixed line offers BB possibilities
Revenue FY08	23,250	49,390	CIR estimate, conservative ARPU proj for TTML
EBITDA FY08	7,208	9,306	High fixed operating costs for MTNL
Current market cap	39,362	119,700	
Current gross debt	27,379	-	Ex-cash, as we are skeptical of MTNL's cash being returned to investors
Current EV ex cash	66,741	119,700	MTNL has a 2x EV of TTML
EV / FY08 subs	284	427	
EV / FY08 EBITDA	9.3	12.9	
Management	Tata Group owns 65%	GoI owns 56%	TTML has well run management
Current scale benefits	Procurement, marketing and operational processes like billing with TTSL	Separate processes –little synergy with BSNL	TTML has better scale synergies
Consolidation chances	Chairman has spoken about merger of Group's telecom ventures	Press reports of merger with BSNL	Both companies are talked about as pan India telco proxy, operationally it would be easier for TTML

Source: Citigroup Investment Research estimates

At current prices, the valuation differential between MTNL and TTML is significant. We believe the growth prospects of TTML are much better and that it would be easier operationally to merge TTSL and TTML than BSNL and MTNL (given employee-related issues). Thus, we recommend switching from MTNL into TTML.

Investment thesis

We believe TTML has improved on execution considerably in the intensely competitive markets of Mumbai and Maharashtra. It has increased its coverage significantly, stepped up marketing, introduced innovative mobile products and garnered about 12% of net adds in the past 6 months. Fixed wireless offtake has been surprisingly strong as TTML has been able to churn subscribers away from incumbents MTNL and BSNL with a strong product offering and better customer service.

The stock has underperformed 14% in the past 6 months. We believe the market is too cautious on the company's prospects. We believe TTML will reach break-even on cash earnings by 1Q FY07 and profit after tax in FY08, one year ahead of our prior expectation. We think recent underperformance offers a good entry point for exposure to the company's fundamental turnaround. We upgrade our rating to Buy and raise our target price to Rs32.

Valuation

We value Tata Tele using a DCF methodology, given the back-end nature of its cash flow and profitability. Our 12-month forward DCF value comes to Rs33. Our calculations use explicit cash flow till FY16 (10 years) and terminal growth of 4.5% (implying a terminal EV/EBITDA of 6.8x). We use WACC of 13.2%, which factors in a risk-free rate of 7%, a risk premium of 7%, beta of 1.1 (source: Bloomberg and our quantitative team), cost of debt of 7.5%, debt/capital ratio of 15% and marginal tax of 33.6%. We assume TTML has higher costs and equity than Bharti.

Alternatively, we value Tata Tele using a FY08E EV/EBITDA multiple of 9x, which translates into fair value of Rs31. Note that we believe FY06 and FY07 multiples are not relevant, as growth is at a nascent stage. While 9x is a high multiple, we consider it reasonable given our expectation of a 164% CAGR in EBITDA in FY06-09E. Also this is around a 20% discount to the target multiple we use for RCVL and the implied multiple for Bharti.

Based on the average of these two estimates, we value the stock at Rs32/share. This implies an expected total return of 36% from current levels.

Risks

Our quantitative risk-rating system, which tracks the share price volatility of the last 260 days, rates Tata Tele Medium Risk.

Disappointment on the number of subscribers and financials could be a negative trigger for the stock. Also, the company will require significant funds to expand. Any plans that significantly dilute the share base would likely be received negatively by the market.

Competition in Mumbai and Maharashtra could also increase as the ownership issue with Idea is sorted out and BSNL sets up fresh capacity in these markets.

Income Statement, FY04-FY08E (Rupees in Million)

Profit & Loss	2004	2005	2006E	2007E	2008E
Telecom Services	**5,975**	**8,075**	**10,989**	**16,579**	**22,282**
Interconnection/Access Costs	–2,464	–2,931	–3,846	–5,637	–7,464
Network Operation Costs	–1,065	–1,114	–1,484	–2,155	–2,897
Employee Costs	–397	–414	–517	–610	–671
G&A expenses	–1,628	–1,667	–2,334	–2,474	–2,622
Marketing and promotion	–425	–2,900	–1,740	–1,845	–1,937
Total Expenditure	**–5,979**	**–9,026**	**–9,921**	**–12,721**	**–15,591**
Operating profit	–4	–951	1,068	3,858	6,690
Other Income	551	290	30	57	95
EBITDA	**547**	**–661**	**1,098**	**3,916**	**6,786**
Financial Charges	–1,218	–1,447	–1,602	–1,284	–1,042
Depreciation	–2,025	–3,170	–4,638	–5,286	–5,685
PBT	**–2,697**	**–5,279**	**–5,141**	**–2,654**	**59**
Provision for Income Tax	–	–	–	–	–6
PAT	**–2,697**	**–5,279**	**–5,141**	**–2,654**	**53**

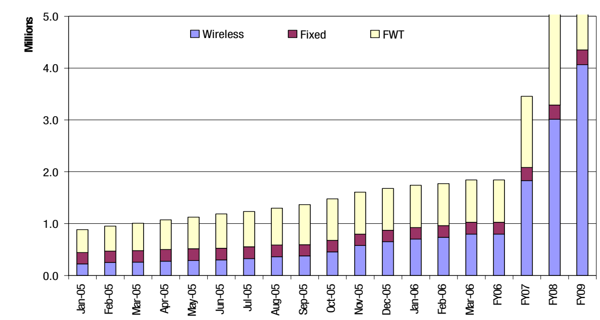
Balance Sheet, FY04-FY08E (Rupees in Million)

Balance sheet	2004	2005	2006E	2007E	2008E
Investments	450	–	–	–	–
Cash and Bank Balances	615	820	875	1,765	2,953
Sundry Debtors	2,213	1,423	1,832	2,533	3,404
Loans and Advances	884	1,423	2,137	2,303	3,095
Current Assets	3,711	3,666	4,844	6,601	9,452
Net Block	**18,002**	**22,520**	**25,696**	**28,220**	**29,994**
CWIP	3,150	2,404	2,404	2,404	2,404
Miscellaneous Expenditure	–	–	–	–	–
Profit and Loss Account	11,645	16,924	22,065	24,719	24,665
Total Assets	36,957	45,513	55,008	61,944	66,515
Share Capital	14,070	14,910	15,029	16,232	16,232
Advance against Equity	–	–	–	–	–
Reserves and Surplus	1,147	1,577	1,577	19,612	19,612
Shareholder's Capital	**15,217**	**16,487**	**16,606**	**35,844**	**35,844**
Total Loans	14,785	18,379	27,379	13,379	16,379
Current Liabilities and Provisions	6,955	10,648	11,023	12,721	14,292
Total Liabilities	36,957	45,513	55,008	61,944	66,515

Cash Flow Statement, FY04-FY08E (Rupees in Million)

Cash Flow Statement	2004	2005	2006E	2007E	2008E
Operating cash flow	–4,310	5	–1,250	3,462	5,646
Capex	–4,108	–4,338	–7,814	–7,810	–7,458
Investments	118	–72	–	–	–
Investing cash flow	–3,990	–4,410	–7,814	–7,810	–7,458
Loans	7,674	5,616	9,000	–14,000	3,000
Equity	17	4	120	19,238	–
Financing Cash Flow	7,690	4,611	9,120	5,238	3,000
Change in Cash	–610	206	55	890	1,188

TTML Subscriber Base



Key Ratios, FY04-FY08E

Ratios	2004	2005	2006E	2007E	2008E
Growth (%)					
Revenue	66	35	36	51	34
EBITDA	NM	NM	NM	261	73
Profitability (%)					
EBITDA margin (%)	–0.1	–11.8	9.7	23.3	30.0
RoE (%)	–18	–32	–31	–7	0
RoA(%)	–5	–9	–6	–2	2
Gearing					
Net debt to capital(%)	48	52	61	24	27

Key Assumptions

Assumptions	2004	2005	2006E	2007E	2008E
Subscribers ('000)	**361**	**747**	**1,941**	**3,315**	**4,815**
Mobile	75	204	794	1,654	2,622
FWT	84	321	925	1,418	1,929
Fixed	202	222	223	244	265
ARPU (Rs)					
Mobile	450	425	340	299	281
FWT	900	675	621	584	560
Fixed	1900	1700	1615	1,421	1,251
Costs					
Marketing Cost / revenue (%)	7.1	35.9	15.8	11.1	8.7
Interconnection Cost/Revenue (%)	41.2	36.3	35.0	34.0	33.5
Balance Sheet					
Capex / Sales (%)	56.4	55.5	71.1	47.1	33.5
Net Debt	14,170	17,559	26,503	11,613	13,425

Source: Company, Citigroup Investment Research estimates.

Valuation and Risks — Other Companies

MTNL (MTNL.BO–Price: Rs196.10; Target Price Rs97; 3L)

Valuation

We value MTNL using DCF and P/E. We assume a risk-free rate of 7%, risk premium of 7%, beta of 0.93, and terminal growth of 3%. On P/E, we value MTNL at 9x FY06E P/E. MTNL has traded within 6-10x from April 2001 to October 2004, with an average P/E of 8.7x. Our target multiple of 9x is 10% below the median P/E of our regional telecom universe and 30% below the target BSE-Sensex multiple.

Risks

We rate MTNL Low Risk based on our quantitative risk-rating system. The upside risks to our target price include: (1) merger with BSNL; (2) refund of 80I(A); (3) continuing growth in mobile business; and (4) broadband business-related upside.

HOLD (2)
Medium Risk (M)

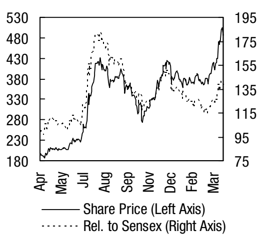
INDIA

Ronie Ganguly, CFA
+91-22-5631-9887
ronie.ganguly@citigroup.com
Mumbai

Anand Ramachandran, CFA
+852-2501-2448
anand.ramachandran@citigroup.com
Hong Kong

Note Released:	13 Apr 2006
Recommendation	
Rating:	2M
Target Price :	Rs530
Expected Share Price Return	17.2%
Expected Dividend Yield	1.0%
Expected Total Return	18.2%

Market Data	
RIC:	VSNL.BO
Price (12 Apr):	Rs452.25
52-Wk Hi/Lo:	Rs515.35/Rs180
Market Cap. (Mils.):	Rs128891/ US$2850
Shares Outst. (Mils.):	285



Source: Datastream.

Performance (%):

	3M	6M	12M
Absolute	10.0	43.2	151
Relative	–0.2	15.0	15.9

Source: Datastream.

Videsh Sanchar Nigam Ltd

Becoming cautious

Summary

- ➤ **Downgrading to Hold after recent run-up:** Our thesis of the business model changing from 'India voice' to global enterprise has played out. We think robust fundamentals are factored into the stock (up 43% in last 6 months).
- ➤ **Target raised 17% to Rs530** (55% from non-core ops). We raise core ops value to Rs289 (from Rs263), Tyco to Rs30 (from Rs20) on better fundamentals; TTSL investment and surplus land make up the rest.
- ➤ **Operational parameters remain strong:** The India voice business should benefit from reduction in license fee and lower ADC. Integration with Teleglobe is progressing. We expect the enterprise business will see robust volume growth as VSNL enters the SME space.
- ➤ **Concerns on competition and capex:** VSNL faces increasing competition from Reliance and global peers. NLD business is getting more competitive as license norms are made easier. Additionally, FY07 capex may be higher due to broadband investments and national fiber backbone.
- ➤ **Risks:** Sale of land could benefit the shares, but timing is key; also, improvement in global bandwidth pricing could improve sentiment. On the negative side: pricing pressure, regulatory changes and market decline.

Statistical Abstract

Year end March	Revenue (Rs. m)	Net Profit (Rs. m)	EBITDA (Rs. m)	EPS (Rs.)	EPS Growth (%)	P/E (x)	P/BV (x)	EV/EBITDA (x)	Div Yield (%)
2004E	31,635	3,777	5,810	13.6	–50	33.4	2.7	22.2	1.0
2005E	33,083	7,085	7,862	15.7	16	28.8	2.5	15.8	1.3
2006E	36,975	5,199	10,291	18.2	16	24.7	2.4	13.3	1.0
2007E	36,726	5,826	12,969	20.4	12	22.0	2.2	11.3	1.0
2008E	39,676	6,313	14,940	22.2	8	20.3	2.0	9.6	1.0

Source: Citigroup Investment Research estimates

Change in Estimates

	Sales (Rs Mils)		Diluted EPS (Rs.)			EBITDA (Rs. Mils)	
	Old	New	Old	New	% Chg	Old	New
2006E	35,230	36,975	17.7	18.2	3.1	10,077	10,291
2007E	36,498	36,726	19.5	20.4	5.1	12,428	12,969
2008E	38,879	39,676	24.2	22.2	–8.6	15,322	14,940

Source: Citigroup Investment Research estimates.

Key points

We downgrade VSNL to Hold/Medium Risk from Buy/Medium Risk. We have been strong proponents of the transformation in VSNL's business model – from an India voice player to a global carrier's carrier. Our thesis of VSNL emerging as a leading player in the enterprise segment appears to have played out. The stock is up 43% in the past six months and 151% in the past 12 months.

We believe the stock price factors in the company's new developments. We raise our sum-of-the-parts based target price from Rs450 to Rs530 to factor in higher value from investment in Tata Tele, land and improvement in the core business. Overall, we are cautious on current valuations. We revise up FY07 estimates by 5% due to better volume growth on the voice and enterprise side. However, we cut FY08 estimates by 9% on expectations of higher competition and margin pressure.

Business update

Integration of acquisitions on track

VSNL is now divided into three segments. 1) the voice division combines the operations of Teleglobe with the India voice business. Teleglobe with its service delivery capability and efficient routing system would aid the domestic business. 2) the Enterprise business is composed of the operations of Tyco, domestic enterprise business and parts of the Teleglobe business. 3) the retail division is responsible for broadband and internet operations.

The company looks on track to integrate the operations of the acquisitions into the parent company. We believe completion of the process will take 6-12 months.

Voice business to benefit from lower license fee and ADC

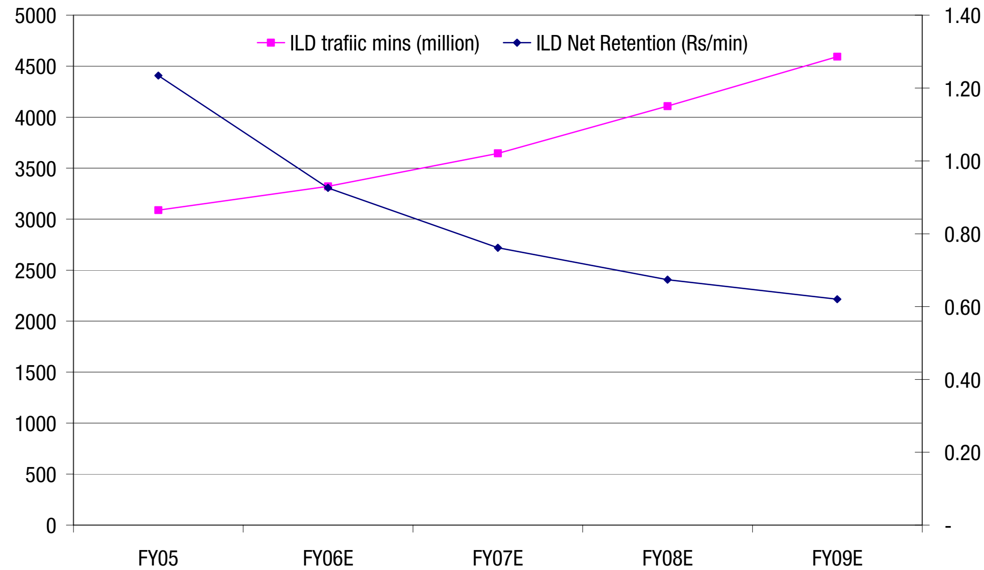
The voice business will benefit from the license fee reduction. We do not anticipate much of the net retention being passed on, as there is no direct interface with customers. The company has net realizations of around Rs0.8/min, which we expect will drop by 10-12% yoy.

We expect reduction in ADC charges will have two effects on VSNL: 1) lower gross revenues, although this doesn't mean anything for the operations. 2) On the volume front, reduction in ADC will make legal channels more competitive and result in migration of illegal minutes. Incoming ADC is still around 3c/min, which means rise in volume should be modest at best. However, as ADC is phased out over time there should be stronger volume growth for VSNL.

VSNL is looking to enter the international calling card business. RCVL has 0.5 million subscribers in this business generating ARPU of US$30. VSNL is considering several geographies to enter the calling card business.

Our concern with the long distance business is that reduction of license obligations will likely increase competition. We believe that although the key success ingredient is getting interconnect, which will take time, greater competition is nevertheless emerging.

VSNL – ILD Operating Parameters



Source: Citigroup Investment Research estimates.

Enterprise Business – Competition and regulatory risks

The Enterprise business faces strong competition from Reliance and Bharti. With Bharti getting capacity on SEA-ME-WE-4 and Reliance getting ready for the FALCON launch in the next 3-6 months, we anticipate price-based competition in this space to continue. Global majors such as BT looking for an India enterprise opportunity exacerbate the competitive problem.

The enterprise business also faces regulatory risk. Reliance earlier protested to TRAI about VSNL’s monopoly rights for landing stations in India and overcharging for usage. Recent media reports suggest that US trade organizations have also aired similar complaints. TRAI is looking into the issue. If TRAI implements a cost-based mechanism for sharing the facilities, VSNL would lose some of its competitive advantage.

Volume growth in the enterprise segment remains robust. Global offshoring and increased internet usage have been propelling growth. VSNL, Reliance and Bharti are looking to expand the market and provide services to the Small and Medium Enterprise (SME) segment.

Overall, volume growth remains robust but competition will start to put pressure on margins, in our view.

Retail broadband – Cable operator route

VSNL has around 65K broadband subscribers. These subs get broadband by using the cable operator’s right of way and having a revenue-share arrangement. We remain skeptical about the long-term growth prospects of this strategy, given the unorganized nature of the cable TV industry. The company is doing a pilot run of wireless broadband techniques and has applied for spectrum from the government of India.

We remain cautious about the prospects of the broadband business in the absence of unbundling of the local loop. VSNL continues to suffer from the lack of a 'last mile', and we don't see any solution for this problem in the medium term. Also, capex in broadband is an area of concern, as it may not be remunerative for the company.

Balance sheet

- VSNL has taken on debt of US$220m to fund Teleglobe. The company had earlier taken on a bridge loan of US$130m to fund the Tyco acquisition. The company is looking to add more debt to fund its footprint in South Africa and broadband-related capex.
- We believe dividend levels will remain steady at Rs4.5 for FY06-08E, given current profitability levels.
- The company will provide a consolidated balance sheet with full-year results.

Financials

We revise our estimates for FY07 upwards by 5%, given robust operational growth. We also estimate more competitive-led pricing pressure in the enterprise and voice businesses in FY08, which leads us to reduce our estimates 8.6%. Note that we have not consolidated our estimates for Teleglobe and Tyco, but will do so after the announcement of full-year results.

As explained earlier, margin expansion in the voice business is an accounting effect, as pass-through revenues such as ADC and settlement charges decline. In absolute terms, retention per minute of VSNL's voice business is on a downward trend.

VSNL: Revenue and EBITDA by Business Segment

	FY02	FY03	FY04	FY05	FY06E	FY07E	FY08E
Voice							
% of revenue	88.6	81.1	67.4	56.8	45.2	32.0	26.6
EBITDA margin	27.0	27.9	12.5	12.1	12.0	24.9	27.5
Data + Internet							
% of revenue	10.3	16.7	30.6	40.7	50.0	61.0	64.7
EBITDA margin	5.6	9.4	22.8	36.0	37.4	38.3	40.0
Others							
% of revenue	1.1	2.2	2.0	2.6	4.8	7.0	8.7
EBITDA margin	44.9	43.1	42.6	25.5	26.1	25.4	27.9

Source: Citigroup Investment Research estimates.

VSNL: Change in Estimates

	Sales (Rs Mils)		Diluted EPS (Rs.)			EBITDA (Rs. Mils)	
	Old	New	Old	New	% Chg	Old	New
2006E	35,230	36,975	17.7	18.2	3.1	10,077	10,291
2007E	36,498	36,726	19.5	20.4	5.1	12,428	12,969
2008E	38,879	39,676	24.2	22.2	–8.6	15,322	14,940

Source: Citigroup Investment Research estimates.

Investment thesis

We forecast India's data and enterprise services will grow over 60% in volume terms and over 30% in value terms over the next 2 years. VSNL should retain a domestic market share of over 50%, in our view. VSNL is also trying to break into the global enterprise market, which could provide upside to our estimates.

We expect the Teleglobe and Tyco acquisitions will be EPS accretive, and synergies with Tyco and VSNL could lead to significant cost savings for Teleglobe. We estimate consolidation of Teleglobe in FY07 could lead to a c20% increase in EPS for VSNL on a standalone basis.

Crystallization of value in Tata Tele (19% ownership) and surplus land (770 acres) could lead to significant share price upside.

We think the share price reflects the strength in business fundamentals. We downgrade VSNL to Hold/Medium Risk.

Valuation

We value VSNL using a sum-of-the-parts methodology to capture value from its existing businesses, acquisitions (which are currently not consolidated) and assets (such as the stake in Tata Tele and its land assets). Our sum-of-the-parts methodology provides a value of Rs530/share.

Old and New Sum-of-the-Parts Valuation for VSNL

		Value (Rs bn		Value per Share (Rs		
VSNL	Effective Stake (%)	Old	New	Old	New	Basis
Existing India Business	100	74,955	82,365	263	289	Average of individual business SOTP and DCF
Teleglobe	100	14,981	15,338	53	54	6x estimated FY07 EBITDA
Tyco	100	5,720	5,720	20	30	At 1.5x cost
Tata Tele	17	16,700	25,875	59	91	At 2.5x investment - Temasek deal valuation (up from 2x investment)
Surplus land	100	16,000	16,000	56	67	At 2.2x 2001 estimated value
South Africa business	26	–	–	–	–	Nascent business
Sum of the Parts		**130,854**	**144,467**	**450**	**530**	

Source: Citigroup Investment Research estimates

- ➤ Existing India businesses – We value the voice, data and other India-related businesses using an average of DCF and sum of the parts. The average value comes to Rs289/share.
- ➤ Teleglobe – We use an average of 6x FY07 (March end) EV/EBITDA in line with its peers, MCI and AT&T. This translates into a value of Rs54/share for VSNL, which is 1.5x the acquisition value. While realization of this would depend on the integration of operations and a resulting reduction in costs, we believe our estimates are achievable.
- ➤ Tyco – In the absence of any financial data previously, we valued the investment at cost – Rs20/share (US$130 million). However, now that the business is being integrated and VSNL has won significant size orders for Tyco, we revise our value on Tyco to Rs30/share.
- ➤ Tata Tele – Using 2.5x invested capital equates to Rs91/share, implying a market cap of US$3.4bn for Tata Tele. This is similar in value to the price paid by Temasek to pick up a 9.9% stake in TTSL in 2006.
- ➤ Land value – We raise our estimate for the 770 acres of surplus land by around 20% (from 2x the value of the 2001 survey conducted by the government of India at Rs56/share), given appreciation in real estate prices since October and the fact that the board has forwarded the discussion to the government of India. Based on Cushman and Wakefield estimates of current real estate prices, we

believe this is conservative; the value of land in Greater Kailash in Delhi would be worth Rs95/share. Given uncertainty about when value might be unlocked, we value it at Rs67 currently.

- South Africa venture: This venture is at a nascent stage. We assign no value to it.

As an alternative valuation methodology, we use our strategist's target Sensex FY07 P/E of 14x. Stripping out the asset values of Tata Tele, surplus land, Tyco and Teleglobe we estimate a value of Rs529/share.

Risks

Our quantitative risk-rating system, which tracks 260-day historical share price volatility, rates VSNL Medium Risk, which concurs with our fundamental analysis.

The **key upside risks to** our price target include:

- Unlocking land value would lead to a strong one-time impact on the stock price. We believe the land holdings are worth Rs150/share based on current real estate prices.
- Improvement in global bandwidth pricing scenario could lead to a rerating of the Tyco assets that VSNL acquired.
- Positive surprises on volume for voice and data business would benefit sentiment on the stock price.

The key **downside risks** to our price target include:

- The key downside risk that VSNL faces is executing its strategy to become a global voice and data player. Integrating Tyco and Teleglobe will be challenging as well, not to mention potential startup problems with the South African operations.
- Competition in the Indian voice and data market is increasing. More players are entering the NLD business after license norms were relaxed. Competition from Reliance and Bharti will likely increase, as they start operations on SEA-ME-WE-4 and FALCON, respectively.
- The enterprise business faces regulatory risk, particular the possibility of TRAI implementing a cost-based mechanism for sharing facilities, which would take away some of VSNL's competitive advantage.
- Other risks: surplus submarine cable capacity on the Atlantic could force a tariff war. Unlocking value in Tata Tele and in surplus land holdings could take time. If capex in FY07-08 is higher than our estimate, pressure on dividends and gearing would increase. If any of these risk factors have a greater impact than we anticipate, we think VSNL's share price would have difficulty attaining our target price.

Income Statement, FY04-FY09E (Rupees in Million)

	FY04	FY05	FY06E	FY07E	FY08E	FY09E
Traffic Revenues	31,635	33,083	36,975	36,726	39,676	41,175
ILD Voice	21,326	17,884	15,380	10,276	8,921	7,143
NLD	–	900	1,327	1,471	1,625	1,716
Data and Enterprise	6,791	11,109	16,160	20,377	23,899	26,322
Internet	2,882	2,340	2,334	2,038	1,779	1,553
Broadband	–	167	1,021	1,753	2,575	3,494
Others	637	683	751	811	876	946
Total Revenues	**32,291**	**33,605**	**37,875**	**37,526**	**40,476**	**41,775**
Tot oper exp	–26,481	–25,744	–27,583	–24,557	–25,536	–25,598
EBITDA	**5,810**	**7,862**	**10,291**	**12,969**	**14,940**	**16,177**
Depreciation	–1,704	–2,332	–3,019	–3,890	–4,455	–4,723
Profit before tax	5,433	5,847	7,220	8,322	9,423	10,704
Taxes	–1,656	–2,976	–2,022	–2,497	–3,110	–3,596
PAT pre exceptionals	3,865	4,484	5,199	5,826	6,313	7,107
Profit after tax	**3,777**	**7,085**	**5,199**	**5,826**	**6,313**	**7,107**
EPS	13.6	15.7	18.2	20.4	22.2	24.9
Divid payout per share	4.5	6.0	4.5	4.5	4.4	6.2
No of shares (MN)	285	285	285	285	285	285

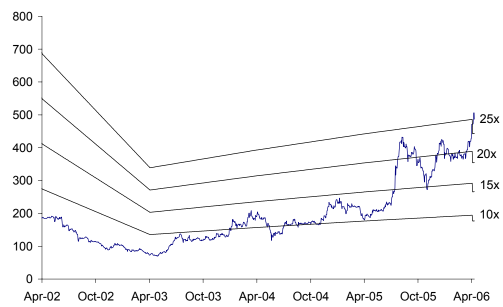
Balance Sheet, FY04-FY09E (Rupees in Million)

	FY04	FY05	FY06E	FY07E	FY08E	FY09E
Cash & Bank Balance	10,467	14,291	8,632	5,699	9,001	15,288
Sundry Debtors	4,402	6,053	6,078	5,534	5,979	6,204
Other current assets	12,128	13,324	13,605	13,596	13,602	13,605
Total Current Assets	26,997	33,668	28,315	24,828	28,581	35,097
Investments	20,891	9,448	9,448	9,448	9,448	9,448
Fixed assets	**17,577**	**24,854**	**40,742**	**53,387**	**53,728**	**52,365**
Total assets	67,632	74,089	84,623	93,782	97,875	103,029
Deferred Tax Liability	71	997	997	997	997	997
Current Liabilities	13,341	15,525	16,626	14,801	13,992	14,026
Provisions	1,918	2,653	1,900	1,900	1,900	1,900
Short term debt	630	169	6,600	13,200	13,200	13,200
Total liabilities	15,960	19,344	26,122	30,898	30,089	30,123
Shareholders' equity	**51,672**	**54,745**	**58,501**	**62,883**	**67,786**	**72,906**
Total liabilities + Equity	67,632	74,089	84,623	93,782	97,875	103,029
Book value per share Rs	181.3	192.1	205.3	220.6	237.8	255.8

Cash Flow Statement, FY04-FY09E (Rupees in Million)

	FY04	FY05	FY06E	FY07E	FY08E	FY09E
Operating cash flow	12,149	5,284	8,311	9,201	10,571	12,385
Capex	–4,726	–10,344	–19,110	–16,739	–5,000	–3,500
Cash flow from Investing	–18,991	1,362	–19,110	–16,739	–5,000	–3,500
Cash flow from Financing	–6,280	–2,823	5,139	4,604	–2,268	–2,598
Change in cash	–13,122	3,822	–5,659	–2,933	3,302	6,287

P/E Band Chart



Key Ratios, FY04-FY09E

Ratios	FY04	FY05	FY06E	FY07E	FY08E	FY09E
Growth (%)						
Revenue	–29.4	4.1	12.7	–0.9	7.9	3.2
EBITDA	–50.7	35.3	30.9	26.0	15.2	8.3
EPS	–50.5	16.0	15.9	12.1	8.4	12.6
Profitability (%)						
EBITDA Margin	18.0	23.4	27.2	34.6	36.9	38.7
FCF Margin	23.8	–10.7	–32.6	–23.7	11.2	19.3
ROE	7.0	13.3	9.2	9.6	9.7	10.1
Valuation (x)						
P/E	28.2	24.3	21.0	18.7	17.3	15.3
EV/EBITDA	19.2	12.9	11.4	9.6	8.0	6.9
Gearing (%)						
Debt/Capital (%)	1.2	0.3	10.1	17.3	16.3	15.3
Interest Cover (x)	1,306	9,220	NA	NA	NA	NA

Key Assumptions

Assumptions	FY05	FY06E	FY07E	FY08E	FY09E
ILD Business					
Incoming min (mm)	1,748	1,958	2,251	2,522	2,824
Outgoing min (mm)	1,340	1,363	1,393	1,587	1,768
Total min (mm)	3,088	3,321	3,644	4,108	4,592
Incoming retention / min	1.09	1.01	0.83	0.66	0.63
Outgoing retention / min	1.43	0.80	0.66	0.69	0.61
Overall retention / min	1.23	0.93	0.76	0.67	0.62
Enterprise Business					
IPLC Volume Y/Y (%)	88	80	60	45	30
IPLC Pricing Y/Y (%)	–31	–20	–20	–18	–15
NLD min growth Y/Y (%)	NM	64	23	23	17
Broadband subs (mm)	0.09	0.24	0.42	0.65	0.88
Broadband ARPU	300	360	350	330	330
Internet subs (mm)	0.65	0.68	0.66	0.64	0.62
Internet ARPU	300	285	257	231	208
Balance Sheet					
Capex / Sales (%)	30.8	50.5	44.6	12.4	8.4
(Net Debt)/Cash (mm)	14,122	2,032	–7,501	–4,199	2,088
Dividend Payout (%)	38.1	25.0	23.0	20.0	25.0

Source: Company, Citigroup Investment Research estimates.

Notes

Notes

Notes

ANALYST CERTIFICATION

Appendix A-1

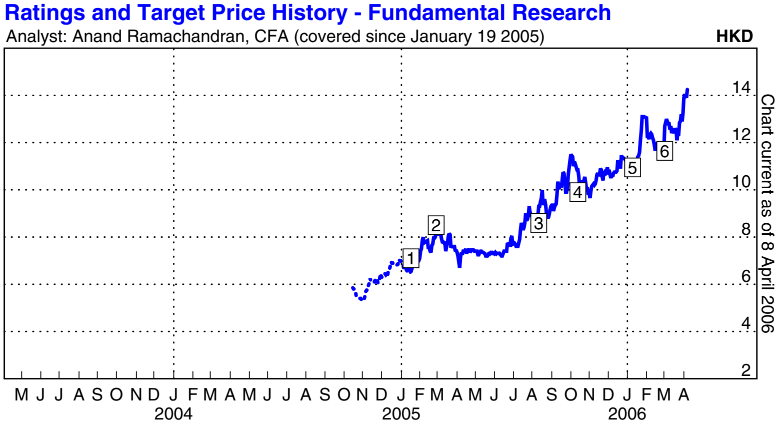
We, Ronie Ganguly, CFA and Anand Ramachandran, CFA, research analysts and the authors of this report, hereby certify that all of the views expressed in this research report accurately reflect our personal views about any and all of the subject issuer(s) or securities. We also certify that no part of our compensation was, is, or will be directly or indirectly related to the specific recommendation(s) or view(s) in this report.

IMPORTANT DISCLOSURES

Hutchison Telecommunication Intl. (2332.HK)

Ratings and Target Price History - Fundamental Research

Analyst: Anand Ramachandran, CFA (covered since January 19 2005)



Covered
Not covered

#	Date	Rating	Target Price	Closing Price
1:	18 Jan 05	1M	8.00	6.55
2:	28 Feb 05	*2M	*8.80	8.50
3:	11 Aug 05	2M	*10.00	9.30
4:	13 Oct 05	2M	*12.10	10.85
5:	10 Jan 06	2M	*12.50	11.00
6:	2 Mar 06	2M	*13.00	12.70

*Indicates change.

Bharti Airtel Limited (BRTI.BO)

Ratings and Target Price History - Fundamental Research

Analyst: Ronie Ganguly, CFA (covered since September 5 2005)

Covered
Not covered

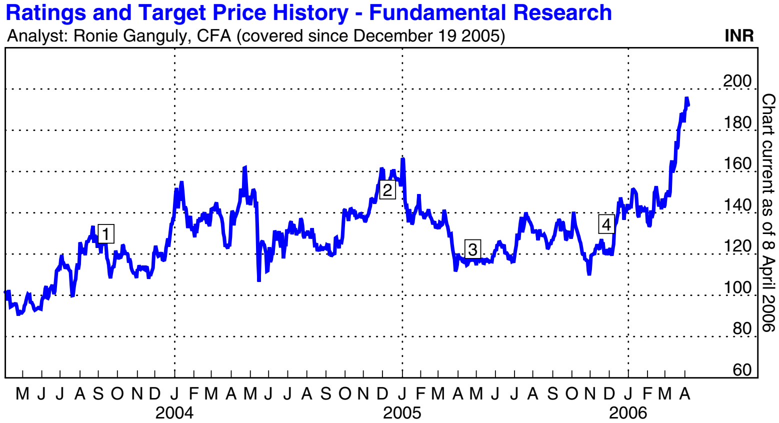
#	Date	Rating	Target Price	Closing Price
1:	24 Apr 03	*3M	30.00	32.35
2:	24 Jul 03	3M	*42.00	47.15
3:	12 Sep 03	Stock rating system changed		
4:	12 Sep 03	*3M	*42.00	61.35
5:	17 Oct 03	*2H	*90.00	78.15
6:	24 Oct 03	*1H	*100.00	77.10
7:	20 Jan 04	1H	*160.00	118.40
8:	17 Mar 04	1H	*220.00	146.15
9:	14 Jan 05	*1M	*260.00	210.30
10:	22 Aug 05	1M	*400.00	306.10
11:	10 Jan 06	1M	*450.00	339.25

*Indicates change.

MTNL (MTNL.BO)

Ratings and Target Price History - Fundamental Research

Analyst: Ronie Ganguly, CFA (covered since December 19 2005)



Covered
Not covered

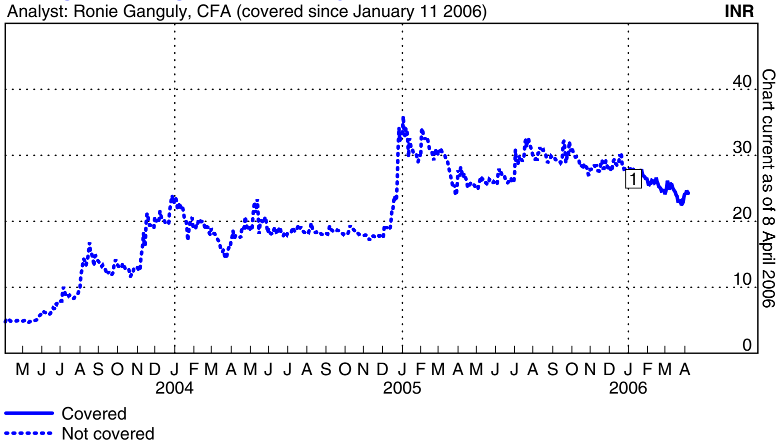
#	Date	Rating	Target Price	Closing Price
1:	12 Sep 03	*2H	150.00	123.55
2:	9 Dec 04	2H	*171.00	154.30
3:	26 Apr 05	2H	*144.00	121.30
4:	27 Nov 05	*3L	*97.00	121.60

*Indicates change.

Tata Teleservices (Maharashtra) Ltd (TTML.BO)

Ratings and Target Price History - Fundamental Research

Analyst: Ronie Ganguly, CFA (covered since January 11 2006)



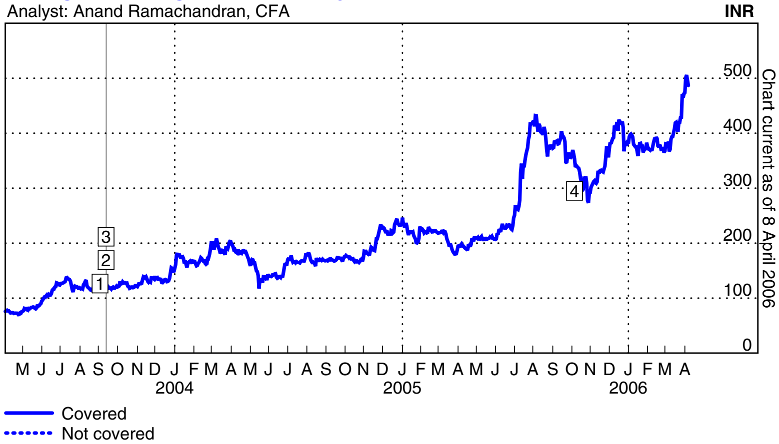
#	Date	Rating	Target Price	Closing Price
1:	10 Jan 06	2M	30.00	27.80

*Indicates change.

Videsh Sanchar Nigam Ltd (VSNL.BO)

Ratings and Target Price History - Fundamental Research

Analyst: Anand Ramachandran, CFA



#	Date	Rating	Target Price	Closing Price
1:	3 Sep 03	*2M	*130.00	122.00
2:	12 Sep 03	Stock rating system changed		
3:	12 Sep 03	*2M	*135.00	123.85
4:	6 Oct 05	*1M	*450.00	353.70

*Indicates change.

Citigroup Global Markets Inc. or its affiliates beneficially owns 1% or more of any class of common equity securities of Bharti Airtel Limited, MTNL, Tata Teleservices (Maharashtra) Ltd and Videsh Sanchar Nigam Ltd. This position reflects information available as of the prior business day.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from Hutchison Telecommunication Intl., MTNL, Tata Teleservices (Maharashtra) Ltd and Videsh Sanchar Nigam Ltd.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from MTNL.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Bharti Airtel Limited, Hutchison Telecommunication Intl., MTNL, Tata Teleservices (Maharashtra) Ltd and Videsh Sanchar Nigam Ltd in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following company(ies) as investment banking client(s): Hutchison Telecommunication Intl., MTNL, Tata Teleservices (Maharashtra) Ltd and Videsh Sanchar Nigam Ltd.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following company(ies) as clients, and the services provided were non-investment-banking, securities-related: Bharti Airtel Limited, Hutchison Telecommunication Intl., MTNL, Tata Teleservices (Maharashtra) Ltd and Videsh Sanchar Nigam Ltd.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following company(ies) as clients, and the services provided were non-investment-banking, non-securities-related: Bharti Airtel Limited, Hutchison Telecommunication Intl., MTNL, Tata Teleservices (Maharashtra) Ltd and Videsh Sanchar Nigam Ltd.

The Firm has a significant financial interest in Bharti Airtel Limited. The Firm regards itself to have a significant financial interest in the issuer if as of the last day of the month immediately preceding the date of publication of this report (or the end of the second most recent month if this publication is less than ten (10) calendar days after the end of the most recent month) it has an aggregate net position of more than $25mm in debt securities, and credit derivatives referencing debt securities, issued or guaranteed by the issuer.

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability, which includes revenues from, among other business units, the Private Client Division, Institutional Equities, and Investment Banking.

Citigroup Investment Research Ratings Distribution

Data current as of 31 March 2006	Buy	Hold	Sell
Citigroup Investment Research Global Fundamental Coverage (2725)	41%	42%	18%
% of companies in each rating category that are investment banking clients	46%	43%	32%
Hong Kong -- Asia Pacific (53)	38%	17%	45%
% of companies in each rating category that are investment banking clients	45%	44%	46%
India -- Asia Pacific (108)	45%	22%	32%
% of companies in each rating category that are investment banking clients	49%	58%	49%

Guide to Fundamental Research Investment Ratings:
Citigroup Investment Research's stock recommendations include a risk rating and an investment rating.
Risk ratings, which take into account both price volatility and fundamental criteria, are: Low (L), Medium (M), High (H), and Speculative (S).
Investment ratings are a function of Citigroup Investment Research's expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating.
For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings are: Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).
Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

Between September 9, 2002, and September 12, 2003, Citigroup Investment Research's stock ratings were based upon expected performance over the following 12 to 18 months relative to the analyst's industry coverage universe at such time. An Outperform (1) rating indicated that we expected the stock to outperform the analyst's industry coverage universe over the coming 12-18 months. An In-line (2) rating indicated that we expected the stock to perform approximately in line with the analyst's coverage universe. An Underperform (3) rating indicated that we expected the stock to underperform the analyst's coverage universe. In emerging markets, the same ratings classifications were used, but the stocks were rated based upon expected performance relative to the primary market index in the region or country. Our complementary Risk rating system -- Low (L), Medium (M), High (H), and Speculative (S) -- took into account predictability of financial results and stock price volatility. Risk ratings for Asia Pacific were determined by a quantitative screen which classified stocks into the same four risk categories. In the major markets, our Industry rating system -- Overweight, Marketweight, and Underweight -- took into account each analyst's evaluation of their industry coverage as compared to the primary market index in their region over the following 12 to 18 months.

OTHER DISCLOSURES

Within the past 5 years, Citigroup Global Markets Inc. or its affiliates has acted as manager or co manager of a public offering of equity securities of Bharti Airtel Limited.

Within the past 5 years, Citigroup Global Markets Inc. or its affiliates has acted as manager or co manager of a public offering of fixed income securities of Bharti Airtel Limited.

Citigroup Global Markets Inc. or its affiliates beneficially owns 2% or more of any class of common equity securities of Tata Teleservices (Maharashtra) Ltd.

Citigroup Global Markets Inc. or its affiliates beneficially owns 5% or more of any class of common equity securities of Bharti Airtel Limited and Videsh Sanchar Nigam Ltd.

Citigroup Global Markets Inc. or its affiliates holds a long position in any class of common equity securities of Bharti Airtel Limited, Hutchison Telecommunication Intl., MTNL and Videsh Sanchar Nigam Ltd.

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the subject company(ies) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. In producing Products, members of the Firm's research department may have received assistance from the subject company(ies) referred to in the Product. Any such assistance may have included access to sites owned, leased or otherwise operated or controlled by the issuers and meetings with management, employees or other parties associated with the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Although Citigroup Investment Research does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of Citigroup Investment Research to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by non-US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in Australia to wholesale clients through Citigroup Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992) and to retail clients through Citigroup Wealth Advisors Pty Ltd. (ABN 19 009 145 555 and AFSL No. 240813), Participants of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. If the Product is being made available in certain provinces of Canada by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. The Product may not be distributed to private clients in Germany. The Product is distributed in Germany by Citigroup Global Markets Deutschland AG & Co. KGaA, which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). Frankfurt am Main, Reuterweg 16, 60323 Frankfurt am Main. If the Product is made available in Hong Kong by, or on behalf of, Citigroup Global Markets Asia Ltd., it is attributable to Citigroup Global Markets Asia Ltd., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Product is made available in Hong Kong by The Citigroup Private Bank to its clients, it is attributable to Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. The Citigroup Private Bank and Citibank N.A. is regulated by the Hong Kong Monetary Authority. The Product is made available in India by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. If the Product was prepared by Citigroup Investment Research and distributed in Japan by Nikko Citigroup Ltd., it is being so distributed under license. Nikko Citigroup Limited is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Akasaka Park Building, 2-20, Akasaka 5-chome, Minato-ku, Tokyo 107-6122. The Product is made available in Korea by Citigroup Global Markets Korea Securities Ltd., which is regulated by Financial Supervisory Commission and the Financial Supervisory Service. Hungkuk Life Insurance Building, 226 Shinmunno 1-GA, Jongno-Gu, Seoul, 110-061. The Product is made available in Malaysia by Citigroup Global Markets Malaysia Sdn Bhd, which is regulated by Malaysia Securities Commission. Menara Citibank, 165 Jalan Ampang, Kuala Lumpur, 50450. The Product is made available in Mexico by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, which is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In New Zealand the Product is made available through Citigroup Global Markets New Zealand Ltd., a Participant of the New Zealand Exchange Limited and regulated by the New Zealand Securities Commission. Level 19, Mobile on the Park, 157 lambton Quay, Wellington. The Product is made available in Poland by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Papierów Wartosciowych i Gield. Bank Handlowy w Warszawie S.A. ul. Senatorska 16, 00-923 Warszawa. The Product is made available in the Russian Federation through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in Singapore through Citigroup Global Markets Singapore Pte. Ltd., a Capital Markets Services Licence holder, and regulated by Monetary Authority of Singapore. 1 Temasek Avenue, #39-02 Millenia Tower, Singapore 039192. Citigroup Global Markets (Pty) Ltd. is incorporated in the Republic of South Africa (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in Taiwan through Citigroup Global Markets Inc. (Taipei Branch), which is regulated by Securities & Futures Bureau. No portion of the report may be reproduced or quoted in Taiwan by the press or any other person. No. 8 Manhattan Building, Hsin Yi Road, Section 5, Taipei 100, Taiwan. The Product is made available in Thailand through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in United Kingdom by Citigroup Global Markets Limited, which is regulated by Financial Services Authority. This material may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in United States by Citigroup Global Markets Inc, which is regulated by NASD, NYSE and the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is regulated by Financial Services Authority. Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to Citigroup Investment Research's Products can be found at www.citigroupgeo.com. Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations. The Product may have been distributed simultaneously, in multiple formats, to the Firm's worldwide institutional and retail customers. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would be illegal. Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. Advice in the Product has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST

2006-AP113