

24 December, 2007

Key Data	(INR)
CMP	970
Target Price	1175

Key Data	
Bloomberg Code	BHARTI IN
Reuters Code	BRTI.BO
BSE Code	532454
NSE Code	BHARTIARTL
Face Value (INR)	10.00
Market Cap. (INR mn.)	1735765
52 Week High (INR)	1149
52 Week Low (INR)	544
Avg. Daily Volume (6m)	425168

Shareholding	%
Promoter group	65.9
Banks/Mutual Fund/FI	4.6
FII	24.5
Others	5.0
Total	100.00

Rs Mn	FY08E	FY09E	FY10E
Revenues (Rs. mn)	241757	303514	357633
Sales Growth (%)	30.5%	25.5%	17.8%
Operating Profits	102897	133789	161954
OPM (%)	42.6%	44.1%	45.3%
PAT	54799	75569	93960
PATM (%)	22.7%	24.9%	26.3%
EPS (Rs.)	28.9	39.9	49.6

Bharti Airtel Ltd.

Bharti Airtel Ltd is one of India's leading private sector providers of telecommunications services based on an aggregate of 53.02 mn customers as on October 30, 2007, consisting of 50.91mn GSM mobile and 2.11 mn broadband and telephone customers.

The businesses of Bharti Airtel is structured into three Strategic Business Units (SBU's) - Mobile services, broadband & telephone services (B&T) and enterprise services. The mobile services group provides GSM mobile services in 23 telecom circles, while the B&T business group provides broadband & telephone services in 94 cities. The enterprise services group has two sub-units - carriers (long distance services) and services to corporates. All these services are provided under the Airtel brand.

Investment Rationale:

Robust growth witnessed by the Indian telecom Industry.

The Indian telecom industry is growing at a robust pace with the wireless subscribers contributing to this growth in a big way. Out of the total telecom subscribers of 256.5 mn at the end of October 2007, wireless subscriber base is of 217.1 mn, whereas the fixed line subscriber base is 39.4 mn as on October 2007. We forecast the Indian wireless subscriber base to reach 305 mn by March 2010, a CAGR of 22.5% during 2007-2010. Bharti is and will likely continue to be the leader in the wireless industry. We estimate the total wireless subscriber base for Bharti of 66.2 mn by March 2010 (CAGR of 21.3%), implying a market share of 21.7% of the wireless Industry.

Revenue and subscriber leadership backed by a solid expansion strategy

We believe that Bharti will continue maintaining revenue leadership based on its pan-India presence and improving penetration and coverage. By March 2008, Bharti will improve its coverage of the Indian population to 75% from the current level of 65%. This will be achieved by building its networks to complete its coverage of all 5,170 census towns (4876 towns at present) in India. In addition the company also plans to roll out coverage in many new non-census villages out of 600,000 total centres (its current coverage is 290,000 villages).

Expansion focused on growth in subscribers as well as profitability.

While the approach for the wireless business is to take the coverage of the Indian population to a progressively higher level, the strategy for the fixed line and broadband business is to selectively expand coverage. This is due to the significantly higher capital cost and lower return ratios resulting from deeper penetration of the Indian hinterland. The Company has a selective strategy for this segment as it intends to focus on cities with high revenue potential.

Value Unlocking in tower business

Bharti Infratel, a 100% subsidiary of Bharti Airtel is a telecom infrastructure provider with a tower portfolio of 52000 towers as on September 2007. On 8th December 2007, Bharti Infratel, Idea Cellular and Vodafone formed an independent tower company named "Indus Towers". While Bharti and Vodafone- Essar will each have 42% in the new company, Idea Cellular will have 16% stake. Bharti Infratel will transfer its 30,000 towers in 16 circles, Idea Cellular will transfer 10,000 towers in 9 out of the

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11 circles that it operates in and Vodafone-Essar will transfer its entire infrastructure of 30,000 towers in its 16 circles. The move is aimed at consolidating their position in the emerging Tower Industry.

Capex plans

The company has capex plans of US\$ 3.5 bn (approx Rs.140 bn) for its entire business. Out of the total, US\$ 1 bn (Rs.100 bn) will be spent on the tower business. Almost 70% of the capex will be utilised for the mobility segment to accelerate network expansion to expand its footprint and for the potential launch of commercial services in SriLanka.

Valuations and recommendations

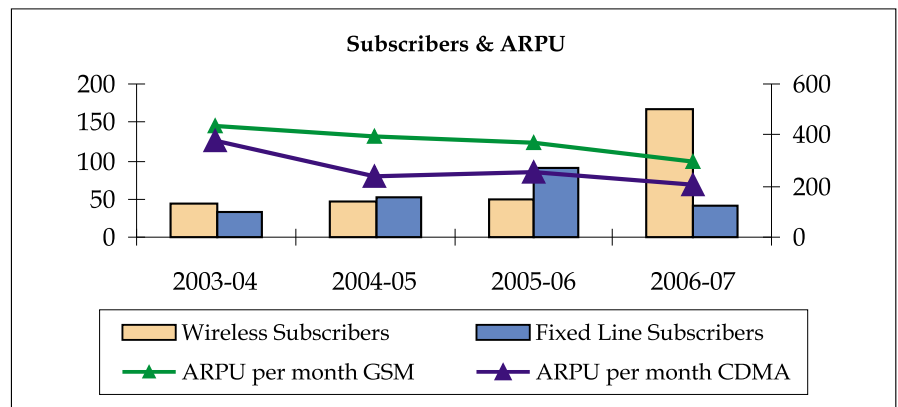
We expect Bharti to register earnings CAGR of 24.5% over FY07-10E. Bharti has reported EPS of Rs. 21.4 for FY07. We expect the company to register an EPS of Rs.39.9 in FY09E and Rs.49.6 in FY10E. At Current Market Price (CMP) of Rs.970 the stock is trading at 24.3x FY09E & 19.6x FY10E earnings per share. Bharti is India's largest private sector telecom company, with a complete suite of service offerings spanning wireless, fixed wireless, fixed line, enterprise broadband, national/international long distance, global data and undersea cable systems. Based on continued market leadership, execution capabilities, improving EBITDA margin, we recommend a "BUY" on Bharti Airtel Ltd with a price target (based on a DCF Valuation) of Rs.1175 (excluding the tower business valuations).

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Wireless segment-Major
Growth Driver
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Industry

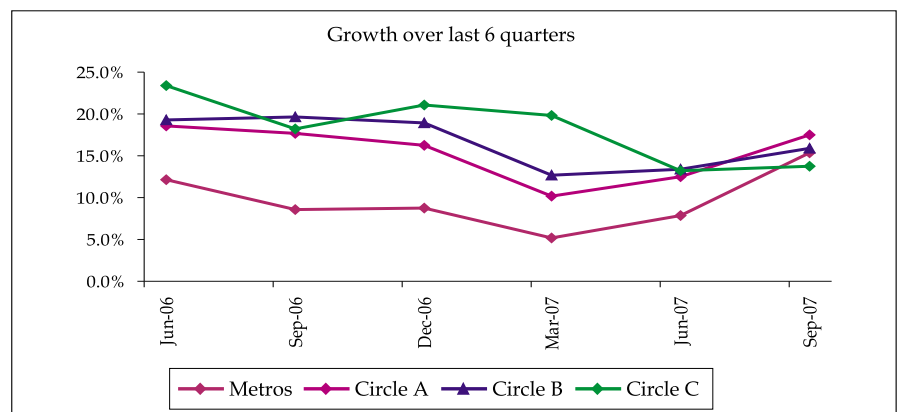
The Indian telecom market is characterized by low penetration and high growth potential. The wireless segment of the industry has been the major growth driver. The total number of subscribers has increased from 54.1 mn in 2002-03 to 256.5 mn as at the end of October 2007. The wireless subscriber base increased to 217.1 mn, whereas the fixed line subscriber base dipped and reached 39.4 mn as on October 2007. The overall tele-density has increased to more than 21% in October 2007 from 5% in March 2003.

The Industry is witnessing rapid growth in subscriber base but the Average Revenue Per User per month (ARPU) is declining, therefore the industry is playing on volumes



(Source: TRAI)

Circle wise subscriber (GSM + CDMA) growth



(Source: CrisInfac)

The B and C circles are witnessing the highest growth in the past few years. These circles have lower teledensity than Metros and Circle A. Therefore these circles present an opportunity for the telecom companies for growth.

Revenue growth :

According to CRISIL Research, the total telecom services industry revenues are expected to grow at a CAGR of 12.4 % between the period from 2005-06 to 2010-11. However the actual revenue for the year 2006-07 is Rs.985.23 bn, which represent rapid growth of 40% over 2005-06.

Majority of the revenues are expected to be from the mobile services segment. **CRISIL has projected the mobile segment to grow at a CAGR of 18 % in the next 5 years (2005-06 to 2010-11), driven by the three-fold growth in the mobile**

subscriber base during the period. Revenues from the fixed wireless segment are expected to grow at a CAGR of 28 %; however, revenues from the fixed wire line segment are expected to decline at a CAGR of 1.1 %. Overall, CRISIL expects revenues from the fixed service segment to increase at a CAGR of 4 % during 2005-06 to 2010-11.

Telecommunication services						(Rs mn)
	2004-05	2005-06	2006-07F	2007-08F	2010-11F	CAGR
Revenue - Fixed services (wireline+ wireless)	319,457	318,664	334,196	352,530	386,586	3.9%
Revenue - Mobile services	256,556	388,814	523,516	649,713	889,815	18.0%
National long distance- Voice	32,797	37,983	45,722	49,887	56,663	8.3%
ILD - Voice	39,939	51,722	59,683	66,310	89,504	11.6%
Others	44,648	50,079	58,214	67,333	100,117	14.9%
Less: Inter-segment revenues	128,035	139,256	167,902	196,761	251,792	
Total telecom revenues	565,363	708,005	853,429	989,012	1,270,894	12.4%
Others include IPLC, DLC, VSAT, Internet and others						

Source: Cris Infac

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Majority of the issues revolve
around the most important
resource –“SPECTRUM”
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Issues and Challenges

There are various issues surrounding the telecom Industry which pose challenges for the Industry. These issues arise out of various policy announcements by the regulator which has resulted in increased competition between the players. If we take a closer look at the issues and challenges, a majority of them revolve around the most important resource in the telecom Industry- “SPECTRUM”. Spectrum is a range of electromagnetic radio frequencies used for transmission of voice, data and images. Mobile telecom operators send and receive frequencies to enable communication between two phones.

- **Enhancement of subscriber criteria for allocation of additional 2G spectrum**

The controversy began when TRAI and DOT’s technical advisory board raised the bar on the minimum subscriber norms for operators to qualify for additional spectrum. The new subscriber norms were around three times higher than the existing ones. This move was challenged by GSM operators in the telecom tribunal. DoT then referred the matter to its technical arm, Telecom Engineering Centre (TEC), which in its report recommended that the allocation norms should be hiked between 2-15 times depending on the circle. The Cellular Operators Association of India, the body representing all GSM players, said that it would file yet another petition with the telecom tribunal challenging the TEC report.

- **Access licence made technology neutral**

The government also permitted existing universal access service licencees to offer wireless services using either GSM or CDMA technology. This decision paved way for existing CDMA operators to provide GSM-based services and vice-versa, subject to the availability of spectrum and payment of the prescribed fees.

- **3G spectrum auction to be open to all**

In another move, the government announced that 3G spectrum would be auctioned, which would be open to all. This means that both existing operators and new entrants, whether owned by domestic entrepreneurs or foreign companies such as AT&T and Deutsche Telekom, who currently do not have presence in India, would be eligible to bid for 3G spectrum. This view is in contradiction with the

Telecom Regulatory Authority of India's (TRAI) recommendation of allocating 3G spectrum only to existing service licencees.

- **Mobile Number Portability (MNP) from last quarter of 2008**

Furthermore, to reduce entry barriers and increase competition, the government has decided to implement Mobile Number Portability (MNP) in a phased manner. MNP would give subscribers the freedom to change their existing wireless operator while retaining the same number. To begin with, MNP would be implemented in the four metros of Mumbai, Chennai, Delhi, and Kolkatta during the last quarter of 2008.

- **Threat from satellite telephony**

A satellite telephone is a mobile phone that communicates directly with orbiting communications satellites. Depending on the architecture of a particular system, coverage may include the entire Earth, or only specific regions. These satellite phones provide worldwide connectivity on a single number. The largest users of satellite phones in India as well as worldwide, till date, are the government and defense forces. However these phones can be used only after the No Objection Certificate (NOC) is issued by DOT. If cost of these handsets reduces, then they may pose a threat.

Outlook

The growth drivers for the telecom Industry such as strong subscriber growth, coming on the back of rising affordability and massive coverage expansion by the telecom service providers continue to drive the industry. This strong subscriber growth is also leading to a strong revenue growth and margin expansion. Value unlocking is taking place in the tower business by various telecom operators. But at this stage the issues and challenges have overshadowed the growth drivers in the telecom industry. There is no clear visibility in terms of timing, impact and the extent of impact.

In absence of adequate spectrum, the companies will not be able to provide better quality of services. The future of 3G services, which are yet to be commenced, is questionable with inadequate spectrum even for 2G services. This will create artificial barriers to entry into this market as although new applicants have been given licenses but without spectrum they will not be able to provide services. There are many existing licensees that are awaiting spectrum. This exposes the industry to a state of uncertainty.

There is a delay in vacating spectrum (Refer Annexure V) by the Defence forces. Rather than waiting for the Defence to vacate spectrum, the telecom operators may devise technologies that would efficiently utilize existing spectrum. The direct consequence of spectrum scarcity is leading to deterioration in quality of service (QoS) resulting in dropped calls. The only way to address the QoS issue without additional spectrum is to increase the network capacity by investing additional capital in further cell splitting (Refer Annexure V). It may also require upgrading of the network. This would therefore result in increasing the capex.

According to our projections we expect that the mobile subscriber base to reach 366mn by 2012. We believe that there still exists huge untapped market for players. Further, we believe that Bharti being a leader in the industry with its large size will be in a position to survive in such a scenario due to significant coverage, strong financials and huge cash flows.



We expect the mobile subscriber base for the Industry to reach 366 mn by 2012 from 166 mn as on 2007



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Market Leader in the
Wireless Segment
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Mobile subscriber base for
Bharti to reach 66.2 mn by
2010, implying a market share
of 21.7%
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Business Overview

Mobile Services Segment : Bharti Airtel, is the market leader in the wireless segment. The company provides mobile services under the GSM platform. With almost 50.91 mn mobile customers, which represent a market share of 23.4% of the wireless market, the company is the largest service provider. This segment is the major contributory with 76.4% in the total revenues.

Network coverage : Bharti's network provides coverage of 4,876 census towns (*Refer Annexure V*) and 290,000 non census towns, thus covering 65% of the country's population. With a view to expand its coverage, the company plans to add around 30,000 base-stations to its existing 40,000 base-stations during the current fiscal. Around 55% - 60% of these base stations would be set up in the rural areas. Once this is completed the company would be in a position to cover approximately 75% of the country in terms of area.

Subscriber base : The company as a matter of strategy has been expanding its coverage very rapidly. The company already has licenses for all the services areas. At present it is expanding into more towns. This has therefore resulted in the company adding more than 2 mn subscribers monthly. Bharti has experienced rapid pace of growth in its subscriber base which is much higher in comparison to the Industry.

Circles wise growth vis-à-vis Industry -GSM

GSM	Metros		Circle A		Circle B		Circle C	
	Industry	Bharti	Industry	Bharti	Industry	Bharti	Industry	Bharti
Jun-06	7.8%	9.5%	14.3%	20.6%	14.2%	16.7%	21.4%	29.2%
Sep-06	8.3%	12.8%	16.6%	19.9%	19.8%	16.0%	17.5%	20.6%
Dec-06	8.4%	11.2%	15.4%	18.2%	19.4%	21.7%	20.5%	21.8%
Mar-07	9.4%	9.8%	14.0%	16.9%	17.3%	20.5%	22.9%	23.7%
Jun-07	7.3%	9.5%	12.8%	13.9%	13.5%	12.6%	12.2%	20.7%
Sep-07	9.8%	10.3%	14.8%	16.7%	13.8%	15.4%	12.8%	12.4%

Source: Cris Infac

Going forward, we expect the subscriber base to increase from 37.1 mn as on March 2007 to 66.2 mn by March 2010. With increasing competition in the Industry, we believe that the market share for bharti will decline from 22.4% in 2007 to 21.7% by March 2010. However, despite the decline in the market share, Bharti is likely to continue to be the leader in the wireless Industry.

Year	Adjusted Population Figures (in mn) *	Total wireless subscribers#	Adjusted Teledensity for wireless subscribers	Bharti Subscribers	Market Share for Bharti
2004	526.1	35.0	6.7	6.5	18.6
2005	534.2	55.0	10.3	11.0	20.0
2006	567.2	99.0	17.5	19.6	19.8
2007	575.5	166.0	28.8	37.1	22.4
2008P	583.8	220.0	37.7	48.6	22.1
2009P	592.0	265.0	44.8	58.0	21.9
2010P	600.1	305.0	50.8	66.2	21.7
2011P	634.7	338.0	53.3	72.3	21.4
2012P	643.3	366.0	56.9	76.9	21.0

Source: Census India Report, Cris Infac & ACMIIL Research

*Adjusted for population that can afford mobile services

Wireless Subscribers include GSM, CDMA and WLL-F subscribers.

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Revenue and subscriber leadership backed by expansion locally as well as beyond India.
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Bharti's per minute economics highest as compared to its peers
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Competitive advantage

Key competitive advantage lies in its coverage

One of the most important advantages for any operators in the Indian telecom market is quick roll out of coverage. Bharti clearly has maintained its leadership position in the market by increasing its coverage aggressively. Bharti is making huge investments each year. The company intends not only to expand its footprint locally but also has plans to expand operations beyond India. Its foray into Sri Lanka market is a step in this direction.

Investments in the mobile segment

	Mar-04	Mar-05	Mar-06	Mar-07
Mobile Capex	16304	29831	41594	71800
Growth	54.7%	83.0%	39.4%	72.6%
As % to total	72.8%	75.8%	65.7%	80.4%

Source: Company Report

Geographical Expansion- Foray outside India: Bharti Airtel investing \$200 mn in Sri Lanka

Bharti Airtel Lanka Pvt Ltd, a subsidiary of Bharti Airtel Ltd, will be investing \$200 million over the next two years for offering mobile services in Sri Lanka. A major portion of the committed investment will be made during the next 12 to 18 months. The company plans to launch both 2G and 3G services in Sri Lanka by the end of the current financial year FY08. The mobile services from Bharti Airtel will be launched under the Airtel brand. Bharti Airtel will be the fifth mobile service provider in Sri Lanka.

International roaming rates in the SAARC nations are among the highest in the world as compared to Europe or even the US. TRAI has already taken up the matter with the Asia-Pacific Telecommunity (APT) on exploring ways to bring down global roaming rates within the SAARC bloc along the lines of the European Union (EU) model. Reduced global roaming rates along with a license to operate in Sri Lanka will enable Bharti to come out with compelling tariff packages for Airtel subscribers in India travelling in SAARC markets like Sri Lanka.

Sri Lankan market has a mobile penetration of around 30% and is growing at a rate of approximately 2mn mobile users per annum. The move is part of Bharti's strategy to expand its operations beyond India Bharti is also eyeing SAARC countries like Bhutan, Nepal, Maldives and Bangladesh. It has started operations in Seychelles and channel Islands.

Bharti playing on volumes.

Bharti's per minute economics is higher as compared to its peers. The Revenue Per Minute (RPM) for voice for Bharti as on September 2007 stood at Rs.0.79 as compared to Reliance Communications' (RCOM) RPM of Rs.0.73. Focus on the mobile business with a view to capture a larger share of the voice market enables it have a higher subscriber base which then leads to higher Minutes of Use (MOU) over its peers. Although the revenue per minute is higher for Idea but it has coverage only in 11 circles (smaller base).

Particulars	Sept 06	Dec 06	Mar 07	June 07	Sept 07
*Revenue per minute					
Bharti	0.98	0.91	0.86	0.82	0.79
Reliance	0.68	0.82	0.70	0.74	0.73
Idea	0.98	0.87	0.82	0.84	0.80

(Source: Company Reports & ACMIIL Research)

*Revenue per minute- Revenue from mobile services (voice) / Minutes of Use

However if we look at the revenue earned per rupee of capex spent, we find that the revenue generated per rupee of capex is the least in the mobile business. Therefore this means that Bharti is clearly playing on volumes. As long as there is a huge untapped market in India, we believe that Bharti will continue to lead as far as subscriber numbers. This in turn enable it to maintain its leadership in the mobile market and will boost its topline as well.

Particulars	Sept 06	Dec 06	Mar 07	June 07	Sept 07
Revenue/ Capex					
Mobile Business	1.20	2.41	3.96	1.43	1.76
Broadband & Fixed Line	3.22	3.64	3.19	4.71	4.04
Enterprise-Carrier	1.85	1.70	1.64	1.30	1.24
Enterprise-Corporate	1.28	1.61	1.27	3.73	10.94

Source: Company Reports & ACMIIL Research

Effective rollout of distribution.

The company believes that effective distribution is the key to the success of gaining market leadership. Bharti has a huge distribution network covering 672,297 outlets. RCOM distribute through its own branded retail outlets, whereas Bharti uses the small retailers and the local shops to retail its recharge coupons to customers. This significantly reduces costs in terms of overhead expenses. This distribution strategy has been a success for Bharti and has enabled the company to improve its penetration and add to its profits as well.

Pioneer in outsourcing contracts

Bharti has clearly identified the key success factors in the wireless business in India. It has been a pioneer in outsourcing the non-core activities as identified by the company, which include design, planning, supply, installation and commissioning of Airtel networks on the network side and billing, subscriber management system, and other customer relationship management on the information technology side. Bharti continues to outsource contracts to vendors like IBM, Nokia and Ericsson.

Mobile Segment – Performance				(Rs. Mn)	
	Mar-07	Mar-08E	Mar-09E	Mar-10E	
Subscriber Base (No)	37.14	48.6	58.0	66.2	
Net Revenue	141442	185162	221017	252055	
Growth	71.7%	30.9%	19.4%	14.0%	
*ARPU	317	317	317	317	
EBITDA	53253	72078	87302	101326	
Growth	79.2%	35.3%	21.2%	16.1%	
EBITDA Margin	37.7%	38.9%	39.5%	40.2%	

Source: Company Annual Report & ACMIIL Estimates

*ARPU- Average revenue per user per month (Net Revenue / Number of Subscribers/12).

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We expect the mobile segment of Bharti to register an earnings CAGR of 21.2% during 2007-2010
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**Selective strategy to focus
on cities with high revenue
potential**
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**Foray into IPTV and DTH to help
sustain the ARPU**
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Broadband and Fixed line Segment

Bharti provides fixed line and broadband services in 94 cities. The Company has a subscriber base of 2.08mn customers of which 34% subscribe to broadband services. The Company has a selective strategy for this segment as it intends to focus on cities with high revenue potential. Further the selective strategy could be due to the higher cost and lower return ratios involved in these lines of business. The focus is to go deeper than wider. The fixed line services concentrate on just two segments of homes and small and mid size businesses.

Foray into IPTV and DTH (Refer Annexure V)

With a view to leverage on its existing fixed line infrastructure, the company has plans to foray into IPTV. The company is also launching DTH services. While IPTV will be initially limited to six cities, the company is betting big on DTH as a mass product. DTH is satellite-based broadcasting service which is currently being offered by media houses such as Zee Group and TataSky. IPTV enables telephone service providers to use optic fibre or copper cables to deliver TV channels. Commonly known as “Triple Play”, the company will provide bundled services where it will provide voice, broadband and TV services on one platform. The IPTV services will be launched by the December '07 in phases and DTH service will commence by last quarter of FY08 (March).

Bharti has partnered with Cisco for IPTV services. The strategy with IPTV is going to be focused on its existing customers initially and use it to provide them with triple play services, which would also help in the sustaining the ARPU, and then at a later stage the company intends to enter the mass market with the DTH. IPTV services will help the company push up its broadband user base to cover all the homes and small and medium enterprises, which has an Airtel fixed line phone. Initially the company is targeting homes and commercial segment for these services.

There are about 160 mn households in the country, out of which approx 50-60 mn have television. Of which only 3.5 mn are served by the existing DTH players namely, Dish TV and TATA Sky. This proves that opportunity exists for Bharti in the DTH market and it will occupy the third position in the market. This will mark Bharti's entry into the broadcasting segment.

In the long run, IPTV would be uniquely positioned to serve the class segment, and the mass segment would be addressed by the company's DTH strategy.

Policy initiatives benefiting Bharti foray into DTH and IPTV.

Increase in FDI limit

As a part of its move to review the foreign investment cap in the broadcasting sector, the government is set to announce an increase in the FDI limits for the direct-to-home (DTH), cable and IPTV sectors. However the probable date of increase is not known. While the cable sector may be allowed to raise its FDI limits to 74 % from the current limit of 49 %, the DTH companies may be allowed to raise their 20 % FDI cap (of the total 49 % foreign investments cap) to 26 % while continuing with an overall 49 % cap. Since IPTV is a new sector with no defined foreign investments cap, the government is likely to allow foreign investments of 74 %. These moves will give a fillip to the DTH, cable distribution companies and IPTV companies.

Unbundling of channels

Telecom Regulatory Authority of India (TRAI) has done away with the practice of bundling of channels by broadcasters. The regulator made it mandatory for

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We expect the Broadband & Fixed line segment to register an earnings CAGR of 19.8% during 2007-2010
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broadcasters such as Zee Telefilms and Star India to offer their channels to DTH operators on a pick-and-choose basis from December, unlike the existing all-or-nothing approach. TRAI said that the total rate for all the pay channels picked by DTH operators should not exceed 1.5 times the rate of the entire bouquet and that the rate for no channel should be more than three times the average per-channel rate for the entire bouquet. This is a welcome step, both from the DTH operators' and the consumers' perspective.

Broadband and Fixed line segment – Performance				(Rs. Mn)
	Mar-07	Mar-08E	Mar-09E	Mar-10E
Net Revenue	22453	28942	33768	38580
Growth	49.5%	28.9%	16.7%	14.3%
EBITDA	5602	7467	9016	11381
Growth	52.4%	33.3%	20.7%	26.2%
EBITDA Margin	24.9%	25.8%	26.7%	29.5%

Source: Company Annual Report & ACMIIL Estimates

Enterprise services-Carriers

The enterprise services- carriers segment offers national and international long-distance services. Bharti has over 55,574 route kilometres of fibre on its national long-distance network. For international connectivity to the East, Bharti has a submarine cable landing station at Chennai Network I2i, which provides a direct link from Chennai to Singapore. For international connectivity to the West, Bharti is jointly, with 15 other global telecom operators, a founding member of South-East Asia-Middle East-Western Europe-4 (SEA-ME-WE-4) consortium. The company has plans to increase the length of its NLD network by 25,000 km by March 2008

Major international carries connected to the ILD gateways through i2i, SMW4, SMW3 and Flag Submarine cable systems



Legend
 i-2-i
 SEA-ME-WE-4
 Other Int'l Connectivity
 Int'l gateways Connectivity

SEA-ME-WE-4	Connectivity to West
i-2-i	Connectivity to East
ILD munites carried (Q2FY08)	1.3 Bn Min
ILD gateways	4
landing stations	2

(Source: ACMIIL Research)

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100% ownership of Network I2i and co-ownership of SEA-ME-WE-4 will enable Bharti to position itself as a global bandwidth provider
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We expect the Enterprise services- Carrier segment to register an earnings CAGR of 31.3% during 2007-2010
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Coporates segment to register an earnings CAGR of 21.4% during 2007-2010
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Submarine cable acquisition

Bharti has acquired the remaining 49% stake in the submarine cable of Net work I2i from Singtel for a consideration of \$110 million. I2i cable connects Singapore to Chennai and has 8.4 Terabits capacity. The balance 51% is already held by Airtel, which means that post this acquisition, Bharti Aquanet has now become a 100% subsidiary and it is proposed that it will be merged into Bharti Airtel.

This acquisition will enable the company to have significant capacity which will enable a higher use. Further with its subsidiary acquiring license in Singapore, the company will now be able to operate international carrier facilities in Singapore. This will enable the company migrate its business from half channel to a full channel business as earlier Bharti was able to route calls only between India and Singapore and calls beyond Singapore were routed by another carrier. This in turn will enable Bharti to earn higher revenues.

Enterprise services Carrier – Performance				(Rs. Mn)	
	Mar-07	Mar-08E	Mar-09E	Mar-10E	
Net Revenue	34889	51185	66796	78951	
Growth	42.1%	46.7%	30.5%	18.2%	
EBITDA	13758	20423	26785	31975	
Growth	56.5%	48.4%	31.2%	19.4%	
EBITDA Margin	39.4%	39.9%	40.1%	40.5%	

(Source: Company Annual Report & ACMIIL Estimates)

Enterprise Services-Corporates

The enterprise services corporates business unit provides customised and integrated voice and data communication solutions to corporate customers and SMEs through dedicated relationship management.

Enterprise Services Corporates – Performance				(Rs. Mn)	
	Mar-07	Mar-08E	Mar-09E	Mar-10E	
Net Revenue	9049	11628	14093	16207	
Growth	25.9%	28.5%	21.2%	15.0%	
EBITDA	4192	5721	7018	8185	
Growth	55.3%	36.5%	22.7%	16.6%	
EBITDA Margin	46.3%	49.2%	49.8%	50.5%	

Source: Company Annual Report & ACMIIL Estimates

Financials

Revenue Mix

The wireless revenues have been the major contributory. The share of revenues from the wireless segment is increasing. The wireless business is witnessing continuous capex commitment and expansion. This has enabled the company not only to maintain its leadership in the wireless market but has boosted the topline as well. Foray into DTH and IPTV are also expected to improve the revenues further. Going forward, we expect the company to register a CAGR growth in the topline of 24.5%.

“
Mobile segment to continue to be the major contributory based on positive traction in Subscriber additions
 ”

“
EBITDA margin improvement led by higher topline and lower cost
 ”

	Mar-07	Mar-08E	Mar-09E	Mar-10E
Revenue Growth				
Mobile	71.7%	30.9%	19.4%	14.0%
Broadband and Fixed Line	49.5%	28.9%	16.7%	14.3%
Enterprise-Carrier	42.1%	46.7%	30.5%	18.2%
Enterprise-Corporate	25.9%	28.5%	21.2%	15.0%
EBITDA Growth				
Mobile	79.2%	35.3%	21.2%	16.1%
Broadband and Fixed Line	52.4%	33.3%	20.7%	26.2%
Enterprise-Carrier	56.5%	48.4%	31.2%	19.4%
Enterprise-Corporate	55.3%	36.5%	22.7%	16.6%

(Source: Company Annual Report and ACMIIL Estimates)

Margin Expansion likely

We expect the EBITDA margins for the entire business to increase from 40.7% in FY07 to 45.3% in FY10 led by the growth in the topline and reduction in the operating cost. The margin expansion will result from reduction in access deficit charges (29% of the total cost) and increase in the share of on-network calls. On-network calls are those that originate and terminate on a company's own network, and these services are offered at lower than normal call rates. This is because the operator does not have to pay termination charges to another operator. For increasing the on-network call, the company is expanding its NLD network and is also increasing the points of interconnects with BSNL. Further increasing coverage will improve the market share, which may then lead to margin expansion.

Capex and Cash Flows

The company has capex plans of US \$ 3.5 bn (approx Rs.140bn). In mobility segment, the company is planning to add around 30,000 new base stations (capex of \$1 bn which will be spent on the tower business) in the financial year 2008 taking their population coverage to over 75%. The company is also going to increase its focus on broadband. Present in 94 major towns, the Company will deepen its presence in these towns to provide greater speed, better experience to customers in enjoying and using broadband services. The Company is progressing ahead with the launch of DTH services and these services will commence by Q1FY09. The capex will also be utilised for the launch of commercial operations in Sri Lanka for which license has been received.

The entire capex for Bharti will be funded by internal accruals. The company is generating strong cash flows at the operating level. With such strong cash flows the company is not only able to finance its capex internally but has also repaid its debt substantially.

Capex Estimates

Capex (In Mn)	FY08E	FY09E	FY10E
Wireless	81600	71153	65010
Broadband and Fixed Line	5500	5817	5610
Enterprise-Carrier	7900	7339	7013
Enterprise-Corporate	5000	5191	4867
Total	100000	89500	82500

Source: ACMIIL Estimates

Tower Business Valuation

Bharti Infratel, a 100% subsidiary of Bharti Airtel is a telecom infrastructure provider. The company has existing tower infrastructure of total 52000 towers as on September 2007. On 8th December 2007, Bharti Infratel, Idea Cellular and Vodafone formed an independent tower company. The three companies have merged their existing passive infrastructure, including towers, in this new company named "Indus Towers". While Bharti and Vodafone- Essar will each have 42% in the new company, Idea Cellular will have 16% stake. Bharti Infratel will transfer its 30,000 towers in 16 circles, Idea Cellular will transfer 10,000 towers in 9 out of the 11 circles that it operates in and Vodafone- Essar will transfer its entire infrastructure of 30,000 towers in its 16 circles.

	Bharti Airtel	Vodafone Essar	Idea Cellular
Bharti Infratel Ownership	100%	-	-
Operational Circles	7	-	-
No of Towers as on September '07	22,000	-	-
Indus Tower Ownership	42%	42%	16%
Operational Circles	16	16	9
No of Towers as on September '07	30,000	30,000	10,000

(Source: Company data)

Drivers for Tower Business.

Increasing subscriber growth:

The Indian telecom industry is witnessing robust growth in terms of subscribers, especially from the B and C Circles. Most of the towers have capacity constraints, as one tower is capable of handling only 1000 subscribers per operator per minute. Therefore sharing of towers would help in overcoming the capacity constraints.

Increasing coverage in rural areas:

The operators have now begun to increase coverage in the rural areas. This requires huge investments on the part of the operator and the returns are quite low as the usage is low in rural areas. Tariffs in rural areas are expected to be low, as purchasing power is low. Lower tariffs are prerequisite for increased affordability. Thus, sharing would enable to reduce the cost of operations.

Significant cost sharing

The cost for a cell site includes passive and active infrastructure cost. The tower cost is basically divided into Active and passive cost. Passive cost includes the cost incurred on land, tower, air conditioning equipment, shelter and security cabin, diesel generator etc. The tower company incurs these expenditures. Active cost includes cost on base transceiver stations (BTS), circuits and antennas. The tenants have to incur expenses on the active components. The tower business model results in sharing of passive infrastructure, which constitutes about 60% of the total cell site cost. Therefore, sharing will enable the operators to reduce their capex to a great extent. But the concern in this respect is that if all the players aggressively expand their tower portfolio then the sharing ratio would tend to decrease which may then impact our valuation accordingly.

For Valuation refer Annexure I

VALUATION AND RECOMMENDATION

We expect Bharti to register earnings at a CAGR of 24.5% over FY07-10E. Bharti has reported EPS of Rs. 21.4 for FY07. We expect the company to register an EPS of Rs.39.9 in FY09E and Rs.49.6 in FY10E. At current market price (CMP) of Rs.970 the stock is trading at 24.3x FY09E & 19.6x FY10E earnings per share. We recommend a "BUY" on Bharti Airtel Ltd with a price target (based on a DCF Valuation) of Rs.1175.

	Mar-08E	Mar-09E	Mar-10E	Mar-11E	Mar-12E	Mar-13E	Mar-14E	Mar-15E	Mar-16E	Mar-17E
EBITDA	102897	133789	161954	186857	208429	231441	255285	276888	295673	339698
Tax	8784	12950	16343	20367	23553	27541	31911	36826	40803	45859
Capex	100000	89500	82500	73000	64500	59500	54100	45200	41900	30200
Change in NWC	15443	12362	12659	17751	16257	15044	15572	15506	15375	18683
FCF	9556	43702	75771	111241	136634	159443	184847	210368	228345	282322

Source: ACMIIL Estimates

Assumptions	
Risk Free rate	8%
Beta	0.8
Risk Premium	6%
Cost of equity	12.6%
Cost of Debt	8.00%
Terminal growth rate	4%
WACC	10.8%

Source: ACMIIL Estimates

Valuations	Amount (In Mn)
Present Value of cash flows	717648
Present Value of terminal value	1554759
Value	2272407
Net Debt (loan funds-Cash balance)	44338
Value of Equity	2228069
No of Shares	1896
Fair Value (Rs per share)	1175

Source: ACMIIL Estimates

Earnings Summary			(Rs. Mn)	
Particulars	2007	2008E	2009E	2010E
Net Sales	185320.9	241756.8	303514.4	357633.4
Total Expenditure	109858.2	138860.3	169725.3	195679.1
Operating Profits	75462.8	102896.5	133789.2	161954.3
EBDIT	75462.8	102896.5	133789.2	161954.3
Depreciation	24486.6	33741.8	40072.0	46859.0
Amortization	1703.8	2175.8	2367.4	2503.4
EBIT	49272.4	66978.9	91349.7	112591.9
Interest	2488.5	2390.4	1419.5	499.5
PBT	46783.9	64588.5	89930.2	112092.4
Taxes	5680.5	9236.2	13597.4	17183.8
Profit before Minority Interest	41103.4	55352.4	76332.8	94908.6
Less: Minority Interest	482.2	553.5	763.3	949.1
Net Profits	40621.2	54798.8	75569.4	93959.5
Growth in sales (%)	58.1%	30.5%	25.5%	17.8%
Operating Profits Growth (%)	79.2%	36.4%	30.1%	21.1%
PAT Growth (%)	100.3%	34.9%	37.9%	24.3%
Operating Profit Margin (%)	40.7%	42.6%	44.1%	45.3%
Net Profit Margin (%)	21.9%	22.7%	24.9%	26.3%

Source: Company Annual report and ACMIL estimates

Sources and Application of funds			(Rs. mn)	
Particulars	2007	2008E	2009E	2010E
Sources of Funds				
Share Capital	18959.3	18959.3	18959.3	18959.3
Reserves and Surplus	95924.5	150723.3	226292.8	320252.3
Total Shareholders Funds	114883.8	169682.7	245252.1	339211.6
Total Loan Funds	52858.9	50858.9	30859.0	10858.9
Minority Interest	1948.2	2501.8	3265.1	4214.2
Net Deferred Tax Liability	2387.2	2839.3	3486.8	4327.5
Total Capital Employed	172078.1	225882.6	282863.0	358612.2
Application of Funds				
Gross Block	281199.2	381199.2	470699.2	553199.2
Less: Accumulated Depreciation	76155.4	112073.1	154512.5	203874.9
Net Block	205043.8	269126.1	316186.7	349324.3
Capital Work in Progress	24708.8	26077.9	23127.8	22741.0
Investments	1471.4	1471.4	1471.4	1471.4
Net Current Assets	-59172.5	-70819.5	-57949.6	-14951.1
Miscellaneous Expenditure	26.6	26.6	26.6	26.6
Total Assets	172078.1	225882.6	282863.0	358612.3

Source: Company Annual report and ACMIL estimates

Cash Flow Statement			(Rs Mn)	
Particulars	2007	2008E	2009E	2010E
Pre tax profits	46783.9	64588.5	89930.2	112092.4
Depreciation	26190.4	35917.6	42439.4	49362.4
Changes In WC	10386.7	15443.5	12362.5	12659.4
Tax	-4844.6	-8784.0	-12950.0	-16343.1
Others	6147.4	2620.2	5306.5	1058.2
Cash from operations	84663.7	109785.8	137088.7	158829.3
Capital Expenditure	-85035.2	-100000.0	-89500.0	-82500.0
Changes in Investments	1341.9	0.0	0.0	0.0
Others.	268.7	0.0	0.0	0.0
Cash from Investment activities	-83424.7	-100000.0	-89500.0	-82500.0
Changes in share capital & Sec. premium	0.0	0.0	0.0	0.0
Change in debts	6293.3	-2000.0	-19999.9	-20000.1
Interest payments	-2561.3	-2390.4	-1419.5	-499.5
Div & Div Tax	0.0	0.0	0.0	0.0
Others	39.3	0.0	0.0	0.0
Cash from Finance	3771.3	-4390.3	-21419.4	-20499.6
Total cash generated	5010.4	5395.5	26169.3	55829.7
Cash at the beginning	3510.5	8520.9	13916.3	40085.6
Cash Balance	8520.9	13916.3	40085.6	95915.3

Source: Company Annual report and ACMIL estimates

Key ratios

Particulars	2007	2008E	2009E	2010E
Profitability Ratios				
Operating Profit Margin (%)	40.7%	42.6%	44.1%	45.3%
EBIT Margin (%)	26.6%	27.7%	30.1%	31.5%
PAT Margin (%)	22.2%	22.9%	25.1%	26.5%
RONW (%)	43.1%	38.5%	36.4%	32.2%
ROCE (%)	20.9%	21.1%	22.9%	22.9%
Per Share Ratios				
Earnings (Rs.)	21.4	28.9	39.9	49.6
Cash Earnings (Rs.)	42.8	59.1	77.7	94.5
Book Value (Rs.)	60.4	89.3	129.2	178.7
Valuation Ratios				
P/E (x)	45.3	33.6	24.3	19.6
Cash P/E (x)	22.7	16.4	12.5	10.3
P/BV (x)	16.1	10.9	7.5	5.4
Capital Structure Ratios				
Debt/Equity	0.46	0.30	0.13	0.03
Current Ratio	0.4	0.5	0.6	0.9
Quick Ratio	0.2	0.2	0.4	0.7
Cash Ratio	0.08	0.11	0.25	0.53
Turnover Ratios				
Inventory Turnover (x)	107.3	101.5	120.9	120.8
Debtors Turnover (x)	14.8	15.6	15.9	15.7
Fixed Asset Turnover (x)	0.9	0.9	1.0	1.0

Source: Company Annual report and ACMIL estimates

ANNEXURE I - TOWER BUSINESS VALUATION

D) Estimating the number of towers

We have estimated the number of subscribers for Bharti to reach 90.9 mn by 2017. We expect majority of the incremental tower to be Ground Based Towers (GBT) as the Roof Top Towers (RTT) have capacity to handle just two- three tenants and therefore have lower revenue potential.

Projections for Bharti Infratel

	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E	2017E
No of towers	23838	33184	43899	55145	64710	73733	82577	91425	98342	105232
Ground Based	13111	19578	27217	35844	44650	54562	61520	69940	76412	82923
Roof Top	10727	13605	16682	19301	20060	20572	21057	21485	21930	22309

Source: ACMIIL Estimates

Projections for Indus Towers

	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E	2017E
No of towers	83500	96200	106800	118200	130200	140500	147800	156155	162089	167600
Ground Based	45925	56758	66216	76830	87646	96945	103460	110870	117190	122328
Roof Top	37575	39442	40584	41370	42554	43555	44340	45005	45385	45596

Source: ACMIIL Estimates

II) Average tenancy:

Sharing of towers is critical to the **survival** of the tower business. Further we have assumed that there are no more than four operators in each circle, therefore we have assumed that the operator would scale up the number of tenants upto 4 by 2017 for ground based towers thereby increasing the tenancy ratio from 1.40 in 2008 to 2.67 in 2017. Further for the roof top tower with 3 tenants, we expect the tenancy ratio to increase from 1.00 in 2008 to 2.26 in 2017. The assumption for tenancy mix remains the same for Bharti Infratel as well as Indus towers. **But there are two concerns concern with respect to the tenancy mix.**

- If all the players aggressively expand their tower portfolio then the sharing ratio would tend to decrease which may then impact our valuation accordingly.
- Secondly Bharti Infratel may face competition from the joint venture company "Indus Towers". If Indus towers enter the remaining 7 circles where Bharti Infratel is present, then the new tenants would prefer to be tenants of Indus Towers. Being the fourth tenant the rentals would be less. In such a scenario the tenancy mix for Indus towers will increase at a much faster pace than Bharti Infratel. The mix of tenants and average tenancy would be as follows.

Projections for Average Tenancy Mix

	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E	2017E
RTT	1.00	1.40	1.48	1.60	1.75	1.90	2.05	2.12	2.20	2.26
GBT	1.40	1.57	1.64	1.76	1.90	2.03	2.19	2.29	2.48	2.67

Source: ACMIIL Estimates

III) Capex requirement:

The tower cost is basically divided into Active and Passive cost. Passive cost includes the cost incurred on land, tower, air conditioning equipment, shelter and security cabin, diesel generator etc. The tower company incurs these expenditures. Active cost includes cost on Base Transceiver Stations (BTS), circuits and antennas. The tenants have to incur expenses on the active components. The total capex incurred by the tower company is different for GBT and RTP. The total capex incurred is around 1.2-1.5 mn for RTP and 2.5-2.7mn for GBT. We have further assumed that the 75% of capex would be funded by debt. The cost structure is as follows.

	RTT (Rs Mn)	GBT (Rs Mn)	% Of the total
Tower Erection cost	0.90	1.62	60
Site set up cost	0.38	0.68	25
Land lease, property cost, taxes	0.22	0.40	15
TOTAL	1.5	2.7	100

Source: Cris Infac and GTL Infra

IV) Monthly Rentals:

The rental fee is designed to account for recovering the capex and pass through cost. As the number of tenants increase, rentals decline on account of discount. Initially the discount in the rentals is high but later on it declines. The rentals are normally in the range as mentioned under.

Tenants	Ground Based Tower Avg Rentals per month	Roof Top Tower Avg Rentals per month
One tenant	38000	25000
Two tenants	33500	23500
Three tenants	31100	22900
Four tenants	29000	-

Source: GTL Infra & Company

V) Expenditure

We have modelled the expenses to average around Rs. 28000 per tower per month. With the increase in the number of tenants the incremental expenditure comes to around 1500-2000 per tower per month. Incremental operating costs are minimal. Therefore, as additional tenants are added to a site, the majority of incremental revenue flows through to operating profit. Global trend indicates operating margins in the range of 55% to 65% over a period of 10 years. (Source: GTL)

VI) Depreciation

The depreciation is applied on a straight- line basis and on an average basis the life of a tower would be approx 12 years.

Particulars	Useful Life (In Yrs)
Towers	20
Shelter	10
Network Operation Assets	4-10
Others	6
Average	11.5

Source: GTL Infra Annual Report 2006-07.

VII) Working Capital requirements:

We have assumed that we have no debtors no creditors (DVP).

VALUATION FOR BHARTI INFRA TEL

We have arrived at a fair value for the tower business on the basis of a DCF Valuation. The various assumptions for our DCF analysis are as follows.

Assumptions	
Risk Free rate	8%
Beta	0.8
Risk Premium	6%
Cost of equity	12.6%
Cost of Debt	8.00%
Terminal growth rate	4%
WACC	10.8%

Source: ACMIIL Estimates

Tower Business-DCF

	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17
EBITDA	2970	6792	8938	12656	17285	23311	27761	32742	39762	47351
Tax	0	0	0	0	212	562	934	1379	2185	3028
Capex	18356	21780	25239	27221	24916	27530	19514	23377	18141	18147
Change in NWC	0	0	0	0	0	0	0	0	0	0
FCF	-15386	-14988	-16302	-14564	-7843	-4781	7313	7986	19436	26176

Source: ACMIIL Estimates

Valuations- Tower Business	Amount (In Mn)
Present value of cash flows	-30815
Present value of terminal value	144154
Value	113339
Net Debt (loan funds-Cash balance)	0
Value of Equity	113339
No of Shares	1896
Fair Value (Rs per share)	60

Source: ACMIIL Estimates

VALUATION FOR INDUS TOWERS

Tower Business-DCF

	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17
EBITDA	12319	19691	22479	28206	35344	42381	49135	55563	66116	75673
Tax	0	0	0	0	0	0	156	873	2122	3088
Capex	31680	32050	27250	29837	30979	26609	18768	20634	17318	13942
Change in NWC	0	0	0	0	0	0	0	0	0	0
FCF	-19361	-12359	-4770	-1631	4365	15772	30210	34055	46675	58643

Source: ACMIIL Estimates

Valuations- Tower Business	Amount (In Mn)
Present value of cash flows	48465
Present value of terminal value	322950
Value	371414
Net Debt (loan funds-Cash balance)	0
Value of Equity	371414
Bharti's share @ 42%	155994
No of Shares	1896
Fair Value (Rs per share)	82
Source: ACMIIL Estimates	

Please note - The assumption for DCF remain the same as Bharti Infratel Ltd.

ANNEXURE I I-SPECTRUM

What is spectrum and who uses it?

Spectrum is a range of electromagnetic radio frequencies used for transmission of voice, data and images. Mobile telecom operators send and receive frequencies to enable communication between two phones. The Defence services, radio, space organizations and railways also use the spectrum.

Management of spectrum

The National Frequency Allocation Plan (NFAP) and the International Radio Regulations of the International Telecommunications Union (ITU) govern assignment of spectrum. The Wireless Planning and Coordination (WPC) wing of the Department of Telecom (DoT) performs spectrum management functions in India, while the Standing Advisory Committee on frequency allocation formulates and reviews the NFAP and evolves technical criteria equipment standards.

Spectrum availability

The various frequency bands in which the mobile operators provide services is as under:

GSM		
Band	Capacity earmarked at present	Used for
1800 MHz	2x75 MHz	2G services
900 MHz	2x25 MHz	2G services
2100 MHz	2x60 MHz	3G services

Source: TRAI spectrum recommendations

CDMA		
Band	Capacity earmarked at present	Used for
450 MHz	2x4.975 MHz	Will be used for 3G
800 MHz	2x20 MHz	Used for 2G at present and will also be used for 3G
850 MHz	2x25 MHz	-
1900 MHz	2x60 MHz	-

Source: TRAI spectrum recommendations

Currently, mobile operators use the 1800 MHz, 800 MHz and the 900 MHz band. These bands are also being used by the Defence agencies, making it difficult for DoT to release additional spectrum in the same band for mobile usage. However the Communications Ministry had reached an agreement with the Defence ministry and they have accepted to vacate spectrum to the extent of 25 MHz in the 1800 MHz band. This was on the condition that DOT would lay down wireline infrastructure for use by Defence services.

Spectrum allocation policy at present

In India, spectrum varying from 2X4.4 MHz to 2X10 MHz has been allocated to Global System for Mobile (GSM), while 2X2.5 MHz to 2X5 MHz has been allocated to service providers using CDMA technology. For GSM, spectrum allotment is subscriber based: 4.4 MHz is allotted initially and the telecom service provider can ask for an additional 6.2 MHz. Spectrum of 8 MHz is given only to companies with a subscriber base of over five lakh and another 2 MHz to 8 MHz after attaining a subscriber base of 10 lakh.

CDMA operators get 2.5 MHz initially and an additional 2.5 MHz is considered after ensuring efficient utilization and based on subscriber base.

Policy implications

With TRAI and TEC both increasing the subscriber base criteria its has now become difficult for the existing operators to get additional spectrum. For efficient quality of services, spectrum availability is a must. If any of the norms for spectrum allocation are implemented the existing operators will have to increase their subscriber base to get additional spectrum. No decision has yet been taken as to additional allocations.

The scarcity of spectrum is an Industry wide issue, which needs to be addressed. The spectrum scarcity may have a higher impact on the players of a smaller size. The reason being the huge capex required for upgrading of network due to the spectrum crunch.

The extent each player will be affected due to spectrum scarcity will depend on the capability of the service provider to maintain his quality of services. Maintaining quality becomes even more important in the wake of introduction of Mobile Number Portability (MNP).

From the subscriber's point of view, we believe that the addition to subscribers will not be affected much with the spectrum crunch. The criteria for subscribing towards a mobile connection by no means include determining the amount of spectrum a service provider has. The existing subscribers may switch over to some other service provider due to deterioration in QoS. With MNP, switching to another service provider will be easier.

Another impact would be an increased competition between the service providers. This may result in the aggressive pricing strategies being adopted by the service providers to retain their subscribers.

But there is a fundamental problem and that is "spectrum scarcity". There is not much spectrum available for commercial cellular services in this country. The Defence has also delayed the vacation of 25 MHz of spectrum in the 1800 MHz frequency for 2G services. Most of the services operators have already become eligible for additional spectrum. With the existing operators suffering, there are somewhere around 46 companies which have applied for 575 new licenses. There are many existing licensees without any allocation of spectrum.

We have done calculations to arrive at the circle wise subscribers per MHz for the industry as well as for Bharti. The position is as follows.

Service Area	Circle	GSM	Subscriber base as on March 07	Spectrum allocated as on March 07	Mn Subs per MHz
Andhra Pradesh	A	Bharti Mobiles	3,609,618	8.8	0.41
Industry Average			8,748,159	32.8	0.27
Assam	C	Bharti Cellular	609,530	6.2	0.10
Industry Average			2,300,425	23	0.10
Bihar	C	Bharti Cellular	2,302,105	8	0.29
Industry Average			4,717,573	24.8	0.19
Chennai	METROS	Bharti Cellular	1,020,973	8.6	0.12
Industry Average			3,684,854	33.2	0.11
Delhi	METRO	Bharti Cellular	3,039,225	10	0.30
Industry Average			8,186,834	36	0.23
Gujarat	A	Bharti Cellular	1,585,887	6.2	0.26
Industry Average			8,559,219	31.6	0.27
Haryana	B	Bharti Cellular	776,946	6.2	0.13
Industry Average			3,347,254	24.8	0.13
HP	C	Bharti Cellular	545,635	6.2	0.09
Industry Average			1,245,724	27	0.05
Jammu	C	Bharti Cellular	533,590	6.2	0.09
Industry Average			1,422,120	19	0.08
Karnataka	A	Bharti Mobiles	4,275,556	10	0.43
Industry Average			8,570,951	32.2	0.27
Kerala	B	Bharti Cellular	982,250	6.2	0.16
Industry Average			5,350,681	28.4	0.19
Kolkata	METRO	Bharti Cellular	1,047,016	8	0.13
Industry Average			3,274,789	30.2	0.11
MP	B	Bharti Cellular	1,387,537	6.2	0.22
Industry Average			5,220,252	26.6	0.20
Maharashtra	A	Bharti Cellular	2,538,185	6.2	0.41
Industry Average			8,790,997	30.4	0.29
Mumbai	METRO	Bharti Cellular	1,859,228	9.2	0.20
Industry Average			6,812,037	37.2	0.18
North east	C	Bharti Cellular	274,044	4.4	0.06
Industry Average			1,175,459	21.2	0.06
Orissa	C	Bharti Cellular	915,619	8	0.11
Industry Average			2,388,317	24.8	0.10
Punjab	B	Bharti Mobiles	2,602,027	8	0.33
Industry Average			6,809,284	28.4	0.24
Rajasthan	B	Hexacom India	1,800,356	6.2	0.29
Industry Average			5,614,884	26.6	0.21
Tamil Nadu	A	Bharti Cellular	2,007,887	6.2	0.32
Industry Average			8,010,972	30.4	0.26
UP East	B	Bharti Cellular	1,591,135	6.2	0.26
Industry Average			7,506,356	30	0.25
UP West	B	Bharti Cellular	1,021,217	6.2	0.16
Industry Average			5,635,069	28.4	0.20
West Bengal	B	Bharti Cellular	815,644	4.4	0.19
Industry Average			4,058,956	26	0.16
TOTAL			121,431,166	653	0.19

From the table above we see that out of the total 23 circles, in 10 circles there is wide difference in the number of subscribers being carried per MHz of spectrum by Bharti and the Industry on an average. These calculation are done irrespective of the nature of traffic whether voice or data. There can be many interpretations of the above data.

1. Bharti is efficient in utilising spectrum as it is able to carry more subscribers per MHz. OR
2. In those 10 circles, apart from Bharti, the other operators even though carrying fewer subscribers per MHz are still demanding additional spectrum. This may mean that there is spectrum scarcity for Bharti in these circles.

ANNEXURE III- EXISTING PLAYERS, NEW PLAYERS WHO HAVE APPLIED AND WHO GOT LOIS

DoT - will issue Letters of Intent - LoIs - for commencing mobile services in India to 16 companies that include ByCell, Swan, Cheetah, S Tel, Parsynath, Datacom, Unitech, Shyam, BPL Mobile and Indiabulls. All these companies have applied for licences before September 25, 2007. Each LoI holder, after paying the licence fee, will be entitled to get 4.4 MHz of GSM spectrum per circle, subject to availability. The LoIs and the licence fee deposit will guarantee these companies a place in the queue for spectrum.

Among the existing operators, three existing operators, namely, Idea, Aircel, Vodafone and Maxis, are awaiting spectrum to launch services, though they got the licences. These companies will be placed ahead of these 16 companies in the queue for spectrum. Idea is awaiting spectrum in two circles, while Aircel and Vodafone wait in seven and six circles respectively.

Apart from the above, Reliance communications is also in queue for spectrum along with Idea, Aircel and others after it was awarded pan India GSM licence. The Company has already paid the requisite licence fee of Rs 1,651 crore for a pan-India GSM licence on October 19, 2007, after DoT, in its new telecom policy, had said telecom operators could offer services using dual technology.

ANNEXURE IV- METHODOLOGY FOR SUBSCRIBER PROJECTIONS

For projecting the wireless subscriber base, we have first determined the potential size of India's population that can afford mobile services. The population estimates have been arrived at from the Census India Report (December 2006). From these estimates we have reduced the population living below the poverty line (25%) to arrive at the population that can afford mobile services. Further assuming that people below the age of 15 years may not avail of mobile services, we have reduced that proportion of population as well to arrive at our sample population. From 2010 onwards, as coverage in the rural areas increase, we expect the share of metros in the net additions to decline as is witnessed off late. This is also reflected in the high teledensity levels of metros like Delhi and Mumbai. Therefore, we expect a shift in the net additions from urban to rural areas. This would moderate the pace of growth to some extent from 2010 onwards.

Reliance Communications Ltd

Year	Adjusted Population Figures (in mn) *	Total wireless subscribers#	Adjusted Teledensity for wireless subscribers	Reliance Subscribers	Market Share for Reliance
2004	526	35	6.7	-	-
2005	534	55	10.3	-	-
2006	567	99	17.5	20.2	20.4%
2007	576	166	28.8	29.0	17.5%
2008P	584	220	37.7	38.5	17.5%
2009P	592	265	44.8	46.9	17.7%
2010P	600	305	50.8	54.3	17.8%
2011P	635	338	53.3	60.8	18.0%
2012P	643	366	56.9	66.6	18.2%

Source: Census India Report, Cris Infac & ACMIIL Research

*Adjusted for population that can afford mobile services# Wireless Subscribers include GSM, CDMA and WLL-F subscribers.

Idea Cellular Ltd

Year	Adjusted Population Figures (in mn) *	Total wireless subscribers#	Adjusted Teledensity for wireless subscribers	Idea Subscribers	Market Share for Idea
2004	526	35	6.7	2.7	7.7
2005	534	55	10.3	5.1	9.3
2006	567	99	17.5	7.4	7.5
2007	576	166	28.8	14.0	8.4
2008P	584	220	37.7	20.4	9.3
2009P	592	265	44.8	28.5	10.8
2010P	600	305	50.8	35.3	11.6
2011P	635	338	53.3	42.1	12.5
2012P	643	366	56.9	50.3	13.7

Source: Census India Report, Cris Infac & ACMIIL Research

*Adjusted for population that can afford mobile services# Wireless Subscribers include GSM, CDMA and WLL-F subscribers.

ANNEXURE V- GLOSSARY OF TERM USED

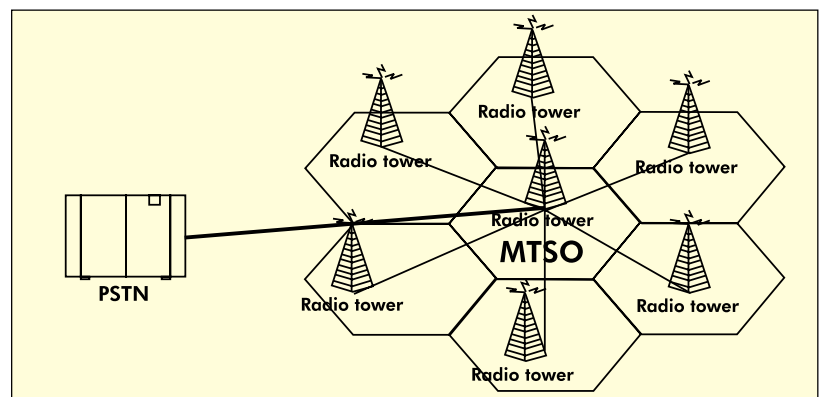
a) Census Towns

In India, a Census Town is one which has:

- a minimum population of 5,000;
- at least 75 per cent of male working population engaged in non-agricultural pursuits; and
- a density of population of at least 400 persons per sq. km.

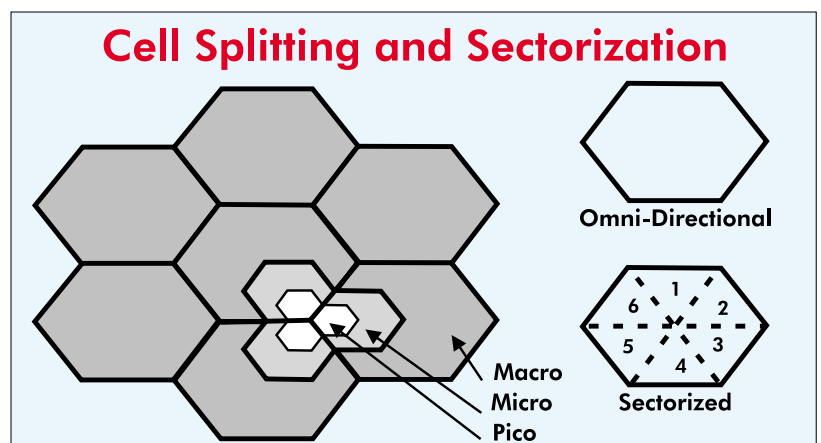
b) Cell

A cell is the basic geographic unit of a cellular system. The term cellular comes from the honeycomb shape of the areas into which a coverage region is divided. Cells are base stations transmitting over small geographic areas that are represented as hexagons. Each cell size varies depending on the landscape. Because of constraints imposed by natural terrain and man-made structures, the true shape of cells is not a perfect hexagon.



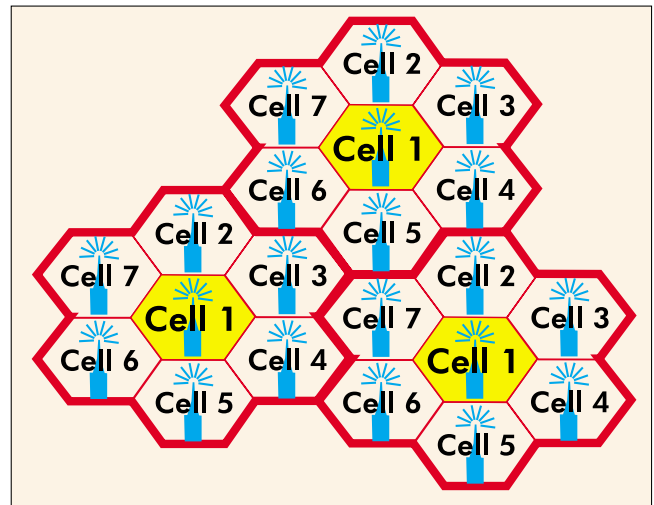
c) Cell Splitting

As a service area becomes full of users, cell splitting is used to split a single area into smaller ones. In this way, urban centers can be split into as many areas as necessary to provide acceptable service levels in heavy-traffic regions. The Cell Splitting method takes a large cell that can no longer provide acceptable service and divides it into smaller cells. These smaller cells are laid out to use the frequency reuse pattern already in the system.



d) Frequency Reuse

As a small number of radio channel frequencies are available for mobile systems, reuse of radio channels was necessary to carry more than one conversation at a time. This is called frequency planning or frequency reuse. The concept of frequency reuse is based on assigning to each cell a group of radio channels used within a small geographic area. Cells are assigned a group of channels that is completely different from neighboring cells. The coverage area of cells is called the footprint. This footprint is limited by a boundary so that the same group of channels can be used in different cells that are far enough away from each other so that their frequencies do not interfere. In the diagram below, cells with the same number have the same set of frequencies. Here, because the number of available frequencies is 7, the frequency reuse factor is 1/7. That is, each cell is using 1/7 of available cellular channels.



e) Internet Protocol Television (IPTV)

Use of the Internet Protocol to distribute Television signals to end users or subscribers on demand. It is a method of distributing television content over IP that enables a more customized and interactive user experience.

f) Direct – to –Home (DTH)

(DTH) Satellite transmissions received into the home via a dish, as distinct from satellite transmissions relayed via a cable system.

g) Vacation of Spectrum

Vacation of spectrum refers to a reallocation of the band of frequencies earlier used by the defense to the mobile operators. There is a delay in vacation of spectrum as the defense has already incurred huge capital outlay to lay down the infrastructure, which is compatible to the frequency being vacated. As a precondition for vacating the spectrum the defense has demanded laying down of wireline infrastructure by Department of Telecom (DOT) as a proxy for the frequencies vacated.

h) Technology

<p style="text-align: center;">FDMA</p>	<p style="text-align: center;">TDMA</p>	<p style="text-align: center;">CDMA</p>
<p>Frequency division multiple access. FDMA divides the given spectrum into channels by the frequency domain. Each phone call is allocated one channel for the entire duration of the call. In the figure above, each band represents one call</p>	<p>Time division multiple access: TDMA divides the spectrum into channels by the time domain. A channel in the frequency domain is divided among multiple users. Each phone call is allocated a spot in the channel for a small amount of time, and “takes turns” being transmitted. In the figure above, each horizontal band represents the channel divided by the frequency domain. Within that is the vertical division in the time domain. Each user then takes turns occupying the channel.</p>	<p>Code Division multiple access: Unlike FDMA and TDMA, CDMA transmission does not work by allocating channels for each phone call. Instead, CDMA utilizes the entire spectrum for transmission of each call. Each phone call is uniquely encoded and transmitted across the entire spectrum, in a manner known as spread spectrum transmission. In the figure above, each brightly colored pattern represents the encoded phone call being transmitted across the spectrum</p>

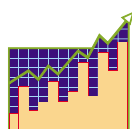
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1. Analyst ownership of the stock	NO
2. Broking Relationship with the company covered	NO
3. Investment Banking relationship with the company covered	NO
4. Discretionary Portfolio Management Services	YES

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