

Consultation Paper No.7/2007



Telecom Regulatory Authority of India

Consultation Paper

on

**Review of license terms and conditions and capping of number of
access providers**

New Delhi: June 12, 2007

**Mahanagar Doorsanchar Bhawan
Jawahar Lal Nehru Marg
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Preface

The telecom industry has already met the 2010 goal of a 15 per cent teledensity set in the New Telecom Policy 1999, and is poised to exceed the DoT's target of 250 million telephone subscribers by 2007. A major factor of this success has been the liberalization of the Indian telecom market with effective policy and regulatory framework.

However, competition and steady subscriber growth by itself may not be sufficient to ensure that the Indian telecom market will sustain the same phenomenal growth in the changing market scenario. In the last few years the telecom Sector has also witnessed a major transformation, with the entry of a large number of operators, higher wireless growth, addition of innovative value added services, inclination of operators to deploy state of art technologies, introduction of bandwidth hungry applications and the requirement of additional spectrum for such services, increase in FDI limit, etc.

It is imperative that policy framework is periodically reviewed to provide required catalyst for sustained growth. From the perspective of the cellular telephony market, there is an urgent need to ensure a clear, fair, predictable, transparent and stable policy and regulatory framework, especially with regard to spectrum policy, investment norms, competition policy, and the licensing regime. Recognizing the need to ensure that the policies keep pace with the developments in the Telecommunication sector, the Government has sought recommendations of TRAI, as per the provisions of TRAI Act.

TRAI has received a reference from Department of Telecommunications seeking recommendations of TRAI on the issue of determining the number of Access providers in each service area and review of the terms and conditions in the Access provider license which include substantial equity holding, transfer of licenses, Mergers & Acquisitions, permitting service providers to offer access services using combination of technology under the same license, roll-out obligations, etc.

In keeping with TRAI's commitment to transparency and wider consultation with stakeholders, the Authority has initiated this consultation process. We invite all stakeholders to respond to the issues raised in this consultation paper. The consultation paper is available on TRAI's website: (www.traigov.in). The stakeholders are requested to send their comments on the various issues mentioned in the consultation paper by 27th June 2007. In case of any clarification/information, please contact Sh. Sudhir Gupta, Advisor (MN), Tel.No.+91-11-23220018, Fax: +91-11-23212014 or email at sgupta09@gmail.com.

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List of Abbreviations Used

Abbreviation	Expansion
AGR	Adjusted Gross Revenue
BSNL	Bharat Sanchar Nigam Limited
BSO	Basic Service Operators
CDMA	Code Division Multiple Access
CMTS	Cellular Mobile Telephone Services
DEL	Direct Exchange Line
DoT	Department of Telecommunications
GDP	Gross Domestic Product
GSM	Global System for Mobile communication
ILD	International Long Distance
MTNL	Mahanagar Telephone Nigam Limited
NFAP	National Frequency Allocation Plan
NLD	National Long distance
POP	Point of Presence
SDCA	Short Distance Charging Area
SMP	Significant Market Power
TRAI	Telecom Regulatory Authority of India
UAS	Unified Access Services
VPT	Village Public Telephone
WPC	Wireless Planning and Coordination

Chapter 1. Introduction

Background

1.1 As per the provisions of Clause 11 (1) (a) of the TRAI Act, 1997 (24 of 1997) the functions of the Telecom Regulatory Authority of India (hereinafter the Authority) is to make recommendations, either suo motu or on a request from the licensor, on the following matters, namely:-

- *need and timing for introduction of new service provider;*
- *terms and conditions of license to a service provider;*
- *revocation of licence for non-compliance of terms and conditions of a licence;*
- *Measures to facilitate competition and promote efficiency in the operation of telecommunication services so as to facilitate growth in such services;*
- *Technological improvements in the services provided by the service providers;*
- *Type of equipment to be used by the service providers after inspection of equipment used in the network;*
- *Measures for the development of telecommunication technology and any other matter relatable to telecommunication industry in general;*
- *Efficient management of available spectrum.*

1.2 In accordance with the above provisions of the TRAI Act, the Department of Telecommunications (DoT) vide their letter dated April 13, 2007 (**Annex I**) has sought the Authority's recommendations on the review of the terms and conditions in the Access provider (CMTS/UAS/Basic) license with reference to following subject matter:

- i) Substantial equity holding by a company/legal person in more than one licensee company in the same service area (clause 1.4 of UASL agreement).
- ii) Transfer of licences (clause 6 of the UASL).

- iii) Guidelines dated 21.02.2004 on Mergers and Acquisitions. TRAI in its recommendations dated 30.01.2004 had opined that the guidelines may be reviewed after one year.
- iv) Permit service providers to offer access services using combination of technologies (CDMA, GSM and/or any other) under the same license.
- v) Roll-out obligations (Clause 34 of UASL).
- vi) Requirement to publish printed telephone directory.

Certain issues are applicable to other licenses (National long distance (NLD)/International long distance (ILD) etc.) also.

- 1.3 In the said letter, DoT has also requested TRAI to furnish their recommendations in terms of Clause 11(1)(a) of TRAI Act, 1997 as amended by TRAI (Amendment) Act, 2000 on the issue of limiting the number of Access provider in each service area.

Telecom Sector – At a Glance

- 1.4 The positive regulatory environment, healthy competition and decline in tariff contributing to increasing affordability have led to a strong subscriber growth over the past few years. The telecom sector in India is a showcase of successful liberalization and the subscriber numbers have significantly exceeded the industry estimates. Today, the Indian market is one of the most competitive markets in the Asian region. The high points of the current status of telecom growth are mentioned below:

- More than 212 million telephone subscribers at the end of April 2007, having approximately 41 million wirelines and 171 million wireless.
- Adding more than 6 million subscribers per month during last six months.
- Fourth largest network of the World-after China, USA & Russia.
- With present growth rate, it is expected to cross 250 million by 2007 end and may become second largest network of the world.
- Mobile subscribers almost doubled in last one year.

- Overall teledensity of 18.74% at the end of April, 2007 with rural teledensity of 6%¹.
- Internet subscriber base of 8.5 million excluding internet users on mobile.
- 2.43 million Broadband subscribers.
- Optional fiber backbone of 7.7 lakhs route KM.
- More than six cellular mobile service providers in most of the circles.
- FDI/Foreign Equity of US \$ 3.89 billion (from August 1991 to March 2007) in telecom Sector.
- Significant infrastructure has been setup and is being further enhanced by private sector players.
- Tariffs for long distance, cellular services and broadband have come down significantly.

1.5 Tele density in 1948 (immediately post independence) was a low of 0.02% and by 1998 i.e. 50 years after the independence, was only 1.94%. In the 50 years of a vertically integrated monopoly environment, the country had only achieved a total growth in teledensity of 1.92%. Since 1994, when the telecom Sector was opened up to allow Private Operators to provide cellular telephony services, the mobile subscriber base has exceeded the 170 million figure and is presently the fourth largest in the world (Figure 1). The industry has already met the 2010 goal of a 15 per cent teledensity set in the New Telecom Policy (NTP) 1999, and is poised to exceed the DoT target of 250 million telephone subscribers by 2007.

¹ Rural teledensity takes into consideration Rural DELS and rural mobile connections. Rural population is taken as 70% of total population as on 31st march 2007 (1129.87 million).

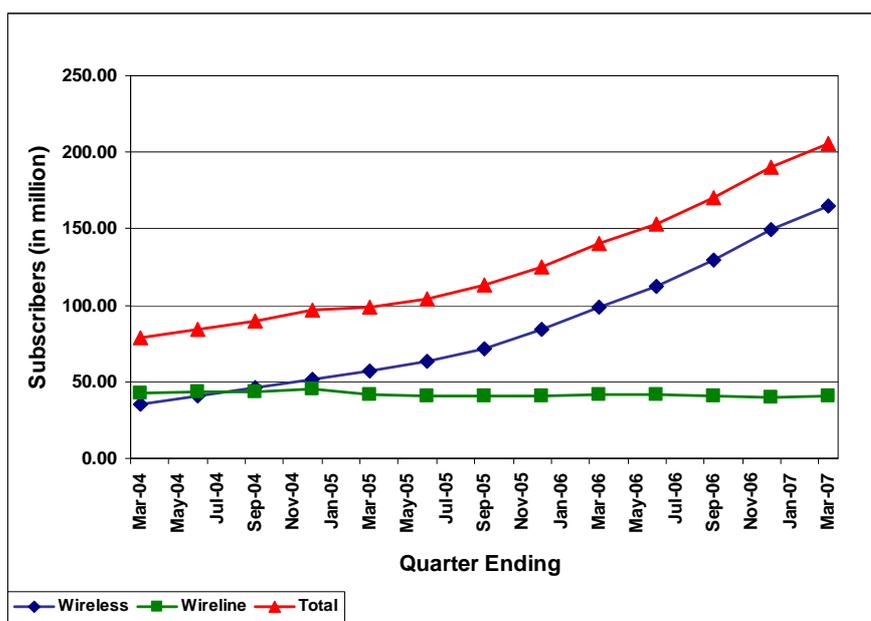


Figure 1: India's telecommunications market has grown 43 per cent over FY2006

1.6 Improving affordability of wireless services is one of the key reasons for growth in Indian wireless sector. The cost of owning a mobile was 93% of per capita GDP in 1999, thereby making mobiles inaccessible but to a handful of Indian population. This has come down to 29% of GDP per capita in FY 3/06 and is expected to further decline to 9% by FY3/10E.

	FY 3/99	FY 3/00	FY 3/01	FY 3/02	FY 3/03	FY 3/04	FY 3/05	FY 3/06	FY 3/07 E	FY 3/08 E	FY 3/09 E	FY 3/10 E
Population (mn)	983	1,015	1,033	1,051	1,068	1,086	1,097	1,112	1,129	1,145	1,161	1,177
Subscribers (mn)	1.1	1.9	3.7	6.6	13.2	34.4	55.1	96.2	165.2	249.2	333.2	417.2
YoY growth rate (%)		67	94	82	99	160	60	75	72	51	34	25
Mobile penetration (%)	0.1	0.2	0.4	0.6	1.2	3.2	5.0	8.6	14.6	21.8	28.7	35.5
Nominal GDP (US\$bn)	401	414	423	440	466	554	633	725	801	948	1,085	1,226
Marginal ARPU (US\$/sub/year)	109	151	232	165	145	114	92	98	79	67	57	50
ASP (US\$)	272	235	195	155	137	108	98	90	77	65	52	47
GDP per capita (US\$)	408	414	413	422	440	514	580	656	715	834	941	1,049
(ARPU +ASP)/GDP per cap (%)	93	93	103	76	64	43	33	29	22	16	12	9

Note: marginal ARPU = ARPU for the incremental subscriber every year. ASP: average selling price of handset

Source : Gartner, COAI, AUSPI, Census of India, Credit Suisse Estimates.

Figure 2: Indian wireless: Increase in affordability Vs growth rate

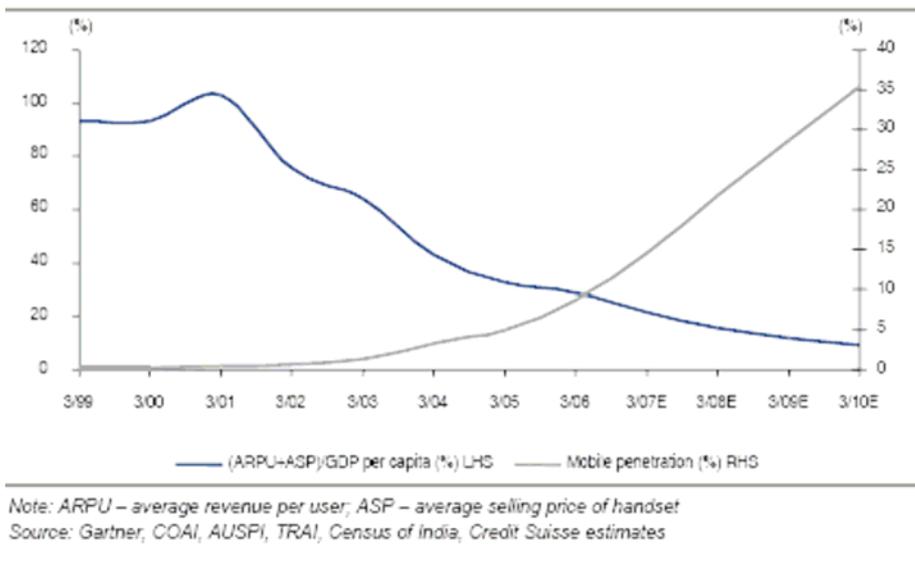
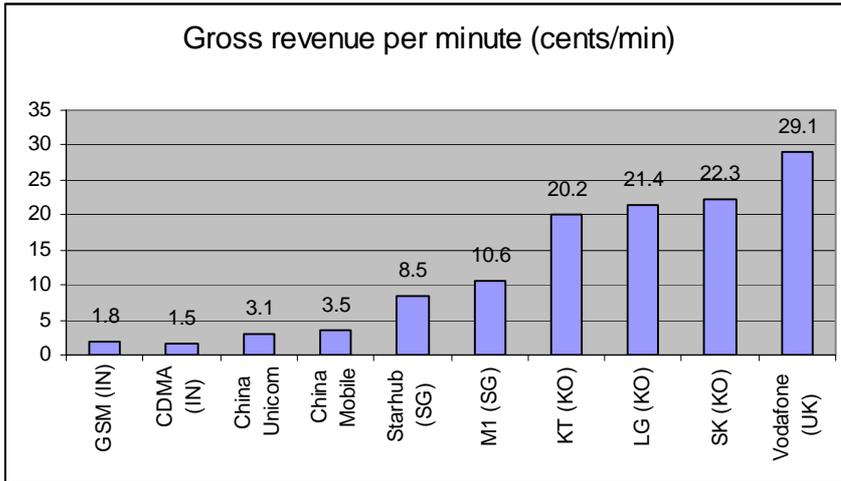


Figure 3: India wireless: affordability vs penetration

While average selling price of handset (ASPs) and marginal ARPU give a good picture of the entry barriers to becoming a mobile subscriber, operators are also reducing the recurrent cost of owning a mobile. Plans, such as lifetime incoming or micro prepaid, are significantly reducing the monthly costs of owning a mobile.

- 1.7 Mobile tariffs in India are around US \$ 0.02 per minute amongst the lowest in the world. The gross and net revenue is lower than China as shown in the Figure 4 & Figure 5.

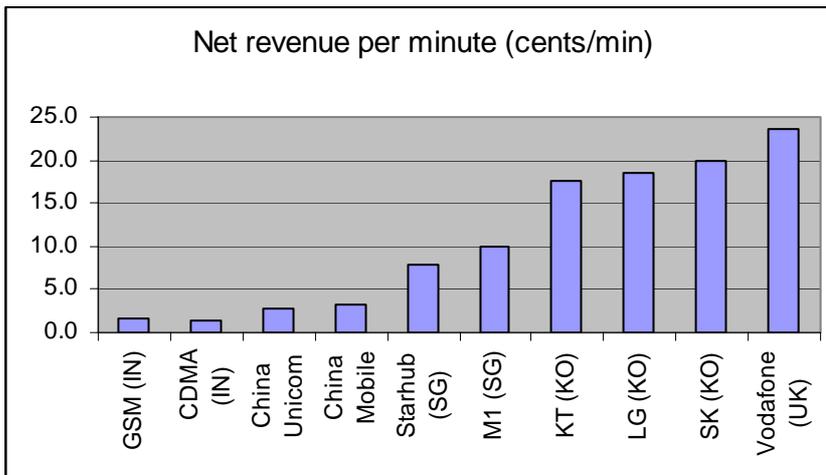


Note: IN=India, SG=Singapore, KO=Korea; :

Data for India is as on Dec.2006 and for other countries is as on Mar.2006.

Source: Information received from Service providers and Credit Suisse

Figure 4: Gross revenue per minute (cents/min)



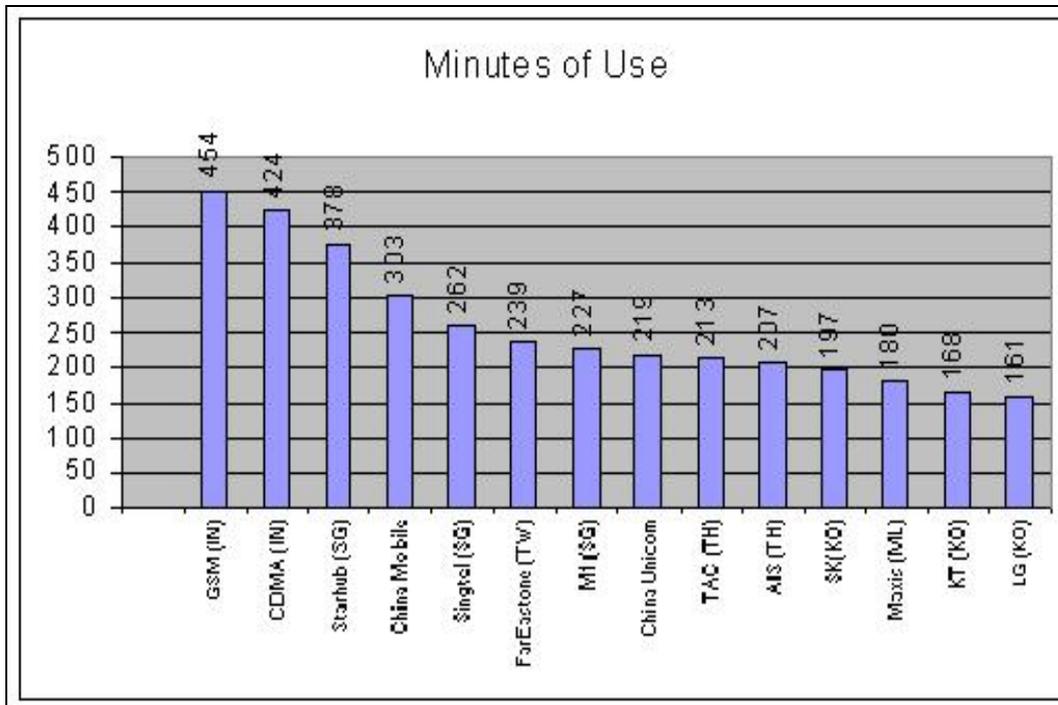
Note: IN=India, SG=Singapore, KO=Korea;

Data for India is as on Dec.2006 and for other countries is as on Mar.2006.

Source: Information received from Service providers and Credit Suisse

Figure 5: Net revenue per minute (cents/min)

1.8 On the other hand, Indian data on minute's usage is significantly higher than any other developing countries (Figure 6). It is largely because of low tariffs.



Source: Information received from Service providers and Credit Suisse

Note: Data for India is as on Dec.2006 and for other countries is as on Mar.2006.

Figure 6: Minutes of use comparison across Asia

1.9 Some of the milestones in the telecom sector are listed in Figure 7:

Regulatory Changes	Description
New Telecom Policy – 1999	<p>The service – providing arm of the Department of Telecom separated from the policy making and licensing functions</p> <p>Creation of corporatised BSNL in October 2000</p> <p>BSNL/MTNL allowed to enter as the third cellular service provider in all circles</p> <p>National long distance market thrown open for competition</p> <p>Wireless Planning and Co-ordination Committee created to review and enforce spectrum allocation policy</p>
Lowering the license fee – 1999	Government changed the prevailing fixed annual license fee to a revenue share regime
Interconnect Usage Charges regime – 2003	<p>IUC regime of 2003 specified the interconnect charges clearly</p> <p>Paved the way for a calling party pays (CPP) regime – subscriber no longer had to pay for incoming calls, making the mobile phone highly affordable to the low usage customers who mainly used it for incoming calls</p> <p>The termination charges made uniform for all types calls – cellular mobile, fixed and WLL (M)</p>
Unified License – 2003/	<p>Allowed an operator to provide fixed and/or mobile service using any technology</p> <p>The objective was to allow the exploitation of technological developments to the fullest extent to provide new applications and services</p> <p>The first phase of implementation, the Unified Access service license, was readily adopted by most of the major operators</p>
Lowering of Access Deficit Charge	<p>Feb 2005: The per minute ADC on domestic long distance calls reduced by up to 60%, and the ADC on international calls by up to 40%</p> <p>March 2006: The per minute ADC for domestic calls replaced with a revenue share fee of 1.5% of non-rural (wireline) AGR, coupled with a sharp 60% drop in per minute ADC on international calls</p> <p>March 2007: ADC on percentage revenue share reduced to 0.75% from 1.5% of AGR. Per minute ADC on outgoing International calls reduced to zero, and on incoming International calls reduced to Rs. 1.</p>
Lowering duty on telecom equipment – 2003 - 05	<p>Union Budget 2003-04 cut the customs duties on telecom sector capital goods from 25% to 15% and on cell phones from 10% to 5%</p> <p>Union Budget 2004-05 exempted imports of capital goods for manufacture of mobile handsets from customs.</p>
Roaming charges	Jan. 2007: Roaming rental reduced to zero. Reduction of roaming tariffs to the extent of 22%-56%
Port Charges	February 2007: Port charges reduced by 23-29%.

Figure 7 Important milestones in Indian telecom sector

The overall objective has been to strike a balance between the interests of operators and subscribers. Regulator has successfully injected right

doze of competition and technological efficiency thereby fostering an increase in teledensity.

1.10 Most circles are competitive with the HHI² falling between 0.17 and 0.29 except one circle, that being Jammu & Kashmir (Figure 8).³

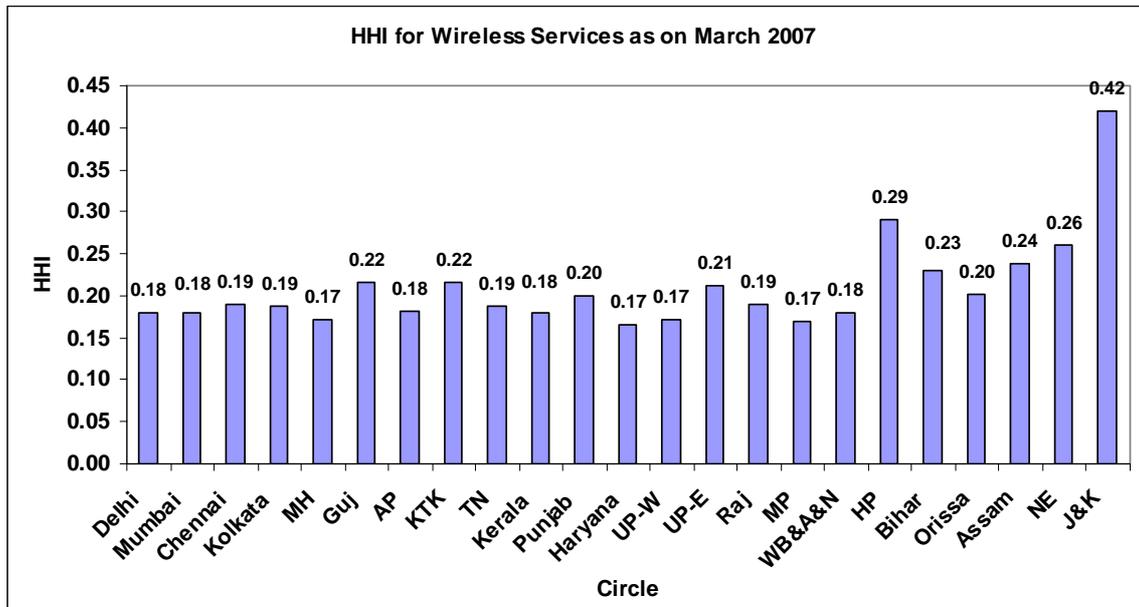


Figure 8: Average HHI is 0.20 if one leaves out J&K circle, and 0.21 with J&K

However, competition and steady subscriber growth by itself may not be sufficient to guarantee that the Indian telecom market will sustain the same phenomenal growth in the changed market scenario, thus making Regulatory and Policy intervention imperative to provide impetus at the right time. From the perspective of the cellular telephony market, there is a need to ensure a clear and stable regulatory structure, especially with regard to spectrum policy, investment norms, competition policy, and the licensing regime in the era of convergence. It is no doubt important to ensure that the regulatory framework is pre-defined and transparent to reduce risk and maximize the potential for growth.

² Hirschman-Herfindahl Index (HHI) is based on the total number and size distribution of firms in an industry. It is computed as the sum of the squares of the market shares of all firms in the industry

³ In J&K circle, cellular service only began in August 2003, and private operators entered the market only in October 2004.

Licensing in Telecom

1.11 As of January 2007, there are 60 cellular mobile telephone service (CMTS) licensees and 98 unified access service (UAS) licensees operating across India. These different licenses are held by 12 entities, details of which are provided in Figure 9.

Name of entity	Number of licenses		Technology used	
	CMTS	UASL	GSM	CDMA
Reliance Infocomm/Telecom	8	21	8	21
Bharti Airtel	1	22	23	
BSNL	21		21	21*
Tata Teleservices		20		20
Hutch	14	8	22	
Idea	11	2	13	
Aircel	2	21	23	
MTNL	2		2	2*
Spice		2	2	
BPL	1		1	
HFCL		1		1
Shyam		1		1
Total	60	98		

* BSNL & MTNL have basic license and are offering limited mobility services.

Figure 9: UASL and CMTS license holders

Initial CMTS licenses were technology specific, allowing the use of GSM network technology only. However, subsequently the licenses were made technology neutral in 1999.

1.12 The Indian wireless market is highly competitive with 5 to 8 operators in each circle. Figure 10 gives the details of these operators along with their subscriber base as on April 2007 in each circle.

Consultation paper on review of license terms and conditions and capping of number of access providers

Circle	Number of operators	Operators with subscribers Base (in millions)
Metro		
Delhi	7	Bharti (3.04), Hutch (2.37), MTNL (1.41), Idea (1.45), Reliance (1.65), Tata (2.16), Aircel**
Mumbai	8	BPL (1.07), Hutch (2.47), MTNL (1.43), Bharti (1.86), Reliance (1.81), Tata (1.14), Aircel**, Idea**
Chennai	6	Aircel (1.17), Bharti (1.02), BSNL (0.82), Hutch (0.71), Reliance (0.62), Tata (0.30)
Kolkata*	6	Bharti (1.05), Hutch (1.27), BSNL (0.65), Reliance (1.18), Tata (0.86), Dishnet**
Circle `A`		
Maharashtra	7	Hutch (1.13), Idea (2.86), BSNL (2.62), Bharti (2.54), Reliance (1.98), Tata (1.64), Aircel**
Gujarat	7	Hutch (4.16), Idea (1.70), BSNL (1.26), Bharti (1.59), Reliance (1.69), Tata (0.77), Aircel**
Andhra Pradesh	7	Idea (1.80), Bharti (3.61), BSNL (2.00), Hutch (1.49), Reliance (2.48), Tata (1.66), Aircel**
Karnataka	7	Bharti (4.28), Spice (0.82), BSNL (1.98), Hutch (1.70), Reliance (1.65), Tata (0.96), Aircel**
Tamil Nadu	6	Hutch (1.03), Aircel (2.90), BSNL (2.41), Bharti (2.01), Reliance (1.71), Tata (0.49)
Circle `B`		
Kerala	7	Hutch (1.55), Idea (0.87), BSNL (2.35), Bharti (0.98), Reliance (1.35), Tata (0.51), Dishnet**
Punjab	8	Spice (1.91), Bharti (2.60), BSNL (1.22), Hutch (1.17), Reliance (0.63), HFCL (0.15), Tata (0.69), Dishnet**
Haryana	7	Idea (0.84), Hutch (0.77), BSNL (1.06), Bharti (0.78), Reliance (0.44), Tata (0.58), Dishnet**
UP - W	7	Idea (1.56), Bharti (1.02), BSNL (1.52), Hutch (1.67), Reliance (1.29), Tata (0.80), Dishnet**
UP - E	7	Hutch (2.74), BSNL (3.05), Bharti (1.59), Idea (0.34), Reliance (1.79), Tata (0.72), Dishnet**
Rajasthan	8	Hutch (1.47), Bharti (1.80), BSNL (2.28), Idea (0.29), Reliance (1.11), Shyam (0.10), Tata (0.96), Dishnet**
Madhya Pradesh*	6	Idea (1.58), Reliance (2.08), BSNL (1.60), Bharti (1.39), Tata (0.49), Dishnet**
West Bengal & A&N*	6	Reliance (1.09), BSNL (1.22), Bharti (0.82), Hutch (1.43), Dishnet (0.14), Tata (0.39)
Circle `C`		
Himachal Pradesh*	6	Bharti (0.55), Reliance (0.21), BSNL (0.55), Dishnet (0.007), Tata (0.08), Hutch**
Bihar & Jharkhand*	7	Reliance (1.99), BSNL (1.49), Bharti (2.30), Dishnet (0.03), Tata (0.54), Hutch**, Idea**
Orissa*	6	Reliance (0.70), BSNL (0.89), Bharti (0.92), Dishnet (0.20), Tata (0.26), Hutch**
Assam	5	Reliance(0.39), BSNL (0.66), Bharti (0.61), Dishnet (0.67), Hutch**
North_East	6	Reliance (0.14), Bharti (0.27), BSNL (0.48), Dishnet (0.31), Hutch**
Jammu & Kashmir	6	BSNL (0.86), Bharti (0.53), Dishnet (0.09), Reliance (0.0002), Hutch**

Note: *Reliance offers both GSM & CDMA services in these circles

** Licensed in Dec 2006. Not yet started services.

Figure 10: Indian mobile sector: operators in each circle

- 1.13 The Indian telecom sector has come a long way from being a government's monopoly prior to 1994 to the present scenario of presence of 5-8 access providers in each licensed service area. Similarly, in the long distance segment, presently there are 17 and 10 National Long distance (NLD) and International Long Distance (ILD) operators respectively. The initial CMTS licenses were technology specific (GSM technology) and it was envisaged that there would be only two private mobile operators in each service areas. However, (it was amended) in 1999, the license was made technology neutral, and the limit of two operators was also removed. Presently there are 5-8 operators in each service areas and a number of applications are pending for the new licenses. Spectrum is a scarce resource and the monthly subscriber growth of more than 6 million is further putting pressure on this resource.
- 1.14 Broadband Wireless Access (BWA) technologies are also available in bands different from those in which 2G services could be provided and the Authority in its Recommendations on 3G and BWA services dated September 27, 2006 has opined that ISPs should also be eligible to provide BWA services. In recent Recommendations on 'Review of Internet Services' the Authority has recommended that in case the ISPs want interconnection with PLMN/PSTN, then they should migrate to the UASL regime. While deciding the issue of limiting the number of licenses in a service area, such factors will also need to be considered.

The present reference by Department of Telecommunications:

- 1.15 As stated in the beginning DoT has sought recommendation on specific issues mentioned in the license provisions of the Access provider:
- i) Telecom Regulatory Authority of India vide its recommendations on Unified Licensing Regime dated 27th October 2003 had inter alia recommended that intra-circle Mergers and Acquisition should be permitted and TRAI shall send its recommendations to

the Government separately. Accordingly, the Authority had forwarded its recommendations on Intra-circle Merger & Acquisitions (guidelines) to the Government on January 30, 2004. Subsequently, the Government had issued the guidelines for merger of licenses in a service area on 21st February 2004(**Annex II**).

- ii) In the period since the M&A guidelines were issued, the telecom Sector has undergone a major transformation, having witnessed the entry of a large number of operators, higher wireless growth, addition of innovative value added services, inclination of Operators to deploy multiple technologies, sharing of infrastructure amongst operators, introduction of more bandwidth hungry applications and the requirement of additional spectrum for such services, increase in FDI limit, etc.
- iii) As per the existing licensing regime⁴, no single company/ legal person can, directly or indirectly have substantial equity holding i.e. equity of 10% or more in more than one licensee in the same service area for the Access services namely; Basic, Cellular and Unified Access Service. Intra service area mergers and acquisitions as well as transfer of licenses are permitted subject to certain conditions, which include there being not less than three operators after merger providing access services in a service area, so as to ensure healthy competition.
- iv) The conditions relating to 'substantial equity holding' and 'restriction on transfer of license' were introduced when there were no specific guidelines for ensuring healthy competition and avoidance of monopolization of the market through merger and acquisition. Subsequently, in 2004, the guidelines on Merger and acquisition were notified by the DoT. The government reference to review these conditions is motivated to ensure constructive harmony of the license with the present situation.

⁴ Clause 1.4 of UASL

- v) As per the existing merger guidelines, maximum spectrum that could be held by a Merged entity is 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. As per the existing subscriber base criteria for the allocation of spectrum, few operators are already eligible to get up to 2X15 MHz of Spectrum. Moreover, with new technologies like 3G and Broadband Wireless Access coming in there is a need to decide the different spectrum bands that would be considered while fixing the spectrum cap that a merged entity can possess and also to review the limit on the amount of spectrum that a merged entity can possess. Moreover, in case of merger of a licensee providing cellular service with GSM technology with a licensee with CDMA technology, it needs to be discussed how the spectrum cap should be implemented apart from issue of deployment of more than one technology.
 - vi) In the light of increasing global interest in the Indian telecom market, the use of mergers or acquisitions as an entry route, and the possible strategy changes of current service providers, it will be important to review these rules and conditions so as to ensure that the Indian market remains competitive, and is able to sustain future growth.
- 1.16 The present UAS and CMTS licenses provide that the operator shall make its choice for specific mobile technology. Accordingly, the DoT has evolved spectrum allocation criteria. It appears that DoT has sought recommendation of the Authority regarding usage of combination of technologies under the same license in the context of new emerging technologies.
- 1.17 The license provisions mandate certain roll-out obligations. It is linked with performance related financial guarantees. The nature of roll-out obligations underwent change and the distinction in terms of urban and rural obligations got defused during the series of license related amendments. The character of roll-out obligations, its compliance, the

verification procedure, financial burden as well as social commitments in the context of rural urban divide need to be freshly examined.

- 1.18 At present there is no explicit limit on the number of licensees allowed to operate in a service area as mentioned before. There is a fierce competition amongst the telecom companies. Given the potential for future growth the telecom companies are also enjoying high rating in the financial market. However, the availability of spectrum as also the methodology of allocation in future will directly influence new seekers of license. It is timely to examine the scope and sustainability of new applicants for license in the wireless mobile sector.

Structure of Consultation paper:

- 1.19 The specific subjects under reference by DoT have been organized in a manner that the inter-related issues get highlighted appropriately. Chapter-2 deals with issues related to merger and acquisitions, specific guidelines including cross holding influencing the M&A activities. The third chapter addresses issues of substantial equity holding in more than one licensee company and its effect on competition. Chapter 4 discusses the licenses conditions, spectrum allocation criteria in the context of service providers seeking access to combination of technologies. The 5th Chapter examines the present features of the roll-out obligations, linkage with financial obligations and possibilities of identifying milestones towards bridging the digital divide. The 6th and final chapter is on the issue of sustainable and viable limits of licenses in any service area and also the alternative of market forces determining the number of licenses with no commitment of spectrum allocation.

Chapter 2. Merger and Acquisition

Background

- 2.1. One of the functions of any infrastructure regulator is to ensure that the markets remain competitive. Section 11 (1) (a) (i) and (iv) of the TRAI Act, 1997 (24 of 1997) specifically vests the Authority with the responsibility of making recommendations on the need and timing for the introduction of new service provider, and on measures to facilitate competition and promote efficiency in the operation of telecommunication service so as to facilitate growth in services. Further, as per the Section 11 (1) (b) (iii), the Authority also has to discharge its responsibility to ensure effective interconnection between operators – a function essential to preventing monopolization of a market.
- 2.2. Following the recommendations on Unified Licensing Regime,⁵ which had *inter alia* recommended permitting intra-circle mergers and acquisitions, the Authority had forwarded its recommendations on Intra-circle Mergers & Acquisitions guidelines to the Department of Telecommunications (DoT) in 2004.⁶ Subsequently, the DoT issued guidelines for merger of licenses in a service area. The text of these guidelines is in **Annex II**.
- 2.3. In its recommendations, the Authority had observed that the state of the telecommunications industry was in a flux and would take some time before the market stabilizes. Hence, it was mentioned that the guidelines could be reviewed after one year. DoT also accepted that, “these Guidelines can be reviewed after a period of one year, or earlier if warranted.”⁷
- 2.4. There have been significant changes in the market structure and operation since 2004. The telecom sector, especially in the mobile

⁵ TRAI, Recommendations on unified licensing, October 27, 2003

⁶ TRAI, Recommendations on intra-circle merger and acquisition guidelines, January 30, 2004

⁷ DoT, Guidelines for merger of licenses in a service area

access segment, has witnessed entry of more operators, exponential growth in subscribers, a healthy interest among operators to deploy state of the art technologies, and addition of innovative value added services. Recognizing the need to review the existing guidelines, the DoT has sought TRAI's recommendations on issues mentioned in ¶ 1.2 and ¶ 1.3

Mergers and acquisitions

- 2.5. In the pursuit of globalisation, India has responded by opening up its economy, removing controls and resorting to liberalisation. The natural corollary of this is that the Indian market should be ready to face competition from within the country and outside. There is a need to shift our focus from curbing monopolies to promoting competition. To achieve this objective one of the steps led to passing of The Competition Act,2002 which has yet to come into force.
- 2.6. Mergers and acquisitions play an important role in enhancing economic growth, establishing effective competition, attracting investment, enhancing efficiency, improving economies of scale and scope and promoting efficient utilization of resources. Through this market process, under performing firms are replaced by more efficient firms. However, in some cases, it could also have anti-competitive effects due to reduction of competition. It may enable firm(s) to increase prices and manipulate supply unilaterally to increase the profit margins.
- 2.7. The definitions of the words Merger, Amalgamation and Acquisition as defined in the Webster-Online-Dictionary are:-
- (a) "Merger" in business or economics refers to the combination of two companies into one larger company. Such actions are commonly voluntary and often involve a stock swap.
 - (b) "Amalgamation" means an act or an instance of combining or uniting. Consolidation of two small companies to form a new corporation.

- (c) "Acquisition" means the taking over by one business of control of another through the acquisition of the whole or the major part of its equity capital. Clause (a) of section 2 of the Competition Act refers to the "acquisition" as directly or indirectly, acquiring or agreeing to acquire (i) shares, voting rights or assets of any enterprise; or (ii) control over management or control over assets of any enterprise;

2.8. As per the terms and conditions of the UASL license agreement:

2.8.1. *Intra service area mergers and acquisitions as well as transfer of licences may be allowed subject to there being not less than three operators providing Access Services in a Service Area to ensure healthy competition as per the guidelines issued on the subject from time to time.*

2.8.2. *Further, the Licensee may transfer or assign the License Agreement with prior written approval of the Licensor to be granted on fulfilment of the following conditions and if otherwise, no compromise in competition occurs in the provisions of Telecom Services :-*

(i) When transfer or assignment is requested in accordance with the terms and conditions on fulfillment of procedures of Tripartite Agreement if already executed amongst the Licensor, Licensee and Lenders; or

(ii) Whenever amalgamation or restructuring i.e. merger or demerger is sanctioned and approved by the High Court or Tribunal as per the law in force; in accordance with the provisions; more particularly Sections 391 to 394 of Companies Act, 1956; and

(iii) The transferee/assignee is fully eligible in accordance with eligibility criteria contained in tender conditions or in any other document for grant of fresh license in that area and show its willingness in writing to comply with the terms and conditions of the license agreement including past and future roll out obligations; and

(iv) All the past dues are fully paid till the date of transfer/assignment by the transferor company and its associate(s) / sister concern(s) / promotor(s) and thereafter the transferee company undertakes to pay all future dues inclusive of anything remained unpaid of the past period by the outgoing company.

2.9. Salient points in the merger and acquisition guidelines dated 21st February 2004 of the DoT are,

- Prior approval of the DoT is required for the merger of the licenses;
- The creation of a monopoly market situation is not permitted:
- Monopoly market situation is defined as market share of 67 per cent or above within a given service area, as on the last day of previous month.
- Subscriber base shall be the criteria for computing the market share.
- The market will be classified as fixed and mobile separately.
- The category of fixed subscribers shall include wire-line subscribers and fixed wireless subscribers. The number of subscribers shall be as per the Exchange Data Records.
- The category of mobile subscribers shall include limited mobile subscribers and full mobile subscribers. The subscriber figure, as per the Home Location Register (HLR) and Exchange Data Record shall be taken into account for calculating the number of mobile subscribers in a given Service Area.

- Intra-service area mergers and acquisitions may be allowed if there are no less than three operators providing access services in a service area;⁸
- Consequent upon the Merger of licenses, the merged entity shall be entitled to the total amount of spectrum held by the merging entities, subject to the condition that after merger, the amount of spectrum shall not exceed 15 MHz per operator per service area for Metros and category 'A' Service Areas, and 12.4 MHz per operator per service area in category 'B' and category 'C' Service Areas.
- While granting permission for merger of licenses, the Licensor may, suitably amend / relax/waive the conditions in the respective licenses relating to the Clause on holding of 'substantial equity'.

2.10. The Competition Act, 2002 *inter alia* provides that (a) the acquisition of one or more enterprises by one or more persons after merger or amalgamation of enterprises shall be a combination of such enterprises and persons or enterprises, if acquisition where the parties to the acquisition, being the acquirer and the enterprise, whose control, shares, voting rights or assets have been acquired or are being acquired jointly have the value of assets specified therein;(b) acquiring of control by a person over an enterprise when such person has already direct or indirect control over another enterprise engaged in production, distribution or trading of a similar or identical or substitutable goods or provision of a similar or identical or substitutable service, if the enterprise over which control has been acquired along with the enterprise over which the acquirer already has direct or indirect control jointly have assets or turnover specified therein; (c) any merger or amalgamation in which the enterprise remaining after merger or the enterprise created as

⁸ UASL clause 6.2

a result of the amalgamation, as the case may be, have value of assets specified therein. In nutshell the combination emerging have to be examined from the point of view (a) controlling power of other enterprise after merger or amalgamation(b) extent of control of distribution or trading of a similar or identical or substitutable goods or provision of a similar or identical or substitutable service;(c) value of assets created after Combination as defined in section 5 of the said Act covers the acquisition of one or more enterprises by one or more persons or merger or amalgamation of enterprises upon fulfilment of the conditions specified therein. The question which arises for consideration is whether conditions require to be incorporated in the license agreement for prevention of anti-competitive combinations.

2.11. The Authority has identified four main areas for detailed consideration and review. They are:

- **Defining the market, determination of market share and monopoly market power.**
- **Determining the minimum number of access service providers allowed to exist in a market after the merger.**
- **The spectrum cap of the merged entity.**
- **The conditions related to the transfer of licenses.**

Ex ante and ex post competition regulation

2.12. It is necessary to consider the basic philosophy of addressing competition concerns. Fundamentally, there are two approaches to competition regulation: *ex ante* and *ex post*. It is also possible to have competition policies that are a hybrid of these two options by mixing elements of these two approaches.

2.13. *Ex ante* regulation is anticipatory intervention, using government-specified controls to prevent socially undesirable actions or outcomes in markets, or

direct market activity towards socially desirable ends. *Ex ante* regulation is mainly concerned with market structure, which is the number of firms and level of market concentration, entry conditions, and the degree of product differentiation. *Ex post* regulation addresses specific allegations of anti-competitive behavior or market abuse. *Ex post* regulation aims to redress proven misconduct through a range of enforcement options including fines, injunctions, or bans. *Ex post* regulation is mainly concerned with market conduct — the behavior of a firm with respect to both its competitors and its customers.

2.14. The current approach to competition regulation in the M & A guidelines of the telecom sector is *ex ante*, with the stipulations and limits placed beforehand. It is possible to have *ex post* regulation as well, in order that firms can conduct their activities and be checked only if they pose a significant threat to the competitive market environment. Given the need to balance the competing aims of encouraging efficiency, flexibility, and market forces, while simultaneously having a stable and predictable regime in place, the Authority seeks opinion whether *ex ante* or *ex post* approach can be followed or how the *ex post* and *ex ante* regulatory philosophies might be balanced i.e hybrid approach to ensure that innovation and market forces can have full play while at the same time, anti-competitive behaviour is curbed and regulation is effective.

Monopoly market power

2.15. It is in the interest of the individual consumer that the market for provisioning of services remains competitive. As the World Bank and ITU note, “competition is the most efficient and equitable mechanism available for organizing, operating, and disciplining economic markets.” Competition maximizes benefits to society by ensuring efficient resource allocation, increased productive efficiency, and investment in new technologies.⁹ India has seen tremendous benefits accrue due to liberalization and

⁹ <http://icttoolkit.infodev.org/en/Section.1670.html>

increased competition in the telecom market. The steep drop in tariffs to one of the lowest in the world, increase in coverage and subscriber base, the deployment of advanced 2G networks, and the significant improvement in quality of service since the 1990s is largely on account of competition in the sector.

2.16. As per the existing Guidelines of DoT, any merger, acquisition or restructuring leading to a monopoly market situation in the given service area, shall not be permitted. **Monopoly market situation is defined as market share of 67% or above of the subscriber base.** As detailed in ¶2.9 the calculation of this market share is done by considering the fixed (wire line and fixed wireless) and mobile (full and limited mobility) subscriber bases separately.

2.17. For reviewing the M & A policy, it is imperative to clearly define the market in which a service is offered. Market definition is an essential precondition to any assessment of market power. It is a tool to identify and define the boundaries of competition between firms¹⁰. The purpose of this definition is to clearly identify which markets are affected by the M&A, and hence detect any change in the competitive environment. As the European Commission notes, market definition helps identify and define the boundaries of competition between firms. Clearly defining markets enables regulators to assess the level of competition, impact of merger/acquisition on competition.¹¹

2.18. In this context it would be useful to look at the definition of relevant market given by European Commission which is as follows:

- A relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer by reason of the products' characteristics, their prices and their intended use;

¹⁰ http://ec.europa.eu/comm/competition/antitrust/relevma_en.html

¹¹ http://ec.europa.eu/comm/competition/antitrust/relevma_en.html

- A relevant geographic market comprises the area in which the firms concerned are involved in the supply of products or services and in which the conditions or competition are sufficiently homogeneous.

The Competition Act, 2002 of India defines the market as below:-

- "relevant market" means the market which may be determined by the Commission with reference to the relevant product market or the relevant geographic market or with reference to both the markets;
- "relevant geographic market" means a market comprising the area in which the conditions of competition for supply of goods or provision of services or demand of goods or services are distinctly homogenous and can be distinguished from the conditions prevailing in the neighbouring areas;
- "relevant product market" means a market comprising all those products or services which are regarded as interchangeable or substitutable by the consumer, by reason of characteristics of the products or services, their prices and intended use;

2.19. The issue of competition being reduced due to mergers and acquisitions acquires major significance in the case of access services because these services provide the basis for control over the end user, and for possible abuse of dominance in a service segment that is fundamental to growth and affordability of telecom services.

2.20. While defining the markets, two important options for classifying the Access segment are – i) Entire access segment as one single market; and/or ii) Access segment as comprising of two different markets viz., fixed and mobile.

2.21. The current UASL allows a service provider to have both wireless and wire line access networks. Hence, the market power of a UASL operator is not necessarily restricted to any one of these access networks. Further, given the growing interest in fixed-mobile convergence, and the possibility of interest in acquisition of wire line businesses among the wireless operators, it needs consideration whether the separation of the fixed and mobile markets in the determination of Market Power is still relevant.

2.22. In case, the markets are defined as “access” markets by aggregating the fixed and mobile markets, owing to large market share of the incumbent operator, i.e. BSNL/MTNL in fixed line, the merger regulations would lose their relevance as many circles would then be construed to be dominated, by one large operator, and if there is a merger even amongst all the remaining operators, the market share of the merged entity may not be significant. Thus, if we take the whole access market as our reference point, mergers amongst operators other than the incumbent may not lead to dominant entities and hence may bypass the entire test of dominance, which would render the guidelines irrelevant. Further, the mobile segment of the market is the one contributing to the ‘immense growth and greater affordability of access services’. An operator dominant in the mobile market, but not dominant in the overall access market, would be in a position to adversely affect competition in the mobile market. The mobile and fixed markets are not perfect demand substitutes of each other, as the usage profile and requirements of the two sets of consumers/users are not the same. It is, therefore, for consideration whether the intra circle access market be continued to be classified as ‘Fixed’ and ‘Mobile’.

2.23. The question now to be addressed is how to determine the components of fixed and mobile markets. Currently the access services offered are in the nature of wireline, fixed wireless, limited mobile and full mobile. As per the existing M&A guidelines the category of fixed subscribers shall include wireline subscribers and fixed wireless subscribers, while that of

mobile subscribers shall include limited mobile subscribers and full mobile subscribers. It is to be decided whether the same definition of these two categories of subscribers is to be continued for the purpose of determining the impact of Merger & Acquisition.

2.24. As per the DoT guidelines on M&A the calculations for fixed and mobile service are as follows:

Fixed	Mobile
Includes wire-line subscribers and fixed wireless subscribers.	Includes limited mobile subscribers and full mobile subscribers.
As per the Exchange Data Records.	As per the Home Location Register (HLR) and Exchange Data Record.

Fixed and mobile services are considered as separate services. However, in the earlier license for Basic Service, because the service provider could provide service both through Wireline and WLL technology, hence in the M&A Guidelines of DoT, both Wireline and Fixed Wireless subscribers were counted as fixed subscriber. Even after migration to UAS licenses in 2003, the access providers continued to include fixed Wireless subscribers (WLL (F)) as part of fixed subscribers.

At that time, the ADC was on per call basis and service providers giving fixed service were permitted to keep this levy. However, DoT vide its letter No. 10-10/03-BS-II Vol.VI, dated 23rd March 2005, issued a clarification to all UASL licensees including BSNL/MTNL regarding Fixed Wireless Terminal. DoT clarified that the terminal used for fixed wireless services should be strictly confined to the premises of the subscriber where the telephone connection is registered. DoT also stated that it is the licensee's responsibility to ensure that the subscriber terminal is operated in accordance with the terms of the license for fixed lines including this clarification. DoT further stated in the above referred letter that separate level within allocated SDCA based link Numbering is to be used for Wireline and Fixed Wireless Services. Wherever such restriction cannot be imposed, it shall be treated as WLL(M) feature for

all purposes which *inter alia* includes, numbering plan, Interconnection Usage Charges, Interconnection arrangements etc. In view of the above referred DoT letter, WLL (F) subscribers of all operators have been considered as mobile subscribers from April 2006 onwards.

2.25. One may argue that spectrum, which is a scarce resource, is required for providing fixed wireless service, and therefore they should be counted in the mobile subscriber number. Till recently, the fixed wireless services were provided using CDMA technology with 8 digit numbers. However, now the operators have started providing fixed wireless phone service using GSM technology with 10 digit numbering system similar to the fully mobile service. Though categorization of fixed wireless in the category of mobile may be relevant for spectrum related issues, it need not necessarily be relevant in equal manner while defining market for the purpose of Merger & Acquisition. The main reason for the above is that though spectrum is used to provide fixed wireless access but the services actually provided is fixed service. Wire line and fixed wireless are generally treated as interchangeable and substitutable. Both this segment addresses the needs of subscriber classes having 'similar usage profile'.

Criteria for determining market share

2.26. Various indicators that may be used for computing the market share of different operators include subscriber base, turnover, capacity, etc. In its recommendations on Intra-circle Mergers and Acquisition guidelines dated January 30, 2004, the Authority had opined that for the purpose of Mergers & Acquisitions, subscriber numbers should be the preferred criterion to compute the market share. The existing guidelines on the issue also considers subscriber base as a criteria for computing the market share.

2.27. If the definition of the markets is changed to merge all subscribers, it will still be necessary to account for wireline and wireless subscribers

separately. In this situation, it is possible to use Exchange Data Record (EDR) for wireline subscribers, and a combination of exchange records and cellular network MSC records for wireless subscribers. However, in the case of cellular mobile telephony subscribers, it is important to decide whether the number of subscribers should be based on the home location register (HLR) or the visitor location register (VLR).

2.28. As per the existing Guidelines, the subscriber figure as per the HLR and EDR shall be taken into account for the purpose of calculating the number of mobile subscribers in a given service area. It is for the consideration whether the same Guidelines continue to hold relevance in the present context. It may be mentioned that the existing spectrum allocation criteria takes into account VLR subscriber base. **Data available with the Authority on this suggests that the difference between HLR and VLR subscriber base is approx. 20%.**

2.29. The third important issue is the market share limits placed on the merged entity. The objective to put these limits is to ensure that the merged entity does not become dominant in the market and takes a position that might result in anti-competitive behavior such as monopolistic price-gouging or on the other end, predatory pricing.¹² There are two specific questions that arise on this issue: should the Monopoly Market Power (MMP) definition be in terms of market share, and how MMP should be defined.

2.30. Market power is generally defined as the power to unilaterally set and maintain prices or other key terms and conditions of sales; that is without reference to the market or to the actions of competitors¹³. It is the ability of a firm to raise prices above competitive levels, without promptly losing a substantial portion of its business to existing rivals or firms that

¹² Predatory pricing is a pricing strategy used by an established firm to eliminate competition from equally efficient firms, and secure a monopoly position in a previously competitive market.

¹³ Telecommunications Regulation Handbook, infodev.

become rivals as a result of the price increase¹⁴. 'Market power' is an economic concept, which is often given a distinct legal status as a 'dominant firm'. Internationally, Market power is often defined as $(\text{Price} - \text{Marginal Cost})/\text{Price}$, which is a function of not only concentration but also of demand elasticity, supply elasticity of rival firm, market share of competitive firms and their reactions and differences in cost and risk. Market power has been defined by the European Court of Justice as "A position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained in the relevant market by affording it the power to behave, to an appreciable extent, independently of its competitors, customers and ultimately consumers". The level of market power necessary to attract intervention by the competition law is commonly referred to as 'dominance'¹⁵.

2.31. The definition of a dominant undertaking as defined under section 2(d) of MRTP Act, 1969 reads as follow:-

"Dominant undertaking" means –

- an undertaking which, by itself or along with inter-connected undertakings produces, supplies, distributes or otherwise controls not less than one-fourth of the total goods that are produced, supplied or distributed in India or any substantial part thereof;
- or an undertaking which provides or otherwise controls not less than one-fourth of any services that are rendered in India or any substantial part thereof.

Interconnected undertaking has been separately defined under Section 2(g) of the MRTP Act, 1969.

¹⁴ <http://www.ictregulationtoolkit.org>

¹⁵ ITU Background paper on competition policy in telecommunications

- 2.32. Section 4 of the Competition Act, 2002 contains provisions for abuse of dominant position. It provides that no enterprise shall abuse its dominant position.

Meaning Of Dominant Position The dominant position has been defined in the Competition Act, 2002 to mean a position of strength, enjoyed by an enterprise, in the relevant market, in India, which enables it to operate independently of competitive forces prevailing in the relevant market; or affect its competitors or consumers or the relevant market in its favour. The relevant market in the telecom sector may vary from whole India to a telecom circle.

When a Dominant Position is not Desirable The Competition Act further provides that there shall be an abuse of dominant position if an enterprise (a) directly or indirectly, imposes unfair or discriminatory condition in purchase or sale of goods or services; or price in purchase or sale (including predatory price) of goods or service; or (b) limits or restricts production of goods or provision of services or market therefor; or technical or scientific development relating to goods or services to the prejudice of consumers; or (c) indulges in practice or practices resulting in denial of market access; or (d) makes conclusion of contracts subject to acceptance by other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts; or (e) uses its dominant position in one relevant market to enter into, or protect, other relevant market. The unfair or discriminatory condition in purchase or sale of goods or services and unfair or discriminatory price in purchase or sale of goods (including predatory price) or service referred to in sub-clause (ii) shall not include such discriminatory conditions or prices which may be adopted to meet the competition.

International definitions:

- 2.33. In general, a market share of 40 per cent to 50 per cent is indicative of dominance. For example, in the European Union (EU), the European Court of Justice holds that there is a presumption of market dominance if

a firm has a market share consistently above 50 per cent. In the United States, markets in which the HHI is between 1000 and 1800 points are considered to be moderately concentrated, and those in which the HHI is in excess of 1800 points are considered to be concentrated. Transactions that increase the HHI by more than 100 points in concentrated markets presumptively raise antitrust concerns under the Horizontal Merger Guidelines issued by the U.S. Department of Justice and the Federal Trade Commission.¹⁶ International practise on Mergers and Acquisition policy in some countries (Australia, Canada, European Union, Hong Kong, Singapore, New Zealand and the United States) are provided in **Annex III**.

2.34. However, it is also possible that a high market share does not necessarily infer market power. Firms may gain high market shares through means other than market power. A firm's market share may increase, at least temporarily, due to a successful new invention or better customer service. Alternatively, a firm may have a high market share for historical reasons. For example, incumbent telecommunications firms were once monopoly franchises in most countries and have high market shares as a result. As competition emerges, an incumbent's market share cannot guarantee it the ability to charge prices higher than its competitors.¹⁷ However, the Authority believes that these causes for high market share are not relevant in the context of mergers and acquisitions.

2.35. Market share calculations are also relatively easy and transparent. Of the quantitative measures that exist to assess whether a firm may have market power, are measures of pricing such as the Lerner Index, which measures the extent to which a given firm's prices exceed marginal costs. It is measured as the difference between the price of a good or service and its marginal cost, expressed as a proportion of the price. However, cost information is very difficult to find and hence this measure

¹⁶ <http://www.usdoj.gov/atr/public/testimony/hhi.htm>

¹⁷ <http://icttoolkit.infodev.org/en/Section.1711.html>

is not as transparent as Hirschman-Herfindahl Index (HHI) or the Concentration Ratio.

2.36. Of the market based measurements, the Hirschman-Herfindahl Index (HHI) is based on the total number and size distribution of firms in an industry. It is computed as the sum of the squares of the market shares of all firms in the industry. The HHI ranges from 0 in a market with many very small firms, to 10000 in a pure monopoly. HHI takes into account the relative size and distribution of the firms in a market. HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. However, in the Indian mobile telecom market, the HHI is not very useful for assessing mergers and acquisitions, as the sector opened for competition in phases and the initial operators have a relatively large market share, leading to a relatively high HHI. Moreover, one of the main concerns is to ensure that the spectrum is efficiently utilized. Fragmentation of spectrum among a number of service providers adversely affects efficient utilization of spectrum. Introducing a number of operators may decrease HHI and increase competition in the market but it adversely affects the spectrum efficiency.

2.37. Concentration ratio is another tool, which can be used to measure the level of market concentration. Concentration ratio is the sum of shares of largest n firms (CR_n; where n represents the number of top 2, 3 or 4 firms). Internationally, countries such as Australia, Brazil and Canada use the Concentration ratio to evaluate the cut off levels. Generally, concentration of top two or three firms is taken for evaluating the cut off level. In its previous recommendation on the issue, the Authority has recommended that if the CR₂>75%, then the desirability of the merger will need to be examined. The Authority thus seeks stakeholders comments on how MMP should be calculated.

2.38. The related issue is the definition of MMP. There is no universally accepted definition of dominance for competition policy. However, the current merger guidelines of DoT deem a market with one operator having a 67 per cent market share as a monopoly market. If one considers the

HHI measures of a market which has one operator with 67 per cent of subscribers, it will be at least 4489, which indicates, at least according to United States practice (¶2.33), a very concentrated market with potential concerns. According to the US definition, the largest permissible market share is approximately 45 per cent – which will lead to an HHI of 1800. There is also concern about changes in the HHI level, that is, the regulator should also be concerned about the effect of changes in market organization. If a merger or market development leads to the HHI increasing significantly, over 50 to 100 points depending on the HHI levels, the Department of Justice investigates the activity.¹⁸ A comparative statement showing HHI for the two periods i.e. as on September 2003 and March 2007 is at **Annex IV**. It can be observed that the level of HHI has gone down indicating strengthening of competition in different service areas.

2.39. The European Commission suggests that national regulatory authorities should define SMP as 25 per cent market share, “with the possibility to deviate from this threshold taking into account the undertaking's ability to influence the market, its turnover relative to the size of the market, its control of the means of access to end-users, its access to financial resources and its experience in providing products and services in the market.” However, the Commission also specifies that single dominance concerns normally arise in the case of undertakings with market shares of over 40 per cent. According to established case law, very large market shares, in excess of 50 per cent are “in themselves, save in exceptional circumstances, evidence of the existence of a dominant position.”¹⁹

¹⁸ In broad terms, if post-merger HHI is between 1000 and 1800, mergers producing an increase in the HHI of more than 100 points in moderately concentrated markets post-merger potentially raise significant competitive concerns. If post-merger HHI is above 1800, mergers producing an increase in the HHI of more than 50 points in highly concentrated markets post-merger potentially raise significant competitive concerns. <http://www.justice.gov/atr/public/guidelines/hmg.htm>

¹⁹http://ec.europa.eu/information_society/topics/telecoms/regulatory/new_rf/documents/smp_guidelines/c_16520020711en00060031.pdf

2.40. In the Indian market, it is instructive to consider the Metro circles, where teledensity has already reached more than 50% (with the exception of Kolkata). The market share of various mobile service providers based on parameters of subscriber base, revenue and MoUs as on March 2007 is provided in **Annex V**. In these circles, and in Category A circles, the distribution of subscribers across the different UASL and CMTS licensees is very similar (*Figure 11*). There already are operators that have attained a market share of more than 25 per cent in these markets and continue to grow. Further, if one considers concentration ratios in the different service areas, many have already crossed 50 per cent with only two operators. Of 17 Metro, Category A and B circles, 4 circles have concentration ratios of more than 50 per cent, 10 have concentration ratios of more than 45 per cent, and remaining have ratios higher than 40 per cent, which indicates high levels of concentration.

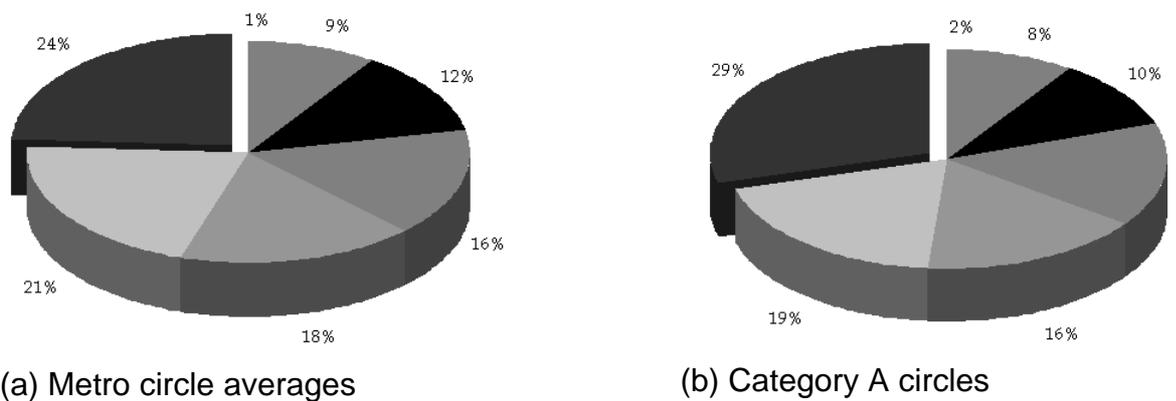


Figure 11: Average distribution of market shares among UASL and CMTS licensees

2.41. It is likely that over time, the market might get further concentrated as the larger firms realize economies of scale. The possibility of mergers and acquisitions in future also increases the importance of reviewing the existing limits of MMP. Given international practices of defining market shares as low as 25 per cent to 40 per cent as indicators of dominance or reduced competition, and the definition of 30 per cent as SMP in the RIO's of the telecom sector, leads the Authority to seek comments on

whether the definition of monopoly market power as indicated by a 67 per cent market share should be revised, and if yes, to what level.

Spectrum related issues

2.42. It is clear that wireless communication is the technology driver of growth in the International and Indian telecom market .In the Indian telecom market, from a subscriber base perspective, wireless telephony has grown at an average rate of 91 per cent per annum for the past five years, while wireline has grown only at 1 per cent (**Figure 12**). From an industry investment perspective, the excitement and interest for acquisitions, as recently evidenced, has to do with future growth potential in the cellular telephone, and higher investment is expected to support the roll out of broadband wireless technologies over the next few years.

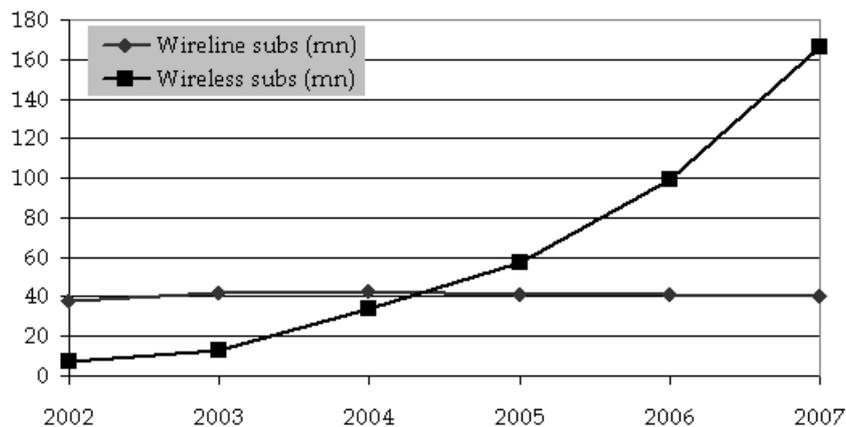


Figure 12: Wireless technology is driving subscriber base growth

Spectrum caps

2.43. In this environment, the spectrum resource, which is the sine qua non of wireless telecommunications, becomes heavily contested and a possible competition issue. Currently, there are certain merger guidelines pertaining to spectrum, and how mergers and acquisitions affect licensee holdings of spectrum. Presently, the spectrum assigned to a licensee using GSM technology varies from 2 x 4.4 MHz to 2 x 10 MHz, and for those using CDMA, it varies from 2 x 2.5 MHz to 2 x 5 MHz. As

per existing merger guidelines, the maximum spectrum holdings for a merged entity is 2 x 15 MHz per operator per service area for Metros & Category A circles, and 2 x 12.4 MHz per operator per service area in Category B and Category C circles.

- 2.44. The details of current spectrum allocations among licensees in different service areas are in **Annex VI**. The spectrum is allocated based on subscriber base criteria details of which are enclosed in **Annex VII**. From this information, it becomes clear that a number of service providers are eligible for additional spectrum allocations. Therefore, in the event of mergers between such licensees, it is possible that total spectrum holdings will cross 2 x 15 MHz. Moreover, with the introduction of new wireless technologies/ services like 3G and BWA, the service providers will have additional spectrum in different bands and is very likely that a number of access providers will have spectrum far more than 15 MHz (For BWA, 15 MHz spectrum/ operator and for 3G, 5 MHz of spectrum has been recommended). Therefore, it needs to be clarified as to what all spectrum shall be counted for this cap.
- 2.45. The central rationale for having limits on the amount of spectrum held by any entity and especially for merged entities is to prevent anti-competitive access to spectrum. Since spectrum is a limited resource and a necessary input to the functioning of all wireless communication systems, it is essential that access to spectrum is fair and available to all parties in a manner that enables efficient utilization of the spectrum and competitive provision of wireless services.
- 2.46. Apart from preventing anti-competitive hoarding or grabbing of spectrum through mergers and acquisitions, spectrum caps also serve as a way to ensure the future availability of spectrum for late entrants in a market, or for the expansion of existing operators.
- 2.47. A number of countries around the world have had spectrum caps to encourage competition and access to spectrum. For example, the United States had, until 2003, a spectrum cap of 45 MHz in urban areas and 55

MHz in rural areas. As the US Federal Communications Commission (FCC) notes, “The... spectrum cap was established in 1994, in anticipation of [cellular telephony] licensing, and in recognition that direct competition was likely to develop... In adopting the... spectrum cap..., the Commission found that an overall cap... would add certainty to the marketplace without sacrificing the benefits of pro-competitive and efficiency-enhancing aggregation.”²⁰ Similarly, Canada also had a limit of 55 MHz in spectrum holdings.

2.48. The US and Canadian caps were withdrawn in 2003 and 2004 respectively following a determination by the telecom regulators that the cellular market had matured sufficiently. Further, they continue to apply general anti-competitive laws to ensure that no entity can monopolize access to spectrum.²¹ In October 2004, for example, the FCC approved the merger of Cingular Wireless and AT&T Wireless, permitting the merged entity to retain spectrum up to 80 MHz in some markets.²² In the case of New Zealand, the government recently extended the period of spectrum caps in 3G, so as to maintain the conditions “that promote effective competitive entry.”²³ The 3G spectrum caps have been extended for the New Zealand market until 2010.

2.49. The scenario in India indicates that the Indian market has not sufficiently matured to a point where spectrum caps can be completely removed. Indeed, the market is still growing and there are a number of new licensees that are currently planning network deployments. Hence, the specific issue on which the Authority requests stakeholders comment is the revised spectrum cap, for both single and merging entities.. A subsidiary issue is the period of next review for the spectrum caps if it is suggested.

²⁰ http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-217577A1.pdf

²¹ <http://strategis.ic.gc.ca/epic/site/smt-gst.nsf/en/sf05645e.html>

²² http://www.wileyrein.com/publication_newsletters.cfm?id=12&publication_ID=11793

²³ <http://www.rsm.govt.nz/spp/3g-spectrum-cap/index.html>

Cross-technology mergers and spectrum

- 2.50. Since spectrum is assigned based on technology-sensitive subscriber-base criteria, which is different for CDMA and GSM technologies, it is likely that a merger between two cross-technology operators might lead to questions about how this cap is to be applied. Hence, merger guidelines regarding spectrum also needs to be reviewed to ensure that spectrum limits in cross-technology mergers have a predictable regulatory framework.
- 2.51. The merger and acquisitions guidelines of DoT specify that, “discretion to choose the band to surrender the spectrum beyond the ceiling will be of the new entity.” In the case of a cross-technology merger where say, one licensee has spectrum in the 800 MHz band for CDMA and the merging entity has spectrum in the 900/1800 MHz band for GSM technology, the merged entity will face issue of technical feasibility and practicability in surrendering any technology-specific bands, such as 800 MHz and 900/1800 MHz.
- 2.52. A possible situation is one where an existing UASL or CMTS licensee might wish to merge with or acquire another UASL or CMTS licensee that is using a different access technology. In the current allocation criteria, the spectrum allocated for the same number of subscribers for GSM and CDMA technology is in the ratio of approx. 2:1. For example, if a CDMA operator has 1 million subscribers in Mumbai circle, it will get up to 2 x 5 MHz of spectrum, while a GSM operator will get 2 x 10 MHz.
- 2.53. Due to this difference in the allocation criteria, it is important to consider the situation of a cross-technology merger and determine how the spectrum should be allocated in such a case. Consider the following hypothetical situation in the service area of Mumbai:
- Consider operator A, which is a UASL using CDMA technology with 1.1 million subscribers. According to the spectrum allocation criteria, operator A should have 2 x 5 MHz of spectrum.

- Consider operator B, which is a UASL using GSM technology with 1.0 million subscribers. According to the spectrum allocation criteria, operator B should have 2 x 10 MHz of spectrum.
- Now if operator A and B undertake a merger, they form a new entity C. In this case, C will have 2.1 million subscribers across both CDMA and GSM networks.
- As per the present guideline, the merged entity will be able to retain 15 MHz of spectrum.

2.54. In this situation, the spectrum allocation criterion does not address how a cross-technology merger should be handled. Specifically, there are two issues that come about: is the merged entity allowed to continue to operate in both the technologies. Secondly, in case of increase of subscriber base in both or either of GSM or CDMA technology, what criteria shall be applied for allotment of additional spectrum for the merged entity.

2.55. Thus, the Authority requests for comments on both the above issues

Determination of minimum number of access providers in a service area in case of mergers and acquisitions:

2.56. According to the license conditions, “Intra-service area mergers and acquisitions may be allowed if there are no less than three operators providing access services in a service area.”²⁴ DoT guidelines also mentions that merger of licences will be permitted subject to the condition that there are at least three operators in that service area for that service, consequent upon such merger. It is clarified that Unified Access Service Licensee will be counted for Basic as well as Cellular service separately while deciding the number of operators in a given service area. This condition was put in place to ensure that there is

²⁴ UASL clause 6.2

always sufficient competition in any service area. This specific condition means that there have to be at least three access providers in Basic as well in Cellular after merger.

2.57. The concern of the Authority here is that this could mean that a situation could arise after merger where there might be three UASLs out of which only one or two UASL is offering basic service apart from offering cellular mobile service. Than a situation may arise where a number of basic service providers reduces to two while cellular mobile providers remain three. Thus in spite of the condition of three UASL being satisfied, the market becomes uncompetitive because of monopolies of the operator in basic service segment. By redefining the clause that specifies how MMP is calculated, it might be possible to avoid such a situation. However, if such a situation arises due to organic growth of these operators, it will effect competition.

2.58. The Authority seeks stakeholders comment on what should be the basis for deciding the lower limit on the number of operators in a circle and how it should be counted for basic and cellular services

Transfer of licenses

2.59. Transfer means any mode of disposing of or parting with an asset or an interest in an asset, including a gift, the payment of money, release, lease, or creation of a lien or other encumbrance. The term embraces every method- direct or indirect, absolute or conditional, voluntary or involuntary – of disposing of or parting with property or with an interest in property, including retention of title as a security interest and foreclosure of the debtor's equity of redemption.

2.60. The Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 has been enacted to *regulate* securitisation and reconstruction of financial assets and enforcement of security interest and for matters connected therewith or

incidental thereto which defines. The property as referred to in the said Act means (i) immovable property; (ii) movable property; (iii) any debt or any right to receive payment of money, whether secured or unsecured; (iv) receivables, whether existing or future; (v) intangible assets, being know-how, patent, copyright, trade mark, licence, franchise or any other business or commercial right of similar nature. This definition is relevant here because **Annexure VII** to the licence Agreement contains the provisions for transfer of licence in pursuance of enforcement of security by lenders.

2.61. As per the provisions of UAS license agreement:

“ 6.1 The LICENSEE shall not, without the prior written consent as described below, of the Licensor, either directly or indirectly, assign or transfer this License in any manner whatsoever to a third party or enter into any agreement for sub-license and / or partnership relating to any subject matter of the License to any third party either in whole or in part i.e. no sub-leasing/ partnership/third party interest shall be created. Provided that the Licensee can always employ or appoint agents and employees for provision of the service.

6.2 Intra service area mergers and acquisitions as well as transfer of licenses may be allowed subject to there being not less than three operators providing Access Services in a Service Area to ensure healthy competition as per the guidelines issued on the subject from time to time.

6.3 Further, the Licensee may transfer or assign the License Agreement with prior written approval of the Licensor to be granted on fulfillment of the following conditions and if otherwise, no compromise in competition occurs in the provisions of Telecom Services:-

i) When transfer or assignment is requested in accordance with the terms and conditions on fulfillment of procedures of Tripartite Agreement if already executed amongst the Licensor, Licensee and Lenders; or

- ii) Whenever amalgamation or restructuring i.e. merger or demerger is sanctioned and approved by the High Court or Tribunal as per the law in force; in accordance with the provisions; more particularly Sections 391 to 394 of Companies Act, 1956; and*
- iii) The transferee / assignee is fully eligible in accordance with eligibility criteria contained in tender conditions or in any other document for grant of fresh license in that area and show its willingness in writing to comply with the terms and conditions of the license agreement including past and future roll out obligations; and*
- iv) All the past dues are fully paid till the date of transfer / assignment by the transfer or company and its associate(s) / sister concern(s) / promoter(s) and thereafter the transferee company undertakes to pay all future dues inclusive of anything remained unpaid of the past period by the outgoing company.”*

2.62. As per above mentioned clause, the Licensee may transfer or assign the License Agreement with prior written approval of the Licensor to be granted on fulfilment of **one of the two conditions**:

- i) The first condition relates to default by the licensee in payment of the loan amount taken from a lender. In that case, as per the prior tripartite agreement executed between the licensor, licensee and the lender, the lender has an option to recommend the transfer of the license to a Selectee. **"Selectee" means an Indian company within the meaning of Companies Act, 1956, selected by the Lenders and proposed to the LICENSOR for the purpose of assignment/transfer of the licence as provided in the licence agreement. The selectee shall meet the following eligibility criterion for transfer of the assets of the Project to it.**
 - a. the Selectee shall be capable of properly discharging the duties, obligations and liabilities under the LICENCE AGREEMENT.

- b. the Selectee shall be capable and shall provide adequate security to the satisfaction of the Lenders for the Financial Assistance.
- c. the Selectee shall have the capability and shall give necessary consent to assume the liability of the LICENCE Fee including the other dues of the LICENSOR and the Lenders' Dues;
- d. the Selectee shall satisfy at the time of formulation of transfer proposal the networth and experience criteria as well as technical and equity parameters as were adopted for the selection of LICENSEE.
- e. The selection should not be of such a company or its sister concern who was/has been granted any LICENCE and became/has become defaulter.
- f. Any other appropriate criteria, as may be prescribed by the LICENSOR from time to time, to ensure continuity in the service.

Before transferring or assigning the LICENCE to the Selectee pursuant to this AGREEMENT, the LICENSOR shall satisfy itself as to the eligibility criteria and the decision of the LICENSOR in this regard shall be final.

ii The second condition relates to transfer of the license in the event of restructuring of the company i.e. merger or demerger. The conditions for allowing the merger and acquisition have been extensively dealt in the previous paragraphs. The other important issue is to evaluate if a license transfer affects the competition levels.

2.63. As noted previously, the US Department of Justice has specific criteria to measure the change in HHI in the sector and initiate inquiries if the change in HHI is more than a specific level. On the other hand, in Europe, the Merger Control Regulation applies only to mergers,

acquisitions, and joint ventures that satisfy thresholds based on the turnover of the firms involved. The purpose of these checks and criteria are to focus resources on investigating those activities that might raise serious competition concerns; mergers or license transfers that do not fall within specified limits are investigated in depth.²⁵

2.64. Hong Kong's OFTA also follows an ex post regulatory philosophy, and undertakes investigations of mergers and acquisition of licensees. In their guidelines,²⁶ OFTA states: There is no requirement that merger proponents notify the TA of their intentions prior to consummating their deal. However, the TA can investigate a merger after it is completed and, if he concludes that it has or is likely to have the effect of substantially lessening competition and does not have outweighing public benefit, he can order that the merger be reversed or that other remedies be implemented to overcome the identified competitive detriment. Merger proponents may request the formal or informal consent of the TA before proceeding.

2.65. Based on the guidelines, OFTA calculates the markets shares of all current market participants, and screens out those mergers and acquisitions where the merged entity is likely to have only a small market share, or where the post-merger level of the concentration in the market is likely to be low. Where the regulator believes that the competition effects of a particular merger require further investigation, it undertakes a competition analysis based on factors such as:

- Barriers to entry for new operators
- The level of market concentration in a telecommunications market
- Presence of strong competitors in a telecommunications market

²⁵ <http://www.ictregulationtoolkit.org/en/Section.1923.html>

²⁶ OFTA, Guidelines on Mergers and Acquisitions in Hong Kong Telecommunications Markets, May 2004

- Ability to significantly and substantially increase prices or profit margins
- Growth, innovation and product differentiation in the market
- If a vigorous and effective competitor will be removed
- Competition levels after the change
- Nature and extent of vertical integration
- Actual and potential level of import competition
- The extent to which substitutes are available.

2.66. Given that the Authority seeks to balance the play of market forces with having a competitive market, and a stable and predictable regime, it seeks comment on how the transfer of licenses should be managed, specifically about conditions in place to limit anti-competitive transfer of licenses.

2.67. **Issues for consultation**

- Q1.** How should the market in the access segment be defined (see ¶2.22)?
- Q2.** Whether subscriber base as the criteria for computing market share of a service provider in a service area be taken for determining the dominance adversely affecting competition, If yes, then should the subscriber base take into consideration home location register (HLR) or visited location register (VLR) data? Please provide the reasons in support of your answer?
- Q3.** As per the existing guidelines, any merger/acquisition that leads to a market share of 67% or more, of the merged entity, is not permitted. Keeping in mind, our objective and the present and expected market conditions, what should be the permissible level

of market share of the merged entity? Please provide justifications for your reply?

- Q4.** Should the maximum spectrum limit that could be held by a merged entity be specified?
- a. If yes, what should be the limit? Should this limit be different for mergers amongst GSM/GSM, CDMA/CDMA & GSM/CDMA operators? If yes, please specify the respective limits?
 - b. If no, give reasons in view of effective utilisation of scarce spectrum resource?
- Q5.** Should there be a lower limit on the number of access service providers in a service area in the context of M&A activity? What should this be, and how should it be defined?
- Q6.** What are the qualitative or quantitative conditions, in terms of review of potential mergers or acquisitions and transfers of licenses, which should be in place to ensure healthy competition in the market?
- Q7.** As a regulatory philosophy, should the DoT and TRAI focus more on ex post or ex ante competition regulation, or a mix of two? How can such a balance be created?

Chapter 3 Substantial Equity

Background

3.1 In its letter, DoT has specifically asked that the Authority make recommendations on clause 1.4 of the UASL, which deals with substantial equity holding by a company/legal person in more than one licensee company in the same service area. Verbatim, the clause states:

1.4 The LICENSEE shall also ensure that:

(i) Any changes in share holding will be subject to all applicable statutory permissions.

(ii) No single company/ legal person, either directly or through its associates, shall have substantial equity holding in more than one LICENSEE Company in the same service area for the Access Services namely; Basic, Cellular and Unified Access Service. 'Substantial equity' herein will mean 'an equity of 10% or more'. A promoter company/ Legal person cannot have stakes in more than one LICENSEE Company for the same service area.

Note : Clause 1.4(ii) shall not be applicable to Basic and Cellular Licensees existing as on 11.11.2003, and in case one of them migrates to UASL it shall not be necessary to surrender the other Licence. Further, Basic and Cellular Licensees existing as on 11.11.2003, shall not be eligible for a new UASL in the same service area either directly or through it's associates. Further, any legal entity having substantial equity in existing Basic / Cellular licensees shall not be eligible for new UASL.

3.2 Sub-section (6) of section 62 of the Companies Act,1956 defines the promoters with reference to civil liability of the promoter for mis-statements in the prospectus of the company, which means a promoter who was a party to the preparation of the prospectus or of the portion thereof containing the untrue statement but does not include any person by reason of his acting in a professional capacity

for persons engaged in procuring the formation of the company. Though the expression “promoter” has been used in other Acts such as Insurance Act, 1938 but has not been defined.

- 3.3** Legal person means a body of persons or an entity (as a corporation) considered as having many of the rights and responsibilities of a natural person and esp. the capacity to sue and be sued. The legal person has not been defined in the license. The definition of legal person becomes relevant in view of the obligation of the licensee and restriction on share holding by the legal person. Clause (31) of section 2 of the Income Tax Act, 1961 includes in the definition of the person (i) an individual, (ii) a Hindu undivided family, (iii) a company, (iv) a firm, (v) an association of persons or a body of individuals, whether incorporated or not, (vi) a local authority, and (vii) every artificial juridical person, not falling within any of the preceding sub-clauses;
- 3.4 In order to prevent anti-competitive ownership patterns, and to allow for true diversity in the range of choices to the consumer, it is essential that rules be put in place and enforced, that restrict the ownership levels of different service providers. Simultaneously, these limits should not be such that growth or efficient consolidation in a market is hampered. Hence, a balance needs to be reached between ensuring that a consumer has access to a competitive market, and allowing firms to grow to improve their economic efficiency.
- 3.5 There are three specific issues within this clause which are to be dealt with under this consultation.
- Restrictions on cross holdings, that “No single company/ legal person, either directly or through its associates, shall have substantial equity holding in more than one LICENSEE Company in the same service area for the Access Services.”

- Definition of substantial equity: “an equity of 10 per cent or more.”²⁷
- Restrictions on a promoter/legal person to have stake in only one company within one service area.

Each of these issues has been dealt with in the following paragraphs.

Cross holdings

- 3.6 Present license conditions restrict the number of licensees in which any company/legal person (henceforth ‘entity’) can have a substantial equity holding in, through direct or indirect means. As per corporate law, equity shareholders are considered as owners of the company. Shareholders can influence the decisions or strategies of the companies they own. Generally, a substantial equity holder has the right to participate in the financial or operating policy decisions of a licensing company but does not necessary control its policies.
- 3.7 Having substantial holdings across a number of companies can result in coordination across firms in order to maximize profits, increase market shares, or even to control or manipulate prices. This is the primary reason why ownership limits are maintained: to prevent the formation of ‘trusts’, or informal anti-competitive cartels or where the owners are the same or work in tandem. Consequently, in this case, limits have been placed on the number of access service licensees, that one entity can have a substantial equity holding in.
- 3.8 In the communication market, it is essential that healthy competition be maintained between service providers. Competition in the Indian telecom market has resulted in the explosive growth over the past few years – both in terms of subscriber base and in terms coverage. Further, prices have reduced over time as service providers have

²⁷ Equity means the ownership share/interest in a company/legal person in the form of common stock or preferred stock. As per the section 2 (46) of the Companies Act, 1956, share means the share capital of a company and includes stock except where a distinction between stock and shares is expressed or implied. As per the Companies Act, 1956 share capital is of two kinds - preference share capital and equity share capital.

engaged in market-share competition, i.e. they have worked to increase their market shares faster than other competitors. As evident from Figure 1 and Figure 2, the subscriber base growth and competitive environment are strong in the Indian market today.

- 3.9 At a time when the Indian telecom market is growing at an accelerated pace, and when tariff are acknowledged to be among the lowest in the world, the Authority seeks stakeholders comment on whether the limit on cross-ownership in terms of substantial equity holding should be maintained.

Definition of substantial equity

- 3.10 The second issue is the definition of 'substantial equity', in terms of its qualitative and quantitative characteristics.

- 3.11 The Authority notes that in the explanation B of the section 294AA of the Companies, Act, 1956 the meaning of substantial interest is as follows:

- In relation to an individual, means the beneficial interest held by such individual or any of his relatives, whether singly or taken together, in the shares of the company, the aggregate amount paid-up on which exceeds five lakhs of rupees or five percent of the paid-up share capital of the company, whichever is the lesser.
- In relation to a firm, means the beneficial interest held by one or more partners of the firm or any relative of such partner, whether singly or taken together, in the shares of the company, the aggregate amount paid-up on which exceeds five lakhs of rupees or five per cent of the paid-up share capital of the company whichever is the lesser;
- In relation to a body corporate, means the beneficial interest held by such body corporate or one or more of its directors or any relative of such director, whether singly or taken together, in the shares of the company, the aggregate amount paid-up on which exceeds five lakhs of

rupees or five per cent of the paid-up share capital of the company, whichever is the lesser.

- 3.12 The Authority has also noted the definition of “person who has substantial interest in [a] company” under the Income Tax Act, 1961. As per the section 2(32) of the Income Tax Act, a “person who has a substantial interest in the company”, in relation to a company is a person who is the beneficial owner of shares, not being shares entitled to a fixed rate of dividend, whether with or without a right to participate in profits, carrying not less than twenty percent of the voting power.
- 3.13 The definitions of substantial equity/interest surveyed in various commercial laws governing business environment in India, give a range from 5% to 25% of paid up share capital of a company. Needless to say, such definitions had been coined at different points of time for different purposes taking into account the conditions prevalent in those periods. Nevertheless, they give an idea of the level at which substantial equity or interest in a company has been viewed.
- 3.14 The Authority has also noted that the financing pattern of telecom service sector has under gone changes in the recent past. Further, the Government of India has also changed its Foreign Direct Investment (FDI) ceiling from 49 per cent to 74 per cent, in certain telecom services,²⁸ subject to certain conditions. Keeping in view these changes, the Authority feels that the definition of substantial equity should be in sync with global pattern and encourage investment in the telecom companies to promote competition and improve the quality of service in the telecom service sector.
- 3.15 At present, the UASL/CMTS license states that a substantial equity holding is 10 per cent of the equity of the licensee company. The higher the holding of an entity in a firm greater is its control over the firm. Consequently, in the interest of reducing the chances of having one

²⁸ These include Basic, Cellular, Unified Access Services, National/International Long Distance, V-Sat, Public Mobile Radio Trunked Services (PMRTS), Global Mobile Personal Communications Services (GMPCS) and other value added services.

entity exercise significant control over a number of different firms, it is essential to keep this limit to a level where the interest of any single entity is not promoted through cross management controls. However, from the perspective of encouraging investment, especially in a sector such as telecommunications, it is useful to allow firms a greater amount of freedom to have entities buy equity and invest to support roll out plans or other improvements in the network.

- 3.16 The conditions in clause 1.4 of the UASL and CMTS licenses were imposed initially, when the telecom sector in India was at a nascent stage. However, presently the market is very competitive with four large operators having market share in the range of 15-25% and there are specific guidelines on M&A for ensuring that the market remains competitive. The DoT in its reference dated April 2007 has also desired the recommendations of TRAI in certain matters that are inter related to each other. For instance, the reference seeks recommendations on a review of transfer of license, guidelines relating to Mergers and Acquisitions and also the need or otherwise to limit the number of access service providers in each service area. Therefore, it is necessary to view the substantial equity clause of the license in the overall perspective in which the reference has been made by the government. It may be noted that TRAI made the recommendations of M&A guidelines on 30.1.2004 and thereafter the Government inserted certain conditions in the license to reflect the guidelines on Mergers and Acquisitions of TRAI albeit in a modified way. Prior to the recommendations of TRAI on Mergers and Acquisitions, treatment of any proposal for consolidation within a circle could have been made in the light of the “substantial equity clause” of the license. Therefore, it is possible to argue that any proposal or development in the market towards consolidation in any form can be addressed in the framework of M&A guidelines, which is also under review in this Consultation Paper. Existing terms and conditions of UASL/CMTS provide for periodic submission of data on equity, change in the equity pattern by the licensees to DoT.

3.17 In this context, the issues that arise for consultation are given below:-

- Q1.** Should the substantial equity clause (1.4 of UASL) continue to be part of the terms and conditions of the UAS/CMTS license in addition to the M&A guidelines? Justify.
- a. If yes, what should be the appropriate limit of substantial equity? Give detailed justification.
 - b. If no, should such acquisition in the same service area be treated under the M&A Guidelines (in the form of appropriate terms and conditions of license)? Suggest the limit of such acquisition above which, M&A guidelines will be applied.
- Q2.** Whether a promoter company/legal person should be permitted to have stakes directly or indirectly in more than one access License Company in the same service area?
- Q3.** Whether the persons falling in the category of the promoter should be defined and if so who should be considered as promoter of the company and if not the reasons therefore?
- Q4.** Whether the legal person should be defined and if so the category of persons to be included therein and if not the reasons therefor.
- Q5.** Whether the Central government, State governments and public undertakings be taken out of the definition for the purpose of calculating the substantial shareholding?

Chapter 4 Permitting combination of technology under same license

Background

- 4.1 The DoT vide their letter dated April 13, 2007 (enclosed at Annex I) has also sought TRAI's recommendations on the issue of permitting service providers to offer access services using combination of technologies (CDMA, GSM and/or any other) under the same license.
- 4.2 The Cellular Mobile Telephone Services (CMTS) sector was opened up for the private sector in 1994-95. Initially two private operators were given licenses for providing the mobile service in most of the service areas. The license (CMTS) for 1st and 2nd mobile operator specified the use of GSM technology.
- 4.3 In 1997-98, licenses were awarded to private service providers to offer fixed services also. Initially the Basic service operators (BSOs) were permitted to use WLL technology for fixed wireless access only. However, in 2001, they were also permitted to offer limited mobility services within short distance charging area (SDCA). As per their license, the BSO's were assigned spectrum in the 800 MHz and 1800-1900 MHz band. Subsequently, Unified Access Services License (UASL) regime was introduced in November 2003, which permitted the licensee to offer both fixed and/or mobile services using any technology. All the BSOs except BSNL and MTNL migrated to the UASL regime. Since November 2003, no CMTS or BSO license is being awarded to new applicants and the new access services licensee can only be UASL.
- 4.4 The initial CMTS license was amended by an order-dated 1.10.1999 of DoT and the license was made technology neutral. Earlier to this order, it was mandatory for the licensee to use the GSM technology. The 3rd and 4th mobile licensees voluntarily opted for the GSM technology. Presently, all the mobile service providers are having either the CMTS license or the UAS license. In the UAS license, there are three different categories of the licenses as given below:

- i. UAS License after migration from BSO
- ii. UAS License after migration from CMTS
- iii. New UAS License

Though most of the license conditions in the CMTS and the above three categories of UAS license are same, however, in the conditions relating to range of technology choice, allocation of the spectrum and frequency band, there are certain differences in the four categories of licenses. The relevant clauses of different licenses are at **Annex VIII**. The table at **Annex IX** indicates the category of license of each existing service provider along with the maximum spectrum committed as per the license agreement subject to availability and the amount of the spectrum presently held by the service provider.

- 4.5 As per the existing licensing regime, the applicant company is first given the license on a specified entry fee and then based on the technology option and the frequency band applied for by the licensee; the Wireless Planning & Coordination (WPC) wing issues the WPC license which permits the utilization of appropriate frequency band. There is no separate allocation fee for spectrum. However, there is pre determined spectrum usage charge (**Annex X**). The relevant clause in the UASL is as below:

A separate specific authorization and licence (hereinafter called WPC licence) shall be required from the WPC wing of the Department of Telecommunications, Ministry of Communications & I.T. permitting utilization of appropriate frequencies / band for the establishment, possession and operation of Wireless element of the Telecom Service under the Licence Agreement of Unified Access Services under specified terms and conditions including payment for said authorization & WPC licence. Such grant of authorization & WPC licence will be governed by normal rules, procedures and guidelines and will be subject to completion of necessary formalities therein.

4.6 As mentioned before, there is a separate spectrum usage annual charge based on certain percentage of AGR (Annex X) depending upon the amount of spectrum possessed by the licensee. Additional spectrum after initial allocation provided in the license, is being allocated to the licensees as per the spectrum allocation criteria of DoT (**Annex VII**). Presently, this criterion is based on the number of subscribers (as per the VLR) and the average traffic in erlangs/subscriber and takes into account the technology being used for the operations (GSM or CDMA).

4.7 India is one of the few countries in the world where the 2G mobile service is being provided using two competing technologies i.e. GSM and CDMA. The spectrum allocation criterion is unique in the sense that the additional spectrum is given based on the subscriber numbers in that technology. The license is technology neutral i.e. permits use of any recognized technology for the provision of mobile service. However, DoT has identified certain specific bands for the TDMA/CDMA technologies and the spectrum is allotted to the licensee on the basis of technology specified by him. This is mainly on account of non-availability of the TDMA/CDMA equipment in all the bands identified by the WPC. Further, the DoT has prescribed certain criterion for allocating the initial spectrum and additional spectrum to the licensees. The spectrum bands identified in the NFAP-2002 are:

- 824-844 MHz paired with 869-889 MHz
- 890-915 MHz paired with 935-960 MHz
- 1710-1785 MHz paired with 1805-1880 MHz

The above frequency bands are colloquially referred as 2G bands.

4.8 In order to appreciate the basic intent of the licensor/DoT it is important to recall chronologically the specific license provisions regarding choice of technology and spectrum with the onset of liberalization:

(i) License agreement for provision of unified access services after migration from BSO.

The relevant provisions in technical conditions are:

“23.1 The Licensee shall provide the details of the technology proposed to be deployed for operation of the service. The technology should be based on standards issued by ITU/TEC or any other International Standards Organization/ bodies/Industry....”

“23.5 The frequencies shall be assigned by WPC from the designated bands prescribed in National Frequency Allocation Plan - 2002. (NFAP-2002) as amended from time to time. Based on usage, justification and availability, spectrum may be considered for assignment, on case by case basis....”

The relevant provisions for frequency authorization are:

*“43.5.(i) For wireless operations in SUBSCRIBER access network, the frequencies shall be assigned by WPC wing of the Department of Telecom from the frequency bands earmarked in the applicable National Frequency Allocation Plan and in coordination with various users. Initially a cumulative maximum of upto 4.4 MHz + 4.4 MHz shall be allocated in the case of TDMA based systems @ 200 KHz per carrier or 30 KHz per carrier or a maximum of 2.5 MHz + 2.5 MHz shall be allocated in the case of CDMA based systems @ 1.25 MHz per carrier, on case by case basis subject to availability....” For making available appropriate frequency spectrum for roll-out of services under the license, **the type (S) of systems** to be deployed are to be indicated.*

“43.5(ii) The licensee operating wireless services will continue to provide such services in already allocated/contracted spectrum. At present contracted spectrum allocation is 5+5 MHz”. The BSO’s were allocated spectrum in the band 824-844 MHz paired with 869-889 MHz (generally referred as CDMA band) and in this band the maximum spectrum allocation was envisaged upto 5+5 MHz with each carrier of 1.25 MHz.

(ii) License agreement for provision of unified access services after migration from CMTS

The relevant provisions for technical conditions in the license at clause 23.1 & 23.5 are similar as above. The relevant clauses for frequency authorization are 43.5(i) and 43.5(ii). The Clause 43.5(i) is similar to above. There is marginal change in clause 43.5(ii) and it is reproduced in the following paragraph.

“43.5(ii) The licensee operating wireless services will continue to provide such services in already allocated/contracted spectrum”.

In this case all the existing CMTS licensees were providing mobile services in the GSM technology and in that the allocated/contracted spectrum was not limited to 5+5 MHz. The initial spectrum allocation itself was 4.4+ 4.4 MHz/6.2+6.2 MHz and hence the line “at present contracted spectrum allocation is 5+5 MHz” have not been added.

(iii) License agreement for provision of cellular mobile telephone service (4th CMSP)

The relevant provision for the technical conditions is at clause 24.1 and it is similar to clause 23.1 under ¶ 4.8 (ii). Clause 24.1 require the company to specify the details of the technology as in other licenses.

The relevant provisions related to frequency allocation is at clause 24.7 and it states :

“24.7 The frequencies shall be assigned by WPC from the designated bands prescribed in National Frequency Allocation Plan - 2000. (NFAP-2000). Appropriate frequency spots in frequency-band of 1710-1785 MHz paired with 1805-1880 MHz will be assigned. A cumulative maximum of upto 4.4 MHz + 4.4 MHz will be permitted. Based on usage, justification and availability, additional spectrum upto 1.8 MHz + 1.8 MHz making a total of 6.2 MHz +6.2 MHz, may be considered for assignment, on case by case basis, on payment of additional Licence fee. The bandwidth upto maximum as indicated i.e. 4.4 MHz & 6.2 MHz as the case may be, will be allocated based on the Technology requirements. (e.g. CDMA @ 1.25 MHz, GSM @ 200 KHz etc.). The

frequencies assigned may not be contiguous and may not be same in all cases, while efforts would be made to make available larger chunks to the extent feasible.”

Part VII of the license deals with frequency authorization and wireless license and clause 24.7 in Part IV above has covered the spectrum allocation and frequency bands.

(iv) License agreement for unified access services

The relevant provision for the technical conditions are at clause 23.1 and 23.5 and they are on the similar lines as in the case of license agreement for unified access services after migration.

The relevant provisions for frequency authorization are at Clause 43.5 (i) and 43.5(ii). The clause 43.5(i) is also on the similar lines. The clause 43.5(ii) is different. It states:

“43.5(ii) Additional spectrum beyond the above stipulation may also be considered for allocation after ensuring optimal and efficient utilization of the already allocated spectrum taking into account all types of traffic and guidelines/criteria prescribed from time to time However, spectrum not more than 5+5 MHz in respect of CDMA system or 6.2+6.2 MHz in respect of TDMA based system shall be allocated to any new unified access service licensee. The spectrum shall be allocated in 824-844 MHz paired with 869-889 MHz, 890-915 MHz paired with 935-960 MHz, 1710-1785 MHz paired with 1805-1880 MHz”. This clause deals with additional spectrum beyond stipulation of 43.5(i). Further, it sets a ceiling regarding allocation of maximum spectrum in each type of technology. A ceiling of 5+5 MHz is already available in the corresponding license. However, here ceiling of 6.2 +6.2 MHz has been set for the licensee adopting TDMA technology.

Thus, it is clear that the option for various technologies by the licensee has been addressed within the four corners of National Frequency Allocation Plan. It is for this reason that clause 23.5 of UASL mentions:

“Based on usage, justification and availability, spectrum may be considered for assignment, on case by case basis.” Evidently, the

availability of spectrum in specified bands has been linked with usage and justification thus indicating a legacy baggage.

- 4.9 The Department of Telecommunications had also issued guidelines for unified access (basic and cellular) services license on 11th November 2003.

The guidelines reiterated that the service providers migrating to unified access service license will continue to provide wireless services in already allocated and contracted spectrum. Thus it envisages continuity of technology in providing telecom services. Further, the guideline mentions, “the unified access service providers are free to use any technology without any restriction”.

Based on the above analysis, it can be said that there is a legacy baggage on the licensees along with the pre-determined spectrum bands for the deployment of technologies.

- 4.10 At present, WPC allocates spectrum to the licensees based on the spectrum requested by them, which is linked to the equipment availability – hence, the 800 MHz band is sought by and allocated to CDMA providers, while the 900 MHz and 1800 MHz bands are sought by and allocated to GSM providers. Initially, 2 x 2.5 MHz spectrum in the case of CDMA technology, and 2 x 4.4 MHz in the case of GSM technology is allocated by WPC. Additional spectrum is assigned to licensees based on a technology-specific subscriber-base allocation criterion.

- 4.11 With the introduction of advanced wireless technologies and services, it is conceivable that new technologies, which are more spectrally efficient, cost effective and more technically advanced to the current CDMA or TDMA based systems may find place in the Indian market. There are possibilities of advanced version of CDMA and TDMA based systems in the context of 3G scenario. The licensees will seek to deploy these systems to offer new services at reduced costs and also enhance quality of service. In the near future, 3G and BWA technologies are going to be introduced. These will perhaps be provided using different spectrum

bands (such as 2.1 GHz, 2.5 GHz, and 3.3 GHz), but using the same UAS license. The Authority has already recommended the mode for spectrum allocation and the charging mechanism for these technologies. The Authority has also recommended that for the 3G service only the existing UASL, and for BWA, ISP's and the existing UASL will be eligible for the spectrum. Moreover as envisaged, in ¶2.48 of Chapter 2, merger and acquisition may throw up combination of technologies i.e. GSM and CDMA with single UAS licensee. After the merger and acquisition, the merged entity may not be just offering GSM or CDMA technology on an exclusive basis.

4.12 Perhaps the key issue is not a blanket disqualification for any licensee to offer more than one access service technology. The limitation operates via spectrum allocation guidelines. Under the present licensing dispensation, a certain quantum of spectrum is to be initially allowed to a licensee on the basis of technology option exercised. Thus it sets two separate growth paths for additional spectrum allocation based on technology being used and the subscriber numbers in that technology. The point for consideration is whether a licensee having opted for any specific technology in case of 2G can opt at a later stage for spectrum earmarked for other technology. Further, in such a case of plurality in technological choice, the issues of quantum, criterion of allocation and inter se allocation prioritization amongst licensees become key issues for determination. Linked with this is also the issue of spectrum charges which is based on certain slab system and are technology centric.

4.13 Presently, for a new UAS license, the applicant has to pay an entry fee, which is based on the service area for which the license is applied. In lieu of this entry fee, the applicant is given UAS license and based on the technology he chooses (GSM or CDMA), he is given an initial band of spectrum which is 2x4.4 MHz for GSM and 2x2.5 MHz for CDMA. The existing licensing regime does not explicitly state whether this entry fee is a combination of the initial license fee and the fee for the initial

spectrum band or is only the entry fee for the UAS license. As per the license, there is no guarantee for the spectrum as it is subject to availability and thus no time frame is committed. The relevant clause states “----- on case by case basis subject to availability”. In case the entry fee is, only for getting the UAS license, the spectrum charges is the annual spectrum license fee of 2% of AGR for 2x4.4 MHz or 2x2.5MHz for GSM and CDMA respectively.

4.14 As noted earlier, the present spectrum allocation criterion is technology specific and is based on the number of subscriber, which the service provider has in that specific technology. The annual spectrum charge is based on the percentage of the AGR and varies with the amount of spectrum being assigned. In such a situation the licensee using more than one technology to provide the services, maintains separate details of the subscriber numbers and the AGR and accordingly additional spectrum can be given as per the existing criterion and annual spectrum charge are calculated based on the AGR maintained separately This may encourage spectrum hoarding because for a new licensee, the initial spectrum of 2 x 4.4 MHz or 2 x 2.5 MHz is given to provide the initial coverage and fulfill the mandatory roll out obligation. However if a licensee has already fulfilled the roll out, then just by paying 2% on the AGR (initially it will be negligible), he would be able to get scarce spectrum without any obligation to use it. This may therefore tempt most of the operators to ask for spectrum for more than one technology. This would be against the principle of efficient utilization of scarce spectrum. Thus, the question arises that if the licensee is permitted use of multiple wireless technologies under the existing licensing regime, than how the additional spectrum should be charged and what additional conditions should be imposed to prevent hoarding and ensure efficient utilization of spectrum.

4.15 A simpler version may be to treat the existing licensee seeking plurality of technology as a new licensee without necessary requirement of forming a new company. However, the licensee may be required to

contribute an amount equivalent to initial entry fee for the new technology along with contingent performance obligation.

4.16 Another linked issue is that in case spectrum is available in phases at different points of time then what should be the priority of spectrum allocation among the following three categories:

- The existing licensees are eligible for additional spectrum allocation as per the WPC criterion;
- The new licensees are waiting for initial spectrum allocation for starting the mobile service;
- The existing licensees want spectrum for deploying alternate technology also.

Issues for consideration

4.17 The issues for consideration therefore are:

- Q1.** In view of the fact that in the present licensing regime, the initial spectrum allocation is based on the technology chosen by the licensee (CDMA or TDMA) and subsequently for both these technologies there is a separate growth path based on the subscriber numbers, please indicate whether a licensee using one technology should be assigned additional spectrum meant for the other technology under the same license?
- Q2.** In case the licensee is permitted, then how and at what price, the licensee can be allotted additional spectrum suitable for the chosen alternate technology;
- Q3.** What should be the priority in allocation of spectrum among the three categories of licensees given in ¶4.16 of the chapter?
- Q4.** Whether there should be any additional roll out obligations specifically linked to the alternate technology, which the service provider has also decided to use?
- Q5.** Lastly, as such service provider would be using two different technologies for providing the mobile service, therefore what

should be the methodology for allocation of future spectrum to him?

Chapter 5 Roll out obligations

Background

- 5.1 The objective of stipulating roll out obligations in license is to ensure expansion of networks & services in a specified time, prevent hoarding & achieve efficient utilization of spectrum, a scarce resource. Roll out obligation contributes to more equitable spatial growth of networks, without concentration in any particular pockets. It ensures wider availability of services through expansion of infrastructure thus achieving the goal of universal service.
- 5.2 Prior to the introduction of Unified Access Service license, roll-out obligations were in vogue on Basic service operators (BSOs) as well as on cellular mobile operators. The obligations of both sets of service providers were different. Post NTP'99, BSOs in a Service Area were required to provide Point of Presence (POP) in all Short Distance Charging Areas (SDCA), in an identified ratio of Urban, Semi-Urban and Rural SDCAs within 7 years. The roll out obligation of Cellular Mobile Service Providers (CMSPs) were to cover 10% of Districts Head quarters (DHQ) in the first year and 50% DHQs in three years. They were allowed to cover any town in lieu of DHQ in that district. In Metros, 90% of the service area was required to be covered within one year from the effective date of license.
- 5.3 In fact the roll out obligations were not only different for BSO and CMSPs but were also different for pre and post NTP'99 BSOs. The old basic service licenses specified the targets for direct exchange lines (DELS) and village public telephones (VPTs) to be installed by the end of 12, 24 and 36 months from effective date of the license. The VPTs required to be commissioned in each quarter, as a percentage of total DELS was 40%. The terms and conditions pertaining to rollout obligations in post-99 BSOs, CMSP and UASL license agreements are provided in **Annex XI**.

5.4 In its recommendations on Unified licensing regime dated 27th October 2003, the Authority recommended that since every service provider under Unified Access Regime will be authorized to offer cellular mobile services, the Rollout obligations and Performance Bank Guarantee in the Unified Access Regime should be same as those of the fourth CMSP. The Government accepted the recommendations and guidelines were issued in this regard in November 2003. As on date, no new BSO and CMSP license is being issued. All the BSOs except BSNL and MTNL have migrated to the UASL regime. The roll out obligations stipulated in the UASL regime which is the same as that for fourth CMSP are reproduced below:

As per the clause 34.2 of the UAS license, the Licensee shall ensure that

The LICENSEE shall make every endeavour to cover the entire Service Area at an early date and notify on quarterly basis the areas not covered by the licensee's System. In Metros, 90% of the service area shall be covered within one year of the effective date. In Telecom Circles, atleast 10% of the District Headquarters (DHQs) will be covered in the first year and 50% of the District Headquarters will be covered within three years of effective date of Licence. The licensee shall also be permitted to cover any other town equally important in a District in lieu of the District Headquarters. Coverage of a DHQ/town would mean that at least 90% of the area bounded by the Municipal limits should get the required street as well as in-building coverage. The District Headquarters shall be taken as on the effective date of Licence. The choice of District Headquarters/towns to be covered and further expansion beyond 50% District Headquarters/towns shall lie with the Licensee depending on their business decision. There is no requirement of mandatory coverage of rural areas.

5.5 Earlier the National Long Distance Operators (NLDO) had to pay an entry fee of Rs.100 crores and the licenses stipulated mandatory provision of setting up of a point of presence in each long distance

charging area. In November 2005, the entry fee was reduced to Rs. 2.5 crores and the roll out obligations on NLD licenses were removed. Though the number of operators as a result of liberal terms increased from 5 to 17 since November 2005 but the focus of the NLDOs is mostly on lucrative urban areas and benefit of competition has not percolated into rural and far-flung areas. While the calls between metro towns have become cheaper, smaller towns don't seem to have been benefited in the same ratio.

- 5.6 DOT also removed the mandatory roll out obligation for ILD service licensees except for having at least one switch in India. Prior to this amendment the following roll-out obligation was imposed on the licensee²⁹:

Receipt and Delivery of traffic from/ to all the exchanges in the country is required to be ensured through one or more Gateway Switches having appropriate interconnections with the NLDOs and meeting the TRAI's QOS Regulations and Network to Network Interface requirements. For this purpose a minimum of four Points Presence (POPs) i.e. one in each Region of the country i.e. Eastern, Western, Northern & Southern will need to be established. There is no bar in setting up of POP in remaining location of Level I TAXs Preferably, these POPs should conform to Open Network Architecture (ONA) i.e. should be based on Internationally accepted standards to ensure seamless working with other Carrier's Network.

Delivery of traffic to all the countries in the World to be ensured through at least four Direct Routes i.e one each to North America, Gulf Region, Europe and any one location in South East Asia, Far East and Oceania. It should be ensured that traffic to remaining countries is transited through one of these hubs abroad. It should be possible to terminate traffic to any global destination.

²⁹ Clause 9.3 of the ILD license

5.7 Presently, an access provider after getting the UAS license applies to WPC for assignment of frequency and SACFA clearance for the BTS planned in the service area. During the interim period of getting the frequency assignment and SACFA clearance, the licensee initiates work on the erection and installation of towers / BTS. In order to comply with the licensing condition pertaining to rollout obligations, the service providers are required to apply and offer the DHQs/towns for coverage testing to Telecom Engineering Centre (TEC) and get the certification. The date of Test Certificate issued by the TEC was being reckoned as the date of commissioning the service for the purpose of calculating liquidated damage charges levied in case the licensee fails to bring the Service or any part thereof into commission (i.e., fails to deliver the service or to meet the required coverage criteria/ network roll out obligations) within the period prescribed for the commissioning. TRAI had sought compliance reports in this regard and it was found that most of the service providers are in default of the required TEC certificate. TEC vide its letter dated 20.03.2007 has now revised and simplified the procedure. As per the amended certification procedure, the service provider after commissioning of the network applies to the TEC along with the requisite technical documents, for conducting the service test. Based on the documents submitted by the Service provider, TEC may carry out visit and re-test any BTS if felt necessary or issue test certificate to service provider. The effective date for roll out obligation now is the date of submission of self-certified test results/reports, unless otherwise found defective or not factual.

5.8 As noted above, today the verification of compliance to roll-out obligations is centralized with TEC which monitors the entire aspect of compliance in all 23 service areas. It is understood that this work is now getting de-centralised with the responsibility of monitoring of compliance of roll out obligations being given to Vigilance Telecom Monitoring (VTM) cell of DoT. It is pertinent to note that provision of monitoring compliance to roll out already exists in one of the monitoring function assigned to VTM cell. As per the information

available from DoT, 34 numbers of VTM cells have been created covering 23 telecom Circles and 10 large cities. It is expected that transfer of this work to VTM cell will improve efficiency of operations and ensure proper and timely verification of roll out compliance.

5.9 Presently an UAS licensee has to submit performance bank guarantee for an amount equal to Rs. 20/10/2 crores (for category A/B/C service areas) before signing the license agreement. On completion of one year from the effective date of the license and the stipulated coverage criteria the first year, the PBG is reduced to Rs. 10/5/1 crores for category A/B/C service areas on self-certification by the licensee. Further on fulfillment the roll out obligations as stipulated in clause 34 of License Agreement the balance PBG is released on receipt of test certificate issued by TEC in respect of coverage.

5.10 The license agreements further mentions that the licensor may encash Bank Guarantee (FBG as well as PBG) in case of any breach in terms & conditions of the LICENCE by the LICENSEE

5.11 In case of NLDOs, there is no PBG for roll out obligations while the ILDO has to submit PBG of Rs. 2.50 crores, which is released as soon as the roll out obligations is met.

5.12 Presently if a licensee fails to meet the required coverage criteria / network roll out obligation then he has to pay the liquidated damages (LD) charges. The LD charges are different for CMTS and UASL licenses. In case of CMTS license, the licensee has to pay the LD charges of Rs. 5 lakh for each week of the delay or part thereof, subject to maximum Rs. 100 lakhs. For delay of more than 20 weeks the license shall be terminated. In case of UASL, the LD charges are @ Rs.5 lakh per week for first 13 weeks; @ Rs.10 lakhs for next 13 weeks and thereafter @ Rs.20 lakhs for 26 weeks subject to maximum of Rs.7.00 crores. For delay of more than 52 weeks, the license may

be terminated. The relevant clauses 37.2 and 35.2 of CMTS and UAS license agreements respectively are reproduced below:

CMTS license agreement

“37.2 In case the Licensee fails to bring the Service or any part thereof into commission (i.e., fails to deliver the service or to meet the required coverage criteria) within the period prescribed for the commissioning, the Licensor shall be entitled to recover Rs. 5 Lakh (Rupees: Five Lakhs) for each week of the delay or part thereof, subject to maximum Rs. 100 Lakhs (Rupees: One Hundred Lakhs). For delay of more than 20 weeks the Licence shall be terminated under the terms and conditions of the Licence agreement. The week shall mean 7 Calendar days from (from midnight) Monday to Sunday; both days inclusive and any extra day shall be counted as full week for the purposes of recovery of liquidated damages.”

UAS license agreement

“35.2 In case the LICENSEE fails to bring the Service or any part thereof into commission (i.e., fails to deliver the service or to meet the required coverage criteria/ network roll out obligations) within the period prescribed for the commissioning, the Licensor shall be entitled to recover LD charges @ Rs. 5 Lakh (Rupees: Five Lakhs) per week for first 13 weeks; @ Rs 10 lakhs for the next 13 weeks and thereafter @ Rs. 20 lakhs for 26 weeks subject to a maximum of Rs. 7.00 crores. Part of the week is to be considered as a full week for the purpose of calculating the LD charges. For delay of more than 52 weeks, the Licence may be terminated under the terms and conditions of the Licence agreement. The week shall mean 7 Calendar days from (from midnight) Monday to Sunday; both days inclusive and any extra day shall be counted as full week for the purposes of recovery of liquidated damages.”

- 5.13 In the case of NLD operators, roll out obligations have been removed, therefore, there is no provision of LD charges in NLD license. In case of ILD license agreement, though PBG is required to be submitted by the licensee, there is no provision of LD charges.
- 5.14 As mentioned earlier, TRAI had sought compliance to licensing terms and conditions pertaining to roll out obligations from all the mobile service providers and it was found that most of the operators are not complying as they do not have the required TEC certificate. In the past, DoT has levied LD charges on some mobile operators for not complying with roll-out obligations. It is learnt that recently also DoT has issued show-cause notices to some operators for non-compliance to roll-out obligations.
- 5.15 Though DoT has not terminated the license of any of the service provider for failing to complete its roll out obligation, however, it needs consideration whether such an extreme condition should be retained in the license condition. Moreover, this condition does not differentiate between a service provider who completes say 90% of its obligation and another service provider who has completed only say 30% of its obligation.
- 5.16 Another issue which deserves consideration is the date from which the time for rolling out the network is reckoned with. As per the present condition the time for roll out is reckoned from the **effective date of license**. There is a possibility where effective date of license may not be the date for allocation of spectrum. There have been delays in past in the allocation of spectrum as it is subject to availability. If the UAS licensee plans to provide mobile service then in the absence of spectrum it will not be possible for him to start the roll out. Therefore, in cases of delay in the allocation of spectrum, the roll out obligation would not be fulfilled if the date is reckoned from the effective date of license and that may result in the licensee paying LD charges.

- 5.17 The issue regarding whether or not there should be a roll out obligation on telecom licensee has been a subject of much debate. From the evolution of license conditions for various services it is seen that the Government has been relaxing rollout obligations imposed on various telecom licensees. Initially the BSO license, the NLD license etc had specific and strict roll out obligations clearly spelt out in the license itself and over a period, the roll out obligation have been significantly diluted from almost every class of license. One may argue that once effective competition is operating in the market then rollout obligations are not required. This is because competition will force the service providers to extend their coverage and provide good quality of service. Moreover since operators are contributing to the Universal Service Obligation Fund (USOF), there is no case for rural roll out obligations.
- 5.18 The other side of argument could be that to ensure quicker roll out of networks especially in non-lucrative areas rollout obligations need to be retained. Moreover, the USOF is providing support for provision of services in specific clusters/locations only. The USOF initially provided support for fixed services in specific SSA/SDCA, and has only recently started providing support for mobile services in specific uncovered clusters.
- 5.19 Recently Cellular Operators Association of India (COAI) had approached DoT for removal of these rollout obligations. The Association has also argued that as the license has provision for imposing penalty, therefore there is no justification for having the provision of PBG also as it adds to the financial burden on the service providers. However, the nature and scope of penalty is different from PBG. Penalty is normally imposed in the nature of fine for an offence/violation. However, PBG is in the nature of security for fulfilling certain specified obligations and is either returned after the obligation is met or is forfeited in case of default.

5.20 DoT had sought TRAI's opinion on the COAI suggestion. The Authority vide its letter dated 15th January 2007 had favoured retention of rollout obligations mainly because the locus of competition is still inclined towards urban areas and it has not percolated deep into semi-urban and rural areas. Other reasons for the above stand include the following:

- Many operators have acquired Unified Access license recently and have yet to complete rollout obligations.
- Rollout obligations reduce the scope of spectrum hoarding by the non-serious players.
- A number of operators are still in non-compliance with the network coverage related to Quality of Service norms prescribed in the Regulation on Quality of Service of Basic and Cellular mobile telephone services 2005 (11 of 2005) dated 1st July 2005.
- The need for level playing field demands uniform application of roll out obligations.

5.21 In the above letter, DoT while giving reference to coverage specifications as per TEC test schedule No: CMTS/COV-01/01.MAR.200 revised vide CMTS/COV-01/02.JUL.2006 and TRAI's QoS Regulation dated 8th July 2005 has stated that in many cases, the CMTS/UASL licensees are yet to provide in building coverage according to TEC/TRAI's regulation. Presently as per the TRAI's regulation on Quality of Service, the in building coverage measured at the street level should be > or equal to - 75 dbm. Apart from this parameter, there are other technical parameters viz. Call Success Rate, Call Drop-out Rate and Voice Quality which are used to determine the quality of the network in a particular geographical area. It needs consideration whether there is a need to amend or modify the presently laid criterion for determining the rollout of the network in an area.

5.22 The phenomenal growth in the Indian telecom Sector has been universally acknowledged with teledensity figures going up from 2.86% in 2000 to 18.4% 2007. However, despite this growth, it is also a fact that a large part of India, both geographically as well as in terms of population, has escaped from the benefits of this development. As on March 2007 the urban teledensity is around 48% and rural teledensity is only around 6%³⁰ and the country is witnessing a widening gap between the urban and rural areas.

5.23 The teledensity figures and the widening gap between the urban and rural teledensity in India is disconcerting. The increasing digital divide is alarming and there is an urgent need to reduce this gap. It is time that policy and regulatory interventions are revisited to ensure a more equitable environment in the telecom sector for rural and urban India. There is a need for development of the infrastructure and provision of services in semi urban and rural areas. There are millions of ears which are still waiting to hear the ring tone.

5.24 The Authority through its various recommendations, orders and regulations has taken several initiatives to promote penetration of telecom services in rural and remote areas of the country. In its recent recommendations on infrastructure sharing³¹, the Authority emphasized the importance of Infrastructure sharing in telecom to reduce costs and improve coverage especially in rural India. The Authority recommended permitting of active infrastructure sharing limited to antenna, feeder cable, Node B, Radio Access Network and transmission systems. Another major initiative is backhaul sharing. Considering the importance of backhaul sharing for mobile services in rural and far-flung areas, the Authority has recommended amendment in the license conditions to allow service providers to share their

³⁰ Rural teledensity takes into consideration Rural DELS and rural mobile connections. Rural population is taken as 70% of total population as on 31st march 2007 (1129.87 million).

³¹ Recommendations on Infrastructure sharing dated 11th April 2007.

backhaul from Base Trans receiver Station (BTS) to Base Station Controller (BSC). In order to provide level playing field and roll out opportunities to all the licensees, the Authority has expanded the scope of financial incentive for passive infrastructure sharing in rural and far-flung remote areas. Accordingly, it has recommended that all the licensees in any service areas should qualify for financial subvention schemes meant for rural areas though at reduced scale compared to the winner in the tender process of USOF Administration.

5.25 Till date the incumbent basic service operator (BSNL) is contributing maximum for increasing the rural teledensity. As far as fixed DELs in rural areas are concerned, as on date, the contribution of BSNL is more than 99%. The focus of private operators was mainly on lucrative areas. However, since last 1-2 years, the private mobile operators have also started moving towards the semi urban and small towns. Prior to this the coverage of mobile networks in rural areas was insignificant and mostly incidental. From the reported data, it is observed that BSNL has around 29% of the total rural wireless subscribers and if both wire line and wireless are taken into account than it has around 48% share of the total rural subscriber base.

5.26 As per the information available with TRAI the present geographic coverage of mobile networks is around 39% and population coverage is around 60%³². The focus of service providers still remains in urban areas and rural & remote areas of the country are largely uncovered. The main issue for consideration is whether additional rollout obligations should be imposed upon the existing licensee so as to ensure that telecom facilities are readily available to the citizens of the country. The roll out obligation is also essential in the NLD and ILD sectors as there is a need to ensure wider area of growth, wider coverage and provision for alternative routes in remote areas.

³² Source: COAI data as on July 2006.

5.27 The twin objectives of universal access and universal services could be met through a combination of two measures-- by redefining rollout obligations in the license agreement and through USOF.

5.28 The USOF was established in 2002 and is being used to provide telecom services in rural and remote areas of the country. Till March 2006, this fund was used for provision of only fixed services. However, mobile services, vide Indian Telegraph (Amendment) Act 2006 dated 29.12.2006, have been brought under the ambit of USOF. A scheme has recently been launched by the Government to provide support for setting up and managing 7871 number of infrastructure sites spread over 500 districts for provision of mobile services including other Wireless Access Services like Wireless on Local Loop (WLL) using Fixed/ Mobile terminals in the specified rural and remote areas of the country, where there is no fixed, wireless or mobile coverage.

5.29 Though USOF fund is being utilized to improve coverage of telecom networks in the rural and remote areas of the country, there is a need to accelerate the pace of telecom penetration in areas other than those specifically identified by the USOF Administration both in terms of coverage as well as in terms of competition, to ensure QoS and a wider choice to consumers. Introducing rural roll out obligation on the UASL and CMSP licensees may act as a catalyst for increased coverage in such areas, achieve teledensity target (500 million subscribers by 2010) and bridge rural-urban divide. Internationally, there are countries who impose roll out obligations to ensure coverage especially in rural and remote areas of the country.

5.30 . In addition to the requirement to cover areas other than those identified by the USOF, there is also a need to encourage the expansion of infrastructure. Dependence on existing infrastructure and services is grossly inadequate and it is imperative to encourage the

growth of competition and introduction of new technology and services in semi urban and rural India. The ultimate aim of introduction of competition is not merely provision of competitive tariffs, or choice to the consumer –there is also an inherent motive of improving and increasing the infrastructure of the country and providing alternative plans in infrastructure. Infrastructure building has to be an essential component of the telecom strategy to sustain the phenomenal growth that this sector has seen.

5.31 In its recommendations on ‘Allocation and pricing of spectrum for 3G and BWA services’ dated 27th September 2006 the Authority had opined that rollout obligations should be set in order to encourage operators to deploy networks and provide service quickly. The Authority also recommended specific rural area roll out obligations. The roll out obligations recommended for 2.1 GHz band are as follows:

Category of circle	At the end of 3 yrs	At the end of 5 years
Metros	-	90% of metro area
A, B and C	30% of the DHQs or cities in the circle out of which at least 10% should be rural SDCAs	50% of the DHQs or cities in the circle out of which 15% should be rural SDCAs

Similarly roll out obligations were recommended for BWA services. The Authority had expressed similar views in its recommendations on Unified Licensing regime dated 27th October 2003 and 13th January 2005.

5.32 It is submitted for consideration whether additional rural roll out obligations should be imposed on the existing licensees. If it is decided that rural roll out obligations should be imposed then the next issue for consideration is what should be the roll out obligations and how should they be enforced so as to ensure that the dark areas from telecom point of view get benefit of network coverage and competition.

5.33 The past experience in the sector has shown that specifying rural obligations in the license agreement especially for basic services did

not meet the objectives in a major way. While the Government may impose penalties for not meeting the specified roll-out obligations it could also be argued that regulation recognizing incentive could perhaps be a more effective tool. Financial incentives in the form of reduction in license fee or spectrum charges based on roll out could be provided to encourage quick roll out or even penetration of telecom services in rural and remote areas of the country.

5.34 There is a need to adopt a fresh approach on the imposition of penalties for failing to meet the roll out targets. It is felt that a combination of incentives and penalties could provide better motivation for the licensees to meet their obligations. Incentives for meeting the obligations could take the form of deduction in license fees and spectrum charges, while penalties for failing could be in form of increase in license fees & spectrum charges or some other financial levies.

5.35 Presently, the Access providers including NLDOs and ILDOs are contributing 5% of the AGR towards the USOF. One of the arguments of the service provider is that they are already contributing to the USOF and hence should not be asked to provide rural coverage. Therefore as an incentive to the fulfillment of the rural rollout could be a reduction in their contribution to the license fee.

5.36 As mentioned earlier, one way of promoting incentive based regulation is to provide discounts in license fee and spectrum charges based on rural roll out. In order to offer such discounts rural roll out obligation may be imposed based on either geographical or population coverage. It is imperative that the scheme for offering such discounts is simple, transparent, easy to administer and monitor. One method of offering such discounts could be to provide discounts based on specified number of BTSs installed by the operator in the rural areas of its service area. The licensees are contributing 5 per cent of AGR towards the USOF. One option could be to specify a minimum rural roll out

obligation in terms of number of BTSs in rural areas for eligibility to a reduced contribution of AGR towards license fee in case the licensee fulfills the condition of specified number of BTS. For example if 500 BTSs are installed by an operator in identified rural areas then a discount of say 2% may be given in the license fee. The issue for consideration will be how to determine the methodology of providing such discounts. The Authority is of the view that to avail such discounts infrastructure should be necessarily shared.

5.37 It is a fact that in the present competitive telecom market, a new licensee needs time to successfully start operation and provide initial coverage. Initially, it would like to introduce the services and stabilise in the more remunerative areas so as to allow him greater leeway in providing services in the markets where the paying capacity of the subscriber may be lower. Therefore, it can be considered that the rural roll out obligation may commence after say, two years of operations. Giving a new operator time to stabilise would make him less likely to default in his obligation and would also be in the interest of equity and fair play..

5.38 The review of roll out obligations would entail following key issues for consideration:

- Q1.** Should present roll out obligations be continued in the present form and scale for the Access service providers or should roll out obligations be removed completely and market forces be allowed to decide the extent of coverage? If yes, then in case it is not met, existing provision of license specifies LD charges upto certain period and then cancellation of license. Should it continue or after a period of LD is over, enhancement of LD charges till roll out obligation is met. Please specify, in case you may have any other suggestion.
- Q2.** Is there a case for doing away with the performance bank guarantees as the telecom licensees are covered through the

penalty provisions, which could be invoked in case of non-compliance of roll out obligations?

- Q3.** Should roll out obligations be again imposed on the existing NLD licensees? If yes, then what should be the roll out obligations and the penalty provisions in case of failure to meet the same.
- Q4.** What additional roll out obligations be levied on ILD operators?
- Q5.** What should be the method of verification of compliance to rollout obligations?
- Q6.** What indicators should be used to ensure quality of service?
- Q7.** As the licensees are contributing 5 per cent of AGR towards the USOF, is it advisable to fix a minimum rural roll out obligation ? If yes, what should be that. If no, whether the Universality objectives may be met through only USOF or any other suggestions.
- Q8.** In case of rural roll out obligation, whether number of BTS in a certain area a viable criterion for verification of rollout obligation?
- Q9.** What should be the incentives and the penalties w.r.t. rural roll out obligations?

Chapter 6 Determining a cap on number of Access provider in each service area.

Introduction

6.1 As per the present licensing policy, any Indian company fulfilling the eligibility criteria can apply for UAS license. The eligibility criterion has been described in detail in para 6.7. NTP 1999 had provided that the entry of an additional operator in a service area is to be based on the recommendations of the TRAI. It was also envisaged that TRAI will conduct a review as and when required and no later than once in every two years. NTP 1999 further states that CMSPs would be required to pay a one time entry fee and the basis for selection of additional operators would be as recommended by the TRAI. However, Section 11(1)(a) of TRAI Act 1997 provides that the Authority would make recommendation on “need and timing for introduction of new service provider”. There is an appreciation in DoT that this provision refers to new type of licenses only.

6.2 The evolution of granting licenses up to UAS license has a common factor of spectrum allocation, no doubt subject to availability. It is beyond doubt that unrestricted entry of access providers will put pressure on spectrum demand in a significant manner. Perhaps, this issue was also addressed in NTP 1999 requiring TRAI to conduct review as and when required but not later than once in every two years in the context of introducing new service provider. As stated earlier, the Government has sought the recommendation of the Authority on the issue of determining the number of access provider in each service area. In view of the fact that spectrum is a scarce resource and to ensure that adequate quantity of spectrum is available to the existing licensees for expansion of services and delivery of the quality of service, it points towards a possible inference for establishing some kind of a benchmark/limits on the number of access service providers in each service area. On the other hand, the advocates of unchained market

forces would argue for no a priori (presumptively) determination of number of access providers in any service area. This chapter attempts to highlight pros and cons of various alternatives on this very critical issue.

- 6.3 As mentioned earlier there are between 5 to 8 access service providers in each licensed service area and a number of other operators have applied for new licenses. The number of access providers in each service area along with their subscriber base is provided in Figure 10. From the Figure 10 and HHI in various circles (Figure 8) it is evident that a high level of competition already exists in the market. The main issue for consideration is whether there is a case for limiting the number of access service providers in a service area on the basis of certain transparent and predetermined criteria or it should be left to the market forces.
- 6.4 Since 2001, the Government has encouraged competition in almost all telecom Services. In the case of cellular services, the sector has been liberalized in phases. The main reason for the phasing of liberalization in case of cellular services, unlike as in the case of other telecom services is that spectrum, which is a scarce resource has been vacated by incumbent users in phases, and has been allocated subject to availability. While deciding the issue of limiting the number of access service providers it is imperative to examine the availability of spectrum to existing and future licensees.
- 6.5 As on date we have around 3-6 GSM and 1-4 CDMA operators (including BSNL/MTNL as BSO) in each service area (Annex VI). The details of ARPUs and MOUs of GSM and CDMA services are provided in Figure 13 & Figure 14 respectively.

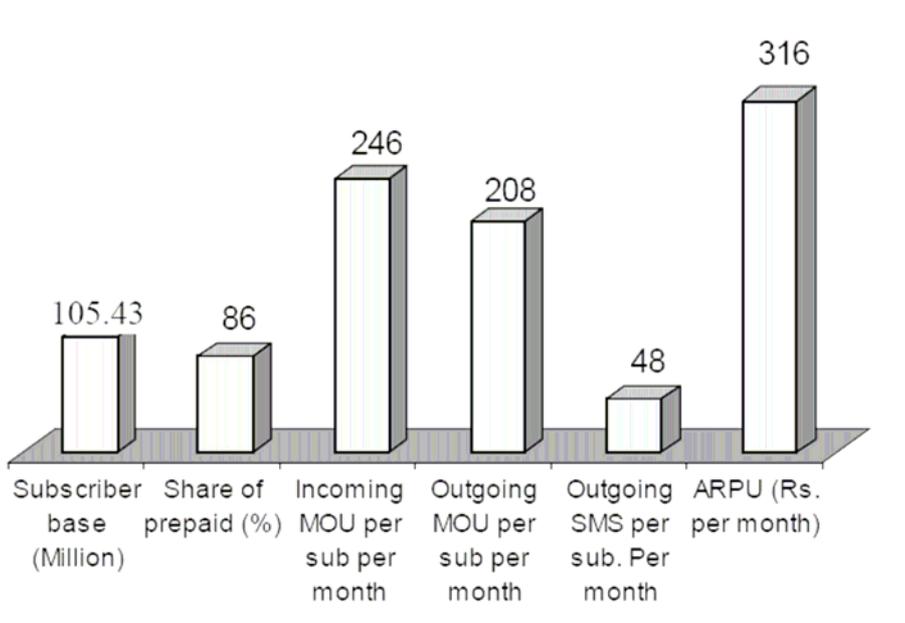


Figure 13 : Key indicators for GSM (QE Dec. 2006)

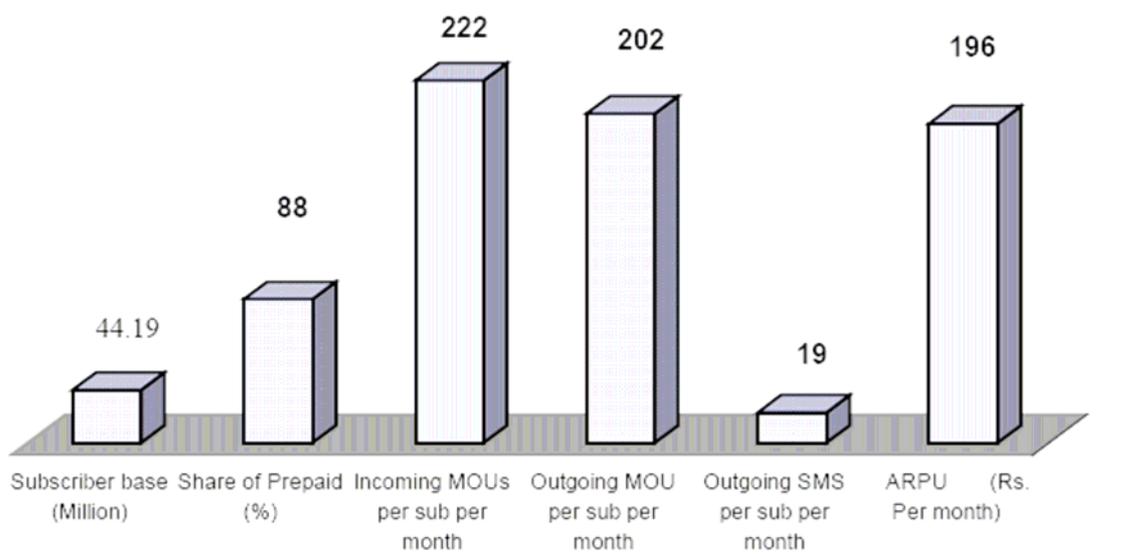


Figure 14 : Key indicators for CDMA (QE Dec. 2006)

6.6 The GSM operators have been assigned spectrum in 900 & 1800 MHz bands and the CDMA operators have their operations in 800 MHz band. As on date spectrum from 2X4.4 MHz to 2X10 MHz and from 2X2.5 MHz to 2X5 MHz has been allocated to each GSM and CDMA operators, respectively. The details of spectrum allocated to mobile operators in each service area are provided in **Annex VI**. Additional spectrum is being allocated based on the subscriber based spectrum allocation criteria, details of which are provided in **Annex VII**.

6.7 As per the existing licensing regime (UASL), the applicant company shall have a minimum paid up equity capital of the amount indicated in Figure 15 for the respective Service Area on the date of the application and a certificate to this effect shall be provided by the applicant's company Secretary along with application.

S.No.	Service Area	Category	Entry fee	FBG Required	PBG required	Networth	Paid up equity capital of Applicant Company
1	West Bengal	B	1.0	25.00	10.00	50	5
2	Andhra Pradesh	A	103.01	50.00	20.00	100	10
3	Assam	C	5.0	5.00	2.00	30	3
4	Bihar	C	10.0	5.00	2.00	30	3
5	Gujarat	A	109.01	50.00	20.00	100	10
6	Haryana	B	21.46	25.00	10.00	50	5
7	Himachal Pradesh	C	1.1	5.00	2.00	30	3
8	Jammu & Kashmir	C	2.0	5.00	2.00	30	3
9	Karnataka	A	206.83	50.00	20.00	100	10
10	Kerala	B	40.54	25.00	10.00	50	5
11	Madhya Pradesh	B	17.4501	25.00	10.00	50	5
12	Maharashtra	A	189.0	50.00	20.00	100	10
13	North East	C	2.0	5.00	2.00	30	3
14	Orissa	C	5.0	5.00	2.00	30	3
15	Punjab	B	151.75	25.00	10.00	50	5
16	Rajasthan	B	32.25	25.00	10.00	50	5
17	Tamilnadu	A	233.0	50.00	20.00	100	10
18	Uttar Pradesh (West)	B	30.550	25.00	10.00	50	5
19	Uttar Pradesh (East)	B	45.25	25.00	10.00	50	5
20	Delhi	A	170.7	50.00	20.00	100	10
21	Kolkata	A	78.01	50.00	20.00	100	10
22	Mumbai	A	203.66	50.00	20.00	100	10

Note: Amount in Rs. Crores. 1 Crore =10 million

Figure 15 Minimum paid up equity capital and Net worth requirements.

6.8 The applicant and promoters of applicant company should have a combined net-worth of amount as detailed in the Figure 16 below:

Net-worth	Total Minimum Net-worth required
Rs.30 Crores ³³ for each Category C Service Area Rs.50 Crores for each Category B Service Area Rs.100 Crores for each Category A Service Area	$100 X + 50 Y + 30 Z$ where X, Y & Z is respectively the Number of A, B & C Service Areas for which either LOI/ Licence have been issued or applied for in the name of applicant.

Figure 16: Combined networth of applicant and promoters

The net-worth of only those promoters shall be counted who have at least 10% equity stake or more in the total equity of the company.

6.9 The key considerations (amongst others) for the licensor while determining the new licenses to mobile telephony service providers are :

- **Competitive scenario:** Would new license enhance competition leading to reduction of tariffs, up gradation of quality of service and innovation in services?
- **Financial sustainability:** Can the market sustain the operation of an additional service provider through subscriber base and spectrum availability?
- **Availability of Spectrum:** Adequate spectrum for existing and new service providers.

Competitive scenario

6.10 Most countries have between three to four mobile operators. Even economically liberal countries like the United Kingdom has five

³³ 1 Crore=10 million.

operators.³⁴ Canada has 6 mobile operators and countries like Australia, Malaysia and Thailand have 5 operators each³⁵. Details of number of operators in various frequency bands in some countries are provided in Figure 17. India has five to eight existing mobile operators providing services in each service area, details are provided in **Annex VI**.

	GSM			CDMA	
	900	1800	1900	800	1900
Australia	3	3		1	
Brazil	4	8		3	3
Canada	1		3	5	3
France	3	2			
Hong Kong	3	6		1	
Indonesia	3	5		4	2
Japan				1	
Malaysia	2	3		1	
Mexico			2	2	3
Pakistan	5	3			4
South Korea				1	[2] ³⁶
Sri Lanka	3	2		2	1
Thailand	1	3	1	2	
UK	2	4			
USA ³⁷			2	4	3
Vietnam	4	1		2	
Average	3	4	2	2	3

Figure 17 Mobile operators in some countries³⁸

³⁴ http://www.gsmworld.com/roaming/gsminfo/cou_gb.shtml

³⁵ <http://en.wikipedia.org>

³⁶ South Korea has two operators in the 1700 MHz band

³⁷ Due to division of the USA into a large number of regions and service areas for licensing, the figures here are for operators in the city of New York as a sample

6.11 The market share of existing service providers in different service areas generally range between 11 to 35% except few exceptions, as is evident from Annex V. Based on the market share per operator in each service area, the **HHI value in most of India’s service areas varies from 0.17 to 0.29**, which indicates healthy level of competition.

6.12 The HHI index in certain developed countries where the mobile teledensity is more than 70% is as indicated below. **By comparing the two it can be said that, in India each service area currently has more competition in the market than most developed nations (Figure18).**

Country	HHI
Japan	0.449
South Korea	0.407
Sweden	0.376
Singapore	0.376
Australia	0.349
United Kingdom	0.250
Hong Kong	0.193
India	0.188 (<i>maximum</i>)

Figure 18: HHI index in some countries³⁹.

Decline in tariffs

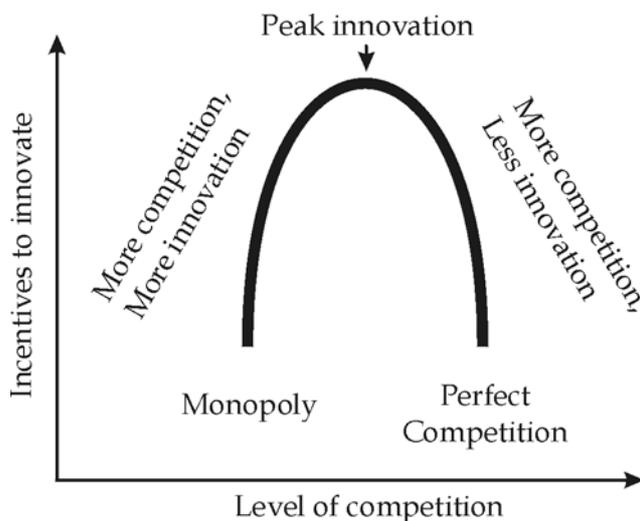
6.13 One strong rationale for introducing new service providers in any service area is to bring about a decline in tariffs through competition. Ours is a price sensitive market with teledensity of only around 19% therefore

³⁸ GSM World, CDMA Development Group operators database

³⁹ NECG report on Innovation and competition: Licensing of mobile services in Hong Kong dated 19th June 2004.

lower tariffs may be an added incentive for penetration of telecom services. It is also widely accepted that the per minute tariff for cellular services in India is perhaps amongst the lowest in the world. Therefore, one may argue **that any significant reduction in tariffs is unlikely with the introduction of more service providers.** Also the reduction in tariff as a stand alone objective may hurt the cause of quality of services and infrastructure expansion. Another probability is a change in pricing strategy with the introduction of bundling of services, which might be used to introduce new tariff packages. However, competition through increasing number of licensees is not a pre-requisite for tariff restructuring. With tariffs for voice calls already low, Operators would necessarily need to introduce imaginative packages, and competitive pressures with or without new entrants would lead towards reasonable tariff.

6.14 Economic models/theory indicate that there is an ‘inverted U’ relation between competition and innovation (Figure 19).⁴⁰ Initially, competition and innovation increases with an increase in the number of operators. However, after crossing the optimum point, addition of new operators adversely affects innovation by unduly intense competition.



⁴⁰ Philippe Aghion, Nicholas Bloom, Richard Blundell, Rachel Griffith, and Peter Howitt, *Competition and Innovation: An Inverted U Relationship*, September 2002, available at http://www.economics.harvard.edu/faculty/aghion/papers/comp_and_innov.pdf

Figure 19: Inverted U theory of competition and innovation

- 6.15 Normally, entry of new operators in the sector acts as a catalyst for the existing operators to improve the QoS. However, the current problem in QoS in the sector, where only 50 out of 124 operators are meeting the Authority's customer satisfaction benchmarks, can be mainly attributed to the growth-oriented focus of the service providers. India is the fastest growing cellular market in the world, with more than 6 million net additions per month. Since teledensity is at 18.74%, there is market-share competition among service providers, i.e. they are trying to build their subscriber base with demand out stepping supply and the QoS has been receiving secondary treatment.
- 6.16 One may argue that introducing more operators may harm the competitive equilibrium and will have negative impact on the quality of service and introduction of new value added services that require additional investment on infrastructure. Introduction of additional service providers will push up the competition for market-share without any linkage to improvements in QoS. The threat of **India becoming a high-growth, low-quality market** cannot be underplayed.
- 6.17 Further, because services like number portability are not yet available in the Indian market, the gains from the introduction of a new service provider may not materialise. If porting was allowed, then subscribers could easily move to a better network with higher QoS or marginally lower tariffs.
- 6.18 Another viewpoint could be that ours is a large country with population of more than one billion. Presently, the teledensity is only around 19% and there is a very large untapped population. Therefore, there will be enough business for the existing and new players with no possible adverse impact on profit..

Economic and Financial sustainability

6.19 Operating in the telecommunication sector requires significant upfront initial capital investments and the gestation time to recoup investments is long. Therefore, sound business and economic case would demand that licensees have sufficient market share in terms of number of subscribers to get adequate rate of return on investments.

6.20 The average population base per network operator in some developed countries where mobile teledensity has crossed over 70% is provided in Figure 20.

Country	Targeted population (in millions)	No. of operators	Population per operator (million)
Japan	127.63	3	42.5
Malaysia	26.51	4	6.6
S.Korea	48.46	3	16.2
Australia	20.4	3	6.8
UK	60.6	5	12.1

Figure 20: Population per operator in some countries.

6.21 In India, the mobile licenses are given service area wise. Presently, there are 23 service areas ranging from Bihar and Maharashtra with a population of 120.96 million and 108.29 millions respectively to Himachal Pradesh and Chennai having 6.49 and 6.42 million respectively as the population⁴¹. The number of mobile licenses in all the service areas is ranging from five to eight. Though most of the mobile service providers are having pan India presence, however, as per the present licensing regime, the service providers are not allowed to have infrastructure outside the licensed service area.

⁴¹ Census of India

Thus barring expenditure on few functions like billing, marketing etc, for all the other functions, each service area acts as an independent entity.

SINo	Service Provider	Area for which licensed with No.	UASL Service Licensed
1	BSNL/MTNL	All India (23)	
2	Bharti	All India (23)	All India except NE
3	Aircel Group	All India (23)	All India except Chennai & TN
4	Reliance Group	All India (23)	All India except NE & AS
	Reliance Infocomm	All India (except Assam & NE) (21)	All India except NE & AS
	Reliance Telecom	MP, WB, HP, Bihar, Orissa, Assam & NE (7)	
	Reliable Internet Services Ltd	Kolkata (1)	
5	Hutch	All India (except MP) (22)	UP-W, WB, HP, Bihar, Orissa, Assam, NE, J&K
6	Tata Teleservices	All India (except AS, NE & J&K) (20)	All India except (AS, NE & J&K)
7	IDEA	Delhi, Mumbai, MH, Guj, AP, KR, HR, UP-W, UP-E, Raj, MP, HP & Bihar (13)	Mumbai, Bihar
8	Spice Communications	KTK, Punjab (2)	KTK, Punjab
9	BPL	Mumbai (1)	--
10	HFCL	Punjab (1)	Punjab
11	Shyam Telelink	Rajasthan (1)	Rajasthan

Figure 21: Licensed service providers

6.22 Figure 22 provides the population and the number of operators present in each service area. Assuming 100% teledensity for the metros and 50% for other service areas as the targeted population upto 2010 (a very high assumption in most of the service areas), the number of subscribers per service provider is lower than other countries of the world (see Figure 20).

Service area	Population* (mn)	Present Teledensity**	Proposed Teledensity	Number of service providers	Possible population/provider (mn)
Delhi	16.05	71.14	100	7	2.29
Mumbai	16.37	59.22	100	8	2.05
Chennai	6.43	66.14	100	6	1.07
Kolkatta	13.22	36.67	100	6	2.20
MH	108.3	10.57	50	7	7.74
Gujarat	55.37	18.68	50	7	3.96
AP	79.82	14.94	50	7	5.70
Karnataka	56.25	18.41	50	7	4.02
TN	66.35	14.2	50	6	5.53
Kerala	33.09	21.54	50	7	2.36
Punjab	27.16	28.22	50	8	1.70
Haryana	23.3	16.19	50	7	1.66
UP(W)	116.38	6.11	50	7	8.31
UP(E)	65.6	13.93	50	7	4.69
Rajasthan	62.45	10.75	50	8	3.90
MP	88.18	7.38	50	6	7.35
WB & AN	87.74	5.03	50	6	7.31
HP	6.49	17.92	50	6	0.54
Bihar	120.96	4.66	50	7	8.64
Orissa	38.98	6.73	50	6	3.25
Assam	28.57	6.3	50	5	2.86
NE	13.19	7.19	50	6	1.10
J & K	11.21	11.64	50	6	0.93
* Source: Telecom Live, Dec. 2006.					
** As on Dec. 2006.					

Figure 22: Possible population per service provider.

6.23 Presently, in the Indian mobile sector, four large service providers control about 74% of the market, as shown in Figure 23. If this present trend continues, then it may be an uphill task for other licensees to clock an adequate rate of return on the capital employed and this may pose the issues of financial viability for some companies.

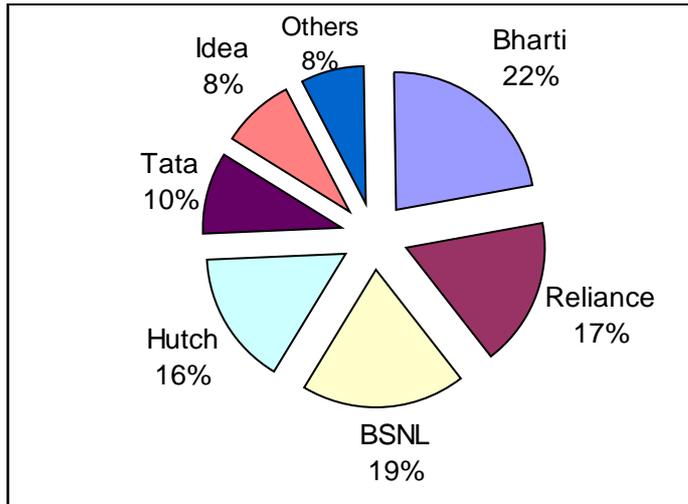


Figure 23: Wireless Operator Market Share

6.24 A view point favouring consolidation in the sector by relaxing conditions for merger and acquisitions, has been advocated by some on grounds of viability and international trend. There are strong views against international approach and a large number of economist favour unrestricted interplay of market forces. It is stated that the regulator and licensing regime should not decide the business case and decision of any operator. If a new operator finds it viable to operate in a market then licensing regime should not come in the way. It should be left to the market forces to decide the number of operators and the viability issue..

Overall financial performance of telecom service sector

6.25 During the last few years telecom sector revenues have increased by more than 20%. For the financial year 2006-07, it is expected that sector revenue will be about 1,10,000⁴² crores. It is pertinent to note that during the financial year 2006-07, EBITDA margins of the listed companies have increased from around 34 to 40%⁴³.

⁴² Source: Estimated based on AGR data.

⁴³ Source: Information available on companies website/stock exchanges.

Revenue of Telecom Service Sector

6.26 The total revenue of telecom service sector increased by over 21% during the financial year 2005-06. The total revenue, which was Rs 71673.7 crores in 2004-05, increased to Rs 86719.55 crores in 2005-06. The revenue contribution from the private sector was 48% and 52% from the public sector telecom companies in 2005-06.

6.27 The total revenue contribution from the private sector for 2005-06 was Rs 41486.57 crores against Rs 29499.53 for 2004-05. A healthy growth of over 41% was registered.

6.28 The total revenue of the public sector for 2005-06 was Rs 45232.98 against Rs 42174.20 Crores for 2004-05. The revenues for the public sector companies increased by over 7%.

Total Revenue of Telecom Service Providers (Rs Crs)		
Particulars	2004-05	2005-06
Total Revenue	71673.73	86719.55
Contribution of Govt Companies	42174.20 (59%)	45232.98 (52%)
Contribution of Pvt. Companies	29499.53(41%)	41486.57(48%)
Source: Operators Data		

Figure 24: Total Revenue of Telecom Service Providers

EBITDA of Telecom Industry

6.29 The EBITDA represents the profit before interest, tax and depreciation & amortization. The EBITDA for 2005-06 was Rs 30137.92 Crores against Rs 26785.70 Crores for 2004-05 i.e. a rise of 12.5%.

6.30 The annual growth of EBITDA for PSUs and private telecom service providers for 2005-06 was 0.5% and 39.8% respectively.

EBITDA of Indian telecom Industry (Rs Crores)		
Particulars	2004-05	2005-06
Total EBITDA	26785.70	30137.92
Govt. Companies EBITDA	18613.20	18709.12
Pvt. Companies EBITDA	8172.49	11428.80
Source: Operators Data		

Figure 25 EBITDA of Indian telecom Industry

Capital Employed and Return on Capital Employed (RoCE)

- 6.31 The Capital Employed is fund deployed to operate the business. The capital employed at the end of 2005-06 was Rs 170087 crs against Rs 153864 crs for 2004-05 i.e capital employed has increased by over 10%.
- 6.32 The capital employed by private sector at the end of 2005-06 was Rs 65856.55 crs against Rs 59925 crs. at the end of 2004-05 i.e private sector capital employed has increased by about 10%.
- 6.33 The Return on the average Capital Employed for 2005-06 for the telecom service industry was 7.82%. Return on capital employed for PSUs for this period was 8.5% against 6.7% for the private sector.

Capital investment of Telecom Sector

- 6.34 The capital investment of the telecom sector has reached to Rs. 200666.10 crores at the end of financial year 2005-06 from Rs.178831.30 crs at the end of financial year 2004-05 i.e. capital investment has increased by over 12%.
- 6.35 The additional capital investment made by the telecom service industry during 2005-06 was around Rs 21834.80 Crore. The capital investment made by the private sector during 2005-06 was 12663 crs. The capital investment of the PSUs during the period was 9171 Crs.

Capital Investment (Gross Block) of Telecom Industry (Rs Crs)			
Particulars	2004-05	2005-06	Addition 2005-06
Total	178831.3	200666.1	21834.80
Govt.companies	66%	64%	42%
Pvt.Companies	34%	36%	58%
Source: operators data			

Figure 26 Capital Investment (Gross Block) of Telecom Industry

Telecom sector share in GDP (%)

6.36 The Indian telecom service industry is contributing 2.71% to the total GDP. The year-wise telecom service sector share in GDP is given below

Telecom sector Share in GDP		
Particulars	2004-05	2005-06
	(Rs in thousand Crore)	
Gross Domestic Product (at factor cost)		
At Current prices	2843.9	3200.6
Total Telecom Revenue	71.67	86.72
	(In Percentage)	
Share of Telecom sector to GDP	2.52%	2.71%
Source: Economic Survey 2005-06 Table 1.1		

Figure 27 Telecom sector Share in GDP

Availability of spectrum

6.37 Another key issue while determining the maximum limit on number of operators in any service area is the status of spectrum availability. If the number of operators increases, the amount of spectrum that each operator can access reduces as the total spectrum available is limited in each service area. If share of spectrum per operator is reduced, then

each operator will have to invest more in their capital, i.e. in the network infrastructure to put a larger number of BTSs in the same area in order to reuse spectrum more.

- 6.38 While this might be desirable to an extent from the point of view of encouraging spectrum efficiency, it is not conducive to the development of the sector. It is self evident that the increased capex forces higher investments and reduces returns on capital expenditure, thus affecting service improvements, in the long run.
- 6.39 Spectrum is the essential commodity for operation of mobile/wireless services. In India, the available quantum of spectrum for GSM technology is between 35-40 MHz in 900 MHz/1800 MHz band and about 20 MHz in 800 MHz band for CDMA technology.
- 6.40 An analysis was done to assess the spectrum requirement in the three service areas viz. Delhi, Mumbai and Karnataka. In the analysis,⁴⁴ the VLR subscriber figures have been taken as 80% of the HLR subscriber figures. This is based on the data submitted to the Authority by the operators. The additional spectrum requirement has been calculated on the basis of the VLR figures in conformity with the spectrum allocation criteria.

⁴⁴ Out of the four Metro cities and five Category A circles, we have analyzed the future spectrum requirement in Delhi and Mumbai Metros and Karnataka (Category A circle) as these service areas have high subscriber growth, population density and high mobile traffic per subscriber.

Consultation paper on review of license terms and conditions and capping of number of access providers

Service Area	GSM	CDMA	Subscribers (Jan 2007)		Spectrum allocated (MHz)	Additional spectrum (MHz)	
			(HLR)	(VLR)			
Delhi	Bharti		2,852,929	2,282,343	10	5	
	Hutch		2,220,987	1,776,789	10	2.4	
	MTNL		1,195,438	956,350	8	0	
	Idea		1,372,067	1,097,653	8	2	
	Aircel ⁴⁵		-	-			
					Subtotal-GSM	36	9.4
			MTNL	75,731	60,584	3.75	-1.25
		Reliance Comm	2,019,825	1,615,860	5	1.25	
		Tata Tele	2,015,779	1,612,623	5	1.25	
				Subtotal-CDMA	13.75	2.5	
Mumbai	BPL		1,062,255	849,804	10	0	
	Hutch		2,416,290	1,933,032	10	2.4	
	MTNL		1,302,796	1,042,236	8	2	
	Bharti		1,805,601	1,444,480	9.2	0.8	
	Aircel		-	-			
	Idea ⁴²		-	-			
					Subtotal-GSM	37.2	5.2
		MTNL	104,141	83,312	5	-2.5	
		Reliance Comm	2,126,897	1,701,517	5	1.25	
		Tata Tele	1,098,952	879,161	5	-1.25	
				Subtotal-CDMA	15	1.25	
KTK	Bharti		3,901,064	3,120,851	9.8	5.2	
	Spice		764,003	611,202	6.2	1.8	
	BSNL		1,574,347	1,259,477	8	2	
	Hutch		1,623,554	1,298,843	8	2	
	Aircel ⁴²						
					Subtotal-GSM	37.2	11
			BSNL	148,442	118,753	2.5	0
		Reliance Comm	1,877,533	1,502,026	5	0	
		Tata Tele	956,974	765,579	3.75	0	
				Subtotal-CDMA	11.25	0	

Figure 28: Additional spectrum requirements

⁴⁵ License has been awarded recently

6.41 Based on the subscriber data available with TRAI up to January 2007, and taking into consideration the growth rate⁴⁶ for the last six months the number of expected subscribers has been projected to December 2007.

	GSM	CDMA	Estimated VLR subscribers by Dec 2007	Spectrum required as per criteria (MHz) by Dec 07(VLR)
Delhi	Bharti		3,103,350	17.4
	Hutch		2,415,938	15
	MTNL		1,300,370	10
	Idea		1,492,503	10
	Aircel		-	4.4
			Subtotal-GSM	56.8
		MTNL	82,378	2.5
		Reliance Comm	2,197,119	7.5
		Tata Tele	2,192,718	7.5
			Subtotal- CDMA	17.5
Mumbai	BPL		1,033,807	10
	Hutch		2,351,580	15
	MTNL		1,267,906	10
	Bharti		1,757,246	12.4
	Aircel		-	4.4
	Idea		-	4.4
			Subtotal-GSM	56.2
		MTNL	101,352	2.5
		Reliance Comm	2,069,937	6.25
		Tata Tele	1,069,521	5
		Subtotal-CDMA	13.75	
KTK	Bharti		5,223,760	18.2
	Spice		1,023,046	8
	BSNL		2,108,146	12.4
	Hutch		2,174,037	12.4
	Aircel		-	4.4
			Subtotal-GSM	55.4
		BSNL	198,773	2.5
		Reliance Comm	2,514,130	6.25
		Tata Tele	1,281,446	5
			Subtotal-CDMA	13.75

Figure 29: Spectrum requirement by December 2007.

6.42 From the above, it can be seen that the total spectrum requirement for GSM based mobile services up to December 2007 works out to be 56.8

⁴⁶ The projections are illustrative in nature. The VLR subscriber figure are not actual but they have been calculated based on average HLR-VLR ratio of the industry. This projection does not take into account the average traffic as prescribed in the spectrum allocation criteria.

MHz in Delhi, (considering initial requirement of 4.4 MHz spectrum for new operator) 56.2 MHz in Mumbai and 55.4 MHz for Karnataka. **This requirement is about 20 MHz more than the existing available spectrum.** [It is relevant to mention that the Government has recently issued 22 new UASL licenses and it has been presumed for the purpose of this illustration that these licensees will also use GSM technology for operation of mobile services.]

- 6.43 From the foregoing, it can be said that even the 20 MHz spectrum in 1800 MHz band which is likely to be vacated by the Defence in near future, will be just sufficient to meet the requirement of the existing operators that too up to December 2007 only. To meet the present growth rate of the existing licensees beyond December 2007, additional spectrum will be required to be coordinated.
- 6.44 However, one can also argue that the case of scarcity of spectrum even for the existing operators is primarily based on the spectrum allocation criterion of the WPC (Annex VII). This criterion is linked to the subscriber base of the operator for the whole service area and does not take into consideration the subscriber density w.r.t. the geographical area. The spectrum allocation criterion is same for Mumbai and Delhi. However, for about same level of population, the area of Delhi is about four times that of Mumbai. Similarly, in a service area, barring the four metros, normally there are only few large cities where the operator would require additional spectrum say beyond 10 MHz in GSM and 5 MHz in CDMA. Therefore, any judgment on the adequacy of spectrum for the existing operators needs careful examination.
- 6.45 The Authority in its recommendation on Unified Licensing Regime dated 13 January 2005 has stated that “The New Telecom Policy 1999 (NTP’99) recognised that convergence of markets and technologies is a reality that is forcing realignment of the industry. At one level, telephone and broadcasting industries are entering each other’s markets, while at another level, technology is blurring the difference between different conduit systems such as wireline and wireless and is forcing re-

alignment of the industry. In line with NTP'99 and to keep pace with technological and market developments, TRAI considers that Unified Licensing Regime should be introduced in India.” It was envisaged that “Unified License would enable the provision of various services, both existing and new, by the service providers without the need for separate additional licenses, with the same media being used for different services which would build economies of scale and scope. As a result, better services would be made available to the consumers at cheaper price.”

- 6.46 Internationally also in a number of countries there is a move towards authorization / converged licenses in lieu of service specific license. With the fast technological advancement, the competitive boundaries between different services are getting blurred. Internet portals with IP telephony are becoming major competitors for fixed line operators. The telecom industry is increasingly competing with the entertainment industry as it moves towards 3G while as broadband technologies like WiMAX are competing with HSPDA for the high speed data services. In such a scenario putting a limit on the number of UASL operators may be construed by many as a retrograde step.
- 6.47 The technological change/innovations are presenting new possibilities of conduits for access service. Presently UAS license is recognised for access services including services like VOIP through broadband (both wire-line and wire-less). The Authority in its recent recommendation on “Review of Internet Services” had opined that internet telephony to PSTN and PLMN within the country is not permitted under ISP license at present. Therefore, internet service provider who plans to provide such internet telephony has to migrate to suitable license permitting the same. However, ISPs could extensively offer voice services with the help of new technology devices. The cable operators also want to enter the race of broadband and voice telephony. Evidently, any criterion for determining access providers on the basis of spectrum would not capture the alternative technologies for carrying voice.

- 6.48 The capping of licensees in a service area may also hurt the expansion plans of licensees who have presence in few service areas but are now aspiring for PAN India operations. Presently there are four operators who have PAN India presence and other operators are present in few service areas but have applied or may apply in future for grant of licenses on PAN India basis. It is recognized that the licensees who are operating in all the States/service area get the benefit of economy of scale in procurement, advertising, centralised billing system, lower tariffs in case of on-net calls, national roaming etc. Therefore, determination of the number of access providers may rebel against a concept of level playing field.
- 6.49 Based on international practices, a framework can be considered which would recognise greater role for market forces. It should be left to the market to determine the scope for licenses, nature of technology and delivery of services. The Authority should strive to provide transparency in terms of spectrum availability, nature of frequency bands, criterion for spectrum allocation in case necessary, determination of spectrum pricing through inter play of market forces and interconnection issues. It can then be left to the license seekers to apply for license on a service area basis for all or select types of services. The advantage in such a predictable scenario would be that it honours the market forces and leaves the issue of business viability to the applicant where it should belong. The economic case for market-based liberalization is not being elaborated as it is now widely accepted in India.
- 6.50 The allocative principle and norms for spectrum allocation is necessary under all circumstances. It has to be transparent, predictable and stable. Such a policy will have to address the criterion for existing operators as well new entrants. The licensing provisions have a certain legacy and therefore, they also need to be addressed while deciding the spectrum allocation policy.

6.51 The issue for consideration are as follows:

- Q1.** Should there be a limit on number of access service providers in a service area? If yes, what should be the basis for deciding the number of operators and how many operators should be permitted to operate in a service area?
- Q2.** Should the issue of deciding the number of operators in each service area be left to the market forces?

Chapter 7 Issues for consultation

Merger and Acquisition

- Q1.** How should the market in the access segment be defined (see ¶2.22)?
- Q2.** Whether subscriber base as the criteria for computing market share of a service provider in a service area be taken for determining the dominance adversely affecting competition, If yes, then should the subscriber base take into consideration home location register (HLR) or visited location register (VLR) data? Please provide the reasons in support of your answer?
- Q3.** As per the existing guidelines, any merger/acquisition that leads to a market share of 67% or more, of the merged entity, is not permitted. Keeping in mind, our objective and the present and expected market conditions, what should be the permissible level of market share of the merged entity? Please provide justifications for your reply?
- Q4.** Should the maximum spectrum limit that could be held by a merged entity be specified?
- a. If yes, what should be the limit? Should this limit be different for mergers amongst GSM/GSM, CDMA/CDMA & GSM/CDMA operators? If yes, please specify the respective limits?
 - b. If no, give reasons in view of effective utilisation of scarce spectrum resource?
- Q5.** Should there be a lower limit on the number of access service providers in a service area in the context of M&A activity? What should this be, and how should it be defined?
- Q6.** What are the qualitative or quantitative conditions, in terms of review of potential mergers or acquisitions and transfers of licenses, which should be in place to ensure healthy competition in the market?

- Q7.** As a regulatory philosophy, should the DoT and TRAI focus more on ex post or ex ante competition regulation, or a mix of two? How can such a balance be created?

Substantial Equity

- Q8.** Should the substantial equity clause (1.4 of UASL) continue to be part of the terms and conditions of the UAS/CMTS license in addition to the M&A guidelines? Justify.
- Q9.** If yes, what should be the appropriate limit of substantial equity? Give detailed justification.
- Q10.** If no, should such acquisition in the same service area be treated under the M&A Guidelines (in the form of appropriate terms and conditions of license)? Suggest the limit of such acquisition above which, M&A guidelines will be applied.
- Q11.** Whether a promoter company/legal person should be permitted to have stakes directly or indirectly in more than one access License Company in the same service area?
- Q12.** Whether the persons falling in the category of the promoter should be defined and if so who should be considered as promoter of the company and if not the reasons therefore?
- Q13.** Whether the legal person should be defined and if so the category of persons to be included therein and if not the reasons therefor.
- Q14.** Whether the Central government, State governments and public undertakings be taken out of the definition for the purpose of calculating the substantial shareholding?

Permitting combination of technology under same license

- Q15.** In view of the fact that in the present licensing regime, the initial spectrum allocation is based on the technology chosen by the licensee (CDMA or TDMA) and subsequently for both these technologies there is

a separate growth path based on the subscriber numbers, please indicate whether a licensee using one technology should be assigned additional spectrum meant for the other technology under the same license?

- Q16.** In case the licensee is permitted, then how and at what price, the licensee can be allotted additional spectrum suitable for the chosen alternate technology;
- Q17.** What should be the priority in allocation of spectrum among the three categories of licensees given in ¶4.16 of the chapter?
- Q18.** Whether there should be any additional roll out obligations specifically linked to the alternate technology, which the service provider has also decided to use?
- Q19.** Lastly, as such service provider would be using two different technologies for providing the mobile service, therefore what should be the methodology for allocation of future spectrum to him?

Roll out obligations

- Q20.** Should present roll out obligations be continued in the present form and scale for the Access service providers or should roll out obligations be removed completely and market forces be allowed to decide the extent of coverage? If yes, then in case it is not met, existing provision of license specifies LD charges upto certain period and then cancellation of license. Should it continue or after a period of LD is over, enhancement of LD charges till roll out obligation is met. Please specify, in case you may have any other suggestion.
- Q21.** Is there a case for doing away with the performance bank guarantees as the telecom licensees are covered through the penalty provisions, which could be invoked in case of non-compliance of roll out obligations?
- Q22.** Should roll out obligations be again imposed on the existing NLD licensees? If yes, then what should be the roll out obligations and the penalty provisions in case of failure to meet the same.
- Q23.** What additional roll out obligations be levied on ILD operators?
- Q24.** What should be the method of verification of compliance to rollout obligations?

- Q25.** What indicators should be used to ensure quality of service?
- Q26.** As the licensees are contributing 5 per cent of AGR towards the USOF, is it advisable to fix a minimum rural roll out obligation ? If yes, what should be that. If no, whether the Universality objectives may be met through only USOF or any other suggestions.
- Q27.** In case of rural roll out obligation, whether number of BTS in a certain area a viable criterion for verification of rollout obligation?
- Q28.** What should be the incentives and the penalties w.r.t. rural roll out obligations?

Determining a cap on number of Access provider in each service area.

- Q29.** Should there be a limit on number of access service providers in a service area? If yes, what should be the basis for deciding the number of operators and how many operators should be permitted to operate in a service area?
- Q30.** Should the issue of deciding the number of operators in each service area be left to the market forces?

Annexure I. DoT's letter dated 13th April 2007 seeking TRAI's recommendations

No. 16-3/2004-BS-II

Government of India

Ministry of Communications

Department of Telecommunications

Sanchar Bhawan, 20, Ashoka Road, New Delhi – 110 001

Dated: 13th April 2007

To

The Secretary

TRAI

MTNL Exchange Building

Jawaharlal Nehru Marg, Minto Road

New Delhi

Sir,

The policy on Unified Access Service Licensing was finalized in November 2003 based on the recommendations of TRAI. As on date, 159 licenses have been issued for providing Access Services (CMTS/UASL/Basic) in the country. Generally, there are 5-8 Access Service Providers in each service area. The Access Service Providers are mostly providing services using the wireless technology (CDMA/GSM). As per the present policy, any Indian company fulfilling the eligibility criteria can apply for UAS license. These are increasing the demand on spectrum in a substantial manner. The government is contemplating to review its policy. A suggested option can be to put a limit on the number of Access Service Providers in each service area, in view of the fact that spectrum is a scarce resource and to ensure that the adequate quantity of spectrum is available to the licenses to enable them to expand their services and maintain the Quality of Service.

2. Fast changes are happening in the Telecommunication sector. In order to ensure that the policies keep pace with the changes/developments in the Telecommunication sector, the government is contemplating to review the following terms and conditions in the Access Provider (CMTS/UAS/Basic) license.

- i) Substantial equity holding by a company/legal person in more than one license company in the same service area (clause 1.4 of UASL agreement).
- ii) Transfer of licenses (clause 6 of the UASL)

- iii) Guidelines dated 21.02.2004 on Mergers and Acquisitions. TRAI in its recommendations dated 30.01.2004 had opined that the guidelines may be reviewed after one year.
- iv) Permit service providers to offer access services using combination of technologies (CDMA, GSM and / or any other) under the same license.
- v) Roll-out obligations (Clause 34 of UASL).
- vi) Requirement to publish printed telephone directory.

Certain issues are applicable to other licenses (NLD/ILD etc.) also.

3. TRAI is requested to furnish their recommendations in terms of clause 11 (1) (a) of TRAI Act 1997 as amended by TRAI Amendment Act 2000, on the issue of limiting the number of Access providers in each service area and review of the terms and conditions in the Access provider license mentioned in para 2 above.

-Sd-

(N. Parameswaran)

DDG (Access Services)

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Annexure II. DoT's Guidelines for merger of licences in a service area

Government of India
Ministry of Communications and Information Technology
Department of Telecommunications
Sanchar Bhawan, 20 Ashok Road, New Delhi-110 001.

No.20-232/2004-BS.III

Dated, the 21st February, 2004.

OFFICE MEMORANDUM

Sub: Guidelines for merger of licences in a service area.

In keeping with the policy of bringing in sustained reforms in the Telecom sector in India for making the service available in the most efficient and affordable manner, Government have decided, after due consideration of the recommendations of Telecom Regulatory Authority of India, the following Guidelines for merger of Basic, Cellular and Unified Access Service licences in a given Service Area for proper conduct of Telegraphs and Telecommunication services, thereby serving the public interest in general and consumer interest in particular: -

1. Merger of licences shall be restricted to the same service area.
2. Merger of licence consequent to mergers/acquisitions or restructuring of the operations shall be permitted in the following category of licences:
 - (i) Cellular Licence with Cellular Licence;
 - (ii) Basic Service Licence with Basic Service Licence;
 - (iii) Unified Access Services Licence (UASL) with Unified Access Services Licence;
 - (iv) Basic Service Licence with Unified Access Services Licence;
 - (v) Cellular Service Licence with Unified Access Services Licence;

In case of a merger of a basic service license with UASL, the basic service licensee shall pay, at the time of application for merger, the

difference of amount of the entry fee, if any, as per the Guidelines for migration to UASL dated 11.11.2003.

3. Merger of licences will be permitted subject to the condition that there are at least three operators in that service area for that service, consequent upon such merger. It is clarified that Unified Access Service Licensee will be counted for Basic as well as Cellular service separately while deciding the number of operators in a given service area.

4. Prior approval of the Department of Telecommunications will be necessary for merger of the licence. The findings of the Department of Telecommunications would normally be given in a period of about four weeks from the date of submission of application.

5. Any merger, acquisition or restructuring, leading to a monopoly market situation in the given Service Area, shall not be permitted. Monopoly market situation is defined as market share of 67 per cent or above within a given Service Area, as on the last day of previous month. Subscriber base shall be criteria for computing the market share. For example, if an application is made on the 10th January, the market share as on 31st December of the previous year, shall be taken into account. For this purpose, the market will be classified as fixed and mobile separately. The category of fixed subscribers shall include wire-line subscribers and fixed wireless subscribers. The number of subscribers shall be as per the Exchange Data Records. The category of mobile subscribers shall include limited mobile subscribers and full mobile subscribers. The subscriber figure, as per the Home Location Register (HLR) and Exchange Data Record shall be taken into account for the purpose of calculating the number of mobile subscribers in a given Service Area. Further, the Department is at liberty to verify these figures from any other source. In case of merger of two Unified Access Service Licences, the total subscriber base of each will be taken into account.

6. Consequent upon the Merger of licences, the merged entity shall be entitled to the total amount of spectrum held by the merging entities, subject to the condition that after merger, the amount of spectrum shall not exceed 15 MHz per operator per service area for Metros and category 'A' Service Areas, and 12.4 MHz per operator per service area in category 'B' and category 'C' Service Areas. Subject to these limits, the merged spectrum will remain with the merged entity and would be treated as a starting point for further allocation and revision, as per the detailed Spectrum Guidelines to be issued separately. The guidelines on efficient utilization of spectrum and its pricing shall be applicable.

7. The spectrum utilization charges beyond 10 + 10 MHz for GSM based system and 5 + 5 MHz for CDMA/ETDMA based systems shall be prescribed

separately. The merged entity will have to pay the prescribed charges from the date of merger of licences.

8. Discretion to choose the band to surrender the spectrum beyond the ceiling will be of the new entity.

9. All dues, if any, relating to the licence of the merging entities in that given service area, will have to be cleared by either of the two parties before issue of the permission for merger of licences.

10. Subject to the orders of the Telecom Disputes Settlement and Appellate Tribunal (TDSAT), in Appeal No. 11/2002 (BSNL Vs. TRAI) it may be noted that TRAI has already classified an operator having market share greater or equal to 30% of the relevant market as one having “Significant Market Power” (SMP) in its Reference Interconnect Offer (RIO). In case the merged entity becomes an SMP post merger, then the extant rules & regulations applicable to SMPs would also apply to the merged entity.

11. The dispute resolution shall lie with Telecom Dispute Settlement and Appellate Tribunal as per TRAI Act 1997 as amended by TRAI (Amendment) Act 2000.

12. While granting permission for merger of licences, the Licensor may, suitably amend / relax/waive the conditions in the respective licences relating to the Clause on holding of ‘substantial equity’.

13. LICENSOR reserves the right to modify these guidelines or incorporate new guidelines considered necessary in the interest of national security, public interest and for proper conduct of telegraphs.

14. These Guidelines can be reviewed after a period of one year, or earlier if warranted.

(Sukhbir Singh)
Director (BS.III)

Government of India
Ministry of Communications and Information Technology
Department of Telecommunications
Sanchar Bhawan, 20 Ashok Road, New Delhi-110 001.

No.20-232/2004-BS.III

Dated, the 17th March, 2004.

MEMORANDUM

Sub: Guidelines for merger of licences in a service area – Clarification regarding effective date.

In continuation of this office O.M. even number dated 21st February, 2004 on the above mentioned subject, it is clarified that the duration of licence of the merged entity will be equal to the duration of Licence of acquiring company. For example, if licence `B' is merging with Licence `A', then the duration of Licence `A' will be applicable for merged entity.

(Govind Singhal)
Director (BS.III)

Annexure III. International Practices on Merger and Acquisition policy

*Australia*⁴⁷

1. Merger control is part of Australia's competition law, the *Trade Practices Act 1974* ('the Act'). The Act prohibits a range of horizontal and vertical anti-competitive conduct and anti-competitive mergers; has extensive consumer protection provisions; and provides for the regulation of public utilities.
2. Section 50 of the Act prohibits mergers or acquisitions which *substantially lessen competition* in a *substantial* market for goods or services in Australia, or that are likely to do so.
3. The five-step process of assessment is as follows:
 - (1) The definition of the market in its product, geographic functional and time dimensions; and ascertaining whether it is a substantial one.
 - (2) Gauging concentration levels. The Commission has adopted twofold concentration thresholds below which it is unlikely to intervene in a merger. Generally speaking, if the merged entity would have a market share of more than 40%, that would suggest the possibility of unilateral market power. Alternatively, if it would have a share of more than 15% and the post-merger combined market share of the four largest firms would be greater than 75%, that would suggest the possibility of coordinated market power. In either of the above two concentration situations, the Commission would want to give the proposed merger further consideration. Concentration below the twofold threshold has come to be known as the 'safe harbour' and the Commission is normally unlikely to proceed further as the merger would usually be considered to be unlikely to SLC.⁴
 - (3) Where the merger crosses either of the concentration thresholds, the Commission will seek to assess whether actual or potential imports

⁴⁷ Merger law in Australia, Professor Allan Fels AO, Chairman ACCC Sept. 2002

would be likely to constrain the merged entity. If they are, the merger is unlikely to be considered to SLC.

(4) If the merger crosses either of the concentration thresholds and imports are not seen to be an effective constraint, the Commission will examine whether there are significant barriers to the entry of new competitors. If there are not, it will not oppose the merger

(5) In a concentrated market, unconstrained by imports and characterised by significant entry barriers, the Commission will examine whether any other factor, such as:

- countervailing bargaining power;
- the availability of substitute product from spare, expandable or convertible capacity;
- dynamic factors including growth, innovation or product differentiation in the market; or
- the elimination or creation of a vigorous and effective competitor suggests that a substantial lessening of competition is, or is not, likely.

4. As a visual aid to understanding the process, the schematic diagram at Figure 5 represents the five-step process to assess the competitive effect of mergers.

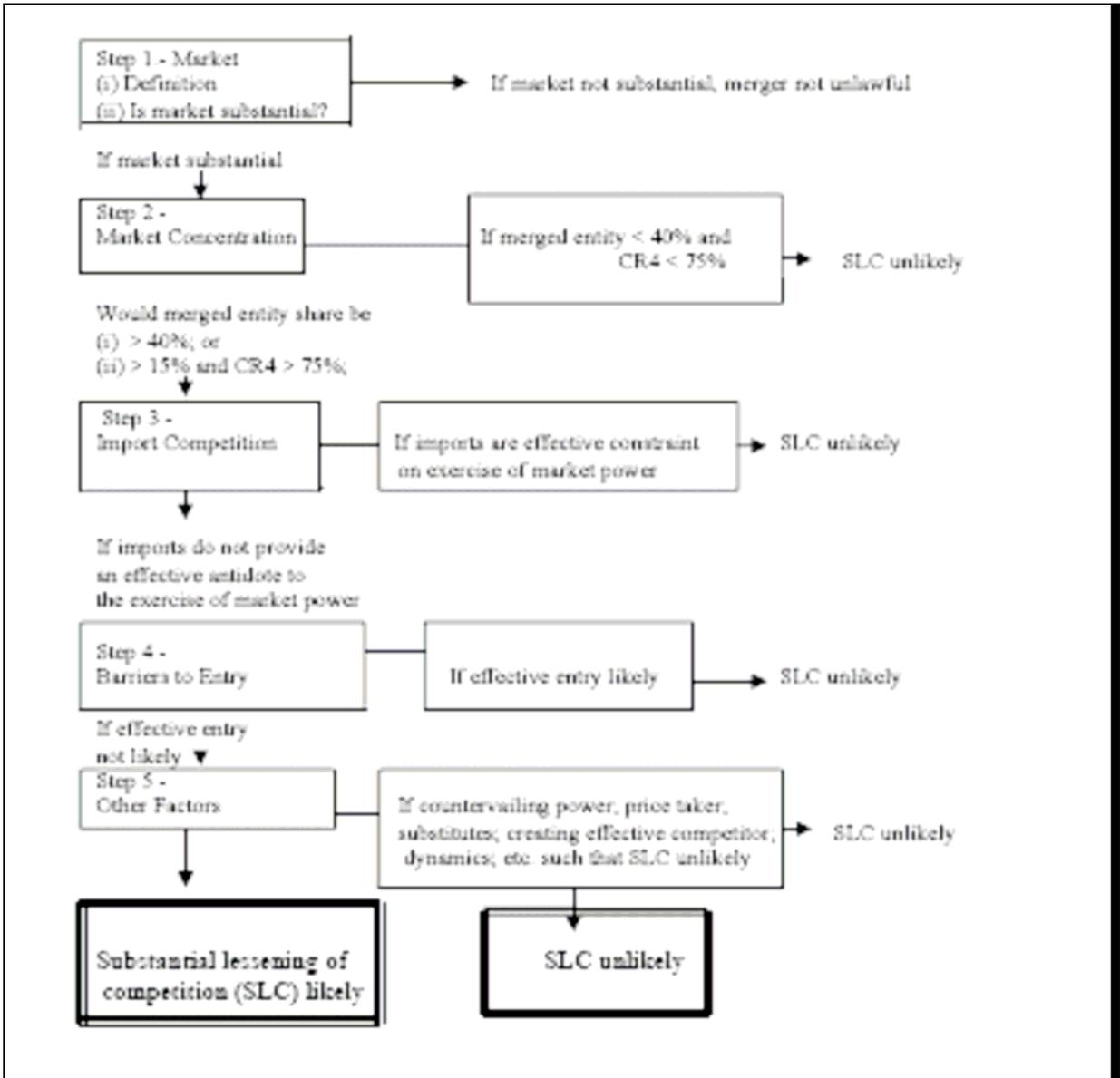


Figure 30: The assessment of effect of a merger on competition in Australia

Canada⁴⁸

5. As per the Competition Bureau’s Merger enforcement guidelines, information that demonstrates that market share or concentration is likely to be high does not, in and of itself, provide a sufficient basis to justify a conclusion that a merger is likely to prevent or lessen competition substantially. However, market shares and concentration

⁴⁸ <http://www.competitionbureau.gc.ca>

can inform the analysis of competitive effects when they reflect the market position of the merged entity relative to its rivals. In the absence of high post-merger concentration and market share, effective competition in the relevant market is generally likely to constrain the creation, maintenance, or enhancement of market power by reason of the merger.

6. The Bureau has established thresholds to identify mergers that are unlikely to have anti-competitive consequences from those that require a more detailed analysis. In particular:
 - the Commissioner generally will not challenge a merger on the basis of a concern related to unilateral exercise of market power when the post-merger market share of the merged entity would be less than 35 per cent.
 - the Commissioner generally will not challenge a merger on the basis of a concern related to a coordinated exercise of market power when:
 - the post-merger market share accounted for by the four largest firms in the market (known as the four-firm concentration ratio or CR4) would be less than 65 per cent; or
 - the post-merger market share of the merged entity would be less than 10 per cent.
7. Mergers that give rise to market shares or concentration that exceed these thresholds are not necessarily anti-competitive. Under these circumstances, the Bureau examines various factors to determine whether such mergers will likely create, maintain or enhance market power and thereby result in a substantial lessening or prevention of competition.
8. In addition to the level of market shares or concentration in the relevant market, the Bureau examines the distribution of market shares across

competitors and the extent to which market shares have changed or remained the same over a significant period of time.

9. In Canada, the spectrum cap policy was established in 1995 during the licensing of the spectrum for PCS at 2GHz. The spectrum cap provided new entrants with access to a sufficient amount of radio spectrum resources. In conjunction with other regulatory provisions, such as analogue cellular roaming, the spectrum cap policy was to provide new entrants with the opportunity to become established in the market thereby fostering competition and choice for consumers. In 1999, the spectrum cap policy was reviewed and the limit was increased from 40 to 55 MHz to allow existing carriers an opportunity to acquire new spectrum in view of the planned auction of the remaining PCS spectrum.. In 2004, the spectrum cap policy was removed.⁴⁹

European Union⁵⁰

10. The inclusive legal standard for merger control can deal with all kinds of competitive effects. The Commission may prevent or correct a merger that would “significantly impede effective competition ... in particular as a result of the creation or strengthening of a dominant position.” This substantive standard is subsidiary to the Regulation’s fundamental criterion, whether the transaction is “compatible with the common market.” The 2004 revision of the Merger Regulation revised the original 1989 standard. The principal issue motivating the change was non-coordinated effects in oligopoly markets, where the merged firm might have market power without necessarily having an appreciably larger market share than the next competitor.
11. The Commission’s 2004 guidelines about horizontal mergers imply strong harmonisation in approach across the Atlantic, at least for horizontal combinations. The guidelines’ structural safe-harbours and presumptions are based on market shares and HHI. The guidelines

⁴⁹ www.strategis.ic.gc.ca

⁵⁰ OECD: Competition law and policy in the European Union.

presume that a merger does not impede effective competition if the new entity's market share would not exceed 25%; however, this presumption does not apply to coordinated effects, where the merged entity would be collectively dominant along with other third parties. The guidelines rely on HHI levels not as firm cut-offs, but as points beyond which it is more, or less, likely that detailed analysis will be needed or that a competition issue will arise. With that general caveat, the guidelines draw the bottom line at post-merger HHI of 1000. The line of greater scrutiny is drawn at post-merger HHI up to 2000, changing by less than 250 points, or over 2000, changing by less than 150 points.

12. Regardless of these levels, though, the guidelines warn that special attention will be paid if any party has a pre-merger share over 50%, or if there are obvious issues of potential or toe-hold entry, innovation, cross-shareholding, "maverick" market behaviour or indications of oligopoly behaviour in the industry.

Hongkong⁵¹

13. Telecommunications Authority guidelines on Mergers and Acquisitions are intended to explain how the TA will apply and enforce the provisions of section 7P⁵² and in particular, to specify the matters he will take into account when deciding whether any merger or acquisition has, or is likely to have,
 - (a) the effect of substantially lessening competition in a telecommunications market; and
 - (b) a benefit to the public and this benefit outweighs any detriment to the public that is, or is likely to be, constituted by any such effect.

⁵¹ <http://www.ofta.gov.hk>

⁵² These guidelines ("the Guidelines") are issued by the Telecommunications Authority ("TA") under section 6D(2)(aa) of the Telecommunications Ordinance (Cap 106) ("the Ordinance") for the purpose of providing practical guidance on section 7P of the Ordinance concerning mergers and acquisitions which are defined as "changes in relation to carrier licensees".

14. These Guidelines specify “safe harbours” and the objective of specifying “safe harbours” is to give guidance as to which mergers and acquisitions are unlikely to substantially lessen competition. They provide a screening device and are not intended as a replacement for case-by-case analysis. Importantly, if a merger or acquisition falls outside the safe harbour thresholds, it is not necessarily an indication that the transaction would substantially lessen competition in a telecommunications market for the purposes of section 7P. It merely indicates that further inquiry may be made by the TA to assess the extent of any anti-competitive effects. The TA may conclude after proper investigation that the transaction would not substantially lessen competition.
15. The TA has identified two safe harbour measures that he intends to apply concurrently, thereby expanding the effective coverage of the safe-harbour mechanism beyond a single measure. A merger or acquisition that meets either one of the safe harbour measures will fall within the safe harbour.
16. The first safe-harbour measure is based on the market share and CR4 Ratio test as used in Australia and Canada. If the post-merger combined market share in the relevant market of the four (or fewer) largest firms (CR4) is less than 75%, and the merged firm has a market share of less than 40%, the TA takes the view that it is unlikely that there will be a need to carry out a detailed investigation or to intervene. Where the CR4 is 75% or more, the TA is unlikely to investigate the transaction if the combined market share of the merged entity is less than 15% of the relevant market. The calculation of the relevant market shares is explained in detail in the following sections.
17. The second safe-harbour measure that the TA will adopt is based on the Herfindahl-Hirschman Index (“HHI”), which is used in the USA and the EU. The HHI measures market concentration. It is calculated by summing the squares of the market shares of all the firms operating in the market. The increase in the HHI resulting from the merger is

calculated by subtracting the pre-merger index from the expected value of the HHI following the merger. Both the absolute level of the HHI and the expected change resulting from the merger can provide an indication of whether a merger is likely to raise competition concerns. The generally accepted benchmarks, which the TA intends to adopt, are as follows. Any market with a post-merger HHI of less than 1,000 will be regarded as unconcentrated. Mergers resulting in unconcentrated markets are unlikely to result in a substantial lessening of competition and normally require no further investigation.

18. Markets with a post-merger HHI of between 1,000 and 1,800 will be regarded as moderately concentrated. Mergers producing an increase in the HHI of less than 100 in these markets, are unlikely to result in a substantial lessening of competition and normally require no further investigation. However, mergers producing an increase in the HHI of more than 100 potentially raise significant competitive concerns.
19. Markets with a post-merger HHI of more than 1,800 will be regarded as highly concentrated. Mergers producing an increase in the HHI of less than 50 are unlikely to substantially lessen competition, even in a highly concentrated market. Mergers producing an increase of more than 50 in the HHI will potentially raise competitive concerns and will normally require further investigation.
20. While the TA is unlikely to further assess any mergers which fall below these thresholds, he does not categorically rule out intervention.

Singapore⁵³

21. As per the advisory Guidelines governing consolidation review process dated 18 February 2005, IDA's approval must be obtained in connection with any Consolidation, whether effected through:
 - (a) the acquisition of an Ownership Interest in a Licensee that would result in an Acquiring Party holding an Ownership Interest of at least 30 percent in the Licensee;
 - (b) the acquisition of the ability to exercise Effective Control of a Licensee without the acquisition of an Ownership Interest of at least 30 percent in a Licensee; or
 - (c) the acquisition of the business of a Licensee as a going concern.

22. In assessing any Consolidation Application, IDA will seek to determine whether the Consolidation would substantially lessen competition in the Singapore telecommunication market. IDA will not approve a Consolidation Application where IDA determines that the Consolidation is likely to substantially lessen competition in any telecommunication market within Singapore or harm public interest.

23. IDA will find that a Consolidation substantially lessens competition where the Consolidation would be likely either to: (a) result in a significant reduction in existing competition in the Singapore telecommunication market; or (b) significantly impede the development of future competition in the Singapore telecommunication market. IDA will first determine the relevant telecommunication markets within Singapore in which the Applicants currently compete. IDA will next determine the unit of measurement to be used to assess the participants' telecommunication market shares. This may include unit or volume sales, revenues, customer base or capacity. IDA will consider the extent to which the structure of the relevant telecommunication market creates a heightened risk that, if the Consolidation Application is approved, the Post-

⁵³ <http://www.ida.gov.sg>

Consolidation Entity will have Significant Market Power. Some relevant factors that IDA may consider include: (a) one of the Applicants is currently classified as a Dominant Licensee in a market in which the proposed Consolidation would increase concentration levels; (b) the Consolidation would result in the Post- Consolidation Entity having a market share in excess of 40 percent in any telecommunication market within Singapore; (c) prior to the Consolidation, the Applicants offered telecommunication services that consumers view as very close substitutes for one another; (d) there are no “strong customers” that would have the ability to resist any effort by the Post-Consolidation Entity to raise prices; or (e) current customers of any of the Applicants would face significant impediment in the event that, following the Consolidation, they sought to switch to alternate suppliers of telecommunication services.

New Zealand⁵⁴

24. As per the Commerce Commission’s Merger and acquisition guidelines, the Commission is of the view that an acquisition is unlikely to substantially lessen competition in a market where, after the proposed acquisition, either of the following situations exist:
- the three-firm concentration ratio in the relevant market is below 70 percent and the market share of the combined entity is less than in the order of a 40 percent share; or
 - the three-firm concentration ratio in the relevant market is above 70 percent and the market share of the combined entity is less than in the order of 20 percent.

⁵⁴ <http://www.comcom.govt.nz/>

United States⁵⁵

25. As per the US horizontal Merger guidelines, 1992 (Revised in 1997), Market concentration is a function of the number of firms in a market and their respective market shares. As an aid to the interpretation of market data, the Agency will use the Herfindahl-Hirschman Index ("HHI") of market concentration. Unlike the four-firm concentration ratio, the HHI reflects both the distribution of the market shares of the top four firms and the composition of the market outside the top four firms. It also gives proportionately greater weight to the market shares of the larger firms, in accord with their relative importance in competitive interactions.
26. In evaluating horizontal mergers, the Agency will consider both the post-merger market concentration and the increase in concentration resulting from the merger.⁵⁶ Market concentration is a useful indicator of the likely potential competitive effect of a merger. The general standards for horizontal mergers are as follows:
- a) Post-Merger HHI Below 1000. The Agency regards markets in this region to be unconcentrated. Mergers resulting in unconcentrated markets are unlikely to have adverse competitive effects and ordinarily require no further analysis.
 - b) Post-Merger HHI Between 1000 and 1800. The Agency regards markets in this region to be moderately concentrated. Mergers producing an increase in the HHI of less than 100 points in moderately concentrated markets post-merger are unlikely to have adverse competitive consequences and ordinarily require no further analysis. Mergers producing an increase in the HHI of more than 100 points in moderately concentrated markets post-merger potentially raise

⁵⁵ <http://www.usdoj.gov>

⁵⁶ The increase in concentration as measured by the HHI can be calculated independently of the overall market concentration by doubling the product of the market shares of the merging firms. For example, the merger of firms with shares of 5 percent and 10 percent of the market would increase the HHI by 100 ($5 \times 10 \times 2 = 100$).

significant competitive concerns depending on the factors set forth in the Guidelines.

- c) Post-Merger HHI Above 1800. The Agency regards markets in this region to be highly concentrated. Mergers producing an increase in the HHI of less than 50 points, even in highly concentrated markets post-merger, are unlikely to have adverse competitive consequences and ordinarily require no further analysis. Mergers producing an increase in the HHI of more than 50 points in highly concentrated markets post-merger potentially raise significant competitive concerns, depending on the factors set forth in Sections 2-5 of the Guidelines. Where the post-merger HHI exceeds 1800, it will be presumed that mergers producing an increase in the HHI of more than 100 points are likely to create or enhance market power or facilitate its exercise. The presumption may be overcome by a showing that factors set forth in Sections 2-5 of the Guidelines make it unlikely that the merger will create or enhance market power or facilitate its exercise, in light of market concentration and market shares.

27. Prior to 2001, in US the spectrum cap per carrier was set at 45 MHz. Subsequently, in 2001 FCC decided that its spectrum cap was no longer needed and the commission included a sunset provision that would eliminate the cap altogether on Jan. 2003. As a result antitrust scrutiny was the only barrier to consolidation. The caps were set in 1996 in an effort to keep deep-pocketed carriers from buying up spectrum and rivals in order to dominate a market. Most wireless carriers were of the opinion that the cap had outlived its usefulness and was preventing them from acquiring enough bandwidth to avoid capacity-related problems such as dropped calls. FCC had responded in 1999 by lifting the rural cap from 45 to 55 MHz. Subsequently for any single urban market also the cap was raised to 55 MHz from 45 MHz. In October 2004 FCC approved the merger of Cingular Wireless Corporation and AT & T Wireless Services

and the merged entity was permitted to retain spectrum up to 80 MHz in some markets⁵⁷.

⁵⁷ www.telephonyonline.com dated Nov 15, 1999, Nov. 12, 2001, findarticles.com/p/articles/mi_zdpcm/is_200111/ai_ziff18118 & www.wileyrein.com/publication.cfm?publication_id=11793

Annexure IV. Comparison of circle-wise HHI 2003-2007

Service area		September 2003		March 2007	
Category		No. of players	HHI	No. of players	HHI
M	Delhi	6	2573	6	1804
M	Mumbai	5	2433	6	1805
M	Chennai	5	2491	6	1886
M	Kolkata	4	3269	5	2097
A	MH	6	2236	6	1802
A	Gujarat	6	2471	6	2224
A	AP	6	2007	6	1846
A	Karnataka	6	2268	6	2269
A	TN	6	2180	6	2021
B	Kerala	5	2252	6	2025
B	Punjab	4	2919	7	2018
B	Haryana	5	2422	6	1780
B	UP(W)	4	2742	6	1760
B	UP(E)	3	3471	6	2214
B	Rajasthan	4	3075	7	2004
B	MP	4	2976	5	2265
B	WB	2	7081	6	2152
C	HP	3	4070	6	3297
C	Bihar	2	5260	5	2921
C	Orissa	2	5000	5	2534
C	Assam	1	10000	4	2595
C	North East	0	-	4	2897
C	J& K	0	-	4	4670

Annexure V. Market share of various service providers in different service areas based on subscriber base, Revenue & Outgoing MOUs.

Service area Category	Service provider	Service area	Market share based on		
			Subscriber base	Revenue	Outgoing MOUs
M	Bharti	Delhi	24%	32%	24%
M	Hutch	Delhi	19%	24%	18%
M	MTNL	Delhi	11%	7%	6%
M	IDEA	Delhi	12%	11%	9%
M	Reliance	Delhi	17%	15%	20%
M	Tata	Delhi	17%	11%	23%
M	BPL	Mumbai	11%	11%	7%
M	Hutch	Mumbai	25%	32%	22%
M	MTNL	Mumbai	14%	10%	9%
M	Bharti	Mumbai	18%	20%	18%
M	Reliance	Mumbai	21%	18%	26%
M	Tata	Mumbai	11%	9%	17%
M	Aircel	Chennai	24%	17%	19%
M	Bharti	Chennai	21%	29%	21%
M	Hutch	Chennai	15%	16%	13%
M	BSNL	Chennai	17%	21%	30%
M	Reliance	Chennai	16%	12%	11%
M	Tata	Chennai	7%	7%	7%
M	Bharti	Kolkata	19%	23%	19%
M	Hutch	Kolkata	24%	28%	23%
M	BSNL	Kolkata	12%	14%	9%
M	Reliance	Kolkata	28%	23%	28%
M	Tata	Kolkata	17%	12%	21%
A	Hutch	MH	9%	10%	7%
A	IDEA	MH	23%	26%	18%
A	Bharti	MH	19%	20%	16%
A	BSNL	MH	18%	19%	16%
A	Reliance	MH	19%	15%	24%
A	Tata	MH	12%	10%	19%
A	Hutch	Gujarat	36%	41%	34%
A	IDEA	Gujarat	16%	13%	12%
A	Bharti	Gujarat	14%	12%	12%
A	BSNL	Gujarat	11%	11%	7%
A	Reliance	Gujarat	17%	14%	21%
A	Tata	Gujarat	7%	8%	13%
A	IDEA	AP	13%	14%	18%
A	Bharti	AP	26%	29%	19%
A	Hutch	AP	11%	12%	11%
A	BSNL	AP	15%	15%	12%
A	Reliance	AP	22%	17%	21%
A	Tata	AP	13%	12%	18%
A	Bharti	Karnataka	35%	43%	33%
A	Spice	Karnataka	7%	6%	6%
A	Hutch	Karnataka	15%	16%	15%

Consultation paper on review of license terms and conditions and capping of number of access providers

Service area Category	Service provider	Service area	Market share based on		
			Subscriber base	Revenue	Outgoing MOUs
A	BSNL	Karnataka	16%	15%	16%
A	Reliance	Karnataka	17%	12%	18%
A	Tata	Karnataka	9%	9%	12%
A	Hutch	TN	9%	7%	6%
A	Aircel	TN	27%	22%	18%
A	Bharti	TN	17%	18%	16%
A	BSNL	TN	24%	33%	39%
A	Reliance	TN	18%	14%	15%
A	Tata	TN	5%	6%	6%
B	IDEA	Kerala	20%	17%	12%
B	Hutch	Kerala	11%	8%	9%
B	Bharti	Kerala	12%	11%	11%
B	BSNL	Kerala	31%	42%	41%
B	Reliance	Kerala	20%	16%	21%
B	Tata	Kerala	7%	6%	7%
B	Spice	Punjab	23%	20%	18%
B	Bharti	Punjab	33%	39%	34%
B	BSNL	Punjab	11%	9%	12%
B	Hutch	Punjab	13%	14%	14%
B	HFCL	Punjab	2%	2%	2%
B	Reliance	Punjab	9%	8%	9%
B	Tata	Punjab	8%	7%	9%
B	IDEA	Haryana	20%	18%	15%
B	Hutch	Haryana	16%	20%	13%
B	Bharti	Haryana	18%	20%	17%
B	BSNL	Haryana	20%	21%	20%
B	Reliance	Haryana	13%	11%	15%
B	Tata	Haryana	14%	10%	20%
B	IDEA	UP(W)	21%	21%	17%
B	Bharti	UP(W)	13%	12%	11%
B	BSNL	UP(W)	19%	23%	24%
B	Hutch	UP(W)	19%	22%	15%
B	Reliance	UP(W)	19%	15%	22%
B	Tata	UP(W)	10%	7%	12%
B	Hutch	UP(E)	27%	31%	21%
B	BSNL	UP(E)	30%	32%	40%
B	Bharti	UP(E)	14%	15%	12%
B	IDEA	UP(E)	2%	1%	1%
B	Reliance	UP(E)	20%	16%	21%
B	Tata	UP(E)	7%	5%	6%
B	Hutch	Rajasthan	17%	18%	12%
B	Bharti	Rajasthan	22%	25%	17%
B	BSNL	Rajasthan	27%	32%	32%
B	IDEA	Rajasthan	2%	2%	1%
B	Reliance	Rajasthan	18%	15%	22%
B	STL	Rajasthan	1%	2%	2%
B	Tata	Rajasthan	11%	6%	14%
B	IDEA	MP	20%	25%	22%

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Service area Category	Service provider	Service area	Market share based on		
			Subscriber base	Revenue	Outgoing MOUs
B	Reliance	MP	35%	28%	36%
B	Bharti	MP	17%	17%	17%
B	BSNL	MP	21%	24%	16%
B	Tata	MP	7%	6%	9%
B	Reliance	WB	27%	19%	31%
B	BSNL	WB	23%	32%	19%
B	Bharti	WB	15%	16%	18%
B	Hutch	WB	25%	26%	21%
B	Dishnet	WB	3%	1%	1%
B	Tata	WB	8%	6%	10%
C	Bharti	HP	41%	51%	39%
C	Reliance	HP	19%	11%	16%
C	BSNL	HP	34%	33%	39%
C	IDEA	HP	1%	0%	1%
C	Tata	HP	6%	5%	6%
C	Reliance	Bihar	36%	28%	39%
C	BSNL	Bihar	23%	31%	34%
C	Bharti	Bihar	32%	34%	16%
C	Tata	Bihar	8%	7%	11%
C	Reliance	Orissa	28%	22%	28%
C	BSNL	Orissa	29%	39%	33%
C	Bharti	Orissa	29%	31%	27%
C	Dishnet	Orissa	5%	2%	2%
C	Tata	Orissa	8%	6%	9%
C	Reliance	Assam	18%	14%	16%
C	BSNL	Assam	32%	45%	48%
C	Bharti	Assam	25%	25%	25%
C	Dishnet	Assam	25%	16%	11%
C	Reliance	North East	14%	9%	9%
C	Bharti	North East	20%	18%	16%
C	BSNL	North East	42%	55%	60%
C	Dishnet	North East	24%	17%	15%
C	BSNL	J& K	60%	58%	65%
C	Bharti	J& K	36%	38%	33%
C	Dishnet	J& K	5%	4%	1%
C	Reliance	J& K	0%	0%	0%

Note: The above figures are based on the latest available data (as of Dec-06)

Annexure VI. Spectrum allocation⁵⁸ among different licensees

Service area	Mobile Operator		Spectrum Allocated	
	GSM	CDMA		
Delhi	Bharti		10 MHz	
	Hutch		10 MHz	
	MTNL		8 MHz	
	Idea		8 MHz	
		MTNL		3.75 MHz
		Reliance Infocomm		5 MHz
		Tata Teleservices		5 MHz
Mumbai	BPL		10 MHz	
	Hutch		10 MHz	
	MTNL		8 MHz	
	Bharti		9.2MHz	
		MTNL		5 MHz
		Reliance Infocomm		5 MHz
		Tata Teleservices		5 MHz
Chennai	Aircel Cellular		8 MHz	
	Bharti		8 MHz	
	BSNL		8 MHz	
	Hutchison		8 MHz	
		BSNL		2.5 MHz
		Reliance Infocomm		5 MHz
		Tata Teleservices		3.75 MHz
Kolkata	Bharti		8 MHz	
	Hutchison East		8 MHz	
	BSNL		6.2 MHz	
	Reliable Internet		6.2 MHz	
		BSNL		2.5 MHz
		Reliance Infocomm		5 MHz
		Tata Teleservices		3.75 MHz
MH	Hutch(BPL)		6.2 MHz	
	Idea		10 MHz	
	BSNL		8 MHz	
	Bharti		6.2 MHz	
		BSNL		2.5 MHz
		Reliance Infocomm		5 MHz
		Tata Teleservices		5 MHz

⁵⁸ Data as on June 2006.

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Service area	Mobile Operator		Spectrum Allocated
	GSM	CDMA	
GUJ	Fascel(Hutch)		10 MHz
	Idea		6.2 MHz
	BSNL		7.4 MHz
	Bharti		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
		Tata Teleservices	3.75 MHz
AP	Idea		8 MHz
	Bharti		8 MHz
	BSNL		8 MHz
	Hutchison		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	5 MHz
		Tata Teleservices	5 MHz
KTK	Bharti		10 MHz
	Spice		6.2 MHz
	BSNL		8 MHz
	Hutch		8 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	5 MHz
		Tata Teleservices	3.75 MHz
TN	Hutch(BPL)		6.2 MHz
	Aircel		10 MHz
	BSNL		8 MHz
	Bharti		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
		Tata Teleservices	2.5 MHz
Kerala	Escotel(Idea)		8 MHz
	Hutch(BPL)		6.2 MHz
	BSNL		8 MHz
	Bharti		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
		Tata Teleservices	3.75 MHz
Punjab	Spice		8 MHz
	Bharti		8 MHz
	BSNL		6.2 MHz
	Hutchison		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
		HFCL Infocom	2.5 MHz
	Tata Teleservices	3.75 MHz	

Consultation paper on review of license terms and conditions and capping of number of access providers

Service area	Mobile Operator		Spectrum Allocated
	GSM	CDMA	
Haryana	Escotel(Idea)		6.2 MHz
	Aircel Diglink(Hutch)		6.2 MHz
	BSNL		6.2 MHz
	Bharti		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
		Tata Teleservices	2.5 MHz
UP-W	Escotel(Idea)		8 MHz
	Bharti		6.2 MHz
	BSNL		8 MHz
	Hutch South		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
		Tata Teleservices	3.75 MHz
UP-E	Aircel Diglink(Hutch)		8 MHz
	BSNL		8 MHz
	Bharti		6.2 MHz
	IDEA Telecommunications		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	5 MHz
		Tata Teleservices	3.75 MHz
Raj	Aircel Diglink(Hutch)		6.2 MHz
	Hexacom(Bharti)		6.2 MHz
	BSNL		6.2 MHz
	IDEA Telecommunications		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
		Shyam Telelink	2.5 MHz
	Tata Teleservices	3.75 MHz	
MP	Idea		6.2 MHz
	Reliance		6.2 MHz
	BSNL		6.2 MHz
	Bharti		6.2 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
		Tata Teleservices	2.5 MHz
WB&A&N	Reliance		6.2 MHz
	BSNL		6.2 MHz
	Bharti		4.4 MHz
	Hutch South		4.4 MHz
	Dishnet Wireless		4.4 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
	Tata Teleservices	2.5 MHz	

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Service area	Mobile Operator		Spectrum Allocated
	GSM	CDMA	
HP	Bharti		6.2 MHz
	Reliance		6.2 MHz
	BSNL		6.2 MHz
	IDEA Telecommunications		4.4 MHz
	Dishnet Wireless		4.4 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	2.5 MHz
		Tata Teleservices	2.5 MHz
Bihar	Reliance		6.2 MHz
	BSNL		6.2 MHz
	Bharti		8 MHz
	Dishnet Wireless		4.4 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	5 MHz
		Tata Teleservices	3.75 MHz
Orissa	Reliance		6.2 MHz
	BSNL		6.2 MHz
	Bharti		6.2 MHz
	Dishnet Wireless		4.4 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	3.75 MHz
		Tata Teleservices	2.5 MHz
Assam	Reliance		6.2 MHz
	BSNL		6.2 MHz
	Bharti		4.4 MHz
	Dishnet Wireless		4.4 MHz
		BSNL	2.5 MHz
NE	Reliance		6.2 MHz
	Bharti		4.4 MHz
	BSNL		6.2 MHz
	Dishnet Wireless		4.4 MHz
		BSNL	2.5 MHz
J&K	BSNL		8 MHz
	Bharti		6.2 MHz
	Dishnet Wireless		4.4 MHz
		BSNL	2.5 MHz
		Reliance Infocomm	2.5 MHz

Annexure VII. Subscriber based spectrum allocation criteria

As per WPC Letter Nos. J-14025/200(17)/2004-NT(GSM) and J-14025/200(17)/2004-NT(CDMA) dated 29 March 2006

GSM subscriber base criteria (millions of subscribers)

Service Area	2 x 6.2 MHz	2 x 8 MHz	2 x 10 MHz	2 x 12.4 MHz	2 x 15 MHz
Delhi/Mumbai	0.3	0.6	1	1.6	2.1
Chennai/Kolkata	0.2	0.4	0.6	1	1.3
A	0.4	0.8	1.4	2	2.6
B	0.3	0.6	1	1.6	2.1
C	0.2	0.4	0.6	0.9	1.2

CDMA subscriber base criteria (millions of subscribers)

Service Area	3 rd carrier (2 x 3.75 MHz)	4 th carrier (2 x 5 MHz)	5 th carrier (2 x 6.25 MHz)	6 th carrier (2 x 7.5 MHz)
Delhi/Mumbai	0.3	1	1.6	2.1
Chennai/Kolkata	0.2	0.6	1	1.3
A	0.4	1.2	2	2.6
B	0.3	1	1.6	2.1
C	0.15	0.5	0.9	1.2

Annexure VIII. Licensing conditions pertaining to technology and spectrum

(i) License agreement for provision of unified access services after migration from BSO.

“23.1 The Licensee shall provide the details of the technology proposed to be deployed for operation of the service. The technology should be based on standards issued by ITU/TEC or any other International Standards Organization/ bodies/Industry. Any digital technology having been used for a customer base of one lakh or more for a continuous period of one year anywhere in the world, shall be permissible for use regardless of its changed versions. A certificate from the manufacturers about satisfactory working for a customer base of one lakh or more over the period of one year, shall be treated as established technology.

23.5 The frequencies shall be assigned by WPC from the designated bands prescribed in National Frequency Allocation Plan - 2002. (NFAP-2002) as amended from time to time. Based on usage, justification and availability, spectrum may be considered for assignment, on case by case basis. The frequencies assigned may not be contiguous and may not be same in all cases, while efforts would be made to make available larger chunks to the extent feasible. The detailed guidelines for allocation of frequency spectrum and charges thereof etc. would be separately issued from time to time.

43.5.(i) For wireless operations in SUBSCRIBER access network, the frequencies shall be assigned by WPC wing of the Department of Telecom from the frequency bands earmarked in the applicable National Frequency Allocation Plan and in coordination with various users. Initially a cumulative maximum of upto 4.4 MHz + 4.4 MHz shall be allocated in the case of TDMA based systems @ 200 KHz per carrier or 30 KHz per carrier or a maximum of 2.5 MHz + 2.5 MHz shall be allocated in the case of CDMA based systems @ 1.25 MHz per carrier, on case by case basis subject to availability. While efforts would be made to make available larger chunks to the extent feasible, the frequencies assigned may not be contiguous and may not be the same in all cases or within the whole Service Area. For making available appropriate

frequency spectrum for roll out of services under the licence, the type(s) of Systems to be deployed are to be indicated.

43.5(ii) The Licensee operating wireless services will continue to provide such services in already allocated/contracted spectrum. At present contracted spectrum allocation is 5+5 MHz.”

(ii) License agreement for provision of unified access services after migration from CMTS

“23.1 The Licensee shall provide the details of the technology proposed to be deployed for operation of the service. The technology should be based on standards issued by ITU/TEC or any other International Standards Organization/ bodies/Industry. Any digital technology having been used for a customer base of one lakh or more for a continuous period of one year anywhere in the world, shall be permissible for use regardless of its changed versions. A certificate from the manufacturers about satisfactory working for a customer base of one lakh or more over the period of one year, shall be treated as established technology.

23.5 The frequencies shall be assigned by WPC from the designated bands prescribed in National Frequency Allocation Plan - 2002. (NFAP-2002) as amended from time to time. Based on usage, justification and availability, spectrum may be considered for assignment, on case by case basis. The frequencies assigned may not be contiguous and may not be same in all cases, while efforts would be made to make available larger chunks to the extent feasible. The detailed guidelines for allocation of frequency spectrum and charges thereof etc. would be separately issued from time to time.

43.5.(i) For wireless operations in SUBSCRIBER access network, the frequencies shall be assigned by WPC wing of the Department of Telecom from the frequency bands earmarked in the applicable National Frequency Allocation Plan and in coordination with various users. Initially a cumulative maximum of upto 4.4 MHz + 4.4 MHz shall be allocated in the case of TDMA based systems (@ 200 KHz per carrier or 30 KHz per carrier) or a maximum of 2.5 MHz + 2.5 MHz shall be allocated in the case of CDMA based systems (@

1.25 MHz per carrier), on case by case basis subject to availability. While efforts would be made to make available larger chunks to the extent feasible, the frequencies assigned may not be contiguous and may not be the same in all cases or within the whole Service Area. For making available appropriate frequency spectrum for roll out of services under the licence, the type(s) of Systems to be deployed are to be indicated.

43.5(ii) The Licensee operating wireless services will continue to provide such services in already allocated/contracted spectrum. “

License agreement for provision of cellular mobile telephone service

“24.1 The Bidders shall specify the details of the technology (which shall always be digital), quality of service and other performance parameters of the system proposed to be deployed for operation of the service. The technology should be based on standards issued by ITU/TEC or any other International Standards Organization/ bodies and the licensee shall seek the approval of the licensor before deployment of such technologies. Any digital technology having been used for a customer base of one lakh or more for a continuous period of one year anywhere in the world, shall be permissible for use regardless of its changed versions. A certificate from the manufacturers about satisfactory working for a customer base of one lakh or more over the period of one year, shall be treated as established technology.

Clause 24.7 of the 4th CMSP licence agreement mentions the following:

24.7 The frequencies shall be assigned by WPC from the designated bands prescribed in National Frequency Allocation Plan - 2000. (NFAP-2000). Appropriate frequency spots in frequency-band of 1710-1785 MHz paired with 1805-1880 MHz will be assigned. A cumulative maximum of upto 4.4 MHz + 4.4 MHz will be permitted. Based on usage, justification and availability, additional spectrum upto 1.8 MHz + 1.8 MHz making a total of 6.2 MHz +6.2 MHz, may be considered for assignment, on case by case basis, on payment of additional Licence fee. The bandwidth upto maximum as indicated i.e. 4.4 MHz & 6.2 MHz as the case may be, will be allocated based on the Technology requirements. (e.g. CDMA @ 1.25 MHz, GSM @ 200 KHz etc.). The

frequencies assigned may not be contiguous and may not be same in all cases, while efforts would be made to make available larger chunks to the extent feasible.

PART-VII WPC WING'S LICENSE

46.1 A separate specific authorisation shall be required from the WPC wing of the Department of Telecommunications, Ministry of Communications which will permit utilization of appropriate frequencies / band for the establishment and possession and operation of Wireless element of the Telecom Service under specified terms and conditions including payment for said authorisation . Such grant of authorisation will be governed by normal rules, procedures and guidelines and will be subject to completion of necessary the prescribed formalities.”

License agreement for unified access services

“23.1 The Licensee shall provide the details of the technology proposed to be deployed for operation of the service. The technology should be based on standards issued by ITU/TEC or any other International Standards Organization/ bodies/Industry. Any digital technology having been used for a customer base of one lakh or more for a continuous period of one year anywhere in the world, shall be permissible for use regardless of its changed versions. A certificate from the manufacturers about satisfactory working for a customer base of one lakh or more over the period of one year, shall be treated as established technology.

23.5 The frequencies shall be assigned by WPC from the designated bands prescribed in National Frequency Allocation Plan - 2002. (NFAP-2002) as amended from time to time. Based on usage, justification and availability, spectrum may be considered for assignment, on case by case basis. The frequencies assigned may not be contiguous and may not be same in all cases, while efforts would be made to make available larger chunks to the extent feasible. The detailed guidelines for allocation of frequency spectrum and charges thereof etc. would be separately issued from time to time.

43.5.(i) *For wireless operations in SUBSCRIBER access network, the frequencies shall be assigned by WPC wing of the Department of Telecom from the frequency bands earmarked in the applicable National Frequency Allocation Plan and in coordination with various users. Initially a cumulative maximum of upto 4.4 MHz + 4.4 MHz shall be allocated in the case of TDMA based systems @ 200 KHz per carrier or 30 KHz per carrier or a maximum of 2.5 MHz + 2.5 MHz shall be allocated in the case of CDMA based systems @ 1.25 MHz per carrier, on case by case basis subject to availability. While efforts would be made to make available larger chunks to the extent feasible, the frequencies assigned may not be contiguous and may not be the same in all cases or within the whole Service Area. For making available appropriate frequency spectrum for roll out of services under the licence, the type(s) of Systems to be deployed are to be indicated.*

43.5(ii) *Additional spectrum beyond the above stipulation may also be considered for allocation after ensuring optimal and efficient utilization of the already allocated spectrum taking into account all types of traffic and guidelines / criteria prescribed from time to time. However, spectrum not more than 5 + 5 MHz in respect of CDMA system or 6.2 + 6.2 MHz in respect of TDMA based system shall be allocated to any new Unified Access Services Licensee. The spectrum shall be allocated in 824-844 MHz paired with 869 - 889 MHz, 890 - 915 MHz paired with 935 - 960 MHz, 1710 – 1785 MHz paired with 1805 – 1880 MHz.”*

Annexure IX. Maximum committed spectrum

Service area	Operator		Type of License	Spectrum Allocated* (in MHz)	Contracted Spectrum in the License (in MHz)	
	GSM	CDMA				
Andhra Pradesh	Idea Cellular Ltd		CMSP	8	6.2	
	Bharti Airtel Ltd		UACMSP	8.8	6.2	
	BSNL		CMSP	8	6.2	
	Hutchison		CMSP	8	6.2	
	Aircel Ltd		UASL		6.2	
		BSNL		Basic	2.5	5
		Reliance Infocomm		UABSO	5	5
	Tata Teleservices		UABSO	5	5	
Assam	Reliance Telecom		CMSP	6.2	6.2	
	BSNL		CMSP	6.2	6.2	
	Bharti Airtel Ltd		UASL	6.2	6.2	
	Dishnet Wireless Ltd		UASL	4.4	6.2	
	Essar Spacotel Pvt. Ltd (Hutch)		UASL		6.2	
		BSNL		Basic	2.5	5
Bihar & Jharkhand	Reliance Telecom		CMSP	6.2	6.2	
	BSNL		CMSP	6.2	6.2	
	Bharti Airtel Ltd		UASL	8	6.2	
	Dishnet Wireless Ltd		UASL	4.4	6.2	
	Essar Spacotel Pvt. Ltd (Hutch)		UASL		6.2	
	Aditya Birla Telecom Ltd (Idea)		UASL		6.2	
		BSNL		Basic	2.5	5
		Reliance Infocomm		UABSO	5	5
		Tata Teleservices		UASL	3.75	6.2
Chennai	Aircel Cellular Ltd		CMSP	8.6	6.2	
	Bharti Airtel Ltd		UACMSP	8.6	6.2	
	BSNL		CMSP	8	6.2	
	Hutchison		CMSP	8	6.2	
		BSNL		Basic	2.5	5
		Reliance Infocomm		UABSO	5	5
		Tata Teleservices		UABSO	3.75	5
Delhi	Bharti Airtel Ltd		UACMSP	10	6.2	
	Hutch		CMSP	10	6.2	
	MTNL		CMSP	8	6.2	
	Idea Cellular Ltd		CMSP	8	6.2	
	Aircel Ltd		UASL		6.2	
		MTNL		Basic	2.5	5
		Reliance Infocomm		UABSO	5	5
	Tata Teleservices		UABSO	5	5	

Consultation paper on review of license terms and conditions and capping of number of access providers

Gujarat	Fascel(Hutch)		CMSP	11,8	6.2
	Idea Cellular Ltd		CMSP	6.2	6.2
	BSNL		CMSP	7.4	6.2
	Bharti Airtel Ltd		UACMSP	6.2	6.2
	Aircel Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	3.75	5
		Tata Teleservices	UABSO	3.75	5
Haryana	Idea Communications Ltd		CMSP	6.2	6.2
	Aircel Diglink(Hutch)		CMSP	6.2	6.2
	BSNL		CMSP	6.2	6.2
	Bharti Airtel Ltd		UACMSP	6.2	6.2
	Dishnet Wireless Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	3.75	5
		Tata Teleservices	UASL	3.75	6.2
Himachal Pradesh	Bharti Airtel Ltd		UACMSP	6.2	6.2
	Reliance Telecom		CMSP	6.2	6.2
	BSNL		CMSP	6.2	6.2
	Idea Telecommunications Ltd		CMSP	4.4	6.2
	Dishnet Wireless Ltd		UASL	4.4	6.2
	Essar Spacotel Pvt. Ltd (Hutch)		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	2.5	5
		Tata Teleservices	UASL	2.5	6.2
Jammu & Kashmir	BSNL		CMSP	8	6.2
	Bharti Airtel Ltd		UASL	6.2	6.2
	Dishnet Wireless Ltd		UASL	4.4	6.2
	Essar Spacotel Pvt. Ltd (Hutch)		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UASL	2.5	6.2
Karnataka	Bharti Airtel Ltd		UACMSP	10	6.2
	Spice Communications		UACMSP	6.2	6.2
	BSNL		CMSP	8	6.2
	Hutch		CMSP	8	6.2
	Aircel Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	5	5
		Tata Teleservices	UABSO	3.75	5
Kerala	Idea Communications Ltd		CMSP	8	6.2
	Hutch(BPL)		CMSP	6.2	6.2

Consultation paper on review of license terms and conditions and capping of number of access providers

	BSNL		CMSP	8	6.2
	Bharti Airtel Ltd		UACMSP	6.2	6.2
	Dishnet Wireless Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	5	5
		Tata Teleservices	UASL	3.75	6.2
Kolkata	Bharti Airtel Ltd		UACMSP	8	6.2
	Hutchison East		CMSP	9.8	6.2
	BSNL		CMSP	6.2	6.2
	Reliable Internet Service Ltd		CMSP	6.2	6.2
	Dishnet Wireless Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	5	5
		Tata Teleservices	UASL	3.75	6.2
Madhya Pradesh & Chattisgarh	BTA Cellcom Ltd (Idea)		CMSP	8	6.2
	Reliance Telecom		CMSP	6.2	6.2
	BSNL		CMSP	6.2	6.2
	Bharti Airtel Ltd		UACMSP	6.2	6.2
	Dishnet Wireless Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	3.75	5
		Tata Teleservices	UASL	5	6.2
Maharashtra	Hutch(BPL)		CMSP	6.2	6.2
	Idea Cellular Ltd		CMSP	10	6.2
	BSNL		CMSP	8	6.2
	Bharti Airtel Ltd		UACMSP	6.2	6.2
	Aircel Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	5	5
		Tata Teleservices	UABSO	5	5
Mumbai	BPL		CMSP	10	6.2
	Hutch		CMSP	10	6.2
	MTNL		CMSP	8	6.2
	Bharti Airtel Ltd		UACMSP	9.2	6.2
	Aircel Ltd		UASL		6.2
	Idea Cellular Ltd		UASL		6.2
		MTNL	Basic	2.5	5
		Reliance Infocomm	UABSO	5	5
		Tata Teleservices	UABSO	5	5
North East	Reliance Telecom		CMSP	6.2	6.2
	Bharti Hexacom Ltd		CMSP	4.4	6.2
	BSNL		CMSP	6.2	6.2
	Dishnet Wireless Ltd		UASL	4.4	6.2
	Essar Spacetel Pvt. Ltd (Hutch)		UASL		6.2
		BSNL	Basic	2.5	5

Consultation paper on review of license terms and conditions and capping of number of access providers

Orissa	Reliance Telecom		CMSP	6.2	6.2
	BSNL		CMSP	6.2	6.2
	Bharti Airtel Ltd		UASL	8	6.2
	Dishnet Wireless Ltd		UASL	4.4	6.2
	Essar Spacetel Pvt. Ltd (Hutch)		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	3.75	5
		Tata Teleservices	UASL	2.5	6.2
Punjab	Spice Communications		UACMSP	8	6.2
	Bharti Airtel Ltd		UACMSP	8	6.2
	BSNL		CMSP	6.2	6.2
	Hutchison		CMSP	6.2	6.2
	Dishnet Wireless Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	3.75	5
		HFCL Infocom	UABSO	2.5	5
		Tata Teleservices	UASL	3.75	6.2
Rajasthan	Aircel Diglink(Hutch)		CMSP	6.2	6.2
	Bharti Hexacom Ltd		UACMSP	6.2	6.2
	BSNL		CMSP	8	6.2
	Idea Telecommunications Ltd		CMSP	6.2	6.2
	Dishnet Wireless Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	3.75	5
		Shyam Telelink	UABSO	2.5	5
		Tata Teleservices	UASL	3.75	6.2
Tamil Nadu	Hutch(BPL)		CMSP	6.2	6.2
	Aircel Ltd		CMSP	10	6.2
	BSNL		CMSP	8	6.2
	Bharti Airtel Ltd		UACMSP	6.2	6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	5	5
		Tata Teleservices	UABSO	2.5	5
Uttar Pradesh (East)	Aircel Diglink(Hutch)		CMSP	8	6.2
	BSNL		CMSP	9.6	6.2
	Bharti Airtel Ltd		UASL	6.2	6.2
	Idea Telecommunications Ltd		CMSP	6.2	6.2
	Dishnet Wireless Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	5	5
		Tata Teleservices	UASL	3.75	6.2
Uttar	Idea		CMSP	8	6.2

Consultation paper on review of license terms and conditions and capping of number of access providers

Pradesh (West)	Communications Ltd				
	Bharti Airtel Ltd		UACMSP	6.2	6.2
	BSNL		CMSP	8	6.2
	Hutch South		UASL	6.2	6.2
	Dishnet Wireless Ltd		UASL		6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	5	5
		Tata Teleservices	UASL	3.75	6.2
West Bengal & Andoman	Reliance Telecom		CMSP	6.2	6.2
	BSNL		CMSP	6.2	6.2
	Bharti Airtel Ltd		UASL	4.4	6.2
	Hutch South		UASL	4.4	6.2
	Dishnet Wireless Ltd		UASL	4.4	6.2
		BSNL	Basic	2.5	5
		Reliance Infocomm	UABSO	3.75	5
		Tata Teleservices	UASL	3.75	6.2

Note: UACMSP = UASL migrated from CMSP, UABSO = UASL migrated from BSO

CMSP: Amendment dated Feb 2002 mentioned that beyond already allocated 6.2 MHz+6.2 MHz, the additional spectrum of 1.8MHz + 1.8 MHz would be assigned in 1800 MHz band.

* Data reported by service providers for the Qtr. Ending March 2007

Annexure X. Spectrum usage charge

GSM Services

Annual Spectrum charge	Spectrum
2%	Upto 2X4.4 MHz
3%	Upto 2X6.2 MHz
4%	Upto 2X10 MHz
5%	Upto 2X12.5MHz
6%	Upto 2X15 MHz

CDMA service

Annual Spectrum charge	Spectrum
2%	Upto 2X5 MHz
3%	Upto 2X6.25 MHz
4%	Upto 2X10 MHz
5%	Upto 2X12.5MHz
6%	Upto 2X15 MHz

Annexure XI. Roll-out obligations

UAS license agreement

34.1 LICENSEE shall be solely responsible for installation, networking and operation of necessary equipment and systems for provision of SERVICE, treatment of SUBSCRIBER complaints, issue of bills to its subscribers, collection of its component of revenue, attending to claims and damages arising out of his operations.

34.2 LICENSEE shall ensure that

- (i) Atleast 10% of the District Headquarters (DHQs) will be covered in the first year and 50% of the District Headquarters will be covered within three years of effective date of Licence.*
- (ii) The licensee shall also be permitted to cover any other town in a District in lieu of the District Headquarters.*
- (iii) Coverage of a DHQ/town would mean that at least 90% of the area bounded by the Municipal limits should get the required street as well as in-building coverage.*
- (iv) The District Headquarters shall be taken as on the effective date of Licence.*
- (v) The choice of District Headquarters/towns to be covered and further expansion beyond 50% District Headquarters/towns shall lie with the Licensee depending on their business decision.*
- (vi) There is no requirement of mandatory coverage of rural areas.*

CMTS license agreement

36.1 The LICENSEE shall endeavour to cover the entire Service Area at an early date and notify on quarterly basis the areas not covered by the licensee's System. In Metros, 90% of the service area shall be covered within one year of the effective date. In Telecom Circles, atleast 10% of the District Headquarters (DHQs) will be covered in the first year and 50% of the District Headquarters will be covered within three years of effective date of Licence. The licensee shall also be permitted to cover any other town in a District in lieu of the District Headquarters. Coverage of a DHQ/town would mean that at least 90% of the area bounded by the Municipal limits should get the required street as well as in-building coverage. The District Headquarters shall be taken as on the effective date of Licence. The choice of District Headquarters/towns to be covered and further expansion beyond 50% District Headquarters/towns shall lie with the Licensee depending on their business decision. There is no requirement of mandatory coverage of rural areas.

New BSO license agreement

9.3 (a) *The LICENSEE undertakes to fulfill the following minimum network roll out obligations:*

Phase 1	Time period for completion from EFFECTIVE DATE of LICENCE AGREEMENT 2	Cumulative % of coverage in terms of Point of Presence to be achieved at SDCA level at the end of each phase 3	% of performance guarantee that can be released on fulfillment of obligations shown under column 3 4
I	2 Years	15%	--
II	3 Years	40%	20%
III	5 Years	80%	30%
IV	7 Years	100%	50%

However, coverage beyond 80% SDCAs in a SERVICE AREA may be done jointly with an other LICENSEE excluding BSNL/MTNL.

9.3 (c) *The roll out obligations specify the list of SDCAs category-wise in terms of (a) rural; (b) semi urban; & (c) urban, and LICENSEE has to fully ensure that each of the named categories is covered in equal proportion during each phase of the roll out obligations.*
