TRADE IN TELECOMMUNICATIONS SERVICES

OPPORTUNITIES AND CONSTRAINTS

INTRODUCTION

Telecommunication is both the architect and the architecture of globalisation, and a facilitator of beneficial interdependence of economies. Telecommunications has spurred innovations that have lead to tremendous growth, among other services, in international financial services. Other service markets such as IT-enabled services and "remote services" depend crucially on telecom infrastructure. In the information age, India's ability to take advantage of its massive pool of skilled technical persons to export software and IT-enabled services would depend a great deal on the status of the domestic telecom infrastructure.

This paper brings together the issues that are relevant to the WTO negotiations specific to telecommunication services from an Indian perspective. The objective is to focus on the opportunities and challenges in the multilateral trade of telecom services against the backdrop of the rapidly changing domestic and international telecom scene. The last decade has witnessed a sea change in the telecommunication scenario in India. During this period there has been a very rapid growth of Direct Exchange Line (DELs), though the teledensity in Inida still remains low; two policy documents were released during this period reporting a change in the previously held view that telecommunications was a luxury service to the one where it was seen as an important infrastructure service that should be generally available, with world-class quality at reasonable and affordable prices. Private investment was seen as an important contributor to achievement of national objectives in the area of telecommunications, and a number of policy initiatives were taken in this regard. However, the experience with policy reform has not been entirely satisfactory, and a re-orientation of policies has recently taken place to provide greater flexibility of operation. The latest policy framework also recognizes convergence of technologies and services that has thrown up

opportunities for growth in several sectors and takes note of the regulatory and other social challenges.

The present paper is organised as follows. **Section 1** gives a brief overview of the telecom business worldwide, including a list of the largest telecom service providers in the world. It shows that telecom revenues, investment and markets are increasing rapidly, and that a number of activities that use telecom as a major input (e.g., e-commerce, call centres, and software exports) are increasing even faster. The lists of the large service providers of telecom indicate the countries that are likely to have an interest in seeking telecom markets in other countries, including India. **Section 2** summarizes the telecom market situation in India, including the various developments that have taken place in the past few years. It shows that while Indian telecom has experienced high growth and that the provision of new telecom services is increasing rapidly, the teledensity is still low. Further, the public sector remains the main provider of basic telecom service in India, and it will continue to play an important role for a number of years including for meeting the Universal Service Obligation.

Section 3 summarizes the main WTO rules and disciplines in the area of telecom services, separately addressing the main disciplines of the GATS, the Schedules of Concessions under the GATS, the Annex on Telecommunications, and the Reference Paper which contains disciplines to promote a pro-competitive framework for operation of telecom services. **Section 4** provides an overview of the commitments made by WTO Members with respect to telecom services. The section provides a sub-classification of the various telecom sectors which were considered for negotiations, the extent and types of commitments made by different countries. The Section also clarifies the coverage of various telecom sub-sectors for which commitments were made by WTO Members, and the types of limitations placed by countries on their commitments with respect to market access and national treatment. The Section also provides a list of most-favoured-nation treatment exemptions that have been specified by certain countries with respect to this sector.

Section 5 makes a comparison of the telecom policies implemented or under consideration by India with the WTO commitments made by it in this area. This Section shows that the policies actually implemented or those likely to be implemented in the next few years are much more liberal than the commitments made under the GATS. This shows that India has considerable scope to make further commitments in this sector under WTO without changing any of its existing policies. **Section 6** takes a look at the likely demand that India may make under the GATS for seeking greater access to the markets of other countries. The Section shows that India is unlikely to make significant demands on other countries in this sector and, therefore, if any commitments are to be made by India regarding telecom, the quid pro quo has to be sought in other service sectors. To get an idea of the type of policy regime that is likely to be implemented in the next few years in the process of telecom reform, it is important to look at the ongoing policy initiatives. This is the focus of **Section 7**. This Section also provides a background for determining which policy changes are likely to be the subject of demand by India's trading partners during the WTO negotiations. This is addressed in greater detail in **Section 8, which covers "Important Policy Areas for Domestic Policy Reform and WTO Negotiations". Based on the discussion in Section 8, a strategy for the forthcoming negotiations is provided in Section 9, which states that:**

> *India may look at this in the following framework:*
>
> *(a) Liberalisation policies for which a commitment may be made on the basis of currently applicable policies or for those which may be in place during the early phase of negotiations (e.g., foreign equity participation, number of operators in domestic long distance communications and for existing service areas, and various regulatory principles that are not yet included by India in its commitments);*
>
> *(b) Liberalisation commitments to be considered in the interim phase of the negotiations, based on domestic developments (e.g., liberalization of*

international call segment, corporatization of DTS, area of operation for domestic long distance operators);

(c) *Liberalisation policies for which review commitments may be made (e.g., increase in the number of operators for basic services and cellular mobile services, increase in the number of operators providing domestic long distance service and for existing service area, non-facilities-based competition);*

(d) *Future commitments in terms of a phase-in time period (e.g., internet telephony, corporatization of DTS, foreign equity participation)*

One feature of the above list is that some liberalisation policies are mentioned under more than one category. This is to provide an example of how more than one type of strategy for commitments may be considered for certain policies (e.g., foreign equity participation, corporatization of DTS).

While the negotiations are going on, there should also be an attempt to develop a policy framework for certain issues, such as allocation and use of frequency, or number policy. This would help in being clearer on the nature of commitment that could be considered for these issues.

Details on a number of related aspects (including the New Telecom Policy 1999 and the WTO Reference Paper for telecom), are provided in Annex 1 of this paper.

1. OVERVIEW OF TELECOMMUNICATION SERVICES IN THE WORLD ECONOMY

The importance of telecom arises both in terms of direct economic activity in the sector itself, as well as the service being a major means of facilitating and enhancing economic activity in several other sectors. In fact, telecom networks provide the platform for trade in general, and for particular sectors such as software, financial services, and various consultancy services. Examples of this synergy are the telecommunications and information technology stimulated activity and innovations in foreign exchange markets, stock markets, insurance, banking, credit cards, payment systems, software exports, call-centres, tele-banking, tele-transfers, and e-commerce in general. Both the volume and speed of transfers have increased tremendously in recent years.

This Section focuses mainly on world-wide telecom services. To get a proper picture regarding the contribution of telecom to economic activity and export markets, we need to consider a variety of telecom services (including fixed and mobile telephony, paging, and other value added services), as well as a number of the above-mentioned services that are based on (and use) the telecom network. This Section provides an indication of revenues in the telecom market, which do not include revenues from other, above-mentioned telecom-

related activities. Some other activities that use telecom as an input (e.g., E-Commerce, IT-Enabled Services, Call Centres, Other Remote Services), are likely to provide a major impetus to economic activity in the coming years. A number of these services already provide major revenue opportunities, while some others have a large revenue potential due to their rapidly increasing market base.

(a) Telecommunications Revenue

Up-to-date information on overall telecom revenue is not available. Estimates of International Telecommunications Union (ITU) show that global telecom revenue in 1998 stood at US$ 722.5 billion, a figure which represented 2.4% of global GDP (The revenue estimate does not include revenues from cellular mobile, radio paging, or data services if these services are not provided by the main fixed line operator). The rate of growth of this revenue is relatively high, with telecom being one of the dynamic sectors in the world economy. Soon, telecom revenue is expected to cross the US$ 1 trillion mark.

Table 1. Telecommunications Revenue In India and Other Selected Areas

Region	Telecommunications Revenue, 1998 (Billion US $)	Proportion of GDP (%)
India	5.1	1.2
World	722.5	2.4
Africa	12.2	2.0
Americas	309.9	2.7
Asia	163.7	2.1
Europe	221.5	2.1
Oceania	15.2	3.4

Source: ITU

Dynamic opportunities in telecom arise to a large extent on account of **the rapid growth of the newer services**. For example, the average growth of the number of cellular mobile subscribers has been about 50 per cent since 1990. Likewise, due to increasing importance of data traffic in total traffic, the proportion of voice in total traffic will become less than 5 percent within the first decade of this century. The rapid growth in telecom service will also stimulate growth in the telecom equipment sector.

(b) Small number of Public Telecommunication Operators (PTOs) account for a large share of revenues

A notable feature of the telecom service industry is that a **large portion (i.e. about three-fourths) of the telecom revenue is accounted for by only the top twenty PTOs** (see below). Of these, particularly high rates of revenue growth have been achieved by the PTOs in China and Mexico.

Table 2.Telecommunications Revenue Earned By The Top 20 PTOs In The World, 1998

PTOs	Telecom Revenue, 1998 (Billion US $)
NTT (Japan)	81.6
AT&T (USA)	53.2
Deutsche Telecom (Germany)	41.8
Bell Atlantic (USA)	31.5
MCI Worldcom (USA)	30.4
BT (UK)	29.3
SBC (USA)	28.7
France Telecom (France)	28.7
Telecom Italia (Italy)	27.5
GTE (USA)	25.4
China Telecom (China)	24.0
BellSouth (USA)	23.1
Telefonica (Spain)	20.3
Ameritech (USA)	17.1
Sprint (USA)	17.1
US West (USA)	12.3
Telstra (Australia)	10.7
KPN (Netherlands)	9.3
DDI (Japan)	8.9
Telmex (Mexico)	7.9

TOTAL OF ABOVE	**529.7**

Source: ITU

Table 2 above shows that nine of the top twenty PTOs are from the United States, showing the basis for United States' major interest in seeking market acess opportunities abroad. Similarly, we get an indication of the countries with important interest in telecom from the list of the top twenty cellular operators in the world, given that the cellular mobile services is growing much more rapidly than the basic telecom service. In this regard too, the list of countries with major presence is similar to that for basic telecom (see Table 3 below). A somewhat wider list of countries emerges when we consider the list of top international carriers (see Table 4 below). With this coverage, the countries with a major interest in access to the telecom market would include not only the major players in OECD, China (China is likely to become a WTO Member during the negotiating phase), Brazil, and Republic of Korea, but also Singapore and India.

Table 3. Top 20 mobile cellular operators, ranked by 1998 subscribers

Operator	Cellular subscribers (000s) 1998	Mobile revenue (US$ million) 1998
NTT DoCoMo (Japan)	25,245	26,163
China Telecom (China)	23,570	7,956
TIM (Italy)	14,299	7,169
AirTouch (USA)	7,915	4,028
AT&T (USA)	7,198	5,406
SBC (USA)	6,851	4,185
Bell Atlantic(USA)	6.623	3,719
Omnitel (Italy)	6.190	2,792
SK Telecom (Korea)	5.966	2,559
Mannesmann (Germany)	5,900	4,371
Deutsche Tel. (Germany)	5,800	3,586
DDI (Japan) a	5,604	6,953
Vodafone (U.K.)	5,570	3,365
France Télécom (France)	5,450	3,116
Telefónica (Spain)	4,894	3,282

GTE (USA)	4,817	3,070
BellSouth (USA)	4,796	4,792
Cellnet (UK)	4,522	2,307
SFR (France)	4,201	3,113
ALL TEL (USA)	4,009	2,137
TOP 20	159,420	104,069

Source: ITU

For the top twenty PTOs for cellular mobile, revenues from cellular mobile are about one-fifth in comparison to the revenues of the top twenty PTOs mentioned in Table 2 above. This share is likely to keep increasing in the next few years. Likewise, decrease in tariffs and growth in data traffic and e-commerce is likely to increase the share of international traffic and revenue in total traffic/revenue.

Table 4. Top 25 international carriers, ranked by international telecommunications revenues, 1997

Company	International revenue ($m)	Total Revenues ($m 1997)
AT&T (USA)	8,200	51,319
Deutsche Tel. (Germany)	5,200	37,529
Cable & Wireless (UK)	4,993	11,668
MCI (USA)	3,400	19,653
BT (UK)	2,588	26,067
China Telecom (China)	2,355	15,821
France Telecom (France)	2,106	26,122
KDD (Japan)	1,864	2,708
Sprint (USA)	1,636	14,873
Telecom Italia (Italy)	1,605	16,721
Telmex (Mexico)	1,432	7,534
Stentor (Canada)	1,391	9,939

Swisscom (Switz.)	1,386	6,931
Singapore Telecom (Singapore)	1,263	3,051
WorldCom	1,249	7,351
Teleglobe (Canada)	1,050	1,400
KPN Telecom (Netherlands)	1,031	7,622
Telstra (Australia)	914	11,458
Telefonica de Espana (Spain)	882	10,509
VSNL (India)	778	1,630
Korea Telecom	686	4,834
Chunghwa Telecom	684	5,272
Telia Group	675	5,827
Telintar	646	646
Telkom	585	4,024

Source: *CommunicationsWeek International*, 23 November 1998 (from WTO Document S/C/W/74, dated 8 December, 1998)

(c) Pattern of telecom investment in various regions

The importance of external markets becomes apparent if we look at the picture on **investment in telecom in various parts of the world**. For example, together with Table 1 above, Table 5 (below) shows that while the major portion of telecom revenues is earned in the Americas and Europe, a **large portion of the investment in telecom is taking place in Asia**.

Table 5. Telecommunications Investment In India and Other Selected Areas

	Telecommunications Investment, 1998 (Billion US $)	**Proportion of Gross Fixed Capital Formation (%)**	**Teledensity, 1998 (Main telephone lines per 100 inhabitants) %**
India	2.4	2.4	2.2
World	175.6	2.4	14.2
Africa	4.6	4.2	2.2
Americas	41.9	1.4	32.3
Asia	78.0	3.2	7.3
Europe	47.8	2.8	37.2
Oceania	3.2	4.3	40.2

Note: The ITU statistics for teledensity include payphones for most countries, and the estimates for population are for mid-year. Therefore, the ITU's teledensity estimate may vary slightly from the teledensity estimates calculated with year-end population and telephone lines excluding payphones.
Source: ITU

A notable feature shown in the Table above is that even Africa, which accounts for a much smaller share of telecom investment than most other regions, is investing a larger share in capital formation on telecom than the regions with larger volume of investments. This is a reflection of the fact that the teledensity in Africa is low, and there is need for substantial additional investment over time.

Therefore, **while Asia is a region that is already attracting substantial investment in telecom, there will continue to be focus on telecom investment in Africa too, even if the volumes are substantially lower**. This has implications for investment opportunities that may open up, inter alia, in the process of divestment of Public Telecom Utilities that is taking place in a number of countries, including in Africa.

Another noteworthy feature is that a number of countries where substantial investment in telecom is taking place, are either NICs or developing countries (see Table 6 below).

Table 6. NICs, Emerging Market Economies, and Developing Countries With Telecommunications Investment of Above US$ 1 Billion in 1998

	Telecommunications Investment, 1998 (Billion US $)	**Proportion of Gross Fixed Capital Formation (%)**	**Teledensity, 1998 (Main telephone lines per 100 inhabitants) (%)**

China	18.1	4.1	6.9
Korea (Rep. Of)	8.0	5.2	43.2
Brazil	6.9	4.4	12.0
South Africa	2.7	6.8	11.4
India	2.4	2.4	2.2
Taiwan - China	2.3	2.9	52.4
Malaysia	2.1	5.2	19.7
Hong Kong	1.8	3.1	55.7
Mexico	1.6	1.4	10.3
Indonesia	1.5	2.2	2.7
Argentina	1.3	2.4	20.2
Poland	1.1	4.5	22.7
Czech Republic	1.1	8.9	36.3

Note: In general, the ITU statistics for teledensity include payphones, and populations estimate is for mid-year. Therefore, the ITU's teledensity estimate may vary slightly from the teledensity estimates calculated with year-end population and telephone lines excluding payphones.
Source: ITU

Telecom activity and investment in NICs and developing countries are likely to continue to grow rapidly in the next few years since the teledensity in these countries is much less than the global average (or in many cases less than the average for their region). This tendency will receive an additional impetus due to technological changes, which is bringing down the costs and increasing the affordability and availability of a large number of telecom services. Further, there is also a widespread view that the dynamic opportunities in the early part of the 21st century will depend on access to telecom. Thus, telecom markets and investment in these countries would tend to grow even more than would be expected with the pattern of investment reflecting current technologies.

(d) New Telecom Areas Are Growing Rapidly

New growth areas are contributing in a major way to the dynamism in the telecom sector. Thus, while there is need to augment basic telephony in countries with low teledensity, technological changes and product development are resulting in a number of new services

increasing their importance. This includes both sectors, (i.e. cellular mobile) and services which use the telecom network, i.e. (internet and e-commerce).

Table 7 below shows the comparative growth rates for fixed line and cellular telephony in different parts of the world.

Table 7. World Telecommunications Network development: Fixed and Cellular Mobile, 1990-1997

	Compound Annual Rate Of Growth For Fixed Line, 1990-1997 (%)	Compound Annual Rate Of Growth For Cellular, 1990-1997 (%)
Africa	11.0	102.1
Americas	5.1	42.6
Asia	11.6	74.4
Europe	3.8	50.8
Oceania	2.2	56.4
WORLD	6.5	52.5

Source: ITU

2. TELECOMMUNICATION SERVICES IN THE INDIAN ECONOMY

(a) India: A Country with Large Network But Low Teledensity

India operates one of the largest telecom networks in the world, with about 25 million telephone lines. A comparative picture for the year 1998 is provided by Table 8 below. Table 8 also shows that despite a relatively large network size, India's teledensity is extremely low and that a substantial effort will be required for, say, a double digit teledensity.

Table 8. Ranking of Countries With 20 Million Or More Telephone Lines in 1998

Country	Number of Main Telephone Lines, 1998 (Million Lines)	Teledensity (No. of Main Telephone Lines Per 100 Inhabitants), 1998
United States	178.8	66.1
China	87.4	6.9
Japan	63.5	50.2
Germany	46.5	56.6
France	34.0	56.9
United Kingdom	32.8	55.6
Russia	29.0	19.6
Italy	25.9	45.0
India	21.5	2.2
Korea (Rep. Of)	20.0	43.2

Note: In general, the ITU statistics for teledensity include payphones, and populations estimate is for mid-year. Therefore, the ITU's teledensity estimate may vary slightly from the teledensity estimates calculated with year-end population and telephone lines excluding payphones.
Source: ITU

A noteworthy feature is that during the 1990s, India registered very rapid growth in telephone lines (also referred to as DELs or "Direct Exchange Lines"). At about 20 per cent per annum, this growth rate is much faster than in most countries of the world, and implies a doubling of the network size in less than every five years. However, there is still a considerable waiting list in several parts of the country, and a large number of villages are yet to be provided telecom access. By the end of September, 1999, 3.43 lakh villages out of 6.07 lakh had been provided with public telephones.

Table 9. Direct Exchange Lines And Waiting List in India, 1987-88 to 1998-99

Years	Direct Exchange	Telephone	Registered	DELs added

(April - March)	Lines(DELs) ('000)	Waiting List ('000)	Demand ('000)	Annually ('000)
1987-88	3,800.8	1,287.1	5,087.9	314.4
1988-89	4,166.5	1,419.6	5,586.1	365.7
1989-90	4,589.5	1,713.4	6,302.9	423.0
1990-91	5,074.7	1,961.0	7,035.7	485.2
1991-92	5,809.9	2,287.0	8,096.9	735.2
1992-93	6,796.7	2,845.9	9,642.6	986.8
1993-94	8,025.6	2,496.8	10,522.4	1,228.9
1994-95	9,795.3	2,152.9	11,948.2	1,769.3
1995-96	11,978.4	2,277.2	14,255.6	2,183.1
1996-97	14,542.6	2,887.2	17,429.8	2,564.2
1997-98	17,801.7	2,705.7	20,507.4	3,259.1
1998-99	21,593.7	1,983.03		3792.0

Source: R. Kathuria, S.K. Nair, and H.V. Singh (2000), "Telecomunications" a paper prepared for the NCAER-ADB Study on Indian Infrastructure.

Further, along with managing the large investment to cater to the potential demand, there is also a need to ensure that new and efficient technology is installed in the network. This is imperative for a sector such as telecom where technology is changing rapidly, resulting in cost decline as well as convergence of technologies and products.

(b) Importance of Cellular and Other Services

To some extent, teledensity may be enhanced through the spread of cellular mobile telephony. The current number of cellular phone subscribers is about 1.5 million. However, the number of cellular subscribers as a proportion of basic service subscribers, though increasing, is likely to have a small impact on teledensity for some years to come (see Table 10 below). It is worth noting that even for cellular mobile, as shown in Table 10, the teledensity for India is much below the world average (about 4 %) and the teledensity in a number of developing countries.

Table 10. Cellular Subscribers as Percentage of Basic Subscribers in India, 1996-99

1996-97	1997-98	1998-99
2.33	4.96	5.53

Source: R. Kathuria, et. al., (2000), op. cit.

Table 11. Fixed Line And Cellular Mobile Teledensity, December, 1997

	Fixed	Mobile	Aggregate of Fixed and Mobile
China	6.0	1.2	7.2
India	1.7	0.05	1.75
Indonesia	2.1	0.6	2.7
Malaysia	18.3	11.2	29.5
Philippines	2.6	1.8	4.3
Thailand	6.9	3.5	10.4

Source: GoT's Spectrum Management Report.

Further, the situation regarding teledensity cannot be ascertained by simply adding the number of basic and cellular mobile subscribers, bearing in mind that for most subscribers to cellular mobile, the cellular phone is an addition to their basic telephone. This would be particularly so in the case of metros and more lucrative circles (e.g., "A" circle). Table 12 shows that these account for a major portion of the total subscriber base for cellular mobile.

Table 12. Subscriber Base for Cellular Mobile Service (Thousands)

Categories	September 1997	September 1998	September 1999
Metros	465.4	459.3	566.6
"A" Circle	84.1	268.8	420.8
"B" Circle	63.0	191.9	317.0
"C" Circle	0.7	25.0	31.0
TOTAL	**613.3**	**945.0**	**1,335.7**

Source: R. Kathuria, et. al., (2000), op. cit.

Therefore, only a small proportion of the cellular mobile subscribers may be considered as being those who are not already covered by the teledensity estimate given for basic service. There is, hence, little basis to consider the aggregate of basic and cellular mobile subscribers to ascertain teledensity. This situation is likely to change in the next few years, however,

when a fall in cellular mobile tariffs and the coverage of the service will result in the two services being seen more as substitutes than they are at present. Till then, **basic service is a better measure of teledensity**.

(c) Rapid Growth Likely in the Market For Telecom and Related Services

Though the cellular subscriber base is not an adequate measure for teledensity, its (cellular services) scope for expansion together with the scope in related services is an indicator of a very large potential market, making India an attractive market. The high growth of the telecom sector activity, especially for the new and value-added segments of the market, suggests that if the sector's growth is allowed to progress (in particular through competition, especially in the provision of a fibre optic backbone), the current size of the domestic telecom market of about US$ 5 billion a year could increase to even US$ 100 billion in about ten years. India has a Long Distance Transmission Network of about 1,65,000 route kilometres of terrestrial Microwave Radio Relay & co-axial cables and about 96,261 route kilometres of Optical Fibre Cables. The total number of stations connected to National Subscriber Dialling (NSD) is over 16,019 and this number is increasing fast.

Some indicators of the potential for high growth in telecom (or telecom-related activities) include the about 20 per cent growth in DELs, as well as high growth in FDI inflows to telecom, and software exports (see Table 13 below).

Table 13. Some Important Financial Data on Post-Reforms Role of the Indian Telecom Sector (Rs in Millions)

Year (ending 31 March)	FDI Inflow	Software Export	Equipment Export	Equipment Production
1993	20			
1994	140		580	55,000
1995	2,070	15,350	1,310	70,000
1996	7,650	25,200	3,100	77,500

1997	12,450	39,000	2,400	80,000
1998	17,760	64,000	2,960	99,600
1999		110,000		

Source: R. Kathuria, et. al., (2000), op. cit.

The possibility of a rapid growth of telecom and its contribution to the growth of internet related business is illustrated by the following:

> The value of totally new businesses created because of the personal computer, since 1981, when the PC was born, (excluding pre-existing companies like IBM and Hewlett Packard), was 100 billion dollars in ten years. In the nineties it was the internet which was creating such value. For new internet based businesses, this number was reached in only four years. And this exponential growth in internet was possible on the bedrock infrastructure of telecom. NASSCOM estimates that the export of software and IT-enabled services will reach 50 billion dollars by 2008. In this context, Tables 9,12 and 13 above shows that there has been a major increase in certain telecom-related activity and investment.

(d) High Growth In Telecom Sector is Expected By Government

A significant feature regarding telecom is that the Government also expects (and aims for) rapid growth in this sector. For instance, the New Telecom Policy 1999 aims for a teledensity of 15 per cent by 2010. To achieve this teledensity, the required growth of fixed lines would need to be more than 20% per annum. In addition to the growth in basic telecom, greater market opportunities would be provided also on account of an increase in cellular mobile subscribers, internet connections, internet access through cable TV, and through the development of significant growth areas include e-commerce, IT-enabled services, call centres, and other remote services.

(e) Public Sector Remains the Main Supplier of Basic Telecom Service in India

To help achieve the high growth rates (and enhanced technology), as explained in Section 7 below, the Government allowed private entry into a number of telecom sectors. Thus, a number of licenses were provided even for the basic service and cellular mobile service (see Table 14). In the case of basic services, the number of additional licensees, and service providers, are substantially fewer than for cellular mobile. Table 15 provides the picture regarding the basic services licensees in different parts of the country (including for the three licensees which have begun their service), and Table 16 shows the subscriber base for DOT/MTNL and the private sector operators of basic telecom.

Table 14. Number of Licenses Issues And Number of Licenses For Which Service Started By August, 1999

Service	Licenses Issued	Service Started
Basic	6	3
Cellular	42	39
Radio Paging	137	93
PMRT	103	57
Data Network	12	10
Voice Mail	11	6
E-Mail	15	15
Internet	110	1
GMPCS	1*	-

*Provisional ; PMRT = Personal Mobile Radio Trunking; GMPCS = Global Mobile Public Comm. System

Source: R. Kathuria, et. al., (2000), op. cit. for Tables 14 to 16.

Table 15. List of Basic Service Providers In India and Their Areas Of Operation

Service Area	Name of Service Provider
(a) Operational	
All over India	DTS
Delhi & Mumbai	MTNL
Madhya Pradesh	Bharti Telenet Ltd.
Maharashtra	Hughes Ispat Ltd.
Andhra Pradesh	Tata Teleservices Pvt. Ltd.
(b) Licensee Yet To Be Operational	
Gujarat	Reliance Telecom Pvt. Ltd.
Punjab	Essar Comvision Ltd.
Rajasthan	Telelink Network (India) Ltd.

Table 16. Subscriber Base for Basic Service (Thousands)

Service Provider	June'98	Sep.'98	Dec.'98	Mar.'99	June'99	Sep.'99
DTS	14,734.5	15,326.4	15,920.5	17,939.7	18,320.7	19,303.2
MTNL	3,448.9	3,491.3	3,530.7	3,653.9	3,660.2	3,708.3
Bharati Telenet	0.9	3.1	8.2	13.9	21.1	35.7
Hughes Ispat	NIL	NIL	2.0	6.0	9.8	13.7
Tata Teleservice.	NIL	NIL	NIL	NIL	NIL	7.3
TOTAL	**18,184.4**	**18,820.8**	**19,461.6**	**21,613.7**	**22,011.9**	**23,068.4**

Even after the entry of the private sector in basic telecom, the role of DTS and MTNL remains pre-dominant. Table 16 above shows that the subscriber base for the private sector needs to increase by a very large amount for it to account for even 5 or 10 per cent share of total DELs. This is particularly so because the DTS is increasing the number of DELs at a very rapid pace. In this process, DTS is covering both high as well as low revenue subscribers in urban and rural areas. It is likely that for many years to come, DTS will continue to be the main service provider and consequently will have major responsibility in the area of universal service obligation, although the New Telecom Policy 1999 envisages that it will be borne by all telecom service providers through a universal access levy.

(f) Certain Other Features of the Indian Telecom Scenario That Are Important For Policy Formulation

Certain features of the Indian basic telecom market need to be carefully considered in any assessment of appropriate policy response for the telecom sector.

One is the fact that a minor proportion of total subscribers provide a large share of the total call revenue. This is shown, for example by Table 17 below.

Table 17: Call-Revenue Contribution By Different Subscriber Categories

Column (1)	Column (2)	Column (3)
Number of Metered Calls Made Every Two Months	Proportion Of Total DELs In The Category Mentioned In Column (1)	Contribution of DELs In Column (2) To Call Revenue

More than 10,000	2.7 %	46.1 %
5,001 to 10,000	2.5 %	9.8 %
2,001 to 5,000	7.9 %	13.4 %
1,001 to 2,000	14 %	11.6 %
500 to 1,000	21.3 %	10 %
0 to 500	51.7 %	8.1 %

Source: DoT

For example, about 5 per cent DELs provide about 55 per cent of the call revenues, and about 14 per cent DELs provide about 70 per cent of the call revenues (and a much larger share of surplus). Any competitor to DTS and MTNL in the market will focus mainly on these high revenue subscribers. Loss of such subscribers through competition would result in a reduction of DTS' available surplus unless there is an increase in certain tariffs that are at present below cost. This reform will become even more necessary when the long distance sector is opened up to competition (see Section 8 below).

Another is the high tariffs for long distance calls in India, especially for distances above 200 kms. This makes investment in long distance telephony attractive, unless interconnection charges (which are yet to be fully worked out) significantly reduce the perceived surplus.

The DTS has announced that it will be providing relatively cheaper long distance calls on the basis of packet-switching. With new service providers entering the long distance market, and the availability of frontier technologies, which will drastically reduce the costs of long distance transmission, there will be great downward pressure on tariffs for this service. These lower tariffs will greatly benefit subscribers, while putting downward pressure in the near term on the revenues for DTS.

In addition, **various policy initiatives that are mentioned in New Telecom Policy 1999 will have a bearing on the negotiating position of India in the WTO**. The various initiatives introduced by NTP 1999 might be the subject of negotiations at WTO. This aspect is further discussed in Section 7 below.

3. RELEVANT PROVISIONS OF GATS AND OTHER RULES AND DISCIPLINES FOR TELECOMMUNICATIONS

The WTO rules and disciplines for telecom comprise the General Agreement on Trade in Services (GATS), the Annex on Telecommunications (hereinafter "Annex on Telecom") and the Schedules of commitments made under the GATS. To get an indication of the basic thrust of major regulatory disciplines that are relevant in the context of the telecom services, we need to consider the Reference Paper also.

While the result of the WTO negotiations on market access for basic telecommunications services formally entered into force on 5 February 1998, the WTO rules relevant to telecom are also contained in the GATS and the Annex on Telecom, which entered into force in January 1995. To begin with, this section will highlight the main disciplines in the GATS and then discuss the main features of the relevant disciplines embodied in the other parts of the WTO legal obligations pertaining to telecom.

It may be mentioned here that the Information Technology Agreement concluded in 1997 has a bearing on trade in telecom services, as does the standstill on not imposing any trade taxes on e-commerce.

(a) Rules and disciplines under the GATS

The GATS consists of 29 Articles, 8 Annexes, and 130 schedule of commitments on specific services or service sectors (each WTO Member submitted a schedule of commitment, whose scope and coverage varies considerably - please see below). GATS provides a framework which defines the types of international trade in service that are subject to the agreed set of rules, the nature of these rules, and the basis for making specific commitments in the schedules of commitments. In addition, the GATS Articles contain provisions for dispute settlement among the WTO Members with regard to the rules and disciplines, future negotiations to be held on trade in services, the establishment of a Council for Trade in Services to oversee the implementation and future work under the GATS, and for the development of disciplines in areas such as government procurement of services, subsidies and emergency safeguards.

A major feature of the GATS is that it extends the definition of international trade in services. This envisages **four different modes of trade**. They are:

- **Cross-border supply** (same as for trade in goods; e.g. international call);
- **Consumption abroad** (such as tourism, or cellular roaming);
- **Commercial presence** of a supplier of one WTO Member in the jurisdiction of another WTO Member (through joint venture, partnership, agent, local affiliate);
- **Presence of natural persons** (as individual service suppliers or through commercial presence).

The negotiations on basic telecom services under the GATS did not focus on a precise definition of **"basic telecom services"**. It was decided that the negotiations will cover all telecommunications services (both public and private) that involve end-to-end transmission of customer supplied information (voice or data), telecom services provided over network infrastructure as well as those provided through resale over private circuits, and supply of telecom services through cross-border provision as well as through the establishment of foreign firms (or commercial presence).

Two important disciplines on international trade under GATT, and now GATS, relate to **most favoured nation treatment** (or "MFN treatment") **and "national treatment"**. MFN treatment requires that the same treatment be given to all Members as may be extended to any country with which a WTO Member country has a trade relation. National treatment requires that the treatment of products (and service providers in the case of GATS) from any country be at least as good as the treatment provided to domestic products (and service providers).

Since trade in services was a new area being brought under the general framework of disciplines of the erstwhile GATT, countries sought comfort through a phased liberalization of the sector. Thus, limitations on market access and national treatment were provided within GATS, unlike the situation for GATT rules regarding trade in goods. The extent to which market access and national treatment are provided by Members are inscribed in the corresponding Schedules of their Commitments. In addition, to a limited extent, some countries specified their exceptions to the MFN discipline in another Schedule.

Therefore, unlike for goods under GATT, there is a possibility under GATS of giving qualified national treatment for services, and to take exception to MFN (see next Section for details).

Without MFN exemption, a WTO Member must treat the services or service suppliers of every other WTO Member as favourably as those of any other country. Further, even if such an exemption is filed, a WTO Member has to apply it to only those services which are not in the Schedule of its commitments. Additionally, the exemption may be used to provide special and preferential treatment to certain WTO Members over and above (i.e. in excess of) those market access provisions which are indicated in the schedule of its commitments. The list of MFN exemptions taken by the WTO Members for telecom is mentioned in Section 4 below.

Other important disciplines under the GATS relate to, inter alia:

- **domestic standards and regulations** (these ensure that domestic regulations are not used unfairly to benefit any particular market participant, and that they do not constitute unnecessary barriers to trade in services and are not more burdensome than necessary to ensure the quality of the service. The GATS also addresses recognition of foreign standards and certification of service suppliers);
- **monopolies and exclusive service providers;**
- **restrictive business practices**;
- **transparency**;
- **free trade areas and customs unions**;
- **emergency measures for balance of payments purposes;**
- **General/security exceptions; and**
- **provision for further negotiations.**

(b) The Schedules of Commitment

Article XX of the GATS provides that WTO Members should specify their specific commitments in their Schedules of commitment. Not all the WTO Members have undertaken disciplines in the area of telecom through their Schedules of commitment. 93 WTO Member Governments included commitments on telecommunications in their Schedules (there were 82 Schedules, because the European Union provided a combined Schedule of commitment for its Member countries). The markets of these participants account for more than 90 per cent of global telecommunications revenues.

The Schedules of commitments specify both the telecommunication service sector in which commitments have been undertaken by a WTO member, and the nature of these commitments with respect **to market access and national treatment**. These commitments are made separately for each mode of service supply. In certain cases, Members have undertaken **additional commitments (on licensing and regulatory principles)** in their Schedules of commitments. While one Schedule specifies the conditions and qualifications

attached to Market Access and National Treatment by Members, another Schedule contains the MFN exemptions specified by countries.

With respect to market access commitments inscribed in the Schedule, certain types of limitations (separately for each mode of supply) may be maintained only if, and to the extent, it is specifically mentioned in the Schedule. The types of limitations that may be specified for market access are:

- limitation on the number of suppliers;
- limitations on the total value of service transactions or assets;
- limitations on the total number of services operations or on the total quantity of service output;
- limitation on the total number of natural persons that may be employed;
- measures which restrict or require specific types of legal entity or joint venture; and, limitations on the participation of foreign capital.

With respect to national treatment for any specified service, Members can specify conditions and qualifications so as not to give full national treatment. The exceptions to national treatment can take the form of different treatment with respect to tax measures, nationality or residency requirements, licensing standards, criteria relating to qualifications, and requirements for obtaining authorization for providing the service.

Based on an **interpretative note** issued by the Chairman of the Negotiating Group (on Basic Telecom), an understanding was developed that unless specified, the scheduled commitments would cover all the relevant dimensions of basic telecom services in terms of:

- local, long distance and international services;
- public and non-public services;
- supply on a facilities basis or through resale;
- technology-neutrality with respect to supply by cable, radio, satellites, stationary and non-stationary means.

(c) The Annex on Telecommunications

The GATS contains certain Annexes relating to specific service sectors, including an Annex on Telecommunications. The Annex on Telecommunications recognizes that "the specificities of the telecommunications service sector and, in particular, its dual role as a distinct sector of economic activity and as the underlying transport means for other economic activities", i.e. the Annex recognizes the importance of telecommunications as an input for other sectors.

The Annex on Telecom comprises seven sections, with the core obligations contained in the section on access to and use of "public telecommunications transport network and services" (or PTTNS). These require WTO members to ensure that access to and use of the PTTNS are allowed on reasonable and non-discriminatory terms for the supply of services included in its schedules. Further, since this discipline covers "access to and use of" telecom services publicly made available, Members must ensure that their obligations under the GATS framework are fulfilled for access to any entity that is providing PTTNS. This would be true even when no basic telecom service commitments have been made by the government in its schedule, and whether or not such PTTNS is supplied by a monopoly or through competition. In, as, much as a Commitment in a Member's schedule on basic telecom services is for the supply of that services, access to and use of PTTNS on reasonable and non discriminatory terms is a mandatory requirement under the provisions of this Annex. This would imply non discriminatory treatment in the matter of interconnection between privately and publicly owned networks.

In terms of the provisions of this Annex, on Telecom WTO Members have to ensure that relevant information on conditions affecting access to and use of public telecom transport networks and services are publicly available. Examples of such measures include tariffs and other terms and conditions of services, specifications of technical interfaces with such networks and services, information on bodies responsible for standards affecting access and use, conditions applying to attachment of terminal or other equipment, and notifications, registration or licensing requirements (if any).

In addition, there is a recognition of the need for maintaining security and confidentiality of messages, safeguarding universal service and other public obligations, and protection of the technical integrity of the networks.

(d) The Reference Paper

A number of Governments felt that explicit regulatory principles should be drawn up for basic telecom services, particularly in order to guard against anti-competitive behaviour by incumbents. This was based on the view that the telecom sector normally has a dominant supplier who could alter the market situation to the disadvantage of a newcomer. Further, an efficiently functioning telecom market requires appropriate linking up of the established and new suppliers, while guarding against anti-competitive behaviour. A Reference Paper was, therefore, prepared which laid down regulatory disciplines that were considered necessary for promoting competition in this sector (see Annex 1). Adherence to these principles, however, was voluntary and subject to whether or not WTO Members inscribed them into their schedules as additional commitments.

The regulatory principles contained in the Reference Paper address situations where major suppliers exercise control over essential facilities or where these suppliers are capable of abusing their dominant market position. Essential facilities were identified as those which are exclusively or dominantly provided by a single or limited number of suppliers, and which cannot be economically or technically substituted in a feasible manner to provide a service. The Reference Paper includes commitments to:

- adopt safeguards to protect against anti-competitive behaviour including use of cross-subsidy, or misuse of information;
- establish terms and conditions for non-discriminatory interconnection to be provided by major suppliers, under conditions, rates, and quality no less favourable than that provided to all other suppliers of like services;

- provide interconnection in a timely manner, on transparent and reasonable terms and conditions, and at cost-oriented rates
- recognize the legitimacy of universal service obligation, provided that these do not act as a surrogate form of protection;
- utilize transparent (i.e. publicly available) criteria in licensing;
- establish an impartial regulator, independent of any service supplier;
- utilize objective, timely, transparent and non-discriminatory procedures for allocation of scarce resources such as radio frequencies, numbers and rights of way.

India's commitments to the WTO in the telecom sector have been modest. Even the applicable regime embodying a relatively small extent of liberalization, has not been bound under the GATS. More about this later

4. LIBERALIZATION IN TELECOMMUNICATION SERVICES UNDER THE URUGUAY ROUND

(This Section is based on a combination of recent information and the WTO Document of December, 1998. The overall picture is the same with each of these two information sources)

(a) Classification of Telecommunications Service Sectors And The Commitments Made By Various WTO Members

The Services Sectoral Classification List provides a classification of the telecom sector into seventeen categories. These are mentioned in the first column of Annex Table 1 below, fourteen categories from "a" to "n", and three "other" categories under "o". Though these services are classified separately in the List, the ongoing convergence arising due to technological and market developments is blurring the distinctions among some of these categories. Packaging and provision of various services by the same operator will increasingly become a norm in the future. Nonetheless, given the type of information available, this Section will provide the relevant information for these sectoral classifications.

In the list of sectors, the term "**basic telecommunications**" is used to cover the services in categories "a" to "g" in Annex Table 1, and certain other services such as mobile communication that provide real-time transmission of customer supplied information. Other service categories are considered as "**value added telecommunications services**".

As of January 2000, 93 WTO Members had included telecommunications services in their Schedules of Commitments. Basic telecommunications is included in the schedule of commitments of 83 WTO Members and value added services have been committed on by 72 Member governments. In addition, 72 Members have committed on some or all aspects of the Reference Paper. Of these, 66 have accepted the Reference Paper in its entirety or with minor modifications. All industrialized countries have taken commitments on basic telecommunications, most value-added sectors, and the Reference Paper.

As in other service sectors, there is a wide variety in the types of commitments made by various WTO Members for the telecom sector, largest number of commitments have been made for voice telephony, terrestrial mobile, and circuit switched data transmission (see Table 18 below).

Table 18. Summary of GATS Specific Commitments on Telecommunications Services

	Voice Telephone	Packet-Switched Data Trans.	Circuit-Switched Data Trans.	Telex	Telegraph	Facsimile
TOTAL SCHEDULES	**72**	**67**	**68**	**63**	**51**	**63**
TOTAL GOVERNMENTS*	**84**	**79**	**80**	**75**	**63**	**75**

	Private Leased Circuit Services	E-Mail	Voice Mail	On-line Info and Data Base Retrieval	Electronic Data Inter-change	Enhanced Facsimile
TOTAL SCHEDULES	**63**	**59**	**55**	**61**	**52**	**50**
TOTAL GOVERNMENTS*	**75**	**71**	**67**	**73**	**64**	**50**

	Code and Protocol Conv.	On-line Info &/or data proc.	Terrestrial mobile	Satellite mobile	Other
TOTAL SCHEDULES	**49**	**47**	**69**	**62**	**48**
TOTAL GOVERNMENTS*	**61**	**47**	**81**	**74**	**48**

Source: WTO

* Numbers are higher for "governments" because EU Member states submit a single schedule.
A total of 93 WTO Governments have telecom in their schedules

For public voice telephone service (not including cellular), a total of 69 WTO governments have committed to allowing at least two suppliers in one or more market segments either on an immediate or phased-in basis. Overall, 26 of these 69 governments have yet to implement certain aspects of their commitments and will do so on dates specified and committed upon in the schedules. Since February 1998, when the package of telecom commitments in the GATS Fourth Protocol entered into force, some of the phased-in commitments have already taken full effect. As of January 2000, the position was:

- 65 governments committed on **local services,** with 21 of these remaining subject to phase-in;
- 62 governments offered **long distance,** with 22 of these still subject to phase-in;

- 66 governments offered **international** service, with 26 of these subject to phase in (see Table 19 below).

In addition, a total of 50 governments committed to allowing simple resale of public voice telephony, with 20 of these governments yet to implement the phase-in of their commitments.

With respect to other types of services considered as basic services for WTO purposes, 79 governments have commitments on data transmission services, 70 governments have committed on access to cellular/mobile telephone markets, 63 governments have committed to competition in leased circuit services (the supply of transmission capacity), 69 governments include commitments on other types of mobile services (such as PCS, mobile data or paging). For satellite based communications, 60 governments committed on certain or all types of mobile satellite service or transport capacity and 50 governments committed on fixed satellite services or transport capacity. A number of these commitments are also subject to phase in on dates specified in the schedules. Such phase ins are usually related closely to the scheduled phase in of public voice services.

Table 19. GATS Commitments on Voice Telephone (number of governments)

Participant	Voice telephone					Add.'l commitments Ref. Paper	Add.'l commitments (other)
	Voice Tel.	**Local**	**Long Dist.**	**International**	**Simple Resale**		
(a) Commitments in the GATS 4th Protocol (69 Governments in all)							
Total (w/break down)	**61**	38 (18)	36 (17)	37 (20)	29 (14)	**57**	**6**
(b) Commitments including other schedules/commitments submitted later (including 10 more Governments)							
Total (w/breakdown)	**70**	44 (21)	40 (22)	40 (26)	30 (20)		
Total (of 79)	**70**	**65**	**62**	**66**	**50**	**66**	**6**

Source: WTO
Note: Bracket show number of Governments' commitments subject to phase in

As noted above, value-added services are included in the Schedules of 72 WTO governments. Even though more commonly subject to competition, they are listed in fewer Schedules than basic services simply because the extended negotiations concentrated on the latter. Leading examples of commitments on value-added services include: on-line

information and data base retrieval – committed by 73 governments; E-mail - committed by 71 governments; voice mail – committed by 67 governments; and Electronic Data Interchange – committed by 64 governments. Commitments on value added services are rarely subject to phase-in.

(b) The Nature of Commitments Made in The Schedules, Including the Types of Limitations On National Treatment and Market Access

Annex Tables 1 and 2 show **that most of the WTO Members have made partial commitments**. Further, such partial commitments were made much more for the mode of supply "**commercial presence**", than for other modes of supply.

Another noteworthy feature is that the mode of supply "**commercial presence" is also subject to the highest number of limitations**. Annex Table 3 shows that for "national treatment", most limitations relate to "nationality requirement", followed by limitations relating to residency requirement, authorizations requirements, and ownership of property land.

The number of limitations for "market access" are much more than those for national treatment. These relate mainly to limitations on number of suppliers, types of legal entities, and participation of foreign capital (see Annex Table 4).

Although there was general appreciation among Members that the accounting rate regimes in place would not be able to withstand the pressures brought about by competitive markets, it was decided to secure a shared understanding that Members would not challenge each other's accounting rates under the WTO's dispute settlement regime. Further, it was agreed that the understanding would be reviewed no later than the commencement of the new services negotiations, from 1st January 2000. However, certain countries (as mentioned above) included exemptions to the most favoured nation (MFN) rules with respect to their accounting rate systems.

(c) Exemptions to MFN Treatment

Exemptions to MFN treatment for telecommunications were taken by: **Antigua and Barbuda** (relating to Government extending to nationals of other Caricom-member countries treatment equal to its own nationals); **Argentina** (supply of fixed satellite services by geostationary satellites); **Brazil** (relating to distribution of radio or television programming directly to consumers); **Bangladesh, India, Pakistan, Sri Lanka** (the possibility of permitting Government or Government-run operator to apply differential measures, such as accounting rates, in bilateral agreements with other operators or countries); **Turkey** (relates to two neighbouring countries regarding fees for transit land connections and usage of satellite ground stations, and to the possibility of permitting Government or Government-run operator to apply differential measures, such as accounting rates, in bilateral agreements with other operators or countries); **United States** (for one-way satellite transmission of DTH and DBS television programming directly to consumers).

(d) More Detail on the Number of Telecommunication Service Sectors in Which WTO Members Have Made Commitments

Annex Table 5 below shows the telecommunications sectors for which different WTO Members have made commitments. Of the seventeen sectors considered here, the number of sectors covered by the commitments of various WTO Members is shown in Table 20 below. Table 20 shows that India's commitments cover ten service sector categories. However, for a better understanding of the commitments, we need to see the details of these commitments.

Table 20. Number of Telecommunication Service Sectors Covered by Various WTO Members in Their Schedules Commitments

Number of Service Sectors Covered	Countries
17	Antigua and Barbuda, Barbados, Belize, Czech Republic, Dominica,

	Georgia, Hungary, Jamaica, Jordan, Kenya, Kyrgyz Rep., Latvia, Slovak Rep., Switzerland, Turkey, United States of America
16	Argentina, Brazil, Canada, Estonia, Grenada, Korea Rep., New Zealand, Romania
15	Austria, Colombia, Hong Kong, Malaysia, Mexico, Peru, Poland, South Africa
14	Australia, European Community, Finland, Iceland, Japan, Norway, Sweden, Trinidad and Tobago
13	Bulgaria, Israel, Nicaragua
12	Chile, Morocco, Pakistan
11	Gambia, Indonesia, Philippines, Senegal, Singapore, Zimbabwe
10	Bangladesh, Cote d' Ivoire, Djibouti, Dominican Republic, Ghana, India, Mauritius, Nigeria, Uganda
9	Bolivia, Ecuador, El Salvadore, Guatemala, Liecthenstein, Papua New Guinea, Suriname
8	Brunei Darussalam, Panama, Thailand
7	Cuba, Mongolia, Venezuela
6	Lesotho, Sri Lanka, Tunisia
5	Slovenia
4	No countries
3	St. Kitts and Nevis
2	No countries
1	Congo RP, Guyana

We compare below commitments made by India with commitments made by certain WTO Members whose commitments cover a relatively large number of service sectors(, namely, Argentina, Australia, and the United States), and some of the countries in the Asian region (e.g., Bangladesh, Malaysia, and Sri Lanka). A consideration of the commitments made by these WTO Members would also provide an indication of the types of commitments that would be expected from India.

Argentina has:

- agreed to phased-in commitment liberalizing voice telephony (local, long distance, and international) and provision of other basic telecom services supplied on an international basis by November 2000;

- agreed to offer full competition in basic services other than voice, such as data transmission, etc. supplied in the national market and leased circuit services (international and national) without phase-in;
- agreed to open competition in mobile telecom services such as data, paging, and trunking.
- committed on duopoly in mobile cellular services and undertaken to allow new entrants subject to an economic needs test for the provision of mobile Personal Communication Services;
- committed to the Référence Paper on regulatory principles;
- submitted an MFN exemption list on telecommunications services involving the supply of fixed satellite services by geostationary satellites.

Australia has:

- offered unrestricted competition in virtually all basic telecom services as of July 1997;
- committed on existing free markets for voice telephony on a resale basis and many other basic services;
- offered to end limits on the number of satellite service providers (currently set at two) and on primary suppliers of public mobile cellular telephony and facilities-based carriers (both currently set at three) as of July 1997;
- offered no limits on foreign equity for new carriers;
- permitted foreign equity up to 11.7% of the government controlled carrier, TELSTRA, and requires majority Australian ownership of the mobile carrier, Vodaphone;
- removed foreign equity limitation for Optus; and
- committed to the Référence Paper on regulatory principles.

Bangladesh has committed to:

- two operators, in addition to the Government operator, to supply domestic long distance and local voice services as well as transmission facilities (leased circuit services);
- full competition in voice and data transmission over closed user groups and for internet access service;
- licenses for four suppliers of cellular mobile voice telephone service;
- reviewing the possibility of adding regulatory principles in the future.

Malaysia has committed to:

- commercial presence in Data and transmission services, Mobile data services and Telex and telegraph services through a locally incorporated joint venture corporation with Malaysian individuals or Malaysian controlled operations or through acquisition of shares of an existing licensed VAS operator/corporation
- aggregate foreign share holding up to 30 percent in Data and transmission services, Mobile data services and Telex and telegraph services

Sri Lanka has committed to:

- duopoly in international basic voice services from 2000, subject to satisfactory progress by the monopoly on tariff re-balancing;
- foreign equity participation of up to 35 per cent permitted for a strategic partner in the government owned SLT;
- four operators licensed for local and domestic long distance mobile cellular services;
- two licenses (in addition to SLT) for supply by wireless and local loop of basic voice telephony, data transmission, payphones, voice mail and fascimile (the two licensees are guaranteed exclusivity for five years);
- five licenses for public payphones services and for paging services licenses with possible additional suppliers of each to be permitted subject to economic needs tests;
- six operators in data communication services;

- foreign equity up to 40 per cent for all suppliers other than SLT, with investments over 40 per cent subject to case-by-case approval;
- reviewing in 2000, the number of licenses permitted;

Further, Sri Lanka indicated that issuance of licenses was under consideration for GMPCS services supplied through own gateways. It submitted an MFN exemption to permit the Government, or the Government-run operator to apply differential measures, such as accounting rates, in bilateral agreements with other operators or countries.

The United States has:

- committed to open markets for essentially all basic telecom services (facilities-based and resale) for all market segments (local, long distance, and international), including unrestricted access to a common carrier radio licenses for operators that are indirectly foreign owned;
- made the offer to also cover, for example, satellite-based services, cellular telephony and other mobile services;
- limitations on market access include no insurance of radio licenses to operators with more than 20% direct foreign ownership and Comsat retains exclusive rights to links with Intelsat and Inmarsat satellite capacity;
- committed to the Reference Paper on regulatory principles;
- submitted an MFN exemption list, involving one way satellite transmission of DTH and DBS television services and digital audio services.

A comparison of commitments made by the above countries with that made by **India** would indicate the limited nature of India's commitments. These were as follows:

(a) For voice telephony (limited to local/long distance, for public use over a public telecommunication transport network, wire based, i.e. for fixed network of subscribers):

- provision of the service through commercial presence only after the operator gets the requisite license;
- induction of one operator other than DOT/MTNL in each service area for a period of 10 years after which the position will be reviewed;
- The private operator should be a company registered in India in which total foreign equity must not exceed 25%;
- The service operator will be permitted to provide long distance service within the licensed service area only;
- Resale of voice telephony will not be permitted, but licensees can grant franchises for providing public call offices service.

(b) For circuit switched data transmission services:

- licensed voice telephone service operators will be permitted for transmission of data on the PSTN network in its licensed service area.

(c) For fascimile services:

- licensed voice telephone service operators will be permitted for transmission of fascimile on the PSTN network in its licensed service area;
- Franchisees of service operators can provide commercial fascimile services.

(d) For private leased circuit services:

- licensed voice telephone service operators will be permitted to provide leased circuits to their customers, for their own use within their licensed service area;
- Resale of such leased circuits will not be permitted.

(e) For cellular mobile telephony:

- The requisite license has to be obtained by the operator;

- Only digital (GSM) technology will be permitted and this will only be terrestrial based;
- There will be two cellular operators in each service area;
- The position will be reviewed after 10 years;
- The right of DOT/MTNL to enter into each service area is reserved;
- The private operator should be a company registered in India in which total foreign equity must not exceed 25%.

(f) has MFN exemptions with regard to accounting rates.

(g) Additional commitments taken are as follows:

- opening up of national long distance service beyond the service area to competition will be reviewed in 1999;
- opening up of international service to competition will be reviewed in 2004;
- commitment to a revised text (i.e. revised by India for its purpose) of the Reference Paper for regulatory framework. This revised text either deletes some provisions from the Reference Paper or alters it to clarify India's commitment. Annex 1 compares the relevant text of the Reference Paper and the commitment made with respect to those provisions by India.

Thus, India's commitments relating to the Reference Paper do not include the following disciplines that are contained in the text of the Reference Paper:

- should not engage in anti-competitive cross-subsidization;
- provision of interconnection in a timely fashion on terms and conditions and cost-oriented rates that are transparent, reasonable, and sufficiently unbundled;
- provide interconnection at any technically feasible point in the network;
- make publicly available the period of time normally required to reach a decision concerning an application for a license;
- make known to the applicant for a license, upon request, the reasons for the denial of a license;

- Procedures for allocation and use of scarce resources (including frequencies, numbers and rights of way) being carried out in a transparent and non-discriminatory manner;
- Make publicly available the current state of allocated frequency bands, without there being a need to provide a detailed identification of frequencies allocated for specific government uses.

5. COMPARISON OF WTO COMMITMENTS MADE BY INDIA WITH THE ACTUAL POLICY IMPLEMENTED/UNDER CONSIDERATION

India has made commitments only under mode 3 (i.e. commercial presence). Mode 4 for this sector is covered by its horizontal commitments which are limited to the entry of and temporary stay of business visitors, intra-corporate transferees like managers, executives and specialists and professionals.

Comparison of the applicable policy regime with India's commitment reflects the fact that the applicable regime is far more liberal than the commitments made by India. Moreover, the process of telecom liberalization is continuing and this will further augment the telecom market available to investors from India and abroad.

This picture can be seen, for example, from Tables 21(a), 21(b), 22 and 23 below.

Table 21(a). Market Structure For Selected Telecommunication Sectors in India In The Initial Period Of Reform in the 1990s

Segment	Market Structure	No. Of Operators Per Service Area	Coverage	Period of License (years)
Fixed Telephony	Duopoly	2	Delhi and Circles	15
Domestic Long Distance	Monopoly (DoT/MTNL)	1	All India	No limit
International	Monopoly (VSNL)	1	All India	No Limit
Cellular	Limited Competition	2	Metros and Circles	10 years
Radio Paging	Limited Competition	4	Cities and Circles	10 years
GMPCS*	Full Competition	1 at present (free entry allowed)	All India	Provisional - One Year

Table 21(b). Market Structure For Selected Telecommunication Sectors In India: Next Few Years Following NTP 1999

Segment	Market Structure	No. Of Operators Per Service Area	Service Areas	Period of License
Fixed Telephone Services	Duopoly	2 (Eventually multipoly)	Delhi and Circles	20 years
Domestic Long Distance	Multipoly	Market determined	All India	20 years
International	Monopoly (VSNL)	1 (till 2004)	All India	No Limit

Cellular	Oligopoly	3 (others on recommendation of TRAI)	Metros and Circles	20 years
Radio Paging	Limited Competition	4 (others on recommendation of TRAI)	Cities and Circles	20 years
GMPCS*	Full Competition	1 at present (free entry allowed)	All India	20 years

(GMPCS* = Global Mobile Personal Communication System by Satellite)

Source: TRAI (1999), Consultation Paper on Liberalization of Domestic Long Distance Service, and NTP 1999

Table 22. Chronology Of Significant Events In the Process of India's Telecom De-Regulation

Date	Event
June, 1992	Bids invited for radio paging services in 27 cities
July, 1992	Bids invited for cellular mobile services in four metro cities
May, 1994	National Telecom Policy announced
July, 1994	Radio paging, V-SAT data services, electronic mail services, voice - mail and video - text services opened to private providers
September, 1994	DoT guidelines for private sector entry into basic telecom services in the country
October, 1994	Eight cellular licensees for four metros finalized
January, 1995	DoT calls for proposal to operate basic, cellular telecom services and public mobile radio trunked services (PMRTS)
August, 1995	DoT receives bids for basic, cellular and PMRT services
December, 1995	Most cellular operators in circles sign license agreements
December, 1995	DoT announces cap on the number of circles basic operators can roll out services in. Licensees selected for five circles.
January, 1996	After setting reserve prices for circles, DoT invites fresh bids for basic services in 13 circles
March, 1996	Five successful bidders short-listed for providing basic services
May, 1996	Poor response to third round of basic telecom bidding. Only one company bids – for Madhya Pradesh.
January, 1997	Telecom Regulatory Authority of India (TRAI) formed.
February, 1997	First basic telecom service company signs license and interconnect agreements with DoT for Madhya Pradesh
March, 1997	TRAI becomes operational with the induction of a chairperson, vice-chairperson and a Member

	Second basic service provider signs basic telecom license agreement for Gujarat
September, 1997	Internet Policy cleared; License agreement for basic services in Maharashtra also becomes operational
November, 1997	Basic service licensees for Andhra Pradesh and Punjab sign basic telecom agreements with DoT.
March 1999	TRAI Issues First Tariff Order.
March 1999	*New Telecom Policy approved;* *License period extended to 20 years, renewable.*
May 1999	*TRAI Issues First Regulation on Interconnection and Usage Charge*
September 1999	*Cellular operators allowed the use of any digital technology;* *MTNL given a license to provide cellular mobile service under these flexible technology conditions.*
October, 1999	*Cabinet approves switch-over from bid amounts for license fee to revenue share license fee for basic services and cellular mobile*
2000	*Government has allowed the setting up of eight international gateways to private internet operators;* *Government is considering the conditions under which domestic long distance sector will be liberalized;* *DOT announces that it will provide (on an experimental basis) long distance calls services using packet-switching technology;* *DOT to enter the cellular mobile market in Assam, Bihar, West Bengal and Tamil Nadu by mid-2000;* *All district headquarters to be connected by internet nodes in 2000;* *Mergers/acquisitions of certain cellular mobile firms in India has started, which is likely to give rise to entities with substantial network, subscriber and resource base.*

Table 23. Recommendations sought by the Government from TRAI In Order to Help Implement NTP 1999

Policy regarding introduction of **competition in domestic long distance services** including recommendations on the scope of service, service area, number of long distance operators, license fee structure, selection criteria for service providers, and interconnection between service providers in different service areas
Issue of **fresh licenses for radio paging service** providers, including entry of more operators in the

service area, level of entry fee, percentage of revenue share as license fee, definition of revenue, basis for selection, and migration of existing licensees to revenue sharing arrangement regime
Issue of **fresh licenses for VSAT service providers**, including level of entry fee, percentage of revenue share as license fee, and other facets of license conditions;
Issue of **fresh licenses for the fixed service providers**, including the number of private service providers for a circle besides DOT, selection criteria, migration from fixed license fee to revenue sharing arrangement regime for existing licensees, and other facets of license conditions
Issue of **fresh licenses to cellular mobile service providers in the six vacant circles/slots** (one slot each in West Bengal and Assam circles; two slots each in Jammu and Kashmir, and Andaman and Nicobar), including level of entry fee and percentage of revenue share from the licensor, definition of revenue for the purpose of revenue sharing, **migration of existing cellular mobile service providers to revenue sharing arrangement**, and any other issue considered relevant
Issue of **fresh license for public mobile radio trunk services, including issue of fresh licenses throughout the country**, level of entry fee and percentage of revenue share as license fee, and definition of the revenue for the purpose of revenue sharing
Recommendations on **terms and conditions of license agreement for GMPCS**, including an examination of the provisional license, terms and conditions of the license, and quantum and structure of license fee
Terms and Conditions of usage of backbone network of utility service providers, **including the class of operators to fund Universal Access Levy**, various cost models or approaches to determine the percentage contribution from the revenue for the operators and the mechanisms for computing it, per unit subsidy for VPTs and rural DELs separately to cover capital and recurring expenditure, and whether per unit subsidy will be the same or different in different geographical area/tribal and non-tribal areas of the country

Likewise, the extent of foreign investment in Indian companies providing telecom services is much more than the maximum of 25 per cent that has been committed in the WTO. For instance, with the approval of the FIPB, maximum foreign equity permitted in telecom services sector is as follows:

49 per cent	Basic, cellular mobile, paging, V-SAT, mobile radio trunking, internet; Investment companies set up for investments in telecom services companies (investments by these companies in a telecom services company is treated as part of domestic equity and is not set off against the foreign equity cap)
51 per cent	E-mail, voice mail, on line information and data retrieval, on lone information and/or data processing, enhanced/value added fascimile service including store and forward, store and retrieve

Also, dividend income and capital invested is fully repatriable, though telecom services companies are not permitted to make royalty payments.

Incentives provided for the telecom sector also include:

- License fee paid by telecom service providers is eligible for amortisation for tax purposes;
- Telecom service licenses can be assigned;
- Limit of External Commercial Borrowings (foreign currency debt) by telecom services companies has been raised to 50 percent of the project cost (including license fee);
- Investments in equity shares and debentures of telecom services companies qualify for tax rebate;
- Telecom services companies enjoy 100 percent tax holiday for a period of 5 years and 30 percent for further period of 5 years during the first 15 years from commencement of business;
- Import of specified telecom equipment is permitted at concessional customs duty rates;
- Import of all capital goods for manufacturing telecom equipment does not require any license.

For the internet sector, which is likely to provide a basis for much of the dynamic telecom-based activity in the future, India has a very permissive regime. The main features of the policy, announced in 1998, include, for example:

- No restriction on the number of service Providers;
- Operation could be on national, regional or on district basis;

- Service provider has option of building or leasing capacity from infrastructure owners (Railways, energy utilities);
- Foreign equity participation capped at 49 percent;
- No prior experience in IT and telecom required;
- Licenses to be issued for a period of 15 years, extendable by 5 years;
- No license fee for the first 5 years. Token fee of Re 1 per annum thereafter;
- Service Providers allowed to set up International gateways after obtaining security clearance;
- Telephony on Internet not permitted;
- Freedom to fix tariffs. However, the TRAI may review and fix tariff at any time during the validity of the licence.

Similarly, certain regulatory disciplines committed by India (in terms of the Reference Paper), are less onerous than the disciplines actually applied in practice. For example, under the WTO, India has not agreed to apply a non-discriminatory interconnection regime, but non-discrimination is one of the principles of the interconnection regime that has been specified by the regulator, i.e. by Telecom Regulatory Authority of India. Likewise, a judgement of TRAI has specified that interconnection should be provided at any technically feasible point in the network. Annex 2 contains some details that shows that the application of regulatory principles in India is much stricter than the commitments by India under the GATS.

Further, India is embarking on liberalization in a number of telecom sectors, and the actual extent of liberalization is likely to be increased even more in the future, bearing in mind that the negotiations at WTO will take a few years to be concluded. These changes may occur even with respect to internet telephony and international call market, given the

recent policy initiative for providing long-distance calls through packet-switching, and the permission granted to establish private international gateways.

One implication of these various policy initiatives would be that India could improve its commitments under the WTO without any need for altering its policy as a consequence of making such an offer. Another is that the unilateral policy changes made by India would provide a basis for others to seek even greater access from India than they may have without such policy changes.

Therefore, two important questions for India during the negotiations will be:

- **Which of the policy initiatives that it has taken (or will take in the near future) could be included in the list of commitments that may be made under the WTO process;**
- **What are the likely demands of other nations that would extend beyond the unilateral policy initiatives taken by India, and to what extent should such demands be considered for India's possible commitments under the WTO.**

To properly consider these issues, India needs to assess also what it would seek from other countries during the negotiations.

6. TELECOM POLICIES OF OTHER WTO MEMBERS THAT INDIA SHOULD CONSIDER DURING GATS NEGOTIATIONS

India's main objectives in the area of telecom include provision of world class telecom services at affordable prices, and achieving the Universal Access objectives.

Access to world class technologies is possible through procurement of such technologies by the existing service providers and through investment by other service providers. Both these depend not on policies of other countries but on our own policies, including policies related to provision of band-width to service providers. This is particularly because in the telecom market, a number of investors and technology suppliers are seeking markets for their operations, and from India's perspective, these attempts are not restricted by policies of other countries.

Likewise, provision of world class services require enhanced interaction among various networks, and the regulatory principles required for this purpose depend on our own policies and not on those of other countries. The same is valid also for meeting India's Universal Service Obligations.

(a) External constraints on India's exports of telecom services under the mode of supply "commercial presence"

Discussions with representatives of some major telecom service providers in India (DTS, MTNL, VSNL, Bharati Telecom) suggest that at present there does not seem to be any major constraint on India's telecom operations in other countries, including with respect to

any planned investments in other countries. In general, the Indian telecom companies are not planning investment in telecom ventures in large markets; in any event, there is considerable flexibility provided in these markets in case Indian firms contemplate operations there. In certain cases where investment abroad may be considered by the major Indian companies, the request for such investment comes from the Governments of the countries concerned. This implies that, in effect, investments abroad contemplated by Indian telecom companies are unlikely to face much constraint.

(b) External constraints on India's exports of telecom services under "cross border" and "consumption abroad" modes of supply

Cross border supply of Indian telecom services relates to provision of telecom services to those outside India seeking to get in touch with persons in India, for example, through international calls/internet. For these services too, there does not seems to be any significant demand from India regarding liberalized policies of other countries. Rather, India has to make efforts to improve its capacity and environment for increasing the supply of such exports.

Exports of telecom services through the mode of supply "consumption abroad" involves sales of telecom services in India to foreign consumers. For this mode too, there is unlikely to be any negotiating demand from India on other countries.

Since telecom is used as a means of supplying other services, an important feature regarding these two modes of supply for telecom is that the trade regime for other products (for which telecom is used as an input) would have a bearing on exports of telecom itself. It is difficult to identify these other services *a priori*, because they would also include services linked to e-commerce and call centres. However, to the extent that these involve some of the existing important services, such as financial services, the policies relating to them are covered in the studies prepared on those services.

(c) External constraints on India's exports of telecom services under the mode of supply "movement of natural persons"

Movement of natural persons is not a common mode for supply of telecom services. Therefore, there is unlikely to be any specific negotiating demand from India with respect to this mode of supply for telecom. To the extent that there is the general issue of greater access to foreign markets through "movement of natural persons", this would be covered by the study prepared on this topic. Likewise, any such demand for certain sectors that use telecom facilities, such as software, is covered by the studies on those sectors.

Thus, it seems that in the area of telecom, India is likely to make little, if any, demand with respect to policies of other countries. There is, however, a likelihood that other countries will demand commitments from India regarding its telecom policies. In this situation, Indian negotiators will have to consider whether, and to what extent, they would like to exchange concessions made by India in telecom with concessions obtained by India in other sectors.

Before considering the likely demands that other countries will make regarding Indian policies, it would be useful to take a look at India's telecom policy initiatives, including the various priority areas for policy action.

7. TELECOM POLICY REGIME IN INDIA

This section first addresses the organizations involved in policy making, and then traces the evolution of policies in the Indian telecom sector.

A. Telecom Policy Making Structure

(a) Department of Telecommunications, Ministry of Communications

The Department of Telecommunications (DOT), Ministry of Communications, is the Authority that looks after the licensing and overall policy making in India. Till recently, DOT was also the main service provider. The service provider section has been separated from DOT, and is now functioning as Department of Telecom Services (DTS). There is, however, yet to be full separation of DTS and DOT. For example, a number of DTS officials also function as officials of the DOT. By 2001, the Government hopes to fully separate the two functions through corporatization of DTS.

Two other Government corporations are important service providers. Mahanagar Telephone Nigam Limited (MTNL) operates in Mumbai and Delhi as a service provider with licenses for, inter alia, basic service, cellular mobile, and internet. Videsh Sanchar Nigam Limited (VSNL) has a monopoly in the international call segment, and has a license for providing some other services including internet. The Government is a major share-holder in both

MTNL and VSNL, and has substantive control over the decision making of these organisations.

At present, the main service provider in India (DTS) does not necessarily interact on commercial considerations with MTNL/VSNL. This is likely to change once DTS is corporatized. In fact, they may also end up competing with each other for the same market. This has already started happening in certain cases, for instance, with MTNL and VSNL for the internet market. The competitive situation would require greater autonomy for MTNL and VSNL.

(b) Telecom Regulatory Authority of India

The Telecom Regulatory Authority of India Act 1997 established the Telecom Regulatory Authority of India (TRAI) in January 1997, with a view to providing an effective regulatory framework and adequate safeguards to ensure fair competition and protection of consumer interests. To achieve the objectives of the TRAI Act, TRAI was given power to issue directions to service providers, make regulations, notify tariffs by Order, and adjudicate disputes arising between Government (in its role as service provider) and any other service provider. More details are provided in Annex 3.

On 24th January, 2000, an Ordinance amended the TRAI Act 1997 and altered its basic structure. For example, the adjudicatory role of the TRAI has been separated and has been assigned to an Telecom Dispute Settlement and Appellate Tribunal (TDSAT), a new organisation. This Tribunal has also been given the dispute settlement responsibility in respect of disputes between licensor and licensee. Further, the decisions of the Tribunal may be challenged only in the Supreme Court.

The remaining functions of TRAI have been better defined and and even enhanced, for instance with respect to powers relating specifically interconnection conditions. However, while there has been an increase in the powers of the Authority (other than dispute settlement), the Ordinance has led to a weakening of the guarantee that was provided in the Act with respect to the five year working period for the TRAI Chairman and Members. This statutory guarantee has been done away with by the Ordinance, which provides for less stringent conditions for removal of any Authority Member or Chairman. To that extent, the independence of the Authority has been diluted. Details are in Annex 3.

B. Policy Developments in the Indian Telecom Sector

Section 6 above indicates that some policies to liberalize telecom began before the announcement of the 1994 National Telecom Policy (NTP). However, a major policy re-orientation was established only with the announcement of NTP 19994.

(a) NTP 1994 recognized a need for large investment and private sector entry into telecom

With NTP 1994, there was a change in perception about telecom services. Earlier, telecom was earlier considered a luxury. NTP 1994 recognized its role in development as an important infrastructure service, and emphasised the objective of building a world class telecommunication sector at affordable prices. It combined quality of service with Universal Service Obligation, so that telephone would be provided on demand, and basic telecom would be available for all Indian villages. It also sought to make possible India's emergence as a major manufacturing/export base of telecom equipment.

Table24. Comparison of Demand Projections and Actual Demand for Telephones

(Nos. in millions)

Year ended 31st March	Demand Projections	Actual – Direct Exchange Lines	Registered on Waiting List	Total Demand (DELs plus Waiting List)
1996	12.8	11.97	2.28	14.25
1997	15.7	14.54	2.89	17.43
1998	17.4	17.80	2.71	20.51
1999	20.5	21.59	1.99	23.58
2000	23.4			
2001	26.8			
2002	30.7			

Source: *India Infrastructure Report*, 1997 (for Demand Projections), and TRAI and DoT (for DELs and Waiting List)

NTP 1994 recognized that resources available with the public sector entities were not adequate to increase the capacity to the extent that was required to meet the anticipated demand. DOT's Perspective Plan for the years 1997-2007 estimated that for the next seven years, financing an addition of 60 million new phone connections would involve an outlay of about Rs. 1.800 trillion at current prices. This aspect becomes clear when one looks at the prevailing estimates of demand and waiting list for DELs. For example, Table 24 above shows that even with high rates of growth for DELs, a waiting list of about 2 million was still existing by 1999, and teledensity would be just above 2 per cent. The Government recognized in NTP 1994 that public resources would not be sufficient for achieving the targets and private sector participation was essential to bridge the resource gap.[1]

(b) Conditions for private entry into basic and cellular mobile sector

The main provisions of the DOT guidelines released in September 1994 for private sector entry in Basic and Cellular Mobile services included:**.**

[1] **The total Ninth Plan public sector outlay for communications (inclusive of Information Technology and Posts) is Rs. 476 billion.**

- Each circle to have two operators offering basic telecom services: DoT or MTNL and a new private sector operator. (Public sector companies were not eligible to bid for the circles);
- Beside these two basic operators, there would be private operators offering ‘Value Added Services' like cellular phones, radio paging and radio trunking services;
- The private basic operator will be allowed to set up an independent telephone network that will include local exchanges, exchanges at the district level and exchanges at the state level; interconnection outside a private operators service area will be only through DoT;
- Both the private operator and DoT will pay access charge while accessing each other’s network; international calls will involve a higher access charge;
- Penalties to be levied if the private operator does not conform to the 'roll-out' (network expansion) plans furnished to DoT while bidding;
- DoT’s tariffs to serve as ceiling levels; future tariff revisions to be decided by the Telecom Regulator;
- Tender conditions specifying the type of bidder, foreign collaborations, net worth and operating experience were laid down to ensure that only financially strong and technically competent private companies would enter the market. The experience criteria specified that every local bidder must have a foreign collaborator;
- Choice of technology and equipment left to private operators subject to ITU/DoT technical specifications;

- The single private operator in each circle, not allowed to carry long-distance national or international traffic outside the circle of its operation;
- The inter-circle telecom traffic to be exclusively handled by DoT and international calls through VSNL. This DoT monopoly of inter-circle long-distance traffic and VSNL monopoly of international call traffic to be reviewed by the proposed Telecom Regulator in 1999 and 2004 respectively.

An exclusive period of ten years was provided for the second basic service 'Access Provider' and network operator. Except where use of radio spectrum was involved (e.g., Cellular and Radio Paging), there was no limit to number of operators in the 'Value Added Services' segment. Similar to Basic services, each service area for Cellular Mobile Services was to be serviced by two operators with the difference that both were to be private operators. A ten year license period was provided. DoT, however, reserved the right to enter the market at a future date.

Direct interconnection between different private service providers (basic, cellular and 'Value Added Services') in the same service area was not permitted. Such interconnection had to be necessarily through DoT's network.

A competitive bidding process was resorted to select licenses for basic service. For cellular mobile, eight licences (two in each of the metros) were awarded in October 1994. In the initial three years the licence fee varied by city, increasing from x, 2x and 4x in years 1, 2 and

3. For years 4 to 10, the licence fee was linked to the subscriber base, subject to a reserve amount. In the selection process for basic and cellular services for the Circles, the policy approach was to set the license fees through a competitive bidding process.

(c) High bid amounts and issues related to viability

While only six basic service operators have been licensed (with only three providing services as yet), the number of cellular licensees are many more, i.e., they are in 18 circles and 4 metros. However, according to the operators, most of the licenses (Basic and Cellular) have run into problems of viability. There is evidence to suggest that this has been due to a combination of factors like high bid amounts for up-front license fee, unrealistic projection of market size by bidders, and lower than expected revenues per subscriber. An example of the high bids is shown in Tables 25(a) and 25(b) below. A comparison of these amounts could be made , for example, with the situation for cellular mobile. TRAI has calculated the Net Present Value of the License Fees to be paid by Cellular Operators for all Circles at Rs. 200 billion over the ten-year license period, compared to DoT revenues of Rs. 164 billion for 1997-98[2]. Committed License Fees for Basic services for certain Circles are three to four times the annual DoT revenues for the Circle.

[2] **The Cellular operators of the four metros are better off in this respect. License fee was not a criterion for bids in their case. Also, a delay of over two years (on account of litigation) in their actual entry into operation paradoxically helped the operators to start on a much higher subscriber base compared to that estimated for fixing the license fee. This was due to sharp drop in handset prices that occurred over this period and an improved economic climate as compared to 1992-93.**

Table 25(a). Basic Service: Circle Wise License Fee Commitments Compared To DOT Revenue in 1997-98 (Rs. crore)

Circles	DOT Revenue	Licensed Circles	Circles With Letters of Intent
Andhra Pradesh	1,006	4,200	
Andaman and Nicobar	6		
Assam	134		
Bihar	356		267
Delhi and Mumbai	4,655		15,085 (only Delhi)
Gujarat	1,194	3,396	
Himachal Pradesh	75		
Haryana	313		4,060
Jammu and Kashmir	74		
Karnataka	1,192		5,796
Kerala	657		
Madhya Pradesh	568	655	
Maharashtra	1,266	13,909	
North East	75		
Orissa	174		2,065
Punjab	667	4,593	
Rajasthan	523	1,110	
Tamil Nadu	1,644		
UP (East)	506		
UP (West)	476		6,580
West Bengal	804		
TOTAL	**16,365**	**27,963**	**33,873**

Table 25(b). Cellular Mobile: Bid License Fee Amounts for Different Circles

(Rs. crore)

Circle	Circle	Name of Operator	Total levy quoted for 10yrs.	PV of quoted levy	License fee accepted	PV of license fee
Category A	A.P.	J.T.Mobile	1001.00	502.76	1001.00	502.76
	A.P.	Tata Cellular	858.00	430.94	1001.00	502.76
	Gujarat	Birla AT&T	1794.10	901.11	1794.10	901.11
	Gujarat	Fascel	1229.25	617.41	1794.10	901.11
	Karnataka	Modicom	1393.00	699.65	1393.00	699.65
	Karnataka	J.T.Mobile	1320.00	662.99	1393.00	699.65
	Maharashtra	Birla AT&T	1657.70	832.60	1657.70	832.60
	Maharashtra	BPL Cellular	1463.00	734.81	1657.70	832.60
	Tamil Nadu	BPL Cellular	836.00	419.89	836.00	419.89
	Tamil Nadu	Srinivas Cellcom	450.00	252.57	836.00	419.89
Category B	Haryana	AirCel Digilink	240.00	134.71	240.00	134.71
	Haryana	Escotel	245.86	123.49	240.00	134.71
	Kerala	BPL Cellular	517.00	259.67	517.00	259.67
	Kerala	Escotel	384.83	193.29	517.00	259.67
	M.P	RPG Cellcom	51.00	25.62	51.00	25.62
	M.P	Reliance Telecom	5.61	2.82	51.00	25.62
	Punjab	Modicom	1266.00	635.86	1266.00	635.86
	Punjab	JT Mobile	914.50	459.25	1266.00	635.86
	Rajasthan	Aircel Digilink	210.00	117.87	382.00	191.86
	Rajasthan	Hexacom	161.00	99.26	382.00	191.86
	Rajasthan	Modicom	382.00	191.86	Not eligible	Not eligible
	U.P (E)	Koshika Telecom	210.88	146.00	210.88	146.00
	U.P.(E)	Aircel Digilink	210.00	117.87	210.88	146.00
	U.P.(W)	Escotel	406.21	204.02	406.21	204.02
	U.P.(W)	Koshika Telecom	258.21	178.75	406.21	204.02
	W.B.	Reliance Telecom	42.00	21.26	42.00	21.26
Category C	Assam	Reliance Telecom	1.32	0.67	1.32	0.67
	Bihar	Koshika Telecom	136.53	94.52	136.53	94.52
	Bihar	Reliance Telecom	2.64	1.33	136.53	94.52
	H.P	Bharti Telenet	14.96	8.14	14.96	8.14
	H.P	Reliance Telecom	1.32	0.67	14.96	8.14
	Orissa	Koshika Telecom	89.22	61.77	89.22	61.77

Circle	Circle	Name of Operator	Total levy quoted for 10yrs.	PV of quoted levy	License fee accepted	PV of license fee
	Orissa	Reliance Telecom	2.64	1.33	89.22	61.77
	North East	Hexacom	1.90	1.25	1.90	1.25
	North East	Reliance Telecom	1.32	0.67	1.90	1.25

The high bid amounts are believed to be an important reason for private sector operators' failure in making their projects bankable for effecting financial closure, and for establishing themselves in the market. A general concern at the policy level has been about how to deal with this situation, which has contributed significantly to the non-achievement of the objectives of NTP 1994 (some say that in certain cases, e.g. providing all villages with telephones, the objectives were too optimistic). The need to improve the process of private sector entry in to the Indian telecom sector got linked to another important development in the telecom services, namely, convergence of technologies and services. It was believed that India had a portential to emerge as an important centre for the development of the Information Technology sectors and the realisation of this potential would depend on a fast roll out of indirect services which in turn was contingent on the availability of a strong and vibrant telecom infrastructure sector. This led to the formation of a New Telecom Policy during 1999.

(d) New Telecom Policy 1999 (NTP 1999)

NTP 1999 aims at providing a modern and efficient telecom infrastructure, and takes account of the convergence of IT, media, telecom and consumer electronics. The emphasis is on making India an "IT super-power". It balances the provision of 'Universal Service' (including unconnected and rural areas, re-targeted for year 2002) with the provision of high-level services capable of meeting needs of the country's economy. The latter objective is further amplified to include 'Internet' access to all District head quarters by 2000, and providing high speed data and multimedia capabilities to all towns of population of 200,000 and above by 2002.

Whereas NTP 94 only acknowledged the need to induct private participation in a big way into value added as well as basic services, and to "ensure fair competition", NTP 99 goes further in targeting a greater competitive environment and a level playing field between private and public sector operators.

NTP 1999 sets a target average penetration of 7 per hundred by year 2005 (and 15 per cent by 2010), and targets for rural 'tele-density' to increase from the current level of 0.4 per cent to 4 per cent during the same period.

To meet the teledensity targets, it is estimated that a capital expenditure of Rs. 4,000 billion for installing about 130 million lines will be required. Recognizing the role of private investment, NTP 1999 envisages multiple operators in the market for various services. The Policy allows DOT/MTNL to enter as third cellular mobile operators in any service area if they wish to provide these services. To ensure a level playing field, DoT and MTNL will have to pay license fee but DoT's license fee will be refunded on the ground that it has to meet the Universal Service Obligations.

Universal Service Obligations include targets of connectivity to all villages (by year 2002), providing Internet access to all district headquarters (by 2000), ensuring 'telephone on demand' in both urban and rural areas by 2002.

Another major change has been a shift from the existing license fee system to one based on one time entry fee combined with revenue share payments as license fee.

Following are some of the other notable steps envisaged under the 1999 Policy:

- Transforming, in a time bound manner, the telecommunications sector to a greater competitive environment in both urban and rural areas and providing equal opportunities and level playing field for all players;
- Speeding up competition in domestic long distance, including usage of existing backbone network of public and private entities in Rail transport, Power and Energy sectors for data (immediately) and for domestic long distance voice communication when latter is opened to competition from January 2000. This opens up the scope for entry of a new category of ' infrastructure providers' or 'carrier's carrier';
- The Fixed Service Providers (FSP) to be freely permitted to establish 'last mile' linkages to provide fixed services and carry long distance traffic within their service area without seeking an additional licence. Direct interconnectivity between FSP's and any other type of service provider (including another FSP) in their area of operation and sharing of infrastructure with any other type of service provider permitted;
- Policy to convert PCO's, wherever justified, into Public Teleinfo centres having multimedia capability like ISDN services, remote database access, government and community information systems etc.;
- Flexibility for different service providers to provide another type of service, subject to having obtained the relevant license for that service;
- Strengthening research and development efforts in the country and providing an impetus to build world-class manufacturing capabilities;
- Achieving efficiency and transparency in spectrum management;
- Cable operators to be permitted to provide last-mile linkages and switched services within their service areas of operation. Subject to obtaining a basic services license, they will be permitted to provide two-way communication including voice, data and information services.

- long term policy will be to have uniform 20-year licenses for both Basic services and Cellular Mobile. Extensions of license periods initially by five years and subsequent ten year extensions are also envisaged;
- Commitment to restructure DOT;
- Interconnect between private service providers in same Circle and between service provider and VSNL along with introduction of competition in Domestic Long Distance;
- the number of players in each circle for Basic Services and their mode of selection would be decided on the basis of recommendations from TRAI;
- liberalization in other telecom service sectors such as GMPCS, V-SAT, Public Mobile Radio Trunking Service, radio paging.
- Undertaking to review interconnectivity between private service providers of different service areas, in consultation with TRAI;
- Resources for meeting the USO would be raised through a 'universal access levy' which would be a percentage of the revenue earned by all the operators under various licences (percentage to be decided by the Government in consultation with TRAI);
- Permission for 'resale' of domestic telephony;
- Clarity regarding number of licenses that each operator may be granted. (This could lead to consolidation of industry operators over the long term);
- Emphasis on certain other issues including Standardisation, Human Resource Development and Training, Disaster Management and Change in Legislation

This is a very wide canvas for policy initiatives, and would result in fundamental changes in the access provided to others in the Indian telecom market. The next section considers some of the important policy areas which require special consideration, including those which are likely to be the subject of attention by other countries during the GATS negotiations.

8. IMPORTANT AREAS FOR DOMESTIC POLICY AND WTO NEGOTIATIONS

The telecom policy regime in India is evolving, as it should, for domestic policy reasons. However, some of these policies will become the subject matter for negotiations in the WTO services negotiations, which have technically started from January 2000. Wherever applicable, this overlap is indicated in this Section.

(A) License Fee Regime

With the previous license fee regime for basic and cellular mobile being replaced by a revenue sharing one, the up-front license fee incidence has been reduced. This license fee regime makes it easier for operators to commence and consolidate their operations. The revised regime would also help attract new licensees for the un-allotted service areas. However, there are two important areas for domestic policy consideration:

- the percentage of revenue that should be charged as license fee;
- how to determine the entry fee.

At present, there is a difference of opinion on the revenue share percentage that should be charged as license fee. One view is that this should be a small amount, basically to cover the cost of induction and administration of licenses, that the services can be provided at a lower cost. The contrary view is that there is considerable surplus in the telecom sector, and some of this "rent" should be appropriated by the Government through the license fee mechanism. The current view of the Government for the cellular mobile and domestic long distance appear to be that the revenue share percentage should be around15 per cent—basically on an adhoc basis.

On entry fee too, one view is to specify an amount that will discourage frivolous entry. Another is to use this as a means of selection in a restricted entry regime. The situation for entry fee with bids is different from that with bids for license fee in general because the operator would have already made the payment of the entry fee and would have an incentive to recover the amount through its operations. Of course, even for entry fee, a situation of over-bidding could arise. To credibly handle this situation, it is necessary to have a license fee regime that is simple and "fair", with well defined criteria on how to terminate a license and select another operator in place of the failed one.

However, irrespective of the decisions made with regard to these policy areas, it is highly unlikely that under the WTO negotiations, there will be any demand made on India with respect to these aspects.

(B) <u>Competition in Domestic Long Distance</u>

Policy considerations regarding liberalization of domestic long distance involve a number of decisions regarding:

- *Type of Competition*, that is whether the entities will compete on facilities or service or both;
- *Areas of operation*, which means geographical boundaries within which these entities will be allowed to operate.

- *Degree of Competition*, free entry or limited number of entities to be licensed in the segment;
- *Time Frame* for policy implementation and transition through different stages of competition

At present, DTS is the only provider of domestic long distance (DLD) services in the country. The private operators providing basic/cellular mobile services in various circles are allowed to offer long distance services to their subscribers within their service areas, but inter-circle long distance traffic is the monopoly of DTS.

In addition to the DTS, which owns most of the long distance telecommunications infrastructure in the country, organizations such as the Railways, State Electricity Boards, Power Grid Corporation of India Ltd. (PGCIL) and Gas Authority of India Ltd. (GAIL) have certain infrastructure that could be used for long distance transmission. These agencies possess Right of Way (RoW) required to deploy Optic Fibre Cable (OFC) along a route which is a critical asset. NTP 1999 envisages utilization of these facilities for voice services in addition to data, which is already permitted. Hence, a telephone service provider should have an option to either build its facilities or lease them from owners of any such facilities.

According to NTP 1999, DLD beyond the service area will be opened up for private operators from 2000.[3] All access service providers will have to provide interconnection to the Domestic Long Distance Operator (DLDO) so that the subscriber can exercise choice with respect to the DLDO. NTP 1999 also allows resale for domestic telephony. Competition can be introduced either through facilities-based or non-facilities-based modality. Non-facilities-based competition would entail competition by entities not operating their own facilities. However, international trends show that resellers are a feature of mature markets representing unrestricted competition in services. Most developing countries do not allow third party resale in the initial phases of liberalisation.

[3] There are two contrasting interpretations of the term "beyond service area". One interpretation is that the intra-circle DLD services will not be opened for competition, since basic service licensees have exclusivity in

However, certain complications may arise in the context of DLD service provision, because:

- There would be a possibility of by-pass of DLD traffic due to cheaper leased circuits and use of voice over internet;
- There would be a need to move to some cost-based interconnection/usage charge regime. This may create transition problems with regard to the charging (or revenue share) regime that is in place for the existing service providers of basic and cellular mobile services.

The Recommendations of TRAI regarding DLD liberalization and the preliminary decisions of the Government in this regard are summarized in Annex 4.

(a) Tariff and Bypass

Tariff and bypass issues, though immensely important for the domestic policy situation, are not likely to be the subject of negotiations.

(b) Internet Telephony

An important demand during the previous negotiations was to include internet telephony in the list of commitments. Though internet telephony is still prohibited in India, this situation is unlikel;y to continue for long. This is indicated, for example, by the fact that DTS has now decided to provide long distance call service based on packet switching. Further, there are now technologies available that drastically reduce the cost of long distance carriage. And these technologies are likely to be applied in the liberalized long distance market of India.

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their service areas for 10 years. The other view is , although the basic service license agreement confers the right to offer intra-circle long distance services, this cannot be construed as an exclusive right to offer these services.

Therefore, the cost advantage of internet telephony will be substantially reduced, and it would be possible to consider its authorization in due time.

Internet telephony will be an issue for negotiations and commitments in the WTO.

(c) Cost based interconnection charges

Though India has not committed in the WTO to cost based interconnection charges, this principle has been adopted by TRAI in its Regulation (dated 28th May, 1999) on interconnection charges. Thus, in practice, cost-based interconnection charges are to be applied in India. This also prepares the grounds for non-discriminatory treatment of various operators providing any particular telecom service, a criteria that is essential if a multi-operator system has to become effective and fully functional. This criteria too is part of the conditions specified by TRAI in its Regulation of 28th May, 1999.

Therefore, cost-based interconnection charge is another policy initiative that could be part of India's offer list, and this would be of interest to the other countries too.

(d) Type of competition (Facilities-based or other)

In the initial period, countries generally have facilities based competition. In the Indian situation, the possibility of leasing facilities of non-telecom companies has been envisaged for domestic long distance segment. Nonetheless, the basic thrust is towards a facilities-based competition, though NTP 1999 does consider the possibility of resale. **In the near future, there is unlikely to be any major demand seeking non-facilities-based competition in India.**

(e) Area of operation

This policy area could be subject of focus by countries with interest in India's long distance market (e.g., United States, United Kingdom). The issue will become relevant especially in the context where the existing operators in contiguous circles combine together

to become national long distance service providers, thus having access to both intra- and inter-circle traffic.

(f) Degree of competition and time frame for introducing competition

This will be the subject of demand by other countries, which will seek a commitment from India for not limiting the number of service providers. At present, the view of the Government seems to be that the number of service providers in domestic long distance should be limited to three or four.

For the negotiations, there is an important aspect of NTP 1999 that should be kept in mind. NTP 1999 provides that the TRAI will recommend the increase in the number of service providers that should take place after certain years**. A two pronged approach may be used with respect to this issue**.

- **To the extent that the Government decides that there should be free entry, India could consider whether to convert the actual policy into a WTO commitment. If free entry has been provided, there should not be a major problem in giving the policy as a commitment.**
- **If a limited entry is provided at present, the Government may still consider a commitment that it will review after a specified number of years (e.g., three or five years), the possibility of increasing the number of operators providing the service.**

It is noteworthy that for basic, cellular and paging services, NTP 1999 has provided for a time-bound review of the number of service providers within a specified time period, for a number of services (see Annex 5). The second of the above two options would be relevant for all such situations.

(g) Extent of foreign ownership

We saw above that in several areas of major interest, up to 49 per cent ownership is provided for foreign investors in telecom. With indirect investment, this becomes about 70 per cent. While one view may be that this is a reasonably flexible policy regarding foreign ownership, it is likely that some demand will be made for relaxing this limit (e.g., from the United States).

This will have to be seen in the context of the overall policy on foreign direct investment. The minimum demand in this regard will be to bind the applicable policy i.e. at 49%.

(h) Convergence of technologies and services

Traditional methods of distinguishing between telecommunications and broadcasting are becoming less clear as a result of technology developments in both industries. Some of these are on account of technical convergence of the medium (the fibre optic cable) used to distribute services. The high and versatile digital carrying capacity of fibre-optic networks means that they will also be ideal network resources to be re-sold to multiple service providers. These could be cable operators, broadcasters, telephone operators, internet service providers, or any other company that needs to send digital signals into the connected units.

Due to convergence, there is a possibility that countries start considering the possibility of providing broad range of licenses where a number of services may be provided by the same service provider. **NTP 1999 has handled this situation by stating that as long as a service provider has a license for any service, that service provider can supply as many services as it desires.**

The policy response to this issue is linked to the policy on the number of operators allowed to provide a service.

(C) International Long Distance

In accordance with the commitment to WTO, the question of opening up International Long Distance to competition will be reviewed by year 2004. This position is re-stated in NTP 1999.

An interesting feature with respect to the WTO negotiations is that these negotiations may continue till 2004 or even later. Opening up of the international long distance to competition will be a major demand on India. T**here have been certain technological and policy developments which might lead to an earlier consideration of opening up the international sector**.

We have already mentioned the possibility of internet telephony being permitted in India sometime sooner than later. Further, the Government has provided permission to certain private Internet Service Providers to set up their own Gateways. This, combined with the Wireless Access Protocol (WAP) technology, will bring down the costs of international telecommunications and also make it difficult to monitor and curb the provision of services by ISPs. Moreover, the pressure to revise accounting rates downwards will become even stronger with decrease in costs (and the consequent likely increase in call back).

With a downward revision of accounting rates, there will be pressure for decline in international tariffs, which in turn will reduce the surplus available in India from this service. New revenue sources will have to be found by the existing service provider, and the Government may recognize within the next couple of years that the international segment needs to be opened up**.**

(D) Liberalization in the existing service areas

The existing policy of a duopoly for basic and cellular mobile in each service area is already under review in the wake of allowing existing operators to migrate to a revenue sharing regime. It is likely that India will be asked to commit for liberalizing this policy. This matter is similar to the one mentioned above with respect to extent of competition in domestic long distance. **NTP 1999 has provided for a time-bound review of the number of service providers within a specified time period (see Annex 5). The same could be given as a commitment during the negotiations.**

(E) Regulatory principles

In general those investing in telecom lay particular emphasis on regulatory principles, because these principles provide the basis for successfully operating in a market which is normally dominated by a large service provider who has strong links with the policy maker. In such a situation, it becomes difficult to function smoothly in a multi-operator environment without certain well defined and accepted regulatory principles**. In these negotiations, countries will focus much more on the disciplines contained in the Reference Paper than they did previously**.

(a) Reference Paper

As mentioned above, a number of **disciplines of the Reference Paper** have not been incorporated by India in its commitments, but the actual application of disciplines in India incorporates these elements. Thus, **these could be considered for commitments.**

The most important conditions relate to **interconnection terms and conditions**. It is noteworthy that the conditions relating to interconnection specified in the Reference Paper are also emphasised by TRAI in its Regulations pertaining to interconnection. This includes provision of interconnection in a timely fashion on terms and conditions and cost-oriented rates that are transparent, reasonable, non-discriminatory and sufficiently unbundled, Likewise, a decision of the TRAI specified that interconnection should be provided at any technically feasible point in the network;

Similarly, **transparency** could be enhanced with respect to decision-making, including publicly making available the period of time normally required to reach a decision concerning an application for a license, and make known to the applicant for a license, upon request, the reasons for the denial of a license;

With greater use of cellular technology (including CDMA), conditions regarding **allocation and use of scarce resources** such as frequencies becomes as important as interconnection. Once again, proper conduct with respect to use and allocation of various resources requires that the regulatory procedures be transparent and be carried out in a non-discriminatory manner, subject to any specific national interest objectives. The certainty and clarity provided by such procedures makes possible an efficient implementation of domestic policy with respect to allocation and use of scarce resources. For spectrum frequency allocation, this objective can be seen in the **following statement in NTP 1999: "There is a need to have a transparent process of allocation of frequency spectrum which is effective and efficient."**

This suggests that it should also be possible to agree to the provisions stating that:

- **procedures for allocation and use of scarce resources (including frequencies, numbers and rights of way) being carried out in a transparent and non-discriminatory manner;**
- **make publicly available the current state of allocated frequency bands, without there being a need to provide a detailed identification of frequencies allocated for specific government uses.**

(b) Restructuring of DTS

One important regulatory principle is that the policy maker and service provider should not be the same entity. In India, this would require complete de-linking of the DTS from the DOT. With this latter aspect I mind, NTP 1999 specifies that corporatisation of DoT (now DTS) will be done "keeping in mind the interests of all stakeholders" by the year 2001.

Thus, **by the time negotiations are underway, it will become clear to what extent the Government may be able to corporatise the DTS. If the process is delayed even by one or two years, the Government could be in a position to consider commitment of DTS corporatisation with a transition phase.**

(c) Possibility of Enlarging Regulatory Scope

Growing convergence of IT, telecom and broadcasting is throwing up new regulatory issues, which may even lead to a recasting of the established principles in certain cases. There is now a tendency for service providers to bundle different services, thus creating difficulties in regulating them as separate entities. In a number of instances, convergence of services and technologies is also resulting in a convergence of regulatory authorities, or greater co-operation among the separate regulatory authorities handling the policy issues. There is a need to recognize this change and consider whether some additional regulatory issues might arise during the negotiations. In this regard, it is useful to consider the view expressed recently by International Telecommunication Union (see Annex 6).

The attempt of all policy initiatives is to promote the flexibility of technology choice and service provision. Thus, neutrality of policies towards technology/platform is seen as a desirable attribute, not only because this enhances opportunities but also because the policy maker is not in a position to anticipate the likely developments and fine-tune policy. As mentioned by ITU (see Annex 6), with convergence **"telecommunications regulation will be less concerned with licensing and pricing and more concerned and continuous efforts to adapt standards of reliability and interoperability to unrelenting technology changes, as well as with frequency allocation and assignment, dispute resolution and consumer protection. A lot more of the telecommunication industry will probably end up being regulated by the market**."

Though the existing regulatory principles such as non-discrimination and protection against unfair competition will continue to be important, there would be a greater need to consider domestic policies regarding frequency allocation and assignment, and consumer protection. While there will be a need for greater co-ordination and exchange of information among regulatory Bodies, it is unlikely that any new regulatory principles will be multilaterally determined to take into account the new situation.

(F) Other policies which are important in the domestic context but are unlikely to be emphasised by other countries during negotiations

These policies are important to bear in mind so that any commitments made during negotiations should not be such that the objectives of these policies gets compromised. These policies include, for example, rural connectivity, and research and development,

9. STRATEGY FOR THE FORTHCOMING NEGOTIATIONS

The negotiations on telecom services will involve India not as a demandeur, but one on whom demands will be made regarding a number of telecom services.

Thus, the **first issue to consider** is that if India has to make any commitments in telecom, for which other services could it obtain concessions from those whom it provides concessions in the area of telecom.

India has embarked on a reform process in telecom, and would have implemented a number of policies that are likely to be of interest to other countries. Knowing that these policies are to be implemented in any event, and would be difficult to roll-back once implemented, the other countries are likely not to emphasise some of these policies in their list of demands. **Nonetheless, India may like to look at these issues in the following order**

(e) **policies for which a commitment may be made as they exist at present or will evolve during the early phase of negotiations** (e.g., foreign equity participation, number of operators in domestic long distance and for existing service areas, and various regulatory principles that are not yet included by India in its commitments);

(f) policies for which commitments may be introduced in terms of a commitment to review (e.g., increase in the number of operators for basic services and cellular

mobile services, increase in the number of operators providing domestic long distance and for existing service area, non-facilities-based competition);

(g) policies which should be considered in the interim phase of the negotiations, based on domestic developments (e.g., liberalization of international call segment, corporatization of DTS, area of operation for domestic long distance operators);

(h) policies for which a commitment could be considered in terms of a phase-in time period (e.g., internet telephony, corporatization of DTS, foreign equity participation)

One feature of the above list is that some policies are mentioned under more than one category. This is to provide an example of how more than one type of strategy for commitments may be considered for certain policies (e.g., foreign equity participation, corporatization of DTS).

While the negotiations are on, there should also be an attempt to develop a policy framework for certain issues, such as allocation and use of frequency, or number policy. This would help to bring clarity about the nature of commitment that could be considered for these issues.

10. LEGAL PROVISIONS THAT WILL NEED CHANGING IF INDIA MAKES COMMITMENTS IN THE FORTHCOMING NEGOTIATIONS

The NTP 1999 points out that the Indian telecommunications system continues to be governed by the provisions of the Indian Telegraph Act, 1885 (ITA 1885) and the Indian Wireless Act, 1933. Since substantial changes have taken place in the telecommunications sector, these laws need to be replaced with a more forward looking Act. A special Group that recently examined this issue has already given its views, emphasising that a permissive new Telecom Act should be made, with specific legislation suitable to specific services or situations being derived on the basis of the general framework specified by the new Act. Examples of specific legislation or sub-legislative document would include cyber laws and new license conditions.

Since most of the policies likely to be part of India's offer will be those already under consideration for implementation in India, the new legislation would have considered many of these policies. Nonetheless, there would need to be close co-ordination among the negotiators and those working on devising a new legal framework for telecom in India.

ANNEX 1

1A: Electronic Commerce

Electronic commerce, also known as e-commerce, has many definitions and its definition is constantly changing to accommodate to the rapid changes in its function and purpose in the realm of business[4]

To understand the impact and the possible implications of e-commerce in the global arena, it is necessary to understand the forces that drive e-commerce for possible economic and social revolution. As noted in the Organization for Economic Cooperation and Development's (OECD) book, The Economic and Social Impact of E-Commerce (1999), the following themes have emerged.

I. Electronic commerce will change the way that business is conducted: "traditional intermediary functions will be replaced, new products and markets will be developed, and new and far closer relationships will be created between business and consumers." In addition, it will change the way that business organizations works with knowledge diffusion, human interactivity, increased flexibility and adaptability, and the redefinition of workers' skills and functions.

II. E-commerce will perform a catalytic effect. It will cause a "reform of regulations, the establishment of electronic links between businesses, the globalization of economic activity, and the demand for higher-skilled workers."

III. E-commerce over the Internet will vastly increase interactivity in the economy and will now extend down to small businesses and households and be able to reach the world at large. Through future technology, people will have the ability to conduct business from anywhere.

Due to the rapid exchange of knowledge and information, "openness is an underlying technical and philosophical tenet of the expansion of e-commerce." Many successful e-commerce companies have achieved such status by making available the inner-workings, databases, and personnel of their respective companies. "This has led to a shift in the role of consumers, who are increasingly implicated as partners in product design and creation. An expectation of openness is building on the part of consumers/citizens which will cause

[4] Two popular definitions of e-commerce are ``The enablement of a business vision supported by advanced information technology to improve efficiency and effectiveness within the trading process" ( Electronic Commerce Innovation Centre 1997) and ``The conduct of commerce in goods and services, with the assistance of telecom and telecom-based tools" (Xamax Consultancy Pty. Ltd. 1999)..

transformations, for better (increased transparency, competition) or for worse (potential invasion of privacy), in the economy and society.

Electronic commerce alters the relative importance of time by speeding up production cycles, allowing firms to operate in close co-ordination and enabling consumers to conduct transactions around the clock.

The Growth Of Electronic Commerce

Electronic commerce is growing at spectacular rates. In a 1997 report by the World Trade Organization (WTO), e-commerce sales will hit the USD 300 billion benchmark by the year 2001.[5] It is estimated that the industry will exceed the USD 1 trillion benchmark by the time period of 2003-2005 (The Economic and Social Impact of E-Commerce OECD). *Business-to-Consumer E-commerce vs. Business-to-Business E-commerce*

A common misconception must be addressed. When one thinks of e-commerce, the immediate image is that of business-to-consumer transactions (i.e. buying groceries or the providing of bank services). Yet, "seventy five percent of transactions happen outside of the consumer's reach "making business-to-business e-commerce the arena where real Internet revolution is occurring".[6]

E-commerce suits the business-to-business market for many reasons. It is noted that the largest impact of business-to-business e-commerce will be on small and medium-sized enterprises commonly referred to as SMEs (The Economic and Social Impact of E-Commerce OECD). The business-to-business segment is enjoying such remarkable success due e-commerce's significant impact on business costs and productivity:

It is less expensive to maintain a cyber-storefront than a physical one because it is always open, thus allowing for a global market. It "defies geographical boundaries and time zones to enable businesses to stay connected with the rest of the world, 24 hours a day and 7 days a week"[7]. By maintaining only one store instead of many, duplicate inventory costs are eliminated.

E-commerce strengthens the links between firms by adopting a "just-in-time" inventory system and improving the ability to forecast demand more accurately" (The Economic and Social Impact of E-Commerce OECD).

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[5] Quoted from New York Times "International Alphabet Soups Seek to Regulate Internet and E-Commerce" March 31, 1998

[6] New York Times "Real Force in E-Commerce is Business-to-Business Sales" January 5, 1999. The Aberdeen Group, a Boston-based research firm, "pegs business-to business at 10 to 20 times the business-to-consumer market" (New York Times January 5, 1999)..

[7] The Hindu "Opportunities thrown up by E-commerce" July 7, 1999

By placing necessary information online, e-commerce merchants greatly increase the efficiency of the sales process.

An electronic interface allows e-commerce merchants to check that an order is internally consistent and that the order, receipt, and invoice match reducing error rates significantly. By providing customer support online, through access to databases or manuals, firms can cut down on operational costs by 10%. Thus, e-commerce has many advantages to the business-to-business sector, mainly SMEs.

E-Commerce And Its Implications On The Global Arena

While having significant economic implications, the social implications cannot be ignored. Major social trends in conducting business include the "globalization of markets, the shift towards an economy based on knowledge and information, and the growing prominence of all forms of technology in everyday life." Thus, societal factors will merit attention from a public policy standpoint, "both to establish the social conditions that allow electronic commerce to reach its full economic potential and to ensure that its benefits are realized by the society as a whole" (The Economic and Social Impact of E-Commerce OECD). However, visions of a global interconnectivity and the elimination of geographical barriers must be tempered by the reality that half the world's population has never made a telephone call, much less accessed the internet. Countries with very low teledensities can only achieve universal access by not reaching every home, but by providing access at the level of the community or institution (The Economic and Social Impact of E-Commerce OECD). Also, there are still wide social disparities "among countries in areas pertaining to culture and language, E-commerce acceptance, availability of infrastructure support and internet literacy" (The Hindu "Opportunities thrown up by E-commerce" July 7, 1999).

Global e-commerce also faces the economic constraints, especially dominant in Europe and Asia, of high cost, lack of sufficient bandwidth, and the slow-pace of planned liberalization of the telecommunications sector. Since countries "will dismantle barriers to global electronic commerce at different speeds, this may raise competitive concerns and pose possible risks to the efficient development of global e-commerce" (The Economic and Social Impact of E-Commerce, OECD).

With the liberalization of the market, the controversy in legal and technical matters will also emerge. New policies addressing these concerns will have to addressed soon, to keep pace with this ever-evolving industry.

To combat the risk of halting efficient e-commerce development, the WTO states in its Internet report that it is ``trying to convince national governments not to regulate the Internet independently."[8]

[8] New York Times "International Alphabet Soups Seek to Regulate Internet and E-Commerce" March 31, 1998.

Many goods are ordered and paid for on the Internet, but the product is actually delivered using traditional modes of transportation. The ability of the Internet to deliver goods poses new challenges for tax authorities as well as the WTO.

Another problem posed by the delivery of ordered products is that of the "digitized" product. A CD can be imported in two forms, the physical form as well as a digitized form. The difference is that the physical form can be seen and the digitized form can cross the border without any witnesses. The WTO is currently debating the status of the digits and whether its transportation over the Internet is a good or a service. The transport of goods is governed by the General Agreement on Tariffs and Trade (GATT) and the transport of services is governed by the General Agreement on Trade in Services (GATS), two very different contracts.

The Effects Of E-Commerce On Indian Economy

The trends witnessed in America and Western countries are similar to those seen in the Indian e-commerce industry as well, however at a much smaller scale. By the year 2000, business-to-business e-commerce is estimated to cross Rs300 crore according to Nasscom, an Indian-based consultancy company. For the year 1998-1999, business-to-consumer e-commerce generated Rs12 crore and is expected to reach Rs50 crore by next year (The Economic Times "Trends/Welcome to e-mall" July 30-August 4 1999). The scope of online retail is enormous in India and prospects are looking good for ever-increasing business worth.

As stated above as one of the five major themes, e-commerce will produce a demand for high-skilled workers, especially those skilled in information technology. For the West, this demand has created a supply shortage in information technology professionals as seen from table.

Current Estimate of Unfilled IT Jobs

WORLD	600,000
UNITED STATES	346,000
GERMANY	60,000
CANADA	20,000 to 30,000
UNITED KINGDOM	20,000

The Economic and Social Impact of E-Commerce, OECD

Due to the lack of skilled workers in these countries and the large pool of skilled labor in India, India is placed in an advantageous position. According to an article in the Economic Times dated July 28, 1999, "India has the world's second largest pool of English speaking scientific manpower." With the importance of information technology, this "pool" of workers is a source exports worth as much as USD 4 billion annually. Due to the technology and the nature of the Internet, the physical movement of natural person to provide many of these services is no longer necessary. Although many of these services do not require the movement of natural persons, it does not mean that the Internet has eliminated the entire

need of the movement of natural persons. There are many issues involved in the nature of the movement of natural persons including the disparity between wages in developed and developing countries, confidentiality, security, and immigration.

Future E-Commerce Implications On Indian Economic Policy

E-commerce introduces a host of changes in policies that must be made in the near future to keep pace with the speed of growth of the industry itself. The following issues must be addressed:

- What connotes a "good" and what connotes a "service" (i.e. digits)? A change in the definition of these two terms is necessary to include new technology.

- How should the government deal with taxes for goods purchased over the Internet? How can/shall such transactions be monitored to ensure accuracy and fairness?

- How can India take the most advantage of its surplus in scientific manpower? What barriers need to be overcome to allow the movement of natural persons to developed countries?

- India needs to make sure that access to communication networks in other countries remain free and developed countries progressively liberalize the imports of services that India is able to supply electronically.

- What barriers are in the way of e-commerce progression in India? What improvements can be made to aid the progress of e-commerce?

  Despite much improvement in the last decade, telecommunications services remain inadequate and expensive. The VSNL monopoly on Internet services might have held back growth in this sector. Key elements of successful e-commerce are public accessibility and knowledge of Internet usage. The low teledensity in India has become a barrier for Internet accessibility. In order for e-commerce to flourish, every effort must be made to increase the teledensity number to that comparable to leading technological countries.

  Unreliable power has become a serious constraint on the growth of e-commerce. Unanticipated interruptions of power can have a catastrophic effect on the productivity of software industry.

  Electronic means of payment both internally and externally must be developed. E-commerce thrives on payment by credit cards or cards of that nature. Yet, internal credit card usage is still limited. And external electronic means of payment needs to be enhanced to ensure that the door to capital outflows is opened.

- What policies are currently in place to protect the consumer? What are e-commerce implications on safety, confidentiality, and privacy?

1 B

Call Centre Opportunities for India[9]

India offers multiple advantages--low manpower cost, software competence, and English speaking workforce—for shared services call centres. Just watch out for the boom. With the advent of CTI in India, Indian corporates have come a long way from being merely "Business Support Systems" consisting of small voice mail systems and, to a certain extent, Interactive Voice Response (IVR) systems to "Business Enhancing Systems". This revolution was well supported by leaders like Dialogic, Siemens, Lucent, OKI, and Nortel in India through their distributors and VARs. Business houses through 1997-99 began to understand the differentiation between the software (PC-based), hardware-based, switchless and switch-adjunct-based CTI solutions and the ways to integrate it more and more in there business processes.

Call Centres: Platform for the SCC

The call centre market in the US, alone, is estimated to be over $ 50 billion (Rs 21,000 crore). As per some estimates, the opportunity for call centres alone is expected to be 2,50,000 staff by the year 2007-8 generating revenues to the tune of Rs 8,000 crore.

The call centre opportunity can be looked at as:

- Incoming calls into India (enquiries, help desk, etc.)
- Outgoing calls from India (collections, telemarketing, etc.)

Incoming calls

While these calls may be simpler to handle, compared to collection calls, the need for the telecom infrastructure to be robust with 99.99 percent uptime is critical. Any break in the telecom channel is a potential loss to the company that has outsourced the business to India. And since the Indian telecom infrastructure, today, does not offer the quality available in the foreign countries, especially the US, these are not the prime candidates for outsourcing to India.

Roughly, 240 staff can be deployed on an E1 (2048 kbps) circuit for this application, with an 8K voice compression. At the cost of Rs 4 crore (approx.), this translates to an expense of Rs 1,67,000 per staff per annum. This is, over and above, the cost of the toll free telephone call cost that the US company incurs for these calls.

Outgoing calls

Collections is fast catching the fancy of the US—e.g. GE Capital in India employing over 200 employees calling customers for their outstanding credit card dues. Although, telecom is equally important for these calls, it is not mission critical (no business opportunity loss) if the telecom circuit is down for some time.

At the turn of the century, Indian corporate users will fully understand the capability of call centres—an important application of CTI. The customer, now, takes DNIS jargons like screen pop-up, CLIP more seriously. Companies, both in India and abroad, are realizing to what level teleworking call centres can be money spinners.

Every business in every industry across the world invests a lot in carrying out back-office processing. Invoice billing, vendor payment processing, payroll, receivable accounting, general accounting, responding to customer queries through mail and on the phone, answering customer calls and

[9] Based on material from various web sources

complaints, making calls for telemarketing or collection of outstanding dues, application processing, generating management information, etc. The list is endless. So is the opportunity.

Increased competitiveness is forcing companies to look for ways to reduce their costs dramatically. With majority of the work force in most of the companies engaged in back-office processing, back-office costs become an obvious target.
Technology has made it possible for such processing to be done remotely for the companies, even outside their countries, anywhere in the world. Thus, making it possible to serve as a virtual extension of customer operations through use of technology.
According to research done by consulting firm McKinsey & Co., this is the business that is not going to dry up in a hurry, the untapped demand for which is something like $ 250 billion (Rs 10,62,500 crore). This figure is larger than the comparable figure for the global software industry of $180 billion. So, demand is not a constraint, supply is.

Why India?

India offers a lot of advantages as a destination where the calls can land and be effectively handled. India, perhaps, is the only country that offers an abundant labour pool of educated English-speaking and cost-effective workforce:

- Salary levels are between $1,500 and $5,000 per annum (compared to US-$18,000 to 25,000; Europe- $20,000 to 35,000 per annum etc.)
- English speaking
- Skilled with high education qualifications and easily trained
- Hard working
- Low employee turnover

For India, it is an opportunity that has much more long-term promise than even the software industry. Here, the business goes on forever, unlike software, which ends with the end of the particular software development.

The Shared Services Opportunity

Shared services focusses on supporting the application processes e.g., financial services, capturing application, and improving the same for the clients and supporting both these through the call centre.

Where India Can Reach...

	1997-98		2007-08	
	Employment	Revenue (Crore)	Employment	Revenue (Crore)
Back-office Operations/Revenue Accounting/Data Entry/Data Conversions	7,300	300	2,60,000	17,000
Medical Transcriptions/Insurance Claims Processing	2,500	75	1,70,000	9,000
Call Centres	200	5	2,50,000	8,000
Database Services	500	20	1,00,000	5,000
Content Development	3,500	150	3,20,000	16,000
TOTAL	14,000	550	11,00,000	55,000

A client in the US, say, needs to outsource its accounting activities to India. In doing so, it opens a call centre, which handles its services at a charge in India. The back-end processes can be handled by its own subsidiary or an independent Indian company. These services can be payroll processing, travel and expense accounting, customer invoicing or credit collections. Now, in doing so there is no value addition to the process. It is merely "off-shoring the back-end" process to a country where the process overheads are low.
However, when there is a value addition to the process which is being migrated, it enhances the business profitability for not only the company in the US manifold which has outsourced its back-end process, but it is a tremendous business gain for the Indian arm supporting the business processes.

The shared services are carried out by the Indian company based on the Service Line Agreements (SLA) drawn out between the US client and the company. The client in US can, now, focus on its core process with significant cost reduction. There are quality outputs with complete capital avoidance with "Best Practice Sharing".

In order to accomplish the value addition, the company offering the shared services should not only have an in-depth understanding of technology of building a robust call centre, it should have software consulting skillsets. These can understand the business process and have the ability to migrate the process and tune the same to maximize profits for the client. Hence, a software centre is required for this service.Strengths of the companies in India to go in for such services are as mentioned—low cost, skilled English speaking workforce, zero tax statuses (software EOU), and vast software skill sets. The weaknesses are infrastructure deficiencies, especially, redundancy for telecom IPLC links, satellite latency in the IPLC links (approximately 770 minutes per second, end-to-end), cultural differences between India and the US. The only healthy signs as opportunity comes in form of reduction in telecom costs (which are yet to be made applicable by VSNL/DoT) and the permission to terminate the link at the US end. Overall, it becomes increasingly pertinent to have shared services centre in India

Cost Analysis for Outgoing Calls (per person per annum basis)			
Cost	US	Ireland	India
Labour	30,000	20,000	5,000
Telecom	-	2,500	3,600
Others	25,000	21,500	16,400
Total	55,000	45,000	*25,000
All prices in US dollars			
Assumptions			
Cost of E1 (2 Mbps) .	= $ 8,50,000		
No. of staff that can be accommodated on the E1	= 238		
Telecom cost per staff member	= $3600		
Labour cost per staff member	= $5000		
Local US call cost	= $ 5,000		
Other cost	= $ 16,400		
TOTAL (per person per annum)	= $30,000		

Source http://www.voicendata.com/

ANNEX 2

Table 26. Comparison of the Text of the Reference Paper With the Text Included By India In Its Schedule of Commitments

(Differences are shown by underlined bold print)

TEXT OF THE REFERENCE PAPER	TEXT OF INDIAN REFERENCE PAPER
Scope The following are definitions and principles on the regulatory framework	Scope The following are definitions and principles on the regulatory framework

for the basic telecommunications services.	for the basic telecommunications services.
Definitions Users mean service consumers and service suppliers.	Definitions Users mean service consumers and service suppliers.
Essential facilities mean facilities of a public telecommunications transport network or service that (a) are exclusively or predominantly provided by a single or limited number of suppliers; and (b) cannot feasibly be economically or technically substituted in order to provide a service.	Essential facilities mean facilities of a public telecommunications transport network or service that (a) are exclusively or predominantly provided by a single or limited number of suppliers; and (b) cannot feasibly be economically or technically substituted in order to provide a service.
A major supplier is a supplier which has the ability to materially affect the terms of participation (having regard to price and supply) in the relevant market for basic telecommunications services as a result of: (a) control over essential facilities; or (b) use of its position in the market.	A major supplier is a supplier which has the ability to materially affect the terms of participation (having regard to price and supply) in the relevant market for basic telecommunications services as a result of: (a) control over essential facilities; or (b) use of its position in the market.
1. Competitive safeguards 1.1 Prevention of anti-competitive practices in telecommunications Appropriate measures shall be maintained for the purpose of **preventing suppliers who, alone or together, are a major supplier from engaging** in or continuing anti-competitive practices. 1.2 Safeguards The anti-competitive practices referred to above shall include in particular: (a) **engaging in anti-competitive cross-**	1. Competitive safeguards Appropriate measures shall be maintained for the purpose of **preventing service suppliers from engaging** in or continuing in anti-competitive practices of the following type: **[Indian text omits (a) of general text]**

subsidization; (b) using information obtained from competitors with anti-competitive results; and (c) not making available to other services suppliers on a timely basis technical information about essential facilities and commercially relevant information which are necessary for them to provide services.	(a) using information obtained from competitors with anti-competitive results; and (b) not making available to other services suppliers on a timely basis technical information about essential facilities and commercially relevant information which are necessary for them to provide services.
2. Interconnection 2.1 This section applies to linking with suppliers providing public telecommunications transport networks or services in order to allow the users of one supplier to communicate with users of another supplier and to access services provided by another supplier, where specific commitments are undertaken.	Same as general text
2.2 Interconnection to be ensured Interconnection with a major supplier will be ensured at **any technically feasible point in the network**. Such interconnection is provided, (a) **under non-discriminatory terms, conditions (including technical standards and specifications) and rates** and of a quality no less favourable than that provided for its own like services or for like services of non-affiliated service suppliers for its subsidiaries or other affiliates; (b) in a timely fashion, on terms, conditions (including technical standards and specifications) and cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for	2.2 Interconnection to be ensured Interconnection with a major supplier will be ensured at **any specified feasible point in the network as indicated in the license.** Such interconnection is provided: (a) of a quality no less favourable than that provided for its own like services or for like services of non-affiliated service suppliers or for its subsidiaries or other affiliates; **[Indian text omits (b) of the general text]** (b) upon request, at points in addition to the network termination points offered to the majority **of users as per license conditions, subject to mutually agreed charges**.

network components or facilities that it does not require for the service to be provided; and (c) upon request, at points in addition to the network termination points offered to the majority **of users, subject to charges that reflect the cost of construction of necessary additional facilities**.	
2.3 Public availability of the procedures for interconnection negotiations The procedures applicable to a major supplier will be made publicly available.	2.3 Public availability of the procedures for interconnection negotiations The procedures applicable to a major supplier will be made publicly available.
2.4 Transparency of interconnection arrangements It is ensured that a major supplier will make publicly available either its interconnection agreements or a reference interconnection offer.	2.4 Transparency of interconnection arrangements It is ensured that a major supplier will make publicly available either its interconnection agreements or a reference interconnection offer.
2.5 Interconnection:dispute settlement A service supplier requesting interconnection with a major supplier will have recourse, either: (a) at any time or (b) after a reasonable period of time which has been made publicly known **to an independent domestic body, which may be a regulatory body as referred to in paragraph 5 below**, to resolve disputes regarding appropriate terms, conditions and rates for interconnection within a reasonable period of time, to the extent that these have not been established previously.	2.5 Interconnection:dispute settlement A service supplier requesting interconnection with a major supplier will have recourse, either: (a) at any time or (b) after a reasonable period of time which has been made publicly known **to a domestic regulatory authority** to resolve disputes regarding appropriate terms, conditions and rates for interconnection within reasonable period of time, to the extent that these have not been established previously.
3. Universal service Any Member has the right to define the kind of universe service obligation it wishes to maintain. **Such obligations will not be regarded as anti-competitive per se, provided they are administered in a transparent, non-discriminatory and competitively**	3. Universal service India retains the right to define the kind of universal service obligation it wishes to maintain. **Such obligations are not regarded as anti-competitive *per se*, since they would be administered in a transparent and non-discriminatory manner.**

neutral manner and are not more burdensome than necessary for the kind of universal service defined by the Member.	
4. Public availability of licensing criteria Where a license is required, the following will be made publicly available: (a) all the licensing criteria and **the period of time normally required to reach a decision concerning an application for a license** and (b) the terms and conditions of individual licenses. **The reasons for the denial of a license will be made known to the applicant upon request.**	4. Public availability of licensing criteria Where a license is required, the following will be made publicly available: (a) all the licensing criteria and **[omitted]** (b) the terms and conditions of individual licences **[omitted].**
5. **Independent regulators** **The regulatory body is separate from, and not accountable to, any supplier of basic telecommunications services**. The decisions of and the procedures used by **regulators** shall be impartial with respect to all market participants.	5. **Regulatory Authority** [**Indian text omits first sentence of general text**]. The decisions of and the procedures used by the **regulatory authority** shall be impartial with respect to all market participants.
6. Allocation and use of scarce resources Any procedures for the allocation and use of scarce resources, including frequencies, numbers and rights of way, will be carried out in an objective, timely, **transparent and non-discriminatory manner. The current state of allocated frequency bands will be made publicly available, but detailed identification of frequencies allocated for specific government uses is not required.**	6. Allocation and use of scarce resources Any procedures for the allocation and use of scarce resources, including frequencies, numbers and rights of way, will be carried out in an objective and timely manner [**Indian text omits some of the text from the general text**].

ANNEX 3

Analysis Showing That Application of Regulatory Principles In India Is Much Stricter Than The Commitments Made By India Under The GATS

(From B.K. Zutshi, 1997, "WTO Agreements, the ITA, and the Telecommunication Annex, GBT Protocol", Lecture at the Asia and Pacific Telecommunication Finance and Trade Colloquium)

The changes and omissions in the Indian commitments do look significant and meaningful on a stand-alone basis without reference to other provisions of the Services Agreement. If, however, one were to look at provisions of the GATS as also its Annex on Telecommunications, it would seem that these omissions, deviations and changes are of no material consequences.

Anti-competitive cross-subsidization is prohibited under Article VIII(2) of the GATS which reads as follows:

> "Turning to the regulatory principles applicable to the telecom sector, concern has been expressed about India not having subscribed fully to the Reference Paper on regulatory principles in its Basic Services commitments in WTO. It has been suggested in some quarters that omissions from and changes made to the Reference Paper in India's schedule of commitments have diminished the quality of India's commitment in Basic services.
>
> There is no doubt that there are omissions and changes made by India in its additional commitments on Basic services compared to the text of the Reference Paper but in the view of this Author they do not diminish the quality of these commitments for reasons which will be brought out presently. Before that it may be pointed out that India is already operating a more liberal regime in relation to its commitments under the WTO. For instance, in the Basic Services, it has committed to a foreign equity participation of 25% in the joint-venture projects, while actually it is already permitting 49% foreign equity participation.
>
> Turning to the Reference Paper (RP) on regulatory framework and India's Additional Commitments, RP provides for the competitive safeguards be applied to

major suppliers, while India has committed itself to applying them to all service suppliers. This should not be any cause for concern as major suppliers are in any case covered under all service suppliers.

Great concern has been expressed about omissions in and changes to commitments relating to interconnection. India has not committed itself to not engaging in anti-competitive cross-subsidization, non-discriminatory terms and conditions and rates for interconnection, nor to interconnection in a 'timely fashions on terms and conditions and cost-oriented rates that are transparent, reasonable and sufficiently unbundled'....India has not also agreed to provide interconnection at "any technically feasible point in the network" but "at any specified feasible point in the network as indicated in the license". These changes and omissions do look significant and meaningful on a stand-alone basis without reference to other provisions of the Services Agreement. If, however, one were to look at provisions of the GATS as also its Annex on Telecommunications, it would seem that these omissions, deviations and changes are of no material consequence.

Anti-competitive cross subsidization is prohibited under Article VIII (2) of the General Agreement in Trade and Services (GATS) which reads as under :

> "Where a Member's monopoly supplier competes, either directly or through an affiliated company, in the supply of a service outside the scope of its monopoly rights and which is subject to that Member's specific commitments, the Member shall ensure that such a supplier does not abuse its monopoly position to act in its territory in a manner inconsistent with such commitments."

This text is quite clear and does not call for any further comment. In regard to non-discriminatory terms and conditions and rates of interconnection, there is already an obligation to that effect under the Telecommunication Annex of the GATS. Section 5 of the Annex obliges

Members to accord "access to and use of public telecommunications transport networks and services on reasonable and non-discriminatory terms and conditions for the supply of a service included in its Schedule". The term 'non-discriminatory' has been defined in the Annex itself as to mean "terms and conditions no less favourable than those accorded to any other user of like public telecommunications transport network or services under like circumstances". The only aspect in India's commitment not covered is of cost- oriented interconnection charges. Interconnection charges is an issue currently under negotiations between DOT and private sector service providers and is also under examination in the TRAI. As mentioned earlier, a Consultation Paper is being issued shortly on the subject. On the issue of points of interconnection, TRAI in its first order has laid down some guidelines in respect of points of interconnection for mobile cell-operators; it has left the choice of number of interconnection points to the operators seeking interconnection, subject, of course, to technical feasibility and network integrity. Furthermore, TRAI is responsible for ensuring effective interconnection. The scope of the term effective is still in the process of being interpreted, but in legal parlance its meaning is quite wide.

In the matter of provision of Universal Service, India has not committed itself to administering this obligation in a "competitively neutral manner' and also not 'making this obligations more burden-some than necessary" for the kind of universal service to be defined by India. India has expressed the view that these obligations are not anti-competitive and would be administered in a transparent and nondiscriminatory manner. The only part which has not been accepted, therefore, is the one relating to obligation not being made more burdensome than necessary for the kind of universal service defined by India. This does not seem to be major deviation, and, in any case the concept of 'burden' is not quite clear in this context. Non-discrimination

and transparency are the real safeguards in the administration of any universal service obligation. India's commitment in this regard is quite clear.

India has also not accepted to indicate the period of time normally required to reach a decision concerning an application for a license, nor has it accepted to make known to the applicant upon request, reasons for denial of licence. Generally India has resorted to an open tender process for award of licences. In any case India's national legal System provides for safeguards against any executive arbitrariness. It may also be pointed out that under Article VI (3) of the GATS Members have an obligation to inform the applicants of decisions concerning their applications. The Competent Authority of the Member is also obliged to provide, without undue delay, information concerning the status of the application to the applicant at his request. The expression 'status of the application' in this provision will get interpreted in due course.

It has also been mentioned that India has not committed to having a Regulatory Body, which is separate from and not accountable to any supplier of basic telecommunication services. In view of the TRAI Act, which come into force subsequently, this omission is of no significance whatsoever.

The last concern in this regard is about the allocation and use of scarce resources wherein India has committed itself to doing so in an objective and timely manner but has not committed to doing so in a transparent and non-discriminatory manner. This is something which will be addressed through regulations in due course.

Additionally if non-discrimination is the issue, as seems to be the case, it is relevant to bear in mind the fact that with a 49% ceiling on foreign equity, all joint-ventures projects in telecom sector will be Indian corporate citizens, discrimination between them being prohibited under the

Indian Constitution except on the basis of a reasonable classification. In sum, it seems that fears on account of deviation from the Reference Paper in India's commitments in the WTO on Basic Telecom Services are highly exaggerated, if not unwarranted."

ANNEX 5

Selected Excerpts From TRAI Recommendations Regarding Liberalization of Domestic Long Distance and Preliminary Decisions of the Government On This Matter

(a) Service area of operation

The licenses for NLD communications should be issued only at the national level. The service area of operation of NLD service provider would be the entire geographical limits of India. Carriage of intra-circle long distance traffic by NLD service providers would also be permitted.

(b) Competition

There should be free competition with open entry (without any restriction on specific number of new entrants) subject to pre-qualification (as per Selection Criteria) and performance obligation (as per Network Rollout Plan) separately detailed herein.

(c) Mode of competition

Facilities-based competition in the provision of NLD service is recommended in the initial phase of the DLD market liberalization.

(d) Resale

Resale of NLD services may be introduced only after 3 to 4 years of the opening up of the market.

(e) Infrastructure Providers

Open competition with free entry is also recommended in the provision of infrastructure.

Infrastructure Providers may be classified into two categories as under:

a. **Category I**: This would cover Infrastructure Providers who wish to provide assets such as dark fibres, right of way, duct space, towers and buildings etc.
b. **Category II**: This would cover Infrastructure Providers who make available end-to-end bandwidth.

No formal license is required for Category I Infrastructure Providers. Category II Infrastructure Providers may be licensed on simple terms and conditions. No Entry Fee should be levied on Category II Infrastructure Providers. They may, however, be required to pay an annual license fee not exceeding 5 per cent of their revenues derived from leasing of bandwidth, as also contributing towards universal access levy or any other charge, as may be determined by the competent authority, on the same pattern as that for NLD service providers.

(f) License fee structure

Entry fee

One-time Entry Fee may be fixed at Rs. 500 crore to keep out non-serious players. A portion of the entry fee i.e. Rs. 100 crore should be recovered in cash, which would be non-refundable. The balance entry fee of Rs.400 crore would be in the shape of a refundable deposit to be used as an incentive to ensure timely roll out of the network during the initial three phases extending upto first four years from the effective date of the license. The applicant-licensee may securitize this amount of Entry Fee in the shape of Bank Guarantees (BG) or as investment in Tax Free Government Bonds with Licensor's lien on the bonds. The BG or the Bonds (along with accrued interest) should be released, as under, in favour of the licensee subject to phased completion of the network roll out:

Completion of Phase I Rs. 100 crore
Completion of Phase II Rs. 100 crore
Completion of Phase III Rs. 200 crore

Any shortfall below the percentage of network coverage for Phases I, II & III, as stipulated in Para 39, would result in forfeiture of the right for incentive relatable to that Phase. There would be no carry forward of the incentive from one phase to the next phase.

Revenue share

The Authority recommends that the revenue sharing percentage should not exceed five percent of the Licensee's Revenue.

(g) Revenue

"Revenue" for the purpose of levying license fee as a percentage of revenue sharing shall mean the Gross Revenue accruing to the licensee by way of operations of providing NLD service mandated under the license (including the revenue on account of supplementary/ value added services and leasing of infrastructure), as reduced by the charges payable to other service providers to whose networks the NLD network is interconnected for carriage of calls.

(h) Modalities for Payment of License Fee

Entry Fee shall be paid in advance before signing the License Agreement.

Annual license fee under the Revenue Sharing arrangement shall be payable in four quarterly installments during the financial year. Each quarterly installment shall be paid in advance within 15 days of the commencement of the first calendar month of that quarter. The year for the purpose of license fee shall be the financial year ending 31st March. License fee for each quarter shall be paid provisionally by the Licensee on self-estimation of the Revenue for that quarter. Final adjustment of the license fee for the financial year shall be made on or before 30th June of the following year based on Revenue figures duly certified by the Chartered Accountant engaged by the Licensee for auditing the Annual Accounts of the Licensee company.

Any delay in payment of license fee beyond the stipulated period will attract interest at the Prime Lending Rate (PLR) of State Bank of India as notified from time to time and further increased by two percent per annum. The interest shall be compounded monthly at the rate(s) applicable for the period (s) of default. A part of the month shall be reckoned as a full month for the purposes of calculation of interest.

(i) License period

The license for the provision of NLD service should be awarded for an initial period of 20 years from the effective date. The license would be extendable by additional periods of 10 years thereafter.

Preliminary Decision Of the Government Regarding Conditions for Liberalizing Domestic Long Distance

- Three new entrants;
- Revenue sharing of 15 per cent (apart from Universal Service Obligation fee);
- Entry fee to be decided through bidding;
- Plus performance bank guarantees of Rs. 400 crores, which would be refunded upon fulfilment of roll-out commitments;
- DTS not to pay license fee;
- Allow category of infrastructure providers who will not need to be licensed;
- Competition to be facilities based;
- Allow access to only long distance calls outside the circle/metro service areas from where the calls are made.

ANNEX 6

Selected Excerpts From NTP 1999, Including Those Relating To Telecom Services For Which NTP 1999 Has Provided For A Time-Bound Review Of The Number Of Service Providers Allowed In The Market

3.1 Access Providers

3.1.1 Cellular Mobile Service Providers

...

It is proposed to review the spectrum utilisation from time to time keeping in view the emerging scenario of spectrum availability, optimal use of spectrum, requirements of market, competition and other interest of public. **The entry of more operators in a service area shall be based on the recommendation of the TRAI who will review this as required and no later than every two years**.

3.1.2 Fixed Service Providers

...

While market forces will ultimately determine the number of fixed service providers, during transition, number of entrants have to be carefully decided to eliminate nonserious players and allow new entrants to establish themselves. **Therefore, the option of entry of multiple operators for a period of five years for the service areas where no licences have been issued is adopted. The number of players and their mode of selection will be recommended by TRAI in a time-bound manner.**

3.2 Internet Telephony

Internet telephony shall not be permitted at this stage. However, Government will continue to monitor the technological innovations and their impact on national development and review this issue at an appropriate time.

3.3 Radio Paging Service Providers

Availability of adequate radio frequency spectrum is essential not only for providing optimal bandwidth to every operator but also for entry of additional operators. It is proposed to review the spectrum utilisation from nine to time keeping in view the emerging scenario of spectrum availability, optimal use of spectrum, requirements of market, competition and other interest of public. The entry of more operators in a

service area shall be based on the recommendation of the TRAI who would review this as required and no later than every two years.

3.6 International Long Distance Services

The subject of opening up of international telephony service to competition will be reviewed by the year 2004.

ANNEX 7

Excerpt From ITU's Report "Trends in Telecommunication Reform 1999" On Effect of Convergence on Regulatory Mechanism

"Licensing frameworks around the world are facing pressures for dramatic change, however. The future is uncertain by the voice telephony paradigm that defines the telecommunication industry is being overtaken and will inevitably disappear. It will be replaced with an IT paradigm that accommodates the multimedia characteristics, global seamlessness and virtuality that will characterize a pervasively IT-based global economy operating over converged technologies and services in cyberspace.

Regulatory regimes of the future will have to reflect different public interest concerns,. Countries that embrace rather than resist the IT paradigm will shift their focus away from a concern for the assured availability of reasonably priced basic voice services provided over traditional public networks. Instead, they will focus more on promoting multiple outlets for voice telephony and ensuring that a reliable and universal virtual public network is maintained across a crazy quilt of interconnected technologies and applications.

Overall, this will likely mean decreased reliance on individual licensing of particular services and facilities and increased reliance on general rules. It will also involve greater coordination among authorities in different industry sectors. Telecommunications regulation will be less concerned with licensing and pricing and more concerned and continuous efforts to adapt standards of reliability and interoperability to unrelenting technology changes, as well as with frequency allocation and assignment, dispute resolution and consumer protection. A lot more of the telecommunication industry will probably end up being regulated by the market." (**ITU, 1999, "Trends in Telecommunication Reform 1999", page 129**)

Annex Table 1 . Market Access Commitments In The Schedules Of Commitment

	Number Listed	Cross Border Supply			Consumption Abroad			Commercial Presence		
		In percent of listed subsectors								
		Full	Partial	None	Full	Partial	None	Full	Partial	None
a Voice Telephone Services	65	12	78	9	31	58	11	11	88	2
b. Packet-Switched Data Transmission Services	59	19	75	7	42	51	7	10	90	0
c. Circuit-Switched Data Transmission Services	60	18	73	8	42	50	8	10	88	2
d. Telex Services	59	20	75	5	47	45	7	11	89	0
e. Telegraph Services	43	19	72	9	49	42	9	9	91	0
f. Facsimile Services	55	18	75	7	44	49	7	11	87	2
g. Private Leased Circuit Services	55	16	80	4	42	55	4	11	89	0
h. Electronic Mail	52	35	60	6	46	42	12	17	79	4
i. Voice Mail	48	35	58	6	44	48	8	17	81	2
j. On-line Information and Data Base Retrieval	54	31	61	7	44	43	13	17	78	6
k. Electronic Data Interchange (EDI)	45	36	58	7	51	42	7	20	76	4
l. Enhanced/Value-Added Facsimile Services	43	37	56	7	49	40	12	21	74	5
m. Code and Protocol Conversion	42	31	60	10	48	48	5	19	79	2
n. On-line Information and/or data processing	40	33	55	13	50	35	15	18	80	3
o. Other, Terrestrial-based	61	8	79	13	30	61	10	13	87	0

Mobile										
o. Other, Satellite-based Mobile	23	9	87	4	28	68	4	8	92	0
o. Other, other	42	5	86	10	10	81	10	2	93	5

Source: WTO

Legend: FULL = No limitations listed, Partial = Limitations listed None = No commitments taken on this mode

Annex Table 2 . National Treatment Commitments In The Schedules For Commitment

	Number Listed	Cross Border Supply			Consumption Abroad			Commercial Presence		
		In percent of listed subsectors								
		Full	Partial	None	Full	Partial	None	Full	Partial	None
a Voice Telephone Services	65	23	65	12	26	63	11	17	77	6
b. Packet-Switched Data Transmission Services	59	37	53	10	39	54	7	34	63	3
c. Circuit-Switched Data Transmission Services	60	37	52	12	40	50	10	30	65	5
d. Telex Services	59	40	55	5	44	47	9	31	65	4
e. Telegraph Services	43	40	51	9	42	47	12	33	65	2
f. Facsimile Services	55	40	55	5	44	49	7	31	64	5
g. Private Leased Circuit Services	55	36	56	7	40	55	5	27	65	7
h. Electronic Mail	52	50	44	6	44	40	15	48	46	6
i. Voice Mail	48	46	48	6	46	42	13	42	54	4
j. On-line Information and Data Base Retrieval	54	52	41	7	48	35	17	48	44	7
k. Electronic Data Interchange (EDI)	45	56	38	7	53	36	11	49	42	9
l. Enhanced/Value-Added Facsimile Services	43	56	37	7	51	33	16	51	42	7
m. Code and Protocol Conversion	42	50	40	10	50	40	10	48	45	7
n. On-line Information and/or data processing	40	55	33	13	53	28	20	55	38	8
o. Other, Terrestrial-based Mobile	61	21	66	13	25	64	11	20	74	7
o. Other, Satellite-based Mobile	23	19	74	8	21	74	6	15	79	6
o. Other, other	42	7	83	10	10	80	10	7	88	5

Source: WTO

Legend: FULL = No limitations listed, Partial = Limitations listed None = No commitments taken on this mode

Annex Table 3. Limitations on National Treatment Commitments, Types of Measures By Sector and Mode of Supply[10]

		Tax Measure	Nationality Requirement	Residency Requirement	Licensing Standards and Qualifications	Registration Requirements	Authorisation Requirements	Ownership of Property/ Land
a. Voice Telephone Services	CB	1	6	4			4	4
	CA		6	4			4	4
	CP	1	12	5	3	1	5	5
b. Packet-Switched Data Transmission Services	CB	1	6	4			4	4
	CA		6	4			4	4
	CP	1	10	5	2	1	5	5
c. Circuit-Switched Data Transmission Services	CB	1	7	4			4	4
	CA		6	4			4	4
	CP	1	11	5	2	1	5	5
d. Telex Services	CB	1	7	4			4	4
	CA		6	4			4	4
	CP	1	13	4	1	1	5	5
e. Telegraph Services	CB	1	6	4			4	4
	CA		6	4			4	4
	CP	1	11	4	1	1	5	5
f. Facsimile Services	CB	1	7	4			4	4
	CA		6	4			4	4
	CP	1	12	4	1	1	4	5
g. Private Leased Circuit Services	CB	1	7	4			4	4
	CA		6	4			4	4
	CP	1	10	4	1	1	4	5
h. Electronic Mail	CB		1		1			
	CA		1		1			
	CP		4		1			1
i. Voice Mail	CB		1		1			
	CA		1		1			

[10] Data in this table does not take into account horizontal measures listed in schedules. As such, Mode 4, movement of natural persons is not included in this table because commitments on this mode are essentially determined by the horizontal measures.

	CP		5		1			1
j. On-line Information and Data Base Retrieval	CB		1		1			
	CA		1		1			
	CP		5		1			
k. Electronic Data Interchange (EDI)	CB		1		1			
	CA		1		1			
	CP		4		1			
l. Enhanced/ Value-Added Facsimile Services	CB		1		1			
	CA		1		1			
	CP		4		1			1
m. Code and Protocol Conversion	CB				1			
	CA				1			
	CP		3		1			
n. On-line Information and/or data processing	CB				1			
	CA				1			
	CP		2		1			
o. Other - Terrestrial-based Mobile	CB	1	7	4			4	4
	CA		6	4			4	4
	CP	1	12	5	3	1	6	4
- Satellite-based Mobile	CB	1	7	4			4	4
	CA		6	4			4	4
	CP	1	9	4	1	1	5	4

Source: WTO

CB=Cross Border Supply; CA=Consumption Abroad; CP=Commercial Presence

Annex Table 4. Limitations on Market Access Commitments, Types of Measures By Sector and Mode of Supply[11]

		Number of Suppliers	Number of Operations	Number of Natural Persons	Types of Legal Entity	Participation of Foreign Capital	Other Measures
a. Voice Telephone Services	CB	5			4	1	11
	CA	1			4	1	8
	CP	38	1		22	23	38
b. Packet-Switched Data Transmission Services	CB	5			4	1	8
	CA	2			4	1	6
	CP	24	1		22	17	32
c. Circuit-Switched Data Transmission Services	CB	3			4	2	8
	CA	2			4	1	6
	CP	23	1		19	18	31
d. Telex Services	CB	2			3	2	7
	CA	1			3	1	5
	CP	22	1		20	17	27
e. Telegraph Services	CB	2			3	1	6
	CA	1			3	1	5
	CP	18	1		18	13	24
f. Facsimile Services	CB	2			2	2	7
	CA	1			2	1	4
	CP	16	1		17	15	28
g. Private Leased Circuit Services	CB	2			4	2	8
	CA	1			4	1	6
	CP	20	1		18	16	31
h. Electronic Mail	CB	3					7
	CA	1					1
	CP	14	1		8	7	19
i. Voice Mail	CB	3					4
	CA	1					1
	CP	13	1		7	8	16
j. On-line Information and Data Base Retrieval	CB	3					5
	CA	1					2
	CP	12	1		8	9	18
k. Electronic Data Interchange (EDI)	CB	2					4
	CA	1					1
	CP	9	1		4	5	14
l. Enhanced/Value-Added Facsimile Services	CB	2					4
	CA						1
	CP	10	1		5	6	16

[11] Data in this table does not take into account horizontal measures listed in schedules. As such, Mode 4, movement of natural persons is not included in this table because commitments on this mode are essentially determined by the horizontal measures.

m. Code and Protocol Conversion	CB	2					3
	CA	1					1
	CP	9	1		3	5	13
n. On-line Information and/or data processing	CB	3					5
	CA	1					1
	CP	10	1		6	4	13
o. Other - Terrestrial-based Mobile	CB	4			4	2	11
	CA	1			4	1	8
	CP	30	1		20	21	33
- Satellite-based Mobile	CB	2			4	2	9
	CA	1			4	1	6
	CP	24	1		20	18	31

Source: WTO

Annex Table 5. Summary of GATS Specific Commitments on Telecommunications Services

	Voice Telephone	Packet-Switched Data Trans.	Circuit-Switched Data Trans.	Telex	Telegraph	Facsimile	Private Leased Circuit Services	E-Mail	Voice Mail	On-line Info and Data Base Retrieval	Electronic Data Inter-change	Enhanced Facsimile	Code and Protocol Conv.	On-line Info &/or data proc.	Terrestrial mobile	Satellite mobile	Other
1. Antigua and Barbuda*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2. Argentina*	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
3. Australia*	X	X	X	X		X	X	X	X	X	X	X	X		X	X	
4. Austria*	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	
5. Bangladesh*	X	X	X	X	X	X	X								X	X	X
6. Barbados	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7. Belize*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8. Bolivia*	X	X	X	X	X	X	X								X	X	
9. Brazil* **	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10. Brunei Darussalam*	X		X			X		X		X	X	X			X		
11. Bulgaria*	X	X	X	X	X	X	X			X		X	X		X	X	X
12. Canada*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13. Chile*	X	X	X	X	X	X	X	X		X				X	X	X	
14. Colombia*	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	
15. Congo RP	X																
16. Côte d'Ivoire*	X	X	X	X	X	X	X								X	X	X
17. Cuba	X	X	X	X	X	X											X
18. Cyprus																	
19. Czech Republic*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20. Djibouti	X	X	X	X	X			X					X		X	X	X
21. Dominica* **	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22. Dominican Republic*	X	X	X	X	X	X	X								X	X	X
23. Ecuador*	X							X	X	X	X	X	X	X	X		
24. El Salvador*	X	X	X	X		X	X								X	X	X
25. Estonia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
26. European Community (12)*	X	X	X	X	X	X	X	X	X	X	X		X		X	X	
27. Finland*	X	X	X	X	X	X	X	X	X	X	X		X		X	X	
28. Gambia	X	X	X	X		X	X	X	X	X	X	X					
29. Georgia**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
30. Ghana*	X	X	X	X	X	X	X								X	X	X
31. Grenada*	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
32. Guatemala*	X	X	X	X	X	X	X								X	X	
33. Guyana										X							
34. Hong Kong*	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X
35. Hungary*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
36. Iceland*	X	X	X	X	X	X	X	X	X	X	X		X		X	X	
37. India*	X		X			X	X	X	X	X		X		X	X		

	Voice Telephone	Packet-Switched Data Trans.	Circuit-Switched Data Trans.	Telex	Telegraph	Facsimile	Private Leased Circuit Services	E-Mail	Voice Mail	On-line Info and Data Base Retrieval	Electronic Data Inter-change	Enhanced Facsimile	Code and Protocol Conv.	On-line Info &/or data proc.	Terrestrial mobile	Satellite mobile	Other
38. Indonesia*	X	X	X	X	X			X	X					X	X	X	X
39. Israel*	X	X	X	X		X	X	X	X	X	X	X			X	X	
40. Jamaica*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
41. Japan*	X	X	X	X		X	X	X	X	X	X	X	X	X			X
42. Jordan **	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
43. Kenya	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
44. Korea RP*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
45. Kyrgyz Republic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
46. Latvia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
47. Lesotho								X		X	X	X	X	X			
48. Liechtenstein								X	X	X	X	X	X	X	X		X
49. Malaysia*	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X
50. Mauritius*	X	X	X	X	X	X	X								X	X	X
51. Mexico*	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X
52. Mongolia								X	X	X	X	X	X	X			
53. Morocco*	X	X		X			X	X	X	X	X	X			X	X	X
54. New Zealand*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
55. Nicaragua*			X	X	X	X	X	X	X	X	X	X	X	X	X		
56. Nigeria	X							X	X	X	X	X	X	X	X		X
57. Norway*	X	X	X	X	X	X	X	X	X	X	X	X			X	X	
58. Pakistan*	X	X	X	X	X	X	X			X				X	X	X	X
59. Panama								X	X	X	X	X	X	X			X
60. Papua New Guinea* **	X	X	X	X	X	X	X								X	X	
61. Peru*	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X
62. Philippines* **	X	X	X	X	X	X			X	X	X				X		X
63. Poland*	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X
64. Romania*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
65. Saint Kitts & Nevis								X	X					X			
66. Senegal*	X	X	X	X		X	X	X					X		X	X	X
67. Singapore*	X	X	X				X	X	X	X	X			X	X	X	
68. Slovak Republic*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
69. Slovenia								X	X	X		X	X				
70. South Africa*	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	
71. Sri Lanka*	X	X	X			X									X	X	
72. Suriname	X	X	X	X		X	X								X	X	X
73. Sweden*	X	X	X	X	X	X	X	X	X	X	X		X		X	X	
74. Switzerland*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
75. Thailand*	X			X	X	X	X			X				X			X
76. Trinidad and Tobago*	X	X	X	X	X		X			X	X	X	X	X	X	X	X
77. Tunisia*	X	X		X											X	X	X

	Voice Telephone	Packet-Switched Data Trans.	Circuit-Switched Data Trans.	Telex	Telegraph	Facsimile	Private Leased Circuit Services	E-Mail	Voice Mail	On-line Info and Data Base Retrieval	Electronic Data Inter-change	Enhanced Facsimile	Code and Protocol Conv.	On-line Info &/or data proc.	Terrestrial mobile	Satellite mobile	Other
78. Turkey*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
79. Uganda	X	X	X	X	X	X	X								X	X	X
80. USA*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
81. Venezuela*	X	X	X				X								X	X	X
82. Zimbabwe		X	X			X		X	X	X	X	X	X	X			X
TOTAL SCHEDULES	**72**	**67**	**68**	**63**	**51**	**63**	**63**	**59**	**55**	**61**	**52**	**50**	**49**	**47**	**69**	**62**	**48**
TOTAL GOVERNMENTS	**84**	**79**	**80**	**75**	**63**	**75**	**75**	**71**	**67**	**73**	**64**	**50**	**61**	**47**	**81**	**74**	**48**

Source: WTO

* Participant in the 4th Protocol on basic telecommunications.

** Entry into force of commitments pending acceptance of 4th Protocol or of the Protocol of Accession.

81+12 (EU) = 93 WTO Governments Total

Annex Table 6. Commitments by Various Countries With Respect to Voice Telephony

Participant	Voice telephone									Phase-in date	Add.'l commit-ments Ref. Ppr.	Add.'l commit- ments (other)
	VT	L		LD		I		R				
			Phase in		*Phase in*		*Phase in*		*Phase in*			
Commitments in the GATS 4th Protocol												
Antigua & Barbuda	1						1			2012	1	
Argentina	1		1		1		1		1		1	
Australia	1	1		1		1		1			1	
Bangladesh	1	1		1								To review and consider adding
Belize											1	
Bolivia	1	1			1		1		1	12/ 2001		1
Brazil (9) (11)**	1											To introduce later
Brunei Darussalam	1					1					1	
Bulgaria	1		1		1		1			2003 2005	1	
Canada	1	1		1		1		1			1	
Chile	1			1		1		1			1	
Colombia	1	1		1		1					1	
Cote d'Ivoire	1		1		1		1		1	2005	1	
Czech Republic	1		1		1		1		1		1	
Dominica**											1	
Dominican Republic	1	1		1		1		1			1	
Ecuador												
El Salvador	1	1		1		1		1			1	
European Union(10)	1	1		1		1		1		**Gr** 2003	1	
Ghana	1	**1**		**1**		**1**					1	
Grenada	1		1	n.a.			1		1	2006	1	
Guatemala	1	1		1		1		1			1	
Hong Kong	1	1		n.a.		1		1			1	
Hungary	1		1		1		1		1		1	
Iceland	1	1		1		1		1			1	
India	1	1		**1**						**ld,int** 2003 **local** 2004	1	
Indonesia	1	**1**		**1**		**1**					1	
Israel (11)	1					**1**					1	
Jamaica	1		1		1		1			2013	1	
Japan	1	1		1		1		1			1	

Korea	1	1		1		1			1		1	
Malaysia	1	1		1		1						1
Mauritius	1		1		1		1			2004		To introduce later
Mexico	1	1		1		1		1			1	
Morocco	1		1		1		1			2002		1
New Zealand	1	1		1		1		1			1	
Norway	1	1		1		1		1			1	
Pakistan	1		1		1		1		1	2004	1	
Papua New Guinea**	(12)										1	
Peru	1	1		1		1		1			1	
Philippines**	1	1		1		1						1
Poland	1	1			1		1		1	2003	1	
Romania	1		1		1		1		1	2003	1	
Senegal	(12)										1	
Singapore	1		1	n.a.			1				1	
Slovak Republic	1		1		1		1		1	2003	1	
South Africa	1		**1**		**1**		**1**		1		1	
Sri Lanka	(12)										1	
Switzerland	1	1		1		1		1			1	
Thailand	(9)											To introduce later
Trinidad & Tobago	1		1		1		1		1	2010	1	
Tunisia	1		1									
Turkey	(9)									2006		1
United States	1	1		1		1		1			1	
Venezuela	1		1		1		1			12/ 2000		1
Total schedules (55)	**47**	**25**	**17**	**23**	**16**	**24**	**19**	**16**	**13**		**43**	**6**
Governments (of 69)	**61**	**38**	**18**	**36**	**17**	**37**	**20**	**29**	**14**		**57**	**6**
Total all (govs)	**61**	**56**		**53**		**57**		**43**			**57**	**6**
Other schedules/commitments submitted												
Barbados	1		1		1		1		1	2012	1	
Cyprus (12)												
Estonia	1	1			1		1		1		1	
Georgia**	1	1		1		1		1			1	
Jordan**	1		1		1		1		1	2005	1	
Kenya	1	1		1			1		1		1	
Kyrgys Rep.	1	1			1		1		1	2003	1	
Latvia	1		1		1		1		1	2003	1	
Suriname (11)	1	**1**		1		**1**					1	
Uganda	1	1		1		1					1	
Total govs, incl. other	**70**	**44**	**21**	**40**	**22**	**40**	**26**	**30**	**20**			
Total all govs, incl. other (of 79)	**70**	**65**		**62**		**66**		**50**			**66**	**6**