THE EVOLUTION OF INTERNET IN INDIA THROUGH PUBLIC-PRIVATE PARTNERSHIP: THE TATA COMMUNICATION'S STORY

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INTERNET REGIME IN INDIA

The history of the internet in India began with the launch of the Educational Research Network (ERNET) in 1986. The network was only made available to educational and research communities.[1] ERNET was initiated by the Department of Electronics (DoE), with funding support from the Government of India and United Nations Development Program (UNDP), involving eight premier institutions as participating agencies—NCST Bombay, Indian Institute of Science, five Indian Institutes of Technology at Delhi, Mumbai, Kanpur, Kharagpur and Chennai, and the DoE in New Delhi. ERNET began as a multi-protocol network with both the TCP/IP and the OSI-IP protocol stacks running over the leased-line portion of the backbone. Since 1995, however, almost all traffic is carried over TCP/IP.[2] The first leased line of 9.6 kbit/s was installed in January 1991 between Delhi and Mumbai. ERNET was allotted Class B IP address 144.16.0.0 by InterNIC in 1990. Subsequently, Class C addresses were allotted to ERNET by APNIC. All IITs, IISc Bangalore, DOE Delhi and NCST Mumbai were connected by 9.6 kbit/s leased line by 1992. In the same year, 64 kbit/s Internet gateway link was commissioned from NCST Mumbai to UUNet in Virginia, United States.

NICNet was established in 1988 for communications between government institutions. The network was operated by the National Informatics Centre.[3]

[1] "20 years of Internet in India: On August 15, 1995 public Internet access was launched in India". News18. 15 August 2015. Archived from the original on 2 October 2016. Retrieved 24 March 2018.
[2] Archived from https://web.archive.org/web/20150918212827/http://www.eis.ernet.in/about.html on 2015-09-18. Retrieved 24 March 2018.
[3] *Supra* note 1

THE INITIAL INFRASTRUCTURE OF INTERNET IN INDIA

The first publicly available internet service in India was launched by state-owned Videsh Sanchar Nigam Limited (VSNL) on 14 August 1995.[4] At the time, VSNL had a monopoly over international communications in the country and private enterprise was not permitted in the sector. The internet service, known as the Gateway Internet Access Service (GIAS), provided a speed of 9.6 kbit/s speed and was priced at $160 for 250 hours for individuals, $500 for institutional dial-up SLIP/PPP accounts, and higher for leased line services. GIAS was available immediately from Mumbai, Delhi, Kolkata and Chennai. It was made available in Pune and Bangalore by the end of 1995, while users from other locations could connect through the Department of Telecommunications' I-NET, an X.25 network accessed through leased lines or at a concessional dial-up rate from almost anywhere. The connection between VSNL and MCI Inc. in the United States was made with multiple 64kbit/s links.[5]

The service was plagued by several hardware and network issues. B.K. Syngal, then chairman and managing director of VSNL, publicly apologized and took responsibility for the issues. Syngal stated that the company had not conducted any survey of the potential demand for the service. The modems used by VSNL were of poor quality, and often would make a beeping sound every three minutes and subsequently disconnect. The connections also faced junction issues when users attempted to connect between internet exchanges. VSNL had designed each line to handle 30 customers at a time, which would quickly swell to full capacity. VSNL invested ₹2-2.5 crore on the launch. Recalling the launch in 2015, Syngal described the amount as "pathetic".[6]

VSNL had then invested in globally promoted projects like international undersea cables and satellite communications including a sum of US$150 million in ICO Global Communications (Holdings) Limited. ICO aimed to provide global mobile personal communication services.

VSNL also held a 2.02% and 5.4% share respectively in Inmarsat and Intelsat. Inmarsat was the world's largest commercial satellite communications provider and Intelsat has a network of 21 satellite offering telephony corporate networks, Internet and Broadcast services worldwide.

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[4] Ghosh, Shauvik (2015-06-29). "The birth of the Internet in India". Archived from the original on 2016-10-02. Retrieved 24 March 2018.
[5] *Supra* note 1
[6] *Supra* note 4

The majority of international carriers use the accounting rate revenue division procedure promulgated by the International Telecommunications Union (ITU) for revenue sharing for incoming and outgoing calls.

THE LAUNCH OF VSNL AND THE EXPANSION OF INTERNET

India's overseas communications monopoly, Videsh Sanchar Nigam Limited (VSNL) launched India's first full Internet service for public access. The Gateway Internet Access Service (GIAS) was launched one week after the deadline.

VSNL stated that while the GIAS will be available immediately from Bombay, Delhi, Calcutta and Madras, it will be directly connected to Pune and Bangalore "shortly". Users from other locations can connect through the Department of Telecommunications' I-NET, an X.25 network accessed through leased lines or at a concessional dial-up rate from almost anywhere.

The connection between VSNL and MCI in the US starts with "multiple 64kbps" links, which will *"grow into T1 or E1 by the end of the year."*

DISINVESTMENT OF VSNL AND THE ENTRY OF TATAs

Companies, joint ventures and consortia interested in participating for bidding of VSNL were required to have a net worth of Rs. 2500 crore. The net worth of only those promoters was to be counted who had more than a 10% equity stake in the total equity of the company. The SEBI takeover code required that the strategic partner would come out with an open offer for an additional 20% stake. The strategic partner was expected to bring in expertise and managerial acumen.

The bid was open to international parties but did not draw any interest because of the 49% capital of foreign direct investments in the telecom sector. GDRs and FIIs already accounted for 38% of VSNL's equity capital that left only a remaining 11% for the foreign company. This left out foreign firms like MCI World Com, France Telecom, Telecom Italia, BT and AT & T, who had shown interest earlier among the domestic players, the initial 7-8 players who showed

interest were paired down to Reliance and the Tata Group by the time the bidding process began. In choosing between prospective strategic partners, the government way to pay due attention, interalia, to the security requirements of the country.[7]

TATA COMMUNICATIONS AND GOVERNMENT OF INDIA ENTERS INTO A UNIQUE PUBLIC PRIVATE PARTNERSHIP TO EXPAND THE DATA DRIVE

The Tata group seems to have hit a jackpot by acquiring strategic stake in Videsh Sanchar Nigam Limited (VSNL). According to analysts, with one stroke, it was able to be a dominant player in the International Long-Distance (ILD) and internet services, even as it is readying to make a foray in the National Long Distance (NLD) segment. The group already has a presence in the cellular and the basic services, making it the first fully integrated telecom player in the country.

Benefits given to Tata Communications for acquiring VSNL

The financial benefits given to VSNL include a five year reimbursement of license, entry and revenue sharing fees and exemptions from performance bank guarantees, all which the Tata group will get. What is more, VSNL has also planned to go full steam ahead with its NLD services, instead of picking up a license for the same, the Tata group can now avail itself of this shortcut. The group had earlier made a tentative investment of Rs. 1000 crore, for rolling out these services. This could now be scaled down considerably.

In the internet segment, it was earlier proposed to merge Tata Internet Services Ltd. with its basic services operation. This was being considered in the light of the plans for offering broadband services in all its circles of operations.

[7] The Economic Times June 28,2002, "World Com Scam Rocks VSNL, Rs 500 crores dues in limbo voice & data, April 18,2002, ILD: Riders are many"

VSNL already has a ready internet subscriber base of 6.6 lakh, having rolled out ISP services in the four metros and its own internet nodes at 18 cities. The Tata internet services network is now present across 32 cities in the country.[8]

THE EXECUTION OF PPP VIS-À-VIS EMERGING COMPETITION

VSNL was the most challenging pubic private partnership as well as privatisation. The suspense was kept alive till the last day for receiving bids, when finally the Delhi High Court dismissed a petition challenging the PPP & Privatisation.

First was the issue of whether to privatise at all. Go down to 49 per cent of VSNL was strategic. Intelligence agencies need access. The court addressed it and stated that Intelligence services will not be impacted as the internal operation would remain the same and the SPV will just be taking over the management control.

Secondly came the ticklish issue of 770 acres of surplus land. The solution given was to separate the surplus land from VSNL. Also, the sale proceeds of such land would go to the government.

Lastly, the bidders concerns were: What happens if, post-disinvestment, BSNL/MTNL refuse to route calls through VSNL? The government could not have created a private monopoly in place of a public monopoly.

Therefore, as a prelude to privatisation, the international communication sector was liberalised from April 1, 2002. Hence the worry. *VSNL was given the most favoured customer status for a period of two years, but at market rates*.

Finally, after a year, the company was privatised in February, 2002 in favour of a Tata SPV for Rs 1439.25 crore.

Lease-Build -Operate-Maintain

[8] *Infra* note 20

The communications network, which was acquired by Tata Communications after privatisation has been operating under the model of Lease-Build-Operate & Maintain.

Tata Communications since the privatization and after the exempted period of 5 years, has been paying a huge chunk of amount as a Lease Fees to the Central Government. Apart from the Lease amount, the company also pays Cable Landing Station Access Charge. This charge is paid to the government for accessing the cable which is coming to the CLSs. The Operation and Maintenance Charges are paid along with the Lease charges.

Based on the TRAI Data, the charges levied on Tata Communications annually are as follows:

Cable Landing Station Lease + Operate & Maintenance Fees

Tata Communications VSB Chennai Cable Landing Station - $2,76,200/p.a.

Tata Communications LVSB Mumbai Cable Landing Station - $6,28,100/p.a.

Fees charged by the Cable Landing Station to Access 1 Cable (SMW4) by Telcos

Tata Communication's Mumbai Submarine Cable Unit Access Charge - $6,28,100/p.a.

GOVERNMENTS CONTROL ON THE CLSS AND CABLES LANDING IN INDIA

A submarine Cable Landing Station is a facility where the International Submarine Cable lands in a country and gets connected with the domestic network of that country. The ownership and the operation of the CLS is dependent upon the regulations of the specific country where it lands. Typically, a Submarine CLS would be a telecommunications equipment building where the submarine cable, after landing on-shore, would be terminated, i.e., it would be connected into a network(s) inside a physical building residing on-land. In India, as per the present regulations, a CLS can be owned and operated by either an ISP or an ILDO. The policy regarding setting up of CLS based international gateways was first liberalized in the year 2000 when the ISPs were allowed to establish their own CLS based international gateways.

Thereafter in the year 2002, after introduction of competition in the ILD services sector, ILDOs were also allowed to establish their own CLS based international gateways.

Legislations governing Tata Communication's Infrastructure Distribution

The Operations of Tata Communications are governed by *The International Telecommunication Access to Essential Facilities at Cable Landing Stations Regulations, 2007*. This regulation deals with governing of the Cable Landing Stations and the allotment of services to all other telecom companies based on the other regulations of TRAI as well as the Central Government.

TATAS UNIQUE WAY OF SERVING PUBLIC VIA PPP MODE

It has been seen that the above mentioned method of Public Private Partnership is one of its kind and has never been seen in the PPP Scenario of this nation till date. Generally, PPPs are carried on in the following models:

a. Design- Build
b. Design-Build-Operate
c. Design-Build-Operate-Transfer
d. Design-Build-Finance-Operate
e. Build-Transfer-Operate
f. Build-Own-Operate-Transfer
g. Build-Own-Operate
h. Lease
i. Concession

However, it has been seen in few cases that Tata Group has followed the Divestiture Model of Public Private Partnership.

Divestiture as a Public Private Partnership

The World Bank Report on Public Private Partnership[9] states:

Full divestiture, also known as, privatization, occurs when all or substantially all the interests of a government in a utility asset or a sector are transferred to the private sector.

A divested or privatized utility or public service is distinguishable from a private commercial enterprise in that the government generally retains some indirect form of control or mechanism for regulation over the privatized utility, in the form of a license granted to the entity to deliver the service to the public.

Full privatization is distinguishable from partial privatization and joint venture arrangements between public and private where the public sector maintains a significant interest.

Typically a government intending to divest of utility assets will sell shares in the utility or transfer assets into a special purpose company and sell shares in that company, although divestiture can be via a sale of assets. Whether the divestiture is via an asset or share sale will depend on the circumstances of the utility and local issues such as tax treatment of such sales. The share sale is often favored as it allows the government to retain an indirect or veto interest in the privatized utility through a "golden share"

The Tata Power Delhi Distribution Case Study

Tata Power Delhi Distribution Limited is owned by the Government of Delhi and Tata Power. A majority stake of 51% was acquired by Tata Power in 2002-03 post the unbundling of the Delhi Government owned Delhi Vidyut Board in the form of equity and preference shares.

Tata Power Delhi Distribution Limited was initially known as the North Northwest Delhi Distribution Company and subsequently renamed North Delhi Power Limited. In 2011, nine years after it first started operations, its name was changed once again to Tata Power Delhi Distribution Limited[10]

[9] Available at http://ppp.worldbank.org/public-private-partnership/agreements/full-divestiture-privatization; Retrieved on March 25, 2018

[10] "NDPL renamed Tata Power Delhi Distribution Limited" http://indiatoday.intoday.in/story/north-delhi-power-ltd-tata-power-delhi-distribution-limited/1/163007.html Retrieved on March 24, 2018

In June 2002, Tata Power Delhi Distribution Limited began its operations as the North Northwest Delhi Distribution Company[11] and at the same time, the distribution network of the erstwhile Delhi Vidyut Board was privatised as per the provisions of the Delhi Electricity Reform Act, 2000 and the Delhi Electricity Reform (Transfer Scheme) Rules, 2001.[12] The Delhi Vidyut Board was unbundled and split into six entities managed by BSES Limited (now Reliance Infrastructure Ltd.) and Tata Power.[13]

Under the agreement, Tata Power gained a 51% stake in the North and Northwest Delhi firm with a payment of Rs. 187 crores. It also agreed to reduce the Aggregate Technical and Commercial (AT&C) losses of the firm by 17% in the next five years.[14]

Tata Power's Ultra Mega Power Project in Gujarat Case Study

Tata Power has secured the contract to develop the Mundra project on a Build-Own-Operate (BOO) basis with an estimated cost of Rs16,000 crore.[15] The project to be developed over seven to eight years was awarded to Tata Power on the basis of a tariff-based international competitive bidding by the Ministry Of Power.[16]

The government has decided to develop ten ultra mega power projects through private sector participation to meet the growing demand for power. These projects are expected to be commissioned during the 12th Plan period (2012-17).[17]

To operationalise the Mundra project, the state-owned Power Finance Corporation transferred the special purpose vehicle, Coastal Gujarat Power Ltd, to Tata Power Co.[18] Tata Power,

[11] Available at http://www.ndpl.com/UploadedDocuments/TPDDL%20Case%20Study.pdf Retrieved on March 24, 2018
[12] *ibid*
[13] Available at http://dtl.gov.in/DTL_New_WebSite/DTL_History_140409.htm Retrieved on March 24, 2018
[14] *Supra* note 14
[15] Available at https://www.livemint.com/Companies/cPovdejdQ5eOIuGPKiibpK/IFC-to-fund-Tata8217s-ultra-mega-power-project.html Retrieved on March 24, 2018
[16] Available at http://www.business-standard.com/article/pti-stories/cao-to-continue-monitoring-tata-power-s-mundra-project-115022200177_1.html Retrieved on March 24, 2018
[17] ADB IFC to fund Tata Powers Mundra UMPP; Available at https://www.projectstoday.com/News/ADB-IFC-to-fund-Tata-Powers-Mundra-UMPP; Retrieved on March 24, 2018
[18] Tata Mundra Ultra Mega Power Project; https://www.sourcewatch.org/index.php/Tata_Mundra_Ultra_Mega_Power_Project; Retrieved on March 24, 2018

meanwhile, has already signed power purchase agreements with seven power distribution companies who have agreed to evacuate power from the Mundra project after its completion.[19]

EXPANSION OF INTERNET INFRASTRUCTURE

Tata Communications since its inception by acquiring VSNL has grown rapidly. It, within 10 years of span, showcased itself as a global powerhouse of data and that was only possible by way of multiple strategic acquisitions in India as well as on the global scale.

Few notable acquisitions which grew Tata Communications extensively were:

1. **VSNL** Acquisition in 2002 which made it an international player but directly gaining access to all Tier 1 Networks, Indian Domestic Cable Network, Voice Telephony, Data Services and International Traffic Services.
2. VSNL acquired **Tyeo Global Network** in 2005 and becomes one of the world's largest providers of submarine cable bandwidth.[20]
3. In 2006, VSNL acquired **Teleglobe**, growing its global reach, operational strengths and deep carrier relationships; VSNL re-brands **SNO as Neotel in South Africa**.[21]
4. **Tyco Telecommunications** was acquired by Tata Communications for $130 million, or Rs 585 crore, in a cash deal.[22] They have planned to build TGN-Intra Asia cable system across Asia Continent. The acquisition will give the company control over a 60,000 km cable network spread over three continents. *"The price that VSNL has paid is a fraction of Tyco's total cable assets. It is a unique global network, with assets of almost $2.5 billion,"*[23] Tata Industries Managing Director Kishor Chaukar said. *"VSNL was short on bandwidth, information, and technology. With this deal no one will be able to beat us,"* Chaukar said, pointing out that Tyco's cables had a data transfer capacity of 10-15 terabit (1 trillion bit per second).[24]

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[19] *Supra* note 17
[20] BSE Data for Tata Communications Ltd; http://www.business-standard.com/company/tata-comm-2295/information/company-history Retrieved on March 24, 2018
[21] *Ibid*
[22] VSNL acquires Tyco for $130 million, http://www.tata.in/article/inside/R3GAyGebwRk=/TLYVr3YPkMU=, Retrieved on March 25, 2018
[23] *Ibid*
[24] *Ibid*

5. America's **Windstream Communications** acquisition to provide 100Gbps Ethernet Network in United States of America.
6. **BitGravity**, a US-based CDN provider was acquired to provide Tata Communications with a new Business Line and start its CDN Services.[25] This acquisition enabled it to offer its customers a cloud-based service for content delivery, including the delivery of HTML, CSS, JavaScript, videos and live streaming HD.[26] This service was then integrated with other support services, like security, satellite teleports, fibre-based video network and transcoding.[27]
7. **Neotel South Africa** acquisition & **Vodacom SA** strategic partnership for providing Internet Data Cable Service to Africa. After the proposed arrangement, all data, voice, video etc would be flowing though the cables systems laid by Tata Communications.
8. In April 2008, another one expansion of its Global VPN service to Egypt was made through a partnership agreement with **TE Data S.A.E.,** *a subsidiary of Telecom Egypt S.A.E.*
9. In May 12, 2008, Tata Communications and **Sonus Networks, Inc**, a market leader in IP communications infrastructure unveiled plans for the strategic expansion of Tata Communications' global voice network.[28]
10. Antrix Corporation, ISRO's commercial arm and Tata Communications signed an MoU for acquisition of satellite capacity in the region.[29]
11. 50% Shares of **Beijing-based China Entercom Communications** was acquired by Tata Communications in 2008 to grow its network in China.
12. **Teleglobe International Holdings Ltd.**, a leading provider of wholesale voice, data, IP and mobile signaling services was acquired by way of amalgamation of Teleglobe with a VSNL subsidiary in Bermuda.[30]

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[25] "Tata Communications completes acquisition of BitGravity - Livemint" available at http://www.livemint.com/Companies/K6ulXvifXcsuHiTCgmmnyK/Tata-Communications-completes-acquisition-of-BitGravity.html. Retrieved 24 March, 2018
[26] Communications, Tata. "Content Delivery Network - Tata Communications". cdn.tatacommunications.com Retrieved on March 25, 2018
[27] *Ibid*
[28] *Supra* note 22
[29] Tata Communications Ltd. Company History and Annual Growth Details; available at https://www.goodreturns.in/company/tata-communications/history.html Retrieved on March 25, 2018
[30] VSNL to acquire Teleglobe for $239 million, available at http://www.tata.com/article/inside/RKXqMYqKpOY=/TLYVr3YPkMU= Retrieved on March 25, 2018

PRESENT DAY INTERNET INFRASTRUCTURE

Tata Communications operates a wholly owned submarine fibre optic cable network, comprising more than 500,000 km of subsea fibre, and 210,000 km of terrestrial fibre.

The company has more than 15 terabits/s of international bandwidth lit capacity.

Tata Communications became a Tier 1 Network provider of Telecom infrastructure after purchasing VSNL. The basic concept of Networking lies at the heart of Under Sea Cables.

Tata Communications, as seen above, went on an acquisition spree and acquired all the world's major cable operators. Tier 1 companies are those who lay down cables under the sea to provide telecom services to local companies.

Tier 1 Companies of the World

Tier 1 Company	Area Governed
AT&T	United States
CenturyLink (formerly Level 3, Qwest, Savvis, Global Crossing, TW Telecom and Exodus)	United States
Deutsche Telekom AG (ICSS)	Germany
GTT Communications, Inc. (formerly Tinet & nLayer)	United States
KPN International	Netherlands
Liberty Global	United Kingdom
NTT Communications (America) (formerly Verio)	Japan
Orange (OpenTransit)	France
PCCW Global	Hong Kong
Sprint (SoftBank Group)	Japan
Tata Communications (America) (Acquired Teleglobe)	United States; India

Telecom Italia Sparkle (Seabone)	Italy
Telxius (Subsidiary of Telefónica)	Spain
Telia Carrier	Sweden
Verizon Enterprise Solutions (formerly UUNET and XO Communications)	United States

These Tier 1 companies, then, sell of the data, voice and other telcom services to Tier 2 Companies who are the National Level Companies and have their network all over the country. In India, Tier 2 Companies are:

1. Reliance Communications.
2. Bharti Airtel
3. Vodafone
4. Idea Cellular
5. Hathaway Broadband
6. Sify Broadband and many more

After the Tier 2 companies, the same network services are sold to Tier 3 companies who operate in regional markets. Tier 3 companies are the ones who get the common people connected to the internet by providing Broadband Services.

CONTROVERSY

The Competition Commission of India (CCI) witnessed an allegation of monopolistic behaviour in the cable landing station market. A cable landing station is the place where submarine cable systems, after carrying voice and data for thousands of miles, pass them on to the domestic network in a country.

India is connected to the rest of the world by 12 submarine cable systems which land at different locations. However, nearly 85 per cent of these landing points are owned by two players — Tata Communications and Bharti Airtel.

The CCI has moved on the issue *suo motu* based on complaints made by some of the foreign long-distance telephony companies alleging that the Indian telecom firms are taking advantage of the control over landing stations by charging a high landing fee.

According to Government sources, the CCI had recently called some of the foreign companies and had made preliminary enquiries. According to the foreign players, the fee fixed by the Indian players is much higher than what is charged in other countries. For example, a long-distance carrier connecting to a cable landing station in Changi, Singapore, pays less than $3,875 per annum for 10 Gbps bandwidth while in India the two operators charge anywhere between $65,000 and $2,50,000 per annum.

Although it is mandatory for the landing station owners to give access to all cables without discrimination, they are allowed to fix their own fee for this facility.

Multinational giants, including AT&T, Verizon and Cable & Wireless, have told the telecom regulator, which is also examining the issue, that the high tariff is holding back consumption of bandwidth available in the country. Compared to a total designed capacity of 33,900 Gbps available on the 12 undersea cables combined, the total lit capacity (ready for use) in the country is 6,009 Gbps and the actual bandwidth consumed is only 1,110 Gbps.

The Indian cable landing station owners defend the higher fee on grounds that it is based on costs. It takes Rs 60-100 crore to build a cable landing station and the bandwidth consumption in India is not high enough to drive volume-based pricing.

The cable landing station owners also know that their facility is being used mostly for catering to enterprise clients who will buy the bandwidth anyway. Therefore, there is no incentive for the landing station owners to drop tariffs. Also, big foreign companies such as BT and AT&T have not invested in setting up a cable landing station in India which allows the Indian players to claim a premium. The Indian players use this to negotiate better rates when they have to land traffic in other countries.