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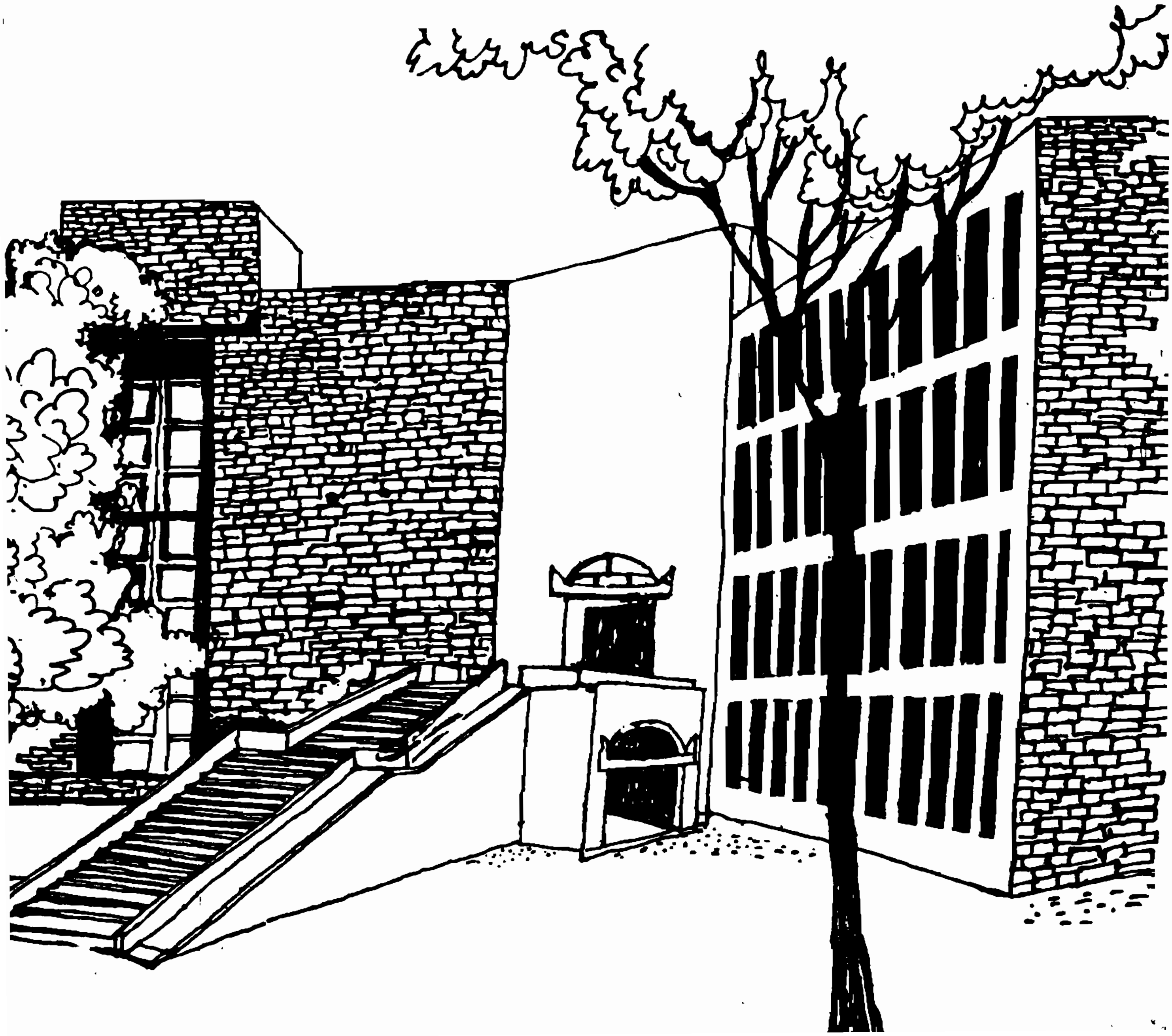

Public Expenditure Accountability in the Telecom Sector

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Abstract:

The telecom sector has seen much change during the past two decades. At first, it was the opening up of the equipment manufacturing sector, followed by the corporatisation of the government owned entities, Videsh Sanchar Nigam Limited (VSNL) and Mahanagar Telephone Nigam Limited (MTNL). Subsequently, the sector was opened for private participation in basic, cellular and other value added services. The most recent liberalization moves have been the corporatization of the Department of Telecom into Bharat Sanchar Nigam Limited (BSNL) and the privatisation of VSNL.

The importance of this sector combined with the need to expand the reach and quality of communications in the country has seen investment in telecom grow at nearly 20 per cent per annum for the last decade. As the regulator and policy maker, much of this investment is either directly or indirectly influenced by government. It would be useful to take stock of how accountably this public expenditure is being made. At the broadest level, the issues related to public expenditure accountability are related to appropriate revenue generation, expenses and investment, and the policies to enable this to happen in a sustainable manner.

In this paper, we attempt to address the issues by examining the budgetary process of the Department of Telecommunications (DOT) in the MOC, with respect to the government of India (GOI). We then look at the relation of the DOT with its PSUs, with an emphasis on the BSNL corporatisation and the VSNL privatisation. Finally, we focus on the broader policy aspects of public expenditure in the telecom sector, with a perspective on the future.

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Introduction

The telecom sector has seen much change during the past two decades. At first, it was the opening up of the equipment manufacturing sector, followed by the corporatisation of the government owned entities, Videsh Sanchar Nigam Limited (VSNL) and Mahanagar Telephone Nigam Limited (MTNL). Subsequently, the sector was opened for private participation in basic, cellular and other value added services. The most recent liberalization moves have been the corporatization of the Department of Telecom into Bharat Sanchar Nigam Limited (BSNL) and the privatisation of VSNL.

The Ministry of Communications and Information Technology (MOC) had a direct investment approximately valued between Rs 1,40,000 crores to Rs 2,50,000 crores in BSNL, MTNL and VSNL in March 2001. During 2000-01, the MOC controlled revenues were Rs 24,000 crores per annum (Rs 19,200 crores from BSNL, 56% of Rs 5,800 crores from MTNL, and 26% of Rs 7,900 crores from VSNL) and corresponding expenses were Rs 13,000 crores (Rs 9,300 crores of BSNL, 56% of Rs 4,400 crores for MTNL and 26% of Rs 5,500 crores for VSNL). From the surpluses generated and the bond issues, about Rs 15,000 crores are invested annually. In addition, the private investment proposals approved as of January 2001 were Rs 29,558 crores. The foreign direct investment proposals approved as of January 2001 were Rs 45,397 crores.

The importance of this sector combined with the need to expand the reach and quality of communications in the country has seen investment in telecom grow at nearly 20 per cent per annum for the last decade. As the regulator and policy maker, much of this investment is either directly or

[1] Funding support provided by the Centre for Telecom Policy Studies, Indian Institute of Management, Ahmedabad is gratefully acknowledged

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In this paper, we attempt to address the issues by examining the budgetary process of the Department of Telecommunications (DOT) in the MOC, with respect to the government of India (GOI). We then look at the relation of the DOT with its PSUs, with an emphasis on the BSNL corporatisation and the VSNL privatisation. Finally, we focus on the broader policy aspects of public expenditure in the telecom sector, with a perspective on the future.

1.0 Budgetary Process

Budgets are proposed by different departments in the various ministries, and approved annually by the parliament. The revenues accrue to the consolidated fund of the GOI, and all itemised expenditures (expenses and investments) are provided for from this fund. Given the developmental significance and the technical nature of the DOT, the tacit understanding between the GOI and the DOT was that it could keep all the revenues that it generated and had the autonomy to make investments after covering expenses. In addition, there have been capital loans from the GOI on which "dividends" were payable. The outstanding amount on this as of 31.3.2000 was Rs 3,043 crores.

Until 2000-1, the expenditure budget amount of the DOT was around Rs 38,000 crores. After the corporatization of BSNL, this amount reduced to around Rs 3,400 crores. While the significance of public expenditure accountability as a result of budgetary expenses has come down, it is still high as a consequence of the extent of ownership of the government in the PSUs. Currently, the budget includes expenses for field operations for the Wireless Planning and Coordination Wing, Telecom Regulatory Authority of India (TRAI), Telecom Disputes Settlement and Appellate Tribunal (TDSAT), Centre for the Development of Telematics (CDOT), and "marginal" budgetary support to the various PSUs under the ministry, and the secretariat expenses.

2.0 Relationship of DOT with its PSUs

The PSUs in which the DOT had ownership are service operators (MTNL, BSNL and VSNL), manufacturing and R&D units like ITI, HTL and CDOT and a consulting company, TCIL. With the corporatisation of BSNL and the privatisation of VSNL, the dealings of DOT with its PSUs merit attention. Due to the considerable assets in these corporations built up with government investment, public expenditure accountability is essential.

This section begins with a description of the transfer of funds between DOT and its PSUs. This is followed by a discussion of the VSNL privatisation. The two other DOT-PSU interactions dealt with are the issue of forced usage of PSU funds by the government and the accountability of employee benefits.

2.1 Transfer of Funds.

Three main heads describe the transfer of funds between GOI and the telecom PSUs. Dividends are a return to the investment that GOI has put into the PSUs over the years. Then there is the question of the responsibility of GOI to provide for the pension payments of retired and yet to retire past DOT employees connected with the PSUs. The payment of license fees by BSNL is yet to be resolved and at present, the issue seems balanced by the social obligations associated with the BSNL.

2.1.1 Dividends

MTNL and VSNL have been the major contributors of dividends to the GOI. Table 1 gives the dividends declared and the GOI share. The dividends from the other PSUs, namely ITI, HTL and TCIL have been relatively insignificant and erratic. BSNL is expected to be a significant contributor of dividends. Until 1999-00, the DOT has been paying dividends to the GOI, towards the capital "loaned" from the GOI. Table 2 gives the dividend amounts along with its percentage of the surplus.

Table 1: PSU Dividends Rs crores

Year	MTNL			VSNL		
	Dividend declared	**GOI equity share (%)**	**Dividend received by GOI**	**Dividend declared**	**GOI equity share (%)**	**Dividend received by GOI**
1996-7	120.00	67.00	80.40	28.00	82.02	22.96
1997-8	189.00	56.40	106.59	38.00	64.97	24.68
1998-9	189.00	56.25	106.31	76.00	54.44	41.37
1999-0	189.00	56.25	106.31	76.00	52.97	40.25

Source: DOT Annual Reports

Table 2: DOT Dividends Rs crores

Year	**Surplus**	**Dividend**	
		Amount	**% of surplus**
1990-1	1327.6	220.3	16.6
1991-2	1148.3	246.6	21.5
1992-3	1938.0	257.1	13.3
1993-4	2126.5	230.3	10.8
1994-5	3665.9	269.8	7.4
1995-6	5192.0	279.2	5.4
1996-7	5885.0	292.3	5.0
1997-8	6744.6	286.5	4.2
1998-9	7646.1	251.9	3.3
1999-0	7321.3	172.5	2.4

Source: DOT Annual Report 2000-1

The Comptroller and Auditor General (CAG) of India report states that all profit making PSUs that are essentially commercial enterprises would declare a minimum dividend of 20% either on equity or on post-tax profit. However, the minimum dividend from the Oil, Petroleum and other infrastructure sectors is desired at 30% of post tax profits.

The post tax profits of MTNL and VSNL were Rs 1,237 crores and Rs 1,325 crores respectively during 1999-0. At 30% of post tax profits, this works out to a dividend of Rs 371crores for MTNL and Rs 398 crores for VSNL. It is seen that in the case of MTNL and VSNL, the actual dividend paid is lower than the amount arrived at by using the CAG stipulations. The MTNL dividend for 1998-9 and 1999-0 was paid as 30% of the paid up share capital of 630 crores. VSNL paid a dividend of Rs 8 (80%) per equity share for 1998-9 and 1999-0. VSNL had also paid special dividends of Rs 50 (500%) and Rs 75 (750%) per equity share on July 10th 2001 and December 16th, 2001 respectively, prior to privatization. The dividends amounted to Rs 1,425 crores and Rs 2,350 crores respectively.

While the DOT "dividend" amounts have been reducing as percentage of surplus, they have reflected a percentage of the capital loans. It is expected that a more rational scheme would be implemented while estimating the dividend liabilities of BSNL. For the present, according to the 2001-2 economic survey, there is an exemption from payment of dividend by BSNL. There are indications that this exemption would hold for the next five years. According to MOC estimates, the tax and dividend exemptions would help BSNL save Rs 1,000 crores annually.

2.1.2 Pensions

The pension liabilities of all employees of the DOT and the PSUs prior to corporatization, were the responsibility of the GOI, since they were in government service. The DOT was the discharging body as the representative of the GOI. The pension liabilities of the employees who would have served and retired in MTNL and VSNL positions prior to their corporatization, were retained by the GOI through the DOT. MTNL and VSNL meet the pension requirements of their serving and retired employees from their profit and loss account and by the creation of an appropriate fund.

After the corporatization of BSNL on October 1 2000, the pension liabilities had been met by BSNL for the years 2000-1(for part of the year) and 2001-2, and have been budgeted for 2002-3. The budget transactions, however, reflect that the amount had been transferred to DOT and then discharged by DOT on behalf of GOI. This had been due to the staff seeking the GOI guarantee for pension.

Since the corporatization of BSNL amounts to almost the entire DOT staff moving to BSNL, the issue of who bears the pension liabilities of the retired employees becomes significant. One principle is that all assets and liabilities are passed on to the corporate entity. BSNL has been arguing that the GOI should directly bear this. While this issue has not been resolved, BSNL has been directed to pay the pension, partly because it has been a profit making entity. Extending this argument, there would be the issue of who bears the pension liabilities of the serving employees towards the service period prior to corporatization.

Like all other corporate entities, BSNL would need to set up a pension fund towards future pension liabilities, which has so far been managed on a "pay as you go" basis by the DOT, as is the practice in government departments. A related issue for BSNL is how best to manage the fund amount and the disbursal.

2.1.3 License Fees

The license fee for telecom companies constitutes a one-time entry fee and an annual revenue share. Being incumbents, BSNL and MTNL have been exempted from paying entry fee for basic (local and long distance) and cellular services, and VSNL for international long distance. The entry of BSNL (then DOT) and MTNL into cellular had been kept open as a possibility during the licensing of the first two private operators. VSNL has been exempted from paying the entry fee for domestic long distance as compensation for an early withdrawal of its monopoly status. BSNL and MTNL are presently obliged to pay the revenue share. There is no such requirement for VSNL.

An assessment of the amounts saved by BSNL and MTNL in not having to pay entry fees is done by examining the entry fees of the winning bids of the private operators (Table 3). This amounts to Rs 3,100 crores during the phase 1 cellular licenses, Rs 1,634 crores during the phase 2 cellular licenses and Rs 497 crores for basic local services. In addition, the entry fee for domestic and international long distance is Rs 100 crores and Rs 25 crores respectively [www.trai.gov.in].

In terms of revenue share, the actual fee payable is 12% for category A circles, 10% for category B circles, 8% for category C circles, 10% for national long distance (NLD) and 10% for international long distance (ILD). This has been assessed at Rs 2,300 crores for BSNL and Rs 513 crores for MTNL. While MTNL has been paying the revenue share, BSNL has been exempted from paying this amount until 2002-3. The budget transaction with respect to BSNL reflects that the revenue share amount has been transferred to DOT and an equivalent amount paid to BSNL by DOT as reimbursement grant towards meeting the operational losses in rural areas and village public telephones. There is also need to rationalize the quantum and time duration for which such a subsidy is to be provided.

Table 3: Entry Fee   Rs crores

Circles	**Phase -1:cellular (2 operators)**	**Phase -2:cellular (4^{th} operator)**	**Basic License Fee**
Delhi	98	170.7	50
Mumbai	89	203.7	*With State*
Chennai	22	154	*With State*
Kolkata	32	78	*With State*
Karnataka	395	206.8	35
Maharashtra	473	189	115 (Including Mumbai)
AP	286	103	35
Gujarat	512	109	40
Tamilnadu	238	79	50 (Including Chennai)
Haryana	68	21.5	10
Kerala	148	40.3	20
Punjab	359	151.8	20
UP – Easr	138	45.3	15
UP – West	116	30.6	15
Rajasthan	109	32.3	20
MP	15	17.5	20
HP	4	1	2
W. Bengal			25 (Including Kolkata)

Bihar			10
Orissa			5
Assam			5
Jammu & Kashmir			2
North East			2
Andaman&Nicobar			1
TOTAL	**3,100**	**1,634.3**	**497**

Source : www.trai.gov.in

The license fee amounts (except the BSNL revenue share) have been paid directly to the GOI. This raises the issue of whether such amounts should be ring fenced for use within the telecom sector

2.2 VSNL Privatisation

As a move towards privatising PSUs, the government had been offloading VSNL shares both in the domestic and international markets. But as a part of change in policy, the government preferred to divest through strategic sale rather than through sale of shares to the public and financial institutions. As a part of this strategy, the government sold 25% of its share to Tatas. Due to the SEBI takeover code, the Tata group had to go in for an open market purchase of 20% share and is presently holding 45% of the stake in the company. The strategic sale with a price/earnings (P/E) ratio of 11 was a much more attractive option that a maximum P/E of 6 realisable through the sale of shares route.

After the BSNL hive off, this is the second important event in the Indian telecom sector with respect to the government's assets. Being a high profile deal in the first spate of disinvestments, there had been a number of contentious issues that were raised and a few problems still linger.

2.2.1 Valuation and Special Dividends

The issues of valuation of VSNL and the special dividends on offer before the sale of the 25% stake are closely linked. There had been two rounds of special dividends of 500% and 750% that may be seen as an asset stripping exercise by the government. Although ostensibly the government justified this as an effort to save national assets from falling into irresponsible hands, these funds could be used for the business expansion of VSNL.

There were serious doubts raised during the bidding process about the value assigned to the assets of VSNL. The floor price of Rs 1,245 crores arrived at by the Ministry of Disinvestment had also been alleged as being an undervaluation for a company with a cash surplus of around Rs 5,000 crores and a lead position in the ILD market. There were differing assessments regarding the value of the real estate that was associated with VSNL although, some of the real estate was separated from the assets of the VSNL offered for sale.

With its monopoly in ILD lost and with a possible threat from internet telephony, there was the need to invest in other value added services to keep up its position as a premier player. There is need to resolve the roles of the government between its responsibility to safeguard the public cash reserves on one hand and to boost an overall national presence in a vibrant telecom sector on the other. One other question that arises as part of the dividend payoff would be the outflow of funds to the second largest beneficiaries after GOI, the foreign investors with a share of 29.22%.

2.2.2 Changing Role of the Government

After the privatization, the VSNL board's decision to invest Rs 1,200 crores in Tata Teleservices Limited (TTL) raised issues regarding the changed role of the government in disinvested entities. The MOC had initially taken serious objection to the deal and alleged that Tatas were effectively cutting down the price of acquisition of 25% stake from Rs 1,439 crores to Rs 239 crores. The government as a significant stakeholder needed to feel comfortable about this decision. But the issue is the propriety of questioning the correctness of a management that holds 45% of the stake in VSNL. The government should have anticipated this transfer of funds. Raising concerns at this point sends down wrong signals to future disinvestments. The basis of the questioning should be on whether the decision was within the legal framework and on the soundness of the business decision.

The government's track record of past investment decisions also needs to be reviewed. VSNL had invested a sum of US$ 150 million in ICO Global Communications (Holdings) Limited that aimed to provide global mobile personal communication services. On August 1999, ICO filed for bankruptcy and the amount invested has been considered a permanent write off. Rs 33 crores were written off on account of the failed investments in Iridium's Indian operations. This instance can also be compared with the MTNL-MKDVC issue mentioned in the next section. It is expected that the private management would seek better business opportunities as they are answerable to the shareholders, rather than the public sector enterprises which are answerable to the citizenry in general. In this process, the government as a relatively minor stakeholder could increase the return on its investments.

2.3 Forced Usage of PSU Funds by the Government

There is the issue of how the government utilises PSU funds to bail out some of its floundering projects. An example is the investment of Rs 250 crores by MTNL into the beleaguered Maharashtra Krishna Valley Development Corporation (MKVDC). Notwithstanding the fact that the project has a rating of A-, indicating government backing on the issue, it does seem that there was some pressure on MTNL to put forth the funding. The fund is not being actively traded and might lead to the blocking of MTNL's funds. This 'behind the scene dealing' does not augur well for the independence of the corporations.

2.4 Employee Benefits and Expenditure Accountability

In the past, unrest and dissent by employees have affected decisions concerning the corporatisation or privatisation of PSUs. This has then been followed up by government intervention with liberal sops to the employees in order to placate them.

When BSNL was being corporatised, a Rs 120 crore package provided free telephones to its 320,000 employees. While the GDR issue of the VSNL was contemplated and again, during the privatisation, generous stock options were given to its employees. During the strategic sale, the 1.97% stock given to employees at concessional rates were worth Rs 120 crores going by the price paid for 25% of the stock by Tatas. Both these instances raise questions regarding the credibility and political strength the government possesses to push its agenda through. The money involved belongs to the public. If the employees cite unfairness in the decision to change their protected status, there is also the larger issue of the fairness to the taxpaying public whose money the government is vested with. While giving in to employees' demands may be seen in the interests of the corporatization, such demands need to be balanced with corresponding guarantees of performance from their side.

3.0 Broader Policy Aspects

With privatization, the financial implications of public expenditure accountability are considerably reduced for the DOT in terms of the details and quantum of the budget heads that need to be approved. Further, the corporatisation separates the role of the DOT and BSNL into that of a policy maker and a service provider. DOT's role as policy maker should enable it to seek a larger role and focus on those areas where market failures are likely to arise and on the growth of the sector.

3.1 Tax

The government has considered telecom as a key infrastructure sector and exempted service providers from paying tax, and provided for dividend tax reduction to 10%. However, the import duty on telecom equipment is at 35%, considered to be high, especially taking into account that import of IT equipment is duty free against export obligations.

The tax provision of MTNL and VSNL, were Rs 602 crores and Rs 589 crores respectively for the year ended 1999, Rs 163 crores and Rs 638 crores for the year ended 2000 and Rs 163 crores and Rs 789 crores for the year ended 2001. BSNL has sought a tax relief of five years in lieu of its recent formation into a corporate entity. The issue here is whether BSNL will continue to be a profitable enterprise and be able to contribute corporate tax and the dividends on profits. These were estimated at Rs 1,155 crores and Rs 369 crores respectively for 2001-2 [www.delhiscienceforum.org/tele25.html].

While the other infrastructure sectors such as IT, power, mining etc have been exempt from sales tax, the telecom sector still does not have this privilege. So far, the DOT had this privilege as government, but BSNL as a corporate does not enjoy the same. The proceeds of the sales tax estimated between Rs 600 crores – Rs 800 crores would go to the central and state governments.

The government has foregone the tax revenues in some areas (income tax, dividend tax) to boost the growth of the sector, but needs to review the implications of customs duty, sales tax etc to facilitate growth.

3.2 Regulation

Regulation is the main tool that GOI possesses while directing developments in the telecom sector. At present, the two main agencies that deal with regulatory issues like tariffs, licensing, US and dispute resolution are the TRAI and the TDSAT.

To ensure effective and independent regulation, it is necessary to provide financial autonomy to regulatory authorities. In some countries, the quantum of license fees is based on the operational requirements of regulatory bodies.

In India, license fees are being levied to cater to 'national development' and go directly to the Consolidated Fund of India. There is an issue as to whether the license fees should be reduced to the extent that is required for regulation. An attendant issue would be 'ring fencing' the license fees for use in the telecom sector. Another model would be to set up a framework by which service providers would directly contribute a levy for the support of the regulatory body.

3.3 Social Obligations and the USO

Although the government had made provisions in the NTP '99 for rural telephony provisions, the implementation had not proceeded smoothly. Many of the private players were lagging behind their targets. Estimates put the number of VPTs set up by private operators at 600 against a target of 60,000 connections [Businessline, 27 March 2002].

With increasing privatization, it becomes imperative to address the issue of service provision in rural areas and the high cost to serve customers. The DOT and TRAI have developed a framework for managing this through a Universal Service (US) Levy that would be imposed as a fixed percentage of the revenue generated by operators holding different types of licenses towards a US Fund. The fund would then be disbursed to meet the net operating costs of Village Public Telephones (VPT). Only lines established after April '02 would be eligible for US funds.

Given the spread of BSNL's network and the extent of government control, it is likely to bear the burden of US provision. It is not clear if the PSU service providers are contributing to the USO fund pegged at around 5% of revenues (it is not provided for in their budget figures). This is to be compared with the claims by the private operators that hey have been contributing for the past few years [Business line 27 March 2002]. In the absence of a ring fenced fund for the development of the sector, these amounts have been credited to the consolidated fund of India.

The recent TRAI guidelines attempt to provide a framework for operationalizing the US funds. The issue related to meeting US obligation are the assessment of costs and the mechanism for disbursal. There are differing assessments regarding the amounts. While the government has assessed this at Rs 2,300 crores, the BSNL employees association has been demanding an additional sum of Rs 1,000 crores to cover the non viable operations of its 80 lakh connections in rural areas and about 4.5 lakh VPTs.

The Northeast region has lagged the rest of India in the terms of development. Realising the national importance of the development of the region, it has been declared as a special focus area for development. Measures like a token license fee as was the case of the Andaman and Nicobar islands can be levied to make it an attractive investment opportunity. Budgetary tax breaks for a limited time can also be adopted.

3.4 R&D

One of the stated objectives of the National Telecom Policy (NTP) '99 was to strengthen R&D capabilities and manufacturing to world class standards. This could also be achieved by a collaborative effort of the various PSUs that are presently spread out as disparate entities in the fields of R&D, manufacturing and services. It might be a good idea to share some of the facilities to bring out the best in a professional, competitive and demanding environment. Divided, these PSUs, especially in R&D and manufacturing might not be able to stand up to the new environment. United with the service providers and faced with the challenge to deliver might do well to boost their activities.

After BSNL's corporatisation, DOT has decided to maintain the Center for Development of Telematics (CDOT) within its fold. This would indicate that the government, through the MOC intends to provide for a thrust in R&D. Considering that CDOT is a PSU by itself, it remains to be seen how it plans to make itself a commercially viable entity. There is much potential for its products and also scope for product innovation and upgradation.

CDOT has a history of being in close connection with the ground situation in India. It could leverage that factor to its advantage. But more so, it would need to face up to competition in the area of advanced telecom technologies. An aggressive product formulation, especially in the lucrative telecom software sector is essential if it wants to be at the cutting edge. The other option might be to wither away to being a side operator dealing with low end technologies and certain rural specific innovations- an area which is still quite significant. During 2002-3, the government had assigned a significantly lower budget allocation to CDOT. This could indicate that CDOT would have to think of raising funds on its own in the future.

While CDOT could function as one of the R&D agencies, there have been other Centres, such as the TENET at Indian Institute of Technology, Chennai that have developed appropriate technologies and international recognition. Signs of Indian creativity and ingenuity can be inferred from the recent development of the WLL (Wireless in Local Loop) and corDECT technologies in IIT Madras as also the various innovative and India specific products developed by the CDOT. These have found a market in other countries as well. It is necessary to nurture this talent by making available resources and equipment to provide Indian manpower the exposure and incentive to generate world class technologies and the ideas to harness them. DOT seems to be having this perspective in mind in setting aside a revenue share contribution of cellular service providers towards research and development.

3.5 Spectrum

Since spectrum allocation and use needs to be coordinated both at the international and national level, there is a need for regulating it. Since it is a limited resource, there must be mechanisms to ensure efficient usage and appropriate pricing. Defence agencies and government departments that own and use the spectrum must pay for its usage. This would enable them to estimate the cost of services they provide and spur them to look out for most alternative cost efficient ways to provide services.

There is a National Frequency Allocation Plan (NFAP) which was established in 1981. It has been modified in the year 2000 and is to be reviewed at least every two years to ensure the consideration of new technologies and market requirements. ITU guidelines are used as the standard to ensure transparency of spectrum allocation. The government has a Spectrum Management Committee in place and the boost in fund allocation to the Wireless Planning Coordination Committee indicates that the government is serious about ensuring efficient spectrum management. At least 2% of the revenue share of cellular operators goes towards spectrum charges covering royalty payment for the use of spectrum and license fee for the use of wireless equipment [www.trai.gov.in].

3.6 Security

Despite the increasing privatization, issues of national security vis-a-vis the telecom infrastructure would need to be coordinated by the DOT and involve the various ministries such as Defence, Home, Railways etc. Such infrastructure is usually managed by the respective ministries and departments. In terms of public expenditure accountability, there is a need to have a transparent mechanism for pricing these services. The issue of how these services are paid for and who pays for these services can then be addressed.

3.7 Human Resource Development

One way to boost the generation of quality human resources is by ensuring that training institutes offer education on the latest technologies. This can be effected by linking up players in the industry with academic institutes to help in influencing a change in the curriculum. This would ensure that the products of Indian technical and management institutes are up to date and ready to face new challenges. The DOT has several regional and national level training institutes. From the perspective of public expenditure accountability, these institutes need to take a greater role in understanding the changes in technology (move towards cellular, Internet telephony) etc and providing industry wide inputs. However, that has not happened. Most of these institutes continue to provide only technical training in fixed wireline technologies.

Conclusion

A summary view of the various financial transactions between the players in the telecom sector is given in the exhibit.

In terms of public expenditure accountability, the events in the telecom sector have changed the focus from direct use of funds to enabling effective use of funds by various players. This enabling role is soon expected to include the IT and Broadcast sectors, as is being considered under the convergence bill. Though there have been hiccups, the general direction of public expenditure accountability demonstrated by the telecom sector has been positive and could be a lesson for other infrastructure sectors.

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Exhibit

Financial Transactions Between Various Players in the Telecom Sector