# Infrastructure Regulation and Institutional Endowments in India: Comparative Analysis of Telecom and Electricity Regulation Policies

Devendra Kodwani<sup>1</sup>

Post 1991 economic reforms initiatives in India, regulatory reforms have been pursued in infrastructure industries. Both the electricity and telecom industries have been opened up for private sector, but there has been little success in attracting private capital into electricity supply chain compared to increased capital investments and competition in telecommunications. This paper would examine implications of political economy and institutional framework differences to explain the difference in the performance of regulators in creating a competitive market structure in the two industries. This paper will examine the issues from an institutional economics perspective following Levy and Spiller (1994), Stern and Holder (1999) and Correa et al (2006) framework to analyse the regulatory systems. While there is a single Telecom Regulatory Authority of India (TRAI) for whole country the electricity regulatory system comprises of a Central Electricity Regulatory Commission and 18 (at present) State Electricity Regulatory Commissions (SERCs). This provides opportunity to compare whether a federal agency for telecoms and multiple agencies set up by states' legislature in electricity could be one of the impediments in development of effective regulatory framework.

<sup>&</sup>lt;sup>1</sup> Lecturer in Finance, Open University Business School, Milton Keynes. Email: <u>d.kodwani@open.ac.uk</u>. I would like to thank Mr. Pradeep Mehta and Mr. Vinayak Pandey of Consumer Unity and Trust Society, Jaipur, India for their assistance in fixing up meeting with regulatory commissions in Delhi and Jaipur.

# Introduction

The focus of much of the work on economic regulation has been on the instruments of regulation such as rate of return or price cap. Only recently have the issues of regulatory process and institutional perspecptives have started attracting attention of the scholars. Levy and Spiller (1994) in their seminal paper argued that institutional aspects regulation need attention if the regulatory reform has to be effective in creating and sustaining environment for attracting and retaining private investment in the regulated industries. Levy and Spiller (1994) provide empirical support for their arguments in their study of national institutional endowments and telecom regulatory institutions in five countries. Subsequently the analytical framework has been fine tuned and used by Stern and Holder (1999) to study regulatory governance in developing countries of Asia. Pereira et al (2006) used a further revised instrument to measure regulatory governance index (RGI) in their study of regulatory institutions in Brazil. Following from the theoretical and empirical framework provided by these studies, this paper studies experiments with economic regulation of telecommunications and electricity industries in India.

The paper is organised as follows. In next section a brief description of institutional framework is provided. This is followed with description of the institutional endowments at national and state level in Indian context setting the scene for discussion of electricity and telecommunication regulatory systems in following section. Concluding remarks are provided in the last section.

## **Analysing Regulatory Structures: An Institutional Perspective**

The privatisation and regulation experiment in the UK and many other countries is much studied phenomenon<sup>2</sup>. In most of the studies on economic regulation, the focus has been on instruments of regulatory policies such as price controls or rate of return. Earlier literature on regulation of US electricity, telecommunications and other regulated industries also show similar trends.

Attempts by several economies in since 1980s to find market based solutions to supply of infrastructure services have not been uniformly effective. Commenting on the adoption of UK model of privatisation and regulation of infrastructure services by developing and transition economies, Alexander (2003), argues that, 'these institutional, political and legal issues cover a wide range of aspects of the framework within which business and politics take place within a country and without full understanding of these conditions it is difficult to make any but superficial recommendations as to how reform should occur." (Alexander 2003, p.2). An analysis of why private infrastructure projects get cancelled (see table 1 later) Harris et al (2003) argue that in the electricity sector it was difficult to enforce and implement contracts requiring the host countries to pursue cost recovering pricing policies and ensuring that collection of payments from consumer and government was possible. In contrast, they argue that projects in telecommunications witnessed relatively few disputes over pricing or allocation. It might be argued here that reasons underlying this are in the institutional framework particularly the political commitment of the ruling party, legal and judicial framework to enforce the contracts between various parties in a given political and institutional context. We argue later in the paper that these are the key differences in the relative success of telecom regulator in India compared to electricity regulators.

<sup>&</sup>lt;sup>2</sup> There are several studies including, Vickers and Yarrow (1988), Kirkpatric and Parker (2005), Newbery and Pollitt(1997) and so on.

Through historical analysis of the regulatory structure in the broader contexts of the national institutional framework of their sample countries, Spiller and Levy highlight the interaction of political institutions with regulatory process and potential impact of such interaction on the regulatory performance. They analysed the regulatory designs of telecommunications industry in five countries (UK, Jamaica, Philippines, Argentina and Chile). They argue that, *"the credibility and effectiveness of a regulatory framework- and hence its ability to facilitate private investment-varies with a country's political and social institutions."* (Spiller and Levy, 1994, p.202).. They conclude, *"that success of regulatory systems depends on how well it fits with a country's prevailing institutions, if a country lacks the requisite institutions or regulatory system that is incompatible with its institutional endowment, efforts at privatization may end in disappointment, recriminations, and the resurgence of demands for re-nationalisation."* (Spiller and Levy, 1994, p. 242).

Spiller and Levy's study makes another important contribution by providing an analytical framework to study the regulatory governance separately. They identify regulatory design as comprising of two elements namely *regulatory governance* and *regulatory incentives*. They define *regulatory governance* as, "governance structure of a regulatory system as the mechanism that societies use to constrain regulatory discretion regulatory discretion and to resolve conflicts that arise in relation to these constraints." (p. 205). Regulatory incentives on other hand comprise the rules governing utility pricing, cross or direct subsidies, entry, interconnections etc.

Stern and Holder (1997) extend the study of regulatory systems but concentrate on the regulatory process in addition to Levy and Spiller's focus on institutional design and formal accountability of regulatory institutions. Stern (1997) focuses on issues of informal

accountability. Explaining the distinction between the formal and informal accountability Stern and Holder (1997) describe formal institutional mechanisms that are written in the legislation and informal mechanisms as regulatory process encompassing the implementation of the regulatory laws. The later process involves interpretation and understanding of law among the stakeholders (namely regulators, regulated participants and consumers). Stern and Holder (1997) identify six inter related aspects of regulatory framework and provide results from a survey of regulatory practice for infrastructure industries in Asian countries. Three of the six aspects relate to institutional design namely; Clarity of Roles and Objectives, Autonomy, Accountability, Participation, Transparency; and Predictability (Stern and Holder, 1999, p.42). Pereira et al (2006) evaluated the regulatory governance of the infrastructure sector in Brazil at both federal and state levels. They do so by studying following dimensions of regulatory systems: (a) autonomy, (b) decision-making processes, (c) tools for making effective decisions (legal and regulatory instruments), and (d) accountability. For this study a slightly modified Regulatory Governance Index Codebook designed by Pereira, 2006 was used to collect information from the electricity regulators. The changes were mostly cosmetic to change the terms and wording to suit Indian context. Interviews were done to collect information for out in four electricity regulatory commissions in India. This was complemented with published sources and data available from the websites of the agencies. In the following section we briefly describe the macro political, legislative environment in the country and then provide discussion on the four aspects of regulatory governance discussed in Pereira et al (2006) but based on the results of survey of regulatory commissions in India.

## National institutional endowments in India

A sovereign parliamentary system, Indian government is characterised by two houses of parliament<sup>3</sup> with a written constitution clearly separating the functions of legislative, executive and judiciary. Constitution of India provides high level of independence and security to judges. Indian judiciary, particularly High Courts and Supreme Court enjoy high level of credibility. Except during a short period between 1975-77 when emergency was declared by the then government, the judiciary and legislature have enjoyed the independence from the executive.

Although India is a parliamentary democracy a multi party electoral competition for power has emerged only recently. There were attempts between 1950 and 1985 by other political parties<sup>4</sup> to compete with Congress party but it remained effectively one party system till the Bharatiya Janta Party (BJP) challenged the strong hold of Congress party at the national level in 1990s. Subsequently however, many regional political parties and various leftist political parties have become significant enough to thwart emergence of bipolar political system at the federal level. Indeed since 1991, there have been cases when federal government has been formed by a political party with support from smaller parties. It is rather ironic fact about recent Indian polity that major economic reforms were launched by a minority Congress government supported by few regional parties. The executive has substantial control over legislative agenda and legislature when one of the main national political parties has clear electoral mandate. However, in terms of formulating and implementing economic policies, it

<sup>&</sup>lt;sup>3</sup> Lower House (Lok Sabha) is the primary legislative body with Members of Lower House elected directly in a fairly transparent and impartial electoral system directly by the people. Upper House (Rajya Sabha) comprises of members indirectly elected through the electoral school comprising of the provincial (State) legislature. <sup>4</sup> For example in mid 1960s a group of libertarian politicians led by late C Rajgopalachari, challenged the Jarwarlal Nehru's policies on economic front and set up a Swatantra Party. The experiment did not last long and slowly Swatantra Party lost momentum. Again in 1977 a coalition of various parties emerged after the emergency period declared by late Mrs. Indira Gandhi. That experiment also did not create a viable second dominant party.

has been seen that coalitions may impose severe restrictions on the legislative and executive powers of the government in India. A pertinent example is 'disinvestment policy<sup>5</sup>. NDA (National Democratic Alliance) coalition government led by main political party BJP from previous Congress led minority government. The BJP government was keen on implementing the disinvestment policy and it set up a separate ministry at federal level with a Cabinet Minister in charge of disinvestment programme. However, the UPA (United Progress Alliance) coalition government led by main political party Indian National Congress that took over power from NDA, decided not to have disinvestment ministry and reduced emphasise on disinvestment policy. This has practically halted privatisation programme. The reason for this major shift in the policy implementation is the fact that UPA government is supported in parliament by various communist parties who have significant presence in a parliament where neither main stream party could secure the clear mandate from people.

Indian National Congress<sup>6</sup> has been main national political party since independence and it followed 'command and control economy' model. Excessive regulation of private sector and substantial segment of industrial economy (steel, electricity, gas, petroleum, heavy engineering, tele-communications among other sectors) was dominated by public sector enterprises. The legacy of public ownership of utilities still continues. Public ownership of utilities has lent itself to interference by the executives which has affected the economic performance of the PSUs. Political interference is most visible in form of distributive politics in electricity industry. Publicly owned electric utilities have been used to provide power to certain segment of customers, particularly farmers, at a highly subsidised rates or even free of

<sup>&</sup>lt;sup>5</sup> Various governments since early 1990s have preferred to use term 'disinvestment' to 'privatisation'. There has also been a concern about 'disinvesting' government stake from the so called 'Navratnas' or nine jewels in form of profit making public enterprises. These are most profit making oil and gas companies and few engineering public enterprises. Left parties in India objected to selling of profit making enterprises and very frequently the labour unions of public enterprises have got support from not only left parties but also from main opposition parties.

<sup>&</sup>lt;sup>6</sup> The name of Indian National Congress had change during periods when late Mrs. Indira Gandhi dominated the party and there were break up groups in the party. It was called for sometimes during 1980s as Congress (I) where I stood for Indira Gandhi.

costs in some states. In petroleum and gas supply industry the kerosene, cooking gas (Liquified Petroleum Gas) are highly subsidised resulting in huge cross subsidies or losses. Given this context we now discuss the electricity and telecommunication regulatory arrangements and governance of these regulatory institutions.

# **Electricity regulation in India**

Indian constitution lists electricity in Concurrent List, meaning both the federal and state level governments could frame policies regarding electricity supply except for nuclear power which is in domain of only federal government. Hence the industry structure remained monopolistic till the reforms were undertaken in 1991. After 1991not only was the public sector monopoly removed from the industry but regulation of the industry was delegated to regulatory commissions and also in some cases assets of public enterprises were privatised.<sup>7</sup>

Initial attempts at attractive private investment in electricity industry failed. A highly publicised power generation project in the state of Maharashtra was implemented but had to be closed down in few years time. The project was negotiated between the state government of the day and the consortium of private companies. The contracts were signed between the public sector distributor MSEB and the generation company promoted by Enron as Dhabhol Power Plant. Subsequently the project was re-negotiated two times after change in the ruling political party in the state. Eventually the project was shut down when the public distributor (MSEB) failed to honour the payment for its purchases despite the escrow accounts, guarantees by the State and Central governments. The case could not be resolved amicably and the matter went to international arbitrator and courts. In table 1 below a list of some other cancelled private projects is provided.

<sup>&</sup>lt;sup>7</sup> In some cities such as Ahmedabad and Mumbai private electricity suppliers were there before the 1991 reforms were launched. In the state of Orissa and national capital Delhi, the restructuring of state electricity boards was followed with privatisation of distribution companies.

Project	Sector	Committed	Year of	Year of	
		investment	financial	cancell	
		(2001 US\$	closure	ation	
		millions)			
Cesco, Orissa	Electricity distribution	31	1999	2001	
Dabhol Power Plant I	Electricity generation	1050	1996	2001	
Dabhol Power Plant II	Electricity generation	1988	1999	2001	
Evergrowth Telecom	Telecommunications	201	1997	1999	
Koshika Telecom	Telecommunications	443	1996	1999	
Source: Harris et al,(2003)	•				

To a large extent the failure of these projects to carry on is result of institutional weaknesses in terms of incomplete contracts, regulatory uncertainties and political interference in the regulatory process. The electricity regulation, in its modern meaning of term, appeared in India through a World Bank and DFID assisted package of electricity reforms implemented in the year 1995 in Orissa, a very poor state of India. Subsequently national government enacted Electricity Regulatory Commissions Act, 1998 which was later repealed and replaced with Electricity Act, 2003. Central Electricity Regulatory Commission (CERC) created in 1998 to over see the development of electricity markets at national level and also to lead in providing regulatory framework for the states to follow. 18 states have set up state electricity regulatory commissions (SERCs) since then. These SERCs are created after each state legislature has passed a relevant legislation. The structure and functions of SERCs are similar in all states. These commissions constitute the regulatory structure that potentially will ensure the working of market oriented electricity industry in India. The central government still guides the overall development of the industry and its regulation through National Electricity Policy. The latest such policy was issued by the government in February 2005 aiming to achieve access to electricity for all households in next five years (i.e., 2010), to meet the full demand by 2012, and to ensure smooth supply of power in an efficient manner and at reasonable rates.

The achievement of above objectives requires new investment in the generation, transmission and distribution. All these three activities of the industry are at present owned and managed by either central government or state government entities. Preceding the announcement of National Policy of 2005, there was a major legislation (The Electricity Act 2003<sup>8</sup>) that laid down in detail the institutional and regulatory framework that is being implemented by the Central and state governments. While the National Policy and Electricity Act both envisage restructuring and privatisation of public sector electricity suppliers, there has been little progress on this in reality. The description of electricity reforms envisaged by the National Electricity Policy and the Electricity Act require substantial autonomy, capabilities and stability in the regulatory process.

#### **Survey of Electricity Regulatory Commission**

As mentioned above the data on regulatory governance aspects of the electricity regulators was collected using a questionnaire adapted from the Regulatory Governance Codebook suggested by Pereira et al. (2006). The information was collected through personal interviews with the officials in the four regulatory commissions in India. This information was complemented with the published information. Following discussion is thus based on analysis of published and primary data collected.

**Autonomy:** We discuss here the political and financial autonomy of the regulatory commissions. The Central Electricity Regulatory Commission (CERCS) was created as a

<sup>&</sup>lt;sup>8</sup> The Electricity Act 2003, adapted substantially the provisions of Central Electricity Regulatory Commission Act 1998 that has now been replaced by Electricity Act, 2003.

quasi judicial body and has been given a clear mandate in the Electricity Act, 2003 (see Box 1 below).

### Box 1: The Act lists following as the functions of CERC

(a) to regulate the tariff of generating companies owned or controlled by the Central Government;

(b) to regulate the tariff of generating companies other than those owned or controlled by the Central

Government specified in clause (a), if such generating companies enter into or otherwise have a composite

scheme for generation and sale of electricity in more than one State;

(c) to regulate the inter-State transmission of electricity ;

(d) to determine tariff for inter-State transmission of electricity;

(e) to issue licenses to persons to function as transmission licensee and electricity trader with respect to their inter-State operations.

(f) to adjudicate upon disputes involving generating companies or transmission licensee in regard to matters connected with clauses (a) to (d) above and to refer any dispute for arbitration;

(g) to levy fees for the purposes of this Act;

(h) to specify Grid Code having regard to Grid Standards;

(i) to specify and enforce the standards with respect to quality, continuity and reliability of service by licensees.

(j) to fix the trading margin in the inter-State trading of electricity, if considered, necessary;

(k) to discharge such other functions as may be assigned under this Act.

Source: Electricity Act, 2003, Government of India, New Delhi.

All the State Electricity Regulatory Commissions have almost identical set of functions

within state jurisdictions. While it would appear that the Act clearly defines the functions of

the Commission, in terms of actual regulatory process, issues have come up before the

Commission where it has had to seek the clarification from the Ministry of Power<sup>9</sup>. In a

personal interview with the officials at the regulatory commissions about the clarity of the

roles it was clear to see that Commission had clarity about regulatory objectives.

The Act clearly lays down the role of other bodies such as Appellate Tribunal, Courts,

Consumer Forums and Accountant General in relation to electricity regulatory commissions.

<sup>&</sup>lt;sup>9</sup> The case relates to treatment of the power purchase agreement between a new power generation company set up by Torrent Group, a private sector electricity generator and distributor in state of Gujarat and the State Electricity Board of Madhyapradesh. See order of CERC in this regard at <u>http://cercind.gov.in/150206/154-05.pdf</u>.

The top executive body of electricity regulatory commissions comprises Chairman and three members of the commission<sup>10</sup>. The Electricity Act 2003, lays down clear procedure for appointment of the chairman and members. The selection procedure for chairman and the members is also clearly laid down. However, the constitution of selection committee is influenced by the central government decisions. The selection committee proposes two names for the Chairman's post to the Minister for Power who in turn recommends only one of the names to the highest body in the executive for final approval. However, once appointed members and the chairman of the commission enjoy substantial protection from any arbitrary government action. The Act provides for fixed term (5 years) of appointment. The termination of the appointment requires prolonged process of enquiry by Appellate Tribunal. This protection does provide an effective check on the arbitrary action on part of government. So far in the short history of the four surveyed commissions no chairman or member has been removed by the government.

All the surveyed commissions reported that there was no political interference in the decisions about tariff determination and licensing, two most critical regulatory decisions. The rate of return is used as regulatory instrument. The regulatory commissions are empowered to decide the asset base rate of return. Interestingly in India, where there is need for providing incentive for investment in transmission and distribution networks also, a local contextual fact has made targets for reduction in transmission and distribution losses a key regulatory incentive. Theft and un-metered supply of electricity meant that the distribution losses, in some cases as high as 60%, are the main cause for the commercial losses of state owned transmission and distribution utilities. In their yearly review of tariffs regulators set the targets for loss reduction as an incentive. The success of companies to recover the amount due from consumers or even to bill them according to meters will depend on how much

<sup>&</sup>lt;sup>10</sup> In some cases there are one man commissions or joint commissions for two states due to small size of the states.

political and police support the distribution companies get for monitoring and taking disciplinary actions such as disconnections to recover their dues. This is an illustration of how good regulatory design for a sector may not deliver the results if the legal and political institutions in the society do not match with the regulatory institutional framework. Other aspect of autonomy is financial autonomy. Regulatory commissions get funding as budgetary support from the government and are therefore subject to same procedures for getting budget approved as other departments of the government. In more than one regulatory commission the officers felt that this sometimes affected their ability to work efficiently.

**Decision Making:** The Electricity Act, 2003 lays down a clear procedure for making regulatory decisions and all the surveyed commissions reported they were following those procedures. The commission members take collective decisions and quorum is necessary. The decisions are based on simple majority and formally documented. The documentation is legally required. It was mentioned that all decisions were supported by reasoning and analysis of the information provided by the parties affected by the decision. Decisions on tariff decisions follow a system of hearing wherein the licensees and other 'petitioners' present their case to commission with supporting detailed documents and analysis. The hearings schedule is announced publicly through local newspapers and the websites of the agencies. Regulatory commissions have been engaging with wider stakeholders in the society. For example, all regulatory commissions have constituted Advisory Councils representing various stakeholder groups. The commissions have been circulating the consultation papers electronically on various issues on which it formulates rules or takes decisions. One of the observations that came up in the meetings with senior officers of the commission was that there was little or negligible effective participation from the academia in the regulatory

debate.<sup>11</sup> So while regulatory commission try to involve other stakeholders in the regulatory process, it seemed that except few consumer organisations and some academics, wider participation is not yet there in Indian electricity regulation. However, some Civil Society institutions<sup>12</sup> have taken initiatives that may strengthen the participation of stakeholders in the electricity regulation.

**Decision Tools:** The commissions can call for relevant data from the regulated business, but it was clear from the survey that good quality regulatory accounting data was not yet available. Primary reason for this that still most of the regulated electricity companies are state owned with and recently restructured. They have still not started producing the annual reports on time. Although regulatory commissions are empowered to call for information in a meaningful format, so far there have been few initiatives in this regard. This issue about the quality and relevance of information about the industry was raised during the interviews and the view seemed to be that there is no standard regulatory information format.<sup>13</sup> In absence of comparable information from other states benchmarking is not possible. All the regulatory commissions have power to change tariff, establish technical norms and resolve disputes arising between generation, transmission or distribution utilities and or potential entrants. For consumer protection regulatory agencies have established Ombudsman in each state and Consumer Grievance Redressal Forums. However, such decision making tools may not be adequate to capture the effectiveness of regulatory governance as it turned out in a regulatory decision involving consumer dispute in state of Maharashtra (See Box 2).

<sup>&</sup>lt;sup>11</sup> This feeling was echoed in more than one meeting with regulatory commission officers at state level also.

<sup>&</sup>lt;sup>12</sup> Consumer Unity and Trust Society, Jaipur, TERI, New Delhi, Prayas Group, Pune.

<sup>&</sup>lt;sup>13</sup> This matter was also raised with state regulatory commission officers. But there seemed to be lack of clarity about the import and format that could be useful for regulatory process.

# Box 2: Mix up of institutional roles: Predictability and autonomy at stake

In 2005, Maharashtra Electricity Regulatory Commission (MERC) declared billing practices followed by the distribution companies which included both private and public sector companies, to be improper. The commission directed these companies to stop practice of issuing amendment / supplementary bills and average bills and also to refund money to consumers on account of such bills. The refund payable to consumers on account of these orders is to the tune of Rs. 3000- 4000 million.

The distribution companies appealed against these orders to the Appellate Tribunal for Electricity (ATE). The ATE in its judgement passed in March 2006 concluded that matters relating to wrong billing practices are in the nature of billing disputes, and moreover said that the state regulatory commissions (SERCs) have no jurisdiction to entertain consumer petitions on these issues even if the wrong / excessive bills are due to (a) systemic violation by utility and / or (b) non-compliance with statues. According to ATE Consumer Grievance Redressal Forums and Ombudsman created under Electricity Act are the competent forums to deal with such complaints. ATE judgement does mention following as function of the SERC as legitimate function as per Act:" ...to specify or enforce standards with respect to quality, continuity and reliability or service by licensees;". But from the judgement of ATE it seems that 'proper billing' can not be considered a service which seems to have been interpreted ATE in the narrower technical sense of the term.

Now the MERC along with few consumer groups has appealed against judgement of ATE to the Supreme Court of India who will now listen to the parties and decide the matter.

Source: ATE, Appeal No. 30 of 2005, 164 of 2005 and 25 of 2006 and www.pravasgroup.org

The above case shows the complexity of regulatory process in India. Although the Act does mention that protection of consumer interest is one of the regulatory functions, but the institutional mechanism provided is through Consumer Grievance Redressal Forum (CGRF) and an Ombudsman. From the reading of the Act 2003, it seems the regulatory commission should lay down the guidelines for constitution of the CGRF by licensees, subsequent rules promulgated by Ministry of Power require that only distribution licensee will decide who can sit in these CGRFs, subject to some qualification norms. This has essentially eroded SERCs capacity to create neutral CGRF.

Of the four regulatory commissions surveyed three reported staff strength of between 50 and 100 and one reported less than 50. Personnel might prove hurdle in developing appropriate regulatory capabilities. The commissions need to take approval from respective government

for recruitment of staff which is long winded process. The independence of regulatory commission seemed quite limited on this aspect. For example, if CERC identified need for creating a post within commission, it needs to get approval from the Department of Personnel and Training in the government and the final decision may be taken only after opinions of Legal Department and Finance Department have been considered. Recruitment from outside present government employees is also unlikely as most of the senior officers in the commission come on deputation from other government departments. This way the autonomy of the agency is slightly diluted. However, in SERCs there was found to be practice of hiring outside consultants to do much of technical analysis to inform the regulatory decision making. In one of the interviews, chairman of a state regulatory commission highlighted 'outsourcing' the technical expertise and thereby justifying the lean staff levels in the organisation.

While there was no problem of 'staff turnover' in its conventional sense of people leaving organisation for other jobs, but the peculiarity of personnel policies makes the staff tenures short. In most regulatory commissions the staff below the level of the top executives, is sourced from other government departments or entities on deputation basis. The deputed staff members are then expected to return to their 'parent' department or entity. This mechanism for staff recruitment has obvious implications in terms building up and retaining capabilities within the organisation. When this issue was raised with one of the interviewees in a commission, the response was that good practices or learning acquired by a staff member while in the commission should be 'institutionalised' and therefore, organisational capabilities will not suffer because of turnover of people.

Accountability: Two dimensions for the accountability of the commission can be discussed here. There is a formal process of reporting to the government and parliament about the

activities of the commission in form of Annual Report. In addition the accounts of the commission are audited by the Comptroller and Auditor General of India. Other dimension of accountability is the creation of Appellate Tribunal for Electricity at national level which hears the appeals against the decisions of the central and state level regulatory commissions. There have been some decisions of the CERC that have been challenged, but exact number of cases was not readily available. In about 2% of the cases the commission's decisions were against the commission. Only one case had reached the Supreme Court. In case of 3 other SERCs surveyed through interviews, no cases have reached Supreme Court. However, concerned parties frequently request to the commissions for review of their orders and when not satisfied they appeal against regulatory decisions. According to one study published in 2003, a survey of nine regulatory commissions found that total number of appeals was 169 till that time and in 10 cases High Courts had intervened. Analysis of appeals shows that the appeals are made by utilities, consumers, individuals in one case by workers unions. In most of the cases the commission orders are withheld but in other cases there have been changes to orders or in some cases as one reported above box 2, there has been reversal of decision.

# **Telecommunication Regulation in India**

Key differences between the electricity regulation and the telecom regulation in India are two. First the regulatory policy on telecommunications has in a way evolved over the years beginning in mid-1980s when the then Prime Minister Mr. Rajiv Gandhi's government started gradual reforms to extend the reach of telephone services to more people and places. The result was a series of experiments by technocrats who also led in the development of telecom policy eventually favouring the privatisation and introduction of regulated competition. A second difference is that unlike electricity, telecommunication is listed in the

federal list of activities in the constitution of India. This meant that telecommunication infrastructure was owned by the central government. These two major differences in the institutional framework and contextualised evolution of regulatory policy are argued to be the main explanatory factors for better performance of the Telecom Regulatory Authority of India (TRAI) compared to electricity regulation (Mukherjee, 2004).

Regulatory roles for telecommunications regulator encompass tariff determination land line telephones, internet, internet telephony, cellular phones, cable and broadband connections and interconnections for domestic and international services. In addition the agency has to promote competition by awarding licences for different services to private and public players.

TRAI's autonomy was challenged initially by the incumbent public sector monopoly Department of Telecommunications (DOT) under the Ministry of Communication, which owned and managed entire telecommunication network in India. In its long battle with the DOT and the line ministry over the period 1991-1997, during this period the regul. Later following National Telecom Policy in 1994, the DOT was corporatised and restructured into two companies BSNL and VSNL. Former providing domestic land line telephone services in whole of India except in cities of Mumbai and Delhi where another public sector company MTNL provides services. VSNL is provides the service for international telephone calls and is now partly privatised. Since 1994 there have been several private players who have been given licences to supply all types of telephone services. In the initial stages the regulator had to face challenge on terms and conditions offered to private companies particularly around the scope of services they could offer. Recently the regulator has had problems with the incumbent on the interconnections to be provided by the dominant incumbent BSNL which is state owned (Jain, 2006). With many decisions of the regulator referred to Tribunal for

telecommunication, TRAI's autonomy and ability to enforce its regulation has been limited. However, over the time its ability to enforce has improved. Table 2 below shows the growth of telephone subscriptions in India. As can be seen over last few years, particularly after 1997, the new connections have been increasing at very high rates.

Table2: Telephone subscribers and telephone density trends									
(Figures as of 1 <sup>st</sup> April of the year)									
Subscribers	1997	2000	2001	2002	2003	2004	2005	CAGR (%)	
(In millions)								(1997-2005)	
Fixed lines	17.80	26.65	32.71	38.33	41.48	42.84	46.1	12.66	
Cellular	0.88	1.90	3.58	6.54	13.00	33.69	52.22	66.6	
Tele-density	1.90	2.81	3.52	4.52	5.10	7.04	9.11	21.65	
per 100 population									
Source: <u>www.itu.in</u> t, <u>www.trai.gov.in</u> .									

The decision tools available to TRAI have been more effective in terms of regulatory staff, access to information as it was dealing initially with effectively one monopoly organisation. However, in terms of regulatory instruments, there have been various tools applied. In 1990s the government allowed private players to bid for providing land line and cellular services. This was before the regulatory commission was established. Annual licence fee and contracts were used for service licences. Extremely high entry costs and annual costs discouraged private sector who substantially reduced the bidding for new licenses. Subsequently one time license fee was introduced for land line and cellular services. This was further changed to smaller license fees plus revenue sharing model. The latest change has been the desegregation of licenses for landline and cellular services thus creating a relatively simpler license. This

evolutionary nature of telecom regulatory policy is in contrast to what is witnessed in the electricity regulation where the corresponding Act goes in detail on all aspects of the regulation disregarding the complexity of the institutional framework required to support the regulators and regulated entities to enforce the regulatory decisions.

Decision making process in telecommunication regulation has been interfered with many times since the reforms were introduced to protect the incumbent publicly owned operators (Sinha, 1996, Dokeniya, 1999, Mukherji, 2004). Participation of stakeholders is encouraged in the similar way as it is done in the electricity regulatory bodies by disseminating information, consultation papers and inviting comments.

TRAI is accountable to parliament and regulated companies and consumer groups can and have appealed against its decisions in the Tribunal for telecommunications, many suits have gone to High Courts and Supreme Court.

Although in many respects the regulation of electricity and telecommunication started around same time in India, the two institutions have delivered different outcomes in terms of competition, access of the service, quality of service provided and prices charged from the consumers. On all these dimensions the telecommunications regulation has enabled better achievement of the objectives of the regulatory reform and privatisation.

# **Concluding remarks**

The institutional framework used to understand the regulatory governance in India has provided an opportunity to examine the mechanisms of regulatory governance. An important finding from this study has been that despite having clear legislative mandate, the regulatory

governance is still vulnerable to state interference. The multi-party political system, institutional framework that has evolved during 'command and control' approach to economy, public ownership of electricity industry (with embedded distributive politics) have created an institutional and political legacy that is likely to delay the emergence of effective and efficient electricity regulatory regimes in India. Relative success of the Telecom Regulatory Authority in India in ensuring development of competitive markets, lower telecom prices as well as increased access will suggest that telecom regulatory institution in India has performed better than electricity regulatory institutions on these dimensions. Apart from the contextual, 'home grown' approach to telecom regulation there is another key difference that might be another factor responsible for better results in telecom. That is the fact that before reforms telephone services were not accessible to the poor and lower middle income consumers in India therefore, political fall out of privatisation and reform were less important at state level. In case of electricity the situation is quite reverse. The farmers and household consumers are important political constituency at state level and electricity is a state subject unlike telecommunications. This reality is likely to see the electricity regulation in India moving slowly from its infant state now to youth and maturity.

Two major limitations of present study are that it has not been possible to construct the Regulatory Governance Index following Pereira (2006) and second is that empirical data on telecom regulation could not be collected through the interviews. As a way forward this will be carried out in future to collect information on remaining SERCs and TRAI through interview (either personal or through phone). Subsequently effort will be put in to construct the Regulatory Governance Index.

Alexander, Ian (2003) UK Model on Developing and Transition Economies: Common Issues and Misconceptions, South Asia Energy and Infrastructure Unit, World Bank, Washington DC, http://info.worldbank.org/etools/docs/library/86469/ses2.1\_ukmodelondeveloping.pdf Dokeniya, Anupama (1999) Re-forming the state: telecom liberalization in India, *Telecommunications Policy*, 23, 105-128.

Harris, Clive, John Hodges, Michael Schur, and Padmesh Shukla (2003) *A Review of Cancelled Projects*, Note Number, 252, World Bank, Washington DC.

Jain, Rekha (2006) Interconnection regulation in India: Lessons for developing countries, Telecommunications Policy, 30, 183-200.

Levy, B and P.T. Spiller (1994) The Institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunication Regulation, *Journal of Law Economics and Organisation*, V 10, No. 2, 201-246.

Mukherji, Rahul (2004) Managing Competition: Politics and the Building of Independent Regulatory Institutions, *India Review*, vol 3 No.4 pp.278-305.

Newbery, David M, and M G Pollitt (1997) 'The Restructuring and Privatisation of the UK Electricity Supply-Was it Worth it?', *Public Policy for the Private Sector*, No. 124, World Bank, Washington DC.

Parker, D, Kirkpatrick, C. (2005) Privatisation in developing countries: a review of the evidence and the policy lessons, *Journal of Development Studies*, 41(4), 513-41 Pereira, Carlos, Bernardo Mueller and Marcus Melo (2006) *Regulatory Governance in Infrastructure Industries; An Assessment and Measurement of Brazilian Regulators*, The World Bank, Washington DC.

Prayas Group (2003) A Good Beginning But Challenges Galore, Prayas Group, Pune, India.Sinha, Nikhil (1996) The political economy of India's telecommunications reforms,*Telecommunications Policy*, 20, pp. 23-38.

Stern, J, S Holder (1999) Regulatory governance: criteria for assessing the performance of regulatory systems. An application to infrastructure industries in the developing countries of Asia. *Utilities Policy*, 33-50.

Vickers, J., G Yarrow (1988) Privatization: An Economic Analysis, MIT Press Ltd, London, UK.