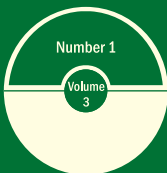


ISSN 0972-4907



# International Journal of Regulation and Governance



June 2003



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## International Journal of Regulation and Governance

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## Information for authors

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# Regulators, policy-makers, and the making of policy: who does what and when do they do it?

Ashley Brown

Executive Director, Harvard Electricity Policy Group, Kennedy School of Government, Harvard University, USA; Of Counsel, LeBoeuf, Lamb, Greene, and MacRae

International Journal of Regulation and Governance 3(1): 1-11

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## **Abstract**

The formation of independent regulatory agencies for infrastructure has led to considerable controversy in many countries over the respective roles of government policy-makers and of 'independent' regulators. The fact that independent regulatory agencies are not only new entities, but also new concepts, has contributed to a lack of clarity on their role in policy formulation. The issue is often characterized as distinguishing between the setting and implementation of policy. That characterization, however, is not very useful. For a variety of reasons relating to politics, expertise, inability to be prescient, transparency, jurisprudence, imprecision in wordsmithing, and finance, the issue is perhaps better defined in terms of two levels of policy-making, macro and micro. The former is the domain of government policy-makers, while the latter seems best suited for regulators. While government always retains the ultimate responsibility for the formulation of policy, it is best to delegate nuanced policy decisions, micro policy, to regulators. Doing so makes for less politicization, more predictability, more transparency, and more informed decision-making.

## Introduction

Delineating between the roles of government policy-makers and independent regulators is the subject of controversy and confusion wherever independent regulatory agencies have been established. Part of the controversy, of course, is the result of the natural ‘shaking out’ process for newly established independent regulatory agencies in countries with no experience regarding these institutions. Part of the controversy, however, is simply that the boundaries between ‘policy-making’ and ‘regulating’ are inherently fluid and uncertain. Moreover, the very notion of distinguishing between ‘policy-making’ and ‘regulating’ may well pose a false dichotomy. Both policy-makers and regulators make policy. The distinction is that policy-makers define the fundamentals and define the parameters within which policy-making is delegated to regulators. It is more useful to think, not in terms of policy-making versus regulation, but, rather, as macro policy-making versus micro. For purposes of this paper, macro policy is defined as the basic policy parameters. It constitutes the fundamental principles of the regulatory system. Micro policy-making is defined as the action of regulators, operating within their legal authority and consistent with the macro policies formally enacted by the government, to apply, clarify, interpret, and fill in details left unspecified by macro policy-makers.

In flushing out the distinction, it is useful to keep key concepts in mind.

- 1 Basic and macro policy must be set by the government
- 2 Government policy must be set and altered only on a prospective basis
- 3 Regulators must follow and enforce policies articulated by the government
- 4 Regulators are creatures of the state and not necessarily of the government
- 5 Policy vacuums are inherent and expected
- 6 Some policy issues require technical expertise to be resolved
- 7 Regulatory decision-making, policy or otherwise must be subject to appellate review.

## Policy-making

The government has the power and the obligation to set basic policy. It not only has the capability, but also takes the action(s) that provides the regulatory regime with its legitimacy, credibility, and legal authority. In fact, except perhaps, in the rare

circumstances where the regulatory agency, as in California, is created in the Constitution itself, regulators possess only those powers specifically delegated to them by the government. Governmental failure to coherently articulate basic policy will inevitably lead to instability, uncertainty, and blurred vision. Neither investors nor consumers will tolerate for long a regulatory regime without basic form. The real question about the government establishment of policy is about the level of detail provided by government policy-makers, stability of the established policy, and the means by which policy is articulated and communicated.

The level of detail provided by the government is not a trivial issue. It is necessary that policy be articulated in sufficient detail to provide a level of stability and predictability adequate to attract capital and market participation. The general rules and parameters for discretion delegated to regulators need to be stated in sufficient detail to enable a general understanding of the nature of the regulatory regime. Indeed, it is in articulating the basic policies that the difference between macro and micro policy is defined. Anything articulated in law or rule by the government constitutes a macro policy. Any policy that regulators articulate in order to carry out their duties to implement macro policy constitutes micro policy.

### *Macro policy-making*

Macro policy should not be overly detailed for two basic reasons. The first being that regulators should be allowed the flexibility needed to adjust to inevitably changing circumstances. Markets and circumstances evolve with time and it is prudent to enable regulators to make appropriate incremental changes. That degree of flexibility internalizes modest changes into the regulatory process and avoids undue politicization of issues of lesser magnitude. It is also a recognition that policy-makers are not and cannot be prescient. It is not possible for them to anticipate all issues that require policy-making to resolve. Rather than attempting to micro manage all details, delegation of authority to regulators to fill in policy details seems sensible, particularly as government policy-makers always possess the ultimate authority to change policy on a prospective basis, when they deem it appropriate to do so.

The second reason for avoiding overly prescriptive policy parameters is that some matters are too technical for policy-makers.

An excellent example is in the area of pricing. While it is important that the basic methodology be set forth on a policy level, the actual implementation and application of pricing principles is an extraordinarily complicated matter. What level of expertise, for example, can we expect to find in a legislative body on the relative merits of locational marginal cost pricing for electric transmission services? The matter, while an important sector policy issue, is self evidently too arcane, too technical, and too complex to expect keen insights from macro policy-makers. That being said, however, it is critical that the government articulate at least a basic theory of pricing. It may range from the amorphous ‘just and reasonable’ standard enunciated in the Federal Power Act in the US, to something slightly more prescriptive, such as mandating price caps, benchmarks, rate of return regulation, PBR (performance/incentive-based regulation), reasonable opportunity to recover prudently incurred costs, or some other criteria. Even here the task is not easy. For example, enunciating PBR goals is much more general than describing the narrower framework of price caps. Further, it is important to consider the general consistency of the guidance. For example, the proposed US energy legislation currently under Congressional consideration gets into details such as ‘native’ load protection that goes against the open access provisions in unexpected ways. Very small changes in the wording may have profound, unintended, and often quite adverse effects. The purpose is to provide investors and consumers alike, some insight into what they may reasonably expect from the pricing regime, not to put regulators into a strait jacket by rigidly defining every detail. Where policy-making requires technical expertise, nuanced shaping, and expertise, it is prudent to delegate it to the regulators.

### *Micro policy-making*

Delegation of micro policy-making to a regulatory authority makes sense because no macro policy-maker, regardless of prudence and vision, will ever be able to foresee all policy issues that might be encountered in practice. Consequently, there is an element of policy-making that will have to be done when unanticipated issues arise for which there is no pre-existing policy, or where the policies, articulated in broad terms, requires clarification or fuller definition in application. Examples include refined definitions of what constitutes improper

exercise of market power in electricity generation, or how to price a newly unbundled telecommunications service that had previously only been offered in a bundled basis with other services, or redefinition of customer classes based on unforeseen uses. It is theoretically possible that regulators, upon encountering such a situation, could stop their decision-making process and seek guidance from government policy-makers. Unfortunately, doing so will almost certainly render the decision-making process more labourious, time-consuming, and less effective. Moreover, there is no assurance that there will be an adequate response, much less a timely one. Certainly, legislative bodies are not famous for either timeliness or precision. It seems both more efficient and fairer to the parties involved to simply authorize the regulators to make the needed determinations. If the judgement of the regulators proves faulty, there will be many opportunities for them to reverse themselves, or for macro policy-makers to step in and articulate a new policy on a going forward basis.

### *Delegation of roles in policy-making*

It is useful to point out that macro policy can come from two sources—one legislative and the other executive. Obviously, basic policy should be set out in law. That requires legislative action. The other possibility for policy formulation, all within the scope of authority provided by law, is that executive agencies such as cabinets, individual ministries, councils of ministries (for example, The National Energy Policy Council in Brazil), the president or prime minister himself, will enunciate the policy. Basic infrastructure ministries, and perhaps other institutions, may possess comparable levels of expertise as is found in regulatory agencies. They, therefore, may well be as competent at analysing arcane technical matters as the regulators. The issue with executive policy-makers, unlike legislators, is often not the lack of understanding or expertise, but, rather, one of timing, transparency, politicization, and application of decisions. It is important, however, to keep in mind that there is more than one level of delegation possible for micro policy-making.

While broad policy questions should be resolved by policy-makers, many areas of micro policy-making, within defined parameters, are best delegated to regulators. Doing so follows logically from one of the fundamental reasons for regulatory

independence. The state performs three basic categories of functions: administration, legislation, and adjudication. It is impossible to put regulatory agencies in any single category as they perform administrative, legislative, and judicial tasks. They operate agencies, buy supplies, enforce laws, manage personnel, and perform other administrative tasks. They set tariffs, promulgate rules, enunciate micro policy within the authority delegated to them, and perform other functions which are universally applicable and prospective in nature. Those two attributes are classic legislative powers. Finally, they adjudicate disputes within their legal jurisdiction. Thus, regulators do not readily fit into any governmental table of organization. Policy-making is legislative in nature and is, therefore, a type of activity in which regulators routinely engage. Their ability to do so, however, is governed by the scope of authority granted to them by the government. Once that authority is delegated, and, until it is rescinded, regulators should be free, subject to appellate review, to apply their expertise and exercise their lawful authority free of governmental interference.

Macro policy-makers always possess the legal capability to dictate policy to regulators. It is important, however, that when they do so, they act only on a prospective basis. The rationale for that principle is twofold, decision-making coherence, and the legitimacy/transparency of the process itself. The first rationale is rooted in sound process management which has three basic elements.

- Legal/macro policy formulation and articulation
- Implementation/micro policy formulation
- Appellate review.

It is an element of basic fairness that those who participate in the process are able, to the extent possible, to know the rules and policies with which they will have to comply. It is, therefore, for the sake of both coherence and fairness that the three elements of decision-making be conducted in appropriate sequence by the proper authorities.

Policy-makers, both legislative and executive, need to provide regulators with the policy framework within which they must make their decisions. By articulating that framework, they simultaneously provide all parties due notice of the basic parameters of regulatory policy and principles to be followed. Those

policies are set forth in general terms and in contemplation of the overall objectives rather than determining the outcome of specific cases or fates of specific market participants. While vested interests will undoubtedly attempt to influence policy decisions, and certainly have a right to do so, it is important to keep policy-makers fully focused on the broad goals and objectives defining the public interest, rather than on the specifics of individual case outcomes.

It is for the regulators to decide individual cases and to actually apply the policies to specific factual contexts and players. In doing so, they will encounter matters that require detailed interpretation of policy, or even fill in the blanks left by the policy-makers. In fact, for the most part, it is in the context of specific cases or set of circumstances that issues of micro policy will arise. It is an inherent and unavoidable aspect of regulation that matters of micro policy, or clarification of broad policy, will arise in specific cases before the regulators. Whereas macro policy-makers are often initiators of policy matters, regulators, more often than not, make micro policy in reaction to matters raised in specific cases or disputes, or, in order to specifically fulfill obligations imposed upon them by law. It is axiomatic, but true, that unforeseen issues or circumstances will arise, which the macro policy-makers did not, or could not, anticipate.

While regulators could, in theory, upon encountering a micro policy matter, stop the process, throw up their hands, and ask for guidance from government or legislative authorities before proceeding, the result, would be likely be highly disruptive, time consuming, and would almost certainly politicize the outcome of very specific cases or the fulfillment of specific regulatory objectives. Those inevitable effects of such a procedure would likely negate the very *raison d'être* of independent regulatory agencies. It makes better sense, therefore, to simply allow the regulators to proceed with their decision-making process. That being said, however, there needs to be a check in place to assure that the regulators neither exceed their legal authority nor violate policies that they are obliged to follow. That, of course, is the reason why there is an appellate process. If regulators, in deciding a matter, fail to follow obligatory laws and/or policies or adhere to required processes, then the offending decision should be reversed and reconsidered.

## The process of policy-making

There is, therefore, a logical sequence to deciding regulatory matters. The first is the initiation of the entire regulatory process through the articulation of basic principles and policy formulations. It allows for public contemplation of basic policies through the political process, but in a broad context without reference to specific cases or disputes. That is, undisputedly, the role of legislators, and perhaps executive policy-makers as well. Regulators can, and perhaps should, provide input to such matters, but are not empowered to take a decision.

The second part of the sequence is the implementation of regulation. That process allows regulators to adjudicate disputes, fulfill legal obligations such as tariff setting, and, where necessary, to provide micro policy details in order to clarify or provide detail on policy. The latter, of course, is the essence of making micro policy. It must be carried out independently, transparently, and in an apolitical manner.

The third sequence is to assure that the second sequence, the regulatory process, is carried out in a manner not inconsistent with policies and principle enunciated in the first process. The third sequence is, of course, the appellate process. In fact, there are two appeal processes, one for resolving specific cases in dispute, and the other, for resolving policy issues on a prospective, going forward, basis. In the first type of appeal, a party who feels aggrieved by a decision by the regulator may ask that an appellate body (usually a court or a tribunal of some sort) reverse the decision in that case. The appellate body, among its other obligations in reviewing the decision of a regulatory agency, must make certain that the regulators neither exceed their authority nor fail to follow policies and processes set by macro policy-makers. It is important to note, however, that this type of review is not to formulate new policy, but merely to assure compliance with existing laws and policies. This form of appeal should be carried out in an independent, transparent, and apolitical manner. The other form of appeal to macro policy-makers, however, is merely to review relevant policy in order to determine whether a policy needs to be altered or supplemented. Because such an appeal can be carried out within the political process, any policy determinations will affect only future matters. In other words, it cannot affect the outcome of specific cases decided by the regulators prior to the re-formulation of basic policy.

### *Integrity and transparency*

Apart from sound principles of decision-making, there is another even more important reason for allowing regulators to decide matters of micro policy. That reason is the transparency and integrity of the decision-making process itself. The integrity of the regulatory process is rooted in many elements, but important among them is the idea that the process be transparent, fair, and independent of politics. As one observer noted, regulators are agents of the state, and not necessarily of the government at the moment. In order to assure the integrity of decision-making, it is vital that the process is exactly as it appears to be. All parties have equal opportunity to access decision-makers and to know what information and arguments the regulators consider while rendering their decisions.

The making of micro policy often arises in connection with individual cases involving specific and discrete financial interests, the process, like the judicial process, must be absolutely transparent and, to the extent possible, divorced from politics. Investors see greater predictability, more dispassionate analysis, and fewer risk variables in the regulatory arena than in a political one. Similarly, consumers in many places have come to the same conclusion, namely that they are better served by having an independent, transparent, apolitical body making key decisions regarding infrastructure than having case-specific matters resolved in a political forum where they are likely to possess less clout than well-funded lobbyists from large companies. The views of political figures may well be considered by regulators as one set of inputs. Such views, however, must be communicated in a transparent, public manner. It should, however, be the regulators, alone, who are responsible for actual decision-making. In short, the process must be internally open and complete.

### *Regulatory process*

Unlike the making of macro policy, which is inherently political, the regulatory process should be free of politics to the extent possible, because it usually involves weighing the interests of specific parties, and making technical judgments regarding the application of broad policy to a specific set of circumstances. It is, therefore, inconsistent with the very basic regulatory concepts of independence, transparency, and depoliticization for regulators to defer to political authorities in rendering their decisions.

It is theoretically possible to construct a relatively transparent mechanism for political consultation by regulators on matters of micro policy. Indeed, political authorities should always have a means of transparently offering their views to regulators. The problem is not the transparent offering of viewpoints, but, rather, the non-transparent bypass of the regulatory processes that seems likely to occur if regulators are not in a position to decide micro policy issues on their own. Parties seeking to advance their own interests will almost inevitably, whenever it suits their interest, seek out political officials to support their point of view. It would, for example, be grossly unfair to have all of the parties in a case present their evidence and arguments to the regulators through the prescribed process while another party to the same proceeding seeks out the clandestine support of a minister or other high political figure in order to secure a favourable decision. Success in such a manoeuvre would render the entire regulatory process in that proceeding a sham. All of the evidence offered, arguments made, processes followed would be meaningless. It is for that very reason that independence of the regulators is, in fact, a critical element of transparency. No process can be deemed to be transparent when the real decision-maker is someone other than whom it is supposed to be under the procedures, or, where the real reasons for a decision remain unrevealed.

### *Politicization*

While perhaps it cannot be said that the motives of regulators are always pure, the discipline imposed by the process can at least compel transparency. The same cannot be said when the process becomes politicized. While the motives of the government in interfering may well be for such legitimate policy reasons as controlling inflation, promoting investment, promoting specific resources, the opportunity of bypassing an established, transparent regulatory process by political officials also opens the door to politicization, corruption and/or de-legitimization. It is important, therefore, as elementary fairness to all parties, for the integrity of the process, and for transparency that the regulators make the decisions themselves, and that any effort by the government or any of its officials to influence the outcome only be carried out in ways that are open and transparent. Certainly, advocating legitimate goals can be done transparently without embarrassment. More importantly, if the

goals being advocated by political authorities are meritorious, then the government is always empowered to change policies prospectively. It need not intervene in the regulatory process in specific cases in order to effectuate policy. Doing so is to effectively alter the rules in the middle of the game. By making policy on a prospective basis only, the integrity of the process is preserved without sacrificing the ability of political authorities to make a policy.

### **Conclusion**

In conclusion, governments must set basic policy, macro policy-making. Filling in the details of that policy, micro policy-making, however, is an inherent part of what regulators have to do in order to carry out their mission. Policy-making by regulators, however, is restricted by two critical factors. The first is that policy made by regulators is subsidiary to government policy and is done only under a delegation of authority from the state. Secondly, policy-making by regulators is incidental to and inherent in their duty to decide specific cases or disputes. That policy-making role is derived entirely from the fact that macro policy cannot be reasonably expected to anticipate all aspects of policy that will evolve for the regulatory process to be fully functional. Gaps will have to be filled in and it is the regulators, with technical expertise and hands-on experience, those are best positioned to accomplish that. Their role in doing so, however, is subject to two checks.

The first is the appellate review that determines if the regulators were acting within their lawful authority, followed policies they were obliged to follow, whether they were acting reasonably, and whether they followed fair and correct procedures. The second check is that the government retains the ability to alter micro policy determinations. In order to safeguard the integrity of the regulatory process, however, it is vital that that power be exercised only on a prospective basis. Recognition of the realities and limits of regulatory policy-making will safeguard the process and allow for a more orderly, transparent, and predictable regulation, both in terms of process and substance.

# Trends in the management of regulation: a comparison of energy regulators in member countries of the Organisation for Economic Development and Co-operation<sup>1</sup>

Carlos Ocana

SAMCA Chair of Regulation, School of Economics and Business, University of Zaragoza, Spain

International Journal of Regulation and Governance 3(1): 13–32

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## **Abstract**

This paper studies the design and functions of energy regulatory agencies building on a cross-country analysis of energy regulators in OECD (Organisation for Economic Development and Co-operation) member countries. There is a strong trend towards specialization of the regulatory function that has resulted in the creation of separate regulatory organizations in many of the countries examined. Regulatory organizations, however, show significant differences in their independence, powers, and relationship with the executive branch of the government. The focus of this paper is on two questions.

First, what do independent regulatory agencies have in common? It has been shown that most independent regulatory agencies share a common blueprint concerning their decision-making structure, procedures and core activities. This suggests that international benchmarking and identification of best practices can help improve the performance of regulatory agencies where they exist.

Second, what explains the variation in the powers and independence of regulatory agencies? The analysis suggests that differences among regulators reflect not only different legal and

<sup>1</sup> A first draft of this paper was prepared while the author was with the Energy Diversification Division of the International Energy Agency. Comments and suggestions from Peter Fraser, Robert Priddle, and Caroline Varley are gratefully acknowledged. The views expressed in the paper are those of the author.

administrative traditions, but also the regulatory framework adopted in each country. Regulatory agencies generally have more power in countries and industries practising active competition policies, such as those requiring the unbundling of networks, and active regulatory policies, such as ongoing regulation of network prices. At the other extreme, regulatory agencies do not exist in countries that practice 'light-handed' regulation. In other words, the choice and design of regulatory organizations reflects to some extent the scope of the functions that regulators have to manage.

## Introduction

Regulatory reforms bring with them substantial changes in the management of regulation, often including the creation of new regulatory agencies and a new distribution of functions and responsibilities among regulators, 'line ministries', competition authorities, and other parts of the government. Regulatory agencies in energy, telecommunications, and other industries, once only present in Canada and the US, were established in many other countries as an integral part of the reform. The organization, decision-making structures, and processes of the new regulatory agencies are often similar to those of traditional utilities commissions and their federal counterparts in the US. However, their role has been redefined and extended to areas related to the introduction and advocacy of competition, and the rationale for independence and neutrality of decision-making has also evolved with the advent of competition. This paper studies recent trends in the organization, decision-making structure, and functions of regulatory agencies building on a comparative analysis of energy regulators in 23 OECD (Organisation for Economic Development and Co-operation) countries.

### *Specialization*

There is a global trend towards specialization of the regulatory function. Specialization is implemented with two different approaches to the management of regulation. In one group, comprising 10 countries, there are independent regulatory agencies with concrete regulatory powers. In another group of countries, the 'line ministry' (within the executive) retains all regulatory powers but delegates the management of some regulatory functions to a ministerial agency in five of the cases examined and to an independent advisory agency in another four cases. These bodies act in a manner similar to an independent regulator but have no final regulatory powers. Only five countries have no specialized regulatory organization apart from the line ministry and this occurs in countries with virtually no ongoing regulation of the industry or with minimal market opening.

### *Convergence*

There is convergence in the design of independent regulatory agencies. The independent regulatory agencies examined in this

paper share a number of key elements regarding their core functions, decision-making structure, procedures, and independence safeguards. Kerf, Schiffler, and Torres (2001) similarly conclude that there is significant convergence across European Telecommunications regulators. However, it is also demonstrated that the powers of these agencies vary. Some agencies work under a general mandate to regulate the industry while the functions of others are more restricted. The analysis suggests that differences in national approaches are partly explained by the regulatory framework adopted in each country. Where the scope of regulatory functions is larger, regulators are inclined to have more power and independence. On the other hand, where regulatory functions and competition policies are less developed, regulatory institutions tend to have less power. There is consistency between the design of regulatory agencies and the scope of regulation.

### *Organizational changes*

There are two alternative views on organizational changes that are currently taking place in the regulatory function. One view emphasizes convergence by highlighting that many independent regulatory agencies have been established in the electricity, gas, telecommunications and, to a lesser extent, water industries. This trend is observed in the OECD countries—Latin America, Eastern Europe, and some Asian countries such as India. The rapid expansion of regulatory agencies suggests that international benchmarking and the identification of best practices could be effective tools in the management of independent regulatory agencies. Berg (2000) provides a comprehensive review of ‘best practice’ design principles for utility regulators. The other view emphasizes diversity by highlighting the large variety of approaches to the design of regulatory agencies and other regulatory bodies, including a number of countries where no regulatory agency has been established. The power and independence of regulators seem to differ across countries, particularly in sectors like energy where reforms are very recent. This would imply that the organization and management of regulation are largely country-specific issues, linked to the legal and administrative tradition of each country. Benchmarking and identifying best practices would not be effective in this context.

The evidence examined in this paper lends support, with some qualifications, to the view that regulatory institutions are

not entirely country specific so that benchmarking and comparison of practices and performances across agencies can contribute to a more effective management of the regulatory function. There is evidence of increasing convergence in the regulatory institutions overseeing the energy sector. A similar trend has been identified in the telecommunications industry (OECD 2000). Furthermore, differences in the design of regulatory agencies across countries reflect, at least in part, the regulatory frameworks and are not purely the result of legal and administrative traditions in each country.

There are, however, country-specific factors that seem to have significant weight in the choice of regulatory organizations. For instance, several early reformers in Northern Europe – Norway, Sweden, and the Netherlands – have established ministerial agencies for regulation rather than fully autonomous bodies. In practice, these ministerial agencies operate with a large degree of autonomy, similar to an independent agency, but are formally subordinated to the line ministry. This choice does not seem to respond to differences in the regulatory frameworks adopted that are roughly similar to those in the UK, the US or Australia.

### **Design of regulatory agencies**

This section provides an overview of the main design options for independent regulatory agencies and the trade-offs involved. Design issues are discussed in Smith (1997), Smith and Shin (1995), and with a focus on process, in Brown (1996) and Berg (2000), among others. Green (1999) considers the interaction among the various institutions involved in the regulatory process with a focus on the British experience.

Independent regulatory agencies are defined as autonomous public bodies empowered to regulate specific aspects of an industry. Regulatory agencies may also have judicial or quasi-judicial powers such as setting fines and penalties for non-compliance or acting as an arbitrator in disputes among industry participants. Independence, in this context, specifically means that the regulatory agency is protected from short-term political interference. Political independence is primarily meant as a commitment to provide for a stable regulatory framework over time. This commitment protects investors against opportunistic government intervention. The value of commitment is discussed in Spiller (1996). This is valuable even in a fully regulated market, which suggests an explanation for the emphasis on

political independence in traditional regulatory agencies overseeing investor-owned industries such as electricity in the US. In a deregulated environment, political independence may also contribute to other goals such as enhancing the transparency and competitive neutrality of regulation, particularly when some of the utilities are publicly owned.

Regulators are also meant to be independent from stakeholders in the sense that the regulated parties should not be able to influence regulatory decisions. This is necessary to ensure that regulation is fair and does not favour one group of stakeholders over the others. Almost all approaches to regulation are based on the principle that regulators should not be 'captured' by the interests of industry players. See Noll (1989) and Viscusi, Vernon, and Harrington (1998) for a discussion of regulatory capture and its economic implications. Unlike political independence, which is an attribute of independent regulatory agencies, independence from stakeholders is sought for all public bodies involved in regulation.

A few countries have independent advisory agencies. These agencies are similar to independent regulatory agencies but have no decision-making powers on regulatory matters. They advise the ministry on a wide variety of regulatory issues, have monitoring responsibilities and authority in the resolution of disputes on issues such as network access.

In most regulatory systems, several organizations either deal with regulatory issues or influence regulatory outcomes. Typically, regulatory agencies split regulatory activities with a 'line ministry'. In theory, the 'division of labour' between the ministry and regulatory agency allocates policy-making, setting the general framework and rules, to the line ministry. Implementation of these rules is the responsibility of the regulatory agency. However, there is some overlap between policy and regulation. This overlap of regulatory activities may indeed be one of the main advantages of setting-up regulatory agencies. Laffont and Martimort (1999) argue that the co-existence of two or more regulatory institutions may result in additional effective monitoring. It may also reduce the regulators' scope for capture by industry interests. On the other hand, the existence of many regulatory institutions increases the complexity of regulatory processes, creates a need to protect the independence of the regulatory agency from other parts of government and requires the development of appropriate coordination mechanisms.

Autonomous ministerial agencies subordinated to the 'line ministry' have been set-up in some countries. These institutions operate on a separate budget, under an autonomous management and may be subject to a differentiated legal framework but are ultimately subordinate to the ministry. In practice, however, autonomous ministerial agencies in some countries operate with a substantial degree of independence.

Competitive authorities can influence regulatory outcomes, particularly when acting *ex ante* to prevent mergers and acquisitions that are deemed detrimental to competition or apply structural solutions to remedy an anti-competitive industry structure. There is significant overlap between regulatory and competition agencies in many areas including network access and pricing, and structural policies such as the unbundling of networks, mergers and divestitures.

Regulatory agencies can be designed in many different ways. Components include the role (or 'mission') they are assigned, their governance, the specific regulatory functions and processes, the resources and internal management of the agency, the start-up strategy and other factors. The main components are summarized in Table 1.

## Case studies

### Overview

The study covers 23 countries in Western and Central Europe, North America, and the Asia-Pacific. Institutional approaches to utility regulation can approximately be grouped into four categories according to whether regulation is managed exclusively by the ministry, the ministry and an independent advisory body, the ministry and a ministerial agency, or the ministry and an independent regulatory agency. The basic approach to regulation adopted by each country is summarized in Table 2.

Independent regulatory agencies have been established in 10 countries. As discussed in the previous section, these entities are autonomous bodies with specific powers, and are governed by one or several commissioners appointed for a definite and non-revocable period. The goals, powers, and activities of these regulatory agencies vary to some extent. The (federal and state) agencies in the US, the UK, Canada, and Australia have a broad mandate to regulate industry and may act on almost all regulatory and competition policy issues. The agencies in Ireland and

**Table 1** Designing regulatory agencies

Area	Design issue	Key options
Mission	Objectives	<ul style="list-style-type: none"> <li>■ One or several among               <ul style="list-style-type: none"> <li>• Consumer protection</li> <li>• Investor protection</li> <li>• Economic efficiency</li> <li>• Competition advocacy</li> </ul> </li> </ul>
	Jurisdiction (powers)	<ul style="list-style-type: none"> <li>■ Regulatory powers only or, additionally               <ul style="list-style-type: none"> <li>• Mergers</li> <li>• Other competition law</li> <li>• Policy on entry, investment, privatization</li> </ul> </li> </ul>
	Industry coverage	<ul style="list-style-type: none"> <li>■ One industry or multi-industry</li> </ul>
Governance	Decision-making structure	<ul style="list-style-type: none"> <li>■ Single regulator or commission</li> <li>■ Odd or even number of commissioners</li> <li>■ Staggered terms or not</li> </ul>
	Appointment of regulators	<ul style="list-style-type: none"> <li>■ Made by parliament or by government</li> <li>■ Stakeholders allowed or not</li> <li>■ Based on professional competence criteria or not</li> </ul>
	Independence safeguards	<ul style="list-style-type: none"> <li>■ Irrevocable mandates</li> <li>■ Prohibition of conflicts of interest during and after mandate</li> <li>■ Stable funding</li> </ul>
Regulatory activities	Functions	<ul style="list-style-type: none"> <li>■ One or several among               <ul style="list-style-type: none"> <li>• Regulation of monopolies</li> <li>• End-user tariffs and quality standards</li> <li>• Monitoring</li> <li>• Dispute resolution</li> <li>• Advisory role to government</li> </ul> </li> </ul>
	Process and appeals	<ul style="list-style-type: none"> <li>■ Process based on               <ul style="list-style-type: none"> <li>• Rule-making</li> <li>• Negotiation among stake holders</li> <li>• Monitoring and remedial action</li> </ul> </li> <li>■ Rules to promote transparency of decision-making such as hearings and publication of decisions</li> <li>■ Designation (or not) of an independent appeals body</li> <li>■ Grounds for appeal restricted to complaints on undue process or not</li> </ul>
	Coordination with other authorities	<ul style="list-style-type: none"> <li>■ Formal or informal mechanisms for consultation and referral</li> </ul>
Resources, management, and external control	Funding	<ul style="list-style-type: none"> <li>■ Earmarked or not</li> <li>■ From state budget or from industry</li> <li>■ Size</li> <li>■ Stability of time horizon</li> </ul>

*Continued*

**Table 1** *continued*

<i>Area</i>	<i>Design issue</i>	<i>Key options</i>
	Human resources	<ul style="list-style-type: none"> <li>■ Salaries at market levels or subject to civil service rules</li> <li>■ Competence and specialization of staff</li> <li>■ Use of external resources</li> </ul>
	Reporting and auditing	<ul style="list-style-type: none"> <li>■ Reporting to parliament, to line ministry, to other ministry</li> <li>■ External audits</li> </ul>
Transition issues	Start-up strategy	<ul style="list-style-type: none"> <li>■ Timing: set up before or after reform</li> <li>■ Initially, staff on secondment from industry or ministry allowed or not</li> </ul>

**Table 2** Approaches in IEA countries

<i>Institutional approach</i>	<i>Country</i>
Independent regulatory agency and ministry	Australia Canada Czech Republic Denmark France Ireland Italy Portugal UK US
Ministerial agency and ministry	Finland Hungary Netherlands Norway Sweden
Ministry and independent advisory agency	Belgium Greece Luxembourg Spain
Ministry only	Germany Japan New Zealand Switzerland

the Czech Republic are responsible for network and end-user tariff setting and network access issues, licensing and authorizations. The remaining agencies have more limited and specialized powers, mainly related to network and end-user tariff setting and network access issues. This is the case in France, Italy, Portugal, and Denmark. These agencies have been established over the past 12 years, except in the US and Canada where they have been in operation for several decades. Many of these agencies have been created in step with market reforms. Table 3 summarizes the main characteristics of national and federal independent regulatory agencies.

At the other end of the spectrum, the 'line ministry' is the only organization directly involved in the management of regulation in Germany, Japan, New Zealand, and Switzerland. In three of these countries – Germany, Japan, and New Zealand – there is no ongoing regulation of networks (that is tariffs and access conditions are negotiated by industry players), which, arguably, diminishes the potential role of an independent regulatory agency.

Independent advisory agencies have been established in Belgium, Greece, Luxembourg, and Spain. These agencies provide advice to the ministry and are responsible for monitoring and arbitration, but have no definite regulatory powers. In accordance with their advisory role, the areas of activity of these organizations are broadly defined to include most regulatory issues. Governance and decision-making structures and independence safeguards are similar to those adopted by independent regulatory agencies. Table 4 summarizes the main characteristics of these organizations.

In the remaining five countries – Finland, Hungary, the Netherlands,<sup>2</sup> Norway, and Sweden – management of day-to-day regulatory affairs is delegated to a ministerial agency formally subordinated to the line ministry and managed by a president or director, appointed for an indefinite but revocable period (Table 5). Ministerial agencies specialize in regulating monopolies. Their main role is to manage network regulation including tariffs and access conditions.

Competition authorities have jurisdiction over electricity and gas markets in the majority of the countries examined. Formally, competition law applies to energy in all countries. However, there

<sup>2</sup> There are plans to establish an independent energy regulator in the Netherlands.

**Table 3** Independent regulatory agencies

	<i>Australia*</i>	<i>Canada*</i>	<i>Czech Republic</i>	<i>France</i>	<i>Denmark</i>	<i>Ireland</i>	<i>Italy</i>	<i>Portugal</i>	<i>United Kingdom (England and Wales)</i>	<i>United States*</i>
Scope	Energy, telecommunications and airports; competition law	Electricity, gas, and oil	Electricity and gas	Electricity and gas	Electricity and gas	Electricity	Electricity and gas	Electricity and, since 2002, also gas	Electricity and gas	Electricity, gas, and oil
Board Members	7	9	1	6	7	1 (could increase to 3)	3	3	5 (+ 6 non-executive members)	5
Length of appointment (Years)	Up to 5 years	7	5	6	4	Up to 7	7	5	5	5
Possibility of renewal	Yes	Yes	Yes	No	Yes	Yes (only once)	No	Yes	Yes, one time	Yes
Main source of financing	Treasury's Budget	Annual fees paid by the regulated companies (based on volume of regulated activity)	State budget	State budget	Charge on regulated companies	Paid by electricity undertakings	Tax on utilities revenue not to exceed 1 per thousand of regulated industry income	Surcharge on transmission tariffs	Charge on the income of the regulated parties	Fees for services (filing fees) and annual charges on utilities
Main functions	Network regulation; wholesale market rules; antitrust	Regulation of electricity exports	Licensing, network regulation and end-user tariffs	Network Regulation	Network tariffs and supervision of end-user tariffs (ex post)	Network regulation; licensing	End user tariffs; network regulation	End user tariffs	End user tariffs; licensing	Rules for interstate electricity sales and transmission; transmission and wholesale tariffs; Overseeing mergers

\* Federal Regulatory Authority

**Table 4** Independent advisory agencies

	<i>Belgium</i>	<i>Greece*</i>	<i>Luxembourg</i>	<i>Spain</i>
Scope	Electricity and gas	Electricity and some gas activities	Electricity and telecommunications	Electricity, gas, and oil
Board Members	6	5	5	9
Length of appointment (Years)	6	5	3	6
Possibility of renewal	Yes	Yes, one time	Yes	Yes, one time
Main source of financing	Surcharge on transmission tariffs	Surcharge on electricity and gas consumption	Surcharge on electricity consumption	Surcharge on consumption not to exceed 0.5 per 1000 of electricity revenue
Main functions	Advise on regulatory issues, monitoring, and arbitration	Advise on regulatory issues and monitoring; gas distribution and end-user tariffs	Advise on regulatory issues and arbitration	Advise on regulatory issues and mergers and acquisitions, monitoring and arbitration

\* The Greek agency has an advisory role in electricity, which is its main activity, but some definite regulatory powers in gas distribution have recently been added.

are exemptions in some countries that may block enforcement in practice. The most common approach is that the competition authority enforces competition law, including cases of abuse of dominant position, anti-competitive behaviour and mergers, and the ministry and regulatory offices manage regulation. This is often complemented with some formal or informal cooperation arrangements to facilitate the exchange of information.

There are, however, significant departures from this approach. In Australia, administration of competition law and most regulatory issues are the responsibility of a single independent

**Table 5** Ministerial agencies

	<i>Finland</i>	<i>Hungary</i>	<i>Netherlands</i>	<i>Norway</i>	<i>Sweden</i>
Scope	Electricity	Electricity and Gas	Electricity	Energy and water resources	Electricity
Main functions	Licensing of network activities; network price regulation (ex post)	Licensing and authorizations, implementing tariff decisions, approval of contracts among regulated parties and arbitration	Network regulation	Network regulation and licensing of network and generating facilities	Network regulation

agency. This applies both at federal and state levels. In the Netherlands, competition law and regulation are also controlled by a single institution, namely the ministry. In the US and UK, merger policy is concurrently enforced by the energy regulatory agency and the antitrust enforcement office.

### *What do independent regulatory agencies have in common?*

The design of the ten independent regulatory agencies identified in Table 2 is analysed below and, more specifically, identifies the common characteristics. This suggests a common blueprint from which regulatory agencies are designed and adapted to national circumstances.

### Objectives

The role of independent energy regulators is largely concentrated in two inter-related areas. One is monopoly control. Most regulatory agencies are responsible for price control and access in the monopolistic segments – transmission and distribution networks – while avoiding any anti-competitive impact of these segments on competitive segments such as production or generation and supply. The other is consumer protection. Regulatory agencies often have responsibility for end-user tariffs and other conditions such as quality of service. However, some agencies have a more general mission to promote efficiency, including oversight of the competitive activities.

## Jurisdiction

Regulatory agencies usually deal only with economic regulation. Social regulation is the responsibility of other authorities. As an exception to this rule, the UK launched in 1998 a review of the role of regulators that aimed to shift the emphasis of their activity from efficiency towards distributional issues. The government proposed changing the primary statutory duty of regulators to one of consumer protection, including dealing with fuel poverty and other social objectives. In Denmark, the regulator is charged with overseeing some environmentally motivated objectives.

Competition law is not the primary responsibility of most regulators, except in Australia where the competition authority is also the ESI independent regulator. However, ESI regulators often perform some supporting functions for the application of competition policy, such as monitoring, providing information and advice or bringing cases before the competition authority. In the US, the regulator has concurrent jurisdiction with the antitrust authority in merger cases.

## Industry coverage

Electricity and gas are regulated by the same institution in all of the cases examined except Ireland. This is consistent with ministries that also cover all forms of energy. This pattern of association of electricity and gas reflects significant and growing interdependencies between the two industries, such as the increasing use of gas for power generation and the integration of gas and electricity firms. It also reflects the fact that both are network industries facing similar regulatory issues, such as access to the network, and are subject to a similar regulatory approach (both industries are being deregulated worldwide).

## Decision-making, appointment, and independence of regulators

A commission governs a majority of independent regulatory agencies, the exceptions being the Czech Republic and, until recently, the UK where there is a one-person regulatory board. However, the Utilities Bill in the UK established a collegial board for the regulatory agency. Appointments are for a fixed term of between three and seven years. Casual observation indicates that, with few exceptions, stakeholders are not appointed as regulators but this does not seem to obey formal rules. Formal

independence safeguards generally include the non-revocability of appointments except in extreme circumstances, such as serious misconduct or insanity, a separate budget, managerial autonomy, or a stable source of financing.

### Functions

The functions of independent agencies vary. However, the regulation of the monopoly elements (networks) is typically allocated to the independent agency when it exists. The regulation of energy transmission tariffs is a core activity of all independent regulatory agencies, with the exception of Portugal. Another common activity of independent regulators is the regulation of end-user tariffs, with the exception of France and Ireland. Regulating entry and exit into the industry through the issue of licenses and authorizations is the responsibility of the independent regulators in Australia, Canada, the Czech Republic, Ireland, the UK, and the US.

To carry out these tasks, regulatory agencies are typically responsible for monitoring market conditions, compiling and auditing company information, and pursuing and penalizing misconduct. The more technical aspects of regulation, such as system operation rules, are frequently left to industry bodies, while the more strategic aspects of regulation and legislation are conducted by legislative bodies and government. For instance, in the US there has been an increase in legislative activity by individual states in areas that were traditionally handled by the Public Utilities Commissions and stakeholders have taken a leading role in developing operational rules.

In federal countries, regulatory functions are split between the federal and the state or provincial regulators, with the latter typically being responsible for the regulation of retail markets, including distribution and retail supply activities. This is the case in Australia, Canada, and the US. The split of regulatory powers reflects the local nature of distribution and retail supply services versus the systemwide dimension of production, generation, and transmission.

### Process and appeals

The procedures of regulatory agencies show significant similarities, which include

- a decision-making process that includes an obligation to conduct hearings and consultations with affected parties

and to make reasoned decisions, and to make these decisions public;

- an appeals mechanism, which establishes that either an administrative court or an ordinary court of justice is the appeals body;
- mechanisms to make these institutions accountable, which include an obligation to submit a report of activities to the parliament or other political body, and some form of auditing and control of performance by the relevant administrative body.

Most regulatory agencies are governed by a collegial body with an odd number of members appointed for a non-revocable term and subject to strict conduct requirements in their relationship with the industry during and after their term in office to prevent conflict of interests. The agency has jurisdiction only on economic regulation (it does not deal with health, safety or environmental regulation), covers electricity and gas issues and, in particular, deals with the regulation of monopolistic segments of the industry and setting end-user tariffs. The agency also monitors the industry and provides advice to the ministry. Process is regulated to ensure transparency and neutrality of decisions. Finally, in federal countries, the state regulator specializes in retailing while the federal regulator primarily deals with wholesale activities.

### **Why do approaches differ?**

Independent regulatory agencies' powers vary significantly from those with a general mandate to oversee and regulate the energy sector to those with a specialized function such as regulating network access or end-user tariffs. Diversity is even larger when ministerial and advisory agencies are considered intermediate options between a fully independent regulator and a ministry-only approach to regulation. While the legal and administrative traditions of each country are important determinants of the choice of regulatory approach, some of this variation can be explained by the regulatory framework in which the agency is set-up to operate.

The evidence examined in this section suggests the following three empirical regularities. First, there is no regulatory agency in countries that have adopted a 'light-handed' approach to regulation, such as New Zealand and Germany, in

which there is no ongoing price regulation and prices and access conditions are negotiated or proposed by the utilities regulated. In the other countries where no regulator exists, market opening has been minimal to date. The lack of a specialized regulator may be explained by the few regulatory tasks to be performed in countries where regulation is minimal or markets have not been established. In Finland, where access to networks is regulated in principle but there is no ongoing price regulation, the powers of the regulatory agency are also very restricted.

Second, in countries that have vertically restructured their industries at the time of reform, regulators have relatively large powers and independence. Some countries restructured the industry simultaneously with the introduction of competition. Restructuring measures include the unbundling of competitive activities, such as generation and end-user supply, from network activities and divestitures to reduce market power. Australia, Italy, New Zealand, the UK, and some US states provide examples of this approach, which requires that many regulatory tasks be recurrently performed, including the auditing of regulated activities, monitoring access conditions, and setting prices for regulated activities. Strong regulatory agencies separated from the ministry and endowed with relatively important regulatory powers have been established in most of the countries following this strategy, such as Australia, Italy, the UK, and the US (the exception being New Zealand as discussed above). The broad scope and powers of these organizations are consistent with the large range of regulatory functions to be performed.

Third, in the remaining countries regulatory organizations show variation that cannot be readily related to the regulatory framework. For instance, as noted in the introduction, some ministerial agencies may act rather independently in practice. In explaining institutional design among these countries, legal and administrative traditions seem to play an important role. However, the experience in the telecommunications industry suggests that perhaps there will be increasing convergence in the future, as reforms mature.

### **Policy implications**

Regulatory institutions are changing in step with the development of new regulatory frameworks. Institutional change

reflects adaptation to a new regulatory environment characterized by open markets, new regulatory needs such as transmission pricing and increasing both regionalization and the links between industries.

The allocation of power and responsibilities to different organizations makes objectives more explicit and decisions more transparent in each area of public intervention. It also provides for a framework that supports neutrality in regulatory decisions. There is, however, no such thing as an institutional 'free-lunch'. The co-existence of several institutions that have jurisdiction over the same industry creates complexity that spawns the need for increased coordination among the various authorities involved and, possibly, greater compliance costs to the regulated parties. Developing coordination mechanisms in an increasingly complex institutional setting is the key condition to an effective reform.

The multiplication of organizations also raises concerns about the efficiency of the public sector. Bureaucracies are expensive, and tend to grow and self-perpetuate. Thus, it is essential that regulatory institutions be examined over time and that their role and resources be continuously adapted. A key challenge in this regard is to find the appropriate balance between general energy policy, industry-specific regulation, and competition policy. The relative weight of each of these policies is gradually changing as competition in energy markets progresses and the allocation of resources to different policy areas may need to be adjusted in response.

Periodical reviews of the institutional setting must take into account the changing boundaries of the energy industries. The need for harmonization across the gas and electricity industries as well as the trading areas will continue to put pressure on regulatory institutions. The scope of sector regulators may need to adapt in order to cope with these structural changes as has been the case in some countries with the merger of electricity and gas regulators. Further change can be expected in this very dynamic setting.

Most independent regulatory agencies share a number of characteristics. These common elements provide a blueprint for the design of new agencies. However, this blueprint is incomplete given that regulatory agencies differ widely on a number of issues. Designing regulatory mechanisms will benefit greatly from international experience.

## References

- Berg S. 2000  
**Developments in best-practice regulation: principles, processes, and performance**  
*Electricity Journal* July: 11–18
- Brown A. 1996  
**Transparency in regulated industries: elements and importance**  
 [A Harvard Electricity Policy Group discussion paper.  
 Draft. 20 May 1996]
- Green R. 1999  
**Checks and balances in utility regulation: the UK experience**  
 In *Public Policy for the Private Sector: viewpoints on competition and regulation*,  
 no. 185  
 Washington, DC: The World Bank  
 [Available online at <http://www.worldbank.org/viewpoint/HTMLNotes/185/185summary.html> (accessed on 05 June 2003)]
- IEA (International Energy Agency). 2001  
**Regulatory Institutions in Liberalised Electricity Markets**  
 Paris: IEA/OECD
- Kerf M, Schiffler M, and Torres C. 2001  
**Telecom regulators: converging trends?**  
 In *Public Policy for the Private Sector: viewpoints on competition and regulation*,  
 no. 230  
 Washington, DC: World Bank  
 [Available online at <http://www.worldbank.org/viewpoint/HTMLNotes/230/230Kerf-0516.pdf> (accessed on 05 June 2003)]
- Laffont J J and Martimort D. 1999  
**Separation of regulators against collusive behavior**  
*Rand Journal of Economics* 30(2): 232–262
- Noll R. 1989  
**Economic perspectives on the politics of regulation**, pp. 1253–1287  
 In *Handbook of Industrial Organization*, edited by Willig R D and Schmalensee R  
 North-Holland: Amsterdam.
- OECD (Organisation for Economic Co-operation and Development). 2000  
**Telecommunications Regulations: Institutional structures and responsibilities**  
 [Document DSTI/ICCP/TISP(99)15/FINAL, 24 May 2000]  
 Paris: OECD

Smith W. 1997

**Utility regulators**

In *Public Policy for the Private Sector: viewpoints on competition and regulation*, nos 127, 128, and 129

Washington, DC: World Bank

[Available online at <http://www.worldbank.org/viewpoint/>

(last accessed 05 June 2003)]

Smith W and Shin B. 1995

**Regulating infrastructure**

In *Economic Notes. Country Department I*

Washington, DC: World Bank

Spiller P. 1996

**Institutions and commitment**

*Industrial and Corporate Change* 5(2): 421–452

Viscusi W K, Vernon J M, and Harrington J E. 2000

*Economics of Regulation and Antitrust*, 3rd edn

Cambridge: MIT Press

# Private sector participation and the poor: realizing the full potential of transactions in the water sector

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International Journal of Regulation and Governance 3(1): 33–58

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## **Abstract**

An increasing number of national and local governments are turning to the private sector to manage and expand their networks for water and sanitation services. The trend has raised concerns about how the poor fare under such arrangements, but a growing body of evidence suggests that private firms are willing and able to serve low-income areas if given the incentives and flexibility to do so.

A given contract's *potential* for achieving pro-poor outcomes is derived from the incentives it provides for efficiency, and particularly from the basis for remuneration. Whether or not this potential can be realized depends on the extent to which the transaction is used to place downward pressure on prices, provides incentives for a pro-poor pattern of service expansion, and allows service providers the freedom to respond to demand. Examples are described from a number of countries.

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## Introduction

Worldwide, an increasing number of national and local governments are turning to the private sector to manage and expand their networks for water and sanitation services. More often than not, the public sector has failed to operate services efficiently to keep up with the ever-growing demands. This is particularly so in developing countries, where the urban population growth is rapid and government resources are severely limited.

The trend of PSP (private sector participation) has raised concerns about how the poor fare under such arrangements. Some fear it brings tariff hikes and makes service unaffordable, or that private operators prioritize high return, easy-to-reach customers (Hall 2003). Others argue that PSP is an important part of a wider set of reforms, one that has the potential to benefit the poor (World Bank 2003; Estache, Gomez-Lobo, and Leipziger 2000; WSP and PPIAF 2002). A comprehensive review of the impact of the experience of primarily Latin American countries of utility privatization and the impact on consumers, especially the poor, has recently been published (Ugaz and Price 2003).

A growing body of evidence suggests that private firms are willing and able to address the needs of the poor if they are given incentives and flexibility to do so (WSP 2001a; WSP 2001b; WSP and PPIAF 2002; Gray 2001). Governments embarking on a process of reform make decisions when engaging the private sector that in one way or another affect the operator's behaviour. *What should the private sector's mandate be? How should the private sector be remunerated? How should the private sector be regulated?* The way in which these questions are answered determines whether, and how much, the poor can benefit from PSP.

The purpose of this paper is to examine how transactions can be designed to benefit the poor.<sup>1</sup> It is concerned mainly with transactions for the provision of network services, but also addresses the impact of these transactions on markets for alternative services.

<sup>1</sup> Definitions and perceptions of poverty differ across countries and localities. Here we refer to those groups and individuals whose well-being is low relative to others.

## Regulating markets for water and sanitation services

Markets for piped water and sanitation services are different from conventional markets, in a way that they cannot be served efficiently by multiple firms competing with each other on an ongoing basis. Due to the large investment required to set up a distribution network, and the declining cost of serving each new customer, these services are most efficiently provided by a single firm.<sup>2</sup> Markets with these characteristics are known as natural monopolies.<sup>3</sup>

The economics of scale associated with a natural monopoly serve as a barrier to competition, giving the incumbent firm 'market power' to charge prices higher than it could command under competition. This is perceived to be at odds with the interests of consumers and is the basis for regulating the industry. It is possible to make a case of no regulation (or very limited regulation), as there is always an alternative form of supply—even if it is the one currently being utilized. This gives rise to a form of contestability, which should help ensure consumers face prices that are lower than those faced prior to the entry of the new operator while also providing the new operator with an opportunity to earn profits, thus giving an incentive to enter the market. It could be argued that this creates the greatest incentive for system expansion (see discussion later). When some element of subsidy is involved the case for greater regulation becomes stronger. This discussion, however, goes beyond the scope of this paper. Consequently, governments often limit the provider's prices through controls, sometimes referred to as conduct regulation, which usually establish the prices that can be charged. Various approaches can be followed, the two standard approaches are price caps (multi-year price paths, often referred to as RPI-X or incentive-based regulation) and rate of return approaches.<sup>4</sup>

<sup>2</sup> Declining average cost is not a sufficient condition for natural monopoly to exist. Rather, natural monopoly occurs where the cost function is sub-additive with respect to the cost functions of other firms.

<sup>3</sup> In considering the monopolistic nature of such markets, it is important to distinguish services for *distribution* of water from the *supply and retail* of raw water; markets for supply and retail may not have natural monopoly characteristics. This paper is concerned mainly with distribution. For further discussion, see Klein and Roger (1997).

<sup>4</sup> It is not the purpose of this paper to discuss the differences between the various forms of price control. An explanation of the differences can be found in Viscusi, Vernon, and Harrington (1997).

Where price caps are used, the monopolist will be tempted to lower the quality in order to minimize costs, and governments must therefore regulate this. Governments can require operators to use certain materials or methods for constructing a network (input-based regulation), or to adhere to particular standards for customer service (output-based regulation). Minimum standards for water pressure, water quality and continuity of service are common.

Not all markets for water and sanitation services are natural monopolies, especially in developing countries. Markets for handcart water delivery and emptying of septic tank, for example, lack the economics of scale associated with a piped network and are contestable (even if no actual competition takes place). Competition helps to select the most productive firms and provides ongoing incentives to respond to consumers' needs. This has advantages over a regulated monopoly. Competitive markets need little or no conduct regulation, thus placing a smaller burden on government resources.

Competition cannot be taken for granted. For example, water vendors in Jakarta are thought to collude with one another, while in Manila a local on-seller of piped water services operates with little competition (Crane 1994). The role of the government in such cases is to reduce barriers to entry. These barriers take numerous forms, including non-competitive behaviour, restrictive legal requirements (including licensing), under-developed credit markets, and limited access to technology.

### **Formulating clear objectives vis-à-vis the poor**

What is it that governments wish to achieve for the poor? The answer to this is not as straightforward as it may seem. If the goal is declared as *the availability of affordable services that meet the demand of residents*, then how 'affordability', 'services', and even 'residents' are defined needs to be addressed. Does 'affordability' refer to a proportion of household income spent on water, a government-mandated level, or something else entirely? Are only network services to be considered, or are alternative services also acceptable? Do squatters and seasonal migrants count among the ranks of residents? While answers to some of these questions depend on local politics and priorities, it is possible to make several generalizations about the poor and their predicament.

One of these is that in many cities – for example, Africa (Collignon and Vezina 2000); Jakarta (Crane 1994); Manila (PCWS 2000); Buenos Aires (Hardoy and Schusterman 2000) – the poor tend to live in areas that are not served by a citywide network. Instead, they rely on small-scale providers such as handcart vendors, water kiosk operators, and tanker trucks. Efforts to improve service by extending the network are typically hindered by the physical layout of poor neighbourhoods, and by socio-economic constraints including a weak land tenure (ADB 2002).

Another generalization is that households that lack a connection pay more per unit of water than their better-off neighbours for a network service. A growing body of empirical evidence shows that the poor are willing to pay as long as it would cover the ongoing cost of piped distribution (WSP 1999; Foster, Gomez-Lobo, and Halpern 2000). In many cities, the poor lack access to formal credit markets and therefore have difficulty affording upfront connection fees (World Bank 2001a; Walker, Ordenez, Serrano, and Halpern 2000).

Given this, the poor might benefit from PSP in three main ways.

- *Downward pressure on prices* Efficiency reduces costs; this frees resources so that downward pressure can be placed on prices, making the service more affordable.
- *Expansion of network coverage* The quality of piped service tends to be superior to alternatives used by unconnected users, and its price per unit is invariably lower due to the economics of scale (Kerf 1996). Qualities such as reliability and reduced levels of contaminants are particularly important for low-income households, who are less able to afford storage and have inferior access to health care.
- *Service levels that meet the needs of customers* The introduction of PSP is an opportunity to enhance the operator's incentives to respond to consumers' needs, especially those of the poor. Circumstances in many low-income neighbourhoods demand that service providers be innovative in the methods and materials they use.

These outcomes would benefit households to varying degrees, depending on whether or not they have access to a connection. Those with connections clearly have more to gain from lower

prices than from expansion. Likewise, cities with low coverage may have more to gain from expansion than from lower prices.

Indeed, policy-makers face trade-offs between prices and coverage. The cost of network expansion must somehow be paid for—passed on to consumers, either directly through prices or indirectly through the government in the form of taxes.<sup>5</sup> Depending on the extent of cost savings from efficiency improvements, a tariff hike might be necessary. Turning this around, prices can affect investment decisions by acting as an incentive, or disincentive, to expand.

### **Maximizing a contract's potential to achieve pro-poor objectives**

A contract's potential for achieving pro-poor objectives is largely a function of the efficiency gains it can bring about, because these are the basis for expanded coverage and downward pressure on prices. This section discusses efficiency and its relationship with contract design.

#### *Incentives for efficiency*

Before considering the impact that different contractual forms can have on meeting pro-poor objectives it is helpful to distinguish among the three types of efficiency.

*Allocative efficiency* is achieved when the most productive firms are engaged in service delivery—efficiency in terms of the service provider.<sup>6</sup> In a competitive market, these are the firms that outcompete their less productive rivals. Where the market is a natural monopoly, a competitive bidding process can be used to identify and engage the most productive firm; competition on the playing field is replaced by a contest *for* the playing field.<sup>7</sup>

Installing the right firm (or firms) is not enough, however. They must also face ongoing incentives to maximize *productive efficiency*. Competition provides the basis for this in a multi-firm marketplace, though interventions may be required to ensure incumbents do not engage in anti-competitive behaviour. A natural monopoly lacks the competitive pressure of the

<sup>5</sup> While the tax burden could theoretically fall on the same group of consumers, it is more likely to affect a broader group. This will depend on the tax base and fiscal policy.

<sup>6</sup> Allocative efficiency is also relevant when considering consumption, which is discussed in this context in the section on using efficiency gains to place downward pressure on prices.

<sup>7</sup> For a discussion on franchising and privatization, see Dnes (1995).

marketplace, so incentives are instead built into a contract with the monopolist.

*Dynamic efficiency* refers to the inter-temporal benefits of investment decisions. Contractual incentives to invest sooner rather than later clearly affect the poor, who tend to depend on the larger outlays needed to expand primary and secondary networks. Similarly, contractual incentives to consume a greater or lesser volume of water inevitably affect the availability of raw water.

### *Contracts*

Contracts for public service provision are essentially an enforceable set of rights and obligations that limit profits or prices while specifying required outputs, and as such their design helps determine the monopolist operator's productive efficiency. To see why, consider four stylized contractual forms that are prevalent in the water sector: management, affermage, lease, and concession (Table 1).<sup>8</sup>

- *Management contract* The private operator receives a simple fixed-fee and has limited operational responsibility. It is not required to make investments. The duration of management and service contracts is usually 3–5 years. In the case of an enhanced management contract, the operator receives a fee that is adjusted by a set of performance benchmarks so as to give the firm an added incentive to achieve specific goals.
- *Affermage* Under an affermage the operator has the right to a fixed proportion of each unit of water sold. The operator has broad operational responsibilities but is not usually required to invest in expansion. Affermage contracts commonly last 8–15 years.
- *Lease contract* The operator has the right to all revenue in excess of a fixed fee it pays the government, but does not usually have obligations to invest. Leases are typically written for a period of 8–15 years.
- *Concession* The operator has the right to all revenues and can make investments. Concessions have a relatively long duration, usually 25–30 years. In some cases, the winning operator makes either an upfront payment or an annual payment may be required.

<sup>8</sup> Several documents provide a description of the major contract types and their variants. See World Bank (1997); Kerf, Gray, Irwin, *et al.* (1998); and Delmon (2001).

**Table 1** Types of contracts

Contract type	Scope of responsibilities	Basis for remuneration	Examples
Management/ Service	<p>Limited operational responsibility. Service contracts are for specific tasks, such as bill collection and civil works. Management contracts cover a larger set of operational responsibilities.</p> <p>Funding for new investment remains the responsibility of the public sector.</p>	<p><i>Fixed fee.</i> Fixed fee or fee plus performance-related payments based on a number of pre-set benchmarks</p>	<p>Johannesburg Amman Gaza Monagas (Venezuela) Gambia Mali Namibia Sao Tome and Principe</p>
Affermage	<p>Greater responsibility given to the operator, including all management (technical and commercial) of existing operations.</p> <p>Funding for new investment remains the responsibility of the public sector.</p> <p>Limited risk is assumed by the operator, who is exposed to unexpected changes in demand and the possibility that a shortfall between revenues collected and the affermage fee will not be paid by the government.</p>	<p><i>Per-unit share.</i> The operator collects the revenues and remits the difference between revenues and the calculated affermage fee (which is based on volume of water produced and sold to the contracting authority).</p> <p>The affermage fee may be modified to include performance bonuses related to efficiency.</p>	<p>Cote d'Ivoire Senegal Gdansk Niger</p>
Lease	<p>Greater responsibility given to the operator, including all management (technical and commercial) of existing operations.</p> <p>Funding of new investment is retained by the public sector.</p> <p>Risk assumed by the operator is greater than under an affermage; it includes not just unexpected changes in demand, but also changes in the composition of the customer base where a progressive tariff structure is in place.</p>	<p><i>Residual claimant.</i> The operator is able to retain all revenue collected, minus a lease fee (fixed in advance, normally to cover the financing costs of the infrastructure) paid by the operator to the contracting authority.</p> <p>Performance bonuses may be paid related to efficiency.</p>	<p>Guinea Mozambique</p>
Concession	<p>Complete responsibility for management and investment transferred to the private operator.</p> <p>Responsibility for funding of new investment rests with the operator.</p>	<p><i>Residual claimant.</i> The operator retains the revenue it collects, minus a concession fee (fixed in advance, normally to cover debt from earlier investments in infrastructure) paid by the operator to the contracting authority.</p>	<p>Manila Buenos Aires Gabon Casablanca Macao Cameroon Cape Verde Bulgaria Chile</p>

Source WSP and PPIAF (2002)

While there are innumerable variations in each of these contractual forms, the three defining characteristics are the *basis for remuneration*, the *scope of responsibilities*, and the *length of the contract*. Together, these determine the potential of a contract to yield gains in productive efficiency.

The basis for remuneration can be structured in three basic ways.

- 1 Fixed fee, where the operator is paid a set amount for providing particular services.
- 2 Per unit share, where the operator is paid a fixed amount for each unit of water it sells.
- 3 Residual claimant, where the operator is allowed to retain all revenues above a fixed fee it pays to the government.

The scope of the operator's responsibilities can range from limited responsibility for a part of the operation in one section of a city, to full control over all assets and all areas. While, often there is a correlation between this mandate and the basis for remuneration, this does not have to be the case. For example, a lease can allocate complete responsibility to the operator to manage the system, including the freedom to make investments that expand the customer base. Similarly, a concession can give the operator limited responsibility over a particular set of operations, or a certain section of the city. In practice, it is expected that the basis for remuneration will drive the scope of the mandate. For example, the more the operator expects to benefit from efforts to minimize costs, the greater the control it may seek over assets.

The third defining characteristic is the duration of the contract, though in fact this can be seen as an extension of the scope of the operator's responsibilities. The longer the operator has rights over revenue, the greater the potential benefits it perceives.

Productive efficiency will be greatest when the operator is granted rights that mimic ownership. The higher the proportion of revenues retained by the operator, the more effort it will make to lower costs and raise output (Grossman and Hart 1983).

Why, then are all contracts not 'high-powered' arrangements that maximize productive efficiency? One explanation for the popularity of less powerful contracts is that they allocate more risk to the government and thereby lower the ostensible cost of contracting with the private sector. In the case of a management

contract, the government takes on all the commercial risk. Since the private sector need not hedge against such contingencies or otherwise incorporate them in its costs, it can charge a lower price. One downside to this arrangement, which affects all existing and potential consumers, is the lower potential for efficiency gains.

Another explanation for the range of contractual forms is that it is not always possible to choose the most efficient form of contract. Many governments are not in a position to award leases and concessions, or to implement the reforms that must precede them. Decision-makers and consumers are uncomfortable ceding responsibility of 'essential services' to a private firm. They perceive an unnecessary loss of control and an unwarranted transfer of resources—concerns that may be well founded if the transaction is not well designed.

### *Freedom to meet demands*

Efficiency is pointless unless achieved in the production of services demanded by customers. The freedom of service providers to respond to customers' needs and to have control over the choice of inputs and methods are addressed in the section 'Giving service providers the freedom to respond to demand'. Two fundamental issues that warrant consideration here.

Allowing for a range of service levels can be difficult in the context of monopoly regulation. Where price controls are used, a corresponding service level must be specified. This, however, restricts the ability of the operator to respond to consumers' needs. While many service levels could be specified, in practice this would be cumbersome to administer. Limiting the operator's rate of return could help, but this has other drawbacks. Rate of return regulation can generate undesirable incentives. In particular, firms will use too much capital relative to other inputs, and thereby compromise productive efficiency (Averch and Johnson 1962). Where coverage targets are used in concert with price controls, these lead to the same dilemma. It is difficult to measure and verify expansion if the operator can satisfy targets with a range of service levels.

The operator's freedom to innovate is also important. Are some contractual forms better at this than others? In short, yes. Remuneration under low-powered contracts is structured over a short period of time, and does not provide incentives to use inputs designed to provide returns over a long term. A logical

response is for the government to demand higher quality inputs by describing these in the contract. However, in doing so it limits the freedom of the operator to innovate.

In sum, high-powered contractual arrangements have greater potential for delivering benefits to the poor since efficiency and net revenue growth provide the basis for lower prices and increasing coverage. However, there is no *guarantee* that the poor will benefit. Other stakeholders including rich consumers, the operator, and the government itself can be expected to compete for these benefits and are often better placed to win them. Van den Berg (2000) examines the allocation of benefits under several water concessions in Argentina and finds that transaction design is an important determinant of how much consumers' gain. Restrictions on the types of services an operator can offer, or the inputs it can use, also determine the outcome for the poor. The next section explores some of the policies that impact the interests of the poor.

### **Realizing the full potential of contracts**

The previous section dealt with the determinants of a contract's potential to deliver benefits to the poor. The following factors are central to *realizing* this potential.

- 1 *Efficiency gains are used to place downward pressure on prices* The 'efficiency dividend' can be distributed in many ways.
- 2 *There are incentives for expansion in poor neighbourhoods* Incentives for expansion are no guarantee the poor will benefit; in fact, several factors may lead to an anti-poor bias.
- 3 *Multiple service levels are encouraged* The poor benefit from innovation and multiple service levels.
- 4 *All service providers are free to respond to demand* Transactions that hinder service provision by alternative enterprises can do the poor a disservice.

#### *Using efficiency gains to place downward pressure on prices*

Most public utilities survive on the basis of an external subsidy, and many draw down on physical capital as maintenance is neglected. When these practices come to an end, typically during a process of reform, higher prices are inevitable. Efficiency gains, however, work in the opposite direction. As costs fall and

collection rates improve, the need for revenue is reduced. Depending on the relative strength of these two forces – cost savings and cost recovery – prices under PSP can go in either direction (Gray 2001). Box 1 illustrates some examples of efficiency gains under PSP.

Regardless of which direction prices move, efficiency gains can always be used to apply downward pressure. An important step towards this goal is to award the contract on the basis of competitive bidding. Where a contract is allocated using a less competitive method, firms are not likely to offer their best price. Instead, each bidder will attempt to capture some share of the expected efficiency gains for itself. This can be distinguished from the other benefit of competitive bidding, that of ensuring the most productive operator is awarded the contract.

Where the private sector is made to surrender these gains, the government will find itself with discretion over their allocation. It can pass them on to the existing network customers by placing downward pressure on prices, use them to expand coverage to previously unconnected areas, or allocate them to any other group by spending revenue in a particular way. Contracts awarded on the basis of lowest tariff channel benefit the price level.

**Box 1** Evidence of efficiency gains under private sector participation

- In Buenos Aires, the labour productivity improved significantly after a water concession was granted in 1993. The ratio of labour per thousand connections decreased from 3.3 in 1992 to 1.7 in 1998 and unaccounted water as a proportion of billed water fell from 0.45 in 1992 to 0.34 in 1998. As a result of these and other changes, the total productivity factor also increased substantially, from less than 0.5 in 1992 to 0.9 in 1997.
- In Cartagena, Colombia, the ratio of employees per thousand water connections fell from 14 to 4.5 in the first six months of private participation under a lease arrangement.
- In Gdansk, Poland, the ratio of employees per thousand water connections fell from 10.3 to 8 in the first three years of reform.
- In Guinea, a private operator significantly increased total factor productivity in the sector.
- A comparison of the performance of public and private water companies in Asia and the Pacific region found that private water operators are consistently more efficient than public ones.

**Source** Gray (2001)

The tariff *structure* can be designed to further allocate efficiency gains among different groups of network customers. An approach adopted by many governments, especially in developing countries, is to use an IBT (increasing block tariff). A per unit premium is charged at higher consumption levels while discounting prices at lower levels. Low-income households are thought to consume smaller amounts of water and thus benefit from this arrangement.

In practice, IBTs do not always achieve their goal (Whittington and Boland 2000). One reason is that the poor tend not to be connected to the network and therefore lack access to the subsidy. Low-income households that are connected frequently share their service with neighbours and as a result are charged high volume rates intended for the rich. Even where a household is the sole consumer, it is often subject to a fixed charge based on a minimum volume of water far in excess of what it uses, which again leads to higher per unit rates. Another drawback of IBTs is the disincentive they give operators to expand in low-income areas. How can affordability be achieved more effectively? While efficiency is the most important step, sometimes the poor need extra help. The first task in designing a subsidy scheme is to identify the target group, understand the constraints it faces, and articulate clear objectives based on this understanding. Information about consumer demand is essential, as this reveals gaps between willingness-to-pay for services and the cost of their delivery.

Subsidies can be designed to target assistance toward consumption or access. Where demand is sufficient, but consumers lack the resources to connect to the service, the subsidy should be designed to facilitate access rather than consumption. Where willingness to pay is insufficient, a consumption subsidy can be justified—although consideration of the quality of the service being offered should also be undertaken. In both cases, efforts should be made to reach as many intended beneficiaries as possible, while minimizing assistance to those who are not part of the target group. Subsidy schemes should also be designed to target beneficiaries with maximum efficiency, and be implemented with the least possible administrative cost.<sup>9</sup>

<sup>9</sup>For a discussion on subsidy design, see Brook and Smith (2001); World Bank (2001b); and Coady, Grosh, and Hoddinott (2002)

### *Providing incentives for a pro-poor pattern of expansion*

Low-powered contracts, such as management contracts, have limited potential for attracting outside investment but can nonetheless be used to commit the private sector to lay pipes and provide connections. Where a government adopts this approach to expand service in low-income areas, it must identify priority neighbourhoods and fund the requisite investments. This requires not just financial resources, but also information about the location of the poor along with the knowledge of appropriate methods and technologies.

High-powered contracts transfer these responsibilities to the operator, which bases its decisions about investments on expected profits. This naturally leads it to expand in neighbourhoods where costs are low and revenues are high, starting with the most profitable first. As the operator goes about assessing the return from expansion in each area, it takes into account many factors. Not all of these are found in the contract. Consumer demand and population density, for example, or the placement of existing infrastructure are simply given—and can have a significant impact on decision-making.

Other influences on expansion are very much a part of the transaction. Chief among these is the tariff structure. Where an IBT is in place, the return in high consumption areas will be boosted as higher rates are levied. As low-income neighbourhoods have lower demand for water, expected profits will be lower than in better-off neighbourhoods, all other things being equal.

The exception is where remuneration is based on a *per-unit share* basis, as in a typical affermage contract. Here the payment to the operator is based on the volume sold regardless of the level of revenue. The operator is insulated from tariff levels and structures, except where these affect demand (Box 2).

Even where an area is deemed profitable, legal restrictions may prevent an operator from serving it. Examples include regulations or contractual clauses that ban service in illegal settlements, or which make it difficult for residents lacking to connect (Calaguas and Roaf 2001; WSP and PPIAF 2002).

In practice, high-powered contracts rarely rely *only* on incentives linked to profit from revenues to ensure expansion to poor areas. Some contracts require that a certain proportion of

**Box 2** Are affermage contracts inherently pro-poor?

It is possible to argue that affermage contracts, in which the basis for remuneration is *per unit share*, insulate the operator's from bias that might disadvantage low-income neighbourhoods under an increasing block tariff structure. As the payment to the operator is based on a flat fee per unit of water sold, it pays no attention to the amount of revenue going into the government coffers.

There are two faults with this logic. One is that prices affect consumption, and thus the basis for an operator's payment. The second is that in practice, the operator may take a keen interest in the amount of revenue being collected, since it's share is usually paid out of this account. While the contract promises a payment regardless of the account balance, in reality the government may balk at payments that exceed it.

**Source** Alexander and Rosenthal (forthcoming)

consumption takes place in each 'block' of customers under an IBT; or coverage targets are established specifying service to a minimum proportion of the population. Targets are usually set out as the percentage of households or population to be served by a network connection, and are backed up by penalties for non-compliance. In order to encourage the operator to focus on the poor, targets are sometimes set for each sub-municipal area.

This approach was adopted in the lease in Dakar, and in the concessions in Buenos Aires and Manila where there are large peri-urban poor areas (Rosenthal 2002; WSP 2001a). It is ineffective in cities where the poor are distributed in very small pockets among the better off, or where targets are set low enough for the operator to be able to avoid unprofitable customers and still achieve the prescribed coverage. Whether precise coverage targets are effective is a moot point. Operators may try to move slowly in those areas that will be least remunerative, knowing that breaching a target may not lead to regulatory or government action, especially when the only action open is the suspension or cancellation of the contract. It has also been the case that operators argue that costs had not been fully known prior to winning the contract and using renegotiation as a way of cutting coverage targets for unprofitable areas.

Investments in expansion yield benefits over *long* periods, and decisions about their distribution and timing are made on the basis of expectations about net revenues over the life of the

concession agreement. This requires a certain amount of forecasting of future conditions and growth patterns in a given city; some areas will develop faster than others.

A long-term perspective warrants consideration of changes to tariffs and other contractual terms during the course of a concession. Periodic negotiations with the government usually attract attention from the media, pressure groups, and the public, not in the least because they concern prices paid for services perceived as essential to the public's well-being. As the operator expects the outcome of negotiations to be influenced by outside pressures, it may decide to alter expansion decisions to influence these.

Finally, the private sector operator may look to influences beyond the immediate contract. For instance, it may face pressure from its owners to make investments that deviate from the profit-maximizing pattern of expansion. Indeed, the long-term outlook of a company that owns all or part of a concession can depend on a range of factors beyond the return it gets from a single concession. It may perceive an interest in maintaining good standing with certain interest groups, prospective clients, and shareholders—for example by building a reputation as a 'socially responsible' company. This can translate into decisions aimed at reducing the return on one contract in an effort to raise it on others.

In sum, the pattern of expansion is determined by many factors, most of which are difficult to influence through transaction design and regulation. Tariff structure may play a significant role, and is certainly an important policy instrument. While there is little empirical evidence showing its relative importance, we suggest that tariff structure has a strong influence on expansion. IBTs warrant particular attention as they explicitly match prices with consumption and thereby make one group of customers more profitable than another.

### *Giving service providers the freedom to respond to demand*

The poor tend to live in areas that are not easily served through conventional network approaches. As a group, they depend on a variety of service levels (Box 3). Low-income households are therefore affected when restrictions are placed on the methods that service providers are allowed to use, and the levels of services they can offer. Standards that prohibit the use of materials

**Box 3** Why are multiple service levels important for the poor?

As a group, the poor use a wider range of services than the non-poor, particularly for water. Some residents purchase water in plastic containers that are hauled by pushcart. Others buy from their neighbours or landlord via a shared connection or yard tap. Many cities have a long-standing strategy of serving low-income areas with public standposts.

Each of these service types provides consumers with a distinct level of service, which can be further defined in terms of water quality and pressure, frequency of billing, legal eligibility, distance from the home, and other factors. These affect how far one must carry water, whether it is available around the clock, whether it is potable at the source, whether legal title for ones dwelling must be obtained, and how often one pays— all are of great importance to poor consumers.

Some service attributes considered unacceptable by high-income consumers tend to be *preferred* by low-income consumers, or vice versa. For example, daily bill collection is considered an inconvenience to richer households, while poorer ones prefer it since they earn daily wages, and lack the same access to savings mechanisms. Similarly, low-income consumers place a high premium on reliability, while higher income households with on-site storage may be more concerned with water quality.

or methods needed for expanding in certain areas limit the operator's ability to meet demand. Similarly, a transaction that makes alternative providers illegal raises costs and limits the availability of service levels (Baker and Tremolet 2003).<sup>10</sup>

### The network operator

As seen, prices charged by an operator are controlled in order to prevent non-competitive pricing due to the operator's monopolistic position and, as such, standards are far from irrelevant. It follows that some level of quality must be specified in order to make the price regulation meaningful. Otherwise, the operator could use its monopoly power to lower the quality as a way of raising net revenue.

A further justification for setting a minimum quality of service is to avoid negative externalities associated with poor public health or environmental degradation. Especially where low water quality and interruptions in service could lead to an outbreak of disease.

<sup>10</sup> These issues are also discussed in detail in Johnstone and Wood (2001).

Standards should be carefully managed because they may be burdensome for the poor. Higher levels of service quality are associated with higher costs, which are inevitably passed on to others—often to consumers through tariffs. At some point these become unaffordable for the poorest, who are among the first to turn to cheaper services that go unregulated for quality. This could reduce the extent of service which ultimately is the means by which public health and environmental goals are achieved (Brook and Smith 2001).

One way to increase the efficacy of standards, while mitigating their burden, is to focus on outputs rather than inputs. Most contracts specify goals for water quality, continuity, and pressure. Since these deal with the quality of the end product or service they can be thought of as *output standards*. Standards can also cover technical specifications for engineering works, such as the minimum diameter and depth of pipes. Use of *input standards* like these are important in cases where commercial risk is not passed on to the operator, or where the term of the contract is short. In most cases, however, output standards are a preferable way to regulate service qualities as they describe desired outcomes, while leaving decisions about methods and means to the operator.

Flexibility can also be achieved through a careful definition of coverage obligations. Allowing the operator a choice of service levels to achieve targets will reduce overall costs, while making poor areas more attractive. It will have the flexibility to adapt to local circumstances (Baker and Tremolet 2003). As an example, concessionaires in Manila have the choice of offering standposts in low-income areas instead of private connections to meet their coverage obligations (Rosenthal 2002). For the purposes of calculating progress toward targets, each standpost is equated with service to 475 people or about 100 households.

### Alternative providers

Incentives can also be used to encourage an operator to work with alternative providers to install secondary and tertiary networks. The concessions in Manila, for example, define coverage in a way that residents are considered ‘served’ for the purposes of the contracts no matter who supplies the service. This has resulted in the installation of independently operated piped networks in some areas, using water purchased from the main network. The concessionaire benefits in two ways from the

arrangement. Firstly, it makes progress towards coverage targets, and secondly, it is paid for the water.

Facilitating the entry of alternative providers is not always so easy. Where coverage requirements are coupled with an IBT structure, operators depend on profitable customers to offset losses from unprofitable ones. Unburdened by an obligation to serve the latter group, alternative providers may ‘cherry pick’ the prime areas and clients. Consequently, high-powered contracts often grant an exclusive right to the operator to serve all customers.

**Problems of exclusivity:** The problem with exclusivity is that it can stifle competition and innovation, both of which bring economic and social benefits that are likely to outweigh any financial savings. As seen, unconnected poor households depend on street vendors, tanker trucks, water kiosks and the like. The continuation of these services is important for customers who cannot be scheduled for network connections until several years into the term of a contract—if at all. Therefore, exclusivity is better avoided or restricted. If granted and strictly enforced, it will prevent alternative providers from offering services in areas which might never be connected to the network – due to their location, land tenure status or terrain – or where network expansion is not scheduled for many years to come.

Exclusivity is usually unnecessary, or can be modified to eliminate its impact on the poor. Since networked services require large investments in infrastructure, there is already a significant barrier to new entrants who wish to offer the same level of service as the main operator. Off-network providers must compete against prices made low by the network operator’s large economies of scale, so once an operator expands the conventional network into a given area, it is unlikely to have its market share threatened. If alternative providers can offer a cheaper and more appropriate service they should not be prevented from doing so. Exclusivity is seldom necessary or justifiable.

If warranted at all, exclusive rights are only applicable in protecting the operator’s share of profitable customers. Since poor areas may be unprofitable due to an IBT structure, granting an exclusive right to serve them is pointless. Services to the poor can be distinguished from services to the non-poor—in most cases by geography or service type. Exclusivity need not apply to low-income areas.

One step to reduce the impact of exclusivity is to restrict its application to network services, as this will enable off-network providers to continue serving their clientele. Another is to allow on-selling of water past the metered point, in order to facilitate kiosks and other forms of small-scale water vending. The most important change is to allow for exceptions where a third party can provide acceptable services cheaper than the operator. This can be particularly effective if coverage targets can be met with the services of small independent network providers. As in the case of Manila (Rosenthal 2002), the operator may find itself with an incentive to encourage the involvement of low-cost providers. A similar analogy would be the community participation seen in the electricity sector in Orissa (Ramanathan and Hasan, 2003).

An issue that arises in such situations is the regulation of alternative providers. Most operate outside regulatory frameworks and are not committed to official tariffs except as purchasers. This frees them not just from quality and environmental standards (Box 4), but also from the pricing constraint that often makes low-income neighbourhoods unattractive for the network operator. This is particularly the case if alternative providers are not paying the full economic costs (for example,

**Box 4** Regulating quality when network water is on-sold

In many cities, network water is sold through intermediaries such as tankers, street vendors, and small independent networks. What, if any, responsibility operators should have for the quality of these services is unclear since control over distribution is typically lost beyond the initial point of sale. In principle, operators could refuse to sell water where certain standards are not met. A contract could require an operator to monitor the condition of tanker trucks at filling centres, or of tertiary network distribution where provided by a community or small firm. The danger, however, is that operators may have a conflict of interest if they are competing with these alternative providers. This is something the contract should avoid.

Operators are put in a similar situation with respect to quality at standposts. In some cities these are operated as private businesses; in others they are controlled and managed by communities or local cooperatives. While water pressure, quality, and availability are in principle within the control of the operator, in reality quality at the standpost may have little to do with what reaches the household. Conditions at many public standposts are unsanitary.

scarcity and environmental value of groundwater or treatment costs of wastewater). Thus, the use of alternative providers may not maximize welfare benefits to society.

While alternative providers may be more flexible and able to respond to the particular characteristics of the market among the poor, this does not necessarily mean they are the most efficient providers. In fact, if pricing were less restrictive the main operator may well be in a position to offer less expensive and higher quality services than alternative providers. The issue then returns to pricing.

## Conclusion

As governments contemplate reforms involving the private sector, they are faced with a choice of contractual arrangements. Some arrangements have more potential than others for meeting the needs of the poor, but realizing this potential requires a well-designed transaction. Efficiency gains must be used to place downward pressure on prices; incentives for expansion must include poor areas; and service providers should be granted freedom to meet the specific needs of poor and non-poor alike.

As for doubts about the private sector's interest in serving the poor, these are well-founded only where transactions are ill-conceived. IBTs, for instance, can make expansion in poor neighbourhoods unprofitable and thus undesirable. Exclusivity can lock out service providers that are essential in poor neighbourhoods. Where operators are not given the freedom to choose how they serve such areas, their ability and interest in serving the poor will surely be encumbered.

While technically straightforward, for decision-makers and their constituencies this involves new ways of thinking and a challenge to vested interests. They must be prepared to address popular concerns about the possibility of allowing foreign companies to operate 'essential services', fears of higher prices and job losses, and scepticism about the private sector's willingness to serve the poor.

This is not to suggest that concerns about higher prices and job losses are unfounded. Depending on the situation, efficiency gains may not offset the true costs of maintenance and expansion. Prices may rise, and cost-cutting will certainly lead to job losses. By planning carefully, however, governments can identify cost-effective and socially responsible ways of addressing these effects.

## Acknowledgements

The views expressed in this paper are solely those of the authors. The authors would like to thank three anonymous reviewers for the constructive comments provided.

## Bibliography

Ackerberg D and Botticini M. 2001

**Endogenous matching and the empirical determinants of contract form**

*Journal of Political Economy* 10 (3): 564-591

ADB (Asian Development Bank). 2002

***Beyond Boundaries: extending services to the urban poor***

Manila: ADB

Alexander I and Rosenthal S. Forthcoming

***Allocating Commercial Risk: approaches used in the utility and infrastructure industries utilizing the basis for remuneration***

Averch H and Johnson L. 1962

**Behavior of the firm under regulatory constraint**

*American Economic Review* 52(5): 1052-1069

Baker B and Tremolet S. 2003

**Regulating the quality of infrastructure services in developing countries**

In *Infrastructure for Poor People: public policy for private provision*, edited by Irwin T and Brook P

Washington, DC: World Bank

Brook P and Smith W. 2001

**Improving access to infrastructure services by the poor: institutional and policy responses**

[Background paper for the *World Development Report 2001*]

Washington, DC: World Bank

Calaguas B and Roaf V. 2001

**Access to water and sanitation by the urban poor**

[Paper presented at the Development Studies Association Conference, Manchester, 10 September 2001, organized by the Development Studies Association]

Coady D, Grosh M, and Hoddinott J. 2002

***The targeting of transfers in developing countries: review of experience and lessons***

[Mimeo]

Washington, DC: World Bank

Collignon B and Vezina M. 2000

***Independent Water and Sanitation Providers in African Cities: full report of a ten-country study***

Washington, DC: Water and Sanitation Program

Crane R. 1994

**Water markets, market reform and the urban poor: results from Jakarta, Indonesia**

*World Development* 22(1): 71–83

Delmon J. 2001

***Water Projects: a commercial and contractual guide***

New York: Kluwer Law International

Dnes A. 1995

***Franchising and Privatization***

[Public Policy for the Private Sector, Note No. 40]

Washington, DC: World Bank [Private Sector Development Department]

Estache A, Gomez-Lobo A, and Leipziger D. 2000

***Utilities Privatization and the Poor: lessons and evidence from Latin America***

Washington, DC: World Bank

Foster V, Gomez-Lobo A, and Halpern J. 2000

**Designing direct subsidies for water and sanitation services—Panama: a case study**

[Policy Research Working Paper 2344]

Washington, DC: World Bank

Gray P. 2001

***Private Participation in Infrastructure: a review of the evidence***

Washington, DC: Private Sector Advisory Services, World Bank

Grossman S and Hart O. 1983

**An analysis of the principle–agent problem**

*Econometrica* 51(1): 7–46

Hall D. 2003

***Water Multinationals: no long business as usual***

Greenwich: Public Services International Research Unit

Hardoy A and Schusterman R. 2000

**New models for privatization of water and sanitation for the urban poor**

*Environment and Urbanization* 12(2): 63–75

Johnstone N and Wood L. 2001

***Private Firms and Public Water: realising social and environmental objectives in developing countries***

Cheltenham: Edward Elgar Publishing Inc.

Kerf M. 1996

**Economic regulation of water companies**

[World Bank Policy Research Working Paper 1649]

Washington, DC: World Bank

Kerf M, Gray R D, Irwin T, Levesque C, and Taylor R. 1998

***Concessions for Infrastructure: a guide to their design and award***

Washington, DC: World Bank

Klein M and Roger N. 1997

**Competition in Network Industries: Where and When to Introduce It**

[Public Policy for the Private Sector Note No. 104]

Washington, DC: World Bank

Komives K. 1999

***Designing Pro-Poor Water and Sewer Concessions: early lessons from Bolivia***

[Policy Research Working Paper 2243]

Washington, DC: World Bank

Laffont J and Matoussi M. 1995

**Moral hazard, financial constraints and sharecropping in El Oulja**

*Review of Economic Studies* 62(3): 381–399

PCWS (Philippines Center for Water and Sanitation). 2000

***Vendors and Small-scale Independent Providers: 30 years of urban water experiences in the Philippines***

Manila: International Training Network

Ramanathan K and Hasan S. 2003

***Privatization of Electricity Distribution: the Orissa experience***, pp. 39–50

New Delhi: The Energy and Resources Institute

Rosenthal S. 2002

**The Design of the Manila Concessions and Implications for the Poor**

[Background Paper prepared for PPIAF/ADB Conference on Infrastructure Development – Private Solutions for the Poor: The Asian Perspective, Manila, 28–30 October, 2002]

Ugaz C and Price C W (eds). 2003

***Utility Privatization and Regulation: a fair deal for consumers?***

Cheltenham: Edward Elgar Publishing Inc.

Van den Berg C. 2000

Water concessions: who wins, who loses, and what to do about it

*Viewpoint* 217

Washington, DC: World Bank

Viscusi W K, Vernon J M, and Harrington J. 1997

***Economics of Regulation and Antitrust***

Cambridge: The MIT Press

Walker I, Ordonez F, Serrano P, and Halpern J. 2000

***Pricing, Subsidies, and the Poor: demand for improved water services in Central America***

Washington, DC: World Bank

Whittington D and Boland J. 2000

***Water Tariff Design in Developing Countries: disadvantages of increasing block tariffs (IBTs) and advantages of uniform price with rebate (UPR) designs***

[Draft report]

Washington, DC: World Bank

World Bank. 1997

***Toolkits for Private Sector Participation in Water and Sanitation***

Washington, DC: World Bank

World Bank. 2001a

***The Design of Pro-poor Subsidies in Urban Water and Sanitation Services in India: Maximizing the social dividends of reform***

Washington, DC: Public Private Infrastructure Advisory Facility

World Bank. 2001b

***Contracting for Public Services: output-based aid and its applications,***

edited by Brook P and Smith S

Washington, DC: World Bank

World Bank. 2003

***Infrastructure for Poor People: public policy for private provision,***

edited by Brook P and Irwin T

Washington, DC: World Bank

WSP (Water and Sanitation Program). 1999

***Willing to Pay But Unwilling to Charge: do willingness-to-pay studies make a difference?***

[A field note]

New Delhi: WSP–South Asia

WSP (Water and Sanitation Program). 2001a

***The Buenos Aires Concession: the private sector serving the poor***

[Private Sector Serving the Poor series]

New Delhi: WSP

WSP (Water and Sanitation Program). 2001b

***Durban Metro Water: private sector partnerships to serve the poor***

[Private Sector Serving the Poor series]

New Delhi: WSP

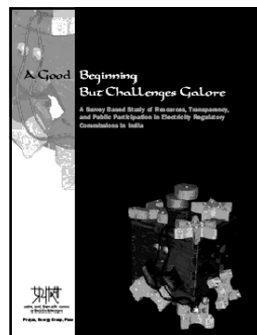
WSP (Water and Sanitation Program) and PPIAF (Public–Private Infrastructure Advisory Facility). 2002

***New Designs for Water and Sanitation Transactions: making private sector participation work for the poor***

Washington, DC: World Bank

Book review

A Good Beginning but Challenges Galore: a survey based study of resources, transparency and public participation in electricity regulatory commissions in India



*Prayas*

Pune

78 pp.

P Abraham

Former Power Secretary, Government of India

International Journal of Regulation and Governance 3(1): 59–62

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This report covers a wide range of issues regarding the functioning of the ERCs (electricity regulatory commissions) in the country. The study includes 13 ERCs and covers issues related to independence and autonomy, empowerment, accountability, transparency and public participation, quality of professionals, and social sensitivity of the ERCs.

It clearly brings out that governments continue to hold considerable control over the ERCs through the selection process of the chairman and members, financial control, etc. ERCs are not free to hire staff of their choice at salaries that they command. The staff of ERCs is mostly appointed on deputation from the government. The study suggests that these procedures be modified and improved to ensure timely appointments with sufficiently long tenures to ensure better selection.

### **Necessity of independent functioning of ERCs**

Another aspect highlighted in this study is about the complete dependence of the CERC (Central Electricity Regulatory Commission and many SERCs (state electricity regulatory commissions) on government funding. The Prayas survey has revealed that many ERCs have received less than 70% of the

budget proposed by the Commission and some have even received 17%–38% of the budget proposed by them. Financial autonomy of ERCs is necessary to enable them to function independently. Lack of adequate financial freedom is bound to hamper the autonomy and effectiveness of the commissions. It may therefore be useful to allow the commissions to levy some fee or surcharge on sales, so that they need not depend on the government for funds.

### **Presentation of annual reports**

The study brings out a major deficiency in terms of the presentation of annual reports to the legislatures. Although the present law requires presentation of annual reports to the concerned legislatures, many ERCs have not submitted any reports, or the reports submitted after considerable delay. Some annual reports were very brief and sketchy whereas they should have been comprehensive and exhaustive in order to instill confidence in the general public, as transparency is the hallmark of reforms. Timely submission of reports would enhance their accountability. Many commissions have even failed to conduct the statutory number of Advisory Committee meetings.

The study reveals that most of the documents of the Commission are not available in local languages which would allow the general public to understand the justification and implications of various orders. This is true especially in the case of tariff orders, which have a significant effect on the general public. The study suggests that all proceedings of the ERCs should be made available in local languages to ensure maximum participation of the general public in a vital sector such as power.

### **Accountability**

Submission of accounts and correct information to the regulator is a major constraint. Non-submission or partial submission of information for tariff fixation, metering, billing and energy audit, capital expenditure, and investments, completely exposes the inadequacy of the utilities in compiling such vital information. PPAs are also not submitted for scrutiny and the new PPAs are being signed without approval of ERCs, which are serious deficiencies in implementation.

Another issue of concern is non-compliance with the directions and targets fixed by the SERCs while fixing tariffs. Invariably these targets have not been achieved, primarily due to the

lack of reliable data with the utilities themselves. The utilities fail to submit the required data, undertake studies, and delay in implementing action of key performance targets. Frivolous litigation is another strategy sometimes adopted by the utilities, which could delay crucial regulatory investigations. It is at times like these that the utilities are unwilling to allow commissions to scrutinize their functioning. It is necessary for the utilities to comply with the directions and provide severe penal provisions for non-compliance of directions of ERC. It has also been observed that many commissions have no library or a reading room with all documents of the commissions.

The study also reveals the lack of a proper system to inform the general public of proceedings, other than the public hearing process. It cites the example of MERC, which informs recognized consumers' representatives of all proceedings and even directs petitioners to send all documents to the recognized consumer representatives. A practice worthy of emulation. The study also highlights the insufficient use of web sites, as relevant information is not available on the web site of many commissions.

The study reveals that the commissions seem to have made very limited efforts for 'operationalizing' the principles of transparency and public participation. Very few commissions have taken any initiative to institutionalize public participation as a result public participation in the regulatory process is restricted only to the public hearings conducted during the tariff revision process.

The study shows that the institution of regulatory commissions in the power sector has made a good beginning in terms of bringing in more transparency and public participation. But, the commissions will have to make proactive efforts to ensure more meaningful public participation and full transparency in their functioning. It is observed that some state governments have not reconciled to the process of independent regulation. Regulatory reforms cannot progress unless there is total government commitment to regulatory reforms. Support from the government, utilities, and consumers is very essential for effectively addressing these challenges.

It is necessary to recognize that reforms in the power sector were borne out of compulsion and not by conviction, which might explain the tardy progress made in implementing the reforms, though they were initiated nearly a decade ago. The regulatory

legislation is new to India and many ERCs have been created only recently. It is necessary to recognize that the commissions have to function in totally unfamiliar grounds and there are no precedents to fall back upon, which makes their task more complex and difficult. The responsibilities and functions entrusted to the commissions are enormous and crucial. The systems are yet to be standardized. Many of the commissions are manned by personnel, who do not have adequate knowledge of the power sector. Balancing the interests of all stakeholders is not an easy task. There are many constraints under which the commissions are functioning. The study undertaken by Prayas will go a long way in improving the functioning of the commissions.

Book review

## Networking Knowledge for Information Societies: institutions and intervention

Edited by Robin Mansell, Rohan Samarajiva, and Amy Mahan  
Delft University Press  
The Netherlands

405 pp.

€52

R R N Prasad

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International Journal of Regulation and Governance 3(1): 63–71

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This book contains a wealth of information about the convergence of information and communication technologies, which it will bring to the information society in the 21st century. It is a magnificent tribute to Melody's outstanding contribution to both policy and regulatory research in North America. This legacy is brought forth in this book with contributions by Melody's colleagues and students. The editors have chosen some excellent short contributions made by more than 50 eminent economists and telecommunication professionals. From varied areas of telecommunication, IT (information technology), and broadcasting, the contributors have had the privilege of undertaking policy research under William Melody's guidance. Articles pertaining to convergence, information societies, telecommunication, economy, and regulation are of significance to policy-makers and regulators in India.

It was Melody who first challenged AT&T's contention that long-distance telecommunication is a natural monopoly, and therefore bar MCI from providing point-to-point long distance telecommunication links to interconnect private networks in the US. Melody, who worked with FCC (Federal Communications Commissions), made original contributions related to network costing and fixing of retail and wholesale prices by regulators globally.

The book structured is around five themes – ‘Inquiry’, ‘Change’, ‘Next’, ‘Bias’ and ‘What’ – which have been chosen to capsule the central ideas behind Melody’s contribution to the creation, networking, and application of knowledge about interactions between changing technologies and societies. As the contributions are varied and many, only those relevant to the Indian telecommunication sector have been discussed here.

Although Melody contributed to areas beside telecommunications – such as IT, media and broadcasting, etc. – a major part of his professional career was spent in dealing with telecommunication reforms.

## Change

The third theme contains interesting articles on telecommunication reforms – for example, ‘Utility deregulation in the US’, ‘Telecom policy for information economies’, and ‘Toppling of natural monopoly doctrine policy and regulatory challenges of access and affordability’ – and an important contribution entitled ‘A competitive market approach to interconnection payments’.

### *Utility regulation*

The contribution entitled ‘Utility deregulation in the US’ reviews deregulation of public utility industries. The deregulation movement started in the US on the assumption that the emerging competition would put the most efficient infrastructure in place, market power of the incumbent would not be sustainable in the long run because of the new players’ entry, and network economies could be easily realized through full interconnections. However, real world experience turned out to be quite different. The decline in economic regulation has seen a parallel growth in market concentration at national and global levels. Market concentration in turn has created new opportunities for collusive pricing and investment strategies, which will adversely affect both the industry’s performance and society as whole.

Trebing in his contribution points out that due to concentration of market power in telecommunications among a few players with deep pockets and a capacity to cross-subsidize one industry segment with another will result in oligopoly. Oligopoly market structure in areas such as IXCs (inter exchange carriers) in the US, and NLD (National Long

Distance) carriers in India will try to gain lead in prices. He illustrates this point with some interesting examples of collusive behaviour in the power sector where a shortage of electricity was created artificially by electricity companies in California resulting in overcharging of customers. The telecom sector too raised the prices of the long-distance carrier artificially despite the significant fall in the access fees paid by them to local phone companies in the US. Trebing states that although oligopoly facilitates investment, it increases market dominance of a few players through mergers, acquisition and a variety of alliances and joint ventures. There has been horizontal, vertical, and conglomerate mergers in electricity, telecom and natural gas in the US. The IXCs in telecom, however, have merged vertically, seeking to reach their final customers directly. All these actions have reduced the level of competition, which was the objective of deregulation in the first place. Based on the analysis of the deregulation movement during the past 20 years, the author points to the need for critical industry analysis and new policy reforms. Here the author brings out Melody's past contribution to policy analysis and research, which will be a rich source of knowledge for anyone carrying on this task. According to the author, of particular value will be Melody's effort to create meaningful cost of service standards to control cross subsidization as part of the public policy reform. Trebing highlights the urgency of both task by stating that electricity and telecom industries are in the state of crisis in the US. He briefly touches upon the Enron scandal, which has shown that market failure and remedial public intervention must be considered in holistic context.

Another interesting contribution in a similar light related to the telecom policy for information economies is the contribution by Pisciotta who points that mere deregulation is not enough. He says that the new information services provided by the so called enhance service providers, who have been classified as end users are exempt from access charges. They are permitted to use inter-state access services under local tariffs. This has skewed the interconnection service market, as some of them provide service through the Internet and are treated differently from the basic service providers. After discussing the difficulties faced by the US in regulating information, telecommunication and cable services, the author concludes that information and telecom policy should ideally be zero-based. He explains this

concept by stating that the regulator should assume as if there was no public telephone voice legacy based on this assumption and develop an understanding on how the information network operates. He also makes a case incentive based on regulation. To spread information services, the author recommends a non-discriminatory interconnection for all technologies/services. This will require an intensive regulatory focus on standards of interconnection as well as swift resolution of disputes. His conclusions are quite relevant to the Indian telecom market where interconnection usage is a current topic.

Another interesting contribution relevant to the Indian market is entitled 'Policy and regulatory challenges of access and affordability' by Gillwald. Gillwald states that throughout the developing world, monopolies have failed to meet the mandates of universal and affordable service. This was due to the inability to provide quality service norms and incapability of product innovation. The first round of privatization and liberalization in many developing countries has not demonstrated significant gains related to universal access and service. Despite privatization of basic services in 1994 in the Indian telecom sector basic service operators have made insignificant contribution for raising the tele-density in rural and remote areas, as well as in providing the much needed VPTs (village public telephones). BSNL continues to provide most of the basic telephones in uneconomic areas and uneconomic planes in economic areas. Majority of private basic operators have failed to fulfill even their contractual obligation of VPTs.

### *Spectrum allocation*

The contributions related to spectrum allocation – by Cave and Ure – are of particular relevance to Indian policy-makers. This is so because of the government's decision of a unified licensing regime for fixed services to end the impasse created by court cases between fixed and mobile operators. The first contribution entitled 'Spectrum allocation controversies' by Cave brings out the pros and cons of the two methods of frequency allocation; one based on administrative assignment and the other based on 'auctions'. Melody in his work on spectrum had identified the fundamental nature of the problem that is the inefficiency associated with the administrative method of allocating frequencies. Melody recommends administrative pricing and a combination of markets with increased flexibility for spectrum use.

The second contribution on spectrum entitled '3G auctions: a change of course' discusses the telecom industry debacle, which was the result of the European auction of 3G (third generation) mobile telephone licences. The author who is a critic of the auction believes that managers and owners of 3G companies in European countries who bid for astronomical amounts for the spectrum were incapable of working out the real estimate of the licences. This was mainly because of the uncertainty surrounding the business of 3G. The author believes that though the auctions were held in 2002 no one knew what services would be available, which of them would sell, who would buy or how the revenue would be collected. The author has given a mathematical model to determine the correct market price of the spectrum. Hopefully, this will help future operators. As a policy decision on 3G services is still pending, these two contributions on spectrum allocation and management will be of great interest to Indian policy-makers and regulators.

### *Interconnection arrangements*

A very topical contribution is by Gabel entitled 'A competitive market approach to interconnection payments'. It will be of a great interest to TRAI (Telecom Regulatory Authority of India), which is grappling with the task of setting the correct price for interconnection under the IUC (interconnection user charges) regime. The author in the introduction points out that establishing the price for interconnection is a challenging task for regulatory commissions globally. He says that such commissions have come under pressure to adopt interconnection arrangements that set termination charges at zero. This is due to the perception that regulators in the past were unable to estimate accurate costs and, therefore, chose interconnection prices that were too high. Gabel in his contribution discusses the concept of 'bill-and-keep' where the calling party's network does not have to pay for the receiving party's network termination charges.

The author also discusses some practical constraints of interconnection arrangements based on cost and benefit of a call, involving the calling and the called party. After examining the various pricing models, Gabel concludes that the interconnection payment schemes should be based on market forces. He also recommends the 'calling party pays' principle for all types

of calls instead of the even distribution between the caller and receiver. His conclusion seems to vindicate some of the recent decisions of TRAI to introduce the calling party regime for fixed to cellular calls, where the called party was required to pay for the called mobile leg. This was an exception to the calling party principle, which has been applicable to all network calls since the advent of PSTN (public switched telephone network) about 100 years ago.

### **Next**

Section 4 entitled 'Next' contains 11 interesting contributions. These contributions deal mainly with the advent of the information society in the 1980s. Although Melody was mainly engaged in preparing the testimony for regulatory agencies during 1960–80, he was concerned with the impact of information services on the functioning of societies. Melody foresaw the profound effect availability of information through networking would have on all institutions. The contributions under this section have been made by either Melody's colleagues or students. They have brought to light the unfolding of the information society and the unequal distribution of information. This brings its own risks.

Some of the contributors are from developing countries, such as Sanatan who worked in the Caribbean region and was responsible for telecom reforms. He had worked with Melody to develop training programmes to tap the potential of information and communication technology. Like Melody, Sanatan wants equitable reform that will sustain the growth of economies in the region. Sanatan, in his article, reveals the difficulty of capacity building in small, low-income countries.

Sanjay, in his contribution, brings into sharp focus the risks developing economies like India face if they see investment in the new technologies as a panacea for all developmental problems. His article reflects the observation made by William Melody in 1985 in which he states that third world nations might face the risk of instability associated with information technology markets. Sanjay highlights the problems that could arise as a result of commercialization of scientific data. He concludes that investment in telecom infrastructure cannot serve in a straightforward way as a catalyst for development. He believes that many other measures are required.

In a similar vein, Jussawalla's contribution contrasts the potential of new technologies to enhance global information flows with the risk of the expanding digital divide. Citing China's example, she explains that the national institutions are still able to influence investment strategies. Just as Melody, in 1989, had argued that social and economic diversity would mean diversity in the institutions of regulation and market liberalization, Jussawalla shows that China and other countries in the region are seeking distinctive ways to manage their participation in the 'new economy'. Advances in the information infrastructure in these countries tend to aggravate political concerns regarding potential threat to sovereign decision making. Despite a growing view that nations can no longer enforce distinctive policies in the face of globalization, Jussawalla identifies an emergent and distinctive policy regime in China.

### **Bias**

The fifth section entitled 'Bias' is inspired by Innis' concept who refers to bias as an emphasis on one aspect to the neglect of another. Harold Adams Innis was a Canadian political economist, an economic historian, and a communication scholar. The authors feel that Innis' work has influenced Melody and many of his colleagues. Some of the contributors, like P Preston, identified Innis' work as the starting point for the analysis of issues on information society. Preston and Comor in their contribution have highlighted the paradox of information '...more information everywhere but less knowledge; more channels for communication, but less interaction...'.

The contribution entitled 'C for convergence (and communication, content and competition)' by Wyatt is of special relevance to Indian policy-makers with regard to the communication convergence bill, which was introduced in the Indian Parliament last year. The author provides details of her interaction with Melody whom she met in 1986 while interviewing for a programme on information and communication technology. She brings to light the contribution by Melody and how he impressed upon the author the long-term economic impact of the convergence of information and communication technologies. She goes on to say how Melody focused not only on the technical aspect of convergence but rather lay emphasis on the importance of information and communication processes of economic and social reform in a country.

## What

The last section entitled 'What' deals with the circulation of knowledge—from production to distribution to consumption. These aspects of knowledge economy stressed upon by Melody as early as 1977 have been highlighted by the authors in this section. Melody's analysis of these developments are closely related to regulatory reform and to his critiques of the emerging information society. He examined advertising and public service broadcasting markets where he found evidence of market dominance or practices that he argued were not in the interest of the public, and called for public policy reforms in this sector. The contributors in this section have shown concern regarding policy objectives and rationale for regulation of media industries. The contributions made by them draw upon experiences in the national contexts of Canada, India, Israel, Switzerland, the UK, and the US as well as Latin America. Silverstone calls for a fundamental re-examination of the rationale for media regulation. Smith like Silverstone emphasizes the need for a moral stance, one that acknowledges the role of the media in assisting the construction of a shared media. He points out that with the intensification of global distribution of media content facilitated by satellite and internet, media regulation and copy right protection are global and no longer the concern of natural regulates alone. Melody in his contribution on media policy had examined this issue about two decades ago and observed that television programmes produced for the international global market must be different from those produced for the domestic market.

Agarwal from India, in an interesting contribution, examines the issue of digital divide in the south Asian region, which will manifest in creating divisions in societies between those who have access to information and those who do not. He argues that policy-makers are 'indifferent' towards measures that might facilitate greater equity in the distribution of potential benefits of digital infrastructure. He calls for a vision of a distinctive Indian information society that can guide a coordinated policy action. The last contribution in this section by Turow and Ribak cautions against the tendency to treat the Internet and the World Wide Web as undifferentiated phenomena. They argue that many comparative studies oversimplify and fail to acknowledge that these media are fundamentally associated with identity formation.

## **Conclusion**

After going through all the five themes, one can conclude that Melody made wide-scale contributions not only to telecom reforms but also to the rise of the information revolution and convergence. These have established him as one of the original contributors to policy reforms in the area of telecom information, media, and public broadcasting in the 20th century.

The editors of the book need to be congratulated on their choice of excellent contributions, which are short and interesting and provide an insight in to many global policy and regulatory issues.