Matching regulatory arrangements with public values in the provision of energy and telecommunications: one view

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Abstract: The staying power of certain public values underpinning public policy in the provision of utility infrastructure is remarkably strong. A list of (nine) Public Values is offered (e.g., universal service, affordability) that has varied little in the past 100 years in the USA. To accommodate these named public values policymakers in the utility field have an array of Institutional Arrangements to choose from (e.g., public ownership, market competition). Five major ones are identified. The thrust of this paper is to see how far each of the Arrangements is likely to satisfy each Public Value.

Keywords: utility regulation; privatisation; public utilities; commission regulation; public ownership; incentive regulation; market competition; public values.

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1 Introduction

The staying power of certain public values underpinning public policy in the provision of utility (and for that matter, transportation) infrastructure is remarkably strong. In the USA and Canada, for example, the list of (9) Public Values (see Table 1) has varied little in the past 100 years, though the preeminence of one or another has sometimes shifted. Moreover, I believe there is very considerable country-to-country commonality in the list.
It seems almost a given that users everywhere want affordable, reliable service that is widely available. All this probably has to do with the perceived essentiality of the services, as well as, perhaps, custom, practice, and rising expectations. Admittedly, as with most value matters, precise definitions are elusive, and in any event the values themselves can be in conflict—or at least require tradeoffs in their application.

Table I Energy and telecommunications infrastructure provision and public values

<table>
<thead>
<tr>
<th>Public values</th>
<th>Institutional arrangements</th>
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<tbody>
<tr>
<td></td>
<td>Intervention (cost-based, (price caps and PBR)</td>
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<tr>
<td>Universal service</td>
<td>X</td>
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<tr>
<td>Consumer protection</td>
<td></td>
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<tr>
<td>Overall efficiency</td>
<td>X</td>
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<tr>
<td>Environment and conservation</td>
<td>X</td>
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<tr>
<td>Quality of service</td>
<td>X</td>
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<tr>
<td>Continuity and familiarity</td>
<td>X</td>
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<tr>
<td>Affordability</td>
<td>X</td>
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<tr>
<td>Research and development**</td>
<td>X</td>
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<tr>
<td>Overall fairness</td>
<td>X</td>
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</tbody>
</table>

*Scoring is mainly on the basis of theoretical accomplishment.
**Considered to equate to modernisation.

Source: Author's construct (2007)

To accommodate these named Public Values in one degree or another policymakers in the utility field have an array of broad Institutional Arrangements to choose from. In general practice there are five main ones (Table 1). Of course some could be (and indeed are) used in combination, but for purposes of exposition and analysis they are here considered as alternative arrangements. Examples of each can be found in countries around the world that have restructured their utility sectors, including the USA.

The thrust of this paper is to see how far each of the Arrangements is likely to satisfy each Public Value. Ultimately the matching involves substantial judgement but buttressed by demonstrated experiences and plausible lines of reasoning. The approach, therefore, is in the 'policymaking-as-argument' framework of the public affairs literature (Toulmin, 1958; Dunn, 1981; Fischer and Forester, 1993). It is informed by the author's 45 years in the regulatory field as both academic and practitioner, but remains a point-of-view piece. Needless to say, the simplistic outcome of counting the numbers of public values met by each of the arrangements does not 'decide the matter', though the attempt is to persuasively argue for this particular assignment of checkmarks in the table cells. Other analysts might score the models differently, and unequal weights might be assigned the individual values (say, core and non-core), producing alternative outcomes.)
are replete with references to this value, and the citizenry in any decent society expects it. At bottom, of course, is the usually wide imbalance of power between the supplier and the consumer of these services that always requires vigilance, often intervention, or at least the threat thereof. Indeed, the origin of public utility regulation in the early 1900s was rooted in just this value.

The last of the core public values in this typology is Overall Fairness of the system itself. A broad perception of fairness in any of the institutional arrangements is essential to citizen support. As elusive as the term may be, 'fairness' in the utility context means reasonable and non-discriminatory pricing of the services and levels of profitability commensurate with the risks taken by service providers. It also means that not only should the outcomes be fair, but the process be fair as well (Breyer, 1982), e.g., full and fair evidentiary hearings, open meetings and open records, timely notice of proposed rulemaking, and opportunities for appeals and reviews of decisions. In a 2000 survey of all 207 public utility commissioners in the USA as to their ranking of the fairness goal against all others, nearly two-thirds of the (90) respondents placed this criterion as 'the highest', and the other third ranked it coequal to the other goals in making their decisions (Jones and Mann, 2001). Further, one finds that in countries that have privatised their previously state-owned utilities and established regulatory bodies to oversee them a first priority is to build credibility in that oversight by demonstrating fairness early on.

2.2 Non-core public values

Particularly in the last 25 years Overall Efficiency has advanced as a public value (Phillips, 1993). Beyond the usual expectation of some basic level of efficiency in governmental and private arrangements there is now a heightened emphasis on this value in the provision of utility services. This development is inextricably tied to the increasing reliance on market solutions and the celebration of competition as a disciplinary force for good (Kuttner, 1997). It was also occasioned (in the US case) by the substantial and persistent run-up in costs and prices of services - particularly energy services - a general downturn in the macro-economy, and a loss of faith that government could effectively oversee these crucial sectors.

An efficiency test, then, has been increasingly applied both to outcomes (e.g., pricing structures, cost allocations) and to processes (e.g., streamlining regulatory and legal procedures, relaxing reporting requirements). In point of fact a major reason that countries restructuring their utility sectors often choose a price-caps form of regulation is perceived administrative efficiency.

Another non-core (but important) public value is Continuity and Familiarity in an institutional arrangement and its functioning. This is to say that utility customers value greatly stability in prices, service plans, and what is expected of them in their relations with utility providers. For them gradualism should characterise change and not shocks and abruptness. This is especially important where customers must adjust their spending habits to meet an increase in their utility bills. Further, they value being able to understand their utility bills and why they are what they are. The arcane reporting of most telephone and energy bills is difficult enough without frequent and dramatic changes. A third non-core public value, also of relatively recent emergence, is Environmentalism and Conservation. This public value comes to the fore particularly in the energy and water utility sectors and can be viewed against the backdrop of a new general awareness
base are rewarded. Or if energy conservation or quality of service improvements are the intended behaviour, then financial rewards are offered to induce these outcomes. The Incentives model involves selective but regular monitoring, as opposed to continuous oversight, and therefore is only moderately intrusive on utility management and supposedly lessens the overall cost of regulation. Price caps, performance-based regulation, and indexing approaches represent major concepts in this model.

The third arrangement is the Contracts model. Used widely in countries reforming their utility sectors this approach (often through licensure or concessions) attempts to govern utility services by writing into binding contracts the expected performance of the carriers (Newbery, 2000; Cook, 1999; Rachline, 1997). The requirements of the contract are typically quite specific, measures toward accomplishment are prescribed, penalties and rewards are identified, and the term is usually fairly lengthy (Moncreiffe, 2000). Monitorship is intermittent, and the presumption is that the force of law and the possibility of contract renewal will assure behaviour in the public interest.

The newest institutional arrangement for the provision of energy and telecommunications is Market Competition. The opposite of the intervention model, the policy choice of relying on competitive forces in these fields has flowed partly from the widespread ideological belief in the inherent superiority of market solutions and partly from the perceived failure of traditional forms of social oversight. The claim is that the utility industries are now not all that different from other commercial sectors, what market power that does remain is minimal, probably temporary, and of little consequence, and in any event the consumer is best served by a largely "hands off" approach. In this view the governmental task is reduced to inducing and encouraging competition and seeing to its continued vigour over time. A mix of countries is trying this route — both reforming countries like Chile and New Zealand and countries with mature utility regimes like the USA and Canada (Melody, 1997) where deregulation has become the policy theme.

The oldest and most common Arrangement (the USA is an important partial exception) is the Public Ownership model. Historically, the public provision of these essential public services was thought to be a fundamental role of the state (Shepherd, 1991). This has held true in both democratic and authoritarian political regimes. Additionally, the rationale included

- only the state had the funds needed for this infrastructure investment
- these services were natural monopolies, and only the state could be trusted not to exercise the monopoly power involved
- these state-owned enterprises could regularly return tidy sums of revenue to the national treasury.

The state as both owner and operator of utility assets could be assumed to automatically act in the best interest of the public.

4 Matching arrangements with values

How well, then, does each of the Institutional Arrangements satisfy the identified Public Values? Some needed qualifiers at the outset. It is acknowledged that each meets them in some degree. Also that the time period considered matters, as the design features of the
some set of desired indicators. Considerable ‘slack is cut’ utility managers in how the
incentive schemes are made to function, and in fact the utilities often are participants in
their design. Not surprisingly, arguments centre around the size of the rewards (and
penalties), measuring performance itself, designing the base case from which to start,
the time period for which it applies, and exactly what is to be targeted. Oversight is
intermittent (as opposed to continuous), relies a great deal on accurate self-reporting,
deals in ranges of acceptability, but often induces gaming of the system by utilities to the
disadvantage of the public.

Our analysis ranks the incentives model in its present form as meeting five of the
public values. It scores well on universal service, quality of service, and R&D
(technological investment), since those elements are readily quantifiable in an incentive
mechanism and can be accurately monitored. Overall efficiency can be met by choosing
the appropriate engineering and cost factors (say, plant-in-service or fuel purchases) and
rewarding their improvement; similarly, pollution abatement and resource conservation
by targeting these goals. The scale of rewards, obviously, can be made to fit the urgency
the policymaker places on their attainment.

What incentives seem to be less good at is satisfying values of affordability and (more
broadly) consumer protection. This is because low pricing and customer-friendly rate
levels are not generally the object of incentive schemes. Rates for service may well be
affordable to most consumers, but that outcome is not typically the result of the design of
incentives. Also, profit levels may be even higher than otherwise where ‘sharing the extra
earnings’ is a design feature. Nor is protecting consumers from utility misbehaviour
directly secured by incentive systems when it comes to the tests of prudent investment
and non-discriminatory treatment. Viewed in this light, oversight based primarily
on incentives does not well accommodate the public value of Overall Fairness.
Since incentive features are inherently target-specific, it is not surprising that individual
features cannot readily be summed into system-wide equity. Finally, it is difficult in
practice to not ‘overdo it’ when individual incentives are piled on top of each other or
actually turn out to be in conflict.

Not really found in the USA but common in countries denoted as developing and
restructuring their utility sectors is the Contract Licensing Arrangement. Here we mean a
system of time-limited concessions underpinned by formal licenses which set out terms
and conditions of the transaction. These may be to merely operate the existing enterprise;
to build and operate it; or to build, operate, and transfer the assets back to the government
after some prescribed time. Governments are drawn to this model in the hope of getting a
modernised utility system that is more efficiently managed. Investors see the approach as
reducing risk by providing (presumably) an enforceable commercial relationship of rights
and obligations, rather than depend on what may be an immature regulatory agency and a
court system inexperienced in private sector utility law. And if private capital is
employed, a government can avoid either incurring additional debt or using scarce tax
revenues for such infrastructure expansion.

Since contracts can be written to achieve virtually any goal, this model initially
scores high as a governance arrangement for utility sectors. Of the nine public values
only two would seem unlikely to be targeted – Overall Efficiency and Environment and
Conservation. Unhappily, however, the actual workability of the contract approach is
often severely undercut by a range of practical problems of both design and
implementation – particularly in its applicability in developing countries. One is that if
the contract is crafted too specifically, it hampers the flexibility of the firm to adjust by
be seen as high cost/low profit propositions and therefore not voluntarily pursued. Attention to the Environment and Conservation value is not characteristic of the market model and may even be antithetical to it if it gets in the way of ‘bottom line’ performance. There is considerable experience indicating that unchecked markets tend to skimp on Quality of Service (e.g., reliability) in order to increase returns. Further, the price volatility that accompanies most markets does not make for Continuity and Familiarity. The Affordability test can be met by the Market model in the sense that the price of utility services may be as low as competition can bring it, but may still be too high for poor customers to pay — even for minimal service — and thus require subsidies from some source to be on the system.

The Public Ownership arrangement ranks very high in meeting public values, in fact in six of the nine by this author’s scoring. The long history and breadth of its usage have provided ample experience for fair assessment. Public ownership’s main weakness is in lacking overall efficiency, at least in countries with a single national utility in these sectors. Documentation for this abounds and is generally explained by multiple factors, including excess employment in the enterprise (e.g., labour force size), a disincentive system for operating efficiency (e.g., soft budgets), lack of direct accountability (e.g., financial and engineering performance measures), often less modern plant and equipment (e.g., slower/lower investment in state-of-the-art technology) and sometimes less technically trained and skillful management. Of course the point must fairly be made that in many instances and in many countries overall efficiency is not a priority value as against, say, affordability or availability of the service to the citizenry.

Relatively, public ownership often falls short in relative quality of service. Where the above-named conditions are present — especially lack of direct accountability, lessened investment, and lower skill levels — the service quality criterion is accordingly less well met. Mustering the concerted political activism necessary to overcome these tendencies is usually a tough hill to climb.

Finally as to weaknesses, public ownership generally scores low on the Research and Development (here read modernisation) test. This is somewhat ironic in that governments through their taxing and borrowing authority can raise large sums of money. Still, spending on R&D in these fields, so as to regularly roll out the latest technologies in telecommunications and energy plant and equipment often has a lower priority than certain competing government activities, e.g., defence or welfare. Moreover, the incentive or means to alter these priorities are frequently not present.

Turn, then, to the particular strengths of the Public Ownership arrangement in terms of our nine public values. With its ability to subsidise (and cross subsidise) in its pricing schemes government can keep utility rates affordable. By its investment decisions it can meet established penetration rates of usage and thus widespread availability. By its administrative control over conditions of service (e.g., disconnect rules) it protects consumers from various abuses. By its design and constancy of service options and associated tariffs it can well meet the Continuity and Familiarity goal. As policy maker and operator it can it can attain prescribed environmental and conservation standards. Finally, under the banner of pursuit of the public interest and the common good, public ownership (at least with democratic regimes) can realise overall fairness in the delivery of these essential utility services.


Notes

1For example, the environment/conservation value and the efficiency value (though not absent) were not as salient in the early decades of regulation as in more recent times. One could argue for 'National Security' as an additional ubiquitous public value, but it is here considered dissimilar enough to be outside the boundaries of this analysis.

2Related discussion can be found in Jones (1988) and a follow-on paper in Jones (2001) by a similar title. Mention might be made that this list of public values was 'tested' in presentations at three academic conferences without discussants objecting to the values chosen.

3Examples in the USA are the Rural Electrification Act of 1936 and the Telecommunications Act of 1996 with its Universal Fund provision. At the state level see Rosenberg and Wilhelm (1998). To be sure, "the obligation to serve" has been relaxed in certain circumstances by federal regulators in the USA.
It must be acknowledged that the negatives enumerated here do not all apply with equal force to special cases of a state-owned asset, like the Tennessee Valley Authority and Bonneville Power Authority in the USA instance and many municipal power companies.

Of some note is the fact that the rank ordering of the two ‘best’ Arrangements remains the same if only the five core values are considered.

For an excellent discussion of the limits of ‘hierarchical safeguarding’ of public values and the offering of two supplementary mechanisms see de Bruijn and Dicke’s (2006).