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LEADERSHIP IN INFRASTRUCTURE POLICY

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Leadership and the Independent Regulator

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Abstract

Being a utility regulator has perils because the independence of the regulator necessarily removes power from politicians, operators, and others. Furthermore, regulators are sometimes scapegoats for unpopular policies and unavoidably become involved in shaping the policies that they are supposed to implement. As a result of such frictions, regulators are sometimes removed from office or marginalized in some way. How can regulators not only survive in such an environment, but also thrive? This paper describes a leadership concept called adaptive leadership that regulators can use to help their countries adapt to new policies and changing situations, while allowing the regulator to stay in the game. The first leadership skill discussed is the ability to get on the balcony to see what is really going on with operators, politicians, consumers, and others. Once this perspective is obtained, then the regulator can engage stakeholders in an adaptive process in which people make necessary changes to traditions and expectations, while hanging on to the things that are truly important. Regulators can do this by bringing attention to problems that people want to ignore because they involve difficult trade-offs, providing certainty and stability when tensions become too high for work to be done, and keeping attention focused on the work and the issues.

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Leadership and the Independent Regulator

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Introduction

When the Governor of Iowa appointed Dennis Nagel to be Chairperson of the Iowa Utilities Board, the only thing the Governor requested was that Nagel not do anything that would cost the Governor the next election. The Governor didn't mention protecting consumers, protecting shareholders, or even obeying the law – he only asked that Nagel not cost him the next election.

It is likely that politicians appoint independent utility regulators[2] with an expectation, even if unspoken, that the regulators will provide a certain amount of stability. Controversies over utility regulation can cause politicians to lose elections, particularly in view of the well-accepted proposition that regulation should protect consumers (Kahn, 1988). John Carlin was able to defeat incumbent Governor Robert Bennett to become Governor of Kansas in 1978 in part because Carlin convinced voters that Governor Bennett was not tough enough on utility companies. Regulatory controversies can cause unrest in other ways. Ugandans took to the streets of Kampala in June 2003 to protest a price increase allowed by the electricity regulator. News writers in Trinidad and Tobago accused the Regulated Industries Commission (RIC) of putting the profits of the incumbent telephone company ahead of consumer interests in April 2004 when the RIC closed down unlicensed telecommunications providers (*Trinidad & Tobago Express*, 2004).

What happens when a regulator whose function is, in part, to keep things calm lands in the middle of controversy? The regulator finds him- or herself in peril.

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[2] A regulator is generally considered independent when he or she has arm's-length relationships with industry, consumers, private interests, and politicians. This paper focuses on independent regulators, but the leadership concepts described are general and could apply to many roles that require exercising leadership.

Regulators who have been viewed as too outspoken or too politically active by politicians have lost their jobs. In one state in the U.S. a review committee decided an outspoken regulator was unqualified for her job when she came up for reappointment. In another state the legislature removed the sitting regulators from office by abolishing the existing agency and creating a new one.

Being an independent regulator or taking steps to become one is perilous work for at least three reasons. In the first instance, there will be some people who have to give up things they value with the development and exercise of regulatory independence (Butler, 2003). A politician stands to lose political power, an operator may lose opportunities to apply political pressure, and some consumers may lose the means to gain favorable treatment. Those who experience a loss because of regulatory independence may attack what they believe to be the source of the problem, the regulator. The second reason independence has risks is that in developing and refining independence, the regulator becomes a player, which compromises the very independence he or she is trying create or practice. Lastly, regulation has perils because the regulator plays a central role in a complex system that develops and implements policies, but the regulator has only limited authority over this system (Nadel, 1990-91). As a result, politicians may use the regulator as a scapegoat for ineffective or unpopular policies, or for policies that are difficult to explain to the public.

This paper explains why the work of the regulator has perils and describes some ways regulators can survive and thrive. I use as my unit of study a person serving in the role of independent regulator for two reasons. First, leadership is ultimately a personal act in that it is the individual who discerns the situation and engages the work. My second reason for focusing on the individual is that the perils of regulation are often personal. In the situation cited regarding a legislature that rewrote regulatory statutes, the purpose was to remove individual regulators from office.[3] Furthermore, I focus my study on the independent regulator rather than regulators who lack independence because, as I explain below, independence creates unique hazards. However, many of the lessons in

[3] This illustrates a linkage between the individual and the institution. The acts of individuals can permanently affect the institution, as in this example. Furthermore, the formal and informal rules of the institution can constrain the individual or put her in peril. For example, individual regulators have only limited options for defending themselves from attacks from persons within the legislative body if the regulatory agency is a creation of the legislature.

this paper can be applied to persons working in regulatory agencies that are not considered independent.

The remainder of this paper is organized as follows. I begin by explaining what I mean by independence and summarize the perils of regulatory work. I then describe the regulator's leadership role and some tools that regulators can use to succeed. I conclude by describing how regulators can develop the necessary leadership skills.

Independence

Regulatory independence generally means the regulator and the regulatory institution have arm's-length relationships with the operator(s), consumers, private interests, and political authorities (W. Smith, 1997). One way countries ensure an arm's-length relationship between the regulator and the operator is to prohibit the regulator from having a stake in the operator's financial success. For example, when I was head of the Research Section for the Iowa Utilities Board (IUB), I could not own stock in the companies I regulated. The Chairperson of the IUB at the time recused himself from several cases involving AT&T because his former law firm had worked for AT&T. No one working for the IUB could receive as much as a cup of coffee from someone who worked for an operator that the agency regulated.

Laws also promote independence for the regulator by imposing organizational autonomy for the institution and an arm's-length relationship with the political authorities. This is often accomplished through earmarked funding for the institution, fixed and staggered terms of appointment for regulators, restrictions on removal of regulators from office without cause, statutory or constitutional authority for the institution, and court reviews of regulatory decisions rather than ministry reviews (W. Smith, 1997). For example when the Uganda Communications Commission was established, its decisions were reviewable only by a special court tribunal, not by a ministry. Political independence also means limits on ex parte communications with politicians. Soon after being appointed to the California Public Utilities Commission, one regulator began receiving telephone calls from politicians telling him how he should decide upcoming issues. His approach was to tell the callers that he could not act on their request unless it was part of the public record and would they please put their request in

writing so that he could consider it and make it public. No letters came and the telephone calls eventually stopped.

Independence from short-term political influences is important because such interests lead to opportunistic behavior (Wells and Gleason, 1995). Opportunism in utility policy is evident when, for example, policymakers ex post change the rules affecting the operators' ability to retain profits from investments made before the rule change. In illustration, regulators in the U.K. resisted pressures from the Labour Party to claw back utility profits after privatization because this would have been considered a breaking of the regulatory compact with the operators. However, once the Labour Party took control of the government, utility profits became a legislative issue rather than a regulatory issue, and the country adopted a windfall tax to capture past profits.[4] Some investors pulled out of the country as a result of this tax (Institute for Fiscal Studies, 2000). Because the threat of political opportunism discourages long-term investments, many countries make their regulatory agencies independent of political influence so that the agency provides a stable and credible legal environment (Goldberg, 1976; Levy and Spiller, 1996; Spiller and Savedoff, 1999).

Independence does not mean that the regulator answers to no one. An independent regulator is governed by laws, political realities, public sentiments, budgets, license provisions, and such. Independence is not absolute because trade-offs exist between certain features of regulation, such as that between independence and accountability, between certainty and flexibility, and between long-term goals and short-term viability. This lack of absolute independence is generally considered desirable because it ensures that the regulator is not simply following a personal agenda.

Perils in Regulation

As indicated, developing and implementing independence can be perilous for the regulator because finding the optimal mix of independence, accountability, flexibility, and the like is difficult. Also, making the necessary trade-offs is painful for some

[4] Labour came into power in part because it argued that utility profits had been excessive under the Conservative Party.

because changes in the mix cause some stakeholders to lose things they value, such as political power, secrecy, and flexibility.

Stakeholders at risk for losing things they value are tempted to strike back, perhaps by trying to marginalize the person or agency that they perceive as the threat. This is what happened in Panama when the agency tried to enforce service quality rules on an incumbent service provider. The operator renegotiated its license with the ministry in a way that removed the agency's leverage for enforcing the service quality standards. In the United States, an incumbent telephone operator in one state became so concerned about what it viewed as activist tendencies of a commissioner that it hired a private detective to investigate the commissioner. The commissioner found out and sued the company, counter suits followed, and the situation escalated to the point that the commissioner was recused from any decisions relating to the operator.

Independence is also problematic because the regulator becomes a player while developing and shaping independence, which compromises the very independence the regulator is practicing. Unfortunately, the regulator cannot help but be a player, whether formally or informally. When asked to play a formal policy role, the regulator advises ministers, legislators, and the like on licenses and other policy matters. For example, U.K. regulators provided input on a government review of regulation in that country and commissioners from the U.S. Federal Communications Commission (FCC) were asked to testify before Congress during the writing of the country's Telecommunications Act of 1996.

The regulator always plays an informal policy-making role. For example, in Trinidad and Tobago, the RIC had to choose between staying on the sidelines and acting to fill the regulatory void that occurred when the government delayed establishing the Telecommunications Authority of Trinidad and Tobago (TATT). Both action and inaction had implications for how the government, the TATT, and other stakeholders would view the RIC. The former director of Jamaica's Office of Utilities Regulation (OUR), Winston Hay, made a decision to talk with the press about the Jamaican government's failure to authorize the OUR's budget (*Jamaica Gleaner*, 2000). His decision had implications for how the ministry, press, and public viewed the OUR. However, a decision to remain silent would also have had implications.

The work of independence is particularly complex in small economies because the small sizes of these economies make true arm's-length relationships difficult to establish and maintain. As a former regulator from a small economy put it, "Everyone knows everyone and has their fingers in everything." In small economies, the development of independence involves changing informal rules and relationships that are well-known and valued even if they are incompatible with necessary improvements in utility markets (Tenenbaum, 1996; Buscaglia and Ratliff, 2000).

The regulator's role as scapegoat adds to the regulator's perils. One regulator in an Asian country encouraged the country's communications minister to blame him, the regulator, for a price increase rather than intervene in the pricing decision. This scapegoating preserved the pricing policy, but it diminished the public's view of the legitimacy of the regulator. When I served on staffs of regulatory commissions in the United States, it was common for operators to notify customers of price increases with words to the effect that the commission had ordered the operator to increase prices even though the commission had only allowed the price increase. In another situation a regulator reversed his earlier decision on a pricing issue because he believed that he would be unable to counter an operator's negative comments in the press. The regulator had initially refused to allow costs for a non-regulated service to be covered by prices for regulated services. However, the public believed these non-regulated services would stimulate the local economy, and the company told the press that the regulator's initial decision would harm economic development.

Authority versus Leadership

A regulator's leadership role is different from the regulator's authority role. See Table 1. People expect authority figures to provide answers. Witness, for example, the recent U.S. presidential election where both major candidates said they knew how to achieve tranquility and economic growth. Arguably, they were responding to what people wanted to hear. In contrast to authority, leadership is about "mobilizing people to tackle tough problems" (Heifetz, 1994, p. 15). Leadership raises questions and forces people to face difficult problems whose solutions require a rethinking of valued traditions

and closely held beliefs. Even though a single act by a regulator may involve both leadership and authority, the leadership role and the authority role are distinct.

Table 1. Authority versus Leadership[5]

Authority	Leadership
Provides solutions by applying established instruments from political science, management, economics and finance, law, and engineering.	**Identifies challenges** by questioning how problems should be defined and pointing out why technical solutions cannot solve adaptive problems.
Protects people and the system from external threats.	**Discloses threats** by calling attention to the fundamental changes in external forces that threaten the status quo and defy traditional solutions.
Restores order so that work can continue when internal or external forces disrupt the normal performance of work.	**Exposes real conflicts** or facilitates their emergence so that those involved face and work through tough choices.
Maintains norms so that people can work by following established rules and procedures, and not waste time "reinventing the wheel."	**Challenges norms** to ensure that "solutions" are not adopted before the new environment is fully understood, the real conflicts are resolved, and key trade-offs are made.

Let me illustrate the difference between leadership and authority with a story from my experience at Sprint, where I worked from 1993 to 1996. The passage of the U.S. Telecommunications Act of 1996 presented a dilemma for Sprint. The Act pitted long distance companies against traditional local telephone companies, and Sprint was in both lines of business. Up until that time, Sprint had played both sides of the street in regulatory debates and sometimes held contradictory policy positions because it was effectively two companies – a long distance company and a local telephone company – and the corporate executives had no policy as to which line of business mattered most to the company. When it came to regulatory policy, Sprint was a house divided.

I worked as a policy manager for the long distance side of the company. My colleagues and I thought the Act would finally force the corporate executives to announce Sprint's business direction. We were wrong. This was a problem for my colleagues and me because regulators were asking us for Sprint's positions on implementing the Act and we had nothing to say. I asked a colleague what I should do and she advised me, "Mark,

[5] Adapted from Heifetz (1994, p. 127).

just act like you are in charge and see what happens." To make a long story short, that is what I did and it worked. I recruited a team that identified policy questions that Sprint needed to answer, asked for additional volunteers to write draft corporate positions, and announced deadlines. The executives noticed and assigned the chief operating officer and the corporate general counsel to review our drafts and decide any remaining policy conflicts. It all worked. I had no authority to do this work, but by defining the work and asking people to get involved, I helped bring about a positive change in how Sprint defined its corporate identity.

A regulator may also need to exercise leadership to create legitimacy for doing the work for which he or she has formal authority. This was the situation that Rohan Samarajiva faced when he became Sri Lanka's Director General, Telecommunications Regulatory Commission, in 1998. Sri Lanka had recently adopted telecommunications reforms, and the reform agreement included a provision for significant domestic price increases. Samarajiva was required by law to allow the price increases, but he knew there would be a large public outcry. He prepared the public, the media, and the ministry for the increase by forcing the operator to completely document the reasons for the increase. He provided a detailed explanation of the price increase during a press conference, the first the agency had ever held, and hosted consumer call-in programs on broadcast radio. In addition, he required the operator to offer a low-use tariff. These steps established arm's-length relationships between the regulator and some of the stakeholders, gave the stakeholders roles in the process, recognized customers' pain, and emphasized transparency (Samarajiva, 2001).

How does the regulator exercise leadership and not only survive, but thrive? Entire books are written on this topic (see, for example, Heifetz, 1994; Heifetz and Linsky, 2002; Laurie, 2000), but I will summarize some of the main techniques that I have witnessed; namely, getting on the balcony, identifying the adaptive work, creating a holding environment, and modeling best practice.

Get on the Balcony

Getting on the balcony is a metaphor for seeing what is really going on with yourself and others. On a dance floor, you can see only yourself and the people

immediately around you. That gives you one perspective on what is happening. But if you leave the dance floor and get up on the balcony, you can see everything that is going on; i.e., who is dancing and who is not, how the music affects different dancers, where dancers are on the floor, etc. (Heifetz and Linsky, 2002, pp. 51-74)

Getting on the balcony incorporates the emotional intelligence skills of social awareness, self-awareness, and self-management (Goleman et al., 2002, pp. 39-50). Social awareness involves sensing others' emotions, perspectives and motives and the political and personal relationships among the persons relevant to the situation. By stepping back from the fray and asking questions such as "Who cares about the actions I am taking?" "What seems to happening beyond my vision?" "Why are some people engaged and why are others not engaged?" and "What seems to energize particular people and what seems to lead to resistance?" can help the regulator understand what is happening with others. Self-awareness involves reading one's own feelings and understanding personal strengths and weaknesses. One former regulator said she used to employ what she called the "smell test," which meant that she would seriously question proposals that didn't feel right even if she could not pinpoint the problem. Self-management includes controlling one's own responses, displaying integrity, adapting to situations, and acting on opportunities. Exercising self-awareness and self-management can be some of the more difficult things to do in a leadership role, but they are fundamental to getting on the balcony (Heifetz and Linsky, 2002; Laurie, 2000; Goleman, 1994; Cooper and Sawaf, 1997).

I failed to get on the balcony when working for the regulatory agency in Iowa. The IUB had a long tradition of using fully distributed cost studies in the 1980s, but increasing competition at the fringes of the local telephone monopoly and rapid changes in technology made this policy problematic. Because cost analysis was one of my areas of expertise, the Iowa commissioners asked me to direct a process to establish new costing rules. I attacked this as a technical challenge and wrote a staff proposal that correctly applied the most current economic theories. I then invited industry economists to join me in a series of workshops to refine the proposal.

The workshops were a disaster. Economists from the industry derailed the first two workshops by arguing about pricing issues rather than costing rules. I was worried

when it came time for the third workshop, but the people who derailed the first two didn't attend and I was able to get the industry representatives to agree with me on a set of principles that could be the foundation for a new IUB policy. However, when I presented these principles to my commissioners, they flatly rejected them. I felt I had nowhere to turn and let the process stop, a personal loss for me because I had prided myself on being an expert in cost analysis. Although I understood the economics of the issue, I had failed to get on the balcony to see what was going on in the larger perspective.

From the balcony, I would have seen that the people who derailed the workshops did so because the industry did not want tightly defined costing rules. It wanted flexibility. I would also have seen that my commissioners needed tightly defined costing rules so that the rules could withstand court challenges. It was impossible to satisfy both the commissioners and the industry, but I had adopted a process that I could not complete without consensus. I should also have recognized that I was motivated by the technical challenge of the issue and my ego. If I had gotten on the balcony, I could have developed workshops that defined issues, clarified perspectives, and engaged others in defining the policies to be forwarded to the commissioners. This would have allowed my commissioners to initiate a rulemaking proceeding with a high probability of success.

Identify Adaptive Work

An important element of being on the balcony is identifying the adaptive work to be done and who has to do it. Adaptive work involves making changes in values, traditions, attitudes, and behaviors that people hold dear (Heifetz and Linsky, 2002, pp. 11-20). It lies at the core of an organization's ability to succeed.

The need for adaptive work arises when fundamental changes in a group's (or an individual's) environment call for a rethinking of basic goals and strategies to thrive or even just survive. Examples of major changes that have affected utility policy include the energy crisis in the 1970s, nuclear accidents at Three Mile Island and Chernobyl, decisions by multilateral institutions such as the World Bank to promote privatization and competition in utilities, and the development of the Internet, but numerous more minor changes exist. According to Laurie (2000, pp. 39-40), a person exercising leadership is able to recognize adaptive work by identifying deeply held beliefs that are inconsistent

with the future, discovering the new learning and the unlearning that has to take place, and determining what competing values are at stake. Leadership in such situations questions long-held assumptions that may not be viable in the new environment and exposes people to the reality of new situations that must be understood for an effective response (Heifetz, 1994; Heifetz and Linsky, 2002; Laurie, 2000; Pascale et al., 2000; see Table 1).

Patrick Masambu was Managing Director of Uganda Telecomm Limited (UTL), the country's state-owned operator, in the mid-1990s. Seeing that privatization and competition in telecommunications were important for his country and probably inevitable, he understood the need to change his own career path and to help his staff and the labor union see the future. Recognizing that privatization would mean a new management team for the company, he left UTL and became Executive Director and Commissioner of the Uganda Communications Commission (UCC). This was a controversial move that some saw as opportunistic, but it focused attention on the role of the UCC and helped the UTL management and laborers begin adjusting to the new business environment. The UCC has since helped the country adjust to global telecommunications by engaging operators, ministries, its staff, and representatives of nearby countries in an international dialogue that has involved joint training, exchange meetings with neighboring countries, and participation in International Telecommunications Union activities.

Policymakers in four countries – Thailand, the Philippines, Malaysia and Indonesia – engaged their countries in adaptive work in 1997. Each country had undertaken some degree of privatization of its electricity system prior to the 1997 East Asian financial crisis. The crisis brought public pressure on the governments to renegotiate contracts with the private investors. Policymakers faced difficult trade-offs between addressing their citizens' immediate financial distress and keeping commitments to investors, and difficult leadership challenges as they worked to change their own and their citizens' perceptions about the future. The countries engaged in similar processes, which included varying degrees of public protest, statements from politicians, and negotiations with investors, but their outcomes were different. Government institutions in Thailand and the Philippines had more extensive checks and balances than did the

institutions in Malaysia and Indonesia. These checks and balances protected investors, which meant that investors in Malaysia and Indonesia had to engage in more adaptive work than their counterparts in Thailand and the Philippines (Henisz and Zelner, 2004).

This raises another point with adaptive work, namely, that in any given situation there may be those whose norms and values are consistent with the new realities, which means that they do not need to engage in adaptive work. For example, some advocates for the poor have held that the poor should receive the same level and quality of utility service as those who are wealthier. In some countries this level of service has proven to cost more than could be funded. Furthermore the poor in those countries, when given the choice, preferred lower levels of service that they could afford. This reality conflicted with the values of the advocates of the poor, so they had to adjust their expectations. The poor, in contrast, needed no such adjustments.

Create a Holding Environment

While getting on the balcony is an important part of the leadership process, it is also important to quickly get back into the fray and orchestrate the process in a way that allows adaptive work to be done (Heifetz and Linsky, 2002, pp. 53, 101-22). This involves both increasing stress when people are refusing to engage in the work that needs to be done and lowering stress when people are feeling overwhelmed. This is called creating a holding environment.

Chairperson Nagel of the IUB created a holding environment for his fellow U.S. state commissioners in 1993 when he helped them realize that the days of monopoly telephone service, with its implicit subsidies and traditional utility regulation paradigm, were coming to an end. He created a unique event – a regulatory summit for state commissioners only – at Keystone, Colorado. Here the commissioners heard from technology visionaries and aggressive corporate executives who planned to take on the telephone monopolies. The uniqueness of the summit and the power of the presentations focused attention and shook the traditional paradigms. The event included discussion groups with handpicked facilitators to involve the commissioners and help them process what they were hearing. After the summit, the commissioners continued to work in task groups to help them focus on manageable tasks while not losing momentum. In part as a

result of Nagel's work, the state regulators played a leading role in opening U.S. local telephone markets to competition, and Illinois served as a model for the competition rules eventually adopted by the FCC.

A holding environment engages people in emotional and analytical thinking. Emotional thinking motivates people and helps them understand what is truly valuable. Adaptive challenges often threaten people's futures or their views of their own self worth. These threats can lead to feelings of anxiety or anger (Lazarus and Lazarus, 1994), which can motivate people to engage in adaptive work if two conditions are met. First, the threats need to come from the need for adaptive work. For example, policymakers in the Philippines motivated the incumbent telephone operator to improve its service quality and availability by threatening to open the country's telecommunications markets to competition (P. Smith, 1995). This threat challenged the managers' egos and increased the uncertainty about their futures. It also demonstrated the value that the managers placed on their monopoly status. The second condition is that the adaptive work must alleviate the negative emotions. Investigating adaptive challenges and possible solutions engages people in analytical work that decreases anxiety by increasing certainty and that decreases anger by restoring self-confidence if the adaptive work appears to be bringing success. However, if anger and anxiety are too high, they can inhibit analytical thinking, so persons providing leadership may need to find ways to lower stress, perhaps by providing a vision of success. (Heifetz and Linsky, 2002, pp. 120-122)

Making sure that the stress level is neither too high nor too low is one of the more difficult tasks of creating a holding environment. Keeping the stress level from being too high is difficult because tension is a dynamic process. We carry our history with us at all times. As William Faulkner (1951) said, "The past is never over. It's not even past." U.S. President George W. Bush appears to have not appreciated this insight in his handling of international relations. Shortly after taking office in 2001, he withdrew the United States from the Kyoto Protocol, from the World Court, and from the peace process in Northern Ireland. Whether these policy decisions were right or wrong is not my point; rather, my point is that he took these steps quickly and with minimal dialogue, which caused a sharp rise in tensions between the United States and many other countries. This stress might have been manageable had it not been for the terrorist

attacks on September 11. President Bush had to respond decisively to these attacks to calm the U.S. citizenry, but he did not find a way to do so without pushing some international relationships beyond the breaking point. In effect, he was in the position of having to balance two holding environments – one domestic and one international – and he could not manage both after September 11.

President Bush's predecessor, Bill Clinton, provides an example of keeping the stress level too low for adaptive work to be done. Former President Clinton followed a well-established pattern for American presidents when he kept U.S. voters happy by ensuring the flow of relatively cheap oil. In doing so he avoided forcing Americans to face the implications of the country's dependence on foreign oil even though this was becoming an increasingly dangerous proposition.

Heifetz and Linsky (2002, p. 111) list several techniques for managing a holding environment. Stress leading to adaptive work can be encouraged by:

1. *Drawing attention to the tough questions.* U.S. state regulators did this by holding their Keystone summit, which focused attention on changing the traditions threatened by opening local telephone markets to competition.
2. *Bringing conflicts to the surface.* Some policymakers and regulators help bring conflicts to the surface by providing sunset provisions in their policies. A sunset provision is an expiration date for a policy, which makes it more difficult to delay facing tough issues.
3. *Protecting out-of-the-box thinking*. The Nigerian Communications Commission facilitates innovative thinking by engaging the public in open forums on a regular basis. Some regulatory agencies and operators fund university research centers in part to ensure that there are outside sources of new ideas and information.

Actions that lower stress when it becomes too great for adaptive work to be done include:

1. *Addressing technical aspects of the problem or establishing a problem-solving structure.* Both of these actions increase certainty.
2. *Taking tough issues off the table*. When California experienced its energy crisis, several other jurisdictions delayed work on energy market reform to

decrease uncertainty. Some stopped work altogether and pursued other means for improving efficiency in their energy sectors.

Modeling Behavior

Another important tactic for the regulator exercising leadership is to model the behavior that he or she expects from others (Heifetz and Linsky, 2002, pp. 95-98, 108-109). Modeling behavior is important for the regulator for two reasons. First, it shows others that the regulator recognizes what others have to give up for change to occur. Second it shows others that the regulator is also willing to pay the price for change.

The Public Utility Research Center's (PURC) previous Director, Sanford Berg, used this approach in helping me establish myself as PURC's Director in 2004. Berg had been in charge of PURC for approximately 30 years. In a very real sense, the two were mutually defined. When he decided to hand the reins of PURC over to me, he faced a difficult problem: How could he remain involved in PURC's outreach activities that he values so much without undermining my role as director? He accomplished this by modeling the behavior that he expected of others at PURC. He completely stopped making the decisions he used to make. He never refers to how things used to be, never compares his and my management styles except to compliment me, and always accepts every decision made in PURC even when he disagrees. This eased the transition for everyone involved and helped the organization establish new norms.

The need to model behavior takes me back to an earlier point: When the regulator is a player in defining his or her own role, the regulator is doing something that conflicts with the role of an independent regulator. In the extreme, an independent regulator simply implements established laws and policies. We all know that this extreme is unworkable; regulators around the world play policy roles, whether formally or informally. But the more active the regulator is as a player in the policy arena, the more he or she is like a political government official and the more the regulatory agency is like a ministry. This creates a paradox that is hard for the regulator to reconcile.

Ansord Hewitt of the Jamaican OUR faced such a situation in 2004. At a University of West Indies seminar, a student asked him about a telecommunications policy issue in Jamaica. The first thing he said was that the OUR does not set policy,

then he proceeded to provide the questioner with the information she sought. He affected policy and made the OUR a player in the policy arena by providing information on a policy issue. However, he modeled the behavior that he expects of his OUR colleagues and his counterparts in the Jamaican government by honoring the difference between the OUR and the ministry.

Developing Leadership Skills

How might regulators develop the leadership skills they need? One way is to undertake leadership training. Heifetz and Linsky, for example, have developed a teaching technique called case in point that has proven effective in developing leadership skills. Participants engage in workshops that make the class the object of its own study: The class studies its own leadership successes and failures in real time, which provides instant feedback and experience with critical skills such as getting on the balcony and creating a holding environment. This intensive approach to developing leadership skills is especially effective as participants have a regular dialogue with confidants and leadership experts over several months following the initial workshop. A final workshop reinforces the skills that have been learned.

Goleman et al. (2002, pp. 109-112) describe a self-directed approach to enhancing emotional intelligence. Their approach involves working with a confidant who provides candid feedback as the learner establishes goals, assesses his or her own strengths and weaknesses, sets a development plan, and practices the desired skills.

All approaches to leadership development have two things in common. One is that they involve extended practice. The emotional thinking that is key to leadership occurs in the limbic areas of the brain, which can learn only through focused practice, repetition, and feedback. The second thing the approaches to leadership development have in common is that they all involve other people who observe the learner, listen to the learner's perspectives, and ask probing questions that lead to appropriate self-assessment.

Conclusion

I have tried to describe how a person can survive and even thrive while exercising leadership as an independent regulator. I described the difference between the regulator's authority and his or her leadership role. I also talked about the need to get on the balcony, identify the adaptive work that needs to be done, create a holding environment, and model behavior.

I would like to close with a saying attributed to Lao-Tzu: "A leader is best when people barely know that he exists. Of a good leader, when his work is done, people say, we did this ourselves." I believe this describes the challenge for the independent regulator, to exercise leadership that focuses attention on the work rather than on the regulator. Otherwise, his or her position as an independent regulator is compromised.

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Execution and Leadership:
Fulfilling Conflicting Responsibilities in Utility Regulation

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Executive Summary

Utility regulators serve in two potentially conflicting roles: An implementer of policies established by others and someone providing leadership to effect change. The regulator's success will depend upon his or her ability to properly perform these roles at the appropriate times, to manage the pressures that these roles bring to the regulatory system, and to limit how the roles sometimes work at cross purposes.

In the regulator's formal role as an implanter of policies and laws, he or she establishes regulatory rules and processes, and makes regulatory decisions, under authority provided by the country's lawmakers and policymakers. A successful regulator provides the policymakers with the information they need to be confident that their policies are being implemented faithfully and efficiently. However, the regulator should keep in mind that lawmakers and policymakers are subject to political pressures and that the regulator's work can sometimes relieve these pressures or increase them. Understanding the political context of regulation, and understanding what politicians need from regulators in order for them to be successful are critical for the regulator to succeed. A regulator that fails in managing these relationships will find himself or herself micromanaged, second guessed, and without adequate support.

As if the formal work of regulation were not hard enough, the regulator also plays a leadership role due to his or her unique position within the regulatory system. This leadership role helps stakeholders and policymakers find the nexus of three spaces: (1) Knowing and implementing what is possible (the technical work of engineers, financial experts, lawyers, etc.); (2) Identifying values and priorities (the work of politics, dialogues, and negotiation); and (3) Aligning systems (the work of managing people and organizations). Too often, these three spaces do not overlap. For example, sometimes people want and think they should have things that are not achievable; in other words, they do not understand reality. The work of leadership in regulation is mobilizing people to deal with the challenges of aligning what people want with what can be done.

This leadership role can conflict with the formal role because the act of leadership affects the higher authorities and the formal structure. The regulator might find him- or herself challenging the work that lawmakers or policymakers are doing, challenging the information and expertise of the utility, and disappointing customers by providing the bad news that sometimes costs are higher, service is necessarily slower to be delivered, or both, relative to what customers believe they should have.

How can a regulator be successful in such an environment? A regulator should carefully map crucial relationships, know their natures, and build a strong regulatory agency. The regulator should also stir and steer, but always with humility, knowing that by stirring the pot the regulator is surfacing problems that others might think the regulator should leave alone, and that by steering the regulator is providing direction that policymakers and lawmakers properly see as theirs to provide, but which they cannot provide because of their limited information and knowledge.

JEL Codes: D02, D72, D80, L32, L38

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I. Introduction

The minister for public utilities of the small island country got to his point quickly. Looking quizzically at the public utility regulator whose agency was but four years old, the minister asked, "The utility has always kept the lights on. And it is always responsive when I need something. Why do I need you?" Why indeed?

Many regulators around the world have found themselves in similar provocative positions. A utility regulator in the United States was informed by her governor that she would not be reappointed to her position if she failed to vote favorably on a telephone company's proposal. Another U.S. governor announced to the media that he would not reappoint commissioners that voted in favor of an electricity price increase. A regulator from a developing country received a phone call from his prime minister, informing the regulator that his resignation had been accepted. The regulator had not offered his resignation.

Being a utility regulator is dangerous work. Not in the sense that the regulator is at risk of suffering physical harm because of her duties, but because she is in the way when utility managers want policy favors or when politicians want to provide benefits for constituents and powerful special interests. The regulator is also an easy target for the press and the media when they need titillating headlines that induce people to buy newspapers or tune into broadcast news. In a nutshell, the regulator is designated to do a job that by its design provides disappointments to important stakeholders, and these disappointments prompt many stakeholders to target the regulator as the cause of the displeasure.

Making matters even more precarious, the regulator serves two potentially conflicting roles. One is a formal role of carrying out policies through price controls, service quality enforcement, market monitoring and the like. The other is an informal role of influencing policy by advising policymakers, provoking special interests to think more broadly about policy issues and changing economic realities, and providing everyone – even those that oppose the regulator – with credible, understandable information on how the complex system of utility service and regulation works.

In this paper we examine the implications of utility regulators serving these two potentially conflicting roles. We explain that the regulator's success will depend upon her ability to properly perform each role at its appropriate time, to manage the pressures that these roles bring to the regulatory system, and to limit how the roles sometimes work at cross purposes.

In the regulator's formal role as an implanter of policies and laws, she establishes regulatory rules and processes, and makes regulatory decisions, with authority passed down by the country's lawmakers and policymakers. A successful regulator provides the political authorities with the information they need to be confident that their policies are being implemented faithfully and efficiently. However, the regulator should keep in mind that lawmakers and policymakers are subject to political pressures and that the regulator's work can sometimes relieve these pressures or increase them. Understanding the political context of regulation, and understanding what politicians need from regulators in order for politicians to be successful are critical for the regulator to succeed. A regulator

that fails in managing these relationships will find himself or herself micromanaged, second guessed, and without adequate support.

As if the formal work of regulation were not hard enough, the regulator also plays a leadership role due to his or her unique position within the regulatory system. This leadership role helps stakeholders and policymakers find the nexus of three spaces: (1) Knowing and implementing what is possible (the technical work of engineers, financial experts, lawyers, etc.); (2) Identifying values and priorities (the work of politics, dialogues, and negotiation); and (3) Aligning systems (the work of managing people and organizations). Too often, these three spaces do not overlap. For example, sometimes people want and think they should have things that are not achievable; in other words, they do not understand reality. The work of leadership in regulation is mobilizing people to deal with the challenges of aligning what people want with what can be done.

This leadership role can conflict with the formal role because the act of leadership affects the political authorities and the formal structure. The regulator might find herself challenging the work that lawmakers or policymakers are doing, challenging the information and expertise of the utility, and disappointing customers by providing the bad news that sometimes costs are higher, service is necessarily slower to be delivered, or both, relative to what customers believe they should have.

The remainder of this paper is organized as follows. Section II describes the relationships of the policymakers, regulators, operators, and citizens, highlighting the formal role of the regulator and the proper lines of authority, accountability, and communication. The third section the regulator's informal leadership role, including tools and frameworks for regulatory leadership. The final section is the conclusion.

II. Regulatory Authority, Accountability, and Communication

We recently examined the situation of one African country that was experiencing turmoil in its regulatory system. Formed about seven years earlier, the regulatory agency was preparing for its first major review of electricity prices. But a number of inexplicable complications were making the planning difficult. One complication was that the government had approved new electricity generating contracts without the regulatory agency's knowledge. The contract prices were high by international standards, so was the agency expected to simply pass these high prices on to consumers? One of the country's goals was to expand the percentage of households that had electricity, which then stood at about 20 percent. How could the poor be expected to begin using electricity when prices were escalating rapidly? Similarly the government and the nation's state-owned electric utility had reached agreements for new loans, the building of transmission lines to connect with neighboring countries, and the like, without any communication with the regulatory agency. The agency head felt powerless to challenge the prudency of the economic decisions, and was upset that the utility appeared to have gone over his head to preempt regulatory authority by dealing directly with policymakers.

After weeks of effort, the head of the agency was able to secure a meeting with a recently appointed minister for energy, who reported to a senior minister who oversaw all infrastructures. This meeting was held in the context of a three-day workshop for ministry, regulatory agency, and operator executives and staff on the basics of utility regulation and utility pricing. The senior minister gave opening comments at the workshop, but then left to attend to other matters. The newly appointed minister and her staff stayed.

During the first hours of the workshop, guest speakers described the role of utility regulators, including how regulators set prices, examine investment decisions and contracts, and establish and enforce performance targets. The speakers also drew distinctions between the government's policymaking role and the regulator's implementation role. In the question and answer periods, the ministry staff asked a number of questions and expressed surprise that the work of implementing policy was to be done by the regulatory agency. The ministry staff knew of the agency, but had little knowledge of its function, and so had been working directly with the utility on policies and implementation. Indeed the ministers and ministry staff that had responsibility for utility issues had never met anyone from the regulatory agency: This workshop was the first such meeting.

As the discussion progressed about the roles of ministries and the roles of the regulator, the minister for energy became uneasy and pointedly asked the regulator: "How can I simply sit back and hope that you carry out my policies correctly? My staff knows what I want and I can talk directly with the utility. Why shouldn't they implement my policies? Why should I trust an agency I know little about and over whom I have little control?"

She had asked the most critical questions about authority, accountability, and trust upon which regulatory institutions are to be built: What is the source of the minister's authority and what authority is reserved for the regulatory agency? How can she hold the regulator accountable for his work and the performance of his agency? What relationships and procedures should be in place so that the ministry and the regulator can trust each other?

What emerged from the discussion was a model, illustrated in Figure 1, for relationships between policy makers, regulators and their agencies, operators, and customers. The figure shows that authority runs vertically beginning with the citizens. Policy makers act as representatives of citizens, much as a board of directors of a private company serves as representatives of shareholders. Policymakers identify policy priorities, such as the economics of prices, importance of service quality, the significance of externalities, and the import of service availability. Policymakers communicate these priorities to head(s) of regulatory agency, who the policymakers also hire. This authorization is done differently in different jurisdictions and may take the form of statutes, policy statements, etc. The agency head(s) are then responsible for developing the agency and its staff, establishing regulatory rules and procedures, and making decisions on prices, service quality, and the like in an effort to achieve the policy priorities. It is the utility's responsibility to make efficiency business management decisions within the boundaries and frameworks set by the regulator. Text Box 1 elaborates on this authority framework.

Text Box 1. Authority Roles

Authority scope of policymakers

- *Reflect on outcomes*
- *Decide what the system supposed to produce*
- *Consider why it does or why does not perform as desired*
- *Respect citizen expectations*
- *Balance the long run and short run*
- *Select agency head(s)*
- *Define and refine the vision for the utility services*
- *Adapt policies to evolving circumstances while recognizing needs for long-lived investments*

Authority scope of the regulatory agency

- *Establish prices, service standards, incentives and market rules*
- *Enforce decisions*
- *Reflect on utility outcomes*
- *Adjust rules, procedures, and decisions as needed*

Authority scope of the operator

- *Determine means to meet financial goals subject to regulatory decisions*

Accountability in Figure 1 runs vertically from the bottom up, beginning with the operator. Both formal and informal methods are used to achieve accountability. Through enforcement actions and the application of other incentives, the regulatory formally holds the operator accountable for following the regulator's rules and decisions. In turn policy makers formally hold the agency head(s) accountable for achieving policy goals through their reappointment, budgetary, and law-making functions. In both instances, informal processes, such as meetings, public dialogues and workshops, public statements, interviews, and the like are used to hold persons and organizations accountable with a lower level of tension and perhaps a lower cost than could be caused with more formal processes.

The accountability relationship between citizens and politicians is different from the other accountability relationships because the politicians serve as individual representatives of the citizens rather than as an organization serving the citizens. Citizens formally hold politicians accountable through elections, but also informally hold politicians accountable through pressures or endorsements expressed through the media, public forums, and the like.

Text Box 2 provides additional details on the accountability mechanisms.

The discussion with the minister and regulator concluded with an agreement to hold another meeting to detail the reports that the regulator would provide to the minister on performance of the sector and the agency, and a schedule and format for ministry-regulatory agency discussions about the reports, external events, and future directions.

Later in the workshop and after the minister had left, the agency head and the head of the power utility had a frank discussion about frictions between the two organizations. The details of the discussion are unimportant, but the basic theme is important. The two leaders of their organizations found numerous flaws in the conduct of each other's organization, including lack of communication, surprising announcements, and unexplained changes in positions and decisions. Fortunately the leaders

resisted the temptation to simply debate and openly explored the pressures that each was under and the sources of those pressures. To their surprise, they discovered that each truly wanted to cooperate with the other, but that pressures and demands from politicians in the country led each to appear to act in bad faith towards the other. In a sense, whether deliberately or accidently, the politicians were playing the operator and the regulator against each other, with the consequence of diminished regulator and operator performance for the citizens of the country.

Text Box 2. Accountability Mechanisms

Accountability for Operators: Rewarded or punished by regulator based on

- *Costs and price performance*
- *Investment and service availability*
- *Service quality*
- *Externalities*

Accountability for Regulators: Pressures and tenure impacted by

- *Affordability of prices*
- *Effectiveness of service quality and availability*
- *Management and transparency of regulatory process*
- *Legitimacy with public*
- *Credibility with operators, investors, and politicians*
- *Legitimacy with public*

What was happening at least in part to the two organizations was a confusion of government roles at the policy level. On one hand there was a sector policy for development, system expansion, and affordable prices. There was also an economic policy that sought to bring capital into the country through contracts with donor organizations and making deals with foreign entities seeking to make strategic investments in the country. There were also political interests that sought to be seen as providing value to important constituents. Figure 2 illustrates a governance framework that helps resolve the sector policy and economic policy conflicts by formally dividing them at the policy level so that the regulator can make regulatory decisions taking the financial conditions and abilities of the firm as given, just as would happen if the firm were privately owned, and the operator could make financial and operating decisions to serve the interests of its owners, subject to the regulatory rules and mechanisms, just as a privately-owned operator would. A first step for effecting such a model is a political separation between the overseers of sector policy from the overseers of the financial performance of the firm.

PLACE FIGURE 2 ABOUT HERE

The heads of the two organizations agreed that their next step should be a workshop for political leaders so that they could better understand the sector and its regulation, in the hope that such knowledge combined with further frank discussions would lead to less political involvement in the details of the sector and its regulation.

Unfortunately, although the ministry, regulatory agency, and operator made good progress and made bold steps, they were unable to put their plan into action. As too often happens, an upcoming national election and some personal missteps by the agency head resulted in a change in upper management at the regulatory agency and further politicization of the sector. The new leaders have not yet tried to pick up where their predecessors had left off.

The conclusion of this case study in how a regulatory practices leadership in his formal role demonstrates the importance of being able to anticipate political changes and informally practice leadership to ensure the continuity of important initiatives. These issues are the focus of our next section.

III. Regulatory Leadership in a Political Environment

Figure 3 illustrates the informal leadership role of a regulator. The three circles represent the spheres of what is possible given the realities of law, economics, engineering, and the like; what people would like to do as expressed in their political involvement and public forums; and how things can get done, given their abilities to manage complex systems, the relationships that exist, etc. Only work that occurs at the nexus of these three spheres is sustainable. But the professionals in each sphere are not necessarily well informed about where the other spheres lie, and so may be unwilling to make the professional concessions needed to find the nexus. When the issues are about utilities, the regulator can be in a unique position to help find that nexus. Not that the regulator sees everything that others do not – indeed the regulator has her own blinders – but because of her role as head of an independent regulatory agency, she can be less of a stakeholder to a particular view and could be the first to sense when the system isn't working. This allows her a different credibility and a balcony view (Heifetz 1994) that can be used to raise difficult questions and challenge conventional wisdom. But acting on this can conflict with her formal regulatory role because she could be crossing a line into a space that politicians see as theirs. And that can be dangerous.

A politician's world is different from that of anyone else.[1] To get a glimpse into what it is like, we describe the recent experience of a prominent legislative leader whose party was winning majorities in both legislative chambers and that would also control the executive branch. Addressing a national audience of local politicians and business leaders, who had assembled for a summit on broadband policy for the country in the hope of being able to develop ideas that could break what appeared to be a partisan gridlock on several major issues, he was asked a question that seemed innocent enough. But his answer was startling in its bluntness and condescension. The questioner asked how the speaker and his party planned to work with the party that was out of power to develop bipartisan policies. The politician's response was quick and confident, indicating that he had thought about this. "We don't have to," he said. "We have won." His confidence proved to be misplaced. Over the next few years his party lost several elections, including crucial seats in the legislature, and was unable to move forward its primary policy agendas except with very narrow margins in the legislature, and even then there were numerous public protests against the policy initiatives.

The politician's response to the questioner and the difficulties his party faced illustrate a paradox in political life: Political parties elect their politicians to go and fight the bad guys, namely the politicians of the other party. It is tempting for a politician in party A to pander to this view in how he

[1] We would like to acknowledge the advice of Marty Linksy in providing insights into the politician's world.

pursues his agenda. But there are problems with this approach. One problem is that a number of citizens of the country view him and the politicians of party A as the bad guys, and when these citizens see party A carrying out what they see as a bad-guy agenda, these citizens get up in arms. Another problem is that in many political systems the party in power often needs votes from other parties to pass legislation. So a politician voted into office to fight the bad guys must work with them to make progress on important and controversial issues. And when his political supporters see him working with those they consider to be the villains, he risks becoming one of them.

What does this have to do with utility regulators? Regulators work in a political context, as Figure 4 illustrates. Both formally and informally, the regulator is involved in many relationships that she must manage well to be successful. In each relationship, the stakeholder wants something from the regulator and the regulator wants something from the stakeholder. For example, she has a two-way relationship with newspapers. The newspaper needs to attract readers to survive and wants at least two things from the regulator. One is information that readers can use to better their lives, such as tips on saving on utility bills or information on changes in telephone numbers. The regulator wants the newspaper to distribute this information because the regulator is trying to get such information into the hands of the public. The second thing a newspaper wants from the regulator is controversy because that sells papers. Generally this is not something that the regulator wants to provide to the newspaper, but it is sometimes unavoidable. What the regulator does want in this context is for the newspaper to distribute the regulator's message. For example, it might be that electricity prices are going to increase. The newspaper wants to focus on the controversy, but the regulator wants the substantive reasons for and the benefits of the price increase to show up in the story. To be effective, the regulator has to frame these messages in ways that makes them useful for the news story from the newspaper's perspective, which means that they add to the story in a way that makes people want to become readers of the paper.

Each of the regulator's relationships has this nature of a two-way transaction, or should if the regulator is to be successful. This is true even of the relationship with the politician. To understand what the politician wants from the regulator, and what the regulator wants from the politician, the regulator needs to understand the politician's world. As Figure 5 illustrates, the politician also lives in a world of two-way relationships, which the politician must manage well in order to keep his job (i.e., win the next election) and one of these relationships is with the regulator.

What is the politician's world like? As we described above, the politician has a relationship with political supporters who want the politician to fight the bad guys. For obvious reasons, it would be problematic for the regulator to become an instrument in that fight, but it has happened. For example, in the case of the Maryland Public Service Commission several years ago, the new governor of the state was the first Republican to hold the office in over 20 years (Jamison et al. 2006). The Democrat-controlled legislature wanted an opportunity to make him look bad and thus lose the next election. The Commission naively stepped into the situation when it was faced with the unavoidable task of approving a 72% increase in electricity prices. Rather than spend time with the public and media, the regulator spent time with the governor and the industry trying to work out transition deals to soften the blow. The legislature made an issue of the meetings, many of which were behind closed doors, and the media

was more than happy to report every accusation. On a theme of cleaning up corruption, the legislature voted to disband the Commission and replace it with an organization that the bad-guy governor had not corrupted.

There are other features of the politician's world that regulators should note. One is that the world of a politician is flat relative to most people's experiences working in organizations. For most of us, our workplace is hierarchical and our bosses sanction or authorize our work. This sanctioning feature is largely missing in most politicians' worlds. Most politicians compete with other politicians for power, and the power struggle is both open and expected. Even in situations where a party in power has a prime minister who wields significant power, the power exists only as long as he is able to serve the needs of the other politicians who agree to his having the power. When he loses their favor, he loses his power.

What do these features of non-hierarchy and open ambition mean for the regulator? The lack of hierarchy means that the regulator, or at least the regulatory agency, must have workable relationships with many politicians. It is insufficient to have relationships only with the politicians currently in positions of great influence because the distribution of power across politicians is volatile. This need for multiple political relationships can be difficult for regulators serving in systems where their appointments come about because of associations with particular powerful politicians. An example of this is the United States where commissioners in federal regulatory agencies are often appointed because of associations with influential senators or congressmen. To formulate the broad range of political relationships that the regulatory agency must have to be effective, a regulator in an agency with a single agency head must commit some disloyalty to her political sponsor to establish relationships with some of the bad guys. A regulator in a commission context is in some sense a less complicated situation because different commissioners can have different political relationships, giving the commission itself a wide range of fruitful dealings with politicians. But this creates other difficulties because it creates the opportunity for the outside political divides and suspicions to map themselves into the agency, causing frictions between commissioners. This happened in a U.S. federal agency several years ago. It was well known that the chairman was a long-time, personal friend of the Vice President. Other commissioners openly accused him of hiding information and controlling the staff resources in a way that served the agenda of the administration at the time, and that denied other commissioners adequate opportunities to influence commission decisions. We are not passing judgment on whether or not the acquisitions were correct. Rather our point is that the difficult climate within the commission was enabled by the diversity of political relationships across the commissioners, and perhaps enhanced by the closeness of some of the associations. A successful regulator needs to be able to navigate such waters by being close enough to politicians to be on friendly terms, but not so close as to be unable to serve at arms length.

How can regulators be effective in an environment where politicians are openly ambitious? The keys to success here in some ways contradict the keys to success implied by the non-hierarchical structure of politics. A politician has at his disposal many things that he may use to promote his career, include controversies that call attention to him and that present him to the public as a champion for constituents' interests. For example, the current economic crises in Europe has challenged the careers of politicians who have promoted the idea that government benefits to constituents must decrease to

stabilize economies and promote growth. Parallel with this, the stock of politicians who point to people outside of their own country as the villains has risen. A successful regulator will keep these ambitions at arms length, recognizing that they exist, but not becoming a tool for the ambition if at all possible. For example, one utility regulator in the Caribbean openly developed professional relationships with politicians in the opposition party to diminish the chances of his agency becoming an item of controversy for the opposition party. This was successful because when the opposition party came to power because it largely did not interfere with the regulatory agency.

Furthermore, like most of us, the politician wants to keep his job, which means winning the next election. There are politicians who are willing to put their jobs at risk for a cause or because of principle – the U.S. Senators of which former U.S. President John Kennedy wrote about in his book "Profiles in Courage" are examples – but even politicians who stand on principle keep their jobs only if they make choices that win votes, so the behaviors of successful politicians are similar across the political spectrum, even if the politicians differ in their character and motivations.

How does this need for politicians to survive elections impact the regulator? The regulator should be aware of which regulatory issues could become political issues and seek to diminish the heat that the issues might cause. Providing the media, the public, and the industry with clear and unbiased information ahead of the issue becoming controversial might do this. The regulator should also avoid hiding or being seen as hiding information as secrecy is an opportunity for opponents to conjecture about what the missing information says, and provides the media with daily stories about speculations, leaks, and the like. The regulator should also avoid surprising politicians currently in power with unpleasant news that they have not prepared for. The surprises might cost them politically, and cause the politicians to be less trustful of the regulator.

As these lessons imply, it is imperative that the regulator build trust with the stakeholders in Figure 4. The two-way dealings are not always simultaneous; so one party in giving something will be guarded if he doubts that the other will be faithful to the implied quid pro quo. Trust is built through repeated performance.

IV. Conclusion

In this paper we have examined the formal and informal roles of the regulator, and examined how they can come into conflict. In a sense this complexity comes from the fact that an independent regulatory agency is a creation of a political process that, because of long-term policy goals, has agreed to restrain itself by the agency's independence, but that sometimes finds it difficult or maybe even impossible to satisfy short-term political needs without infringing upon the agency's independence. It is the regulator's leadership skills – not her talents as a lawyer, engineer, economist, etc. – that she must call upon to successfully sustain the regulatory system.

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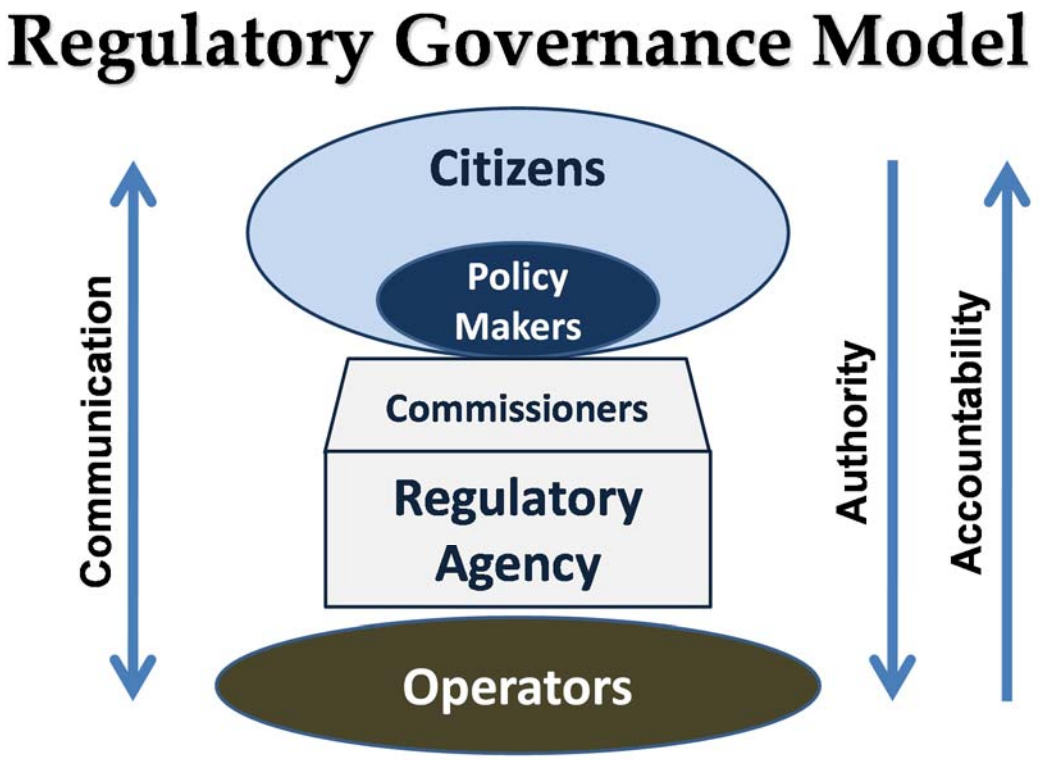
Figure 1. Regulatory Governance Model



Adapted from Brown (2006).

Figure 2. Clarifying Roles

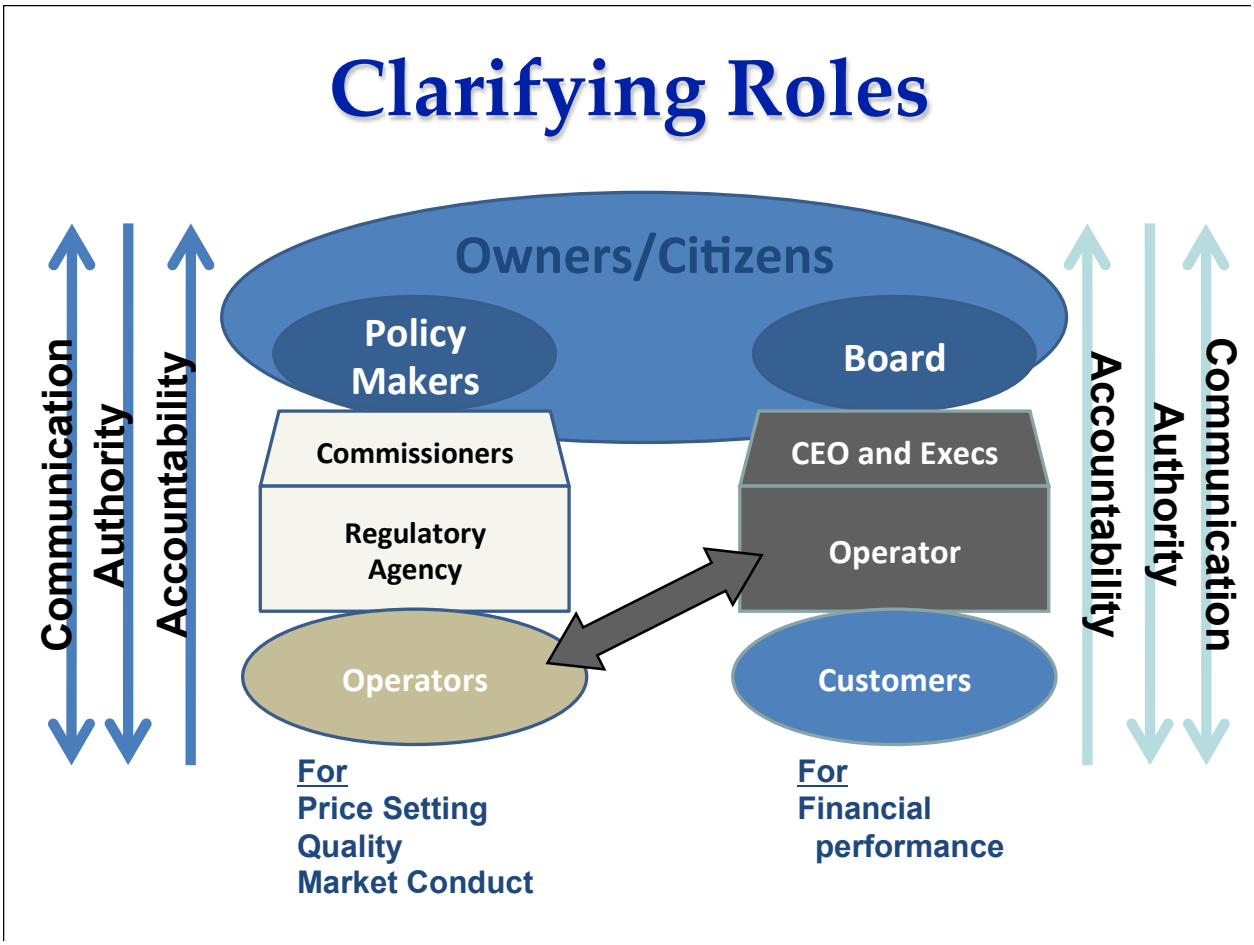
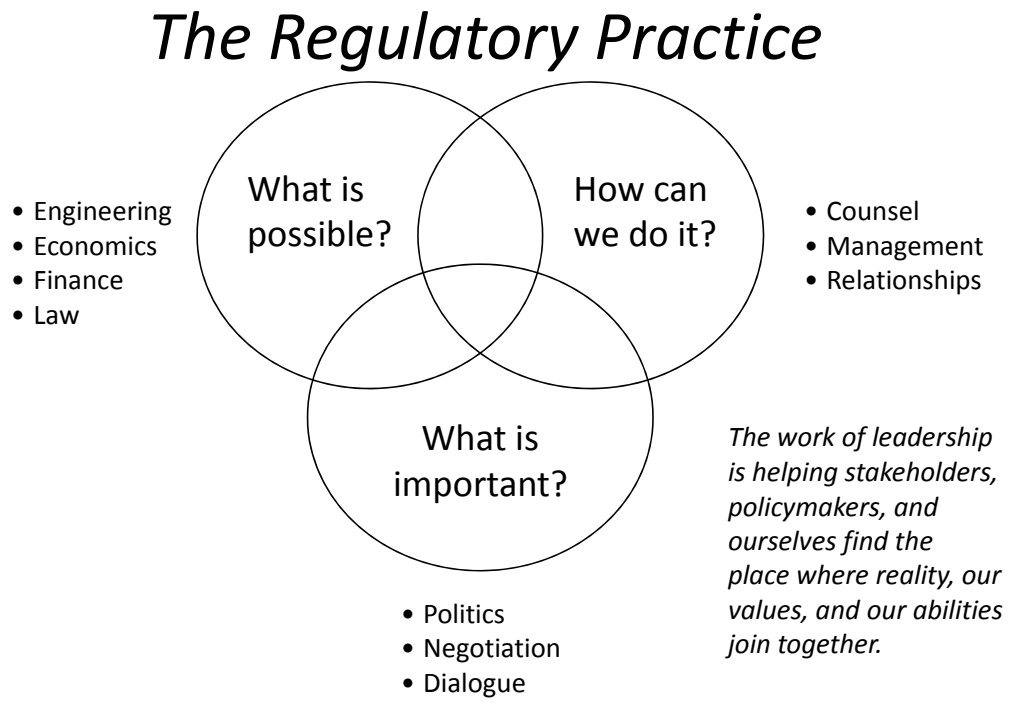


Figure 3. The Regulatory Practice



Adapted from Jamison and Castaneda (2011).

Figure 4. Regulator's Political Context

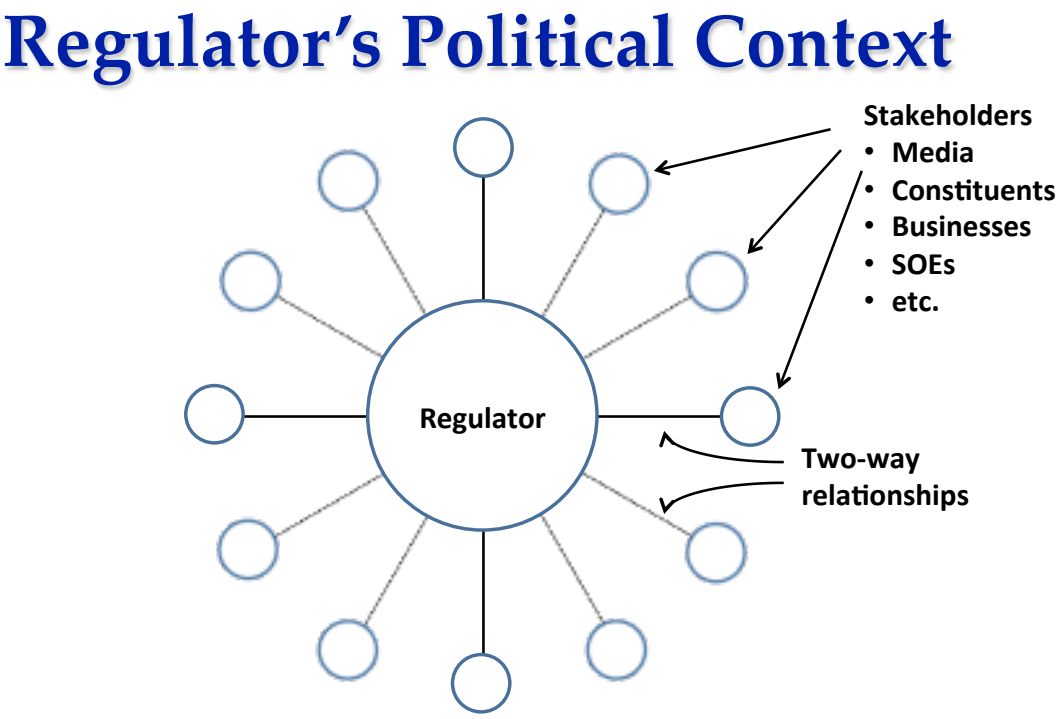
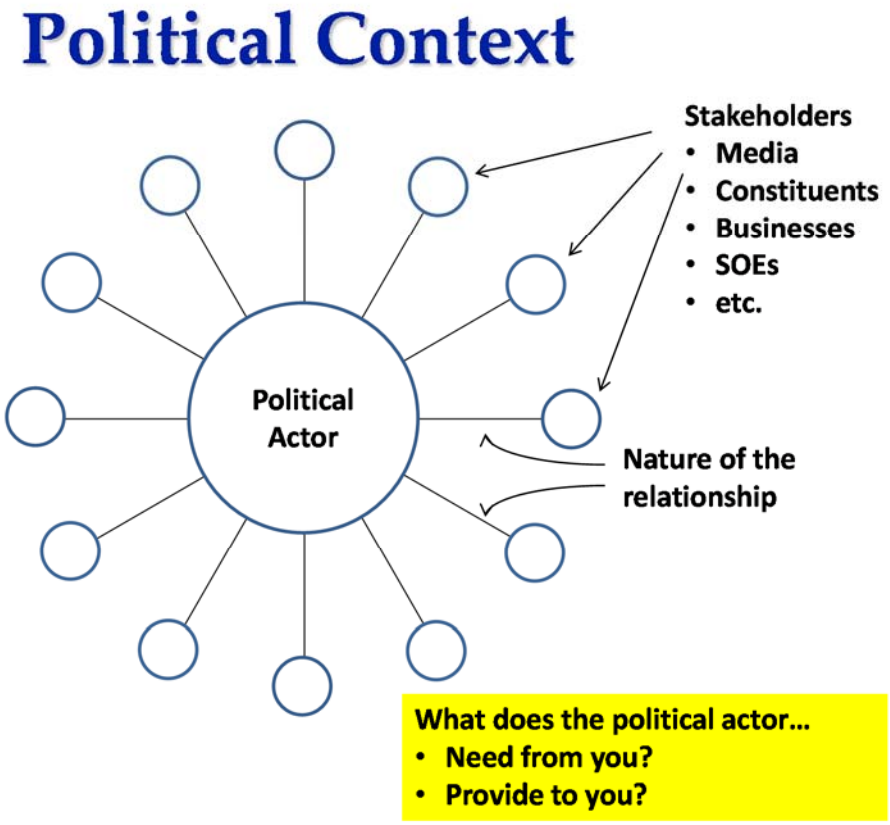


Figure 5. Politician's Context



Reset for Regulation and Utilities:

Leadership for a Time of Constant Change

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Abstract

This paper describes a process for a reset of regulation and utilities in today's environment of constant change. "Reset" means to develop fresh perspectives and knowledge about the future, all the while holding in trust the wisdom of the past. The paper examines three juxtapositions: (1) Focus on next practices, not best practices; (2) Emphasize learning the why of how things work and not just the what; and (3) Provide leadership rather than try to lead.

Keywords: Leadership; Change; Utilities; Regulation

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Introduction

There are no easy answers for today's utilities and their regulators. Climate change policy for the United States is on the shelf at least for now, but the financial risks continue to loom large for utilities that fail in their political forecasts. Regulators, policy makers, and utilities are all trying to anticipate the future of smart grid, but that future depends upon the policies and regulations themselves, upon consumer response, and upon future technologies. Politics, customer responses and technologies are impossible to anticipate with much certainty, but getting them right is crucial: Recall how Western Union famously dismissed the telephones as mere toys? And the once dominant Microsoft has been seriously wounded because it wasn't ready for the Internet and cloud computing.

New policy initiatives, changing technologies, blurring boundaries between regulation and politics, and volatile economics and markets hold the potential to drive fundamental changes in the electricity industry and its regulation. Many traditions seem to be up for grabs: determinants of profit, regulatory independence, and system control to name a few. Are the examples of the Maryland legislature disbanding the Public Service Commission, or a former Florida governor announcing that commission rate decisions will determine his commissioner appointments anomalies or indicators of things to come?

With this much turmoil, how should the industry and its regulators think about their futures? When the future is unknown our natural tendency is to look for fixes or for someone who has the answer. That is why there are so many conferences where the brightest minds present their solutions or bring the latest news. That is also why people focus on statements from political leaders, business leaders, and expert consultants for guidance.

But what if the best among us don't have the answers, even if they think they do? Or maybe they don't even know the right questions? How can we reset stakeholders' expectations and help our own organizations accept that context had changed and that the strategies that made us successful in the past could be largely irrelevant for the future? How can a system tightly controlled by laws, legal precedence, sunk investments, regulatory processes and traditions, and the like be flexible enough to step back and invest in learning?

It isn't easy, but it is doable. Consider the experience several years ago a group of Caribbean utility regulators, who gathered in Jamaica to discuss how they might support each other as they strived to establish utility reforms, build their new regulatory agencies, and move towards greater regulatory independence. The outcome of their meeting was the Organisation of Caribbean Utility Regulators (OOCUR). The regulators did not know how OOCUR would evolve or what it would become, but they knew they had a common purpose and took the future one step at a time, which enabled them to form an effective regulatory alliance.

In uncertain times it is more important to ask the right questions (and risk getting wrong answers) than to get the right answers to the wrong questions. Rather than ask, "Is this smart grid investment prudent?" we should ask, "Does this investment teach us something that we need to know?" Rather

than ask, "Does this regulatory decision favor consumers or investors?" we should ask, "What options for the future does this decision create or foreclose?"

This is a reset of regulation and of utilities. "Reset" means that we develop fresh perspectives and knowledge about the future, all the while holding in trust the wisdom of the past. Reset does not mean that we engage in a grandiose redesign of utilities or regulation. To legitimately do this would require a belief that we know the future. Nor does reset suggest that everyone should reboot and erase institutional memory. Rather it means that we find smart, manageable experiments based on due diligence; systematically learn from our own experiments, share results with others, and learn from others' efforts; and then decide what to try next. No one is the leader, but everyone practices leadership.

This paper explores three juxtapositions to describe how to engage in reset. The first is that we should focus on next practices, not best practices.[1] Best practice is about imitation and is important for following in someone else's footsteps. A focus on next practice is needed when we are going into areas where no one has gone before.

The second juxtaposition contrasts the question of "Why?" and the question of "What?"[2] When we ask ourselves "What should we do next?" we emphasize practice. But the practice needs a foundation of basic principles and values. So we should ask ourselves "Why have certain practices or experiments been successful or unsuccessful?" so that we engage in an analysis of our underlying priorities and of our context. This allows us to learn, keep what is important, and discard what holds us back. The third juxtaposition is between leading and leadership. A leader provides direction, which is proper when the right direction is known with a high probability. In contrast leadership mobilizes people to tackle difficult and often ambiguous problems and circumstances.[3]

Next Practice, Not Best Practice

Utility regulation is probably the most technically complex function of government. Properly done, regulation involves the interdisciplinary efforts of financial analysts, accountants, lawyers, engineers, economists, public relations experts, and administrators. This technical work is the bread and butter of regulation.[4] For example, the Bahamas Utility Regulation and Competition Authority is developing guidelines for calculating the net cost of universal service obligations. The Barbados Fair Trading

[1] Heifetz, Grashow, and Linsky (2009b).

[2] Collins (2009), pp. 36-42.

[3] Heifetz (1994), p. 15.

[4] Jamison, Rowe, and Perlman (2005).

Commission has developed regulations for a renewable energy rider. The Jamaican Office of Utilities Regulation is developed a tracking system to ensure success of the country's renewable energy initiative.[5]

In performing their work, regulatory agencies often imitate the practices of other agencies in addition to following expert analysis. A former PURC student, Troy Quast, researched this issue in his dissertation and found that regulatory decisions of small U.S. states are heavily influenced by the decisions of the largest states in their respective regions even when the small states' circumstances are dissimilar to the large state's circumstances.[6] Similarly, a spot check of regulatory training programs and webinars shows that many emphasize best practices and experiences of practicing or former regulators.

Imitation is legitimate when we find ourselves in circumstances familiar to others, but can hurt us when we find ourselves in novel situations. Situations that are familiar present what are called technical challenges, which are problems where there is general agreement on the existence and nature of the problem, the alternative solutions are clear, and work can be done by subject matter experts, such as regulatory economists, lawyers, and accountants. In contrast, novel experiences present adaptive challenges, which are those that arise when fundamental changes in a group's (or an individual's) environment call for rethinking basic goals and strategies.[7]

How can we tell when circumstances are familiar or when they are novel? This is difficult and the tendency is to misidentify novel experiences as familiar ones.[8] But there are signals that alert us. One signal is stakeholders disagreeing on whether there is a problem or on the nature of the problem. Consider what happened in New Orleans when it was struck by Hurricane Katrina. The possible consequences of such as storm had been known for some time, but political priorities favored putting taxpayer money into projects other than building up the city's dikes. When the storm struck many people remained in denial about the consequences: Some residents refused to seek safety and some politicians let jurisdictional boundaries and face-saving be higher priorities than quick and efficient responses to the crisis.

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[5] See URCA web site http://www.urcabahamas.bs/consultations.php?cmd=view&article=365, accessed September 29, 2014; OUR web site http://www.our.org.jm/ourweb/media/press-releases/electricity/07-2014/media-release-renewable-energy-projects-trackjuly-15-2014, accessed September 29, 2014; and FTC web site http://www.ftc.gov.bb/index.php?option=com_content&task=view&id=275&Itemid=2, accessed September 29, 2014.

[6] Quast (2005).

[7] Heifetz (1994), pp. 3-9, 35.

[8] Heifetz and Linsky (2002), p. 14.

Other signals indicating adaptive challenges include stakeholders' embracing policy options that align with long held beliefs and biases rather than with the problem at hand, and refusing to change behavior and implement policies that have been agreed upon.[9] Consider the experience of one African country that created a multi-sector utility commission at the prompting from the World Bank. It took over a year to begin hiring employees and the country failed to adopt sector laws that would give the agency clear policy direction and authority. In the United States, discussions of aging workforce for utilities often focus on transferring knowledge and preserving traditions and values. In contrast one forward looking utility treated the imminent surge in retirements as an opportunity to engage in a difficult conversation about long-established beliefs and behaviors that should retire as well.

Addressing adaptive challenges requires experimentation and an active engagement in surfacing conflicts and gaps between the beliefs and priorities people hold on the one hand, and the realities they face on the other.[10] The number of hurricanes in 2004 and 2005 in Florida triggered cries for increased undergrounding of lines, more aggressive rules for maintenance and system recovery, and the like. But rather than jumping into sweeping policy changes, the Florida Public Service Commission, the utilities, and PURC engaged in a dialogue about what really happened during the hurricanes. This led to a research program that created new modeling capabilities and new methods for learning from severe weather events so that stakeholders could engage in thoughtful discussions about their issues and decisions could be fact-based.

This experience illustrates the importance of adaptive learning, which is the learning that takes place when new experiences help us close the gap between what we believe is true and what is actually true.[11] It also illustrates the multilateral nature of the learning because regulators, industry representatives, and independent researchers from academia all contributed to the process, and stakeholders could actively engage in the discussion. For effective co-evolution of regulators, utilities, etc. to occur, the system must have decentralized control, outside perspectives, multiple decision makers, experiments, and deliberate sharing of ideas and debriefing on trials.[12]

Without deliberate effort to suspend traditional practices and controls, we can find ourselves stuck. In Australia, the incumbent telecommunications company, Telstra, took an unyielding, oppositional stance towards the sector regulator with respect to measuring service costs and towards the government with respect to the government's desire for a national broadband network. The result was regulatory paralysis and a ruling that Telstra could not participate in bidding on providing the broadband network. In contrast, the history of electricity industry restructuring is a case study in multilateral learning. In the

[9] Jamison (2006).

[10] Heifetz (1994), p. 22.

[11] Heifetz (1994), pp. 244-245; North (2005), pp. 66-67.

[12] Jamison (2009).

early 1980s Chile accepted the reality that state-owned monopolies were not going to provide the power the country needed and led the world in electricity reforms. The country made mistakes that it, other Latin American countries, and several European countries learned from. These countries engaged in their own reforms and, for the most part, avoided repeating Chile's mistakes as they experimented with different reform models. The United States learned as well, but as evidenced by the California electricity crisis, did not learn well enough and created a new set of mistakes that others observed and learned from.[13]

Not what, but why

Emphasizing next practice over best practice is important in times of change because the practices that made regulatory agencies successful in the past may work against them for the future because the context has changed. Recall the example of the Maryland Public Service Commission. The Commission treated Constellation's over 70 percent price increase as a technical issue, focusing on revenue requirement, rate design, and transition issues. It failed to respond adequately to the political context and effects of its staff being unhappy with the treatment of some of its senior members. The agency and the state politicians missed part of the essential DNA of utility regulation, namely the productive tension between short term political will and long term political aspirations.[14]

To make sure that we understand the essential characteristics and features of our institutions and practices, we must be students of our work.[15] Consider how Jim Collins, author of the Amazon best seller From Good to Great describes the importance of a leader being a continual learner. He tells the story of a small, unknown American company in the 1950s that decided to emphasize discount retailing in small, rural towns. The company's visionary leader emphasized partnership with his people, everyday low prices, and accountability. The company decimated its Main Street rivals and competed effectively against its primary competitor, K-Mart, a large discount retailer that was at this time an industry leader. The company's stock value increased 6000 percent from 1970 through 1985 and it became one of the country's largest discount retailers.

Now if you are thinking that Collins is describing Wal-Mart, you are wrong. He is talking about Ames Department Stores, a company that no longer exists. Why did Ames go out of business while Wal-Mart, following almost an identical business plan, rose to number one in the Fortune 500? Collins says a big part of the answer lies in Wal-Mart's founder's self-deprecating and inquisitive nature. Sam Walton famously interviewed his rivals' employees, taking copious notes on a yellow pad, and was well known

[13] Jamison (2009).

[14] The DNA metaphor in a reset situation is developed and explained in Heifetz, Grashow, and Linsky (2009b).

[15] Collins (2009), p. 39.

for asking more questions than he answered when visited by foreign business leaders. This passion for knowing why things work, not just what works, was instrumental in propelling Wal-Mart to the top.[16]

Small differences can make all the difference because the "process of adaptation is at least as much a process of conservation as it is of reinvention."[17] What do we need to conserve? Modern utility regulation is about controlling market power, providing stability and continuity, and protecting investment from opportunism,[18] but these might not be the essential DNA. Controlling market power is really about ensuring wide spread service availability and affordability because utility services are considered to be affected with the public interest.[19] Stability and continuity are about controlling risk, as is containing opportunism. Are all aspects of utility services affected with the public interest? Because the expectation of profit is a key driver of innovation, and innovation is an essential element of adaptation, is controlling market power still the appropriate regulatory mechanism, or can we obtain service availability and affordability in another way?

The importance of knowing an organization's core DNA is illustrated by the experience of one of the authors of this paper, Araceli, with a company several years ago. The company hired a new regional marketing manager whose work would complement that of another regional manager in a different part of the country. This plan was clearly spelled out to both managers, but once the new manager was hired, the company marginalized the incumbent manager, who happened to be a single mother with two children, by shifting responsibilities to the new manager. The changes appeared unjustified by any changes in the market or by the performance of the incumbent manager. Interpreting this as a signal that the company's underlying values were in conflict with her own, Araceli ended her association with the company. Her reading of the company's core values was later confirmed when the executives were arrested and charged with corruption, although on issues unrelated to the manager positions.

Not leading, but leadership: The sweet spot

Ensuring that we intelligently move from best practices to next practices, in part by continually investigating the why question and not just the what question, takes us to the third juxtaposition, namely that we should focus not on leading but on leadership. However, before exploring that further, it is useful to lay a foundation by explaining a model used at the PURC to think about analysis, politics, leading, and leadership, illustrated in Figure 1.

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[16] Collins (2009), pp. 39-41.

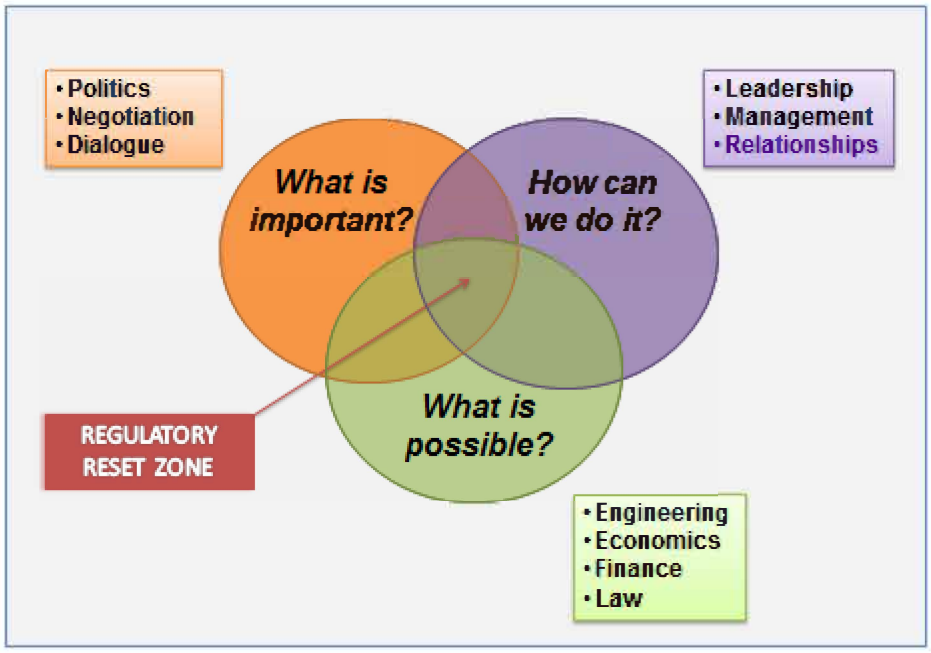
[17] Heifetz, Grashow, and Linsky, (2009b).

[18] Jamison (2009).

[19] Trebing (1987).

Figure 1 shows three basic questions involved in utilities policy. The foundational question is: What is possible? This is the realm of economics, engineering, law, and the like. Within these disciplines, experts tell us about cash flow requirements, costs of financing, legal rights and responsibilities, and what can and cannot be done with current technologies. The positive research[20] in the physical and social sciences are the major contributors to this foundation, but it is also the bread and butter of regulatory work. This is why many political scientists refer to expert regulatory agencies as a fourth branch of government, namely that the agencies are so highly expert that they often receive a higher level of respect from the population, from academicians, and from top level consultants than do the political branches of government.[21]

Figure 1. Framework for Basic Questions



A second basic question is: What is important? This is typically the realm of politics where through our elections and other political activities we establish visions and priorities for our nations and other levels of government. Research in this field is normative because it advocates goals, objectives, and

[20] Positive research describes how things work or what things are. The research by Quast (2005) described earlier is an example of positive research. In contrast, normative research describes what the author believes should be. It is prescriptive. The immediate paper is normative because it describes what the authors believe regulators and others should do to achieve particular objectives.

[21] See for example Vilbert (2007).

instruments. The last basic question is: How can we do it? This question addresses many of the human processes that it takes to move from "What is possible?" and "What is important?" into accomplishment. This work is the domain of disciplines such as management and administration, including the act of leading people to perform the work of an organization.

Figure 1 shows an overlap of the three questions, implying that there is a core, or a sweet spot or regulatory reset zone, where what we would like to achieve is technically feasible and can be worked through the human processes. But what if this overlap does not exist or what if it is difficult to find? Consider PURC's experience assisting in the development of an event where scientists and policy makers discussed how to improve the scientific basis for energy policy. One politician gave the disturbing answer that basing policy positions on scientific evidence is generally ineffective because scientific input is too complex to be communicated and made relevant in the few moments that policy makers have with their constituents. From one perspective this is a communication issue, but it may also be based on issues of prior beliefs, embedded values, and lack of trust: We are not caused by our history -- our industries, policy successes and failures, and institutions -- but these are the lenses by which we view our future. Whatever the reasons, if facts are left out of the policy process the resulting policies are little more than fantasies and lead to greater dysfunction, frustration, and conflict. Furthermore the scientific work that is intended to influence policy occurs in a vacuum, resulting in research that is increasingly irrelevant to people's priorities and everyday lives. So instead of finding the sweet spot where the three circles intersect, we find ourselves with disconnect.

Leadership is needed to overcome the disconnect that occurs when the core does not exist or is difficult to locate. In contrast to leading, which is the process of providing direction for a group,[22] leadership is about mobilizing people to identify disconnects, adapt the group to new situations, and determine direction. Oftentimes the person providing leadership is not the one with formal authority. In fact, lacking formal authority can be an advantage for a person providing leadership because he/she does not have the conflicting burden of trying to keep the organization calm and functioning while promoting the disruptive work of exploring disconnects.[23]

This issue of providing leadership without formal authority has implications for the opportunities for regulatory agencies to provide leadership. Other stakeholders in the policy making process – politicians, businesses, consumer groups, and the like – have constituencies that they serve and, to stay in the game, must maintain a certain loyalty with those supporters.[24] This is less true of independent regulatory agencies because their independence means that their loyalties should be to the regulatory process. The independence gives the regulator greater latitude to raise issues that cause conflict

[22] See for example Kotter (1996).

[23] Heifetz (1994), pp. 184-188.

[24] Heifetz, Grashow, and Linsky (2009a), pp. 91-96.

between the various constituencies. However, the lack of a constituency leaves the regulator more open to political attacks that are difficult to defend against.[25] The solution to this friction is often to orchestrate experiments and dialogues that help groups find or create the sweet spot shown in Figure 1. This conflicts with regulatory agencies' traditional roles of providing expert answers, obtaining policy direction from the political process, adhering to process, and staying out of the management of utilities, but is an important role during times of change.

Conclusion

This paper develops a model for resetting regulation and utilities in today's uncertain environment. Given that the future is unknown and probably unknowable, and that at least some countries face situations where particular policies that gave success in the past now hold the countries back, it is important to engage in adaptive learning. The model for adaptive learning includes focusing on next practices rather than best practices when faced with novel situations, studying why some practices have been successful and continuing to learn from attempts at next practices, and focusing on leadership rather than leading to ensure that all elements of the system – regulatory agencies, service providers, customers, and the like – engage in adaptive learning.

The practice of leadership in the current environment can be described as stirring and steering. The context needs to be stirred to surface problems, contradictions, and opportunities. But the system also needs to be steered, not in the sense of leading a particular direction, but rather ensuring learning, providing opportunities for resolving conflict, and orchestrating experiments into next practices.

Marty Linsky of Harvard University summarized the paradox of leadership for a reset this way:

> "…you have to be completely committed to what you are doing in order to step out there and take the risks, but at the same time, with equal persistence, you have to hang on to self-doubt, always keeping open the possibility that there is a better idea out there. Otherwise, how can you ever learn and grow? But, then again, I might be wrong about that."[26]

[25] Jamison (2007).

[26] Linsky on Leadership, http://www.cambridgeleadership.blogspot.com/, accessed August 26, 2009.

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The Regulator's Challenge: Providing Stability While Leading Change

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Keywords: Regulation, Utility, Leadership

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Introduction

It is a paradox of our time that utility regulators are confronted with two seemingly conflicting challenges. On the one hand, regulators have their traditional and central responsibility of providing a stable regulatory environment, or perhaps more appropriately, a predictable environment, in which investors, operators, and customers can make long-term decisions with confidence that short-term political goals will not trump to any significant degree the long-term goals for efficient and sufficient utility services. On the other hand, the regulator must adapt the regulatory system to economic, social, and technological realities that are changing rapidly in directions that are at present unknown. This uncertainty makes it hard for regulators to plan and put at risk benefits that stakeholders have come to expect from the regulatory process.

In this paper, this challenge of regulating in a time of rapid and uncertain change is examined. It begins with an examination of the traditional role of regulation, namely that of controlling the exercise of market and political power, which left unchecked would limit investment in services. Successfully fulfilling this role requires that the regulator maintain some form of independence from industry and political forces and that the regulator be highly competent to perform the complex, technical work that is the bread and butter of regulator work. The current context for regulation, emphasizing the uncertainty that regulators, policymakers, and stakeholders face, is then examined. To be successful, regulators need to properly fulfill their technical roles while also helping the political process express the values that are to guide policy and helping the players in the policy and regulatory processes adapt to new realities as they emerge. The paper concludes with a description of the perils that regulators face in serving in these various roles.

The Central Role of Regulation

A classical view of the role of regulation is that the regulator controls industry market power and government political power (Newbery, 2001, pp. 1, 27). In this view, utilities are capital intensive, use long-lived assets that are immovable, and enjoy scale economies. These features lead to market power, which the operator can use to obtain supernormal profit. These features also provide opportunities for opportunistic behavior:

Once a utility's assets are in place and costly to redeploy, government officials face political pressures to take advantage of the situation by, for example, forcing price decreases to noncompensatory levels. This happened in Brazil with transportation utilities, in Hungary with electric tariffs, and in the United Kingdom with its windfall tax on utility profit (Wells and Gleason, 1995; Jamison, 2007). Knowing this, utility investors are sometimes reluctant to sink capital without some constraint on political discretion. Independent regulatory agencies serve as that constraint.

Another classical view of regulation is that it provides stakeholders with opportunities for rent seeking. In this view, regulation emerges from what would otherwise be a free market system because stakeholders with political power are able to entice politicians into imposing regulations that shift wealth from the less powerful to the more powerful (Newbery, 2001, p. 141). Political battles over structural and functional separation in telecommunications fit nicely into this view of regulation, as do battles over universal service subsidies. Separation policies are generally promoted by entrants that want to constrain an incumbent rival, by incumbents that want to impose limits on potential rivals, or by incumbents that want to avoid some other regulatory instrument they view as more onerous. Universal service policies often benefit operators more than they do customers.

A review of the development of independent regulatory agencies in the United States provides other reasons for regulation and adds richness to the classical views. Utilities in the United States were initially regulated either directly by political bodies or by the courts (see generally Glaeser, 1927). In some instances, city governments would negotiate contracts or concessions with entrepreneurs to provide utility services within the city. In other instances, state legislatures regulated prices directly. Regardless of the mode of direct political control, the outcomes tended to be as follows: (1) Prices became outdated as technology and economic conditions changed, often resulting in financial distress for the operator and poor service for consumers; (2) Politicians were out-negotiated by their utility counterparts, resulting in high prices and profits. In at least one instance the profits were so high that the utility was embarrassed and lowered its prices below the maximum negotiated by the politicians, resulting in embarrassment on the part of the politicians; and (3) Utility services were withheld from political opponents or

given free (or nearly free) to political friends. Regulation by courts faired no better than regulation by political bodies: Regulatory benefits were received only by stakeholders with the economic resources to pursue relief through the court system. As a result of these problems, utility service was inadequate and unreliable. To remedy this, about 100 years ago, legislative bodies began creating utility regulatory commissions with the power to regulate prices and with greater independence from operators and politics. The success of this approach by a few leading states led to its adoption by all states and by the federal government.

The goals of utility regulation came to be to ensure that utility service was efficient and sufficient for the needs of the economy and the population. More specifically, this meant that prices were not unduly discriminatory, revenue was sufficient to attract continued investment in the utility enterprise, costs were fairly apportioned, and efficient consumption was encouraged (Bonbright, Danielsen, and Kamerschen, 1988, pp. 377-384). These goals meant that regulators devoted their resources to analyzing utility finances, regulating prices, and ensuring each geographic area was assigned to a service provider that had an obligation to serve all customers in that area. More recently, regulators became interested in issues of market structure, first in telecommunications but now in other sectors as well. These were highly technical issues and dealing with them adequately required regulatory agencies to hire staff who were expert in law, economics, finance, accounting, and engineering.

But as illustrated below, getting the technical issues right only gets regulators part way to success. For sure, getting the technical issues right is a necessary condition for success; no regulator succeeds without that. But technically correct answers are not sufficient for success. To be successful, the regulator needs to recognize context and at appropriate times provide leadership and/or play the role of the politician.

Context

The current context for utility regulation is rapidly evolving, but in uncertain directions.

- Rapidly increasing energy costs are leading the media, politicians, and others to look for someone to blame. Regulators are sometimes convenient targets.

- Stakeholders have rapidly evolving and often conflicting expectations for environmental impacts of utility services, new applications of utility services (such as plug-in hybrid automobiles), and new technologies (such as broadband and information services). Regulation can reduce the adaptability of industry to new demands and new realities, but it can also provide a focal point for bringing new information to light and raising issues that are sometimes conveniently ignored in the political discussions.
- In that vein, political populism is leading to disconnections from realities. In one country for example, a new political party came to power, fired all of the utility commissioners, and then demanded that the new commissioners fire all of the staff and lower electricity prices below cost.
- The public has been making new demands for environmental policies, service reliability, etc., but resists when the costs for such policies impact utility prices.

Segmenting the Work of the Utility Regulator

These rapid economic, societal, and technological changes require regulators to go far beyond getting the technical issues right. Figure 1 illustrates this idea. The circle in the upper left – marked, What is possible? – represents the technical work of regulation. Here regulators deal with the constraints of engineering, economics, finance, law, and the like to ensure that, for example:

- Prices are both affordable to customers and sufficient for investors.
- Service quality is adequate for the needs of the population and the economy and affordable in terms of the costs required to make the quality possible.
- Operators are financially sound.
- Service is available.
- Utilities operate efficiently.

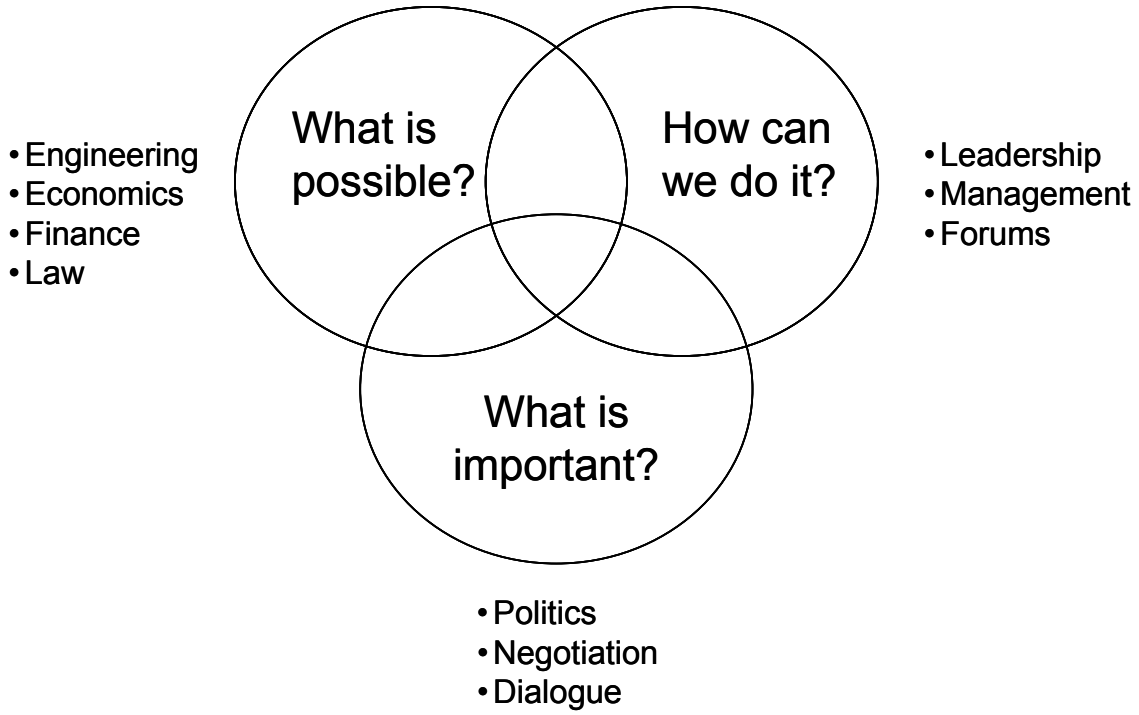

Figure 1. Areas of Work for Today's Utility Regulator

Situations arise – and there may be many such situations today – in which regulators can and should step beyond their technical work to provide political work, which is reflected in Figure 1 by the bottom circle. Here regulators help address the question: What is important? Answering this question is normally left to the political institutions (Vilbert, 2007, p. 2), but many of today's issues are highly technical, involve technical uncertainty, and change quickly. The value choices are unclear because policy impacts are unclear. Furthermore, value choices made today can be quickly outdated, necessitating new political dialogues and processes. But frequent updating of political choices can be at best costly, and at worst physically impossible, for traditional political institutions. Regulatory institutions may be better at making some of these decisions. A case in point would be electricity restructuring in California. The utility regulator had developed a plan that might have been workable if implemented, but the political institutions developed political compromises on some key elements of the restructuring plan, which made the plan unstable. When the flaws came to light, the political bodies

were unable to generate the will to make crucial changes in a timely manner, resulting in service failures, unnecessarily high prices, and financial collapse.

A challenge for regulators who engage in the political work of making policy choices is that they have to recognize the limits of their political authority, that the limits are fluid, and that there will not be unanimity on the extent of their authority. Regulators should address this challenge by "getting on the balcony." Getting on the balcony is a metaphor for seeing what is really going on with yourself and others. On a dance floor, you can see only yourself and the people immediately around you. That gives you one perspective on what is happening. But if you leave the dance floor and get up on the balcony, you can see everything that is going on (i.e., who is dancing and who is not, how the music affects different dancers, where dancers are on the floor, etc.) (Heifetz and Linsky, 2002, pp. 51-74). Getting on the balcony requires stepping back from the fray and asking questions such as, Who cares about the actions I am taking? What seems to happening beyond my vision? Why are some people engaged, and why are others not engaged? Who am I hearing from and, perhaps more importantly, who am I not hearing from? and What seems to energize particular people, and what seems to lead to resistance? One former regulator said she used to employ what she called the "smell test," which meant that she would reject proposals that didn't feel right even if she could not pinpoint the problem (Jamison, 2007).

Getting on the balcony is actually a tool of leadership, which takes us to the third circle in Figure 1, which addresses the question, How do we get it done? For technical work, this is simply an issue of management providing direction, order, and protection from outside forces. But when circumstances have changed and traditional approaches are no longer adequate, then leadership is required to engage people in investigations and dialogues on what has changed, what the changes mean, and how to react to the changes. This overlaps with the political work because leadership forces stakeholders to think through and make new value tradeoffs, but it is distinct from the political work in that it is not the regulator who is making the value tradeoffs, but the stakeholders whose realities have changed (Heifetz, 1994, p. 15; Heifetz and Linsky, 2002, pp. 11-20). In a sense, this area of work not only addresses the question of, How? but also the question of, What is "it"? because goals and aspirations are defined in this circle.

The peril in this third circle is that the regulator must be careful to maintain legitimacy when dealing with adaptive work, which in contrast to technical work is the work of learning about changed circumstances and making changes in values, traditions, attitudes, and behaviors that people hold dear. The need for adaptive work arises when fundamental changes in a group's (or an individual's) environment call for a rethinking of basic goals and strategies to thrive or even just to survive. Examples of major changes that have affected utility policy include the energy crisis in the 1970s, nuclear accidents at Three Mile Island and Chernobyl, decisions by multilateral institutions such as the World Bank to promote privatization and competition in utilities, and the development of the Internet, but numerous more minor changes exist (Jamison, 2007).

Dangerous Work

Regulating utilities in today's environment is, in some sense, dangerous work. The truth of that statement may not be obvious to everyone, but consider the following:

- Ugandans took to the streets of Kampala in June 2003 to protest a price increase allowed by the electricity regulator.
- The Labour Party came into power in Britain in 1997 in part because Labour successfully portrayed the Conservative Party as being soft on utilities (Jamison, 2007).
- The Maryland legislature attempted to disband the Maryland Public Service Commission in 2006 after a large electricity price increase (Jamison et al., 2006).
- Members of the Florida Public Service Commission came under a cloud of suspicion in 2004 for attending a regulatory conference that the Commission had organized and that was also attended by industry representatives. The accusations escalated when the Commission approved telephone price rebalancing – the first such meaningful change in telephone prices in over ten years.

Why is regulation dangerous work? The issues are important, controversial, and political. Communications issues pit large, conflicting economic interests against each other. Energy policy involves hard tradeoffs between economic growth, consumer affordability, the environment, and international affairs, each with its distinct interest

groups. Water policy is central to numerous environmental policies, but it digs into everyone's pocketbook and affects where economic growth occurs (Jamison, 2007).

Regulation is also dangerous because regulators play conflicting roles. As illustrated above, a regulator's primary job is largely technical implementation of policy – analyzing utility finances and tariffs, developing and enforcing market rules, and the like – but the regulator is frequently called upon to make policy choices and balance stakeholder interests: two areas that put the regulator squarely in the political arena.

Regulation is also dangerous because regulators have conflicting needs. A regulator must have intimate knowledge of the operators regulated to be credible and effective in his or her technical work. But an arm's length distance with the operators must be kept to maintain legitimacy. The Florida situation cited above provides a case in point: Some commissioners were brought up on ethics charges and heavily criticized in the papers for spending time with utilities. However, the Commission was also put under political pressure for not regulating details of how electric utilities prepared for hurricanes.

How can regulators survive and perhaps thrive in the midst of these conflicts and pressures? The critical skill seems to be seeing the context within which controversies occur so that the regulator can fulfill the most essential role – that of a technical regulator – and supply leadership and policy direction when needed.

Conclusion

Regulation in today's context means disappointing people at a rate that they can endure.[1] Regulation has always been about addressing problems with human behavior, not problems with technology. Certain technological and economic contexts simply gave some behaviors more opportunity than other behaviors to limit our economic and social well being. To be successful, regulators need to recognize context, changes in context, and patterns in the changes. But when changes occur, some people have to give up things that they have valued about the past, which adds peril to the regulator's job because the regulator might be blamed or scapegoated. Furthermore, the regulator might play an evolving role in policy development. But this, too, has perils because the role will be

[1] This phrasing is adapted from Heifetz and Linsky (2002).

situational, and important stakeholders will disagree on the boundaries of the regulator's political authority. But in the end, even though regulation might sometimes be dangerous work, it is always interesting work.

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Boomers: Outdated or Wise?
Millennials: Innovative or Naive?

Is Your Utility Ready for Retirement?

At a recent gathering of utility executives and senior managers hosted by PURC, a knowing chuckle spread across the room when retirement was mentioned. A show of hands revealed that one fourth of that audience would retire within 5 years and about half within 10 years. That magnitude of loss was true from the company managers all the way down to the craft workers. Everyone agreed that this presented a challenge. Was it a technical problem that could be solved through hiring practices and training programs? Or, was it an adaptive challenge where employees and the company would have to make hard decisions about what they valued most?

Aging workforce is a well known problem for utilities, as it is for other industries. When utilities expanded in the 1960s and 1970s, they hired a large number of people that were just entering the workforce and these employees – many of whom have now worked for the same company for 30 years or more – are nearing retirement. Some people worry that when these employees go, a lot of knowledge, wisdom, and loyalty goes with them. Others are happy to see the older generation go.

Who is right… those who worry or those who can't wait? The answer is probably both. Aging workforce presents both a threat and an opportunity for companies facing a changing economic and regulatory climate. The key questions most utilities will have to answer include:

- What from the past do we need to retain to be successful in the future?
- What from the past holds us back from future successes?
- Which losses are the older generation experiencing that may cause them to sabotage knowledge transfer?
- Which beliefs and attitudes do the new generation possess that may cause them to reject the most important lessons from the past?

Some of the knowledge necessary to retain is obvious: Where are problems likely to occur in power lines, pipelines or other infrastructure? What is the best way to communicate with emergency management officials when a major storm or another type of disruptive event occurs? However, some traditions that pass for knowledge may hold a company back. Rivalry between organizational silos can throw up barricades to adapting as circumstances change.

Memories of failed expansions into new lines of business can cause organizations to become overly conservative, while predominance of close relationships with like-minded companies can reinforce conventional wisdom. Of course, these are not uncommon characteristics for utilities of all shapes and sizes. How can a utility develop a culture that can determine what from the past to remember and what is best left behind?

One company – not a utility – developed interdisciplinary experiment teams, whose mission was to identify and carry out trials that would test conventional wisdom and new ideas. Another company organized its "rebels" to explore what was generally considered unthinkable in the management ranks. In a third company, the CEO allowed disgruntled

Continued from page 38

employees to vent at him publically, thus establishing a culture that celebrates the discussion of elephants in the room.

How can a utility address the losses, beliefs, and attitudes that separate generations? Some establish programs that honor the roles of aging employees and help them establish new roles outside the company, maybe within the community or in an organization that celebrates the company's past. Other companies hire pools of talented, young employees that rotate through the company during their first few years of employment. Yet others develop leadership academies that bring younger employees together with senior managers from all aspects of the company in interdisciplinary teams to pursue experiments of their choosing that test new strategies and operating models.

The wrong approach to addressing the aging workforce issue is to assign it to HR, treating it as a personnel issue. The adaptive challenges of aging workforce cut across all dimensions of an organization and involve everyone.

The wrong approach to addressing the aging workforce issue is to assign it to HR, treating it as a personnel issue. The adaptive challenges of aging workforce cut across all dimensions of an organization and involve everyone.

What happens if a company ignores the adaptive challenges of the aging workforce? The 50 percent or so of employees who are going to retire will do so, and the company left behind will be a consequence of attempts to put new wine in old wineskins: It won't be the company created by the retired generation because that will be gone. It won't be a company formulated by the new generation because they are simply being fit into the old generation's structure. Nor will it be a company jointly developed by the best that the two generations have to offer because they never worked through what to keep from the past and what to create anew. At best, the company will be an accident of history. At worst, it will belong to somebody else. **uhQ**

Author Profile

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The Economic and Political Realities of Regulation: Lessons for the Future

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Abstract

The practices of utility regulation embed many lessons and myths from the past. It is incumbent upon those who take regulation into the future to properly understand the difference between lesson and myth because, failing to properly distinguish will endanger our ability to successfully determine the road ahead. This paper examines three important lessons from economics regarding the importance and role of information, the design of incentives, and the design of markets. It also studies two lessons from the politics of regulation, namely the role that regulation plays in constraining political opportunism and the role it serves in stimulating learning.

Keywords: Regulation, Competition, Information, Incentives, Politics, Leadership

JEL codes: K23, L51, L90

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1. Introduction

The first electricity price review in the UK provided a moment in regulatory history where what we had learned from the past and what we hoped for the future converged and nearly exploded. It was about 20 years ago and the government, having completed is privatization of the electric distribution companies, had established initial prices and price trajectories. Now it was up to the newly formed regulatory agency to establish prices going forward. The regulator's announced pricing decision appeared tough at first glance – it clawed back profits and required that prices decrease in real terms going forward for five years – but within 24 hours of the announcement the share prices of the utilities began climbing rapidly and there were hostile takeover bids coming from outside the country. Clearly the future looked more profitable – much more – than the regulator had anticipated.

What had gone wrong? Perhaps nothing from the regulator's perspective. It is quite feasible that the regulator was implementing a well-established economic theory that firms will hide their true abilities to be efficient unless allowed to profit from improved performance. But the media and political firestorms that soon followed revealed that regulation has political realities that are intertwined with its economic realities.

I review these realities in this essay to help inform us about the future. There are certain realities that we must not abandon – namely, that high-quality information is critical for regulatory stability and to constrain political opportunism, that firms respond to economic incentives, that markets reveal reality, that regulatory agencies are important for compensating for weaknesses in the politics of utility services, and that regulators are implicitly asked to serve a leadership role that, if they fulfill it, they do so at their peril. I consider each of these in the following sections.

2. The Economics of Information

The roots of economic regulation of utilities go back centuries, but the most relevant events occurred in the past 150 years. In the initial decades following the development of utility services, political officials sought to control prices and service directly through negotiations because they were concerned that an unchecked, monopoly industry would exercise market power to the serious harm of the community. Sometimes the political negotiators represented cities and at other times legislative bodies. Regardless of the political body involved, the officials faced significant pressures: (1) An incentive to take political advantage of the utilities' sunk costs (once investments had been made) and force prices to non-compensatory levels; and (2) The knowledge that utilities held an information advantage that they could exploit during and after the negotiations.

Regardless of the mode of direct political control: (1) Prices became outdated as technology and economic conditions changed, resulting in financial distress and poor service; (2) Politicians were out-negotiated by their utility counterparts; and (3) Utility services were withheld from political opponents or given free (or nearly free) to political friends. Sometimes courts intervened and established prices and service obligations when utility conduct violated principles of common law. But the courts fared no better than the political bodies: Benefits were received only by stakeholders with the resources to pursue legal cases.

The information and opportunism problems led to the formation of regulatory agencies in the early 1900s and to what was called service at cost regulation. The agency served as a source of expertise to diminish the utilities' information advantage. It also served as a buffer between investments, which are made on planning horizons that are several decades long, and politics, which has a planning horizon of no longer than the time to the next election. The service at cost approach to pricing, which utilized utility accounting and operating data, constrained the regulator and politicians from setting prices that were out of line with commercial realities. This is a point

that seems to be lost in regulation today: Relying on accounting data was not about controlling the utility but about controlling the regulator.

Good, well-understood data were missing from the UK regulator's initial price review. It wasn't that the data were unavailable: Rather, the newness of the system and the focus on incentives resulted in poor regulatory data. Reality was known by investors, as the stock market revealed, but was unknown by the regulator.

3. The Economics of Incentives

When service at cost regulation (which became known later as rate of return regulation) was first developed, it was immediately recognized that it diminished incentives for the utility to control costs. This observation led to the development of systems for strengthening the incentives.

Two incentive systems were deliberately used at the start of the agency regulation and remain in use today. One is the use of audits that may allow the regulator to identify inefficiencies if the regulator has high expertise or the utility is unusually sloppy in its decision making. Even if the regulator fails to catch inefficiencies, the possibility of discovery provides the utility with an incentive to avoid wastefulness that could be caught.

The other incentive mechanism was called the sliding scale, which is now called earnings sharing. This system allowed the utility to keep some portion of its profits over and above what the regulator had estimated were needed to maintain investment levels, if the greater profits were from sales or efficiencies that were greater than what the regulator had anticipated.

More recently the regulators have begun using price cap or revenue cap regulation. Price caps are used when costs are largely driving by volumes of output and revenue caps are used when the reverse is true. In their purest form, the caps limit prices in a way that is independent of the utility's accounting costs. This provides a maximum incentive for efficiency. But in most cases

the capping system serves as a formalized regulatory lag (i.e., the situation where the regulator responds to cost changes with price changes after some time delay) by using accounting data to reset prices only at fixed times. This diminishes the efficiency incentive, but has the benefit of constraining the regulator from establishes prices that deviate so far from economic reality that they could cause more harm than the diminished efficiency incentive.

Regulators also use benchmarking to provide information on what utilities are capable of doing. With benchmarking the regulator uses information from other utilities to estimate the possible technical efficiency of the utility being regulated. In essence this forces utilities in separate markets to compete against each other for the regulators' rewards. The weakness of benchmarking is the lack of precise methods for making utilities comparable: Each utility has some degree of uniqueness in its situation and, if this is not properly reflected in the benchmarking analyses, the regulator could choose unrealistic expectations that imperil the utility.

The UK regulator understood economic incentives very well and anticipated that the utilities would reveal how efficient they could be if the regulator could commit to not clawing back the efficiency gains for a significant period of time. The regulator was right, but the political and public relations costs were high. I discuss those in a later section. Before doing that, it is important to examine the importance of getting markets right.

4. The Economics of Markets

That markets reveal economic realities wasn't necessarily a problem for regulation in the UK – the market competition for electricity generation was producing cost savings for customers and the financial markets revealed economic reality on cue – but mixing regulation and competition that has shown itself to be problematic.

Telecommunications regulation provides one of the clearest examples of the problems created by trying to regulate prices and service in a competitive market. Mistakes included getting industry boundaries wrong, misidentifying what customers wanted to buy, and establishing uneconomic prices.

Based on a history of aligning market boundaries with political interests – which was sustainable in a monopoly era, but not when markets became open to competition – regulators established service territories, service definitions, jurisdictional boundaries, and prices along lines of local service, long distance service, interstate and intrastate service (in the case of the US), and domestic and international service. Once regulators began to relinquish control of market entry, the system began unraveling. For several years the regulatory system fought back with some success by creating elaborate subsidy systems and placing barriers to competition. But once technology change enabled an end run on the regulations, the game was over. Unregulated mobile services demonstrated that customers did not care about local and long distance distinctions, that they were willing to sacrifice some service quality for convenience, and that prices did not need to align nicely with economics costs as long as customers understood the pricing plans, customers found the predictability adequate, and revenues were high enough to incentivize investment and low enough to limit new entry. Regulators' efforts to unbundle networks to facilitate entry were at best marginally helpful to the launch of competition, but also locked competitors into the incumbents' monopoly-era network structures and technologies. This was eventually overcome by broadband, which proved to be sufficiently disruptive to remove artificial distinctions between voice and data services, and between domestic and international communications.

These lessons are relevant to the evolution of energy regulation in two regards. First they show that gradual deregulation suffers from the illusion of knowledge, which is a psychological

anomaly that leads us to believe we know more than we do. This manifests itself in deregulation in many ways, one of which is that regulators' and stakeholders' views of the future are distorted by their legacies. I believe we see this in the use of simple net metering policies, feed-in tariffs, and subsidies for fuels. The second lesson is that regulators can be overly cautious with the deregulatory process. Markets involve risk and businesses and investors are well adapted to managing that risk. Unfortunately in a regulated, there are also political risks for regulators and for utilities. These risks have proven to be problematic because the market for political power does not respond well to the appearance of doubt or failure. These barriers to proper deregulation led Alfred Kahn to coin the phrase, "Deregulating the process of deregulation," to explain the importance of letting markets reveal realities that were unknowable prior to deregulation.

5. Political Realities of Regulation

My above descriptions of the economic lessons highlight some of the political realities of utilities and their regulation: (1) The political system takes a short-term view that diminishes incentives for long term investing; (2) Government involvement enables rent seeking behavior, especially as technologies change and deregulation proceeds at a slow pace; and (3) Energy (and the environment) have political value because they touch the lives of every person, and excite passions.

These political realities are one of the reasons why governments formed utility regulatory agencies with as much independence as the political machinery could tolerate and that is consistent with holding regulators accountable for their decisions, but not accountable for events that are beyond their influence or control. History has shown that this balance is subject to tensions that sometimes throw the system into disequilibrium: Regulatory agencies have been dissolved (and then reconstituted), regulators have been pressured out of office (to be replaced by people with no

better capabilities and biases), and regulation has been politically micromanaged. It is the regulators themselves that appear best situated for managing these pressures by managing their political capital, getting on the balcony to see the larger political landscape, and disappointing people at a rate at which they can endure. Regulators are in the position of speaking unpopular truths – that changes have costs, that revenues must cover costs, and the like – and must do so in ways and at a pace that keeps the system sustainable.

6. Conclusion

The first UK price review provided an important moment in regulation. It showed that brilliance and talent – both of which the regulator possessed – are not substitutes for good information. It also showed the power of incentives and the power of markets, both of which reveal unanticipated realities. Perhaps more than anything, the experience demonstrated the importance of a regulator defending the integrity of the process in the presence of political and public pressures. Regulation disappoints. The art of regulation is to disappoint at a rate that the stakeholders can endure.

Adapting Infrastructure Regulation: What Should Be the Boundaries of Coercive Power?

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Abstract

Today's utility regulation is marked with change, including the internationalization of infrastructure, challenges to traditional utility business models, the decline of the natural resource model for water, emerging market structures that are sometimes weakly competitive, and companies such as Google that aspire to be the dominant managers of the world's information, computing, and network resources. This paper outlines an adaptive approach for developing regulatory responses. The adaptive framework recognizes that issues can be divided into two basic groups: technical and adaptive. Technical challenges are those for which there is general agreement on the existence and nature of the problem, the alternative solutions are clear, and work can be performed by subject matter experts. Adaptive challenges arise when fundamental changes in the environment call for a group to rethink basic goals and strategies.

The model has as one of its goals the achievement of proper coherence, which is the proper alignment between institutions, technologies, and sector practices. When change is the norm, coherence should be dynamic with greater emphasis on liberty of ideas and less emphasis on static notions of efficiency and alignment. An adaptive regulatory system would be one that decentralizes control, permits multiple moving parts, allows for asymmetric treatment of service providers, facilitates deliberate experiments, and emphasizes information sharing.

Introduction

The bread and butter of utility regulation have been the use of the coercive power of the state and of voluntary economic incentives to induce service providers to provide sufficient and economical service. In some instances it was also desired that service non-discriminatory, but there are times when discrimination is desired by industry regulators and policy makers. For example it is not unusual in the United States for utilities to have special tariffs for important customers, such as the government. But these tools were designed for times in which the desired outcomes were well understood and easy to observe. For example regulators would use coercive power to penalize operators for failing to meet performance objectives, such as service quality or service availability. More recently regulators have begun using incentive mechanisms, such as price cap regulation, that are designed to provide economic rewards to utilities when they use private information to the benefit of customers.

But today's utility regulation is marked with change rather than well known and observable outcomes: Infrastructure is becoming increasingly international, challenging traditional regulatory boundaries. Emerging carbon policies and command and control mechanisms for promoting renewable energy are altering the economics of the entire value chain. Some smart grid proposals threaten to dissolve the traditional electric utility business model. Many parts of the world are experiencing the end of being able to harvest fresh water from nature and will need to manufacture it. While wireless telecommunications continues to experience robust competition in most places that have fully liberalized, emerging fixed line broadband markets are a mixture of monopoly and limited competition. Furthermore companies such as Google are aspiring to be the dominant managers of the world's information, computing, and network resources.

How should policy makers, utility regulators, service providers, and other stakeholders respond to these tides?[1] This paper outlines an adaptive approach for developing regulatory responses. The adaptive framework recognizes that issues can be divided into two basic groups: technical and adaptive. (Heifetz, 1994, pp. 3-8, 35) Technical challenges are those for which there is general agreement on the existence and nature of the problem, the alternative solutions are clear, and work can be performed by subject matter experts. For example, a number of utility regulators in the United States are considering electric utility rate cases. The issues involved are demanding and complex, but the challenges are

[1] To conserve on words, I will hereafter use the term "regulation" to cover both policy and regulatory issues.

largely technical in the sense that there is general agreement that the issues are how much, if any, a company's overall price level should change, and how will any price changes be distributed across customers. (Jamison, Rowe, and Perlman, 2005) In contrast, adaptive challenges arise when fundamental changes in the environment call for a group to rethink basic goals and strategies. For example, current beliefs about climate change are forcing some regulators to re-evaluate commitments to affordable energy and to market solutions for emissions control. An adaptive approach to solving regulatory problems engages regulators, service providers, customers, and other stakeholders in processes of experimentation and dialogue to clearly understand the changed environment, make tradeoffs between old and new aspirations, and jointly discover new approaches.

The remainder of this paper proceeds as follows. The next section describes the concept of coherence for matching regulatory policies and institutions with external conditions. It then reviews the changes occurring in utility markets and argues that the markets are dynamic, necessitating the need for focusing adaptive coherence, which is defined below. The fourth section suggests that regulators should engage in adaptive processes that encourage experimentation. The final section is the conclusion.

Coherence

Regulatory policies and institutions evolve to achieve coherence, which is the proper alignment between institutions, technologies, and sector practices. (Künneke, 2008; Jamison, 2009) This evolution has been experienced several times throughout history. In the United States, state regulation of utilities replaced municipal regulation in the early 1900s and within a few years federal regulation replaced certain aspects of state regulation because technology changes made it feasible for service providers to situate aspects of their operations outside the jurisdiction of the initial regulatory organizations. Recently in the United Kingdom the government merged the operations of its telecommunications regulatory agency and broadcasting regulatory agency to form Ofcom because technology changes had made moot the traditional boundaries between the two sectors.

There are at least five dimensions along which to consider coherence between regulatory institutions on the one hand and technology and industry practices on the other. One is to consider the problem as one of restricting outcomes or pursuing objectives. This effects coherence involves ensuring that regulatory institutions' geographic and legal reach are sufficient to accomplish the purposes of

regulation, namely controlling market power, ensuring industry stability, redistributing wealth, extracting rents from service providers, limiting opportunism, and overcoming information asymmetries.[2] Outcomes and objectives have been the pragmatic guiding principle determining much of the development of regulatory practices and institutions. An example of effects coherence would be the a ratemaking decision by the Barbados Fair Trading Commission that insulated customers of Cable & Wireless in the nation from possible negative impacts of an organizational change in the company that led to a loss of information about costs incurred to provide service in Barbados. The regulator might not have had jurisdiction over the company's organizational structure, but could exercise its ratemaking authority to require that particular cost information be provided.

Control coherence is the form of coherence articulated by Künneke (2008). He describes coherence as an alignment of regulatory institutions and technological practice, contrasting centralized controls in technology with decentralized control by market mechanisms. The essence of this perspective is that if there is a need for regulatory control of an operation or system, then the regulatory institution needs the geographic and legal reach to have that control. Such control might be necessary in situations where effects coherence is inefficient or cannot be accomplished. For example, in the case of Internet address conventions, network effects would be lost if there were not general agreement on protocols. Bilateral and multilateral service provider negotiations might have failures, resulting in disruptions. The Economic Community of West African States (ECOWAS) secretariat is an example of control coherence where a network of sovereign states in Africa gave a supranational institution coercive power to oversee the development and operation of a regional transmission grid. (Berg and Castañeda, 2007)

The third form of coherence is capacity coherence and refers to the information and expertise of the regulatory institution. There can be situations where a service provider's legal structure insulates certain kinds of information from the regulator's reach. For example, the documentation for certain cost items might be held by an unregulated affiliate or business partner of the regulated operator. If the operator does not have legal authority to obtain the information, the regulator might need to have that authority itself, or at least authority to prohibit the operator from entering into such business relationships.

[2] See Jamison (2009) for a more complete explanation of these purposes of regulation.

Another form of coherence, array coherence, is the number and types of operators with which the regulatory agency engages. Sometimes concerns arise that if a single operator (or set of closely aligned operators) makes up a significant portion of the regulator's work, that the relationship might have significance on regulatory decisions. If the relationship becomes adversarial, the regulator might have difficulty making progress on issues because of poor communications with the operator and the regulator might lose objectivity. On the other hand the regulator or government might be captured by the singular industry interest. Furthermore, as Lyon and Li (2003) point out, regulating a number of companies gives the regulator an opportunity to establish its credibility.

The final form of coherence is dynamic coherence and refers to the ability of the regulatory-provider-customer system to adapt. Two types of forces drive the need for adaptation. The first type is the external forces that are outside the control of the regulatory institutions, industry and customers. Examples would include technology changes, changes in fuel prices, and certain changes in laws, such as general changes in tax or accounting regulations. The other force is the internal dynamics of co-evolution in which changes in some player in the system induces changes in other players. For example, changes in regulatory treatment of nuclear investments in Florida have incentivized electricity producers to expand investments nuclear power. (Holt and Kury, 2009) In practice nearly all changes creating a need for adaptation would be a combination of external and internal influences. For example, a change in smart grid technology might have no impact on a utility service area absent regulatory change that allows adoption, investment by the utility in certain aspects of the technology such as smart metering, and customer acceptance of the roles that customers might need to play in making energy choices.

Changes in Utility Markets

This section briefly reviews five changes that imply a need to focus on dynamic coherence. The first change is the increasing internationalization of infrastructure. Internationalization of infrastructure occurs through interconnections or links that lead to interactions. (Jamison, 2009) These interconnections take many forms. Physical interconnections in infrastructure include connections for telecommunications traffic, electricity transmission, natural gas pipelines, and liquefied natural gas shipping. The cross-border issues include technical standards, geographic locations, payment amounts, payment systems, transmission rights and obligations, and enforcement of contracts or other

agreements. Logical interconnections are those related to the intelligence and controls across the physical system. Telecommunications numbering and Internet naming conventions would fall into this category.

Financial interconnections include several situations. An infrastructure firm's activities in one country might affect its performance in another country. An operator might seek to hide or double report costs or revenues through transactions with international affiliates. It could also be that there are scale economies in financing operations and that these economies can only be achieved if the operator serves more than one country. The cross-border issues include ring fencing the finances of domestic operations, regulatory access to and use of financial and accounting information.

Strategic interconnections are those where decisions across jurisdictions are strategically interrelated. Recent examples include the provision of natural gas in Eastern Europe where contract decisions appear to have been tactics in larger economic and geopolitical strategies. Policy interconnections include spillovers of jurisdictional decisions. For example liberalization of telecommunications in Western economies led to the creation of multiple global telecommunications firms that desired to interconnect with networks in non-liberalized markets, resulting in telecommunications liberalization in these other economies.

Internationalization of customers led to changes in infrastructure companies, in particular telecommunications where operators sought to expand into multiple countries so as to have network footprints wherever their multinational customers had business locations. Environmental interconnections are largely spillovers and externalities related to environmental impacts of infrastructure decisions, such as acid rain, greenhouse gases, and natural resource extraction.

Environmental policy is another factor affecting electric utilities and their regulation. In recent times the most prominent of these policies relate to climate change and include ideas such as a carbon tax, carbon cap and trade, and renewable portfolio standards (RPS). The carbon restrictions are designed to change the economics of electricity provision, incenting generators to adopt less carbon

intensive energy sources than traditional coal, natural gas, oil, and the like, and perhaps to incent customers to decrease their electric consumption.[3]

Some generators are directing new investments towards nuclear power as a solution for base load, but it raises its own environmental concerns, including issues of location and waste disposal. Other investors, including taxpayers, are financing the development of renewable energy, including wind, solar, and biomass. But these energy sources also raise environmental concerns, including placement of new transmission facilities, potential polluting effects of growing plant materials for bio fuels, and the water demands of producing the plant materials. For example, a recent study at the University of Florida found that four ethanol crops — corn, sugarcane, sweet sorghum and pine — yield net energy, meaning they are viable for replacing fossil fuels in Florida and Georgia, but the estimated freshwater requirements would increase by 25 to 100 percent the total freshwater withdrawals for all human uses reported in the two states for 2000. (Evans and Cohen, forthcoming) Furthermore renewable energy may raise unforeseen environmental concerns because they have never been developed and deployed on scales contemplated by some RPS policies.

These environmental policies are changing the risk profiles of electric generators, transmission providers, and distribution companies. For example, concerns over climate change policies have prompted some generators in the United States to pursue nuclear power options. But the long lead times for constructing nuclear plants have made some investors unwilling to take the risks, which include uncertainty over construction costs, operating costs, regulatory treatment, future climate policies, technology change, and demand. This investor reluctance has led some states to attempt to reduce risks to nuclear plant developers or re-allocate them to customers and to improve expected returns on investments. For example, Florida's power generation is subject to traditional rate-of-return regulation, but regulators can annually approve ongoing investments in nuclear power before plant additions actually go online. (Holt, Sotkiewicz, and Berg, 2008; Holt and Kury, 2009) The uncertainty of which carbon policies may be adopted by various countries may be resolved over time, but the

[3] Decreases in electricity consumption would be needed to decrease carbon emissions from generation if technology and economic restrictions effectively prohibited generators from selling the same amount of electricity while meeting the carbon emission standards.

magnitudes of the carbon taxes and the prices emerging from cap and trade schemes will remain uncertain, in part because they will be determined more by political forces than by economic forces.

Smart grid represents a set of technological, business, and regulatory changes that could transform the utility business model. Opinions vary on what smart grid is, ranging from ideas as simple as smart metering to ones such as plug in hybrid vehicles, which could include third party aggregators, battery storage systems, and automated load management. (Holt et al., 2009) These differences in opinion as to what smart grid represents, coupled with the technology, regulatory, and demand uncertainties create a significant amount of risk for utilities, customers, and other businesses that might contribute to smart grid.

Aside from the changes in electricity, there is increasing recognition that many parts of the world are experiencing the end of an era of being able to harvest fresh water from nature and will need to manufacture it. According to the World Health Organization and the United Nations Children's Fund (2008), approximately 15 percent of the world's population does not have access to improved drinking water and a recent study by the Center for Strategic and International Studies (2009) estimated that within 20 years over half of the world's population will live in water stressed regions. One of the consequences of water declining as a natural resource as been the commoditization of water resources. Treating water as a tradable good rather than a gift of nature raises issues of property rights over surface water and subterranean water resources that cross geographic property and national boundaries. (Baillat 2005) Rethinking these rights changes the cost of water, raises pricing issues for water utilities, and challenges traditional notions that all aspects of water utilities are natural monopolies.

The changes in expectations for utility markets are not limited to electricity and water: There is evidence that the competitive paradigm for telecommunications may falter in some situations for broadband. Wireless telecommunications continues to experience robust competition in most places that have fully liberalized the market. The competition promotes network expansion and economic development. (Waverman, Meschi, and Fuss. 2005; Lee and Marcu, 2007) Competition also promotes broadband development in fixed line (Lee and Marcu, 2007), but competition in fixed line broadband is generally limited to two technologies – DSL and cable modem – with some traditional telephone providers such as Verizon choosing fiber to the home options over DSL. But these technology options

mean that facilities based competition is limited to two traditional network providers: traditional telephone companies and cable television companies. In countries where cable television is not very well developed, facilities competition can be quite limited.

This market structure for fixed broadband raises two issues. The first issue is whether fixed and wireless broadband technologies are in the same market, meaning that they are substitutes for each other. This is still an open question. The second issue is: If competition is limited in broadband markets is limited, what is the most appropriate regulatory response? Options range from retail price controls, to regulation of market structure (through subsidies unbundling, resale, access to essential facilities and the like), to acceptance of the imperfect competition. Which of these approaches might be optimal is unknown and could vary across markets and across jurisdictions.

Finally, there are potential new players in the utility markets that could bring about fundamental changes that are hard to anticipate. For example, companies such as Google are aspiring to be the dominant managers of the world's information, computing, and networks. Google's interests were initially in information management and moved into telecommunications network management. Now Google is developing plans for being a player in smart grid. If the company is successful, it could become an information and networking utility with significant market power and political influence.

Adaptive Processes for Regulation

As a practical matter, it is impossible to achieve any form of coherence other than dynamic coherence when utility markets are in the degree of flux that we are now experiencing. What then is the appropriate regulatory response? It would appear that regulation should follow two potentially conflicting paths: A path of stability so that suppliers and customers can make long term decisions and a path of experimentation so that stakeholders and regulators can learn and make necessary tradeoffs once learning has occurred.[4]

How can regulators promote a system where people grow in knowledge together so that the learning embedded in institutions and the system of institutions is consistently greater than individual

[4] For a more complete description of a regulatory approach for adoption, see Jamison and Castañeda (2009).

knowledge and is able to adapt when circumstances change? Jamison (2009) explained that the "appropriate answer to this question is to create or allow a system of experiments in institutional design and regulatory rules that test assumptions and conclusions, and that examine new ways of addressing known problems." Such a system would facilitate adaptive learning, which is the creation of new mental and institutional frameworks that narrow the gap between existing beliefs and reality (Heifetz 1994: 244-245; North 2005: 66-67).

For example, Chile and Argentina led the world in electricity reforms, but made mistakes that several European countries learned from and, for the most part, avoided repeating. The United States learned as well, but as evidenced by the California electricity crisis, did not learn well enough and created a new set of mistakes that others observed and learned from. Likewise the evolution of regulatory institutions in the United States provided lessons regarding ratemaking authority and independence, the initial understaffing of U.K. electricity regulator provided lessons on developing agency expertise to avoid significant information asymmetries, and New Zealand's attempt to rely solely on competition law illustrated the importance of expert regulatory agencies and ex ante regulation of markets with powerful incumbents. (Jamison, 2009)

Adaptive learning occurs through experiencing and analyzing the results of decisions that challenge existing norms. For example, at one time public ownership was favored around the world. But then privatization was tested, and the results were positive. Consequently, the public ownership standard gave way to a private ownership model. After it became clear that equity markets would not finance all of the infrastructure that some policy makers and multilateral institutions believed were needed, that institutional weaknesses led to inefficiencies regardless of the form of ownership, and after it became clear that private participation was only a piece of a larger system of reform efforts, many countries began developing and testing various forms of public-private partnerships.

Jamison (2009) used the term co-evolution to describe the systems learning that occurs when institutions interact and adapt, with some becoming extinct and others being formed anew. Systems learning is the sum of adaptive learning within organizations and the adaptations that occur in how organizations interact. He identified five institutional characteristics that are important for a system of regulatory and government institutions, service providers, customers, and supporting institutions such as think tanks to engage in effective adaptive learning.

The first property was decentralized control, which speeds experimentation and can align economic rewards with decision making relative to more traditional economic regulation. With centralized control an experiment would need permission of the formal authority figure. This permission would add costs and reinforce the status quo because the party desiring to experiment would bear a burden of proof in seeking permission. Where might control be decentralized today? Mechanisms for addressing concerns over carbon emissions, smart grid systems, and approaches to renewable energy are examples where experiments are being conducted through research consortia that include industry, academics, and customers, and sometimes include regulatory institutions.

A second property was multiple moving parts. Concepts of static efficiency often imply that industrial organization should emphasize exploiting scale economies and limiting transaction costs. However, opportunities for adaptive learning are greater with greater numbers of decision making units, implying that there are times when production economies should be sacrificed for potential dynamic gains. Current climate change legislation in the United States Congress would violate the multiple moving parts criteria because it preempts state experiments with carbon restriction mechanisms and renewable energy requirements.

Differing treatment was the third property. It means that asymmetric treatment of service providers should be used to facilitate learning about how service is affected by regulatory rules. The United States used this path for learning about broadband when it had unbundling requirements for telephone companies but not for cable television companies, but abandoned this approach when it declared broadband to be an information service and not a telecommunications service. Without passing judgment on whether unbundling was an important policy, the choice of symmetric treatment of different types of operators precluded what might have been some important learning about alternative ways of facilitating competition in fixed line broadband.

Support of deliberate experimentation was the fourth property. In some ways the United States is doing well with experimentation for smart grid as universities, service providers, and other stakeholders are conducting numerous trials funded in part by the Department of Energy, the National Science Foundation, and industry. To facilitate such experimentation, the regulatory system should make it easy to suspend rules or establish temporary rules, institute processes for information gathering and analysis, and engage in dialogues that promote the development of new ideas for experimentation.

The National Information Infrastructure initiative launched by the Clinton Administration in the United States had some such features. It included a variety of grant mechanisms that promoted localized initiatives and forums for generating new ideas. The George W. Bush Administration's hands off approach to broadband had a similar effect, making it possible for initiatives such as Connected Nation and One Economy to create and refine new ways of promoting broadband that had not been thought of by federal regulators.

Information sharing is the final property of a regulatory system that promotes adaptive learning. This includes traditional sharing systems, such as conferences, meetings, and reports, but the system should be deliberate in getting outside the box to engage with people who would significantly disagree with status quo and current trends, with groups that have different traditions and cultures, and with its traditional stakeholders but in a dialogue framework that creates new ideas. Regulatory associations might for example devote time to discussions about how jurisdictions differ, how they are the same, and how regulatory decisions affect sector performance.

Conclusion

This paper outlines an adaptive process for regulation during a time of change in utility markets. The model has as one of its goals the achievement of proper coherence, which is the proper alignment between institutions, technologies, and sector practices. When change is the norm, coherence should be dynamic with greater emphasis on liberty of ideas and less emphasis on static notions of efficiency and alignment. An adaptive regulatory system would be one that decentralizes control, permits multiple moving parts, allows for asymmetric treatment of service providers, facilitates deliberate experiments, and emphasizes information sharing.

It is a paradox of our time that utility agencies play such a central role in changing a system that they were created to stabilize. Utility regulators' traditional and central responsibility is to provide a predictable environment, in which investors, operators, and customers can make long-term decisions with confidence that short- term political goals will not impose uncertainty. However, the utility regulator must adapt the regulatory system to economic, social, and technological realities that are changing rapidly in directions that are at present unknown. This uncertainty makes it hard for regulators to plan and put at risk benefits that stakeholders have come to expect from the regulatory process. This

makes today's utility regulation perhaps as much a question of leadership as it is a question of proper economics, accounting, finance, engineering, and law.

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