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THE CREATION OF DYNAMIC REGULATORY INSTITUTIONS

Essays on Emergent and Self-Governing Regulatory Systems,
the Information Ecology of the Regulatory Process,
Conflict Transformation, and Regulatory Convergence,
With a Guide to Implementation

by

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EXECUTIVE SUMMARY

In response to concern about which regulatory methods, organizations, and processes are best suited to these changing times, public utility regulatory commissions around the nation have embarked on an effort to (1) turn outward, (2) become less adversarial, and (3) reestablish consensus among stakeholders about regulatory processes and institutions. They are, in short, attempting to become "dynamic" regulatory agencies, where dynamic describes their ability to create motion in a non-linear environment.

Effective regulatory agencies will be required to perform four key functions–unbiased, independent enforcement of laws and policies; effective participation in the policy making process; proactive dispute transformation; and consumer protection. This report contains four essays describing aspects of the creation of these dynamic regulatory agencies; it concludes with a chapter that provides implementation suggestions.

Emergent, Self-Governing Regulatory Systems

Three forces dominate a series of vast changes in social structure, technology, politics, and economics, of the type only encountered once in 500 years. They are:[1]

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[1] Ibid., xiv. Statements in parentheses were added by the author of this report.

- The shift from reason-based to chaos-based logic (i.e., in the regulatory context, the replacement of deliberate, sequential, and linear quasi-judicial processes as the dominant regulatory tool coupled with the near chaos of legislative and policy-making processes and the operation of markets);
- The splintering of social, political, and economic organization (i.e., the ongoing assault on regulatory institutions and methods and near-cataclysmic changes in utility service delivery markets);
- The collapse of producer-controlled consumer markets (i.e., the ultimate replacement of vertically integrated utility service providers and the rise of customer-centered, value-adding service providers in many portions of the utility delivery system).

We have a long-lived tendency to view change as a matter of conflict between players rather than as the convergence of natural forces, a tendency that impairs progress and has victimized public utility commissions. The result, in some cases, has been increasing marginalization of the expertise of regulatory commissions at a time when that expertise is sorely needed.

A more productive way to view change is to focus on the larger forces at work and to undertake "systems thinking," which is a way of thinking about and understanding the forces and interrelationships that shape the behavior of systems and of viewing regulatory mechanisms as processes that continually evolve and interact with their environments. Viewed this way, regulatory systems are open, non-linear systems tied to

the environments that gave them birth, are subject to the fluctuations of the environment, provide feedback to and receive feedback from other systems, and are attracted to certain patterns of complex but repetitive behavior. The variables that impact these systems are not either/or propositions but are, in fact, interwoven.

From these complex interactions, systems can emerge. These systems are self-governing to the extent that order bounded by these patterns can emerge from what appears to be chaos. Complex systems are also "emergent" to the extent that they are always involved in the process of creation and co-creation in concert with their environments. Robert Quinn argues that organizations are constantly involved in crafting a balance between hierarchy (i.e., the organization's attempt to create some form of management or control) and adhocracy, which pushes predictability and control aside in favor of learning and adaptation. Successful organizations live with both in balance. Some regulatory agencies have begun to balance hierarchy and adhocracy through creative organizational forms and making a distinction between enforcement of rules and laws and making policy.

For those attempting to design new and effective regulatory organizations, there are six implications:

1. The level of unpredictability (and number and drama of unpredictable events) will increase as new systems emerge. "Tipping points," points of dramatic and seemingly unpredictable change will push the regulatory environment from existing patterns of movement into new patterns.
2. Systems must be designed iteratively. In a complex, non-linear environment, it is impossible to predict from the start the

interactions of the involved variables. Reaction and counter-reaction in the design of regulatory systems and market structures will be required.

3. Successful regulatory systems must contain elements of both hierarchy and adhocracy. They must exist in dynamic tension with their environment. Unfortunately, government systems are often designed to minimize adhocracy.
4. What is chaotic at one level is orderly at another. Even traditional regulatory systems, which were regarded as highly stable and predictable, were, at many levels, characterized by unpredictable behavior.
5. Any systems at war with environmental patterns and forces will face constant pressure and eventual failure. A system cannot escape its attractors. Once the environment shifts, adhocracy must be given an opportunity to shake regulatory systems.
6. Systems built on the imposition of authority rather than consensus are, at best, temporary. Until new, consensus-fed mechanisms are created, the traditional regulatory mechanism will be under assault.

As a result, the design of new regulatory systems will need to take into account the "genetic code" of the regulatory environment, that is, the limits and patterns of movement that characterize the environment. They include the power and the limits of technology, the pursuit of financial return by service providers, the pursuit of self-interests by consumers, expanded and nearly chaotic information flows, and the involvement of other players in the regulatory environment. Governed by these patterns, effective regulatory agencies will make good use of information, leverage

the strengths of other agencies and institutions, make a distinction between enforcement of the law and policy making, focus primarily on consumers rather than providers of service, and make good use of human capital and technology.

The Information Ecology of the Regulatory Process

Another way to analyze regulatory processes and institutions is to examine the information flows attendant to them. Information has always been the lifeblood of regulation. Regulatory agencies collect information, synthesize and filter it, act on it, and distribute the results of their decision making in the form of information to stakeholders. As markets become more competitive, the flow of information will likely become more rapid, more diverse, and more critical to the achievement of appropriate regulatory outcomes. What is needed is consideration of the "information ecology" of the regulatory process that integrates information strategies, politics, behavior, culture, staff, processes, and information architectures and that provides both information and knowledge.

Traditional public utility regulatory information flows were driven by two limiting information behaviors: (1) the attempt to limit decision-maker authority by restricting options to those presented in the formal record, which restricts the ability of decision makers to participate in the development of consensus and (2) the attempt to limit information flows to clearly delineated routes through a linear information winnowing process. Those traditional information flows were based on the assumptions that the reliability of the information is highly important, information must be simultaneously available to all parties, information can be constrained to

regularized loops, the public utility commission should serve as the information "gate," and adversarial processes lead to good outcomes. Unintended outcomes also emerged: additional contentiousness was injected into the regulatory process, "hard" data that could survive the information aggregation process was emphasized, commissioners were overloaded, innovation was stifled, reductionism became the rule, and regulatory information flows failed to detect information that strongly suggested that changes in regulatory processes were necessary.

Ecological information systems, on the other hand, according to Thomas Davenport are characterized by integration of diverse types of information, recognition of evolutionary change, an emphasis on observation and description, and a focus on people and information behavior. As regulatory commissions reconsider and redesign their information systems, they should emphasize integration of systems with the strategic plan of the commission, an overall "information strategy," a focus on consumers, the support of commission and individual performance assessment, additional diversity of information sources, information aggregation for decision makers and the public, application of "pull" systems of information retrieval, the creation of systems by users, continual evolution, broad skills for information staff, the need for analysis, security and protection of consumer privacy, cost-benefit analysis, and broad support and top-level buy-in. Changing the ways that people collect and use information (i.e., information behavior management) is also key.

Turning Regulation Upside Down: A Conflict Transformation Model

For decades, the principle mechanism for management control in industrial societies has been the establishment of hierarchical organization. According to many, however, those days of success based on order and control are over. Even government has begun to abandon hierarchical, rule-driven models of operation.

Most regulatory agencies are still hierarchical with clearly defined, and often rigid, processes. In addition, movement toward less traditional models of control is made difficult because some commissions still largely operate in an adversarial manner with utilities, are subject to being whipsawed by their various constituencies, focus their information systems on service providers, are still handicapped in the application of alternative dispute resolution processes by procedural requirements, are not able to compete on an economic basis with the private sector for personnel, focus their performance evaluation on activities rather than outcomes, still, in some cases, have difficult relationships with legislatures, face unreasonable stratification between commissioners and staff, and must deal with extremely high workloads and legislative scrutiny.

Nonetheless, despite these handicaps, many commissions are attempting to follow the same course of moving toward less hierarchy and less top-down norms of operation in a number of ways. They include commission initiatives to employ different regulatory methods (e.g., price caps), the creation of more-competitive markets, the application of alternative dispute resolution, and consumer outreach and education.

One element that is common to all regulatory agencies is dispute resolution, and, in fact, much of what commissions do is predicated on the existence of disputes. In order to avoid marketplace conflict, a conflict in which consumers were significantly disadvantaged by monopoly providers, regulatory commissions bounded the conflict within the ordered domain of the regulatory process. The conflict was not prevented; it was transformed and elevated so that it occurred within the constraints of judicial processes. In the future, conflict in the regulatory environment will likely increase rather than decrease, and commissions will need new and better conflict transformation methods, transformation methods that rely less on hierarchy, process, and intervention.

Another dispute transformation method has been created by William Ury. Ury argues that the key to the prevention of the escalation of conflict to destructive levels is the involvement of the "third side," those members of the community not directly involved in the conflict but who will be harmed in some manner by it. The third side, Ury argues, can gradually transform conflict from confrontation into cooperation.

He further posits a three-part hierarchical model for conflict transformation, though his hierarchical model reverses the normal dispute resolution model applied by commissions, a model that presumes the application of interventionist strategies. Ury argues that the first and most preferable strategy for dispute transformation is prevention. Prevention functions include enabling people to meet their own needs, giving people the skills to handle conflict, and building relationships.

The second level of Ury's hierarchy is resolution. Resolution implies reconciling conflicting interests through mediation and facilitation, determining disputed rights through arbitration and negotiation,

democratizing power by bringing the powerful to the table, and repairing injured relationships.

Only as a last resort, does Ury sanction containment and intervention. Containment functions include paying attention to conflict escalation, setting limits to the conflict by establishing rules, and providing protection by interposing and enforcement.

Though his model was not developed for public utility commissions, it easily translates. The most common approach of public utility commissions to conflict has been to translate the conflict into a judicial process with the goal of intervening to impose a solution. A better strategy for commissions might be to deliberately attempt to push regulatory conflict downward on the Ury scale to resolution or, better yet, to prevention. Examples of commission processes and activities, information requirements, and staff skills are identified in the text for each of the Ury conflict transformation levels, and a sample mission and objectives for a commission committed to the Ury model are also provided.

Regulatory Convergence: Lessons from Banking, Securities, and Insurance Regulation

In their transition from the dominance of rate regulation to the promotion and oversight of competitive markets, with the ancillary demands to better serve consumers, attend to the needs of legislators, and create a more collaborative regulatory system, public utility regulators have been challenged to create new regulatory models and methods. There are, fortunately, some useful U.S. precedents for the transition of regulatory systems from rate-setting or interventionist models to the

oversight of effective and vibrant competitive markets. The regulation of the securities, banking (now more appropriately referred to, because of the proliferation of services they are allowed to provide under banking deregulation, as financial institutions), and insurance industries has progressed from what in the public utility environment would be referred to as "traditional" economic regulation to the regulation of highly competitive markets. If one examines the regulation of those sectors, a number of themes common to the current evolutionary status of public utility regulation are apparent as are a number of divergent regulatory approaches, approaches that though different from current models of public utility regulation, may ultimately serve as useful guides. These differences and similarities in regulatory approaches are most readily observable at the Virginia State Corporation Commission (Virginia SCC). The Virginia SCC is the only regulatory commission in the nation that has broad responsibility for the regulation of public utilities, insurance, securities, and financial institutions and fulfills many of the business registry functions typically performed by secretaries of state.[2]

The five most striking common themes are:

- Consumer outreach,
- Convergence of the sectors,
- The uneasy balance between federal and state regulation,
- The movement toward further deregulation, and
- The increasing international presence in domestic service delivery.

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[2] The Arizona Corporation Commission regulates securities as well as public utilities.

The divergent, but illustrative, themes are:

- The employment of private-sector entities to accomplish regulatory functions,
- The clear distinction between enforcement and policy making, and
- The focus on financial soundness and the ability to serve (i.e., the protection against "moral hazard").

There are, surely, elements of public utility regulation that are so unique as to require the development of unique regulatory solutions. Nevertheless, there are lessons that can be learned from a study of the regulation of other sectors and, perhaps, regulatory solutions that can be imported.

The Basel Committee on Banking Supervision, on international consortium of banking regulators, is basing its work on three pillars of effective regulation. Those pillars are: (1) the need for a flexible regulatory and supervisory process staffed by skilled personnel and experts, (2) the need for stronger, more risk-sensitive prudential standards that are compatible with and encourage improved bank risk management practices, and (3) the need for banking regulators here and abroad to make greater use of market discipline through the disclosure by banks of meaningful information.[3]

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[3] Richard Spillenkothen, Director, Division of Supervision and Regulation of the Federal Reserve Board, "Bank Supervision and Regulation in the Next Millennium," remarks at the New York State Banking Department, New York, NY, October 25, 1999.

These three pillars–a flexible process staffed by skilled professionals, the need for better standards that encourage appropriate behavior, and the better use of information to encourage market discipline–have direct and compelling application to the current state of public utility regulation. One cannot conclude other than that the art and practice of regulation would be improved by dialogue between the regulators in all of these important economic sectors.

Implementation Guide

The final chapter of this report provides an implementation guide to the types of change suggested by the report. It presumes that successful regulatory commissions will need to be outwardly focused, multi-dimensional, ecological, constantly learning, outcome oriented, more collaborative, information based, and vision driven. In addition to being a complex task, the types of change required for the creation of regulatory agencies that meet these criteria cannot be imposed from the outside but must be self-generated (though outside facilitation can be useful). An iterative planning model is presented that employs environmental assessment, creation of a compelling commission vision, formation of change teams, development of change plans, coordination and approval, implementation, and evaluation. In order for the change to be successful it will eventually need to address legislation and rules, commission processes and regulatory methods, performance assessment, information systems, strategic intelligence, the organization, human resources, and commission alliances.

The keys to the creation of effective change implementation effort are:

1. The development of an accurate understanding of the environment the organization operates within, determination of the correct environmental "fit," and creation of an active, ongoing dialogue with players in the environment.
2. Soliciting the input of stakeholders and ensuring that they have some ability to participate in the change creation process.
3. Applying systems thinking and questioning assumptions so that the right questions can be asked and answered.
4. Creating a vision by the leadership of the organization and ensuring that the vision is widely shared by participants so that it may serve as the context within which all of the change initiatives can be integrated.
5. Performing the hard work of managing the teams and implementing change initiatives.
6. Making a commitment to ongoing change (i.e., to change as a way of organizational life).

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FOREWORD

Dave Wirick has drawn upon his several years of work with most state public utility commissions and has identified a number of innovative perspectives that can assist regulators in making changes needed in rapidly changing times and circumstances.

Individual state regulatory commissions exist in a wide range of organizational settings and external environments. This report does not urge a single approach, but is intended to initiate and encourage dialogue about the purpose, organization, and methods of public utility regulation. This report will be an indispensable resource for the regulatory community.

Sincerely,

Raymond W. Lawton, Ph.D.
Director, NRRI
January 2001

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The author would like to acknowledge the advice and assistance provided by his colleagues at the NRRI, whose expertise and patience appear to be unbounded. He would also like to express his appreciation to the many commissioners and staff around the nation who have shared their time with him, told him their stories, and let him be a part of their professional families.

CHAPTER 1

INTRODUCTION: THE MOVEMENT TOWARD DYNAMIC REGULATION

While the nation's and the world's public utility communities debate the merits of market-based approaches to the delivery of utility service in lieu of monopoly service provision, another equally important debate is being conducted about which regulatory methods, organizations, and processes are best suited to the times. Though traditional, quasi-judicial regulatory institutions and processes have served the public well for over a century, considerable concern has been expressed, and continues to be expressed, about their ability to function well in an environment characterized by industry change and by commission agendas filled more with policy making than rate cases.

In response to these concerns, which are often articulated most vigorously by state legislators and utility service providers, commissions around the nation have embarked on an effort to:

- Turn outward. In addition to the use of competitive markets, commissions are becoming more attentive to the needs of consumers and the concerns of legislators. Creating methods of gathering more information and finding ways to encourage dialogue about utility sector issues are on the agenda in many states.

- Become less adversarial. Commissions have thrived on adversarial, quasi-judicial processes. There is now more recognition that those adversarial processes, though still effective for some purposes, are limited in others and create unintended outcomes that may not serve the public interest. According to Sanford Berg, "As the number (and diversity) of market participants expands, the use of the traditional adversarial hearing process in the U.S. is being supplemented (if not replaced) by alternative dispute resolution (ADR) procedures."[1] And in a stronger statement, expressing a sentiment mirrored by many utility industry stakeholders, the New Jersey 1994 *Reorganization Plan* concluded, "There is no more wasteful institution that bureaucracy, and no more wasteful process than litigation. We have married the two, we have bureaucratized litigation, and we are all the poorer."[2] Though not everyone may agree with the statement in the 1994 report, which may have been partly responsible for the reportedly successful application of alternative dispute resolution at the New Jersey Board of Public Utilities since then, there are many who do.

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[1] Sanford Berg, "Developments in Best-Practice Regulation: Principles, Processes, and Performance," Public Utility Research Center, University of Florida, downloaded from the PURC website at www.cba.ufl.edu/eco/purc/, December 2000.

[2] Office of the Governor, *Reorganization Plan No. 001-1994*, New Jersey Register, June 6, 1994, CITE 26 N.J.R. 2171.

- Reestablish consensus among stakeholders about regulatory methods and institutions. To be effective, regulatory processes and institutions must operate with the consent of those they govern. That consensus has eroded and many stakeholders are seeking new ways to pursue their legitimate interests, ways that may serve to end the monopoly of public service commissions over utility policy. A new consensus is required and is being sought in many states in a number of ways.

Regulatory agencies that are turning outward, becoming less adversarial, and reestablishing consensus have begun the process of becoming "dynamic." In the normal definition of the word dynamic means "of or relating to physical force producing motion."[3] Producing motion is clearly a characteristic of modern regulatory agencies, whether that motion be in the direction of infusing more competition into markets, environmental protection, or consumer activism. In a scientific sense, dynamic systems are non-linear, making clear relationships nearly impossible to pin down.[4] They are, however, subject to patterns of behavior and the pull of system "attractors," which will be described in more detail later.[5] Nonlinearity is also clearly a characteristic of regulatory

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[3] *The Merriam-Webster Dictionary*, 1974.

[4] James Gleick, *Chaos: Making a New Science* (New York, NY: Penguin Books, 1987), 24.

[5] For a simple explanation of the operation of dynamical systems, see John L. Casti, *Complexification: Explaining a Paradoxical World Through the Science of*

(continued...)

systems in the new environment, whereas the traditional rate setting method reduced utility operations to a simple, linear equation.

The essays in this report explore the establishment of dynamic regulatory commissions. Effective commissions will be required to perform the four functions identified in Figure 1.1. Those critical functions are:

1. Unbiased, independent enforcement of industry laws and policies. Even though commissions are becoming more involved in industry-wide policy making, they will still need to accomplish company-specific functions. When issues affecting an individual firm are before a commission, due process protections will remain imperative. When commissions exercise their power to sanction or penalize individual firms for violation of standards, they should continue to operate free of political influence using appropriate quasi-judicial procedures.
2. Effective participation in policy making processes. When commissions make policy, they must operate in concert with other policy making bodies. Legislators and other agencies have roles in policy making; the policy making "space" must, therefore, be shared. In addition, successful commissions will find ways to support legislative decision making and apply their expertise in the public interest. Effective decision support by public utility commissions is particularly key in an environment

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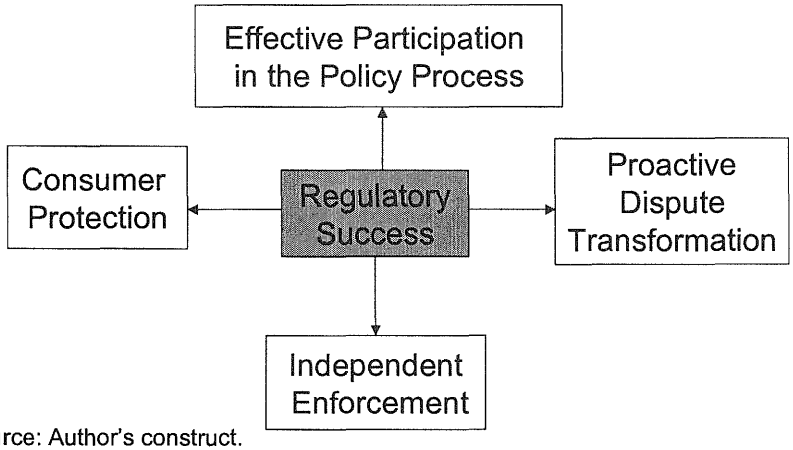
[5](...continued)
Surprise (New York, NY: HarperCollins Publishers, 1994), 26-32.

Figure 1.1
Required Commission functions in the new environment.



Source: Author's construct.

in which industry wide policy making is supplanting single-firm rate setting and in which issues are becoming geometrically more complex.

3. Proactive dispute transformation. Some commissions have begun to employ education as a means of preventing problems and collaborative processes as a means of resolving them. In the current utility and societal environments, more use of these types of dispute transformation processes will be required.

The third essay in this collection describes a conflict transformation model that relies more on prevention and collaboration than intervention.

4. Consumer protection. The traditional focus of regulatory commissions has been on the industries that they regulate. Increasingly, consumers are becoming powerful and demanding of high levels of service. As these consumers become more powerful, public interest goals may be able to be effectively and efficiently accomplished through commission attention to their needs and decreased attention to the internal workings and financial structure of service providers. In providing effective consumer protection, regulatory commissions will need to protect consumers from both external market failures (i.e., consumers must have choice to maximize consumer welfare) and internal market failures (i.e., markets need to be free of overt coercion, undue influence, deception, incomplete information, and needlessly confusing information).[6]

Though much change has occurred at state and federal regulatory commissions, much necessary change remains. Implementation and design of change initiatives at state regulatory commissions is, of course, highly dependent on local conditions. What may work best at one

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[6] David W. Wirick, et al., *Organizational Transformation: Ensuring the Relevance of Public Utility Commissions* (Columbus, OH: National Regulatory Research Institute, 1998), 48. The chapter from which this citation is drawn was authored by Robert Burns of the National Regulatory Research Institute.

commission may not work as well at another. In addition, though commissions may change substantially and begin to operate in a variety of ways, there will still be a need for the foreseeable future for the application of quasi-judicial processes, particularly with regard to enforcement actions. Those enforcement actions must still take place within the constraints of due-process protection for those involved.

The essays in this collection are intended to provoke thought and dialogue about the future of regulatory institutions and organizations and about the most effective ways to serve the public interest in these vital and complex fields. As such, their most important contribution may be to generate questions rather than to create solutions. The first essay focuses on "systems thinking" to understand forces and relationships affecting regulatory commissions. The second examines the information flows vital to providing utility services and regulating them appropriately and effectively. The third describes a conflict transformation model that relies on prevention and collaboration rather than intervention.

Unfortunately, the articulation of regulatory visions may be an exercise in frustration unless agencies have the ability to get from "here to there." For that reason, the final chapter in this collection presents a model for the creation of the types of dynamic regulatory agencies described here. That implementation model is based on a collaborative and iterative process that is adaptable to local circumstances and that we are prepared to assist commission in applying.

Some might question the need to radically transform regulatory agencies now. Haven't they been successful for decades? Might they still be useful? The answers to both questions are "yes," but we live in an era

in which all institutions are under attack.[7] Gary Hamel sums this up bluntly by stating that "somewhere out there is a bullet with your organization's name on it." He further notes,

> Never has incumbency been worth less. Schumpeter's gale of creative destruction has become a hurricane. New winds are battering down the fortifications that once protected the status quo.[8]

Fortunately, Hamel also reminds us that "the gap between what can be imagined and what can be accomplished has never been smaller."[9] If there were ever a time to reevaluate the methods and the institutions of regulation, that time is now—while we still have the time and luxury to consider how we might structure public utility regulation in order to optimally serve the public interest.

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[7] Gary Hamel, *Leading the Revolution* (Boston, MA: Harvard Business School Press, 2000), 11.

[8] Ibid., 7.

[9] Ibid., 10.

CHAPTER 2

SYSTEMS THINKING AND SELF-ORGANIZING AND EMERGENT REGULATORY STRUCTURES

We are, by at least one account, in the midst of a series of vast changes in social structure, technology, politics, and economics, a magnitude of change only encountered once every 500 years.[1] Wacker and Taylor say that for society as a whole, the three most dominant, ubiquitous forces in this vast change, forces that are familiar to public utility regulators or daily becoming more apparent, are:

- The shift from reason-based to chaos-based logic [i.e., in the regulatory context, the replacement of deliberate, sequential, and linear quasi-judicial processes as the dominant regulatory tool coupled with the near-chaos of legislative and policy-making processes and the operation of markets];
- The splintering of social, political, and economic organization [i.e., the ongoing assault on regulatory institutions and methods and near-cataclysmic changes in utility service delivery markets];

[1] Watts Wacker and Jim Taylor, *The 500-Year Delta* (New York, NY: HarperBusiness, 1998).

- The collapse of producer-controlled consumer markets [i.e., the ultimate replacement of vertically integrated utility service providers and the rise of customer-centered, value-adding service providers in many portions of the utility delivery system].[2]

In the face of these changes, government, at all levels and across a wide range of issues, is struggling to find ways to keep up and to protect the public interest. For those who regulate business, the need for change is particularly acute. According to Richard Stevenson, "In an economy that changes as swiftly as this one, driven in particular by breathtaking technological advances, it is clear that government faces a growing challenge in keeping pace with what is happening in the front lines of business."[3] For public utility regulators, the need for change is painfully apparent, as new models of market operations arise, utility service providers and services morph with blinding speed, new players attempt to enter the commission "policy space," and consumers react with new demands.

The Limits of Viewing Change as Bilateral Adversity

Unfortunately, we have a long-lived tendency to view change as a matter of conflict between players rather than as the convergence of natural forces. According to Steven Jay Gould, this "lamentable tendency

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[2] Ibid., xiv. Statements in brackets were added by the author of this report.

[3] Richard W. Stevenson, "Playing Catch-up With Monopolies," *New York Times*, November 14, 1999, 16wk.

to portray all complex issues as dichotomies of us versus them" goes back to the Greek philosopher Protagoras, who said, "There are two sides to every question, exactly opposite to each other."[4]

Today, that unfortunate tendency is particularly acute as we operate within an "argument culture" that urges us to approach the world in an adversarial frame of mind and which presumes that opposition is the best way to get anything done.[5] This argument culture is particularly apparent in the judicial system, upon which public utility regulatory practices are modeled. Defenders of adversarial judicial systems argue that they are akin to the application of the scientific method, in which "every thesis is subjected to raking criticism aimed to probe for weaknesses, unearth contrary evidence, and ensure that no proposition enters the corpus of scientific doctrine based on wishful thinking."[6] That system, however, according to legal ethicist Paul Spiegelman, emphasizes the competitive aspect of human nature and suppresses cooperative impulses.[7]

As a result of our natural tendencies to define change as interpersonal and inter-organizational conflict, we tend to view the current turbulence in the regulatory environment as a battle between utilities and regulators, industrial and residential consumers, the federal and state

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[4] Steven Jay Gould, "The Brain of Brawn," *New York Times*, June 25, 2000, WK, 17.

[5] Deborah Tannen, *The Argument Culture: Moving From Debate to Dialogue* (New York, NY: Random House, 1998), 3.

[6] David Luban as cited in ibid., 147.

[7] Paul Spiegelman as cited in ibid., 162.

governments, state legislators and public service commissions, and proponents of competition versus proponents of the public interest. The reality, though it might not be as convenient or make such good press, is more complex.

In the effort to develop new regulatory models, the tendency to view change as bilateral conflict impairs progress. Public utility commissions in some states have been victimized by this imputed polarization and even demonized. A theme of "those seeking progress versus old-fashioned, self-serving regulatory institutions" has clouded the debate. Similarly, some public utility commissions have been accused of appearing to characterize efforts to create change as being crafted in direct opposition to reasonable regulatory oversight and the interests of residential consumers. The result, in some cases, has been marginalization, some inflicted by stakeholders external to the regulatory organizations and some of it self-inflicted, of the expertise of regulatory commissions in a time when that expertise is sorely needed.

Systems Thinking, Adhocracy, and Chaos

The task at hand is to take a step back from the conflict which has characterized regulatory change, to focus instead on the larger forces at work, and to undertake "systems thinking," which is a way of thinking about and understanding the forces and interrelationships that shape the behavior of systems.[8] Systems thinking also enables us to shift from a

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[8] Peter M. Senge, Art Kleiner, Charlotte Roberts, Richard B. Ross, and Bryan J. Smith, *The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning*

(continued...)

focus on people, discrete events, and structures to seeing regulatory mechanisms as processes, continually evolving and interacting with their environments. It provides a context to what might otherwise appear to be simply self-serving or chaotic behavior. According to Joe Jaworski, the key to change is "the willingness to see yourself, and even your enterprise, as part of larger forces that can shape new realities."[9]

Self-Governing Systems

By applying systems thinking, regulatory mechanisms and the utility service delivery network can, more fruitfully, be viewed as processes: as open, non-linear systems tied inextricably to the environments that gave them birth, subject to the fluctuations of that environment and the resources flowing through them.[10] The activities of these systems or processes provide feedback to one another and are attracted to certain patterns of complex but repetitive behavior, referred to in the literature of chaos as "attractors."[11] If the system is knocked out of

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[8](...continued)
Organization (New York, NY: Currency Doubleday, 1994), 6.

[9] Joe Jaworski as cited in Peter M. Senge, Art Kleiner, Charlotte Roberts, Richard B. Ross, George Ross, and Bryan J. Smith, *The Dance of Change* (New York, NY: Currency Doubleday, 1999), 492.

[10] John Briggs and F. David Peat, *Seven Life Lessons of Chaos* (New York, NY: Harper Perennial, 1999), 72.

[11] Ibid., 64.

equilibrium, it will be attracted to return to these patterns of behavior fairly quickly.[12]

To the extent that regulatory systems are open to outside influences (e.g., the behavior of firms, the actions of legislators, the demands of consumers, the influence of the weather), which frustrate linear behavior and provide multi-dimensional feedback, they are capable of a wide range of behaviors."[13] The variables in a complex system that drive system behavior are not "either/or" propositions (e.g., competition versus cooperation, consumer protection versus profit maximization) but are, in fact, "complexly interwoven."[14]

Though these behaviors can appear at certain levels to be random or chaotic, the attractors provide patterns and limits on the behavior of individuals, organizations, and markets. Chaotic systems are "self-governing" to the extent that order bounded by these patterns and limits emerges from the apparent chaos. That does not imply that regulatory systems should be designed with the goal of producing order by reducing system behavior to linear predictable patterns. Applying linear structures to nonlinear processes is an exercise in frustration.

There are limits on the behavior of all systems, and as limits are approached, systems self-govern themselves by pushing behaviors back towards the tolerable levels. Self-governance has, in fact, always characterized the behavior of regulatory systems. Iterative rate cases

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[12] Ibid.

[13] Ibid.

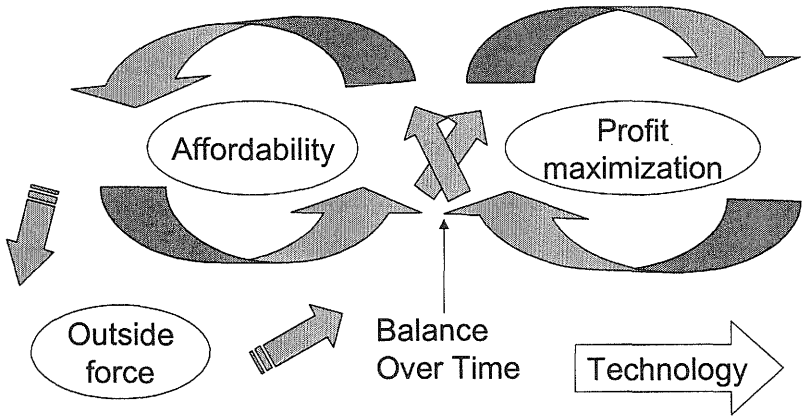
[14] Ibid., 63.

provide one example of regulatory action that sought to constrain firm behavior within levels of acceptable tolerance.

Figure 2.1 illustrates the role of attractors in governing system behavior. In this simple hypothetical model, system behavior is pulled by service affordability on one hand and profit maximization by utilities on the other. At any point in time, the system is at some point of equilibrium creation around these attractor poles. Over time, a floating balance between the two is created. Though movement around these attractors occurs, system behavior cannot escape their ultimate attraction. Occasionally, the system is pulled out of balance by a lesser variable, like environmental concerns or safety issues. Fairly quickly, however, system behavior is pulled back into the orbit created by the key attractors. In this model, changes in technology are posited as a variable that can permanently shift the entire model in new directions (a "tipping point"), though once it has shifted it is still subject to attractors. More complex models employing a wider array of attractors can be imagined, making the system geometrically more complex. Even these complex systems will operate, however, within the bounds of their attractors, no matter how many of them there are.

Regulatory systems, like all other systems, operate within the constraints of their attractors. Therefore, any regulatory method or process will have the same ultimate result, which is to create balance between the attractors until some event or series of events changes the composition of the attractors. For example, even in a monopoly provider environment without regulatory commissions, utilities could only maximize profits until some point of non-affordability was reached. At that point, services would be unaffordable and unable to be purchased by

Figure 2.1
Hypothetical patterns of utility regulatory system behavior.



Source: Author's construct.

consumers (i.e., the economic system would push the system back toward equilibrium) and consumer outrage would reach legislators (i.e., the political system would push the system back toward equilibrium). The choice of a regulatory system does, however, make a difference in that what we are seeking is an efficient regulatory mechanism that will assist in the attainment of balance without undue disruption of the natural patterns but with minimal hardship caused by the most extreme fluctuations of the system.

Emergent Systems

In addition to being self-governing, systems are also "emergent" to the extent that they are always involved in the process of creation and co-creation in concert with their environments. Robert Quinn argues that organizations are constantly involved in crafting a balance between hierarchy and adhocracy. Hierarchy is based on solutions to problems that have worked in the past; it is the organization's attempt to achieve some form of management and control. Hierarchy is not necessarily bad, but pushed to its extreme, becomes frozen bureaucracy. Adhocracy, on the other hand, emerges when the hierarchy does not keep pace with its environment and change is necessary. Adhocracy pushes predictability and control aside in favor of learning and adaptation. Working through individuals and small groups, adhocracy challenges hierarchical forms and breaks norms. Allowed to operate to an extreme, adhocracy becomes chaotic anarchy.

Successful organizations live with both, with adhocracy tearing down hierarchy if the hierarchy is not responsive to the environment and hierarchy organizing adhocracy when it is successful. The goal of organizational change agents is not, therefore, to abolish hierarchy, but to join it with its positive opposite (adhocracy) to create a system of productive community.[15]

The same can be said of regulatory (or any other) systems. They are successful only when the ordered system, through its hierarchy of organizations and processes, correctly answers questions that are

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[15] Robert E. Quinn, *Change the World* (San Francisco, CA: Jossey-Bass, 2000), 35-49.

current. If the ordered system answers questions incorrectly or if the system is responding to the wrong questions, it can be expected that the forces of adhocracy will attack the ordered system. In the short-term, the system will become disordered and characterized or dominated by the adhocracy. In the long run, successful adhocracy, bounded by the system's attractors, will form the basis of the new ordered system. But in an agitated and disturbed state, the interactions between variables will be less linear than normal and outcomes less predictable.[16]

It can be argued, therefore, that the current upheaval in the regulatory environment and criticism by some of public utility commissions is the result of a changed environment, new expectations of regulatory institutions, and disruption of the regulatory system rather than the result of poor performance by regulatory institutions. The introduction of new technologies into the utility marketplace pushed it out of its long-term balance. Adhocracy, in the form of utilities and large users of utility services attempting to find new ways to exploit the advantages of the new technology, intruded into the system and disrupted it. Encouraged by positive feedback, the variation was amplified and change occurred.

A new equilibrium of hierarchical norms has not yet been reached, and unpredictable outcomes are predictably occurring. Regulatory institutions are responding to the changing environment with emergent responses of their own that also insert adhocracy into the previously stable regulatory environment. Examples are alternative forms of dispute resolution, consumer education and outreach, and intensified levels of legislative interaction.

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[16] Ibid., 149.

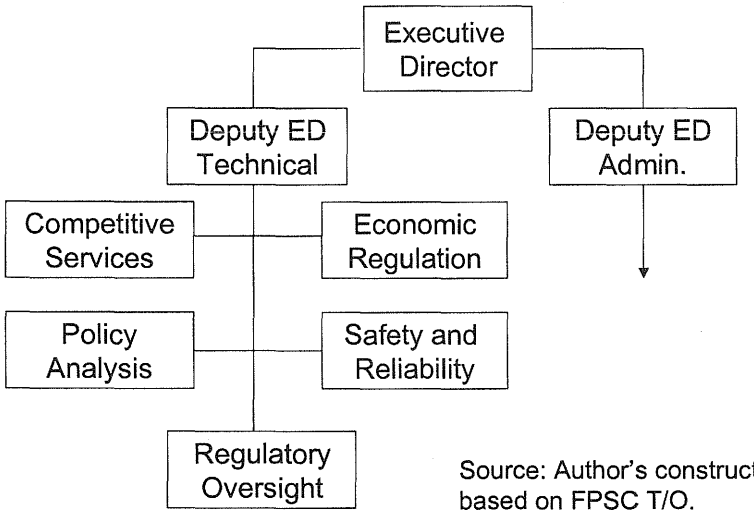
There are internal examples of commissions attempting to balance order and adhocracy. The distinction made earlier between enforcement and policy making suggests that commissions should attempt to bifurcate their activities into enforcement, which would necessarily be accomplished within a highly ordered system, and policy making, which would take place in the near-chaotic political process. The result is to embrace order where it is appropriate and disorder where that works best.

Another solution is found in the recent reorganization of some commissions in which there is clear separation between traditional commission activities and the activities required by new markets. The reorganization of the Florida Public Service Commission eliminated traditional industry-specific regulatory divisions within the commission and, instead, created divisions which are responsible for the more-traditional regulatory functions of the Commission (Economic Regulation, Regulatory Oversight, and Safety and Electric Reliability), and a Division of Competitive Services, which is responsible for development of competitive safeguards, market development, and service quality in more competitive markets. This organizational arrangement simultaneously recognizes and embraces the need for order and the need for change. An abbreviated version of the Florida PSC Table of Organization is included here as Figure 2.2.

Implications

There are six implications of all of this for those attempting to design new and effective regulatory systems. They are:

Figure 2.2
Florida PSC abbreviated table of organization.



Source: Author's construct based on FPSC T/O.

1. The level of unpredictability (and number and drama of unpredictable events) will increase as new systems emerge. "Tipping points" of dramatic and seemingly unpredictable change will push the regulatory environment from existing patterns of movement into new ones. This movement will appear to be chaotic but will gradually reveal itself to be constrained by emerging patterns of movement and limitations. Examples of tipping points in public utility regulation may be the emergency at Three Mile Island and the recent ratepayer upheaval in San Diego. Tipping points internal to commissions

may be the retirement or early departure of key staff, a change in composition of the commission, or legislative action to reorganize or restructure commissions.

2. Systems must be designed iteratively. In a complex, nonlinear environment, it is impossible to predict from the start the interactions of the relevant variables. Though an attempt will surely be made to design new models of regulation (e.g., new electric industry structures) that will last, the power of the varied forces in the marketplace cannot be accurately measured because they are complex, nonlinear, and highly interlinked. Reaction and counter-reaction in the design of regulatory systems and market structures will be required.
3. Successful regulatory systems must contain elements of both hierarchy and adhocracy. They must exist in dynamic tension with their environment. Unfortunately, government systems are often designed to minimize adhocracy. These hierarchical systems work well in a time of stability but sometimes fail to embrace the adhocracy necessary to cope with change. One means of infusing creativity into government agencies and processes without unduly limiting government accountability is to hold agencies responsible for clearly defined outcomes rather than to hold them accountable for complying with rigorously defined rules and processes. "Outcome based" commissions are discussed later in this report.
4. What is chaotic at one level is orderly at another. Even traditional regulatory systems, which were regarded as highly stable and predictable, were, at many levels, characterized by

unpredictable behavior. Examples were the weather, management decisions, the human dynamics of the regulatory process, and changes in federal policy. The strength of the traditional model was not its rigid order but its ability to adjust through iterative processes and constrain price fluctuations to within tolerable levels. As one observer noted, regulation was a process, not an event.[17] Similarly, new models, if they are to be effective, will not prevent the occurrence of unpredictable events (like the recent price spikes in electricity) but will create mechanisms (perhaps market mechanisms) that react swiftly to excessive destabilization.

5. Any systems at war with environmental patterns and forces will face constant pressure and eventual failure. A system cannot escape its attractors. Once the environment shifts, adhocracy must be given an opportunity to shake regulatory systems. Without obeisance to natural forces in the design of regulatory systems, it may be impossible to place regulatory change in a reasonable perspective, identify the root causes of change, identify the tradeoffs that may need to be explored (e.g., the tradeoff between fairness and effectiveness in regulatory proceedings), and craft workable, long-term solutions. Currently, regulatory commissions are being subject to environmental pressures. Legislative reviews and legislative reconfiguration of commissions are two examples of the tangible impact of those pressures. To be effective, regulatory mechanisms need to emerge or be allowed to emerge from

[17] John Borrows in conversation with the author.

the observable patterns of the regulatory environment and be directly responsive to the needs of the environment within which they operate. If adaptable regulatory systems can be created that flow with these patterns of movement, they may avoid the obsolescence of which the traditional regulatory model is accused by creating more adaptable norms rather than by identifying a single, fixed regulatory model that can survive for extended period of time.

6. Systems built on the imposition of authority rather than consensus are, at best, temporary. The drive for self-determination is strong in individuals and organizations. As noted earlier, adhocracy perpetually attacks hierarchy, and at the point that the hierarchical system fails to provide needed results, adhocracy will gain a foothold and eventually overthrow the hierarchy. The most visible manifestation of the attack on public utility commissions by adhocracy is the increasing involvement of other agencies, including state legislatures, in public utility policy making. It can be argued that the consensus support of the traditional public utility regulatory mechanism, though it existed for decades, has now eroded. Until new, consensus-fed mechanisms are created, the traditional regulatory mechanism will be under assault.

The "Genetic Code" of Regulatory Systems

If we can identify the inexorable forces that will drive behaviors in regulatory environments and the naturally occurring limits on those behaviors, we might be able to identify design characteristics for new regulatory models and identify those elements of adhocracy that might eventually form the basis of a new regulatory regime . But what are those limits and patterns of movement that will characterize future utility service delivery? Several are obvious:

1. The power and limits of technology. Though technology has opened utility markets, it too is bounded. Some limits are imposed by physics and the patterns which drive the emergence and adoption of technology. Others are created by economics and human factors.
2. Pursuit by utility service providers for a maximum financial return to their owners. Designers of regulatory systems would do well to heed the advice of Milton Friedman: "So the question is, do corporate executives, provided they stay within the law, have responsibilities in their business activities other than to make as much money for their stockholders as possible? And my answer to that is, no they do not."[18] Utility service providers can be expected to take advantage of any process, including the political process, in pursuit of their self-advantage. The

[18] Milton Friedman as cited in Louis E. Boone, *Quotable Business* (New York, NY: Random House, 1992), 198

best that might be hoped for is that service providers conclude that maximizing the interests of consumers will, in the long run, maximize shareholder return as well.

3. Pursuit by consumers of their own self-interest. Similarly, regulators and industry stakeholders should presume that consumer representatives will look out for the interests of consumers at the expense of utility provider interests. Customer choice and customer dominance are becoming hallmarks of most consumer markets. Though it may take time, most public utility markets must follow suit; economic anomalies, like biological anomalies, are typically short-lived.
4. Expanded and nearly chaotic information flows. In more competitive markets, competitive advantage "shifts from the traditional triad of labor, capital, and material resources to knowledge and technology."[19] This is as true for those who deliver utility service as for those who regulate it. It will be argued that in this information age, information flows attendant to utility service delivery have become too rapid and chaotic to be contained within traditional regulatory mechanisms.
5. Involvement of other players in the regulatory environment. The monopoly long held by public utility commissions over public utility policy making has been eroded or ended. Legislators will, and should, play a role in the development of policy that governs service delivery and regulatory systems. Other state and federal agencies can also be expected to

[19] Arno Penzias, *Digital Harmony: Business, Technology, and Life After Paperwork* (New York, NY: Harper Business, 1995), 43.

attempt to gain a wider involvement in utility service issues because of the intersection of those issues with the mission of those agencies (examples are antitrust and its relationship to the role of state attorneys general and universal service and its relationship to public welfare functions of government). Important functions of these other players, along with public utility commissions, are to serve as a brake on other players and to ensure fairness and balance in the regulatory system. It has been argued that this nation vacillates between pro- and anti-business cycles. These necessary swings are implemented and dampened to avoid precipitous results by government agencies. The result of these swings is to balance, over time, the interests of businesses and individuals.

These forces are the genetic code of regulatory systems, the unvarying attributes that will be present across a wide array of potential outcomes of market change. If these forces are identified correctly, regulatory systems, if they are to be successful will have to take them into account. In my view, in order to work with these forces the next generation of successful public utility regulatory institutions will:

1. Make good use of information. The availability of information and speed of its exchange are, quite obviously, expanding rapidly. New regulatory models are needed that treat information as the most important commodity in utility service delivery and its regulation and allow for diverse and less constrained information flows. That implies an ecological perspective of regulatory information flows, which is described

in the next chapter, and methods of mining and harnessing those flows in the public interest.

2. Leverage the strengths of other agencies and institutions. Other agencies and institutions have strengths that can contribute to an effective regulatory ecology. In addition, public utility regulation is rapidly converging with other, more mature models of economic regulation, and public utility regulation will likely become much more like the regulation of financial institutions, securities, and insurance. Those regulatory models are currently characterized by many of the same problems that attend public utility regulation (e.g., Federal preemption, provider convergence and diversification, the need for regional collaboration, and the need for consumer outreach and education). They have suffered through the evolution of monopoly to competitive service provision and have ultimately created better relations between the regulator and service providers and are now able to maintain a clear distinction between enforcement and policy making, a function lead by and shared with legislators.
3. Make a distinction between enforcement of the law (a process independent of politics) and policy making (a process deeply enmeshed in political systems). I believe that the attempt to create a new equilibrium between state regulators and state legislators on the matter of policy making is the dominant source of conflict between those players. Until the roles of public utility regulators in enforcing the law and making policy are clarified, conflict with legislators and utility service

providers will be the norm. In the current environment, regulatory agency independence and apolitical action are most appropriate when the agency is involved in the enforcement of existing legislation or involved in fact-finding of the type required for single utility, rate setting functions. Elected official involvement is imperative when agencies make policies that affect entire industries. Public utility commissions around the nation are moving from models of clear independence to models of greater involvement with state legislators as the role of commissions shifts from single-company rate setting to industry wide policy making. Where enforcement of the law is necessary for individual firms, commission should still remain independent from political processes, though ultimately accountable to the public. But where policy making is necessary, commissions need to create issue-by-issue arrangements with state legislatures to determine the scope of policy making to be reserved to the commission. The regulation of insurance, banking, and securities has reached a point at which the differences between enforcement and policy making are more evident than is currently the case with public utility regulation.

4. Focus primarily on consumers rather than service providers. The historical focus of the regulatory process was the service provider. Because of the likely explosion of service offerings and provider types, the focus of public utility commissions and the public utility regulatory process may, by necessity, shift to the consumer of utility services. In an environment in which

economic issues no longer fit regulatory boundaries, a significant argument for the continued existence of state-level regulation of any service is the ability of the state-level regulator to remain closer to the customer and to better identify and respond to the customer's needs than a more distant regulator. The predominant response to the increasing national scope of economic entities is to apply increasing national, in lieu of state, regulation. That response is simple, convenient, and wrong largely because of the ability of state governments to maintain closer links to their consumers.

5. Make good use of human capital and technology. In an environment of rapid change, human capital and technology may be key to organizational and regulatory system success. We may be approaching a crisis in human capital at regulatory institutions as a generation of skilled regulatory staff rapidly approaches retirement. Without investment in the next generation of regulatory leadership, regulatory systems may lack the intellectual capital necessary for coping with the complex demands of changing regulatory processes. Similarly, technological tools (principally for information processing) have not been employed as rapidly as might be desired due to budget constraints and limitations on expertise. Technology is not the answer to all regulatory problems, but the appropriate use of information technologies might provide utility regulators with new tools. The next chapter expounds on the employment of information technologies as a regulatory strategy.

Conclusions

The idea of governing in concert with natural, environmental forces is not by any means new; many state regulatory commissions have embarked on a process of creating regulatory change. Creating regulatory institutions that operate in accordance with the natural forces at work in the regulatory environment does not imply that they will be toothless organizations that simply cater to the self-interests of constituents. Effective regulatory agencies in the future will provide vigorous, apolitical enforcement of the law, deliver useful and proactive policy guidance, actively interact with consumers to protect their rights and enable them to maximize their own satisfaction, and create alliances with other government agencies to maximize their effectiveness. Effective regulatory systems will not surrender to adhocracy; they will examine naturally occurring adhocracy for new and effective regulatory models and methods.

The creation of new regulatory systems that operate with, not against, the forces that drive human and organizational behavior will take considerable time. Meaningful organizational change is at least a three-to-five-year process.[20] Regulatory redesign will be an iterative process, and there will undoubtedly be failures, from which we might draw useful lessons. There are complex, nonlinear relationships between the forces and players in the public utility environment, and chaos theory teaches us,

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[20] Margaret Wheatley, "Goodbye, Command and Control," in Francis Hesselbein and Paul M. Cohen, Editors, *Leader to Leader* (San Francisco, CA: Jossey-Bass Publishers, 1999), 159.

among other things, that results may be highly sensitive to initial conditions, that the impact of relatively small perturbations may ripple through the system creating large impacts, that sudden "tipping points" may disrupt flows, and that end results may be nearly unpredictable. According to David Whyte:

> Most paths, in fact, metaphorical, literal or mathematical, take the form of an iterative equation, an equation where the values and events it produces are continually fed back into the equation again and again, influencing any future values it may throw out. Every action, then, no matter how small, influences every future action, no matter how large.[21]

We are in the midst of that iterative process to create the next generation of regulatory institution, and every participant in that change process has the opportunity to have an impact. No matter how small it may initially seem, that impact may ripple through the process to create effective regulatory models and optimal utility service provision to all consumers.

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[21] David Whyte, *The Heart Aroused: Poetry and the Preservation of the Soul in Corporate America* (New York, NY: Currency Doubleday, 1994), 219.

CHAPTER 3

THE INFORMATION ECOLOGY OF THE REGULATORY PROCESS[1]

In order to create new and effective regulatory structures, new ways of looking at existing processes and methods may be required. Business change processes like "thinking outside the box" and "reengineering," though overly cited, imply an examination of methods of operations from a different perspective to avoid the blinders that come from repeated observation from the same vantage point. One potential way to look at regulatory institutions and processes anew may be to observe and analyze the information flows related to public utility markets and the utility regulatory process and attempt to develop mechanisms that optimize those flows in the public interest. In this essay, I take that step away from the standard analysis of regulatory methods and institutions and, instead, observe the flow of information attendant to them. That vantage point provides some interesting and illuminating perspectives that may provide clues for the creation of new, more responsive regulatory methods.

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[1] This phrase is adopted from Thomas H. Davenport with Laurence Prusak, *Information Ecology: Mastering the Information and Knowledge Environment* (New York, NY: Oxford University Press, 1997).

The Importance of Regulatory Information Flows

Information is the lifeblood of both regulation and the provision of public utility services. Commissions, at a basic level of analysis, are in business to make and communicate decisions. They collect information, synthesize and filter it, act on it, and distribute the results of their decision making in the form of information to stakeholders, usually in the form of commission orders. As markets become more competitive, the flow of regulatory and utility market information will likely become more rapid, more complex, and more critical to consumer satisfaction and the success of utility business units. According to the Electric Power Research Institute, "This [the microprocessor] is shifting the energy business dynamic from the supply of commodity-value electricity to the delivery of value-added service through intelligent, customer-managed service networks."[2] Stan Torvik of San Antonio Public Service reports that "we have seen issues that used to be deemed core utility issues, like generating electricity, almost supplanted in importance by effective information technology strategy."[3] New regulatory methods that can cope with these faster and more critical flows of information may be required if commissions are to keep pace with consumer and industry needs and demands.

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[2] Electric Power Research Institute, *Electricity Technology Roadmap: 1999 Summary and Synthesis* (Palo Alto, CA: EPRI, 1999), x.

[3] Stan Torvik as cited by Bill Nesbit, "CIOs on IT," *Public Utilities Fortnightly, IT Supplement 2000*, 10.

Though the utility industry is embracing the strategic value of information and information technology, we on the regulatory side commonly limit our consideration of regulatory information flows and systems to issues like electronic filing and docket management. These are important commission functions that should and are being provided additional attention as resources are available at forward-moving public utility commissions. In a more general sense, however, even more is at stake than how commissions handle these process-driven information flows.

To effectively protect and advance the public interest, public utility regulatory agencies need to create information flows that integrate the needs and voices of all stakeholders; that address the content, method, and context of information flows; that take into account the speed with which information moves and changes; that create a bias for action, without unduly compromising the fundamental fairness of regulatory processes; that, in general, operate from a system of open information flows; and that employ information to accomplish the strategic missions of regulatory commissions.

Now more than ever, public utility commissions exist within a network of stakeholders that includes legislators, state attorneys general, residential consumers, investors (the source of the capital that will finance competition, extended services, and utility sector innovation), large users, other state and federal regulatory commissions, and utility service providers, both incumbent and competitive. The information flows that are relevant to effective public utility commission operations are, therefore, both internal to the agency and external to those other stakeholders and

very diverse in terms of the needs of the various audiences for commission information.

As a result of these factors and requirements, we need to consider the "information ecology" of the regulatory process. That information ecology includes not only analysis of the electronic and paper information systems that support commission operations but analysis of information strategies, politics, behavior and culture, staff, processes, and information architectures.[4] A wider, ecological perspective is particularly important in an environment in which the movement and dissemination of electronic information may become a regulatory tool itself rather than merely a support system for other regulatory methods.[5]

Creating effective information flow, therefore, is more complex than converting paper files to electronic ones. Every piece of information has five essential elements: method, content, sender, recipient, and context, which is the environment within which the other elements interact. Unfortunately, all too often, our infatuation with information systems causes us to only address the method by which we transmit information. Too often, the needs of the recipient and the strategic use of information are inadequately addressed.

Information is "data with relevance to the receiver's situation."[6] Knowledge is "the capacity for effective action," which implies that, in

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[4] Thomas H. Davenport with Laurence Prusak, *Information Ecology*.

[5] See, for example, David Wirick, *New Models of Regulatory Commission Performance: The Diversity Imperative* (Columbus, OH: National Regulatory Research Institute, 1999), 43-61.

[6] Peter Senge, Art Kleiner, Charlotte Roberts, Richard Ross, George Ross, and Bryan Smith, *The Dance of Change: The Challenges to Sustaining Momentum in Learning Organizations* (New York, NY: Doubleday, 1999), 421.

order to create knowledge, information is dependent on the ability of a recipient to interpret the information, generate meaningful options for action, and implement the action.[7] The creation of knowledge requires more than the provision of useful information; it requires a learning process and the development of new human capacities for action.[8] It requires that the intended recipients of information are engaged in its receipt and able to act on it.[9] Information and knowledge cannot be fully separated (i.e., information leads to knowledge and knowledge informs the provision of information), and what is required for effective decision making in the regulatory environment, or any other, is a balance of information and knowledge.

What we are seeking is the provision of information and knowledge that will allow for effective decision making and the creation of markets that serve needs of the public, both individually (the wants and needs of individual consumers) and collectively (the public interest). We are seeking to optimize "information and insight," which is defined by Gary Hamel as "all the knowledge that is collected from and utilized on behalf of customers" and "the ability of a company to extract insights from this information."[10] We are also seeking information that will allow the evaluation of markets, participant behavior, the accomplishment of public goals, and regulatory commission performance.

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[7] Ibid.

[8] Ibid.

[9] Thomas H. Davenport and Laurence Prusak, *Information Ecology*, 92.

[10] Gary Hamel, *Leading the Revolution* (Boston, MA: Harvard Business School Press, 2000), 82.

There are, of course, limits to the application of this information ecology perspective. Every perspective, necessarily, simplifies a complex situation and creates its own reality. No single element in an environment can be analyzed for its singular impact on change. Change is both interactive and cumulative,[11] and changes in information flows will interact with changes in staffing, consumer expectations, economic realities, and a host of other factors to create the overall environmental change. Despite these limitations, it is hoped that an ecological perspective on regulatory information flows will provide a beginning for those who are attempting to craft the next generation of regulatory model.

Traditional Public Utility Regulatory Information Flows

It can be argued that the major role of public utility commissions is the processing of information for decision making and that information flows have been organized to support traditional decision making norms. These traditional regulatory information flows have helped support a clean process that withstood most judicial review. But traditional flows suffer from several design shortcomings that have helped shape the regulatory process in ways that may not serve it well in the current environment. Of course, those traditional information flows and the processes they serve may continue to function well for those portions of the utility marketplace that remain subject to more traditional forms of regulation. In particular, enforcement actions against utility service providers that have violated

[11] Wacker and Taylor, *The 500-Year Delta*, 159.

market rules should be accomplished with appropriate regard to due process and application of judicial processes.

The quasi-judicial model of regulation, which reached the apex of its formality in the 1950s and 1960s, is driven by two limiting information behaviors: (1) the attempt to limit decision-maker authority by restricting options to those presented on the formal record, which restricts the ability of decision makers to participate in the development of consensus outside the process, and (2) the attempt to limit information flows to clearly delineated routes. Each of these intended limits will be discussed in turn.

The Limitation of Decision-Maker Discretion

In order to optimize the fairness, analytical rigor, and objectivity of the regulatory process, decision makers are required to make their decisions based on limited, highly filtered information. This attempt to limit decision-maker discretion presumes that decision makers receive information that drives their decisions only from regularized sources, free of *ex parte* influences and wholly within the bounds of the formal record. It ignores the fact that decision makers often draw on a variety of sources of information, some of it "hard" data of the variety created by the formal judicial record and some of it "soft" data of the type derived through a variety of sources, some of which may not appear to be relevant to public utility regulation at all.

It also presumes that regulatory decision makers respond to data analytically by attempting to sort through the data contained in the official record to find the best decision. It assumes that the role of decision makers is to sort through facts to find the truth and that they begin the

decision-making process by organizing facts. Peter Drucker argues against that assumption and states that effective decision makers actually:

1. Begin the decision process with untested hypotheses (opinions) and are not deceived into false objectivity.

2. Consider alternatives, organize dissent, and demand disagreement as a means to stimulate the imagination.

3. Begin with a commitment to understand why people disagree.

4. Understand that each decision is an approximation and a risk. There is no right answer.[12]

Some of these attributes are allowed in the regulatory process (e.g., the demand for disagreement fueled by the adversarial process). But Drucker's model assumes an element of subjectivity in the minds of decision makers and a commitment to avoid "false objectivity," subjectivity that regulatory processes try, probably unsuccessfully, to eliminate. His model also suggests a decision maker actively involved in the process of questioning his or her own hypotheses against the environment. The traditional regulatory model presumes a more passive decision maker who is content with the filed record. In the Drucker model, the most important function of decision makers is to participate proactively in *forming* the key questions, a function of executives more important than actually filtering data and *answering* the questions. Unfortunately, at some commissions, particularly those with strong *ex parte* barriers between

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[12] Peter F. Drucker, *Management: Tasks, Responsibilities, Practice* (New York, NY: Harper and Row, 1974), 470-480.

staff and commissions, allowing commissioners to participate in the question formulation stage is difficult.

While many public utility commissioners are highly analytical, the traditional regulatory model ignores the facts that people respond to information both analytically and emotionally and that some prefer emotional decision making over analytics. In short, while data is important, decision makers use both their heads and hearts in decision making.[13] Attempting to deny that people respond to information emotionally is to deny what is known about human nature and decision processes and is ultimately "useless, naive, and counter-productive."[14]

In the context of public utility regulation, the analytic presumption may also limit the inherent genius of the regulatory system, which was intended to counter the analytic talent and narrow focus of commission staff with the broad knowledge and wide public focus of commissioners. The analytic presumption, in its extreme, finds fault with any commissioner who does not function nearly exclusively analytically.

The traditional regulatory information flow model, at best, does not provide incentives for regulatory decision-makers to craft consensus solutions. At worst, it attempts to prohibit the development of consensus. Alternative dispute resolution (ADR) has been proposed for years as a set of methods that would allow commissions and commissioners to escape the restrictions of the quasi-judicial regulatory process. Though used in some instances quite successfully, ADR application is still substantially limited by administrative requirements in many jurisdictions, and its

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[13] Thomas Davenport and Laurence Prusak, *Information Ecology*, 124.

[14] Ibid.

potential for crafting win-win solutions is still unrealized in most jurisdictions.

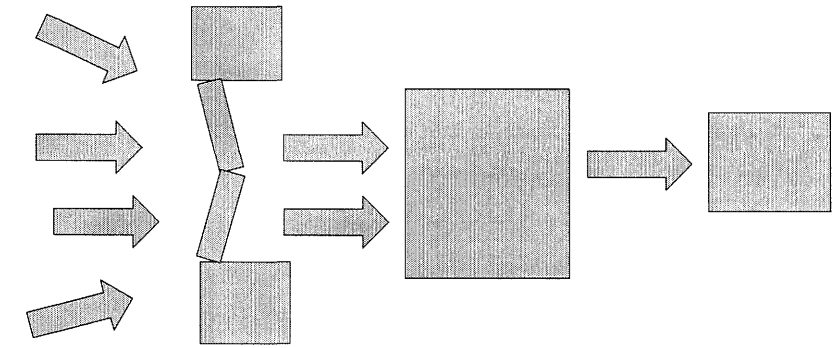
Lastly, commissioners are not commonly empowered to scan the environment for creative solutions or broker solutions that achieve optimal outcomes. Commissioners with a legislative or business background, who made often decisions through active, informal, and direct engagement with stakeholders, often find these constraints particularly inimical to effective decision making.

The net result of these underlying assumptions about the behavior of decision makers, assumptions that are codified in the regulatory process, is to limit their discretion, creativity, and collection and use of information. In the past, those limitations may have been appropriate. The key issue is whether they are appropriate now and will be in the future.

The Restriction of Information Flows in the Traditional Regulatory Model

Information flows in the traditional model were limited to regularized information channels or pipes. Figure 3.1 illustrates the traditional information flow, which is a linear, winnowing process designed to limit information flow to circumscribed paths and to narrow the scope of information ultimately used for the decision. Few players were allowed to present information, and all information had to pass through institutional "information gates." Once it had passed through the information gate, information was further subjected to "raking criticism" further winnowing the information available to decision makers. Though that process may have been useful for due-process protection, it serves far less well for system-wide policy making.

Figure 3.1
Information flows in the traditional regulatory model.



Source: Author's construct.

Several other, usually unspoken, assumptions characterized the design of the information flow system under traditional quasi-judicial regulation. These assumptions are:

1. The reliability of the information used for regulatory decision making is highly important. As a result, techniques were created for the verification of its accuracy. These techniques included the use of financial and management audits and, most importantly, the requirement that all information bearing on a decision be subject to public cross-examination. The information system was designed to ensure that no unverified or untested information was used for decision making.

2. Information must be simultaneously known to all parties to ensure fairness. This assumption, buttressed by *ex parte* and open meetings requirements, generated systems for filing information on an open record. Though presumed to be a bedrock of the regulatory decision-making process, few decision processes in other environments require simultaneous and equal knowledge. Other techniques are, fortunately, available for redressing information asymmetry.
3. Information flows can be constrained to regularized and closed loops. Modeled on court procedures, regulatory procedures were developed to manage the flow of information and to guide it along prescribed pathways. If information flowed outside the process, sanctions were created and applied to errant participants; if it was deemed on review that a regulatory proceeding was "polluted" by information from outside the prescribed path, the proceeding was sometimes deemed inappropriate and reversed on appeal. These restricted flows helped provide a "transparent" process able to be replicated and reviewed.
4. The public utility commission should serve as the information "gate." In the traditional process, public utility commissions have two key functions. One is to make decisions. The other is to assemble the information deemed necessary for decision making. In that commissioners, operating on one side of the gate, are restricted to making decisions based on the information that passes through it, a key feature of regulatory processes is the battle among stakeholders to push information that supports their positions through the commission information gate. One common strategy is to

flood the commission with information, most of which will be irrelevant to the decision.

5. Adversarial processes lead to good public outcomes. A key element of commission processes is subjection of information to "raking criticism."[15] The assumption underlying the practice is that the presentation of information sustaining a position, attacks on that information, and attacks on the information presented to buttress counter-positions are effective methods that lead to good outcomes. If that assumption were not held, commissions would adopt alternative processes or attempt to change existing processes. Considerable evidence is now being presented that suggests that the best way to resolve problems may not be by adversarial methods.[16]

Though designed with good intentions and effective for a number of years, the regulatory processes designed on these information assumptions have led to some unintended outcomes that handicap their utility in the current and likely future environment of public utility markets. Those unintended outcomes of the regulatory process may include:

1. Additional contentiousness was injected into the regulatory process. By defining issues as adversarial and subjecting them to an adversarial process, traditional regulatory methods ensured that adversity was magnified. According to Carrie Menkel-Meadow, an adversarial process can create problems

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[15] David Luban as cited in Deborah Tannen, *The Argument Culture: Moving from Debate to Dialogue* (New York, NY: Random House, 1998), 147.

[16] See, for example, Alfie Kohn, *No Contest: The Case Against Competition* (Boston, MA: Houghton Mifflin, 1986).

by forcing the parties into "attack and defensive postures which then may inhibit creativity in finding solutions."[17] It also leads to what Gregory Bateson calls "symmetrical schismogenesis," in which each party does more of the same thing in reaction to the other.[18] Alfie Kohn describes this phenomenon as MEGA (mutually exclusive goal attainment), in which my success is dependent on your failure.[19] The language of a rate case was the language of a contest. Attacking the information provided by "the other side" was an accepted and necessary practice. Commonalities were not focused on. In doing so, opportunities for more amicable resolution of issues were closed.

2. "Hard" data that could survive the information aggregation process was emphasized. As was indicated earlier in this essay, some information relevant to decisions comes from a variety of sources and in a variety of forms. Effective decision making relies on a combination of hard and soft information. In the traditional regulatory process, the information that survived the process was likely to be information that could be subjected to analysis. Anecdotal information, information that resonated against personal values, and information not readily reducible to "read/view" mode was intentionally minimized. On a more positive note, the traditional process ensured that there

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[17] Carrie Menkel-Meadows as cited in Deborah Tannen, *The Argument Culture: Moving from Debate to Dialogue* (New York, NY: Random House, 1998), 164.

[18] Gregory Bateson as cited in Deborah Tannen, *The Argument Culture: Moving from Debate to Dialogue*, 165.

[19] Alfie Kohn, *No Contest: The Case Against Competition* (Boston, MA: Houghton Mifflin, 1986), 4.

was a place for analysis. Less structured decision processes may not feature or rely on scientific analysis.

3. Commissioners were overloaded. A key function of decision support systems is to make the assimilation of information by decision makers manageable. In some states, commissioners are required by law to read the entire record, and it is presumed that commissioners are, at a minimum, familiar with volumes of data. Some commissioners complain that the volume of information, coupled with its complexity, is impossible to keep up with.
4. Innovation was stifled. Research indicates that organizations and systems with more open information flows have higher levels of productivity, performance, and innovation.[20] In traditional public utility regulatory processes, decisions are constrained to the borders of the record and information flows are closed.
5. Reductionism was the rule. Again according to Carrie Mendel-Meadow, an adversarial process "reduces complex human problems to just two sides" and everyone must align with one side or the other.[21] In traditional regulatory processes, issues were often framed in an "us-versus-them" vocabulary. (See the first essay in this report for a description of the impact of bilateral conflict.)
6. Regulatory information flows failed to scan the environment and detect information that strongly suggested that changes in regulatory processes were necessary. The traditional

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[20] Thomas Davenport and Laurence Prusak, *Information Ecology*, 84.

[21] Carrie Mendel-Meadow as cited in Deborah Tannen, *The Argument Culture*, 164.

> regulatory process proceeds in a reactive, case-by-case, docket-by-docket fashion, which does not provide enough opportunities for longer-term evaluation of the regulatory or market environment. In the case of traditional regulation, forces were building across the past decade which had the capability to substantially disrupt the regulatory regime and change service delivery.

It may have been possible and advantageous to attempt to constrain regulatory information flows in the past, and that information constraining process may be appropriate for certain commission actions now. In the current, rapidly changing environment, however, flows are more diverse, more rapid, and more critical to service providers and recipients.

As technology enables new market development, the "life cycle" of information becomes much shorter. Decisions, fueled by information, need to be made quickly before circumstances change. New players and new roles for old players bring new information and information needs to the regulatory environment, information that must be assimilated and acted on in short order. There is neither the time nor the capacity to force these vibrant streams of information into the deliberative and limited flows that traditional regulatory methods required.

Information Flows in New Regulatory Systems

Though restricted information flows may still serve commissions well when they enforce rules and consider action against infringement of market rules, what is needed for the new roles of public utility commissions, which include regulatory policy making and informing

consumers, is a regulatory model that can accommodate expanded streams of information, flows that border on chaos because of the volume of the flow, the many sources of information, and the increasing speed with which information arrives, needs to be acted on, and quickly becomes irrelevant. In the language of the telecommunications industry, we are seeking to increase the "bandwidth" of regulatory information flows.

In this section, I lay out several criteria for regulatory information processing. I present an ecological model that accommodates other players and new sources of information, and in its totality, attempts to establish regulatory institutions as "information-based organizations,"[22] organizations whose principal function is the rapid and effective collection, dissemination, and use of information in support of their mission.

As noted earlier, our approach to information systems is often limited to application of available technology instead of attempting to change the way we use information to support the mission of the organization. According to Thomas Davenport, organizations have applied technology to information problems and attempted to use machine-engineering methods to turn data into something of use on computers.[23] Neither has been adequate and, as a result, most organizations "don't know what they know or what they need to know.[24]

The solution, he argues, is the ecological approach that knits together information systems, the organization, and its environment.

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[22] Peter Drucker, *The New Realities In Government and Politics/In Economics and Business/In Society and Worldview* (New York, NY: Harper and Row Publishers, 1989), 207.

[23] Thomas Davenport, *Information Ecology*, 28.

[24] Ibid., 7.

Specific elements to consider include strategy, politics, behavior and culture, staff, processes, architecture, the business environment, technology investment, physical arrangements, business markets, technology markets, and information markets.[25] He further defines four "ecological attributes" of an information system:

1. Integration of diverse types of information. Information ecologies thrive, according to Davenport, on diverse types of information. Integration has occurred not only because of new technologies but the need to better leverage non-traditional sources of information.
2. Recognition of evolutionary change. Information ecologies will constantly evolve. Identifying the right compromise between information structures that last and those that can easily be modified is a key variable.
3. Emphasis on observation and description. Taking the time to describe the current information environment is essential to developing new information networks. Unfortunately, often little is known in an organization about how information flows or how people use the available information.
4. Focus on people and information behavior. If a system doesn't change the way people use information, it is wasted effort. Helping individual workers seek, share, structure, and make sense of information is critical.[26]

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[25] Ibid., 34-39.

[26] Ibid., 29-33.

An application of these ecological attributes to regulatory information systems might find the latter wanting. Information sources and types are limited; though the need for change might be recognized, information systems are designed to support static processes. There are few studies of the way people in commissions use information; and, as indicated, the focus is not on people and behavior but on the regulatory process. To become more ecological in their focus, as regulatory commissions reconsider or redesign their information systems, they may want to emphasize the following attributes:

- Information systems need to be integrated with the strategic plan and mission of the commission. Though commissions are seeking new missions in the changing regulatory environment, they sometimes fail to create new information systems to support those activities, often because of a lack of time and resources. But if those missions are to be optimally effective, they must be supported with information. For example, if commissions elect to provide more and better consumer education and empowerment, what information will those missions require? How will that information be gathered and shared? What is known about consumers and their preferences? The same types of questions might be asked about the operation of competitive markets. If a commission encourages the development of competitive markets, how will it know if those markets are successful? How will it measure market power? The key may be the creation of information systems that measure market failure or success and provide information that decision makers can use to amend policy. Too often, information systems planning is an ancillary

component of the budget process, which often does not allow for the full and fair consideration of the changing information needs of regulatory commissions.

- An overall "information strategy" should be put in place. This strategy should focus on information content, common information, information processes, and new information uses.[27] The purposes of the information strategy are to better allocate information resources, help the commission change, and make information more meaningful.[28] Lastly, the information strategy should provide a tool that can be integrated into the commission budget process.
- The focus of commission information systems should eventually shift from companies to consumers. As consumers gather power in utility markets and as utility service delivery shifts from commodity service to value-added service, the focus of commission regulation and information gathering to support that regulation should shift to consumers as well. Currently, a wealth of information is available at commissions about the internal workings and cost structure of utility service providers; little is known about consumers and their preferences. In the future, having detailed knowledge about the impact of markets and services on consumer segments will be more valuable than utility data. Commissions also need to determine when the utility information is no longer useful and cease its collection.

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[27] Thomas Davenport, *Information Ecology*, 47.

[28] Ibid.

- Information systems need to support commission and individual performance assessment. Effective performance measurement requires an assessment of multiple dimensions of an organization's performance.[29] It is often stated that "what gets measured, gets done." In order for commissions to be successful, they need to identify outcome indicators for their performance at the commission and gather information that supports performance assessment. In addition to identifying outcome indicators and measurement techniques for commissions, information systems should also support the assessment of the performance of commission staff.
- More diversity of sources needs to be interjected into information gathering. In the past, nearly all information collected by commissions was gathered from the utilities. Now some of the information once collected from utilities is irrelevant. Other information sources need to be added to enrich the information mix used for decision making. Collecting expectation and satisfaction data directly from consumers is one example. Effective information systems collect both "hard" and "soft" data.[30] Commission systems, particularly decision support systems, should collect diverse types of information from diverse sources, including publicly

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[29] Hugh Watson and Traci A. Carte, "Executive Information Systems in Government Organizations," *Public Productivity and Management Review*, Vol. 23 No.3, March 2000, 380.

[30] Hugh Watson and Traci A. Carte, "Executive Information Systems in Government Organizations," *Public Productivity and Management Review*, Vol. 23 No.3, March 2000, 377.

available information, thereby increasing information "bandwidth."

- Information needs to be aggregated and synthesized for decision makers and the public. Information should be disseminated to users based on their needs and level of sophistication. Just as diversity of sources is necessary, diversity of output is also necessary. Information needs to be tailored for various constituent groups, which may include legislators; consumers, who may speak different languages or who may gather their information from non-standard sources; and the investment community, including potential investors in utility capacity. The commodity in shortest supply among decision makers is time; drawing their attention to information is critical but rarely considered.[31] One state regulatory commission is considering the preparation of an easy-to-read annual review of the state of utility service delivery as one means of providing useful information to the public and to policy makers. Harnessing the power of the Internet is important, but not all consumers have access to it and it cannot meet all information needs. Alternative means of distributing information will be required in the short run at least.
- Information systems should allow users to "pull" the information they need. Most information systems assume a standard user and "push" information to that user. A pull strategy assumes that users are the best judges of what they

[31] Thomas Davenport, *Information Ecology*, 91.

need.[32] Combined systems, in which some information is pushed while other information can be pulled, can be effective, and the best information distribution systems are often combinations of people, documents, and computers.[33]

- Information systems should be built by users. Top-down re-engineering of information systems doesn't work well in knowledge and information professional settings.[34] One key to getting people to change behavior is to involve them in change processes. Top-down imposition of systems, though they may be technologically competent, are likely to fail to produce the desired behavioral effects. A participative approach that emphasizes outcomes rather than detailed work steps is likely to be the most successful.[35] Commissions systems are also likely to serve external users as well as internal ones; those external stakeholders should be involved as well.
- Continual evolution should be expected. As the regulatory environment changes, information needs will change as well. A "one-time fix" of commission information systems is unlikely to be productive. Evolution of the information ecology is discussed by Davenport.[36] In addition, unintended consequences of information system redesign are sure to arise and will need to be addressed once discovered.

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[32] Ibid., 148.

[33] Ibid., 148-149.

[34] Ibid., 154.

[35] Ibid., 155.

[36] Ibid., 28

- Information staff need broad skills. In addition to being competent in, but not obsessed with, information technologies, information staff need to have a broad understanding of the commission's mission, knowledge about the sources and uses of information at the commission, political savvy, strong interpersonal skills, and a strong orientation to overall business performance.[37]
- Information systems need to allow for analysis. One strength of the traditional regulatory system was its emphasis on the analysis of information. In the future, analysis will still be an important part of the assessment of the effectiveness of markets, the behavior of service providers in meeting service standards, and consumer satisfaction and expectations. Systems that collect data without allowing it to be "mined" for useful information will fall short of meeting commission needs. An example of a system that allows effective analysis is a consumer complaint tracking system that would allow aggregation by utility and type of complaint and allow tracking of action taken on each complaint. Attention will need to be paid to the ability of the system to present the results of analysis in a variety of high-quality formats.
- Information systems must be secure and protect consumer privacy. Security from deliberate or accidental damage by outsiders is, of course, mandatory for information systems. In addition, commissions will have to tread the fine line between collecting consumer information that will allow consumers to

[37] Ibid., 115.

receive the best service and information that can be abused through unwanted intrusions.[38]

- Information systems must be subjected to cost-benefit analysis. Though reducing paper is a laudable goal, information systems must be subjected to clear-eyed cost-benefit analysis, which requires identification of the purposes for which systems are constructed and analysis of information system options. Unfortunately, research into government information systems has shown that projects that provide immediate measurable benefits or those that can easily be subjected to traditional cost-benefit are preferred.[39] Decision makers also need to consider harder to measure and long-term benefits of regulatory information systems as well (e.g. improved effectiveness of decisions, enhanced statewide and community economic development).
- Systems must have broad support to ensure "buy-in" and to prevent system failure due to commissioner or staff turnover. A strong and committed sponsor is critical to system success, but at some point, the system must prove its value and be so widely supported that its continuance is not dependent on the support of a single person.[40]

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[38] John Hagel, *Net Worth: Shaping Markets When Customers Make the Rules* (McKinsey and Company), 26.

[39] Hugh Watson and Traci A. Carte, "Executive Information Systems in Government Organizations," *Public Productivity and Management Review*, Vol. 23 No.3, March 2000, 375.

[40] Ibid., 379.

Conclusion: Managing Information Behavior

The goals of information system redesign are to better inform the decision making process at commissions, allow commissions to better accomplish their missions, both new and old, and to change individual behaviors. The last goal may be the most difficult.

According to Thomas Davenport, managing information behavior includes:

- Communicating from the top of the organization that information is valuable through requiring better information, devoting more resources to the provision of information, giving information processes attention in organizational structure, and rewarding employees for good information exchange practices.
- Clarifying the organization's information strategy and objectives.
- Identifying necessary information competencies.
- Assigning responsibility for information behavior.
- Creating a committee to address information behavior issues.
- Raising tough issues about information collection and use.[41]

Public utility commissions have effectively employed information in pursuit of their missions for decades. As their missions change, however, considerable consideration needs to be given to the ways that information is collected and used at commissions. If substantial changes in commission missions and processes are to be accomplished, they will require a parallel substantial change in commission information strategies, sources, uses, skills, and culture.

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[41] Thomas Davenport, *Information Ecology*, 104-105.

CHAPTER 4

TURNING REGULATION UPSIDE DOWN: A CONFLICT TRANSFORMATION MODEL

The End of Hierarchy as the Principal Business Model

For decades, the principle mechanism for management control in industrial societies has been the establishment of hierarchical organizations, an organizational model that has been institutionalized by management training and accepted as the norm in business and government organization. According to Frances Hesselbein:

> Organization Man developed the practice of management. But as this practice evolved, he forgot that his world was round, and he built a management world of squares and boxes and pyramids. His world had a special language that matched its structure: the language of command and control, of order and predict, of climb the ladder, of top and bottom, of up and down. In every large organization for the next one hundred years, rank equaled authority. And for the most part the old hierarchy that boxed people and functions in squares and rectangles, in rigid structures, worked well. It even developed the famous pyramid with the CEO sitting on the pointed top looking down as his workforce looked up.[1]

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[1] Frances Hesselbein, "Managing in a World That is Round," in Frances Hesselbein and Paul M. Cohen, Editors, *Leader to Leader: Enduring Insights on Leadership From the Drucker Foundation's Award-Winning Journal* (San Francisco, CA: Jossey-Bass Publishers, 1999), 9.

Today, management experts and observers, in a world of fierce global competition and instantaneous communication, say that those days of success based on order, hierarchies, and pyramids are over, led in that change by the innovators of Silicon Valley, whose greatest "product" may be the social organization of its companies and the networked architecture of the region itself.[2] Again according to Frances Hesselbein:

> In the 1970s and 1980s, some leaders in the private and voluntary sectors saw that the hierarchies of the past did not fit the present in which they were living or the future they envisioned–so they took people and functions out of the boxes and, in doing so, liberated the human spirit and transformed the organization....With the return of a more fluid, circular view of the world, the days of turf battles, the star system, and the Lone Ranger are over. The day of the partnership is upon us.[3]

In government, limiting the range of discretion for agencies and individuals was regarded as imperative in order to ensure their adherence to the law and established authority. As a result, the hierarchical, pyramidal model of organization was ideal. Jerry Koehler and Joseph Pankowski say that:

> Government systems usually operate top down, and are top-echelon driven...In traditional government management systems, activities are divided into functions.

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[2] Kevin Kelly, *New Rules for the New Economy: 10 Radical Strategies for a Connected World* (New York, NY: Penguin Books, 1998), 28.

[3] Frances Hesselbein, "Managing in a World That is Round," in Frances Hesselbein and Paul M. Cohen, Editors, *Leader to Leader: Enduring Insights on Leadership From the Drucker Foundation's Award-Winning Journal* (San Francisco, CA: Jossey-Bass Publishers, 1999), 10-12.

> Organizational structure and design forced activities into specific functions. The assumption was that if each function met its goals, the organization would be effective...The old concept of managing government was for each individual to be given a specific task...In the traditional government organization, elaborate information systems were established to collect data for the top echelon. The top echelon was in charge of analyzing the data and developing new strategies for improving the organization. The assumption was that if top management was exposed to the data, it could develop strategies within the organization to improve organizational effectiveness.[4]

But in a world of constrained resources and increasing consumer and legislative demands, government too began to abandon hierarchical, rule driven models of operation. The common threads in that ongoing government "reinvention" are the propositions that government should:

- Promote competition between service providers and prefer the use of market mechanisms.
- Empower citizens by pushing control out of the bureaucracy into the community.
- Measure the performance of agencies, focusing on outcomes not activities.
- Be driven by goals and missions instead of rules and regulations.
- Redefine clients as customers.
- Prevent problems before they emerge.
- Decentralize authority.

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[4] Jerry W. Koehler and Joseph M. Pankowski, *Teams in Government: A Handbook for Team-Based Organizations* (Delray Beach, FL: St. Lucie Press, 1996), 4-5.

- Catalyze all government sectors into action to solve public problems.[5]

In short, business and government (and, presumably, those organizations in between) have discovered that what was once rational–order-driven, hierarchical, pyramidal organizations–is no longer. Faced by a world in which the time span of discretion grows shorter and shorter, the long term always turns out differently that it was predicted to, lines of communication are no longer possible to control, the locus of power floats through the organization to those who control the most critical variables, and chaos rather than order is the norm, successful leaders of government and business have turned the organization on its head.[6] The bottom of the traditional pyramid–consumers and those who do the work and create value in organizations–now control the top with the role of managers shifting from control to facilitation and support of those who perform direct service to customers. According to Wacker and Taylor:

> Nations and corporations who thrive will organize themselves accordingly. They will maximize the freedom to know, to go, to do, to be. Nations and corporations that

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[5] David Osborne and Ted Gaebler, *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector* (New York, NY: Penguin Books, USA, 1992), 19-20.

[6] Watts Wacker and Jim Taylor with Howard Means, *The 500-Year Delta: What Happens After What Comes Next* (New York, NY: HarperBusiness, 1997), 33-34.

> don't, that continue to fight rear-guard actions based on nostalgia, will atrophy.[7]

The keys for private and public organizations in this new order for organizations are to push power down from the top of the former hierarchy toward the bottom, to trust in the ability of those who perform the work of the organization to identify and serve customer needs, to open information flows, to empower customers, to focus on outcomes instead of activities, and, probably most importantly, to learn to solve problems jointly. William Ury, who will be cited more extensively later in this chapter says:

> For centuries, we have relied on top-down decision making to get things done. Now the old authoritarian hierarchies are tumbling down; the father, the boss, the chief, the king [the regulatory commission?] cannot simply give orders anymore. Increasingly, we cannot compel others to do what we want; we depend more and more on their voluntary cooperation. We have little choice but to learn how to make our decisions jointly. (Phrase in brackets added by the author.)[8]

Implications for Regulatory Institutions

Public utility commissions have been and, for the most part, still are clearly pyramidal organizations with clearly defined, and often rigid, processes. As such, they fall far from the norm of contemporary

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[7] Ibid., 42.

[8] William Ury, *The Third Side* (New York, NY: Penguin Books, 2000), 198.

organizations. In addition, movement toward less traditional models of control is made difficult because, in some cases:

1. Commissions still largely operate in an adversarial manner with utilities. Traditional relationships between utilities and regulators were combative and confrontational within the adversarial judicial process. Despite the fact that in some segments of the utility market the regulatory model has changed, complaints still arise about the adversarial tone of regulatory commission actions. In one small example, some commissions define each formal interaction with the utility as an "investigation," which when announced publicly implies a presumption of wrongdoing.
2. Commissions are subject to being "whipsawed" by their various constituencies. Incumbent utilities often argue that commissions are introducing competition too rapidly and handicapping them; competitors argue that commissions have tilted the field toward the incumbents, thereby making effective market entry difficult or impossible. Commissions are caught in the middle and subject to criticism from both sides and from legislators.
3. Commission information systems still largely focus on utility service providers rather than markets or consumers and, because of financial considerations, sometimes do not rely on the best available technology.
4. The legal process and procedural requirements still handicap the application of alternative dispute resolution (ADR). Though ADR has been advanced as an alternative to quasi-judicial

processes for years, the quasi-judicial model still predominates even though the focus of much commission action has shifted from individual utility actions to broad, industry-wide policy making.

5. Commission personnel systems are not competitive with the private sector. At some public utility commissions the loss of talent is critical and is exacerbated by the looming retirements of key staff. Some of the benefits of public employment, benefits that were supposed to offset lower salaries, are no longer as compelling. For example, in this environment of regulatory change the former high probability of lifetime employment in government service has been reduced.
6. It is difficult for commissions to shift the focus of commission and employee performance evaluation to outcomes in lieu of inputs or activities as suggested by Osborne and Gaebler because those outcomes have been poorly defined.[9] In the past, commission performance was evaluated on the criteria of speed of action and the creation of an elusive and short-lived balance between competing interests. In a policy-driven regulatory world, those criteria are even less adequate than they may have once been.
7. Partnerships between commissions and legislatures, commissions and other agencies, and commissions and external stakeholders, though improving, are still limited and, in

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[9] David Osborne and Ted Gaebler, *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector* (New York, NY: Penguin Books, USA, 1992), 138-165.

some cases, are still adversarial or non-cooperative. The ability to create a socio-political network to regulate physical networks has been limited. Yet as William Ury put it:

> To survive and thrive in the knowledge economy, organizations of all kinds...have come to recognize the urgency of breaking down walls of all kinds...–anything that interferes with the information sharing process through which new knowledge and wealth are generated. Whereas pyramidal organizations create and reinforce boundaries, network organizations erase boundaries by making connections across them.[10]

8. The requirements of *ex parte* processes sometimes create undue stratification between commissioners and staff and between staff units. Effective communications at commissions is frequently cited as a major impediment to effective operations.
9. Commissions sometimes are not able to focus on their mission due to the heavy workload from procedural and low-impact items.
10. Though commission workloads are extremely high and staff are hard working and competent, the productivity of commissions, measured as the ability to create effective outcomes in a rapidly changing environment, may be declining.
11. The work of change "champions" at commissions is more difficult than it would otherwise be. Because commission work is deeply embedded in clearly defined processes and rules, it

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[10] William Ury, *The Third Side: How We Fight and How We Can Stop* (New York, NY: Penguin Books, 1999), 97.

is particularly difficult to create change. Further, hierarchical systems discourage the growth of change producers by rewarding those who play the game rather than those who attempt to subvert it. Change, as a result, most often is imposed from outside agencies by external sources (e.g., legislators or dissatisfied customers) or by the placement of change agents within the commission by outsiders (e.g., the governor). The attributes of successful organizations in tumultuous times–flexibility, speed, risk taking–are difficult to insinuate into process-driven organizations.

12. Legislative scrutiny is pervasive. In the recent past, three commissions have been abolished (and replaced) by their state legislatures (one requiring an amendment to the state constitution which was adopted by voters), legislative study commissions have been formed, national groups of legislators are concerned about the role of state commissions, "sunset" reviews have become more than mere formality, and legislators have become more interested in commission operations and, in some unfortunate cases, the role of individual commission staff.

Though regulatory commissions are handicapped in many regards in their pursuit of the objectives for government defined by Osborne and Gaebler by their court-like structure and processes, elements of the organizational revolution described earlier in this chapter are applicable to them.

Despite the many handicaps regulatory agencies face, many of them are attempting to move toward less hierarchical and less top-down

norms of operations in a number of ways. The traditional regulatory commission was organized around the fixed and predictable universe of ratecases. Today, public utility commissions are employing different regulatory methods, which include the creation of more-competitive markets, more market-based forms of rate setting, consumer outreach and education, and policy making. They are adopting alternatives to the quasi-judicial regulatory processes; those alternatives include regulation by policy making, regulation by information, regulation by dispute resolution, and regulation by consumer protection and education.[11]

Regulatory commissions across the country are also reaching outward, becoming more externally focused instead of being inwardly and process-focused. They are creating new relationships with legislators and other agencies and providing information to and collecting information from consumers.

The net result is that, though many commissions have made considerable changes in their operations and methods, much change remains necessary for state regulatory commissions if they are to become responsive and more open to consumers and consensus-driven processes. Like their private-sector colleagues, in order to keep pace with rapid change and increased demands, regulatory commissions may need to find ways to turn old hierarchies and pyramidal organizations on their heads. There are limits on the changes commissions can make, but there is tremendous opportunity as well to create new missions, regulatory techniques, organizations, and partnerships.

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[11] David Wirick, *New Models of Regulatory Commission Performance: The Diversity Imperative* (Columbus, OH: National Regulatory Research Institute, 1999).

One area in which commissions might invert their traditional pyramid in order to make better use of resources and create more cost-effective outcomes is in the manner in which they envision and resolve disputes. Dispute resolution is a common function of commissions, and, in fact, much of what commissions do is predicated on the existence of disputes. I describe here a conflict transformation model that, if applied to public utility commissions, might eliminate unproductive hierarchy and open commissions to more consensus-driven processes, citizen empowerment, conflict prevention, and decentralization.

Regulatory Institutions and the Transformation of Conflict

Containing conflict has, for decades, been the principal mission of public utility commissions. In order to avoid marketplace conflict, in which consumers would be significantly disadvantaged by monopoly providers, regulatory commissions bounded the conflict between service providers and recipients within the ordered domain of a regulatory process. The conflict still occurred; it was not prevented. It simply was transformed and elevated so that it occurred within the constraints of a judicial process instead of being resolved in the market or before the legislature, which had been forcibly removed from rate setting by the courts. For those same decades, it was believed that there was no effective alternative to this process of conflict containment.

Today, there are some, albeit imperfect, alternatives. The conflict between consumers and utility providers, each in pursuit of legitimate self-interests, and among providers of utility services now occurs in markets for portions of the telecommunications, natural gas, and electric markets.

In addition, utility service providers have, in some cases, taken their conflicts to the state legislatures for resolution.

Overall, the commission strategy of containing market conflicts within quasi-judicial processes has been frustrated and is likely to erode further. Regulatory commissions, therefore, need new ways of dealing with conflict, particularly since conflict is likely to increase in turbulent times and in competitive or partly competitive markets rather than decrease.

It is sometimes presumed that conflict is a bad thing, a phenomenon to be avoided. In truth, conflict can indicate the need for change and dissatisfaction with the status quo. Conflict, therefore, should not be avoided by commissions. Indeed, an argument can be made that commissions ought to seek out conflict to determine the need for policy changes. Conflict can become a problem, however, when it exceeds a threshold of acceptability or when it is unresolved and damage results. The model presented in the following section presents three ways of transforming conflict and preventing it from exceeding those thresholds.

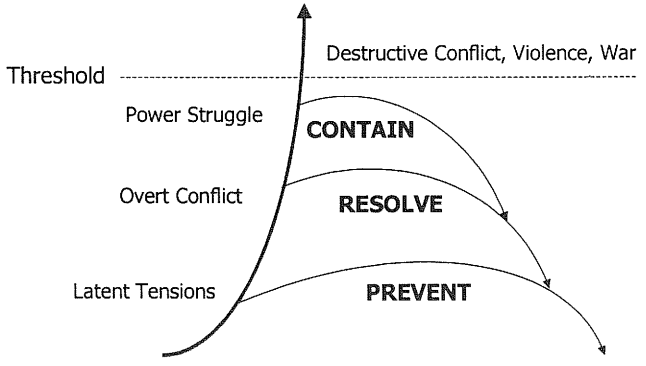
The "Third-Side" Model of Conflict Transformation

William Ury, part of the original team that created the art of principled negotiations, presents a model of conflict transformation that might prove useful for commissions. His key to the prevention, not of conflict itself, but of *destructive* conflict is the involvement of the "third side." The third side, in Ury's model, is composed of those members of the community not directly involved in the conflict but who will be harmed in some manner. If the third side can become involved in the conflict, the

conflict can be contained to prevent escalation. Within the container provided by the third side, conflict can gradually be transformed from confrontation into cooperation.[12] With their obligation to serve the public interest, public utility commissions might serve the role of the third side in the operation of utility markets. Converting conflict to cooperation also comports with one frequently espoused direction for state commission change (i.e., the application of more consensus-driven models of decision making).

Ury's model further posits a three-part hierarchical model for conflict transformation, though his hierarchical model is upside down, particularly given the typical escalation of conflict applied by public utility commission quasi-judicial processes. That model is summarized in Figure 4.1 and Table 4.1.

Figure 4.1
Catching conflict before it escalates.



Source: William Ury, The Third Side.

[12] William Ury, *The Third Side: How We Fight and How We Can Stop* (New York, NY: Penguin Books, 1999), 3-7.

Table 4.1
The Ury Conflict Transformation Model

Conflict Type	Why It Escalates	Transforming Mechanism	Roles for Conflict Mgrs.	Emphasis
Latent Tension	Frustrated needs, poor skills, weak relationships	Prevention	Provider Teacher Bridge-builder	Highest Prevent if possible.
Overt Conflict	Conflicting interests, disputed rights, unequal power, injured relationships	Resolution	Mediator Arbiter Equalizer Healer	Second: Resolve if necessary.
Power Struggle	No attention, no limitation, no protection	Containment	Witness Referee Peacekeeper	Lowest: Contain as a last resort.

Source: Adapted from William Ury, *The Third Side*, (New York, NY: Penguin Books, 2000).

At the top of Ury's hierarchy, which identifies the roles for third siders, is conflict prevention. Prevention is defined as "addressing the root causes of conflict and laying the foundation for the cooperative management of differences."[13] Conflict escalates because of frustrated needs, poor skills, and weak relationships. In a successful program of

[13] Ibid., 114.

prevention, third siders need to accomplish the three functions identified below. Ury's role descriptors are listed in italics:

1. Enable people to meet their needs by sharing resources and knowledge, providing protection, giving respect, allowing people to be free, and opening doors. *The Provider.*
2. Give people skills to handle conflict by de-legitimizing violence, teaching tolerance, and teaching problem solving. *The Teacher.*
3. Build bridges by forcing relationships across the lines of conflict, creating cross-cutting ties, developing joint projects, and fostering genuine dialogue. *The Bridge Builder.*[14]

Prevention of conflict, though less visible than conflict containment or resolution, is the foundation of conflict transformation.[15] Relative to the other two stages of conflict transformation, the majority of program resources should be expended on prevention.

The second level of Ury's hierarchy, and the area of second-greatest attention, is resolution. Because conflict escalates due to competing interests, disputed rights, unequal power, and injured relationships, in a successful program of conflict resolution "third siders" need to:

- Reconcile conflicting interests by mediating disputes, bringing parties to the table, facilitating communications, and helping people search for a solution. *The Mediator.*

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[14] Ibid., 115-139.

[15] Ibid., 114.

- Determine disputed rights by arbitrating disputes, replacing destructive conflict, promoting justice, and encouraging negotiation. *The Arbiter.*
- Democratize power by bringing the powerful to the table, building collaborative democracy, and supporting nonviolent action. *The Equalizer.*
- Repair injured relationships by creating the right climate, listening and acknowledging, and encouraging apology. *The Healer.*[16]

The goal of the resolution stage is reconciliation, the repair of the social fabric. The establishment and maintenance of relationships of trust and mutual respect are key.

The final level in Ury's pyramid, and the last resort to be used only if prevention and resolution have failed, is containment. Because conflict can escalate from a lack of attention, limits, and protection, in a successful program of containment, third siders need to:

- Pay attention to conflict escalation by watching out for early warning signs, actively seeking information, speaking out, and getting help. *The Witness.*
- Set limits to the conflict by establishing rules for fair fighting and strengthening defenses. *The Referee.*
- Provide protection by interposing, enforcing the peace and preempting violence. *The Peacekeeper.*[17]

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[16] Ibid., 140-167.

[17] Ibid., 169-188.

Though Ury's model is a general conflict transformation model intended to be applied to any situation of conflict, by changing a few terms and making some changes to its organization, it translates well into the environment of public utility regulation.

The Conflict Transforming Commission

As noted above, the most common approach of public utility commissions addressing conflict within the regulatory environment is to translate that conflict into a quasi-judicial process with the goal of intervening in the conflict to impose a solution. As Ury's model suggests, intervention, which in his model would fall within the domain of conflict containment, is far less effective and efficient than prevention or mutual resolution.

The most effective strategy for public utility commissions might be to deliberately attempt to push regulatory conflict downward on the Ury scale. In fact, many commissions are trying to make more use of prevention and resolution as they restructure their industries. Examples are consumer education, anticipatory policy making (prevention), the application of consensus-building processes, and mediation of interconnection and consumer disputes (resolution). For each of the areas within the Ury hierarchy, there exists a parallel set of commission processes, regulatory issues, information needs, and staff and commissioner skill sets. These are illustrated in Table 4.2, which also modifies the Ury model for commission application.

The most important area in the conflict transformation hierarchy for public utility commissions is the prevention/independence zone, in which commissions seek to prevent latent tension and allow markets and

Table 4.2

Commission Processes, Information Needs and Skill Sets
for Each Conflict Transformation Zone

Zone	Process/ Activities	Information Required	Staff Skills
Containment/ Intervention	Judicial processes, enforcement, retrospective determination of fact, reactive policy making, reporting	Company cost data, incident data, docket management, industry status	Accounting, economics, investigation, auditing, legal, information presentation
Resolution/ Collaboration	ADR, mediation, negotiated rulemaking	Objective standards for negotiations, needs and interests of the parties, market and consumer intelligence	Mediation, facilitation, relationship building
Prevention/ Independence	Information gathering, proactive policy making, consumer education, utility assistance, information provision, analysis of complaint data	Consumer and market intelligence, complaint data, legislative intelligence	Information gathering, market analysis, data analysis, political skills

Source: Author's construct.

consumers to function by themselves. Creating this independence requires developing effective market structures and providing consumers with information and the skills necessary for effective decision making. A balanced model of conflict transformation places the first line of defense and the majority of commission resources in prevention.

Commission activities in conflict prevention might include consumer empowerment so that they have tools with which to resolve their own problems and make service and consumption choices; provision of information to legislators, local officials, policy makers, service providers, potential service providers, and consumers though workshops, conferences, and publications. For example, one public utility commission is considering the preparation of an annual assessment of the status of utility service delivery in terms accessible to policy makers, the media, and to the public. Another commission is providing assistance to small utilities serving hard-to-reach consumers. Other examples of commission conflict prevention activities are the collection of information about consumer preferences and industry status (e.g., service capacity) and effectively "mining" consumer complaints for indications of growing problems.

The information necessary to support prevention/independence might include market intelligence, such as service capacity, service quality, market shares, and pricing data; consumer preference information; legislative intelligence; and complaint data. Skill sets for commission staff include information gathering and surveying, market and data analysis, and those skill sets necessary for participation in the policy process.

The second level on the conflict transformation hierarchy, and the level of importance secondary only to prevention/independence, is resolution/collaboration. At this level, commissions act in concert with

stakeholders to craft win-win solutions in most cases without commission intervention. Moreover, creation and maintenance of productive relationships is more important than the resolution of any single problem.

Commission processes/activities at this level include ADR, mediation, facilitation of collaborative efforts, and negotiated rulemaking. Information needs include objective standards with which mediation and negotiation might be facilitated, market and consumer intelligence, and information about the needs and interests of those participating in joint processes. Commission staff skills include building relationships, mediation, and facilitation. Though these are important skills, a change in commission culture from the alleged "we-win-only-when-you-lose" mentality may be as important as skill attainment.

The third level on the hierarchy, the one traditionally relied on nearly exclusively by state commissions, is containment/intervention. Though we might imagine an ideal world in which prevention and resolution are adequate for all conflict, enforcement of the law and periodic intervention will always be necessary for public utility commissions. As noted earlier, the challenge for commissions is to create balanced conflict transformation models and to decrease commission reliance on containment/intervention.

At the containment/intervention level, commissions might employ traditional quasi-judicial processes, enforcement of policy by application of sanctions and penalties, retrospective determinations of fact, reactive policy making, and the reporting (but not resolution) of problems. This last function corresponds to Ury's identification of the "witness" role for those engaged in other types of conflict. Information required for this level is company cost data, incident data if rules or policies have been violated, docket management data, and industry status. As was noted in the second essay in this set, commission information systems are being

designed largely to serve this level of commission action, a level that should be decreasing in importance.

The skills necessary for commission staff at this level are the traditional commission skills, which include economic analysis, accounting, investigation, case presentation, auditing, and information presentation.

It is more glamorous and gratifying, if gratification comes from wielding power, to operate in the containment/intervention mode. But those who prevent and resolve conflict accomplish more good, though the rewards may not be as great, the acclaim by the public as pronounced, nor the power employed as dramatic. By preventing problems or facilitating their resolution, those who labor in the prevention and resolution modes conserve resources and build the relationships that foster long-term growth.

Honore Balzac said, "Power is not revealed by striking hard or often, but by striking true." The challenge for commissions is to find those ways to "strike true," to leverage their enforcement powers without their constant application. An example of an agency with significant power largely held in reserve is the Securities and Exchange Commission, which patrols U.S. financial markets while rarely resorting to the application of its extensive and financially life-or-death power over companies.

A key to the application of the Ury model, as modified, is careful and creative definition of problems. For example, state commissions may imagine that they have little ability to prevent natural gas price increases, if those price increases are attributable to wellhead costs. That may be true, but a portion of the problem may be, not merely the prices themselves, but a lack of forewarning by the public or lack of understanding by the public of the reasons for the price increases. Those are latent tensions that commissions, through education, can prevent

from worsening. Similarly, some states confronted with concerns about electric service reliability, traditionally the type of topic dealt with through a utility-specific investigation, have established collaborative efforts to attempt to create solutions of optimal and mutual benefit. In doing so, they defined the problem as one between a potentially irresponsible utility and a defenseless set of consumers; the commission became the third side in bringing the parties together to resolve the problem.

Conclusions

This model of conflict resolution supports a framework of commission operations that is more open to stakeholder input; responsive to consumers; actively engaged in the policy process; applying quasi-judicial mechanisms for enforcement of law and policy; and making the best use of information. Though each regulatory commission will necessarily adapt these models to fit their own circumstances, the mission and objectives of commissions applying this model might include the following:

Mission:

> To facilitate the operation of utility markets by informing consumers, stakeholders, and policy makers; establishing, in concert with other policy makers, rules and standards for market participation; minimizing market concentration; resolving disputes between market participants, and, as a last resort, sanctioning those who violate those rules and standards.

Objectives:

- To collect and disseminate information about markets, providers, and consumers in formats that allow effective decision making.
- To establish effective educational programs targeted to those who make consumption and policy choices in households, businesses, and government.
- To establish and energize effective dispute resolution mechanisms employing a variety of techniques, including mediation and arbitration.
- To equalize the ability of consumers to participate in utility markets by providing subsidies to providers or consumers themselves.
- On an ongoing basis, to identify consumer requirements and establish service delivery standards that meet those requirements.
- To create, in concert with the state legislature, rules for market participation and structure.
- To monitor the behavior of firms in the market.
- To create and apply sanctions against those who violate market participation rules in a manner protecting due process.
- To monitor markets for undue concentration and, in concert with the state legislature, to create mechanisms to reduce concentration or substitute for the operation of markets.

In order to make optimal application of this model of conflict resolution, commissions will need to retrain staff to create the ability to monitor markets and facilitate collaborative processes. These latter "soft skills" have sometimes been overlooked in management training and staff

recruitment. Commissions may need to revise their operating rules and policies (and, in some cases, attempt to introduce new legislation) to allow them to operate more informally when appropriate. Lastly, commissions may have to change the prevailing organizational culture to lessen the adversarial nature of proceedings and to cause commissioners and staff to think of prevention and resolution as the first resort, rather than the last.

To apply the four-function model of commission operations identified in the introductory chapter to this set of essays, the roles of commissioners will also need to change. Previously defined by their judicial and, sometimes, agency administrative roles, commissioners now need to exercise a broader set of roles, which include judge, advocate of collaboration, facilitator, consumer advocate, policy leader, legislative advisor, and chief information officer. In this last role, a commissioner need not be the person at the commission most conversant in the latest technology but a person insistent on the collection, dissemination, and use of the best available information that facilitates the accomplishment of the commission's mission.

Expanding the roles of commissions while at the same time developing regulatory models that share power with other agencies, legislators, consumers, and stakeholders is undoubtedly difficult and will be time-consuming. Opening a wide array of dialogues is also, undoubtedly, the place to start.

CHAPTER 5

REGULATORY CONVERGENCE: LESSONS FOR PUBLIC UTILITY REGULATORS FROM THE REGULATION OF SECURITIES, BANKING, AND INSURANCE[1]

In their transition from the dominance of rate regulation to the promotion and oversight of competitive markets, with the ancillary demands to better serve consumers, attend to the needs of legislators, and create a more collaborative regulatory system, public utility regulators have been challenged to create new regulatory models and methods. In general, they have been required to "make it up as they go along" with little to guide their efforts to meet these considerable challenges other than the experiences of other states.

There are, however, some useful U.S. precedents for the transition of regulatory systems from rate-setting or interventionist models to the oversight of effective and vibrant competitive markets. The regulation of the securities, banking (now more appropriately referred to, because of the proliferation of services they are allowed to provide under banking deregulation, as financial institutions), and insurance industries has progressed from what in the public utility environment would be referred to as "traditional" economic regulation to the regulation of highly competitive markets. For example, insurance regulators formerly set insurance rates, a function clearly no longer necessary. If one examines the regulation of

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[1] The author is grateful for the helpful comments and review of this essay provided by his colleague, Robert Burns of the National Regulatory Research Institute.

those sectors, a number of themes common to the current evolutionary status of public utility regulation are apparent as are a number of divergent regulatory approaches, approaches that though different from current models of public utility regulation, may ultimately serve as useful guides.

These differences and similarities in regulatory approaches are most readily observable at the Virginia State Corporation Commission (Virginia SCC). The Virginia SCC is the only regulatory commission in the nation that has broad responsibility for the regulation of public utilities, insurance, securities, and financial institutions and fulfills many of the business registry functions typically performed by secretaries of state.[2] It was created under the Virginia Constitution in 1902 to regulate the rates and services of railroads and telephone and telegraph companies as well as to grant charters to corporations and was granted executive, legislative, and judicial powers. Since its establishment, there have been more than 50 legislative enactments imposing new duties and responsibilities.[3] According to one observer, the Virginia SCC has "...become the single most influential public body in implementing Virginia's business and economic policies; its regulatory actions ultimately affect all Virginia citizens."[4] Reference to the Virginia SCC will be made throughout this essay, and more will be said about this unique but happy marriage of regulatory functions.

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[2] The Arizona Corporation Commission regulates securities as well as public utilities.

[3] Preston C. Shannon, "The Evolution of Virginia's State Corporation Commission," *William and Mary Law Review*, Volume 14 No.3, Spring 1973, 534.

[4] William J. Bridge, "The Virginia State Corporation Commission: A Primer," *Virginia Lawyer*, February 1996, 34.

Convergent Regulatory Themes

Engage a regulator of insurance, financial institutions, or securities in conversation and you will, undoubtedly, be struck by the convergence in regulatory themes and regulatory language between those fields and public utility regulation. The five most striking are:

- Consumer outreach,
- Convergence of the sectors,
- The uneasy balance between federal and state regulation,
- The movement toward further deregulation, and
- The increasing international presence in domestic service delivery.

These themes will be considered in turn.

Consumer outreach is high on the agenda of all regulators, not just public utility regulators. A recent public hearing sponsored by the National Association of Insurance Commissioners (NAIC) addressed "the role of state insurance departments in consumer education, information, and counseling" and "different approaches in consumer advocacy," topics that could have been extracted from the agenda of the NARUC Committee on Consumer Affairs.[5] Strategies that were suggested by those who attended included a speakers bureau, upgrading consumer information systems including brochures and web pages, establishing local/regional

[5] NAIC/Funded Consumer Representatives Board of Trustees, "Executive Summary of Public Hearing on the Role of Insurance Departments in Consumer Information, Education, Counseling and Advocacy," September 9, 2000 available at the NAIC website (www.naic.org).

service offices, establishing helplines, making referral of consumer files to enforcement arms, providing funding for external consumer advocacy groups, and creating a consumer protection and education division.[6] These are all strategies that have been applied or considered by public utility commissions.

Regulators in insurance, securities, and financial institutions, like public utility regulators, are also aware that choices for consumers are becoming geometrically more complicated and that the opportunities for mischief are increasing as well. "Day-trading," for example, which is now possible due to ongoing securities deregulation, allows individuals to trade securities but also exposes them to downside losses and the potential for uninformed choice.

As a result of the increasing burdens being placed on consumers and the potential for mischief, consumer protection is high on the agendas of these regulatory agencies, and consumer outreach efforts are sustained and creative. For example, in 1997, the Ohio Department of Insurance, Office of Consumer Services, assisted policyholders in recovering more than $4.6 million in refunds, responded to more than 100,000 telephone calls, and investigated more than 7700 consumer complaints. That Office has available five "shopper's guides" and operates the Ohio Senior Insurance Information Program, which provides services in all of Ohio's counties through a network of 1200 certified volunteer counselors, who have assisted approximately 125,000 senior citizens since 1992.[7] At the Virginia SCC, the Bureau of Insurance is

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[6] Ibid.

[7] Ohio Department of Insurance, www.ins.state.oh.us/AboutODI/ODIDiv/offconsumer.htm.

highly regarded by external stakeholders for its consumer-friendly information.

The most compelling lesson in this regard for public utility regulators is that consumer outreach and education is not simply a transitional function that public utility commissions will be able to abandon once the transition to competitive markets is completed. As a case in point, in Virginia the most competitive industry regulated by the SCC (insurance) generates the most consumer inquiries.

Convergence of the regulated sectors is the second theme common to the regulation of insurance, financial institutions, securities, and public utilities. The convergence of the securities industry, financial institutions, and insurance, though in process for some time, was provided a recent impetus with the passage of the Financial Services Modernization Act, otherwise known as the Graham-Leach-Blilely Act. That Act allows financial holding companies to engage in "financial activities" that may include insurance underwriting and sales, securities underwriting and dealing, and merchant banking. The Federal Reserve Board is currently (December 2000) seeking public comment on a proposal to allow financial holding companies to act as real estate brokers and managers.[8] These new allowed activities supplement activities already allowed for bank holding companies like lending, investment advisory functions, data processing services, and, activities connected with banking overseas, travel agency and management consulting services. Because of the convergence of activities, implementing the provisions of Graham-Leach Blilely at the federal level will require the cooperation of eight different federal agencies to agree on a common approach and meet a short implementation deadline defined in the

[8] Federal Reserve Board, press release, December 27, 2000.

statute.[9] The coordination of state-level implementation among a variety of agencies is required as well.

The result of this industry convergence in these industries, and in the provision of public utility service, is threefold. First, the complexity of industry structure increases the importance of regulatory attention to consumer services as described earlier. Second, as industry structures become more complex and the number of providers increase (though decreased, in some cases, by mergers and acquisitions) and service offerings proliferate, traditional attention to the internal operations and cost structure of service providers will become less viable as a regulatory strategy. The focus will, necessarily, shift to market monitoring and oversight of consumer impact. Third, as in the case of the implementation of Graham-Leach-Blilely the convergence of regulated sectors requires the convergence of regulatory agencies and cooperation and consultation among a wide array of agencies with disparate interests and responsibilities. Regulation of any industry, now and in the future, cannot be the exclusive preserve of a single agency.

The third theme common to securities, financial institution, insurance, and public utility regulation is the creation of an effective balance between state and federal regulators, which is sometimes necessary to counter trends toward federal preemption. In each of the sectors, with the exception of insurance, a balancing act is required between the authority of federal regulators and the states. Insurance regulation is accomplished by the states alone, though the state insurance regulators have a federal interface with the Department of Labor and the Health Care Finance Administration (part of HHS), and periodically fight off

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[9] Remarks by Governor Laurence H. Meyer before the American Law Institute and American Bar Association, Washington, D. C., February 3, 2000, available at www.federalreserve.gov/BoardDocs/Speeches/2000/20000203.htm.

the portent of federal insurance regulation. That battle is waged on behalf of state regulators by the insurance industry and the National Association of Insurance Commissioners, the national professional association for state insurance regulators.

The U.S. maintains a "dual" regulatory system with regard to banking. Financial institutions have the choice of being either state chartered and subject to state regulation or federally chartered and, therefore, subject to minimal state oversight. Even state-chartered banks, however, must meet requirements set by the Federal Reserve System in order to become members of that system. At the federal level, the Federal Reserve System, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision all have a role in bank regulation.

In the securities industry, the federal Securities and Exchange Commission (SEC) administers the various federal laws pertaining to securities, the most significant of which are the Securities Act of 1933, the Securities Exchange Act of 1934, the Investment Advisers Act of 1940, and the Investment Company Act of 1940. Each state has its own securities division which administers state acts (Blue Sky Laws) and provides information, which may include the registration status of securities and the licensing and disciplinary records of dealers.[10] State regulators may still be empowered to enforce state acts, investigate complaints, issue permanent and temporary injunctions, punish for contempt, and fine violators.[11]

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[10] Maine Department of Professional and Financial Regulation, Securities Division, *Consumer Information and Complaints*, December 28, 2000, available at www.state.me.us/pfr/sec/info.htm.

[11] Preston Shannon, "Evolution of Virginia's State Corporation Commission,"

(continued...)

In each of these industries, a critical problem is assignment of regulatory authority for regulatory problems that fail to conform to physical regulatory boundaries (i.e., problems that are either regional or national). State and federal regulators bring differing perspectives, strengths, and traditions to the regulatory table.[12] Nonetheless, redirection of authority for regulatory oversight to the federal government is too often seen as a simple solution. Despite the apparent logic of federal centralization of regulatory authority, state regulation is still the best option because state regulators are better able to innovate, can better nurture regulatory talent, are closer to their customers, and can more easily identify effective strategies and eliminate unworkable solutions.[13]

The fourth theme common to these sectors and public utility regulation is the movement toward further deregulation. These other industries have already progressed to the point of effective competition. Nonetheless, the trend toward further deregulation continues. Mention has been made of the Graham-Leach-Blilely Act, which changed banking policy that had existed since the 1930s and impacted insurance and securities regulation as well. Deregulation of the public utility industries has progressed from telecommunications, to natural gas, and now to the electric industry. Though the water industry is characterized by unique

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[11](...continued)
William and Mary Law Review, Vol. 14 No. 3, Spring 1973, 541.

[12] Richard Spillenkothen, Director, Division of Supervision and Regulation of the Federal Reserve Board, "Bank Supervision and Regulation in the Next Millennium," Remarks at the New York State Banking Department, New York, NY, October 25, 1999.

[13] Adapted from Gary Hamel, *Leading the Revolution* (Boston, MA: Harvard Business School Press, 2000), 271.

structural conditions and a lack of interconnection, changes in water regulation are certain as well.

The lessons that public utility regulators might draw from the experiences of these other industries are twofold. First, deregulation is a long-term trend that is not complete even at the point of full competition. Second, the trend toward deregulation is not, by any means, limited to public utility regulation. It is a trend deeply embedded in the political economy of the era. Its pace may slow eventually but its progress is likely to be relentless.

The fifth, and final, theme common to the regulation of insurance, banking, securities, and public utilities is the increasing internationalization of service delivery. Public utility regulators are already coping with international vendors purchasing U.S. utilities and the increasing international presence of domestic utilities. The same phenomenon is apparent in other sectors. For example, in 1975, fewer than eighty foreign banks had offices in the U.S.; there are now three times as many.[14]

The result is that international regulatory cooperation is imperative. As a case in point, the U.S. Federal Reserve participates in the Basel Committee on Banking Supervision, a consortium of international banking supervisors attempting to create new banking standards and models.

Divergent Regulatory Approaches

While there are commonalities across the regulation of these sectors, there are also disparities worth mentioning because they may provide interesting options for public utility regulation as it continues to

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[14] Spillenkothen, "Bank Supervision and Regulation in the Next Millennium."

reach the level of market maturity enjoyed by these other industries. The disparate themes explored here are:

1. The employment of private-sector entities to accomplish regulatory functions,
2. The clear distinction between enforcement and policy making, and
3. The focus on financial soundness and the ability to serve (i.e., the protection against "moral hazard").

While regulation is principally thought of as a government function and self-regulation frowned upon by public interest advocates, in the case of securities regulation private-sector entities have been employed to accomplish difficult regulatory functions and, to most observers at least, have accomplished these functions well.

Two clear examples of the use of private-sector agencies to accomplish regulatory functions occur in securities regulation, (1) the establishment of accounting standards and (2) self-regulation by the securities industry.

Until the U.S. Congress, prompted by the financial abuses which contributed to the Great Depression, established the SEC, there was no formal mechanism for setting accounting standards, which are key to the operation of sound financial markets. The SEC was granted that authority but immediately delegated that authority to the accounting profession when it stated that:

> In cases where financial statements filed with this Commission pursuant to its rules and regulation under the Securities Act of 1935 or the Securities Exchange Act of 1934 are prepared in accordance with accounting

> standards for which there is no substantial authoritative support, such financial statements will be presumed to be misleading or inaccurate despite disclosures contained in the certificate of the accountant or in footnotes to the statements provided the matters involved are material.[15]

With that phrase, "substantial authoritative support," the SEC opened the door for the private establishment of accounting standards that would provide that authoritative support. The result has been a succession of standards-setting organizations established by the accounting profession, the most recent of which is the Financial Accounting Standards Board (FASB). Over time, the SEC has periodically intervened in the standards-setting process to establish specific standards or to ensure that the process is professional and that it serves the public. Some of the concerns addressed by the SEC across the years were the adequacy of public representation on the standard-setting organization's board of directors, the establishment of full-time organizations with competitive salaries, and adequate staffing of standards-setting organizations. Overall, most would agree that the SEC delegation of the establishment of financial accounting standards to the accounting profession, with the ability of the SEC to reinsert itself in the process if necessary, has been a very workable arrangement.[16]

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[15] Securities and Exchange Commission, "Release No. 4, April 25, 1938, Administrative Policy on Financial Statements," as cited in Subcommittee on Reports, Accounting, and Management of the Committee on Government Operations of the United States Senate, *The Accounting Establishment*, Document No. 95-34 (Washington, D.C.: March 1977), 1432.

[16] For a full discussion of the establishment of accounting standards and their implications for public utility regulation, see David W. Wirick and John J. Gibbons, *Generally Accepted Accounting Principles for Regulated Utilities: Evolution and*

(continued...)

A further example of the use of the private sector for securities regulation is the authority delegated by the SEC to the National Association of Securities Dealers (NASD). Through authority essentially delegated from the SEC in 1938, the NASD is "self regulating"[17] and has regulatory authority over 5600 firms operating in 84,000 offices with more than 665,000 securities professionals. Through its subsidiaries, it develops rules and regulations, conducts regulatory reviews of members' business activities, disciplines violators, and designs, operates, and regulates securities markets and services. The subsidiaries of the NASD include, the American Stock Exchange, the NASDAQ Stock Market, Inc., and NASD Dispute Resolution. Through that last entity, the NASD operates a dispute resolution program employing mediation and arbitration programs.[18] The New York Stock Exchange is also regarded as a self-regulatory organization.

In the banking industry, a reversal of the use of private entities to smooth industry operations is worth noting. The U.S. government, in order to expedite the transfer of funds between banks, has assumed a direct, service-provision role in the operation of the banking industry. The Federal Reserve System, in addition to conducting the nation's monetary policy, supervising and regulating banking institutions, protecting the credit rights of consumers, and maintaining the stability of the financial system, provides financial services to the U.S. government, the public, financial

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[16](...continued)
Impacts (Columbus, OH: National Regulatory Research Institute, 1994).

[17] Maine Department of Professional and Financial Regulation, Securities Division, *Consumer Information and Complaints*, December 28, 2000, available at www.state.me.us/pfr/sec/info.htm.

[18] Information about the activities of the NASD is available at www.nasdr.com.

institutions, and foreign officials. This service provision role, that of being the nation's "central bank," is unique in the sectors evaluated for this essay.

Public utility regulators have initiated a foray into the use of private entities to accomplish public purposes with the establishment of independent transmission service operators (ISOs) to coordinate the transmission and ancillary services needed to allow a wholesale (and retail) generation market to operate.

The second divergent theme is the clear distinction between enforcement of the law and policy and policy making, a separation that immediately calls into question the much-treasured independence of public utility commissions.

In the current regulatory environment, agency independence is most appropriate when the agency is involved in the enforcement of existing legislation or involved in fact-finding of the type required for rate setting functions. Apolitical hearings are the best option when regulatory agencies are taking action against businesses that have violated clear guidelines. Clearly, when a regulator is imposing sanctions against a company, which might include the termination of that company's business, due process protections must be in place and political interference must be minimized. However, in the U.S. system political involvement is imperative when agencies make policies that affect entire industries.

As "more mature" industries that have been competitive for some time, insurance, financial institutions, and securities regulation seem to have struck a clear and workable balance with their legislatures in making the distinction between policy making and enforcement. When they recognize the need to make policy affecting their respective industries, they involve the legislature. As public utility markets reach the competitive

maturity of those industries, the appropriate allocation of responsibility for enforcement and policy making may become more apparent. What is needed is a clear delegation of authority for rulemaking, which allows public policy making in an area of statutory delegation.

The third divergent theme is the focus of these other industry regulators on the financial soundness of service providers and their ability to serve. Because banks, securities dealers, and insurance companies hold funds that are the property of their customers, these firms have a special obligation to safeguard these funds and protect their depositors from the "moral hazard" that might be created if companies were to take undue risks with their money. As a result, regulators in banking, securities, and insurance have been required to identify variables that indicate the ability of the provider to maintain those funds and deliver the services offered in a trustworthy manner. Those variables include the care and management of customer funds entrusted to the provider and the ability to remain financially viable (i.e., their "risk profile"). With these key variables in hand, regulators in these sectors have created active examination and inspection operations. Indeed, one of the primary regulatory tools employed in these sectors is regular and thorough field examinations of companies.

No clear parallel to the existence of these potential moral hazards can be clearly identified in public utility regulation. However, one might argue that the provision of services necessary to the preservation of life creates a reasonable proxy. If that is the case, the lesson that is apparent from the emphasis these other regulators place on field examinations of providers is that public utility regulators are not likely to ever completely abandon the oversight of service providers. In the recent past, there has been an appropriate decreased reliance on audits of public utility providers to verify information submitted in rate cases and a decrease in

management audits to ensure compliance with various statutes and policies. In the future, competition may provide the principal mechanism for the market discipline of utility providers, but regulators will still need to assure the public that providers meet minimum service standards, that they are, in fact, able to deliver the services they sell and that they do not deceive consumers. The focus on a few key variables may differentiate these examinations from the management and financial audits performed under traditional regulation.

Combination of Regulatory Functions in a Single Agency

Early in this essay, the broad powers of the Virginia SCC were enumerated. Some, observing this consolidation of regulatory power in one agency, would be concerned that the potential for abuse may be strong. Others would argue that regulatory consolidation would allow the realization of productive economies of scale and assembly of expertise.

The strongest argument for regulatory consolidation is the experience of the Virginia SCC, which is acknowledged as having been successful for decades. A hallmark of the SCC's establishment and operations is its independence from the remainder of state government. At the Virginia SCC, the Directors of the Divisions responsible for insurance, securities, and financial institutions highly value the independence of the SCC in enforcement actions and are, reportedly the envy of their professional peers around the nation. Rather than being required to refer enforcement actions to the civil courts, regulators of insurance, securities, and financial institutions at the SCC can make use of the "private" court operated by the SCC. (The Virginia SCC, like some public utility commissions around the nation, is a court of record able to enforce its orders by its own processes anywhere in the

Commonwealth.[19] Though some public utility commissions are used to having that ability, regulators in the other sectors often must rely on civil courts for enforcement actions.) Stakeholders in those industries strongly support the independence afforded those regulators by their placement at the SCC and believe that independence allows the SCC to assemble more professional staff than would be the case if regulation of those sectors were structured as it is in most states.

It can, in fact, be argued that the Virginia Constitution and General Assembly were prescient in assigning these once disparate functions to the SCC. As indicated earlier, regulatory issues across these industries will likely continue to converge as will the regulatory methods employed. All of these industries are subject to common themes; they all have experienced to greater or lesser degrees the transition from monopoly to competitive or partly competitive markets, federal preemption, provider proliferation and the expansion of service-offering types. Their regulation will, increasingly, require the same skill sets. This convergence and expansion are likely to accelerate in the future as public utility markets become more competitive. Though not all states may be prepared to combine these regulatory functions in one agency, the experience of the Virginia SCC provides a compelling case in point for how operating synergies might be achieved.

Conclusions

The methods and approaches adopted by regulators in the securities, banking, and insurances industries surely reflect the particular composition of those industries and the interplay among stakeholders.

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[19] A.E. Howard, *Commentary on the Virginia Constitution*, 970.

There are, surely, elements of public utility regulation that are so unique as to require the development of unique regulatory solutions. Nevertheless, there are lessons that can be learned from a study of the regulation of other sectors and, perhaps, regulatory solutions that can be imported.

The Basel Committee on Banking Supervision, which was mentioned earlier, is basing its work on three pillars of effective regulation. Those pillars are: (1) the need for a flexible regulatory and supervisory process staffed by skilled personnel and experts, (2) the need for stronger, more risk-sensitive prudential standards that are compatible with and encourage improved bank risk-management practices, and (3) the need for banking regulators here and abroad to make greater use of market discipline through the disclosure by banks of meaningful information.[20]

These three pillars–a flexible process staffed by skilled professionals, the need for better standards that encourage appropriate behavior, and the better use of information to encourage market discipline–have direct and compelling application to the current state of public utility regulation. One cannot conclude other than that the art and practice of regulation would be improved by dialogue between the regulators in all of these important economic sectors.

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[20] Spillenkothen, "Bank Supervision and Regulation in the Next Millennium."

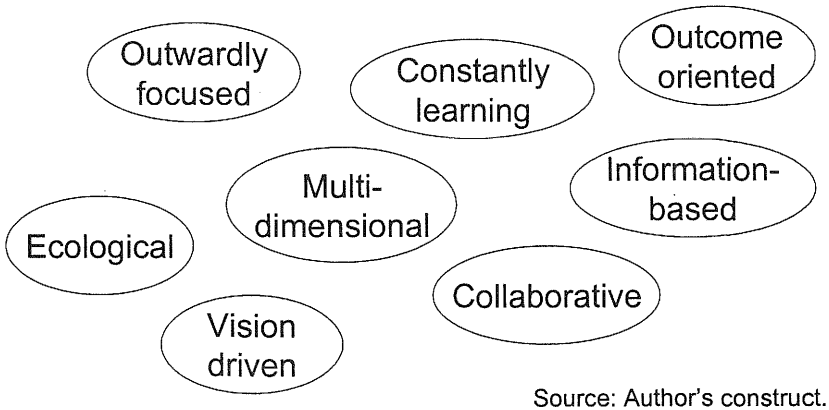
CHAPTER 6

THE CREATION OF DYNAMIC REGULATORY AGENCIES: AN IMPLEMENTATION GUIDE

Through the course of the preceding essays and their introductory chapter, I have described various attributes of regulatory agencies that might position them for success in rapidly changing circumstances. In summary, I argue that successful regulatory agencies need to be (see Figure 6.1):

- Outwardly focused. For too long, public utility regulatory agencies have focused on their internal processes and dynamics (e.g., cases, dockets, investigations, hearings). In the meantime, the environment shifted and some players in the regulatory game sought solutions outside public utility commissions and established dialogues with state legislatures that dramatically changed the regulatory landscape. Now, public utility commissions, too, need to turn their attention toward their interactions with key players outside the commission–legislators, utilities, the economic development community, and, most importantly, consumers of public utility services.
- Multi-dimensional. In the past, quasi-judicial processes effectively sustained public utility regulation in an environment in which rate cases were the principal means of interaction between utilities and regulators. Now, policy making,

Figure 6.1
Characteristics of dynamic regulatory agencies.



Source: Author's construct.

consensus building, dispute resolution, the provision of information, and consumer interaction are sharing the regulatory stage. As a result, commissions need to build an array of regulatory methods suited to local circumstances and changing conditions.[1]

- Ecological. According to Arie de Geus, who studied companies with extremely long lives, environmental sensitivity is one of the four key determinants of organizational success. (The others are a strong sense of identity, tolerance, and

[1] For more information about the alternative roles that public utility commissions can apply, see David Wirick, *New Models of Regulatory Commission Performance: The Diversity Imperative* (Columbus, OH: National Regulatory Research Institute, 1999).

conservative financing).[2] The organizations that have been able to survive for extended periods, he says, "remained in harmony with the world around them" and "managed to react in a timely fashion to the conditions of society around them."[3] Dynamic regulatory agencies will recognize that they exist in concert with their environments, a recognition that was clouded in the past by attempts to achieve effective command and control regulation. In order to develop links to their external environments, and to maximize regulatory efficiency, regulatory agencies will need to establish alliances with other agencies with partial regulatory purview.

- Constantly learning. In order to maintain the flexibility to reinvent themselves as circumstances change, regulatory agencies need to be constantly involved in and committed to a process of constant learning. Today's regulatory solution will not fit tomorrow's circumstances, and the adaptation for tomorrow will not fit the circumstance of the day after. If regulatory agencies are to remain optimally effective, relevant, and vital, they need to engage in an open dialogue to identify trends, expectations, threats, and opportunities. According to Peter Senge, organizational learning is based on five "learning disciplines," which are personal mastery (i.e., learning to expand our personal capacity to create the results we most desire), mental models (i.e., reflecting upon, continually clarifying, and improving our pictures of the world), shared

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[2] Arie de Geus, *The Living Company*, (Boston, MA: Harvard Business School Press, 1997), 6.

[3] Ibid.

vision (i.e., building a sense of commitment in a group by developing shared images of the future we seek to create), team learning (i.e., transforming conversational and collective thinking skills), and systems thinking (i.e., a way of thinking about, and language for describing and understanding, the forces and interrelationships that shape the behavior of systems).[4]

- Outcome oriented. Organizations exist in order to accomplish purposes. Without the ability to measure performance against outcomes clearly linked to those purposes, organizations will not have the ability to maximize the deployment of resources or defend themselves against critics who attempt to argue that they do not accomplish the necessary public interest outcomes. Making an organization accountable can be frightening to those who staff and manage the organization. This is a serious undertaking that requires the collection of performance data and the application of judgment in that few government agency performance measures lie entirely within the control of the agency. Nonetheless, accountability is mandatory for agencies that seek optimal performance. Performance evaluation for public utility commissions has been an imperfect art that has relied on measures of balance, efficiency, or regulatory failure. In the future, effective regulatory agencies must be able to justify their worth to legislators and to citizens. Outcome measures of

[4] Peter Senge et al., *The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization* (New York, NY: Currency Doubleday, 1994), 6.

performance, which several states are in the process of applying, are the key.[5]

- More collaborative. In any endeavor, including economic, social, or administrative regulation, the exercise of power is always met by a responsive exercise of power. Therefore, agencies that rely predominantly on the flexing of their muscles will be met with a response from those they govern, a response that will seek to either challenge or subvert. In some instances, punitive action against those who clearly violate market rules for example, the exercise of regulatory power is mandatory. For the most part, however, regulatory agencies rely on the consent of those they govern, and establishing consensus on regulatory outcomes and regulatory methods is imperative for long-term success of a regulatory regime. Just as power begets power, collaboration begets cooperation. Wherever possible, successful regulatory agencies, of which one example is the Securities and Exchange Commission, hold power in reserve.
- Information Based. Even now, the stock-in-trade of regulatory agencies is the exchange of information with regulated entities, the public, and other affected parties. Given the increasing speed with which information can be processed and transmitted and the ability of organizations and people to gather and assimilate information, the regulatory agency of the

[5] For more information about regulatory commission performance assessment and the development of outcome indicators of performance, see David Wirick et al., *Organizational Transformation: Ensuring the Relevance of Public Utility Commissions* (Columbus, OH: National Regulatory Research Institute, 1998), Chapter Six.

future will rely extensively on information exchange to not only streamline processes but to accomplish its mission. Peter Drucker says that government agencies of the future "will be knowledge-based, composed largely of specialists who direct and discipline their own performance through organized feedback from colleagues and customers."[6] The key to the ability of those feedback loops to direct regulatory action will be a continual dialogue between regulatory agencies and their customers and constituents. In the lexicon of the telecommunications industry, regulatory agencies need to increase the bandwidth of their information flows.

- Vision Driven. No human endeavor can achieve spectacular results without engaging both the hearts and the minds of those involved. In organizations, the tool best suited for mobilizing hearts and minds is the organization's vision, a concept no more complex than the identification of the result that the organization most deeply desires to achieve, described in the present tense.[7] Unlike the organization's mission, which is often externally prescribed or defined in terms of basic purposes, articulation of the organization's vision allows for more creativity by those who currently reside in or are responsible for the organization. Visions, to be effective, need to be doable yet a stretch, understandable, and

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[6] Peter Drucker, *The New Realities in Government and Politics/in Economics and Business/in Society and World View* (New York, NY: Harper and Row Publishers, 1989), 207

[7] Peter Senge et al., *The Fifth Discipline Fieldbook* (New York, NY: Currency Doubleday, 1994), 201, 302.

motivating. The achievement of a vision, once articulated, becomes the simple standard for evaluation of the organization's attempt to change itself.

Another list of effective regulatory attributes or best practices was generated by the 1999 Australia Utility Regulators Forum. Their list of best practices was:

1. Communication (information to stakeholders on a timely and accessible basis)
2. Consultation (participation of stakeholders in meetings)
3. Consistency (across market participants and over time)
4. Predictability (a reputation that facilitates planning by suppliers and customers)
5. Flexibility (by using appropriate instruments in response to changing conditions)
6. Independence (autonomy–free from undue political influence)
7. Effectiveness and efficiency (cost-effectiveness emphasized in data collection and policies)
8. Accountability (clearly defined processes and rationales for decisions, with appeals)
9. Transparency (openness of the process).[8]

Ensuring that regulatory agencies conform to these characteristics will be a challenge complicated by the fact that regulatory agencies are complex, specialized entities, facing regulatory environments that are changing at different speeds for each utility sector. For change to be

[8] Sanford Berg, "Developments in Best-Practice Regulation: Principles, Processes, and Performance," Public Utility Research Center, University of Florida, downloaded from the PURC website at www.cba.ufl.edu/eco/purc, December 2000.

successful, deeply embedded in the organization, and long-lasting, it cannot merely focus on one or two elements of regulatory operations. It will need to address human resources, the organization of the agency, information systems, performance assessment, process and regulatory methods, enabling legislation and rules, and strategic alliances. It will need to be informed by strategic intelligence, and, as a by-product of changes in the other elements, it will need to change the organization's culture. The key for evaluation and change of each of these elements is, once again, the context provided by the unique strategic vision established for the agency. The key question for each element is: how must this element change in order for us to achieve our vision?

In addition to being a complex task, the types of change required for the creation of regulatory agencies that meet the criteria listed above cannot be imposed from the outside but must be self-generated (though outside facilitation can be useful). Jerry Sternin is pioneering a change method described as "amplifying positive deviance," the key to which is the identification and replication of informal solutions that people in similar circumstances have developed–a version of the types of "emergent" organizational solutions described earlier. He says:

> The traditional model for social and organizational change doesn't work. It never has. You can't bring permanent solutions in from the outside....Set up a situation in which people–including those who need to change the way that they operate–can discover, on their own, a better way to do things. Raise questions, but let the group come up with the answers on its own.[9]

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[9] David Dorsey citing Jerry Sternin, "Positive Deviant," *Fast Company*, December 2000, 286-288.

Figure 6.2 illustrates one planning process that can be applied to the creation of regulatory change. It is loosely based on the model employed by the Iowa Utilities Board, in which staff teams were created with extensive ability and responsibility for recommending organizational change.[10] Planning processes, of course, should be designed to fit state-specific purposes, and a number of state commissions have employed effective planning and change models or are in the process of their implementation. Unfortunately in that environments always change, planning and change implementation must be iterative and to a degree never-ending, though periods of intense planning activity can be offset with periods of less-intense activity. Ultimately, however, any regulatory or organizational "answer" must be regarded as temporary, to be adjusted or replaced when feedback is gathered about its success and as environmental circumstances change.

This planning model begins with an environmental assessment. That assessment may include stakeholder (and consumer) interviews or surveys; scenario planning (as described by Peter Schwartz et al.); and identification of commission strengths, weaknesses, opportunities, and threats. Too often, environmental assessment begins and ends with a short exercise involving only those internal to the organization. No private sector enterprise would launch a product based only on the opinions of the product developers; prior to product introduction, products are tested on real consumers.

Similarly, regulatory agencies, if they are to successfully interact with their environments, need to gather data from those who are impacted

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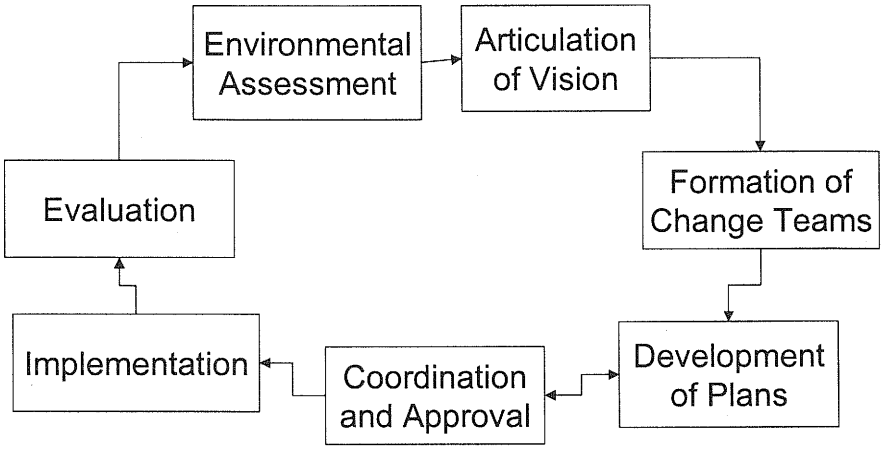
[10] For a full description of the recommendations of the Iowa Structure Team , see The Structure Team of the Iowa Utilities Board Staff, "A Proposed Structure for the Iowa Utilities Board," *NRRI Quarterly Bulletin*, Vol. 19 No.1, 83-94.

Figure 6.2
The creation of dynamic regulatory agencies:
A planning process



This is one planning process that can be adopted; processes can and should be designed to fit state-specific circumstances.

Source: Author's construct.

by their activities and spend time questioning assumptions. Learning from the environment is optimized by time spent interacting with people and organizations that are the least like the commission.[11] Because of the nature of adversarial, quasi-judicial processes, regulatory commissions in the past were not commonly engaged in an open and active dialogue with their external environments; they were, instead, process focused. The

[11] Anna Muoio, "GM Has a New Model for Change," *Fast Company*, December 2000, 64.

creation of dynamic regulatory agencies requires an active, intentional, and ongoing dialogue with those environments to identify current conditions and future trends.

With that assessment of the commission's environment, the development of a compelling vision can begin. That vision provides the basic context in which all strategy, change and organizational health can arise.[12] According to Burt Nanus, there is no more powerful engine driving an organization toward excellence and long-range success than an attractive, worthwhile and achievable vision of the future, widely shared.[13]

Tools applicable for vision creation might include systems thinking,[14] advanced change theory,[15] the use of metaphors,[16] and learned optimism.[17] Ultimately, the development of a compelling agency vision relies on the strength of its leadership, which must be the source of vision,

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[12] David Kyle, *The Four Powers of Leadership: Presence, Intention, Wisdom, Compassion* (Deerfield Beach, FL: Health Communications, 1998), 168.

[13] Burt Nanus, *Visionary Leadership* (San Francisco, CA: Jossey-Bass, 1992) as cited in David Kyle, *The Four Powers of Leadership: Presence, Intention, Wisdom, Compassion* (Deerfield Beach, FL: Health Communications, 1998), 168.

[14] Peter Senge et al., *The Fifth Discipline Fieldbook* (New York, NY: Currency Doubleday, 1994).

[15] Robert Quinn, *Change the World: How Ordinary People Can Achieve Extraordinary Results* (San Francisco, CA: Jossey-Bass, 2000).

[16] Gareth Morgan, *Images of Organization* (Thousand Oaks, CA: Sage Publications, 1997).

[17] Martin Seligman, *Learned Optimism* (New York, NY: Simon and Schuster, 1998).

its principal voice, and a force that focuses the agency's energies on pursuit of the vision.[18]

If work groups or teams are to be a component of the change process, there are a number of considerations that affecting their formation and operation. Who should the teams be composed of? Staff? From which commission divisions? Managers? Commissioners? External stakeholders? In that it is probably infeasible to address all of the elements of commission regulation in the first iteration, which of the elements listed earlier should be addressed first? Should the simplest or the most difficult be addressed first? How will teams be led? Self-elected leadership or appointed leadership? Who might facilitate the work of the teams? External facilitators? Internal facilitators? What resources will teams have at their disposal? Consultants? Data collection? Staff time? Secretarial support? A number of resources are available to guide the formation, motivation, and management of team efforts.

Once the vision is in place and work teams created, the development of specific and tangible change initiatives can begin. The team activities required by this planning process can be aided by outside facilitation, and the application of the concepts inherent in systems thinking,[19] organizing teams,[20] organizational ecology,[21] balancing

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[18] David T. Kyle, *The Four Powers of Leadership: Presence, Intention, Wisdom, Compassion* (Deerfield Beach, FL: Health Communications, Inc., 1998), 167.

[19] Peter Senge et al., *The Fifth Discipline Fieldbook* (New York, NY: Currency Doubleday, 1994).

[20] Warren Bennis and Patricia Ward Biederman, *Organizing Genius: The Secrets of Creative Collaboration* (Reading, MA: Addison-Wesley, 1997).

[21] Arie de Geus, *The Living Company* (Boston, MA: Harvard Business School Press, 1997).

advocacy and inquiry,[22] self-organizing systems,[23] conflict resolution,[24] and the amplification of positive deviance.[25] The specific plans for change that address the chosen elements of commission operations and that evolve from this process will require coordination.

Figure 6.3 identifies the many elements of a regulatory agency that must be addressed in order to institute long-term change. They include legislation and rules, processes and regulatory methods, commission and individual performance assessment, information systems, strategic intelligence (i.e., how the organization gathers information from its environment), organization, human resources, and alliances with other organizations. Not all of these elements must be addressed immediately, and some may naturally change in response to changes in the others. Overall, however, commission change is a holistic process that ultimately must affect every element of commission operations.

In summary, the keys to this type of change implementation effort are:

1. The development of an accurate understanding of the environment the organization operates within, determination of the correct environmental "fit," and creation of an active, ongoing dialogue with players in the environment.

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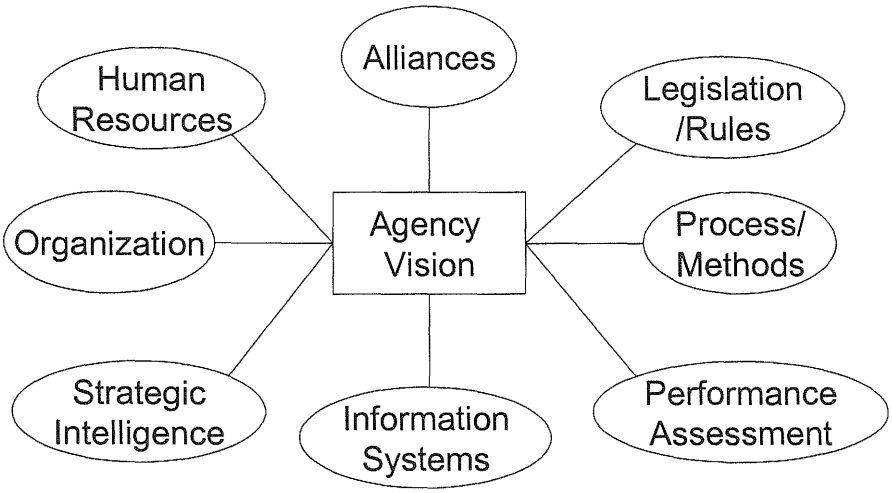
[22] Peter Senge et al., *The Fifth Discipline Fieldbook* (New York, NY: Currency Doubleday, 1994).

[23] John Briggs and F. David Peat, *Seven Life Lessons of Chaos* (New York, NY: HarperCollins Publishers, 1999).

[24] William Ury, *The Third Side: Why We Fight and How We Can Stop* (New York, NY: Penguin Books, 2000).

[25] David Dorsey citing Jerry Sternin, "Positive Deviant," *Fast Company*, December 2000.

Figure 6.3
Necessary elements of change.



Source: Author's construct.

2. Soliciting the input of stakeholders and ensuring that they have some ability to participate in the change creation process.
3. Applying systems thinking and questioning assumptions so that the right questions can be asked and answered.
4. Creating a vision by the leadership of the organization and ensuring that the vision is widely shared by participants so that it may serve as the context within which all of the change initiatives can be integrated.
5. Performing the hard work of managing the teams and implementing change initiatives.
6. Making a commitment to ongoing change (i.e., to change as a way of organizational life).

Without question, creating this type of organizational change is not an endeavor that should be undertaken lightly. It requires time and effort and, if done correctly, shakes the foundations of the status quo. However, regulatory agencies have no choice but to embark on the creation of new types of regulatory models. Times have changed, the old models of regulation are under assault, and without change, public interest outcomes may not continue to be adequately promoted.