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Throughout the United States, the machinery of utility regulation has shown strain. Conviction has been gathering that not only have the aims for which the commissions were designed not been realized, but that the regulatory systems operate to defeat the very purposes for which they were created.

-Felix Frankfurter

I. INTRODUCTION

The introductory quotation was uttered in 1930 by no less a figure than Felix Frankfurter in the series of Yale Lectures on the Responsibilities of Citizenship, and it seems that consternation over public utility regulation has been long lasting, if not necessarily ubiquitous. To be precise, Frankfurter was complaining that regulators were paying insufficient attention to consumer protection. Today’s critics argue quite the opposite—that regulators are insufficiently attentive to markets. Perhaps such tension between governments and markets is in the nature of our polity. At least, that proposition lies at the heart of these remarks. Further, that central tension helps explain the past as well as helps predict the future as I hope to persuade.

I start with two very basic concepts before the body of my argument. The first concept is that government and markets are necessarily interrelated. The second concept simply narrows the discussion of the interrelationship between government and markets and defines what is meant by the economic regulation of the so-called network industries. Network industries have not sprung upon the scene full blown. Instead, these industries and their regulation have developed over the last century, and that development sets the stage for the next generation of government regulation.

A. An Introduction to Governments and Markets

The first concept concerning the connection between government and markets may sound either strange or superficial, but it is absolutely

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1. FELIX FRANKFURTER, THE PUBLIC AND ITS GOVERNMENT 93 (1930).
necessary to internalize this idea precisely in order to understand the regulatory state. The idea is simple to state but not so simple to internalize—governments and markets are not separate. Put a bit more strongly, markets cannot exist without government. Governments create, protect, and enable transactions of property in markets.

This idea offends some right-thinking economists, particularly those with a Libertarian bent because they believe that any government intrusion into markets involves a restriction on liberty (here also read property). This Right view of a modern political economy is too narrow, yet the idea of a separation between governments and markets has a great deal of staying power in public rhetoric. Nevertheless, the idea of separation is wrong, and the direct and important consequence of rejecting the idea of separation is to recognize that the relationship between government and markets is one of degree not category. Sophisticated scholars and analysts from the Left and the Right acknowledge this point, and their work is better appreciated because of it. 2

Still, the idea of separation is persistent and powerful and very difficult and cumbersome to avoid. To be more precise, when we refer to “the market” we are actually referring to a common law baseline of rules designed for the creation, transfer, and protection of property. In other words, we are referring respectively to the fundamental laws of property, contracts, and torts and to other associated subjects, such as intellectual property, business associations, and products liability, that emanate from these foundational rules systems. It is no small claim to say that the common law baseline of rules establishes a regulatory scheme, for indeed they do, and that scheme is of a constitutional dimension because it is protected by the Takings Clause of the Fifth Amendment to the United States Constitution. 3

The common law baseline can be seen as an institutional system of regulation. At its most simplistic, the common law system involves the


judicial resolution of a past dispute between two parties where the winner takes all. These disputes are what the economists call *ex post*, meaning that a party must incur an injury or be very certain that an injury will occur before courts will open their doors to a complainant. In short, market behavior is regulated (that is, compensation is awarded), but it is regulated after the fact.

To correct dislocations before the fact, *ex ante* as the economists say, government intervention into “the market” is necessary, and such intervention modifies or displaces the common law baseline. Let’s use adulterated food products as an example. Society can adopt a regulatory regime that permits consumers to buy and consume bad beef and then sue for stomach cramps if they choose to exercise their common law rights. The problem with such a regulatory scheme is that too often the transaction costs of pursuing a common law remedy are prohibitive and few consumers sue. As a consequence, bad beef is overconsumed and injuries go uncompensated.

An alternative approach for government regulators is to impose quality standards for beef in an effort to reduce the instances of stomach cramps. In this way, people are protected from the injuries before they occur and the transaction-costs problem is addressed and there even may be efficiency gains with such a system because the costs of thousands of individual tort suits are avoided.  

Thus, a regulatory regime can be installed to promote efficiency gains. When regulation is aimed at improving market efficiency, it is referred to as economic regulation. Economic efficiency is not the only reason for government regulation. Governments also regulate for equity or fairness reasons. This other form of regulation is referred to as social regulation and largely addresses health, safety, and environmental issues as well as public-goods issues and political issues, such as voting and civil rights. Again, we can use the bad beef hypothetical.

Policymakers may choose to impose quality standards for beef for reasons other than efficiency and may choose to regulate to distribute costs. It may be seen as “fairer” to impose regulatory costs on industry rather than risk injury to multiple consumers because it is easier and cheaper for industry to inspect beef than it is for consumers to perform these inspections. In effect, transaction costs are shifted to industry and away from consumers for equity reasons. In this way, regulation is a form of


wealth redistribution rather than simply efficiency maximizing. These arguments for social and economic regulation are not perfectly distinct. Imposing transaction costs on industry, for example, can be justified on efficiency and equity grounds.

Another way of stating this proposition is to say that any discussion of government and markets can be translated into a set of choices among institutional regulatory regimes for economic, non-economic, or a combination of reasons. Policymakers can choose from the common law baseline, heavy-handed price control regulation, or a market-based regulatory scheme to accomplish an array of objectives. In this Symposium, these market-based regulations can be seen loosely as third way regulations.

Government regulation is so pervasive in our lives that it is difficult, and perhaps impossible, to discern where our private lives end and our public lives begin. Professor Ian Shapiro makes just this point in his recent book Democratic Justice, writing: “No social practice can be declared to be beyond politics, and therefore beyond the possibility of political regulation.”7 Shapiro’s conflation of public and private, and the conflation of social and economic regulation, and of governments and markets may be philosophically accurate and even abstractly true. However, such conflation is no aid to analysis and makes predictions about the future of the regulatory state messy and not especially meaningful. Therefore, more definition is needed.

B. An Introduction to Network Industries

The second introductory concept narrows and defines our topic to the economic regulation of network industries. For the most part, the following analysis addresses efficiency as a key goal of government regulation.

Judge Posner describes economic regulation as pertaining to four basic industries: transportation, communications, financial institutions, and energy.8 These industries have been comprehensively and similarly regulated over roughly the same historical period, and this form of traditional economic regulation will be described in detail in Part II. These industries are also experiencing a similar transition that will be more fully explained in Parts III and IV. These remarks generalize what has

transpired in the regulatory state over the last century and concentrate on
the last thirty years as a method of anticipating the future of economic
regulation. While primary examples will be drawn from the energy and the
telecommunications industries, illustrative examples from other industries
will be used as well.

The energy and telecommunications industries are the better examples
of economic regulation because they share both structural and regulatory
characteristics, and the development of these industries and their regulation
have occurred in tandem to the point that we now refer to them together as
network industries.

The history of modern economic regulation can be dated to the 1876
case of Munn v. Illinois\(^9\) and to the creation of the Interstate Commerce
Commission (ICC) in 1887. In Munn, the Supreme Court upheld the
constitutionality of an Illinois statute regulating the prices charged by grain
elevators against a takings challenge. The Court held that state legislatures
could set prices charged by monopolies especially when the service was in
the public interest.\(^10\) The rationale for the creation of the ICC is consistent
with Munn. The ICC was established specifically for the rate regulation of
railroads because rail transportation was in the public interest and railroads
exercised market power. Given its ratemaking responsibilities, the ICC
became the model agency for economic regulation.

These two events form the backdrop for the first phase of public utility
regulation. Public utilities provided publicly desirable goods and services,
and they took the form of natural monopolies, more about which shortly.
Government regulation of these industries was seen as necessary to prevent
rate discrimination among various customers and to protect consumers
from excessive rates. The traditional form of economic regulation started
in the states as public utilities grew beyond municipal boundaries. The
regulation of telephone, gas, and electricity was performed by the federal
government in the public interest when those industries moved beyond
state boundaries.

The next section will describe in more depth the regulatory methods
employed by the federal and state agencies that regulated these industries.
Important to note here is that initially economic regulation was engaged in
the public interest and largely for consumer protection against growing and
threatening corporate power.\(^11\) This sense of the need to protect consumers

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9. 94 U.S. 113 (1876).
10. See id. at 133-36.
PROPERTY passim (rev. ed. 1968); JAMES C. BONBRIGHT & GARDINER C. MEANS, THE HOLDING
COMPANY: ITS PUBLIC SIGNIFICANCE AND ITS REGULATION 153-87 (1932).
against corporate power abuses lasted until the New Deal when the economic regulation of public utilities evolved into the economic regulation of regulated industries.\textsuperscript{12} While consumer protection was still an important goal for policymakers, nationwide economic stability was central to the success of the New Deal.

Although I am taking some literary license by noting an evolution from the regulation of public utilities to that of regulated industries, there has been a shift in regulatory emphasis no doubt brought about by experience. The phase of New-Deal and post-New-Deal government oversight of regulated industries is characterized by three phenomena. First, similarities about the industrial structure of public utilities were noted, and it followed that regulators could learn from each other's experience and could regulate similar industries in parallel fashion. Previously, natural gas was regulated as an industry separate from the electricity industry, and both were regulated distinctly from the telephone industry when in fact these industries share certain structural characteristics. Second, the economic analysis of regulation began to emerge as a scholarly discipline. Once the lens of economic analysis was focused on regulation, then similarities among and regulation of different industries emerged, which has been Alfred Kahn's great contribution to scholarship.\textsuperscript{13} And third, because of the increased importance of microeconomic analysis of regulated industries, policymakers (and here read regulators as well as legislators) paid increasing attention to efficiency gains. As a consequence of the increased attention to efficiency, regulators quite explicitly began to balance consumer interests and investor interests as a regulatory goal.\textsuperscript{14}

With the insights provided by the economic analysis of regulation, study of regulated industries was refined and has been transmuted into the study of network industries.\textsuperscript{15} Today, the study of network industries commands attention, and that study has a focus distinct from either the


study of public utilities or the study of regulated industries in two notable ways. First, the economic analysis and regulation of network industries is primarily concerned with creating and sustaining competition through the *deus ex machina* of markets. Consumer protection and balancing give way to "consumer choice," which is a soft way of saying that producers should be as free from government regulation as possible. The second distinction is that the fear of natural monopoly is not applied to an entire industry. Instead, multiple producers and consumers are seen as promotive of competition with a wary eye reserved for the bottleneck portions of these network industries, which are the wires and pipelines that transport the product from those multiple producers to consumers with multiple purchasing choices.

In brief compass, the object of our study has been defined and narrowed to the topic of the economic regulation of the network industries. The remainder of this paper will contrast the current regulation of those industries against the traditional model and then speculate about the next generation of regulation. Before the main event, I would like to place our topic into a broader, global context because that context has influenced policymakers.

II. REGULATION AND THE THIRD WAY

*Perhaps you don't know that when I've hardly escaped the two waves, you're now bringing the biggest and most difficult, the third wave.*

* * *

*Unless . . . the philosophers rule as kings or those now called kings and chiefs genuinely and adequately philosophize, and political power and philosophy coincide . . . there is no rest from ills for the cities . . .*

*Socrates*

For Socrates, the third wave was a mediation between politics and philosophy; for Tony Blair, the third way mediates the liberalism of the Old Left and libertarianism of the New Right. And, for U.S. politicians, the third way mediates the old politics of "top down paternalism" (big

government) and a new politics of "individual and civic empowerment."\(^{20}\) Finally, and somebody had to say it so Robert Reich did: "We are all Third Wayers Now."\(^{21}\) Third way politics has been described as both a continuation of Reaganism and Thatcherism and a new form of centrist politics and rests on a set of core values of equal opportunity, mutual responsibility, and community or self-government. Third way politics is the Left's attempt to recapture the center from the Right and is an attempt to reinvigorate progressive politics. Although its themes are grand, third way politics must leave room for the regulatory state.

Third wayers advocate reducing government intervention in markets, promoting competition, and preferring wealth creation rather than wealth redistribution. Clearly, capitalism is the favored ideology and information technologies have become the poster children for competition because they have indeed stimulated world-wide economic growth while creating vast fortunes for a sector of the economy other than heavy manufacturing. Information technologies include the behemoth Microsoft as well as myriad start-up companies. With such a vigorous industry, wealth creation is currently a safe bet even though its distribution is problematic.\(^{22}\)

The promotion of markets and competition is a worldwide phenomenon, and it is also consistent with domestic and international deregulation. While free market proponents are anxious to declare a cause and effect between deregulation and market competition,\(^{23}\) the relationship is not so direct for two reasons. The first reason is a matter of definition—deregulation means competition. The statement that deregulation promotes competition is true by definition, not by cause and effect. In the absence of regulation, there is the market. The second reason is more analytical. Regulation can correct market imperfections and can promote competition, or it can inhibit markets. One could well argue that, without the government regulation of network industries through the first half or two-thirds of the century, these markets would not be as developed or as

\(^{20}\) New Declaration: A Political Philosophy for the Information Age, PROGRESSIVE FOUND., July 1996, at 3, 3.

\(^{21}\) Robert B. Reich, We Are All Third Wayers Now, 43 AM. PROSPECT, Mar.-Apr. 1999, at 46, 46.


vigorously as they are today. In other words, regulation stimulated and promoted markets and competition rather than inhibited them.

Third wayers also favor globalization, meaning worldwide trade, investment, and markets. With the downfall of communism, opportunities for democratic capitalism are obviously available, yet they may not be as desirable as its proponents might hope. The recent World Trade Organization meeting in Seattle signifies the lack of consensus in our own country regarding the virtues of globalization. Indeed, as global networks proliferate and as global participation increases, democratic participation decreases and "denationalization" occurs.

Third wayers also favor balanced budgets and President Clinton has gained an enormous amount of political capital adopting this strategy. Indeed, one wonders whether his impeachment trial would have had the same result if the economy were less robust. We can tolerate many peccadillos with full stomachs and fat wallets.

The third way has also developed a social program to compliment its economic program, and here is where third wayers break ranks with Reagan-Thatcherism: first, because they simply have a social program, and second, because it recognizes some positive role for government. To be sure, the social safety net for third wayers is small: people need to be more accountable, and work is aggressively encouraged. At the same time, programs for job security and training are necessary. Education, particularly technological literacy and general investment in human capital, are seen as fully consistent with and supportive of greater participation in the marketplace by persons as producers as well as consumers.

This set of third way values and strategies affects network industries in three discernible ways. First, as government control of these industries lessens, competition and, in many areas, new markets are promoted. In this way, the release of network industries from heavy-handed government economic regulation is a significant input into competitive markets. Second, especially in telecommunications, opportunities for education, jobs, and wealth creation reach down and across broader segments of the population.
population. Anyone can be a player in the market, real or virtual, with computer access and a good idea, although access to venture capital cannot hurt. Third, the third way movement to devolution, to decentralization, and toward competition may well be of constitutional significance, as Professor Mark Tushnet has written:

The new [constitutional] regime . . . proceeds from a handful of well-known, moderately conservative principles; these principles include commitments to scaling back the welfare state while preserving a loose social safety net, and to phasing out command-and-control forms of economic regulation while preserving some public responsibility for ensuring that markets operate safely and without artificial obstructions.27

A final thought about third way politics does not take a philosopher-king to recognize. Much of the third way program is pragmatic, which is to say, it adopts current socio-economic political realities and tries to make the most of them. The Berlin Wall has fallen and the world-wide web has been constructed. Technology makes communication faster; competition makes prices lower; and there is a vast world of consumers to be served. At the same time, those consumers need to be prepared to participate in these emerging markets and will need government help along the way.

Technological advances, global markets, large corporate organizations, and public-private partnerships all contribute to a blurring of the line between the public and private spheres of life. To the extent that private bureaucracy replaces public bureaucracy, the jury is out on which system is more just. Also, to the extent that global programs increase, democratic participation may decrease. In short, if the third way is successful, it must still be monitored. Network industries play a supporting rather than a direct role in the third way program, and their current competitive status is fully consistent with third way politics. Before this current status is described, the history leading up to it will be explained to provide a comparative analysis.

III. A CENTURY OF THE REGULATORY COMPACT

The utility business represents a compact of sorts; a monopoly on service in a particular geographical area (coupled with state-conferred rights of eminent domain or condemnation) is granted to the utility in exchange for a regime of intensive regulation, including price regulation, quite alien to the free market. Each party to the compact gets something in the bargain. As a general rule, utility investors are provided a level of stability in earnings and value less likely

to be attained in the unregulated or moderately regulated sector; in turn, ratepayers are afforded universal, non-discriminatory service and protection from monopolistic profits through political control over an economic enterprise. 28

-Judge Kenneth Starr

A. Basic Theory

Judge Starr’s quotation is a contemporary version of the traditional rationale for the government regulation of public utilities. 29 The standard public interest argument for government intervention into network industries is that corporate power was being misused to the detriment of consumers and in many instances to the detriment of shareholders. 30 The standard counter-argument, best exemplified by the regulation of railroads and airlines, is that private corporate power “captured” government for its own benefit. 31 Capture theory expanded into the economic analysis of politics called rational or public choice theory. 32 It is both fair and accurate to say that both the public interest theory and the capture theory have sufficient numbers of counterexamples to demonstrate that neither theory offers a full explanation for government regulation. 33 Instead of trying to develop a heuristic model with predictive power, government regulation can be fairly easily explained.

The regulation of public utilities was undertaken in order to build an infrastructure of desired goods and services throughout the country. This desire may not have been either fully conscious or fully developed in the minds of policymakers (here read legislators). Although policymakers knew that utility products were socially desirable, there was no real way to know when the infrastructure would be completed. Consequently, legislation was passed without sunsetting provisions. This idea that utility

29. See id.; see also BONBRIGHT ET AL., supra note 13, pt. I; KAHN, supra note 12, ch. 1; PHILLIPS, supra note 13, chs. 1-5.
regulation was about infrastructure fits both dominant theories. The public interest is served by expanding the availability of certain desired goods and services for consumers, and private producers are afforded protected opportunities to earn profits as per capture theory. The infrastructure explanation is as true for canals as it is for fiberoptic networks.

The infrastructure rationale is embedded in the concept of universal service as policymakers decide which goods or services should be delivered in the public interest. As those goods or services become universally available either through market expansion or due to technological innovation, pressure is brought to bear on government to either change or abandon regulation. In other words, the infrastructure explanation is consistent with the current interest in deregulation because, once an industry has been built up, further government intervention into that industry may be either unnecessary or counterproductive.

B. Basic Compact Terms

To advance the objective of infrastructure expansion, policymakers had to justify government intervention in the marketplace, and more importantly, they had to determine the proper form of intervention. Again, *Munn v. Illinois* is instructive, and the rationale for intervention was twofold. First, the product was deemed to be in the public interest. Second, the private market was seen to be a monopoly. In brief, the sin of monopoly power is excessive prices and profits. Monopoly power at once increases prices and profits, reduces output, and creates a dead weight loss on society. In other words, because prices are up and output is down, consumer choice is constrained. Consequently, monopolies had to be controlled. Generally, antitrust law exists for that purpose but public utilities had a special problem—they were perceived to be natural monopolies.

The theory of natural monopoly goes a bit further than corralling accumulated market power. There are some industries in which it is more efficient for one producer to provide a product than for multiple producers to do so. Public utilities are excellent examples of natural monopolies because of their structure. Utilities require enormous front-end capital investment that is sunk into the firm. Once the large, fixed costs are sunk, then the variable costs can be spread over a large range of output. Further, at least the transportation segment of a utility has monopoly characteristics.

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34. 94 U.S. 113 (1876).
35. See SHAPIRO & TOMAIN, supra note 5, ch. 5.
insofar as multiple pipelines, wires, or rail lines are unnecessarily duplicative if built by one or more competitors. Together these characteristics mean that a single producer’s average variable cost will continue to decline over a range of production, thus enjoying economies of scale.

Policymakers, then, were in a bit of a bind. On the one hand, the utility product was seen as desirable and was best delivered by one provider. On the other hand, the lone provider was a monopolist. What were policymakers to do—nationalize? Not likely in a capitalist democracy. Ironically, the regulatory solution was a state-controlled monopoly—the regulatory compact—as described in Judge Starr’s opening quotation. Monopoly regulation was able to preserve the scale economies while avoiding competitors’ economically wasteful investments.

The regulatory compact imposes significant obligations on both the government and the regulated firm. In exchange for a government-protected monopoly, the public utility lets government set its prices through ratemaking. The utility is given the power of eminent domain to lower its transaction costs; is given an exclusive franchise or service area to prevent competition; and is, therefore, the only firm authorized to sell its product in that area. In fact, the utility acquires an obligation to serve. The government, through ratemaking, sets the price of the service. Generally, rates are set so that a prudently managed utility will cover its operating expenses and earn a reasonable return on its capital investment, thus enabling the utility to earn a profit. The regulatory control of natural monopoly, then, occurs by: (1) limiting entry, (2) setting prices, (3) controlling profits, and (4) imposing a service obligation.

Ratemaking is at the heart of traditional regulation and was intended to mimic a competitive market rather than to allow the utility to set its prices at monopoly levels. Rates were to be those that would be set by a private firm with similar financial risks and rewards. This very idea that a regulated utility’s prices should mimic those of a competitive firm is odd, to say the least, because there are no similar competitive firms. As a result, any price set by a regulatory authority was likely to be too high, thus gouging consumers; too low, thus failing to reward investors; or, right on the money only by accident. Complicating things a bit further, the ratemaking formula was intended to serve multiple purposes, including attracting investors and promoting efficiency, as well as controlling consumer demand and distributing income. In other words, ratemaking had both market efficiency and non-market objectives. In an expanding

36. See BONBRIGHT ET AL., supra note 13, at 91-98.
economy, consumer and producer surplus could be achieved through ratemaking because rates were flat or declining. Under these circumstances, utilities could attract investors and avoid gouging customers.

The traditional rate formula is: \( R = O + (V - d)r \). Looking more deeply into the ratemaking part of the regulatory compact, one quickly sees that government price setting is dependent on crucial guesses as well as explicit policy choices.\(^3\)

The crucial guesses are determining the firm’s rate base \((V - d)\) and determining its allowable rate of return \((r)\). Again, the fundamental idea behind ratemaking is to run parallel to the competitive market, but that market does not really exist; therefore, the rate of return is simply a guess. Furthermore, because there are at least eight ways to value rate base,\(^3\) the choice of rate base valuation is also a guess. Operating costs \((O)\), of course, can be taken right from a firm’s books. However, which costs should the regulator use: past, present or future? The choice of any one has dramatic and different implications depending upon whether the firm’s costs are increasing or decreasing and whether the market is inflationary or deflationary.

Traditional cost-of-service regulation chose historical costs. This choice, coupled with the concept of a competitive rate of return for capital investment (rate base), worked wonders for the expansion of the country’s infrastructure. Simply, the more money a firm spent on capital construction, the more it earned. In the electricity industry, for example, from the end of World War II until the mid-1960s, utilities continued to expand at a seven-percent annual growth rate, and since average costs continued to decline, rates stayed relatively flat. With rates being set on a historical basis, utilities were safe investments, and since the rates were flat, consumers caused no political problems. That situation changed as

\(^3\) Shapiro & Tomain, supra note 5, at 153. The variables of this formula are:

- \( R \): firm’s revenue requirement or the total amount of money that the regulatory authority decides that the firm is entitled to earn
- \( O \): firm’s operating expenses
- \( V \): gross value of the firm’s capital investment
- \( d \): firm’s accrued depreciation
- \( V - d \): firm’s rate base
- \( r \): rate of return the utility is allowed by the regulatory authority to earn on its capital investment or rate base

\( Id. \) (emphasis added).


\(^3\) See Shapiro & Tomain, supra note 5, at 155-56.
soon as industry growth slowed and costs increased. Nevertheless, the traditional rate formula had the desired effect of encouraging capital investment in and infrastructure expansion of utilities.

The rate formula is intended to yield the revenue requirement (R) or the amount of money a utility should earn. As noted, determining R involves a good amount of guesswork. Determining how portions of the revenue requirement are allocated among customer classes is called rate design and entails significant policy choices. Choosing which items to include in the rate base and which to expense entails policy choices. Should, for example, a partially constructed generating plant be included in the rate base? Even operating expenses involve policy choices. Which expenses should be included? Salaries? Advertising? Business? Charitable contributions? All of these choices are policy choices which are made to achieve certain social ends. By statute, rates are to be fair and non-confiscatory for all consumers, and there is to be no rate discrimination within customer classes. A utility cannot give a rate discount to its friends or best customers. At the same time, rates should be reasonable (low) enough to promote consumption, thus furthering the goal of universal service. Because of this goal, rate design had the effect of having one class of customers subsidize another class as a matter of policy. Small, rural ratepayers paid less than full cost of service at the expense of large, urban ratepayers.

In short, the traditional rate formula was intended to protect consumers from excessive rates and to promote industry expansion.

C. The Life Cycle of Government Regulation

In the previous section, the argument was advanced that the basic regulatory compact achieved its goals and, therefore, government regulation worked. Implicit in this argument is that, once the goals are achieved, the need for government regulation lessens. In fact, the amount of and enthusiasm for government regulation ebbs and flows over time. These historic periods of expansion and contraction of government intervention in the marketplace seem to occur every generation. In *Regulatory Law & Policy*, Sid Shapiro and I describe historic periods


alternating between government intervention and laissez-faire. These alternating periods reproduce on a large scale and over time the fundamental tension between government and markets with which this essay opened. It is our government we love to hate, especially linked to our economic well-being. In flush times, we should get government off of our backs and let the market work its magic. In down times, the government should step in, stabilize the economy and protect those citizens who fall through the cracks in the marketplace.

The regulation of network industries is a subset of this history. Indeed, every generation in the regulation of an industry appears to experience an identifiable cycle. Building on the earlier work of Marver Bernstein, Shapiro and I argue that regulated industries experience just such a cycle in six stages.

Stage One, the free market, is the period when government intervention is absent from a particular industry or market. This stage adopts a version of laissez-faire or of limited government. If the market is functioning properly or reasonably well or, in other words, if the market is efficient and fair, government intrusion cannot improve the situation. Simply, in the face of a well-working (efficient and fair) market, government regulation will at least add unnecessary administrative costs, thus reducing allocative efficiency, and may cause inequitable distributions. At the tail end of the nineteenth century, the network industries were start-up companies, operating at local levels, and competition was the preferred mode of behavior. There was no call for government intervention as competitors tried their products on the market.

Achieving or maintaining a free market, however, is rare and difficult. Instead, the frequent situation is of a market in disequilibrium because of the existence of a market failure. In Stage Two, once a failure, such as natural monopoly, is identified, a regulatory response from government is suggested. In other words, the existence and the identification of the market failure becomes the justification for government intervention into private enterprise, thus moving regulation into the next stage. For network industries, the most frequently identified market failure was their natural monopoly nature. Economies of scale could best be realized through a single provider and the natural progression for these industries was


43. See MARVER H. BERNSTEIN, REGULATING BUSINESS BY INDEPENDENT COMMISSION ch. 3 (1955); SHAPIRO & TOMAIN, supra note 5, at 92-94.
concentration which occurred during the first quarter of the twentieth century with undesirable economic consequences for consumers and shareholders alike.

Once a market failure is found, then Stage Three, government regulation, is reached. In order to reach this stage, a justification for government intervention must be given. For the price and profit regulation of network industries there were two basic justifications. Government intervened to promote economic efficiency and to promote reasonable prices. In the early part of the twentieth century, utility regulation was the province of the states starting with New York and Wisconsin in 1907 and eventually moving to Washington, D.C. in the 1930s as utilities dealt increasingly in interstate markets. In both cases, consumer protection and later investor support were the bases of regulation.

Justification for government intervention is a necessary but insufficient condition for government regulation because the government must respond to the perceived market failure with the correct regulatory tool. The particular form of regulation must be the appropriate corrective for the identified market failure. The consequence of using the wrong regulatory tool—using price supports to correct inadequate information, for example—may worsen a situation rather than improve it. Or, a regulatory tool can outlive its usefulness, as has been the case of network industry price controls.

For the initial regulation of network industries, government intervened with a heavy hand of price, profit, entry, and exit regulation, raising the question whether this was the correct regulatory tool. Below I will argue that, for a period of time, ratemaking worked well and regulators achieved their objectives. It is also the case that, as ratemaking outlived its usefulness, regulatory failure, Stage Four, ensued. As a crude test of regulatory failure, if the costs outweigh the benefits of regulation, government regulation has failed. For network industries, the period of regulatory failure was roughly from the mid-1960s until the so-called Reagan Revolution. Price regulation no longer neatly fit an economy with rising costs and with severe economic dislocations.

There are two reactions to regulatory failure. In the last two stages of the life cycle, government can either respond by fixing the failure through regulatory reform at Stage Five, such as modifying existing regulations, or government can extract itself from the market all together by complete deregulation at Stage Six, that is, by eliminating regulations, thus reverting back to Stage One, the free market. Despite the hype over deregulation, network industries are clearly entrenched in Stage Five—a phase of regulatory reform. Indeed, industry deregulation is now known as industry restructuring, and this generation of regulation deserves our attention.
D. Assessing the Regulatory Compact

Has the traditional regulatory compact been a failure, or has it been a success? It depends. Assessing failure or success depends on one’s point of view. I believe that we can safely declare that the regulatory compact has been a strong success because it has accomplished its primary goal of expanding our country’s infrastructure.

For most of this century, again until the mid-1960s, energy and telecommunications prices have been steady or declining. Services have increased and have been widely distributed. Jobs have been secure in these industries. And, the industries have been oddly market sensitive. By this I mean, particularly for the energy industries, that energy markets have expanded with the economy. During this period, policymakers in Washington and corporate leaders in boardrooms acted on the belief that there was an energy-GNP linkage such that the more energy that was produced, the healthier the economy, and the healthier the economy, the more energy that needed to be produced. The country also enjoyed expanding telecommunications options in radio, television, and telephone at decreasing rates throughout the century.

Government regulation of network industries was intended to guard against the painful effects of monopoly power in a way that promoted markets to the benefit of consumers and producers alike. Some data is instructive. From 1960 to 1998, energy production nearly doubled and energy consumption more than doubled. In 1998, over 42% of all U.S. households had a computer; over 67% had cable television; over 98% had at least one television; over 85% had VCRs; and there were over sixty-nine million cell phones. 44 Not bad for expanding infrastructure.

In short, traditional regulation captured markets, as distinct from capturing regulators, until the 1960s when the country experienced regulatory failure. The standard account of regulatory failure is that the natural gas market was distorted because of price regulation; that the electricity industry was grossly overbuilt during that same period because of the traditional rate formula; and that telecommunications innovations were stymied because AT&T was an entrenched monopoly. The standard account also claims that prices in each industry sent the wrong economic signals, and industry could not properly respond. These claims of regulatory failure extended to the transportation and financial services industries, and all of these criticisms brought pressure on policymakers (both legislators and bureaucrats) to deregulate.

It is possible, indeed likely, that the infrastructure argument and the standard regulatory critiques are both correct because they apply to different historic periods. It is impossible to know whether or not the universal service provided by these industries would have come about sooner without the traditional scheme of regulation, but that proposition is doubtful. Regardless of whether the traditional regulatory compact can be deemed an unqualified success or an unqualified failure, it also cannot be denied that the traditional scheme has outlived its usefulness. The challenge is to address the current needs of the markets for network industries. To properly assess what those needs are and what forms, if any, of government regulation are needed, we must describe their current situation, to which we now turn.

IV. RENEGOTIATING THE REGULATORY CONTRACT

_Greed, for lack of a better word is good._
_Greed is right._
_Greed works._
_Greed clarifies, cuts through and captures the essence of the evolutionary spirit._

_Gordon Gekko_45

A. New Theory

The 1980s Gordon Gekko quotation about greed is familiar to contemporary readers but it would be just as apt to quote Alexander Hamilton's _Federalist XII_ from the 1780s, in which he argued that "human avarice and enterprise" can be harnessed as the "source of national wealth." 46 Simply put, the "evolutionary spirit" throughout the world and affecting network industries is competition. And, competition, as we know, creates wealth.

Regardless of whether traditional regulation can be judged a success or a failure, network industries have entered a new competitive phase of

45. WALL STREET (20th Century-Fox 1987).

The prosperity of commerce is now perceived and acknowledged by all enlightened statesmen to be the most useful as well as the most productive source of national wealth, and has accordingly become a primary object of their political cares. By multiplying the means of gratification, by promoting the introduction and circulation of the precious metals, those darling objects of human avarice and enterprise, it serves to vivify and invigorate all the channels of industry and to make them flow with greater activity and copiousness. The assiduous merchant, the laborious husbandman, the active mechanic, and the industrious manufacturer—all orders of men look forward with eager expectation and growing alacrity to this pleasing reward of their toils.

_Id._
industrial development, and the time is appropriate to assess and renegotiate the understanding between government and network industries. The very nature of that understanding is being questioned and contemporary jargon frames that relationship as contractual. 47 While we can take issue with the notion that a contractual relationship exists between utilities and governments, the idea is useful to make the point that the nature of the relationship affects the nature of the regulation. The original compact has been performed; the infrastructure has been built; and utility products have been distributed at reasonable cost and have been distributed virtually universally. Notice, I said that the contract should be renegotiated, not abandoned, because further performance issues remain. In fact, the remaining issues run as deep as the fundamental tension between governments and markets.

The delivery of network industry products continues to balance consumer choice with consumer protection and, while the array of choices has increased, all consumers do not share the benefits. Small residential energy consumers, for example, do not have the bargaining leverage of large industrial consumers and protection against reverse cross-subsidization may be necessary. Reverse cross-subsidization means that, as large consumers are able to negotiate discounts, small consumers may pay a disproportionate share of those discounts. Also, local cable television packages and rates can take on monopolistic characteristics to the detriment of consumers.

One of the overriding themes for the current pro-market attitude is that increasing deregulation also means increasing consumer choice because of the greater availability of goods and services, which in turn should bring lower prices. Judge Richard Cudahy calls this the “Folklore of Deregulation.” 48 With tongue appropriately planted in cheek, he writes: “This is the creed that honors the way of markets as the single source of progress and prosperity—not to mention virtue, wisdom, motherhood, and

47. See SIDAK & SPULBER, supra note 15, chs. 4-5 (using the phrase “regulatory contract” to advocate a pro-utility position). Their thesis is that, because the state has changed the terms of its understanding with utilities, that “expectation” damages is in the proper measure of just compensation for stranded costs. This proposition is dubious at best. Rather, if the contract analogy is to hold, then reliance would be a better measure assuming that there is any difference whatsoever between reliance and expectation in this situation.


apple pie." His implicit caution is well placed. In addition to encouraging competition, we must observe a watchfulness over consumer choice and consumer protection. In addition, that watchfulness needs to extend to producer choice and producer protection. Incumbent energy and telecommunications producers who have invested in satisfying regulatory requirements face competition from new entrants not similarly burdened.

In short, the reason the regulatory "contract" is being renegotiated rather than abandoned is because "it’s the political economy, stupid!" The weak version of this argument is that government will continue to intervene in network industries because that is the way everyone is used to doing business. While this statement may be true, nothing good can come from this rationale alone because the old, familiar ways of doing business will not succeed in today’s marketplace.

The strong version of the argument is that governments and markets work together because that is the very nature of a mixed economy. Labeling our society a mixed economy is only the beginning of political-economic analysis because the label says nothing about the degree and kinds of intervention. Still, the point is central to understanding not only the regulatory state; it is critical to understanding how a political economy deals with products deemed to be publicly desirable. In essence, through regulation, government supports private producers while protecting consumers from market power abuses.

The current environment for renegotiating the network industries contract is a coalescence of several ideas. Clearly, there has been a lack of faith in the old contract. Command-and-control economic regulation has outlived its purpose. Somewhat more specifically, there has also been a decline in faith that natural monopolies need as extensive regulation as they historically have had. Concomitant with that decline in faith in government regulation is a renewed commitment to market competition. Belief in competitive markets is never absent in our society—it just waxes and wanes.

This affirmation of capitalism is worldwide as noted above. It is also bipartisan—Left and Right, Democratic and Republican. The renewed faith in the market is also endorsed by the three branches of government. Congress has been pro-market for nearly twenty-five years; the Executive Branch, both in the Office of the President and in the administrative

49. Id.
agencies, has also supported the move; and, to a significant extent, the judiciary follows suit.\footnote{51} It must be noted that, while industry has not sat idly by during this transformation, it has not been of one mind either. Mavericks like Enron, MCI, and Southwest Airlines behaved like the entrants they were to take market share from the incumbents. At the same time, aggressive incumbents like Entergy, Cinergy, and Delta began to behave more and more like unregulated competitive firms also in an effort to capture market share, not merely keep what they had. These upstarts and defectors showed that there was a breach in the regulatory cartel as much as there was a breach in the regulatory contract. The vigorous amount of merger and acquisition activity, particularly in the telecommunications industry, also evinces a strong belief that efficiencies and economies of scale remain to be realized.

B. New Structure

The traditional regulatory structure involved the command-and-control economic regulation of private firms to protect consumers against the wages of natural monopoly. This form of regulation resulted in a single provider, providing a single product at an established price in a geographically designated service territory. Regulatory goals included reliable, universal service at fair or reasonable prices which entailed cross-subsidization among customer classes.

The traditional form of regulation worked well enough and succeeded in expanding service. However, once the infrastructure was built, a rate formula that rewarded capital expansion contributed to wasteful overcapitalization. In its worst form, an overcapitalized industry attempted to recover its capital costs from ratepayers for expenditures that were neither used by nor useful to them. After all, a canceled nuclear power plant produces no electricity. Overcapitalized firms find it difficult both to make investments and to attract investors.\footnote{52} In a similar vein, the management of regulated firms became complacent. For two decades after World War II, energy firms simply relied on steady, predictable growth and completely misassessed the financial and political risks of nuclear power. The cancellation of the Zimmer nuclear power station by the Cincinnati Gas & Electric Co., for example, was caused by management trying to

\footnote{51. See, e.g., Tushnet, supra note 27 passim.}
\footnote{52. See, e.g., PETER NAVARRO, THE DIMMING OF AMERICA: THE REAL COSTS OF ELECTRIC UTILITY REGULATORY FAILURE 13-16 (1985).}
construct a nuclear plant with a coal-age mentality.\textsuperscript{53} Similarly, when AT&T divested the regional bell operating companies (RBOCs), it simply (and wrongly) assumed that AT&T would remain dominant in the field and would overshadow the RBOCs. Now AT&T, while huge, is only a player in a vigorous information market and one that is competing against its own RBOCs rather than the other way around.

The regulatory world has changed and is moving rapidly toward the market. Instead of the traditional industrial structure, network industries do not rely on single providers of single products in exclusive service territories. Instead, multiple providers provide a range of products throughout the country. Nowhere is consumer choice more varied than in the telecommunications industry. Consumers have choices among long distance telephone service providers, cable and network television services, and all sorts of information services and connections, and choices among energy providers are expanding as well. These choices seem to be growing daily with e-commerce products that enable consumers to bid on once-regulated airline tickets among other myriad products.

No longer are prices as rigidly set as they once were. Indeed, multiple prices for energy, telecommunications, and transportation services open options previously unknown. The phenomenon called unbundling increases choices even more as energy purchasers can buy either natural gas or electricity or their transportation or both; and, consumers can buy telephone service and telephone equipment from different sources. The transition from the traditional scheme to the current one did not occur overnight. Administrative agencies and judicial review of administrative actions experimented over the last twenty-five years with opening up markets through flexible ratemaking, incentive pricing, and looser entry and exit controls.\textsuperscript{54} Under the traditional scheme, cross-subsidization helped provide universal and reliable service. The current scheme has not fully addressed this issue. The key proposals include some form of tax rather than cross-subsidized prices or no cross-subsidization at all, in which case universality and reliability would be left to market forces.

The change from the traditional regulatory structure to the current structure has been dramatic as Table 1 demonstrates:

\begin{table}[h]
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\textsuperscript{53} See JOSEPH P. TOMAIN, NUCLEAR POWER TRANSFORMATION 34 (1987).
\textsuperscript{54} See, e.g., SHAPIRO \& TOMAIN, supra note 5, chs. 5-6; see also Roger Ridehoover, The Role of Entry in Deregulating Gas and Electricity, 19 ENERGY L. J. 307 (1998) (examining the manner in which competition is replacing the regulation of gas and electricity).
### Table 1
The Regulatory Structure of Network Industries

<table>
<thead>
<tr>
<th>Traditional Structure</th>
<th>Current Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Private firms</td>
<td>• Private firms</td>
</tr>
<tr>
<td>• Single producer</td>
<td>• Multiple producers</td>
</tr>
<tr>
<td>• Franchise area</td>
<td>• Limited, shrinking franchise areas</td>
</tr>
<tr>
<td>• Single product</td>
<td>• Multiple, unbundled products</td>
</tr>
<tr>
<td>• Set, non-discriminatory rates</td>
<td>• Variable, multiple prices</td>
</tr>
<tr>
<td>• Goal of universal, reliable service</td>
<td>• Issue not fully addressed</td>
</tr>
<tr>
<td>protected by government</td>
<td></td>
</tr>
<tr>
<td>• Cross-subsidization</td>
<td>• Possible reverse cross-subsidization</td>
</tr>
<tr>
<td>• Firm-wide regulation</td>
<td>• Bottleneck regulation</td>
</tr>
</tbody>
</table>

C. New Consequences

Any change in regulatory structure entails costs,⁵⁵ and it is reasonable to question the financial consequences of that change and ask whether the costs are less than or exceed the benefits. While it is reasonable to ask the cost-benefit question, the question may not be realistic for two reasons. First, costs and especially benefits are notoriously difficult to identify, assess, and compare as even the defenders of cost-benefit analysis recognize.⁵⁶ Second, the competition train has long left the station so a return to the old ways will not occur. Still, while it is helpful to identify costs and benefits for efficiency purposes, it is more significant to understand the distributional consequences of regulatory change.⁵⁷

Clearly, regulated firms will entail transaction costs as they move from a regulated to a less regulated or unregulated environment. The transaction costs involve managing old regulatory obligations, especially stranded costs; managing transitional regulatory obligations; and competing against

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⁵⁷. See Posner, supra note 2, at 14-16.
new entrants. Offsetting these costs should be reduced regulatory costs, but it is also likely that transitional regulation will be needed.

Under the new scheme of regulation, innovations should increase because of competition; an increased number of products should result in a decrease in prices; and, together with price competition, these markets should offer service competition as well. These, of course, are the benefits of competitive markets. In addition, there should be redistribution of wealth from producers to consumers as prices decrease.

Cross-subsidization under traditional regulation complicates this redistribution, however. Even if there is a net gain to consumers, there is likely to be a consumer set that does not realize lower prices. Small energy consumers or rural telecommunications consumers, for example, who were subsidized by large industrial urban consumers during regulation and who cannot bargain for discounts as the large industrials can, are vulnerable to price increases. They are also vulnerable to paying for stranded assets.

For producers, as allocative, productive, and dynamic efficiencies are realized, entry, investment, and administrative costs should likewise decline. Sidak and Spulber argue that, in the more competitive market, goods will go to their highest valued use (allocative efficiency) at the cheapest cost (productive efficiency) and that investment and innovation will increase (dynamic efficiency). While it is theoretically true that competitive markets realize these efficiencies, it is equally true that concentration of market share and market power is the dominating force behind aggressive profit-seeking firms.

D. New Markets

Even the most cynical market critic cannot deny that competition is here and has brought with it at least the benefits of more consumer choices in products and prices and more innovation from producers. Indeed, the behavior of network firms has changed noticeably over the last two decades, and the number of changes seems to expand every day. The move to competition has been accompanied by an alphabet suit of new actors, including independent power producers (IPPs), qualifying facilities (QFs), and exempt wholesale generators (EWGs). These actors all

58. See Sidak & Spulber, supra note 15, passim.
participate in energy markets that are less regulated than public utilities. 60 New products abound, such as high definition television (HDTV), multi-channel video program distribution (MVPD), personal communication services (PCS), and all forms of cellular communication devices and video options. New services are available in every industry, and there are new players to deliver these services. Network industries are more fully engaged in advertising and marketing than ever before. Marketers sell power and become virtual utilities. Aggregators assemble energy purchasing groups in order to compete with larger consumers. Merchant power producers compete on spot markets. Prices are set with ceilings, floors, caps, and ranges or with no limits at all. Regulatory entities are public, private, or some combination of the two and are variously called independent system operators (ISOs), regional transmission organizations (RTOs), or power exchanges (PXs). Previously separate industries are now offering products they never offered before. Telephone companies provide television services and vice versa; cable companies provide computer services and vice versa; public utilities provide Internet space; 61 and the Internet provides everything, including energy through e-utilities. 62 Companies are merging, acquiring, divesting, and making initial public offerings like no other time in history, and these products are being distributed in real time via contract as well as through futures markets.

The current generation of network industries regulation has been transitional if not transformative as Kearney and Merrill note. 63 The transition has evolved over the last quarter of a century and the regulatory contract has been renegotiated. The transition from regulation to full competition has not been complete because several transitional problems remain and because it is not in the nature of our polity to have government completely extracted from public service markets. In the next section, I will explore remaining problems and will speculate about the next generation of network industries regulation.

63. See Kearney & Merrill, supra note 31, at 1324.
V. REGULATORY MARKETS

In a surprise breakthrough in antitrust settlement talks, negotiators for Microsoft and the government have agreed on a plan by which the software giant will acquire the U.S. Department of Justice for $7 billion, sources close to the discussion said yesterday.64

As noted earlier, regulatory history can be analyzed generationally and can be analyzed along a business cycle. The year 2000 is as good a time as any to bring an end to one generation of regulation and begin another. The last century of network regulation has fulfilled its mission of expanding its infrastructure. Now, competition promises benefits in terms of products and prices, services, and innovation. The last regulatory generation, from the late 1960s to the present, was transitional, yet significant issues remain to be resolved, and it will take another regulatory generation to complete that transition. The next generation, from 2000-2030, will be charged with managing markets largely shaped by government regulators. This period can be called the generation of regulatory markets as government policymakers (legislators and bureaucrats) continue to affect who participates in markets and what is sold there even while encouraging competition. Underneath the joke that Microsoft could buy the Justice Department lies a truth about power and size. Microsoft can easily afford the price tag. Indeed, Bill Gates could write a personal check for that amount. The underlying truth is that it is wise for regulators to be wary of vast market power in information products.

During this period there are three large remaining regulatory issues that must be resolved for the network industries. The first is determining how stranded costs are valued and how they are to be paid. Few policy analysts seriously disagree that the investments that network industries made in order to comply with and satisfy regulatory requirements should be compensated even though there is little constitutional support for the idea.65 The controversy over nuclear plant cancellations addressed exactly this issue with no clear guidance as to how courts and regulators should assess

65. See Hovenkamp, supra note 46, at 808 & n.26; see also Duquesne Light Co. v. Barasch, 488 U.S. 299, 307-16 (1989); Susan Rose-Ackerman & Jim Rossi, Disentangling Deregulatory Takings 34-35 (Jan. 10, 2000) (unpublished manuscript, on file with author) ("United States takings jurisprudence has not found that regulatory actions in infrastructure industries demand compensation.").
whether compensation is due. Stranded costs present the same difficulty involving estimates "ranging from a low of $10 billion to $20 billion to a high of $500 billion." The range of estimates indicates part of the problem. Utilities, naturally, want to identify as many recoverable stranded costs as possible to protect investors. Regulators are less inclined to do so in order to protect consumers. Assuming that assets can be properly attributed, then a valuation must be assessed and valuation methodology, as we have learned from trying to evaluate rate base, is not scientifically precise. The reality is that, while there is a consensus on compensating firms for stranded costs, there is no consensus on which costs should be recovered or which valuation methodology should be used. These choices are fundamentally political rather than economic.

Again assuming that an amount of stranded costs can be established: who pays? Should exiting customers pay through an exit fee? Should current customers pay through a surcharge? Should bondholders pay through securitization? Should shareholders absorb some losses? Legislatures and regulators have and will continue to assess each strategy.

The resolution of the stranded costs issue implicates another problem brought about by increased competition. As regulated firms are invited (or forced) to compete, they will be competing with new entrants. New entrants exist because entry costs are low enough to enter a market, and they believe that they can price their product below the price of the incumbent. In other words, new entrants believe they have a competitive advantage, and incumbents believe they have a competitive disadvantage because of regulatory burdens. The transition to a more competitive environment must at least attempt to level the playing field for incumbents and entrants alike. Competition requires multiple producers, but incumbent producers should not be disadvantaged.

The third large issue involves moving competition from the wholesale to the retail levels, and this move entails opening access so that consumer choice among network products is maximized. The rub here is that private transportation network owners are not anxious to give up their competitive

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(monopolistic)\textsuperscript{69} advantage, and government is not likely to nationalize. The trick is to design a form of transportation that opens access, compensates owners fairly, and does not allow operators to discriminate among providers, especially between affiliated and non-affiliated providers.

The big three problems, then, involve stranded costs, leveling the competitive playing field, and access. There are other concerns. In each industry, the power of small consumers is—well—small, and service reliability is a concern. Energy industries have added concerns over environmental protection and conservation—why generate electricity from natural gas or nuclear power when coal is so cheap?

As if solving these problems was not enough, the solutions to the problems, and more, must be managed. Managing competition in regulatory markets for the next generation of network regulation is ironic in a deep and perhaps costly way. While regulators during this period will promote competition, they must also monitor it. The irony, particularly for state regulators, is that regulatory staffs will be engaged in tasks that greatly resemble what centrally planned economies attempted to achieve. Staffs will monitor access into the transmission networks, will monitor various markets for signs of competition or concentration, and will monitor markets for service quality, price, and reliability.\textsuperscript{70} The more competitive energy markets must also be monitored regarding negative effects on conservation, the environment, and small consumers.\textsuperscript{71} More ambitiously, staff may also monitor futures markets and auctions as an adjunct of service issues. Regulatory staffs could well grow larger with an attendant increase in costs. They will also require more sophisticated economic expertise—so much so that deregulation, more accurately restructuring, may bring about full employment for economists. Too bad for we lawyers.

VI. CONCLUSION

Everything about the $165 billion takeover of Time Warner by America Online is big. AOL is the largest Internet company. Time Warner is the largest media and entertainment company. Their proposed marriage will be the largest corporate merger in history. The implications of this merger are big too, for the way stocks are valued, for the way information services reach consumers, and perhaps for


\textsuperscript{70} See, e.g., OHIO REV. CODE ANN. § 4928.06(E)(1), (2) (Anderson 1999); ARIZ. REV. STAT. ANN. § 40-202 (West Supp. 1999).

\textsuperscript{71} See Wallace Roberts, Power Play, AM. PROSPECT, Jan. 1, 1999, at 71, passim.
The way entertainment, politics and journalism evolve in a 21st-century corporate environment.

-New York Times

The joke in the last section was that Microsoft could buy the Justice Department for $7 billion. Reality is even more amazing as demonstrated by AOL’s proposed acquisition of Time Warner for $165 billion. With this merger, entertainment content and information transportation combine into the world’s largest media firm. While it is clear that network industries must get larger to compete, will size reduce the benefits of competition? Put differently, what will the regulatory future look like?

Fractal geometry generates remarkably intriguing and complex patterns from fairly simple mathematical formula. At first glance, the patterns seem to repeat themselves endlessly at greater and greater magnitudes. On closer examination, however, one notices that the patterns are in fact not exact copies of each other. Instead, each pattern is unique, like snowflakes.

Government regulation has an identifiable pattern that is generated from the simple formula that government and markets cannot exist without each other. Markets require government protection, support and enforcement; and governments require a market to facilitate the distribution of goods to preserve its society. On closer inspection, of course, the range of options is infinite, like fractal geometry or snowflakes.

The pattern described above involves the expansion and contraction of government economic regulation over goods and services seen as publicly desirable. Today, in the Information Age of the Global Village, capitalism has won the day. Therefore, it is not at all surprising that traditional regulation has yielded to a more modern market focus. Indeed, over the years, even our language has changed to either conform with or contribute to these changes. Public utilities have given way to regulated industries which, in turn, have given way to network industries. The former regulatory compact has now evolved into the regulatory contract, a shift in language with potentially hundreds of billions of dollars in consequences. No longer do we look at canceled plants; instead, we focus on stranded assets, and universal service has given way to connectivity. Finally, deregulation has been transformed into industry restructuring.

Underlying these language changes is the old tension between markets and regulation and the pattern of the ebb and flow of government intervention. It may be too much to speculate about what the next

generation of regulation will be after regulatory markets because that directly depends on what happens during the current thirty-year period. Today, it seems likely that network industries will be so competitive that regulatory markets can be deregulated even further. Yet, it seems equally likely that, as we move to a one-wire world, producer concentration can increase to the point at which market power threatens the gains from competition. In that case we will see an increase in regulation to insure that the information stream is diverse and broadly distributed. While the changes in language are important and instructive, keep your eye on the pattern—it is unlikely that government regulation of network industries will disappear completely.