Regulation or Technology?

Low-Income Electric Customers and the Transition to Competition

How to remake universal service through information, communications, and product choice.

Two hundred years ago, 300 steadfast Spartans, defending their sacred Cretan turf, held up Xerxes's Persian army at the pass at Thermopylae just long enough for the Persians to lose the opportunity to conquer Greece. The world would have been quite different if the Spartans had just "given way."

Contemporary state public utility regulators number just about that of those plucky Spartans. They too are defending their sacred ground. Like Xerxes's army in 480 B.C., American electric utilities today are trying to squeeze their way through a perilously narrow passageway. They are being pushed from behind by the force of competition, which is as tough a master as Xerxes ever was. Will electric utilities, seeking the flexibility necessary to prevail in the competitive market, be delayed so long that they too lose the war?

Protecting the Residential Customer

The sacred ground many regulators believe must be protected is the network of rules and regulations designed to protect residential customers from abuse by a monopoly utility service provider. Often, these rules and regulations have developed a special emphasis on the low-income customer, considered particularly vulnerable and in need of protection. Virtually every current utility regulation is held in place by three related regulatory predispositions:

- the expectation that a utility will do its best to extract monopoly profit from customers and take advantage of them because they have no alternatives, or only very expensive ones.

- the view that residential customers, particularly low-income customers, need regulatory "protection" because they are either unwilling or unable to make the informed decisions required to function in a competitive environment (This notion is especially pronounced when competition initially appears on the horizon. In short, there is some underlying sense that customers may not be well equipped to make choices even to the extent that they are available.)

- the practice of embracing inter- and intraclass subsidies in the pricing of utility services. (These cross-subsidies are usually drawn from and distributed across wide groups of customers, rather than narrowly targeted to those falling below a maximum income threshold.)

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In an era marked by increasing competition in the electric industry, the critical problem for electric utilities is not that the rules inhibit any inclination to exploit a monopoly position, but that many of the rules and policies significantly limit the flexibility they need to compete with new entrants. This flexibility is needed to maintain relationships with increasingly elatic customers able to extract concessions from their suppliers.

Also significant in propelling the market toward competition is the legacy of distorted pricing. Regulators have subtly conveyed subsidies to residential customers at the expense of business customers. These subsidies have become such an accepted feature of the utility landscape that residential customers have had no idea they were being subsidized. The resulting high prices charged to some business customers encourage entry and subvert economically rational pricing, which is imperative for utilities during the industry transition to competition.

The key lesson of transitions to competition in other industries (telecommunications, financial services, natural gas, airlines, trucking) is clear. Flexibility is crucial as the real action moves to marketing, accurate pricing, and the creation of value-added services—all of this accompanied by a vastly greater reliance on information technologies. The experiences of the natural gas and telecommunications industries suggest that electric utilities should focus now on acquiring more flexibility to adjust their prices and customer relationships.

Regulators themselves will not likely initiate the rule changes required to provide utilities this flexibility. In part, their reluctance stems from concerns that residential and low-income customers will be left out or actually hurt by competition and electric restructuring. Frequently, the regulatory response is to maintain "tight" utility regulation and deny choice to residential and low-income customers during the transition to competition. Yet, this lack of customer choice reinforces the regulatory drive to protect customers from monopoly abuses with rules that ultimately bind utilities in a competitive market.

The solution to the low-income customer issue resides not in an ill-fated effort to reinforce traditional approaches to treatment of low-income customers, but in a utility and regulatory commitment to creatively address the low-income customer question through participation in the changes to come. This commitment would most likely involve a grand tradeoff: in exchange for broad-ranging flexibility, utilities would agree to bring meaningful choices to low-income customers.

Creating a new paradigm for serving low-income residential customers will require: 1) the creative application of technology, 2) unbundling utility services and marketing new value-added services meaningful to low-income customers, and 3) targeting subsidies through effective "last-resort" mechanisms.

Integrating Information Technology

Beyond the mere emergence of commodity competition in the electric industry, there is the inexorable reorganization of the industry around information and communications. The most important development now taking place is the elision of the information business (including telecommunications) with the energy industry.

The trade press and even the general media are replete with examples of electric utilities moving to integrate information technologies into their everyday business, both internally and externally. Much of the attention focuses on 1) sending price signals back and forth through real-time pricing; 2) lowering transaction costs at the residential and smaller commercial customer

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1This paper uses the term "choice" to refer to a retail customer's ability to choose to participate in the competitive electricity market. In this environment, the customer acts as regulator and has access to prices and services in the market. Customers, for example, would have access to alternative suppliers of generation services through nondiscriminatory access to utilities' transmission and distribution network. Under this customer choice model, transmission and distribution services would continue to be regulated.

2One of the first reactions of incumbent utilities in regulated monopolies to the intrusion of new competitors is to run to regulators and policymakers to make the case that the cross-subsidies they have long deemed are now among the good reasons to resist competition and maintain the monopoly. That strategy always fails and often backfires. Utilities have needed to do a good job of convincing regulators that the subsidy system is actually drawn and is a sacred trust of the public-service commission. The result is that utilities can be caught in a trap of their own making. They are feared as monopolists responsible for the entirety of the traditional system of cross-subsidies; but they draw the subsidy, as well as a great part of their profit, from a contracting share of the market.

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level with services such as automatic meter reading, direct bank account billing, and customer information systems for cross-selling opportunities; and 3) entry into communications business segments such as cable-TV, local telephone, and wireless service. The emergence of an “electricom” industry is well underway.

To a considerable extent, deploying these technology applications requires the blessing of regulators. Such permission could be obstructed by traditional worries about low-income customers and how value-added services for well-off consumers could affect other levels of service. The political and pertinent question might be, “Where’s mine?” The turn of the millennium should bring digital technologies that can address these problems:

- prepaid debit cards, sold through terminals in retail stores and used in metering devices, could remove the need for deposits and turnoffs for non-payment and could be issued by welfare agencies to qualified low-income customers
- time-of-use pricing, tied in with prepaid debit cards, could permit low-income customers to enjoy the benefit of off-peak prices as well as price signals of on-peak consumption
- safe remote turn-off and turn-on systems
- a completely tamper-proof metering devices as well as protection against theft of prepaid electric smart cards (the smart card could be useful only in a certain meter)
- energy management systems that give low-income customers more control over their usage
- targeting of “last resort” subsidies through technology that allows for prompt enlistment, exit, and disqualification from such programs
- advanced communication systems that allow low-income customers to tie in with other information-based services such as: medical/education services, home security systems, fire protection systems, social services, employment opportunities.

**Lack of customer choice causes regulators to protect customers with rules that ultimately bind utilities in a competitive market.**

Utilities will need to deploy these and other technologies on an experimental basis to advance the technology, demonstrate customer acceptance, and achieve regulatory comfort.

**Offering Choices**

Historically, many regulators and incumbent utilities have felt that customers don’t really want or need choice—they don’t want the inconvenience of having to choose and don’t need the types of new services spurred by competition. What customers really want, the theory goes, is “plain old utility service.” When competition first began to emerge in the telephone and natural gas industries, this argument was used by some in the industry to convince policy-makers to resist competition. It was argued that neither the customers nor the industries were smart enough to handle the messiness of competition. History has shown the opposite. In regulatory halls across the country, it is still the advocates of choice who must prove that electricity customers are not only ready, willing, and able to participate in a competitive market, but want to exercise choice.

Pragmatically, utilities that want to offer choices to their higher-income customers may need to extend some appropriate choices to the poorer customers. Low- and high-income people are generally distinguished by their effective range of choices. The low-income customer issue will be minimized if new services are offered to both groups as ways to save money and provide people with choices.

**Funding Low-Income Services**

Although energy prices across the board have risen more slowly than the rate of overall inflation, those with low incomes still have difficulty paying for utility service. Given the general inertia of public policy, utilities risk being left with many of the social costs that have grown up over the years, but a declining market share. Programs that offer choices through technology to lower-income customers should include changes in the funding and design of residual market or “last resort” low-income programs. Three principles should guide these efforts.

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2 In 1985, one year before this diversification of the Bell System, cellular telephones and fax machines were not in widespread use. Since that time, there has been an explosive and unexpected growth in demand for these new technologies and services. The number of cellular telephone subscribers, for example, has grown from 90,000 in 1984 to almost 20 million in 1994. Similarly, the number of fax machines has increased 10-fold in a period of 10 years. Telecommunications firms have now moved to offer services that are variations on the fax and the answering machine, such as voice mail, caller ID, call waiting, and call forwarding.
Qualities must be in place that will enable them to recoup their current level of funding and distributing social program benefits as an excuse for keeping competition out. That is a paper thin wall.

New players entering into market segments formerly occupied exclusively by utilities should make some financial contribution to social costs.

To collect contributions from new entrants at the retail service level, the social costs to be borne through the electric system must be specified. (This would include specifying the types of services to be subsidized, and the level of subsidies required to meet the state's social objectives.)

To maintain the benefits of competitive market pricing, the size of the subsidy flow must be reasonable. Perhaps not every service offered to residential customers would be provided at subsidized rates to qualified low-income customers.

Rather than adapting the scope and design of existing low-income assistance programs, public authorities should rethink and redesign targeted assistance programs. Redesign should reflect the competitive industry paradigm and the potential deployment of new technologies. In addition, any redesign should recognize that if we target subsidies to low-income customers while moving all other customers toward competitive market pricing, we can offer more assistance than we do under the current rate structure, reliant on cross-subsidies.

Three possible targeted assistance mechanisms could be widely deployed, complemented by new technologies to improve services for low-income customers:

- **Utility as sole residual supplier**
  - To receive subsidized service, low-income customers would have to take service from the utility. The financial burden of providing subsidized services would fall fairly on all competitors operating in the utility's service territory.

- **Residential customer chooses supplier**
  - Qualified customers would be allowed to receive subsidized service from the generation supplier of their choice. All suppliers would make financial contributions to support subsidized services.

The most important current development is the convergence of the information business with the energy industry.

- **Direct assignment**
  - Low-income customers that qualify for subsidized service would be assigned on a pro rata basis to residential marketers that would bear the subsidy responsibility not borne by public authorities.

Springing into Action

Utilities have little time to get the proactive transition process underway. Their overarching objective is to gain substantial flexibility from regulators in pricing service and dealing with customers. In addition to pricing flexibility and rate design reform, utilities will need flexibility to market services to customers and to implement new information technologies.

Addressing the problems of low-income customers to provide meaningful new services and lower bills will be critical in gaining regulatory support for this flexibility. By working jointly with low-income customer groups and other interested parties, utilities may be surprised to find mutually agreeable solutions to the problems faced by low-income customers and those they face themselves in the transition toward an increasingly competitive market.

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The challenge facing regulators is not only redesigning assistance programs, but in explaining them to the larger consuming public. This is no easy task. In 1990, the Illinois Commerce Commission ordered Illinois Bell Telephone to increase the monthly surcharge to Finance Lifeline Service from $9 to $15. Under this plan, the federal government matched these local contributions with federal funds. The Commission also ordered Illinois Bell to specify the item on customer bills as a first step toward promoting the notion of a specified targeted subsidy for low-income customers. The resulting public firestorm caused by media overexposure and legislative reaction forced the Commission not only to extend the increase, but to cancel the state's participation in the federal program entirely and thereby lose access to the matching federal funds for low-income assistance.

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