

EXECUTIVE SUMMARY

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Does disruptive competition mean a death spiral for electric utilities?

Electric utilities can avoid the death spiral if they respond by implementing strategies aimed at creating value for customers. Utilities today are in a strong financial position, capable of undergoing significant adaptation. If they wait until they cannot recover their historical system costs under any rate design, it will be far too late to begin adapting.

Disruptive markets

The entry of distributed generation, especially the solar-powered variety, into electric utility distribution markets is attracting considerable attention in the industry. Electric utility sales decline when customers meet some of their power needs with on-site generation. This has obvious negative financial implication for utilities.

The initial reaction of many utility industry advisors is that electric utilities should redesign their rates to limit the financial damage these competitors can inflict. They suggest that raising monthly customer charges significantly can allow utilities to recover all of the costs of the electrical grid—their legacy costs—regardless of the amount of electricity that customers purchase from the utility. This rate design change would not so much allow utilities to enter the competitive fray as it would insulate them from its effects.

The assertion that rate design changes will ensure full cost recovery deserves close inspection. Reallocating costs to rate design components will likely serve its intended purpose only as long as competition remains fairly weak. However, this approach will likely fail to protect utilities under two

conditions: (1) the loss of load to distributed generation becomes so large that utilities strand assets; and (2) a large number of customers meet their entire electric power needs with systems that require no grid connection.

The latter is especially troubling for electric utilities. If customers disconnect from the grid, the utility collects nothing from them to contribute to legacy system costs under any rate design. The availability of 100 percent off-grid electric service options is more than a pipe dream. NRG Energy is planning to offer a hybrid system that combines solar PV panels with a gas-fired generator—no electric grid connection required. It sees the 34 million residential customers already served by a local gas distribution utility as its primary market.

Whether such hybrid systems will be here in large numbers next year or in 15 years is not as important an issue as it might appear at first blush. Making a large-scale utility plant investment is tantamount to placing an implicit bet that competition in electric utility markets will not threaten utility cost recovery over the period spanning the years 2014 through 2044. This is the cost recovery (depreciation) period for long-lived utility plant assets that enter service today.¹ Thirty years is a long time to keep competitors at bay.

Attempting to recover legacy costs under disruptive competition

Utilities are attracted to a recovery strategy that relies on rate design to fend off competition because they operate in a world of cost-based rate regulation. Regulators generally allow utilities to recover prudently-incurred costs associated

with plant investments that utilities make to meet their legal obligation to serve all customers. Yet, it is important to note that the utilities' obligation to serve does not create an absolute reciprocal right for them to recover those legacy costs in all cases.² The street car utility industry provides an interesting case in point.

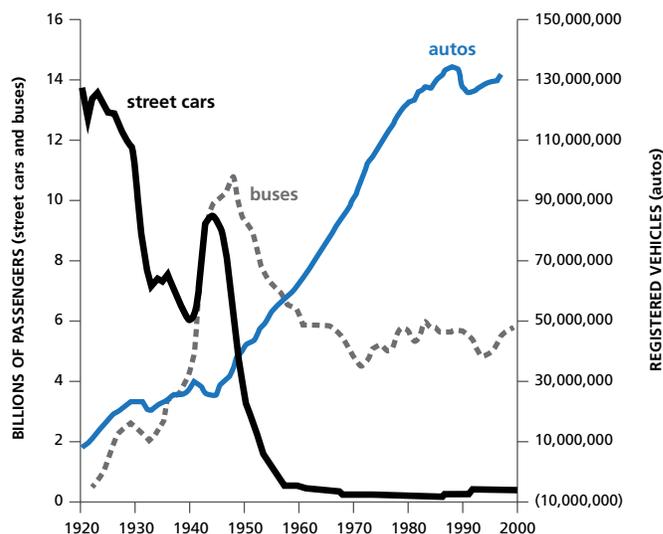
In 1920 street cars met the lion's share of the nation's public transit needs in cities, serving 14 billion riders in that year alone. Buses were barely visible on the competitive horizon and most households did not yet have an automobile. Within a decade, however, street car ridership had declined by about 35 percent as competitive alternatives became more attractive. While ridership picked up in World War II due to gasoline rationing, by 1950 the street car industry was on life support. By 1960, almost all street car utilities had ceased operations.

Over this transition period, the street car utilities showed no real signs of innovation, essentially offering the same service to customers in 1950 as they had in 1920. The experience of Market Street Railway, a street car company that operated in San Francisco, is particularly informative. In the 1940s Market Street's regulator, the Railroad Commission of California, set the utility's fare at a level that essentially guaranteed that it would not recover some of its legacy costs. The Commission found that a higher fare would likely cause more customers to choose alternate forms of transportation, causing Market Street to lose additional riders.

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Market Street appealed the decision and the case eventually made it to the United States Supreme Court. Regulatory economics literature recognizes *Market Street* as among the most important public utility court cases of the 20th century because it defines the rules of regulation for utilities subject to effective competition.³ Market Street asserted that the Railroad Commission had erred in setting its rates because as a public

When competition took hold, street car utilities focused on cost recovery strategies to the bitter end.



utility it had a Constitutional right to recover the costs of the system it had built to meet customer demand. Market Street cited to the Supreme Court's landmark *Hope*⁴ case as a primary basis for its argument. *Hope* sets the standards regulators must meet when setting a utility's rate of return. That return should allow the utility to raise capital at reasonable rates to carry out its duties as a public utility, which is referred to in the industry as the capital attraction standard. Electric utilities today lean heavily on *Hope* to support their rate of return requests.

With Market Street's fare structure causing it to operate at a loss, and with investors reluctant to provide it with any capital, all parties and the Court agreed that the Railroad Commission's order did not meet the *Hope* standard. Yet it would not invalidate the Railroad Commission's order for one critically important reason. The Court found that the standard set forth in *Hope*, which forms the backbone of public utility regulation in this country, does not apply to utilities subject to intense competition.⁵

The Fifth and Fourteenth Amendments to the United States Constitution protect utilities from due process violations by the government, not from losses that result from competitors.

When markets enter a truly disruptive phase, the institutional provision utilities cherish the most—the right to be afforded a reasonable opportunity to earn a fair rate of return on their invested capital—may disappear. Utilities might not be able to attract investment capital, limiting their ability to function. Once a utility gets to this point, its ability to adapt would be essentially non-existent.

The way to survive a competitive onslaught is to offer customers something they want, not redesign pricing for the same service they have had for years.

Market Street should give electric utilities considerable pause. Pricing to recover legacy system costs will collapse under its own weight if enough customers want something other than traditional electric service. At the time of *Market Street*'s demise it still had substantial ridership, just not enough to absorb the full costs of its service. As competition becomes disruptive in their markets, electric utilities are potentially at risk for the same sort of outcome.

The way to survive a competitive onslaught is to offer customers something they want, not redesign pricing for the same service they have had for years. The latter will do little more than upset customers. In contrast, successful electric utilities will strive to make customers happy by offering new products and services that create an attractive value proposition. Legacy electric service could be one of the services the utility offers, but it likely will not be the only offering.

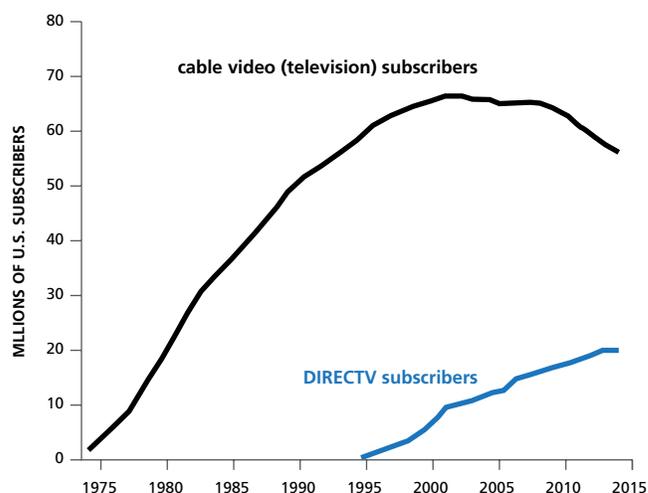
Value creation as successful strategy in the face of disruptive competition

The cable television industry provides an example of a response to competition that is fundamentally different from that used by the street car utilities. The cable companies have relied on value creation to meet the competitive threat in their industry. In most communities, cable television companies operate under monopoly franchises and until the mid-90s they faced little competition. If a customer wanted anything

other than over-the-air service, the cable company was the only game in town. The advent of satellite television changed that situation dramatically. Within 15 years, one satellite provider alone (Direct TV) took 20 million subscribers from the cable companies.

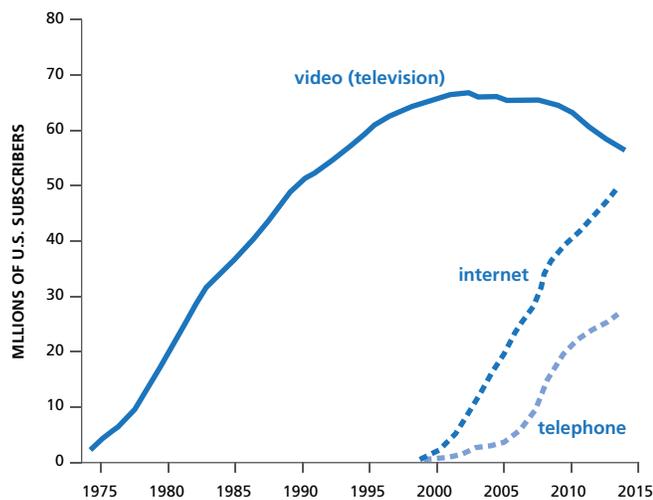
Cable television subscribership peaked in 2001 and has been on the decline ever since. Yet, over the next ten years cable industry revenue increased by 117 percent as the companies offered customers a new value proposition. They expanded their offerings to include internet and telephone service. The internet service, which today has almost as many subscribers as the legacy television service, is arguably the industry's most valuable offering, providing greater speed and reliability than most other internet providers can. The cable companies also developed a bundling strategy that enabled them to market multiple services to customers at effective prices lower than those at which they could sell individual services.

Satellite television providers caused cable television subscribership to decline...



While the cable industry in general fared well over this period by using a value-creation strategy, there were both winners and losers among the individual companies. Comcast thrived over the period, outperforming the S&P 500 in terms of total investor returns. Charter Communications, on the other

...but cable companies offered new services, which enabled revenues to double



hand, had taken on too much debt in the transition and was forced to file for bankruptcy protection, writing off \$8 billion in loans in the process. It emerged as a recapitalized company in 2009.

The cable industry example illustrates two important points for electric utilities as they enter a more competitive marketplace: (1) even if a successful industry strategy emerges, there could be winners and losers among the

individual electric utilities; and (2) a loss of financial value, even bankruptcy, does not threaten the reliability of the system. Charter provided service before, during and after its bankruptcy period. More to the point for electric utilities, the largest electric utility in Texas today operates under bankruptcy protection, but the lights have not gone out in the Lone Star state.⁶



The full article appears in the spring 2014 issue of the *Energy Law Journal*, Volume 35, No.1. It was written by Elisabeth Graffy, Ph.D. and Steve Kihm, CFA. Steve is director of market research and policy at the Energy Center. He has three decades of experience in utility finance, regulatory

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¹ While depreciation is a non-cash expense for non-regulated entities, utility rates include depreciation expense as a cash item that ratepayers must pay. The depreciation expense is the way that utilities obtain a return of the capital they invest. The rate of return provides the return on that capital.

² Kenneth Rose, *An Economic and Legal Perspective on Electric Utility Transition Costs*, NRRI 96-15, 1996.

³ Charles Phillips, Jr., *The Regulation of Public Utilities*, Public Utilities Reports (1988).

⁴ *FPC v. Hope Nat. Gas Co.*, 320 U.S. 591 (1944).

⁵ *Market Street R. Co. v. Railroad Commission*, 324 U.S. 548 (1945).

⁶ Nick Brown and Billy Cheung, "Texas Power company Energy Future files for bankruptcy," *Reuters*, April 29, 2014.