Eventually, every industry faces new products or market conditions that challenge, and potentially change, the industry’s business environment and/or replace its existing products or markets. For the airline and telecommunications (or the “old telephone utility”) industries—two industries that once shared the electric power industry’s traits of being price- and franchise-regulated—such “disruptive challenges” arrived in the late 1970s and early 1980s as a result of regulatory actions and, in the case of telecommunications, technology developments that spurred competition.

Today, the airline and telecommunications industries bear little resemblance to their former selves, with many of the players and the services they once provided now things of the past. Yet, their experiences offer valuable lessons for all industries. It is clear that the electric power industry must continue to prepare for and develop plans to better integrate and adopt new technologies, and to create new customer services. It is also critical that the industry’s regulatory structures align with the needs and interests of all stakeholders, including consumers and investors, to ensure a sustainable future.

**Airline and Telecommunications Deregulation**

Both the airline and telecommunications industries transformed from a price- and franchise-regulated model to a competitive business model as a result of deregulation. The airline industry embraced price competition but did not effectively align its revenue model, cost structure, or market footprint to competitive dynamics. As a result, each of the major old-line carriers voluntarily filed for bankruptcy protection (at least once) over the last 30 years, and then either dissolved or merged with a competitor to enhance scale.

The telephone industry needed to adapt to price competition, as well as competing technologies and enhanced products and services. Each of the major pre-1982 telephone utilities has lost more than 50 percent of its wireline customers over the past six years to new technologies. Those companies that embraced these new technologies have survived as a result of a dramatic realignment of their asset base, product offerings, revenue model, and cost structure. Those companies that have not responded to change in a proactive way have been forced to merge or to be acquired.

The lesson learned is that price and/or technological competition can materially expose old-line oligopoly/monopoly service providers.

The experiences of airline and telecommunications companies offer valuable lessons for all industries.

**Potential Game Changers**

For electric utilities, changes are emerging today as a result of falling costs of distributed generation (DG) and other distributed energy resources (DERs); an enhanced focus on development of new DER technologies; increasing customer, regulatory, and political interest in demand-side management (DSM) technologies; government programs to incentivize selected technologies; the declining price of natural gas; slowing economic growth trends; and rising electricity prices in certain areas of the country. Taken together, these factors...
are potential “game changers” to the industry, and could dramatically affect customers, utilities, employees, investors, and the availability of capital to fund future investment.

In my white paper prepared for the Edison Electric Institute entitled “Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business,” I examine the financial risks and investor implications related to these game changers. I also look at potential strategic responses to these challenges, as well as likely investor expectations going forward.

Customers with DER technologies do not contribute their share of their utility’s fixed costs for the delivery system.

Financial Implications

The electric power industry is among the most capital-intensive industries in the nation. The current regulatory paradigm that has supported recovery of utility investment has been in place since the industry reached a mature state in the first half of the 20th century.

Today, the cost-of-service rate-regulated model links a utility’s revenues directly to the cost of providing service, and, in most jurisdictions, customer rates are a function of usage or unit sales (such as sales of kilowatt-hours of electricity), which include the fixed cost of the delivery system (or the system that delivers back-up power to the customer and enables the customer to sell his or her own excess power).

If a utility is recovering any of its fixed costs in retail electric rates that vary with customer usage—and most often they are—then customers who generate their own electricity, or reduce their usage through DSM programs or other new technologies/programs, will lead the fixed cost of service to be spread out over fewer unit sales. In other words, customers who are using DER technologies are no longer contributing their share of their
utility’s fixed costs for the delivery system, which can lead to higher rates for those customers who are not using DERs.

As more customers generate their own electricity, or reduce their usage, there will be even more upward pressure on rates to enable electric utilities to recover their fixed costs. With existing rules, the customers who have no DER, are, once again, the ones left paying for those who do. At present, the potential for a significant and immediate business impact from DERs is currently low, because customer participation to date is, on average, relatively low. As a result, DERs are getting little attention inside the financial sector. Nevertheless, the industry and its stakeholders should seriously begin to address DERs now to mitigate any potential impact, especially given the prospects for significant DER participation in the future.

Unless electric utilities are prepared to respond strategically, DERs could create significant financial risks in the future. These risks include higher unit costs, declining revenues, and the potential for lower profitability. These, in turn, could lead to lower credit ratings, particularly over the long term, which would result in higher cost of capital and, ultimately, higher electric rates.

The electric power industry, like other stable, mature industries, has a proven product, steady demand, and revenues and cash flow with low volatility. As a result, utilities offer more certainty and fewer business and financial risks than...
other industries. Consequently, investors have accepted a lower profit or return on their investments in utilities than they have with their investments in newer or more volatile businesses. Electric utilities, as a stable business with relatively low revenue volatility, benefit from lower capital costs and relatively unfettered access to capital relative to non-rate-regulated industries.

With the exception of a very few periods over the past century, utilities have benefitted from this unfettered access to relatively low-cost capital. Even during challenging financial market environments when many industries effectively had limited access to capital, utilities were able to raise capital to support their business plans and to finance needed investments in utility infrastructure systems.

As we look at the electric power industry today, investors, for the most part, remain confident that the utility's regulatory model will be applied fairly to provide them with the opportunity to earn a reasonable and fair return on their investment. However, DERs add a new type of risk for the industry's investors.

Potential Near- and Long-Term Solutions

The electric power industry is at a defining point right now. The industry has a great opportunity to move in a direction that will allow customers, investors, and utilities to benefit and prosper.

Various rate designs and rate structures have been approved that allow utilities to cover their fixed costs and investments in the face of declining revenues. There are many options available, and each utility, in collaboration with its regulators and customers, will determine whether change is necessary and which action to take. Decoupling of sales from revenues or implementing lost revenue adjustment mechanisms are two of the more common approaches. But these still can result in non-participating customers paying higher rates as a result of some customers installing DERs.

Without adequate recovery of fixed costs, however, there is only so much of an increase that can be placed on a utility's remaining customers before political pressure is brought to bear on recovery mechanisms. This may lead to a challenging cycle in which an increase in customer rates over time will further enhance the competitive dynamics of DG technologies and encourage greater use of them, as well as customer participation in utility DSM programs.

In the near term, there are actions that the industry should consider to align the interests of all stakeholders, while avoiding additional cost shifting to non-participating customers.
These actions could include instituting a monthly customer service charge, which reflects the utility’s fixed costs of providing services, to all tariffs or implementing straight fixed-variable rates. These solutions would allow the utility to recover fixed costs of the delivery system and eliminate the cross-subsidy biases that are created by improperly priced DERs, energy efficiency, and demand-side resources.

Another option would be a revision of net-metering programs so that self-generated DG sales to utilities are treated as supply-side purchases at a fair, market-derived price. Today there are programs in place in 43 states and the District of Columbia that allow a home or business to generate its own electricity and run its meter backward to sell any excess electricity to the grid for a bill credit. These programs were designed for their simplicity to facilitate the integration of new, high-cost technologies, and, while they may have had some usefulness, they should be revisited as they no longer can be the main support mechanism for DG technologies. From every perspective, economically correct pricing is needed to support the adoption of distributed resources on economically driven terms, as opposed to being incentivized by hidden cross subsidies.

There are a number of longer-term actions that utilities and stakeholders should consider that also may prove helpful in addressing today’s challenges. One is reassessing the appropriateness of depreciation recovery lives based on the economic useful life of investments, factoring the potential for disruptive loss of customers. Another financial measure might be applying more stringent capital-expenditure evaluation tools to factor in potential investment that may be subject to stranded-cost risk, including the potential to recover such investment through a customer hook-up charge or over a shorter depreciable life.

New business models and services also may need to be considered to recover lost margin while providing a valuable customer service—this was a key factor in the survival of the incumbent telephone players post deregulation. Regulators also may need to factor the risk of disruptive forces in determining the appropriate cost of capital being sought.

It is also valuable to ask what investors will expect to see as a strategic response from the industry to a changing business environment. The way to realize growth in earnings is to develop profit streams to counterbalance the impact of disruptive forces. Examples of new profit sources could include utility ownership of DG recovered through an ongoing service fee. Alternatively, regulators could factor into customer rates investment and financial incentives for utilities to encourage DSM benefits for customers.

Whatever course of action is taken, investors will want to see very clear-cut programs to capture value that are consistent with the core strengths of utilities: the ability to execute construction projects, to provide dependable service with high reliability, and to access relatively low-cost capital.

Maintaining a Viable Utility Industry
The electric power industry has faced technological and economic disruptions in the past, and has responded strategically to high interest rates, varying natural gas prices, low-cost new generation technologies, wholesale retail competition, and other challenges. Utilities can adjust to current trends as well, provided that appropriate rate structures and risk premiums are in place.

I encourage electric utilities and state regulatory commissions to focus immediately on revising state and federal policies that do not align the interests of electric customers and investors, particularly revising utility tariff structures in order to eliminate cross subsidies (by non-DER participants) and utility investor cost-recovery uncertainties.

In addition, utilities and their stakeholders must develop policies and strategies to assess business models where utilities can add value to customers and investors by providing new resources and services.

Fortunately, the electric power industry has the benefit of a collaborative stakeholder environment—and lessons learned from its own past, as well as lessons learned from other industries—that will enable it to respond strategically to the challenges it faces and to move the industry in a direction that will allow for customers, investors, and the U.S. economy to benefit and prosper.

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