

IBM Institute for Business Value

Switching perspectives

Creating new business models for a changing world of energy



Overview

Long-standing electric utility business models are rapidly becoming outdated in light of new technologies, policy changes and more demanding consumers. Roles along the value chain are shifting, with traditional buyers gaining a foothold as value providers. To succeed in this new environment, industry model innovators will develop fresh business models, as well as the infrastructure, rules and standards to facilitate not only traditional energy generation and delivery, but also emerging products and services enabled by new technologies.

A century ago, the first great business model innovation in the electric power industry began with the move from small local plants delivering power over short distances to central generating plants delivering power great distances over high-voltage wires. This innovation was followed by a long period dominated by a “grow-and-build” philosophy that drove the development of near-universal access to electric power in much of the world through the mid-twentieth century. Although this philosophy reached its practical limit during the latter part of the century, there has been little further evolution of business models.

Today, however, the industry faces relentless pressure to reassess its business models to accommodate governmental policy shifts, new technologies and changing consumer demands. We believe industry model innovation (IMI) – which involves moving into new industries, redefining existing industries to serve new markets or creating entirely new industries – will unlock opportunities for electric providers.¹ Industry model innovators will formulate the infrastructure, rules and standards for transactions among providers and customers in business areas that will include not only traditional energy generation and delivery, but other products and services enabled by new technologies.

The industry's new value model

The traditional electricity value chain consists of the generation-transmission-distribution-retail pathway from energy source to end use, with energy and information flowing in one direction. The introduction of smart grid technologies will add complexity, moving power and information in multiple directions and enabling a host of new participants



and business models. This recharacterization of the industry value chain will dramatically reshape the value proposition among energy, service and product providers, as well as their customers.

Today, customers are demanding more than merely reliable power at reasonable rates. They want more control over their expenditures and environmental impact and more information about their energy usage. They also have much more to offer in return than just payment for energy consumed. Some of these new elements of reciprocal value are primarily operational in nature (such as demand response, load profile flexibility, and distributed power and storage). Others (such as information on energy consumption patterns, other consumer demographic and behavioral information, and access to personal connections/networks for marketing purposes) are the foundation for new revenue sources.

Industry model innovation

Because of the increasing demand for control and information by customers and continual technological improvement and deployment, we believe that the end state for the industry is likely to be a Participatory Network, where a wide variety of network and communications technologies enables shared responsibilities and benefits.² The most likely path is through IMI that results in extraordinary change to the platforms on which electric providers operate. As used here, *platform* refers to a common architecture (essentially, a design for products, services and infrastructure facilitating users' interactions) and set of rules (protocols, rights and pricing terms) that provide a standard foundation governing transactions among two or more parties.³

Many platforms are single sided, with a seller at one end and a buyer at the other and, often, intermediaries between them that transfer the product without changing it substantively.⁴ The electric power network has historically operated as a single-sided platform. In coming years, a smart grid with energy and information flowing in multiple directions will provide support for interactions among all ecosystem participants, facilitating the development of electric power industry multisided platforms, which have multiple types of buyers and/or sellers. An energy industry multisided platform could link energy suppliers, service providers, device manufacturers, application developers and end users (see Figure 1).

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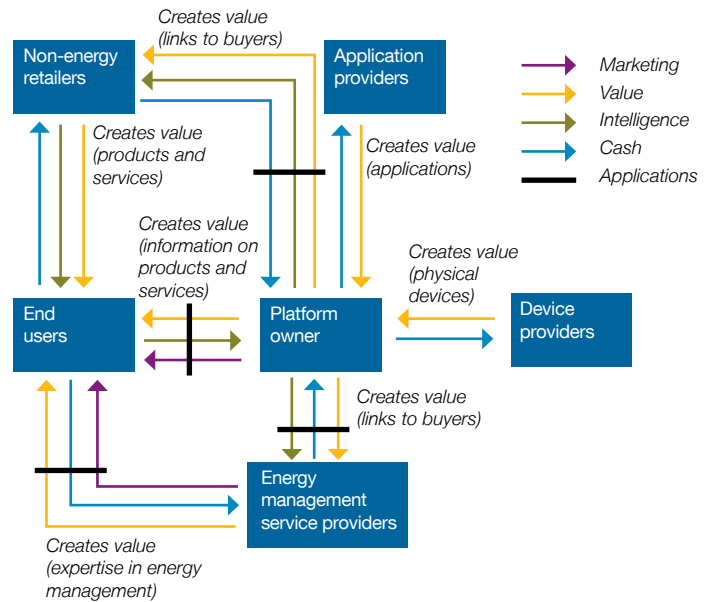
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Source: IBM Institute for Business Value analysis.

Figure 1: Platform example: Information aggregator.

Conclusion

The business models that brought the electric utility industry success in the middle of the twentieth century are overdue for revisiting. For those positioned to be industry model innovators, the “grow and build” years are back – but with a different emphasis. What is being “built” are sophisticated platforms to support information exchange, consumer participation and new services. “Use more – we’ll keep building” will return as a marketing message to consumers – but this time around, the emphasis will be on information and services rather than energy.

How can IBM help?

- *Business Strategy, Business Analytics and Optimization, and Organizational Change:* Helps you define a company-specific strategy for evaluating and implementing business model innovation and manage change as the key industry drivers evolve.
- *Selected Energy and Utilities Solutions and Offerings:* Intelligent Utility Network, SAFE Framework and Informed Decision Making, Customer Operations Transformation and Generation Strategy.

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