


A glowing lightbulb is placed inside a miniature metal shopping cart. The lightbulb is illuminated, casting a warm glow. The cart is on a dark surface. In the background, a window shows a blurred view of wind turbines.

Energy Retail Platforms

A Blueprint for Staying
Relevant in a Rapidly
Evolving Energy Market



This paper is part of our thought leadership series on the energy transition, decentralization, business disruption, new technologies and shifting consumer demands.

In the context of the energy transition and climate challenges, this paper focuses on how to use energy retail platforms to deal effectively with rapidly changing markets, adapt to industry and regulatory dynamics, and stay relevant in the marketplace.

We invite you to explore our other thought leadership papers on energy trends, market deregulation and liberalization at CGI.com.

Introduction

Climate change is accelerating the global energy transition toward a low carbon society. Moreover, power generation is becoming increasingly distributed and renewables are outcompeting fossil fuels. In parallel, the convergence of energy and technology is driving fundamental economic changes that impact consumers, businesses and governments alike ^[1].

These changes present threats as well as opportunities. For energy companies, the impact on their business models may be significant. This is due to the shift away from non-renewable fuel sources such as oil, coal and gas, to renewables like solar, wind and geothermal. It also is because consumers will play an increasingly central role in energy decisions than they do presently—even becoming producers of energy, or what are called “prosumers.”

Why energy retail platforms?

The concept of “energy retail platforms” is a powerful vision and framework for effectively addressing these trends and driving new ways of generating revenue. An energy retail platform is a marketplace and brokering function between energy supply and demand. It facilitates energy trading between providers and consumers, including peer-to-peer exchanges between traditional customers and prosumers. An energy retail platform also advances innovation and the development of new services, while providers can optimize its components and services for reuse to reduce implementation and management costs.

Around the world, government-mandated restrictions to curtail the spread of the COVID-19 pandemic have resulted in large-scale closures including the transportation of people, goods and services, and industrial and retail businesses, except critical services. This has severely disrupted the supply and demand of energy, with the global energy market evolving almost on a daily basis.

In a post-pandemic world, we see a stronger focus on accelerating the energy transition caused by a new economic and investment climate. In this new world, energy retail platforms will become even more relevant as a powerful catalyst for helping organizations to rebound from the crisis, navigate the energy transition and grow their business.



Summary

The energy transition or the shift from fossil fuels to sustainable energy is accelerating despite the current pandemic crisis. This is evidenced by the drop in solar and wind power prices below those of fossil fuels, which is expected even after oil recovers to its normal price levels in the post pandemic world ^[2]. The objective of the transition is to build an energy system, at global scale, that is able to address increasing energy demand, energy poverty (access to energy for everybody), and the protection of our planet from the potentially devastating consequences of climate change.

The energy system must deal with new market dynamics, such as the rise of renewable energy, which typically is distributed, intermittent and difficult to predict due to weather conditions. Another dynamic is new energy-consuming equipment such as electric vehicles (EVs) and heat pumps that are entering the market. These devices, which have different energy requirements than traditional energy devices, could potentially more than double electricity consumption.

If and how all of these market dynamics will materialize is unclear, but one thing is certain: an entirely new energy system is emerging^[3]. The characteristics of this new system include bi-directional energy flows, a crucial role for predictions and the transfer of energy management to local levels, where consumer choice plays an important role for energy suppliers.

In addition, changing regulatory requirements add to the complexity. To ensure legacy energy sources are phased out to make way for alternatives, government bodies are becoming more vigilant in implementing regulations.

At the same time, businesses and consumers increasingly rely on platform economics—driven by companies like Amazon, Google, Facebook and Uber—to facilitate their personal, social, professional, and political needs. For traditional energy companies to sustain their future in this new world and become resilient to platform providers, especially in the “battle for the customer,” they need new business models. Without new business models, they will face the risk of being disenfranchised from their customers.

This white paper explores how energy retail platforms can help energy companies effectively manage these changing industry, market and regulatory dynamics ^[4]. Our blueprint envisions energy retail platforms that overarch current local or domestic utility retailers, broker energy supply and demand, open doors to a broader portfolio of innovative energy products and services, and establish favorable earning models across multiple customer groups.

Since putting the customer at the heart of everything and leveraging their relationships and data are critical for generating new earnings, successful adoption of energy retail platforms will require a combination of standardization and the use of modern technologies with adaptability, flexibility and agility.

At CGI, we work with our clients to help them stay relevant in this new energy system. We already are delivering products and services in the utilities and renewable space by, for example, providing solutions and services for windfarm management, energy islands (smart grid), smart buildings, retail stations of the future, and smart meters. CGI also is expanding our participation in consortia and joint ventures with an aim to drive value for clients and contribute to a sustainable global energy system.

Reshaping the energy market

Experts expect energy demand to grow over the coming decades. Due to uncertainty about peak oil demand, several oil and gas companies already have adopted energy transition strategies with ambitious goals ^[5]. In addition, shareholder pressure and new policies are compelling organizations to look for new revenue streams to offset depleting carbon fuel revenues.

The extent and speed at which companies are responding to the energy transition is also impacted by incentives provided by countries and governments, which differ in terms of their focus and pace, and the stage of the energy transition.

Despite the many variables, the consensus is that the new energy world will revolve around placing the customer—consumers, businesses and prosumers alike—at the center to satisfy growth needs and sustain the business. Amazon, Airbnb, Netflix, Spotify and Uber are all good examples of companies that are effectively satisfying customer needs by taking a platform approach. For energy organizations as well, “owning” the customer appears to be key for sustaining the business and creating new revenue streams.

CONSUMER POWER AND PLATFORMS

Platforms provide the opportunity for creating new, customer-centric business models and ways of generating new earnings ^[6].

As we have seen in recent decades, consumers are increasingly dictating how the market functions. Loyalty diminishes unless companies deliver a superior brand experience and fulfill customer needs based on data insights. Energy companies should embrace customer-centric business models and strategies that recognize that everything taking place within their organization will affect customer experience.

What does this mean for current energy and utilities markets? Governments typically regulate and control certain market segments, such as energy transportation, and regulations vary by geography. In the distribution space, certain segments are yet unregulated, and there is emerging competition for creating new business models in these unregulated areas. Who owns these new energy products and data in an increasingly decentralized, prosumer-oriented environment?



CUSTOMER-CENTRIC APPROACH

Based on current insights, companies that control access to the customer are in the best position to drive new business models, launch new products and play a key role in brokering energy supply and demand. Energy platforms can enable and support this customer-centric approach^[7], as they form the interface between customers and demand on one hand, and energy providers and supply on the other hand.

Different types of power sources and suppliers can lead to a new ecosystem of energy service providers:

- Supplier based: electricity (plant, wind, solar, hydro), gas (including hydrogen), heat, water and EV charging
- Home and building based: rooftop solar, heat pump and heat boiler
- Community-based: solar and wind turbines
- Other sources: batteries, hydrogen and other chemical storage, EV batteries, home controllers and measurement equipment

If energy retailers “own” the customer relationship, they can expand their product and service portfolios and create economies of scale and efficiencies to increase their profits. For example, customers need help in buying or leasing new technologies such as solar photovoltaic (PV) and home batteries, and services in this fast growing and complex product market.

By adopting platform economics, both existing energy retailers and new entrants can take the next step into the age of business disruption and customer centricity. Customers are looking for convenience and an improved experience, and this approach can service their needs as they arise, or even earlier.

ENERGY RETAIL PLATFORMS

A way forward is to create an energy retail platform that connects energy supply and customer demand. An energy company can build this platform in a cloud domain taking a comprehensive approach that balances risk and value and integrate it with existing retailer or partner ecosystems. New entrants can acquire existing retailers to obtain access to their market knowledge, customer data, operational processes, retailer and trading licenses, trading experience, and so on. It also is possible to become a first-time energy retailer, but acquiring licenses takes time and involves a steep learning curve.

With an energy retail platform, energy companies can keep the core legacy utility retail systems in place, as they implement new functional models gradually in the new platform. Based on available investment funds and customer needs, companies can modernize the legacy core and move it to the new platform, ultimately scaling to a globally agile system. The aim is not just the digitization of internal processes; it is also about building a platform for the future based on digital transformation and IT modernization concepts^[8].

CGI's Central Energy Management System: an ecosystem platform example

CGI's Central Energy Management System (CEMS) is an example of a successful, long-running energy platform pilot with an ecosystem of utility companies, authorities, partners and consumers focused on consumer needs and the customer experience around home energy consumption and generation (prosumers). It also supports concepts for the home of the future, sometimes called “smart homes,” which are characterized by features such as household energy control and consumption, energy prediction, dynamic energy pricing, smart appliances and consumer interaction via in-home displays and voice control.

CGI's energy retail platform

DRIVING BUSINESS VALUE

Based on our industry experience and insights, and our extensive integration and service capabilities in information and communications technology (ICT), CGI has created a blueprint for an energy retail platform for the future.

We designed the platform to support a customer-centric approach as well as generate new opportunities and revenue streams such as:

- Energy trading
- Value chain cross-selling
- Management of large and complex supply chains
- Media revenue generation (advertising)
- Management of large volumes of consumers and their data
- Upselling of energy products, as well as other products, including those from third parties



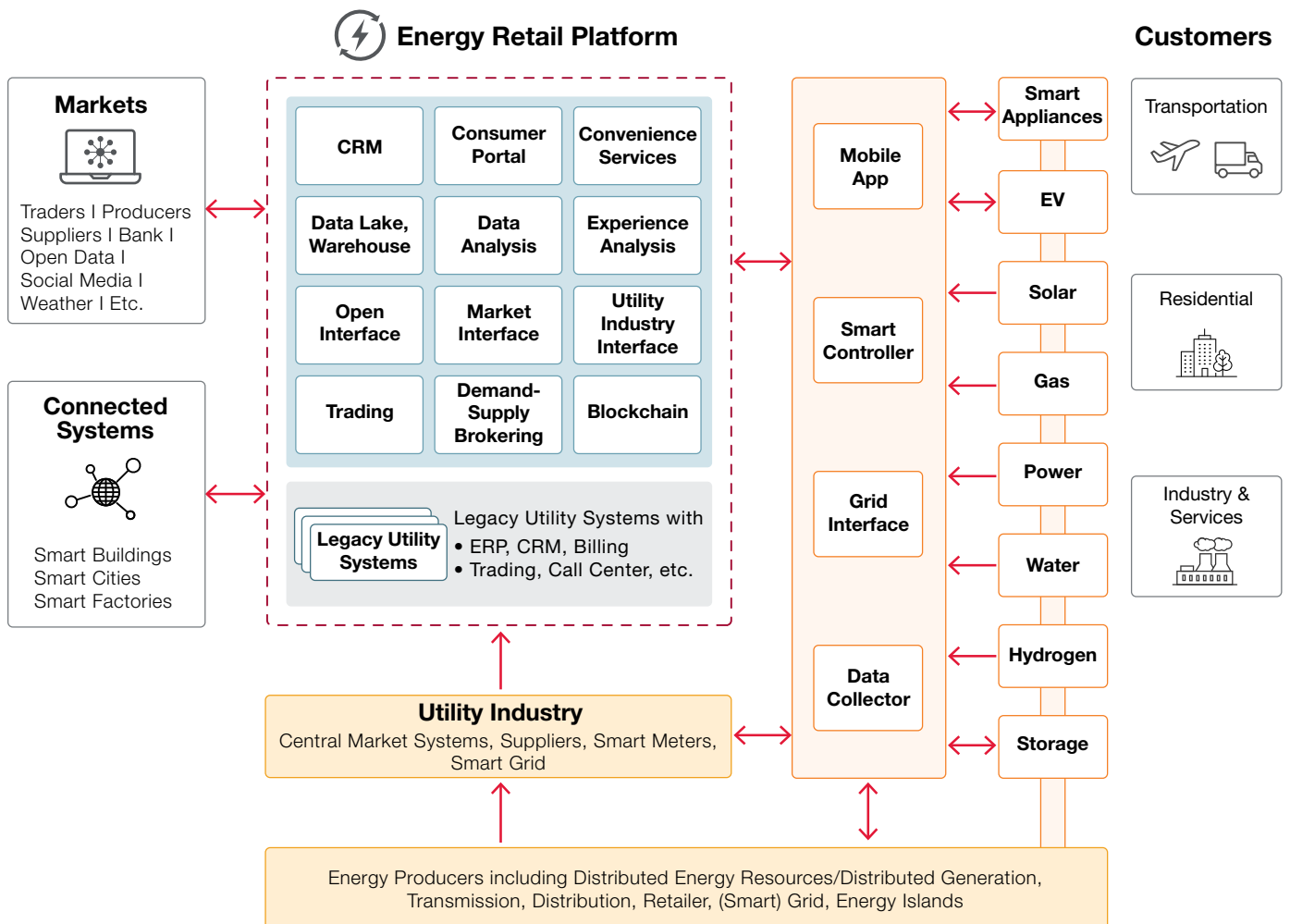
PLATFORM BLUEPRINT

The diagram below illustrates the energy retail platform blueprint that companies can use to better serve their customers and accelerate time to market for new energy service offerings. The blue box depicts the key functions/services (e.g. customer data, energy brokering, peer-to-peer transactions, data analytics, external interfaces, etc.).

The utility “legacy” component is assumed to be separate; however, an energy company can encapsulate and integrate it into the platform using interfaces or the cloud. They can also modernize or migrate systems from an acquired utility company to the new global or cloud-based platform for purposes of modernization or scale.

In this model, it does not matter who generates or distributes energy to customers, or whether customers generate energy themselves. The most important consideration is the availability of a platform that facilitates the interface and brokering between energy supply and demand. In doing so, the platform owner can offer integrated services to customers, either coming from suppliers in the market or provided themselves to increase revenue and growth.

The platform should interface with customers, central market systems and open data to create customer insights to deliver better services or propose new services. Services should not be limited to energy supply as customers also are searching for integrated offerings such as installing solar and heat installations, batteries for local storage, smart controllers and maintenance contracts.



MEETING CUSTOMER NEEDS

Consumers have different needs than business customers and it all comes down to knowing the customer, offering them what they want, and delivering services through a central platform that interfaces with market suppliers, ecosystems and partner solutions.

According to a recent CGI-sponsored study conducted at the Queen's University in Canada, of energy consumers, customers are demanding the following:

- Energy flexibility – bundled offerings for all demand (e.g., electricity, gas, heat, water, etc.)
- Single portal for all financial insights, billing, payments, etc.
- Single view of all consumption, including forecasting (e.g., gas, electricity, hydrogen, etc.)
- Add-on services such as pricing models, savings options, flex contract period, set your own payment day, green energy, insurance, etc.
- Broad range of offerings, including PV, battery, EV charging, bio-installation, maintenance services etc.
- Overview of all consumer production solutions (solar, wind, battery and other distributed energy resources)
- Sophisticated home controller devices (e.g. voice-controlled apps, devices etc., or devices that offer artificial intelligence-based user interfaces and experiences)
- Dynamic reporting of delivered services
- Facilitation of peer-to-peer trading
- Ability to sell consumer-generated energy
- Ability to sell customer-generated energy via the home EV charging connection to clients on the agreed schedule of the supplying customer

Above all, 57% of the respondents in the study said that energy price is the most important buying factor, followed by energy reliability.



Conclusion

Energy retail platforms facilitate the brokering of customer demand and energy supply to improve customer service and accelerate time to market for innovative new offerings. They also create economies of scale compared to the point solutions offered by individual energy retailers ^[4]. Energy margins are small and only by integrating the value chain and creating platforms it will be possible to create economies of scale and support the fast development of new add-on solutions to increase profits.

Platforms can enable both existing and new market players to move toward customer centricity by offering integrated services from suppliers in the market. Successful energy platform deployments require careful planning and solid design, use of standardization and modern technologies, and an adaptable and agile approach.

How CGI can help

To help our clients stay relevant in this new energy system, CGI provides advice and support for their energy transition journey and can implement energy solutions and platforms locally or internationally. Over the past several years, we have applied our extensive experience in the energy market to build and deliver platform solutions based on generic cloud solutions and our open energy innovation platform. Some of these platforms leverage cloud technologies, for agility and flexibility, allow fast scale-up, enable shorter time to market and ensure the core is easy to maintain and replicate to other countries or regions, should regulations require. We provide a comprehensive cloud approach to address client requirements for managing data location, privacy and cloud security.

If you have comments or questions, or want to set up a meeting with one of our experts, contact us at info@cgi.com.



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ABOUT CGI

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world. Operating in hundreds of locations across the globe, CGI delivers end-to-end services and solutions, including strategic IT and business consulting, systems integration, intellectual property, and managed IT and business process services. CGI works with clients through a local relationship model complemented by a global delivery network to help clients achieve their goals, including becoming customer-centric digital enterprises.

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