



Illustration by Sylvia Neuner

Imperatives for growth in power

How European Utilities can create value again

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There is no doubt that the business model of power utilities operating in developed markets is currently poised for major transformation. As we have discussed in previous Prism articles, *The Future of Energy Utilities* (2/2013) and *Radical Changes for European Power Utilities* (2/2014), the traditional vertically integrated, centralized, asset-heavy, generation model is being questioned from many angles, not least economically. As a consequence, valuations of most leading utilities have been severely reduced, reflecting the loss of value in generation portfolios. As anticipated, we are witnessing different types of reorganization by some leading players as they shift away from this model. The most publicized is perhaps E.ON's formation of Uniper, separating conventional power generation (coal, natural gas and hydro) midstream gas and global energy trading activities from the "New E.ON," which will focus on renewables, energy networks and customer solutions. They are not alone: RWE, Centrica, ENEL and NRG, to name but a few, are also reorganizing in different ways to shift their focus away from conventional generation.

Once the asset depreciation and reorganizations have taken place, the question is then how to create value once again. In a continuing context of stagnating or even decreasing demand in many markets, there is no need for further capacity investments to meet new needs, while replacing old power plants is fraught with uncertainties – and by its nature will not be a growth solution. Our previous articles highlighted the fact that, other than investing in renewable generation assets, most of the opportunities for growth in developed markets lie downstream, in the trends and shifts affecting consumer energy usage and its energy mix. This article discusses some imperatives to grow the top line in those activities.

European utilities are currently undergoing significant reinvention due to a rapidly changing market and political environment. The traditional energy generation model is under fire, while at the same time demand is shrinking due to changing habits. The industry desperately needs to develop new business models to ensure new top-line growth. How can this be achieved, and how can utilities create value once again? This article discusses the imperatives and opportunities driving change in the market.

More than ever, power utilities are looking for ways to grow

In Europe, demand for electricity is stagnant and, in many key markets, is decreasing. (See Table 1) In North America, utilities face a similar situation. The fact is that GDP growth in developed markets is no longer based in energy-intensive industries.

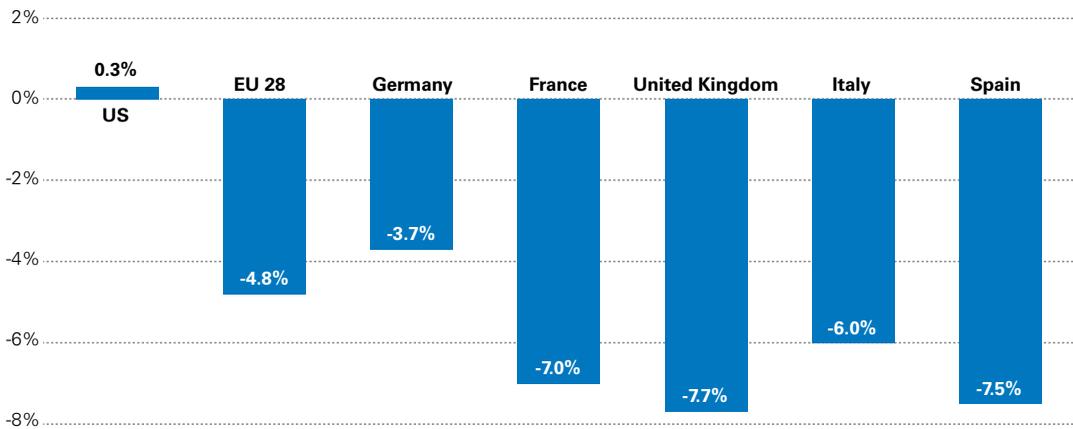


Table 1 **Change in electricity demand in the US and EU, 2010-2014**

Source: Eurostat, EIA statistics

Moreover, in many countries, for environmental or balance-of-payments reasons, regulators and authorities are asking utilities to “sell less.” Authorities in some markets are imposing a constant reduction (i.e. the US, where utilities are incentivized to reduce their customers’ consumption, and the EU with its goal of 20% increase in energy efficiency by 2020), and are actively subsidizing energy efficiency measures with public funds, while being very vocal about the need to reduce energy consumption.

In this unfavorable context, CEOs are looking for ways to grow their top line in order to facilitate the transformation of the companies they lead, and to find substitutes for the revenues and income that traditional assets will no longer provide. Some are looking for international growth, in countries where there is need for generation capacity and infrastructure investments. Others have been seeking to invest in renewable generation assets and have created

specific units to lead those efforts. However, the question remains – what can be done to grow the top line in the “home” markets? It looks very much as if the answer lies in downstream areas, and in taking advantage of the shifts in the energy mix and customer usage that are taking place.

Multiple trends impact the energy world, and provide spaces for opportunity

A number of major trends are affecting how consumers use energy. There are also numerous technologies that are changing the relative economics of different types of fuels, and thus, the final energy consumption mix of a country.

Small-scale, distributed generation and power storage is opening up space for households and enterprises alike, as well as cooperatives and other associations of local consumers (or producers-consumers). While distributed generation takes away revenues from the utility, it leads to new sources of service revenue: customers need services in the provision, optimization, operation and maintenance of the local energy system. Local generation and power storage offers opportunities – but also risks – for a utility. There are many prospects: service fees might partially compensate for the loss in commodity revenue, longer contract duration and highly individualized services reduce churn, while add-on services are easier to sell, especially when they are app-based. Distributed energy, however, opens the door for new competitors: photovoltaic (PV) panels, electric cars, heat pumps, micro-CHP and battery storage, as examples, are “entry products” which could be bundled with power and gas contracts by their respective OEMs, thus taking the customer away from the utility. This is already a reality. On the back of cost reductions and technology improvements, several utilities have launched packages of PV-storage-energy together with battery-technology providers to preempt this threat and capture the opportunity themselves. These include Duke Energy/Green Charge Networks, Green Mountain Power/Tesla Powerwall, and RWE HomePower Solar/VARTA.

Energy efficiency and energy cost savings are another growth opportunity, driven also by regulation, which ranges from legal requirements for energy management systems in larger firms, as applied in Germany, to customer energy savings targets for utilities, as in Austria. Many utilities, as well as other specialized firms, offer energy audits and energy management services which help the customer to monitor and control energy consumption. Contracting of heat, steam, power, pressurized air and other process inputs is a well-established services business at many utilities. Further sources of revenue exist “behind the meter”: buildings, facilities and industrial sites need improvements in energy efficiency by optimizing their operations as well as replacing equipment.

Similar to distributed generation, energy management and efficiency services lead to additional long-lasting revenue streams. The IEA estimates that European utilities’ revenue in energy efficiency and management services activities is growing at 3-4% per year. Although these figures vary substantially from market to market, our estimates, shown in Table 2, concur, and break this down into 2-4% in optimized end-use supply and up to 8% in energy-efficiency services. This compares with negative growth in the traditional energy commodity supply business. E.ON Connecting Energies recorded sales of over €340 million in the energy services market. The more established COFELY (with services ranging from distributed generation to facilities management) achieves almost €15 billion¹.

Entering into new verticals is another relevant opportunity for growth: “smart” home automation offerings, electric mobility through charging stations, street lighting and more, are already part of the portfolio of utilities – but also of telecoms or industrial firms. Point solutions, such as smart thermostats or multi-room media, still dominate the sector, but the growth potential through greater penetration and the connection of solutions is massive. The “battle” for the smart home is already taking place among platforms and eco-systems that are being developed and commercialized by players from different industries. The AT&T Digital Life platform, Google’s purchase of Nest and RWE SmartHome are examples of this.

¹ Sources: IEA Medium Term Energy Efficiency Market Report 2015; E.ON Connecting Energies.

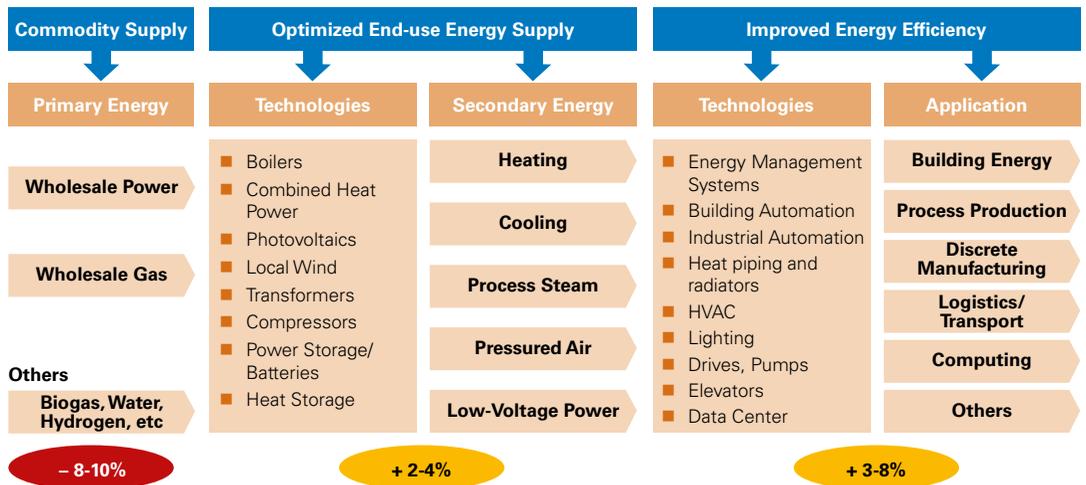


Table 2 **Energy services opportunities include all stages of the energy supply chain at end-user premises. This is where scope for positive revenue growth lies, compared to negative growth in centralized commodity sales – the old “core business”** *Source: ADL analysis, US DoE, IEA, RWE, E.ON, IRRIC Institute*

New growth is expected from tapping into the plethora of consumer and grid data that opens up opportunities for new business models, ranging from grid stabilization services to sharing platforms, on which consumers trade locally generated power at distribution grid level. The concept of the shift of role from central utility to facilitator, or “smart integrator,” is already foreseen by National Grid in the US within the context of supportive changes in the New York State regulatory framework.

On top of the main opportunities discussed, there are also utilities reflecting on what transportation conversion to gas or power on a mass-market scale might mean for them. Understanding the transportation sector and recognizing specific potential growth areas for the medium- and long-term future is another key trend. The potential switch of marine fueling to LNG and the necessary changes to port infrastructure to facilitate this is a good example, creating opportunities in commodity supply, engineering and management services.

However, these new businesses are outside the “comfort zone” of the classic power utility, and companies need to recognize that pursuing such opportunities is one or several steps away from their day-to-day business and capabilities.

Imperatives to grow

In this context of important shifts in many areas at the same time, some aspects are important to focus on for success:

1. Getting the basics right in the “core business” is a must

As in any commercial organization, the “core business” needs to be run effectively and efficiently. This might not be as simple as it seems, as most industry leaders have millions of customers that cover different market segments (from families and individuals to corporations), and are constantly the target of local regulatory authorities. As an example, the big UK utilities have long struggled with IT system changes impacting on billing accuracy and cash flow; in 2015 Npower lost 10% of its residential customers and paid £26 million in fines to the regulator due to unresolved customer complaints connected to billing issues.

Nevertheless, as we observe in our continuing client work and benchmarks², there continues to be significant work that needs to be done in areas such as customer service (where there are still many “push factors” that drive customers away), in understanding customer needs, in managing customer churn and in building effective marketing and sales channels.

As well as the “core business”, these are imperatives for any other product or service business that a utility might be interested in developing and pursuing.

2. Choose your battles (& competitors)

Many of the opportunities mentioned, and many others, can be interesting endeavors. However, in most of them there are already established businesses, while most leading utilities are also already in the process of entering them. Therefore, incumbents are

² See our viewpoints: “Managing churn in power utilities” and “Power & Gas retail costs benchmark”

facing competition from other, similar players as well as from new, more nimble and focused rivals around each particular product or service.

A review of the plans announced by leading utilities in Europe identifies that none of them wants to miss out on any of these opportunities. It seems that they are all willing to pursue pretty much everything that moves – developing new hardware for home energy monitoring, creating their own IT platforms to link their services, digital apps of all sorts, building engineering groups to provide installation and maintenance of distributed generation, solar rooftops, etc. Taking the UK as an example market, all the Big six utilities offer energy services, but these can range from residential boiler sales, PV installation and community projects through to industrial energy management. One of the companies even states it purposefully uses this “simple title” to describe a very wide range of offerings, the list of which reads like a home for any product or service outside of energy commodity sales rather than a business unit with a purpose.

While large companies might have the resources to pursue many of these opportunities, it is important that they recognize that different business opportunities might require different skills and capabilities, face different competitors, and need different business models, among other things. Even large companies cannot compete with everyone – they need to pick their battles and assess which ones they are likely to win.

This is particularly true in the service arena. It is open to entry by a variety of start-ups and local players on one hand, and at the same time by international specialists that leverage expertise gained in one market to target another. A thorough assessment of how competitive a company might be on a service is critical to building sustainable strategies.

A pragmatic approach to this strategy problem is to look at the existing key strengths, competencies and value proposition a utility has in new business fields. Different approaches can provide valid alternatives:

- Focus on the reliability of energy supply. “Keeping the lights on” is the main concern of most customers, especially in a distributed world. Utilities can clearly make a difference to other “point solution” vendors by offering a “holistic” service with a guaranteed performance. Market research shows that utilities are strongly positioned with customers for energy services, despite any innate paradox of commodity supplier/efficiency driver, and can offer holistic approaches beyond the capabilities of other players. The key distributed-energy competencies of a utility exist today in distribution grids and power plants where the highest availability levels, stable operations and safety are required. A candidate for growth therefore is operations services for distributed-energy systems/equipment that require flexibility (e.g. demand response, storage).

RWE recognized its strengths as a trusted energy supply and producer, and dynamic trader, along with the fragmented nature of the German distribution network sector and the difficulty in managing distributed energy effectively. With a big enough connected base of distributed production facilities, there should be portfolio effects and improved possibilities for grid management and value extraction. A partnership with Siemens has provided the technical expertise to make this virtual power plant theory a reality. Aggregation and coordination of the distributed output means that power can be sold at the EEX (power exchange) or on the balancing market, plus dispatch can be managed to support grid stability. The next-generation Smartpool project was announced by RWE and Siemens in late 2015, and is planning to provide a mass-market IT platform to widen participation – a further step towards the smart integrator model.

- Another option is to focus on the productivity and effectiveness of existing channels to build a “sales machine” aiming to maximize the sales of adjacent products and service bundles to the existing customer base. Some utilities build on this by pursuing a strategy to move away from selling “electricity” or “gas” towards a supply of bundles and solutions, which link the commodity with the inspection, certification and maintenance of installations as the main standard offering.
- Others might focus on leveraging their relationships and reputation with local customers and authorities to build presence

in other services such as distributed generation and ESCOs (energy-service companies that manage all of the energy needs of a facility). Once the presence and capabilities have been established, such companies can think about further expansion.

Growth beyond the core must be carefully selected, especially when diversifying into energy-efficiency businesses or new verticals. A thorough and honest assessment of where each utility can add value and has a real competitive advantage is crucial to avoiding plans that will not translate into concrete opportunities.

3. Reorganize to build focused and performing businesses

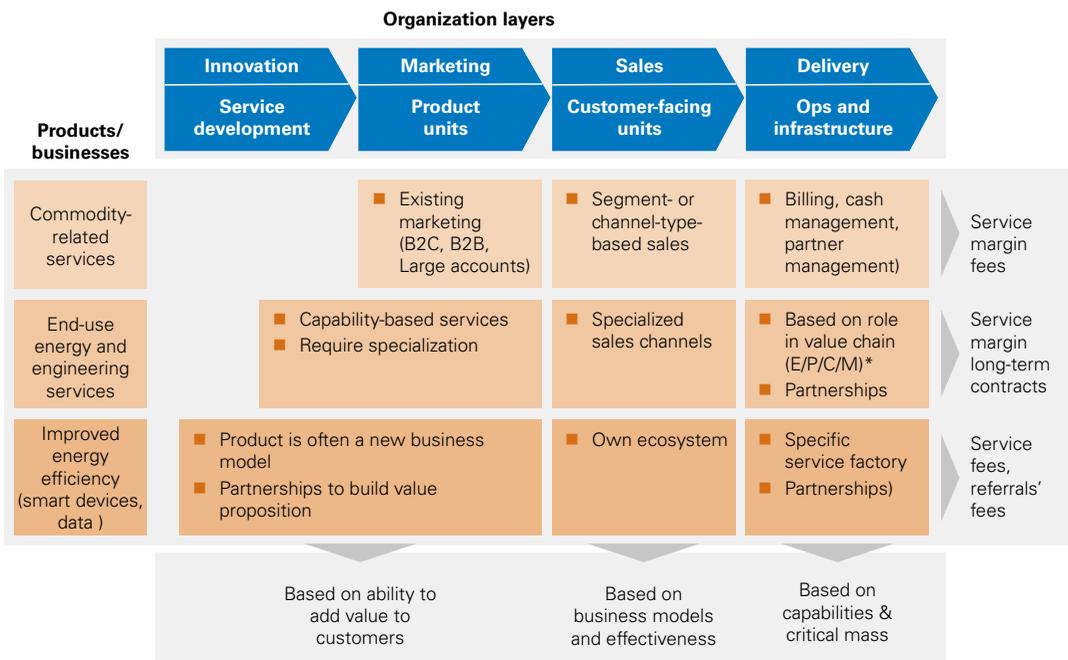
Large incumbents are structured to serve their core businesses. Billing systems, for instance, are designed to be able to calculate and send accurate bills to millions of customers every month. Customer-care platforms are designed to provide answers to customer requests around a number of key interactions, in massive volumes. While many of these can be modified and changed in many ways, they are seldom at ease in adapting to products and services that apply to a fraction of those millions, but substantially increase their complexity.

Sales channels that sell power and gas are certainly able to cope with changes in the product portfolio, but they have difficulties when the nature of the service requires specific advisory or specific skills that the sales force does not have. This is often the case with many of these new types of opportunities. A typical challenge is changing the sales force from selling transactional commodities to complex, individualized services.

On the other hand, new engineering-based services and often digital product and services offerings have to be developed and customized in a much more dynamic and complex market environment. Many of these require their own “service development unit” and their own “service factory”. In turn, these units require new capabilities. As an example, software and data will play a major role in the new business fields and thus require new capabilities such as “agile” product and software development, data analytics and prediction, just to mention a few.

The sales business of the future must re-organize in order to align business potential, priorities and KPIs, along with the resources and necessary capabilities for its different types of businesses and new ventures. Different options exist, but a good starting point is to think in terms of functional layers which interact on clearly defined targets and KPIs (the “layered model”; shown in Table 3):

- Service development units: to innovate on new services based on engineering capabilities, software or hardware (including energy equipment), or data-based, which can be combined from solution offerings by the product unit. Often service development is carried out by partners/suppliers.
- Product units: to market and develop standardized or customized solution offerings from commodity products and services and new, integrated service offerings, combining and integrating service “modules” (such as engineering offerings, software and/or hardware).



* E-engineering, P-procurement, C-construction, M-management

Table 3 A layered model to reflect on how to reorganize for growth

Source: Arthur D. Little

- Customer-facing units: to sell. For the core business this should be specialized by main segments or channels, combining commodity and bundled services sales for B2C, B2B and the wholesale market. For new services, new sales channels or sales models are required, perhaps under separate branding.
- Operations & infrastructure units (“service factory”): to deliver the product or service value to the customers, and operate distributed as well as centrally provided services and equipment, usually structured into technical plant services, energy management services and customer care and billing services.

In the end, in order to pursue some or most of these opportunities, power and gas retailers need to think about establishing new teams and organizations. These need to be freed from the utility culture, processes and systems in order to gain and maintain the agility required to compete in a service business. In some instances, it may also be relevant to distance new business areas from the core utility brand. A creative and entrepreneurial spirit is more likely to thrive outside the old core. Centrica’s Hive business is a good example.

British Gas (Centrica) had achieved some initial success in 2011 with remote heating controls in the residential segment, based on technology provided by partner AlertMe (eventually acquired in 2015 for £44 million). The potential of the greater customer interaction the devices triggered was recognized, but also that speed to market was too slow and cumbersome, and opportunities to leverage the technology were being missed. Decision-making lines needed to be shorter and faster; new ways of working were needed to be able to sell interactive electronics rather than energy; specialist skills would have to be added for product development, sales and service; the link to the core utility and brand needed to be maintained in order to leverage connection opportunities between products and channels, and to keep some degree of control.

Hive was deliberately located in central London, far from Centrica’s HQ, with a tech startup-style culture. Eighty percent of the team was recruited externally, including from telecoms, media and software development; the remaining staff came from British Gas, keeping the connection to the core business, plus dotted reporting lines were put in place from Hive to the CIO of British Gas Information Systems. LEAN start-up and Agile methods were deployed to develop and bring products to market, using customer test-

ing and fast product iteration. Customer management, marketing and sales are dealt with by Hive via its own team, brand and website, while British Gas's trusted brand in the home market and trained engineers are essential for installation. Low-cost, cloud-based CRM systems were set up so Hive could deploy quickly and avoid impacting a major IT change program in the core business.

Hive was set up in late 2012. The initial product launched in September 2013 as Hive Active Heating, providing remote heating control via a smart phone app. Around 250,000 smart thermostats have been sold in the UK; 3 million Centrica customers in the UK and US now have access to analytics and insight products. Lighting control, plug sockets and security sensors, plus a designer facelift to the hardware, were added in 2015, as Hive is conscious that the offering is intended to be as much a stylish, millennial product as it is a functional piece of technology.

It is not only because of the different nature of the product or service that the metrics and KPIs of such organizations need to be changed. Many of these opportunities are emerging and will gradually impact different parts of the market. For some time, they might not stand out and get enough visibility in the parent company P&L unless they are measured separately. As an example, EnerNoc, a Nasdaq-listed US company successfully selling wholesale and demand response services, has revenues of a few hundred million US dollars, a table that would hardly be visible in the accounts of, say, the big European utilities.

4. Partner & venture

New services often require new business models, and these business models sometimes require partnerships and cooperation with others. If a company is planning to enter home energy monitoring and management, does it really need to design and make the hardware or own the IT and communications platform? Does it think that the value of the business is in the customer-usage data, in the design of the devices or in the installation and maintenance services of the hardware? Does it plan to bundle it with the power and gas contracts (maybe to aim for a customer churn reduction) or does it prefer a one-off sale?

Each company must reflect on where the key drivers of value are going to be for them and how it will differentiate and provide an attractive value proposition to its customers. However, each of these choices will have profound implications on the overall complexity and agility of the business to be set up. As many digital economy services are illustrating today, partnering can be an effective way to leverage others' capabilities while focusing the organization's efforts on the aspects that are most relevant for the business.

Nest Labs, started in 2010, launched its Learning Thermostat in 2011, and subsequently cameras and security products. Compatibility with a vast array of other manufacturers' products, from washing machines to pet feeders, allows linkages between devices to create greater energy savings and a smarter home, learning from the user's behavior. Google's acquisition of Nest for \$3.2 billion in 2014 made global headlines.

Utility partners in the US include NRG, National Grid, Austin Energy and Con Edison, plus in the EU nPower, Electric Ireland, Direct Energie, Essent and Lampiris. Partnering with these utilities gives Nest access to around 100 million potential customers and a ride on the back of the utilities' trusted brands. For the utilities, the partnership offers a route into the smart home market without product investment and associated risk, plus the benefit of association with a growing tech brand.

5. Make a commitment

The energy world is in a state of flux. Ten years from now, the traditional commodity-focused retail business will not exist anymore in its current shape. There are many aspects that are changing, new technologies emerging and, all in all, a large amount of uncertainty. In those situations, investing in and managing a portfolio of options might be a good strategy for a large incumbent. However, when each one or many of these opportunities becomes a business itself and the incumbents' investments have to compete with companies that are extremely focused and already pursuing opportunities, the risk is that the strategy and investment does not receive enough senior management attention to become competitive and grow. There is currently a "window of opportunity" for traditional utility

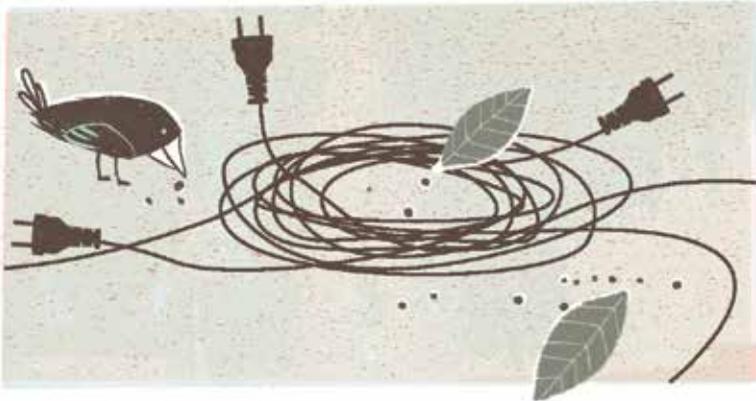


Illustration by Sylvia Neuner

retail businesses. They must use this over the next five years if they want to achieve and maintain strong positions in the emerging and established markets discussed in this article. Otherwise, new entrants and established players from other industries will take pole position as the integrated energy, services player with customers. Given the size of the opportunity, but also the challenges, this means a complete transformation of the business, from strategy, business models, people and processes to partners. It needs a full commitment of owners and executive management to make a bold move, move ahead and drive transformation from the top. It must encompass the whole organization and make it agile, learning, and much more efficient.

Insights for the executive

The utility sector has historically been categorized by periods of accelerated and slow change: we are now in a period of accelerated change, and action is essential. In a context of stagnating or declining demand for electricity, there are many opportunities connected to, or at the fringe of, the core business in the “home” markets, where revenue growth is achievable – in the context of negative growth for many companies in the utility commodity business. Some opportunities are clear and proven, others less certain and predictable. Betting on every horse spreads risk but limits the possibilities to establish a leading new business. Companies that

make the effort to produce a strategic future view and filter effectively increase their likelihood of picking a winner.

The “imperatives for growth” discussed in this article are compulsory to achieve effective growth strategies. In many ways, utility businesses are already changing, transforming in structure and model. New ventures will require further business-model innovation to succeed. Distancing themselves from the old “utility culture” may be essential. At the same time, with many players developing relevant skills and technologies that are already active, partnering is an attractive possibility. Growth lies in energy services, connected services, and customer-oriented operations, but within these areas there are many opportunities and models. The pragmatic approach is to focus on core competencies in order to determine the direction to drive the business forward – while an external view can help determine which competencies and direction are truly relevant. For utilities, packages and holistic services can be the value-add that competitors miss.

However, on the other hand, reorganizations, new ventures and adjusting focus to future prospects can distract from core operations. Our experience shows that improvements here are (almost) always possible. In a business that is more and more service driven, losing touch with the performance of the traditional utility unit can be fatal.

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