

UTILITY 2.0

2020 ISSUE I



2020 the decade of Electrification

In the next decade, electrification will drive growth in the electricity sector. We examine global trends and impact actions across industries to identify real actions that will determine if utilities will grow and reap the benefits or become zombies and perish!

THE DECADE OF ELECTRIFICATION – WILL UTILITIES GROW OR SHRINK? DEPENDS ON WHAT THEY LEARN FROM OTHER INDUSTRIES OF PAST DECADE TO SERVE PROSUMERS!

In the last decade, the US energy sector was the worst performer in the S&P 500 (-1%) and the utility sector was bottom performer among key sectors. The onslaught of renewable energy, efficiency, and technology advances led to apocalyptic talk of the “Utility Death Spiral”. Well, utilities largely survived, barring a few bankruptcies. As we look forward to the next decade and at the future of the energy and utility sector, some very promising opportunities are looming. According to Bloomberg New Energy Finance (BNEF Energy Outlook 2019), demand for electricity is going to triple by 2050, there is a great opportunity

for the energy and utility sector to grow. A key question is, will utilities be able to take advantage of these opportunities, or will they try to play catch-up to survive and hide behind jargon-filled talks of utility modernization and digital transformation?

In both developed and developing markets these opportunities will come from electrification through transportation, a rising middle class, and increasing urbanization. Our research points to some key actions/considerations for utilities if they wish to play a central role as demand for electricity triples. First, utilities need to look beyond their core business. Growth will come

from non-core sectors like transportation electrification and the smart cities. Second, climate change action will change the needs of the Commercial and Industrial Sector (C&I) profoundly as more companies commit to climate driven Resiliency, a key driver towards self-generation and supply. Third, for growth in revenue, utilities need to learn from the success of top performing sectors of the last decade—technology, retail, finance—by truly providing customers control of their energy destiny through service-oriented business models and platforms. Utilities need to proactively adopt new models for capturing a future which is 3 times bigger than the past!

The electrification of transportation, climate change driven resiliency, and a rising middle class in emerging economies will drive growth in electrification. Utilities can serve them by learning from the top performing industries of the last decade.

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In our analysis, we identified five mega trends which are impacting industries around the world. The actions taken by industries to meet these trends is where there is an opportunity for utilities to take advantage of an electricity-rich future. Business models and climate change are the most prominent trends, while technology disruption and social are the key trends. Globalization, while an important trend, will have waning influence compared to the others.

- 1 **Business Models**—Business model change is the most impactful and prominent trend happening in all aspects of business, including economic, financial, operational, market, and service aspects responsible for new revenues and growth.
- 2 **Climate Change**—Shifting weather patterns, threats to human health and wellbeing, natural resource scarcity, threatened biodiversity and coastlines will lead to need for resiliency.
- 3 **Technology Disruption**—Innovations in computing, analytics, materials, and telecommunication will continue, but business models will be under regulatory scanners.
- 4 **Social**—Changes in media, norms, the impact of crowdsourcing, and the emphasis put on the individualization of products.
- 5 **Globalization**—Reflects changing demographics, urbanization, geopolitics, and increased connectivity, both through trade and immigration. We believe globalization will retreat in the short/medium term, replaced by national and regional priorities.

Leading industry sectors have responded to these trends in past decades, and utilities can learn from them to improve their performance in this decade. Figure 1 shows how leading industries are acting on the global trends and actions which are overlapping across the mega trends. For example, the telecom sector has been impacted by globalization, technology disruption and social changes. Actions by telecom may overlap with financial sector actions, which are also impacted by social, technology disruption and business model changes.

Finance: This sector has embraced fintech (financial technology) in a way that utilities should emulate. Customers are comfortable with mobile transactions, as well

as mobile-based marketing and communication related to their transaction history. Utility offerings such as online bill pay is common, but this can be further enhanced through mobile applications. Utilities that partner with a third-party developer or build out an app in-house to provide more direct access to the customer. There are more opportunities to facilitate not just bill pay but also rebates, promotions, and additional services that can be accessed via an app or through text messages. Utility customers should be able to specify limits in their account using their phone to send them a notification as they reach a predetermined benchmark in their energy use. This type of system is common with banking and credit card apps, giving customers more insight into their resource utilization.

The financial sector has also reacted to climate change by turning towards investment through green bonds to raise capital. Globally, the issuance of green bonds has skyrocketed, from \$1.5 billion in 2007 to over \$245 billion in 2018. Few US utilities have used this mechanism for financing clean energy projects, but there is a huge potential for this type of infrastructure investment. Utilities must take advantage of green bonds to finance their transition into the clean energy economy or risk missing out on market transformation.

Insurance: Data analytics has always played a big role in the development of insurance policies. However, as data collection has gotten both easier and less expensive, the insurance industry has embraced technology. Beyond the real-time data collection facilitated by cheap sensors, the insurance industry has increased its focus on predictive analytics and proactive risk management. The rising risks of climate change have driven the use of big data to build models to estimate the costs of doing business in areas vulnerable to climate change impacts. For insurers, helping prevent damage before it occurs, like using drones to check on the quality of a roof before it is damaged, is seen as the logical next step to prevent premiums from rising on customers too sharply. The use of big data and analytics for risk assessment can help utilities to design proper business models and tariffs for services as it builds resiliency services to remain relevant in the world increasingly threatened by climate change. Applying predictive analytics and proactive risk management to outages and infrastructure damage before they occur will provide long-term benefits to customers and shareholders. This will only become more important as increasing electrification puts stress on current

infrastructure while also demanding additional resources be built out.

Telecom: Globalization has driven the demand for a more connected world, while technology disruption through wireless and cellular technology has driven the decline of fixed-line business. The result of this has been for telecoms to create new value streams through bundled services-- combining landline, internet, mobile, and streaming. Currently, many utilities offer discounts on energy efficiency products, but there are additional services (ex. Resiliency, 5G connectivity) that could be included with the purchase of power, much like you can do for many telecom services. Utilities could partner directly with telecom providers to take advantage of the increasing number of electronic devices that use data or Wi-Fi connections. For example, instead of a standard utility rebate for buying an energy star certified television, a free trial of a streaming service is offered instead.

Utilities should also focus on resiliency planning to protect telecom investments and ensure the continuity of communication during emergency response. In this way, the telecom industry is a key customer for utilities to target in the next decade for resiliency services, either through on-site energy production, storage, or demand management.

Retail: The increased cross border and peer-to-peer trading that has occurred due to globalization has also facilitated more competitive sourcing practices. The actions taken by the retail industry reflect this through the creation of mobile and digital platforms. Targeted marketing and consumer interaction have flourished as a result. There are opportunities for utilities to make energy services customizable. For example, individualized products based on a user’s consumption habits or suggested energy source mixes based on location. Socially, consumers are increasingly critical of negative impacts associated with the creation of a product and will change their purchase behavior in response to poor business practices. As brands rush to become more sustainable in the eye of the consumer, utilities have an opportunity to work with retailers and manufacturers to provide them with sources of carbon free electricity at a premium.

Transportation: The electrification of transportation will be the biggest contributor in tripling electricity demand in this decade. Peak pricing for services by Lyft and Uber recognizes the value of transportation based on availability and convenience. In the next decade, an increase in EV home and DC fast charging stations could make conditions favorable for creation of EV-specific electricity rates as an effective form of demand management and revenue for utilities.

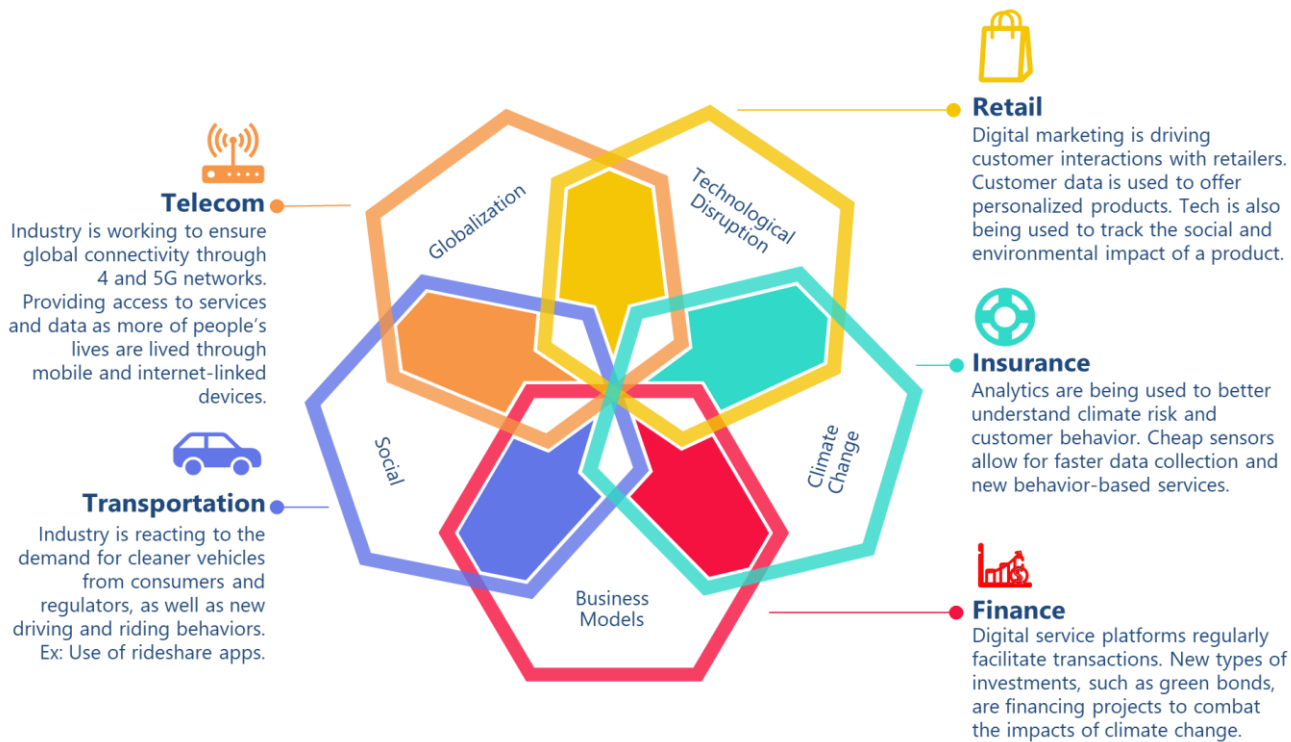


Figure 1: How a trend impacting an industry action reflects the influence of several overlapping trends.

OUR RECOMMENDATIONS

There is no one-size-fits-all industry scenario for addressing trend impacts. However, we do think there is a lot to learn from other sectors if utilities want to take advantage of opportunities in this decade.

- ✓ Utilities should focus on **adoption of electric vehicles** in all segments and not just developing charging infrastructure to ensure that there are enough carts before the horses!
- ✓ Utilities need to **adopt service-based business models**, learning from successful industries. The world is going to need more electricity, but the assumption should not be that utilities will be the ones to provide it by sticking to business as usual.
- ✓ In addition to selling electricity, utilities should look at **bundled services**, in the same way the telecom industry has done with streaming, mobile and data services, in order to secure new value streams.
- ✓ Climate change is putting infrastructure at risk. Utilities have an opportunity to provide **resiliency as a service** to other industries.
- ✓ **Customers expect individualized services**, rather than a generalized product. Utilities need to connect with their customers in order to retain them, or risk losing them to services that appeal to their individuality.
- ✓ Embrace new ways of financing clean energy projects, including **green bonds**, when moving towards clean energy transformation.
- ✓ **Predictive data analytics** is a key requirement, even more important than collecting tons of data. Without knowing applications, it is futile to collect data.



We believe for utilities to succeed in this decade of electrification they need to stop hiding behind regulatory limitations and proactively develop and implement new business models. They must learn from successful industries of the past decade. This decade will belong to those utilities who disrupt themselves in next 2-3 years.

Overall, utilities have significant opportunity to triple their business in this decade, provided they are willing to disrupt their current business models

UTILITY 2.0 – ABOUT THE AUTHORS



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About Vrinda Inc.

Vrinda Inc. is a New York based business and technology firm. Vrinda Inc. creates success for your business through a focus on value creation by providing trusted, actionable advice and practical solutions. We provide business and technology consulting services to the Energy, Utility and Transportation sectors.