SPOTLIGHT

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Cloud adoption in the utilities sector is on the rise. This IDC Spotlight will examine how the increased use of the cloud throughout utility organizations will increase customer satisfaction and improve operations.

How Cloud Improves Customer Experience and Enables Operational Excellence for Utilities

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Introduction

Cloud Adoption and Generative AI in Utilities Are Improving Customer Satisfaction and Operational Efficiencies

Faced with many legacy customer information systems (CISs), the utility sector is increasing investments in cloud-enabled customer systems to improve the customer's overall digital experience.

The utility industry's commodities business is under constant pressure with volatility in supply and demand, as well as uncertainty in pricing. To hedge some of that risk, utilities are expanding cloud investments in value-added customer services to build additional revenue streams over and above the sales and delivery of energy commodities. This approach includes providing customers with clean energy products and choices such as energy efficiency programs, distributed energy resources (DERs), electric vehicle (EV) programs and rebates, and green energy tariffs. These programs provide environmentally friendly utility products and services to customers and help utilities gain and retain their customer base.

AT A GLANCE

KEY STAT

Utilities are using cloud or planning to use cloud across a number of areas within 12 months, according to the IDC's 2023 *CloudPath Survey*.

Application	Using cloud	Plan to use cloud
CIS	42%	33%
Smart meters	46%	30%
DERMS	44%	36%
Field services	46%	31%
Asset management	38%	40%

Many utilities are evolving from commodity business models to derive more value from selling non-commodity products and services such as charging networks for electric vehicles, battery storage, and solar panels. There is a marked need for and emphasis on improving the lead-to-cash process beyond traditional meter-to-cash operations.

Utilities will also be challenged in the coming years to meet increased business and consumer energy demands. Electric demand for utilities will grow as more customers start charging EVs at home and as datacenters in commercial and industrial sectors use more electricity due to the increased utilization of AI and generative AI (GenAI). To help solve some of the industry challenges, over 40% of utilities are investing in or exploring GenAI use cases, according to IDC's 2023 *Future Enterprise Resiliency and Spending Survey*. Utilities will also need to comply with increasingly rigorous carbon footprint requirements and the shift to renewable energy sources.

The Business Case and Key Market Trends

The key trends influencing energy and water utility customers are customer centricity, a carbon alternate society, grid modernization, a focus on renewable energy sources, GenAI, investing in cybersecurity and customer data privacy, and supply chain volatility caused by geopolitical conflicts.

Key imperatives for systems integrators and original equipment manufacturers (OEMs) include:

- Embedding customer experience (CX) and digital journeys
- Improving operations through robust supply chain and AI/ML solutions
- Grid modernization
- Modernizing aging operational assets and processes
- Updating legacy back-office systems
- Expanding solutions and enabling a responsive enterprise
- Providing differentiated services using customer data and insights
- Water conservation through reduced per capita consumption

Both the rapid rise in the numbers of environmentally conscious customers and the influx of renewable and distributed energy assets driven by the energy transition have utilities evaluating cloud-first opportunities throughout the utility value chain, including customer engagement offerings. Investments in cloud technologies and platforms are being made as aging operational and grid management systems are unable to support the rapidly evolving energy transition.

That said, utility customers are becoming more aware and educated and are eager to play a more active role in the energy transition. Customers can contribute to a utility's decarbonization efforts by optimizing their own energy consumption and water usage, investing in self-generation and energy storage solutions, and electrifying their vehicles and heating solutions.

Furthermore, to successfully navigate the energy transition, utilities will need to invest in cloud solutions that can help solve major challenges that can hamper utility operations, such as eliminating silos and connecting dispersed data, processes, and personnel via cloud platforms and applications to create better business continuity throughout their organizations. Increasing cloud adoption within utilities can provide better digital experiences both internally and externally, which can increase operational efficiencies, improve customer satisfaction, and produce positive business outcomes. Cloud-enabled platforms, applications, and technologies can create a unified and holistic approach to operations involving all key stakeholders throughout a utility organization.

Enterprise cloud solutions can help eliminate many manual business and operational processes. By implementing traditional AI and GenAI models, cloud-enabled applications can assist agents with timely data and information to better service customers via the call center. AI- and ML-driven models can capture customers' clean energy preferences and provide recommendations for utility programs and services to increase energy conservation and efficiencies while creating additional revenue streams for utilities.

Cloud can connect dispersed data and departments. For example, a cloud platform can connect a utility's customer service data and personnel to enterprise resource planning (ERP) applications and back-office functions for a more detailed view. In addition, cloud-enabled meter data management (MDM) applications with embedded AI and advanced analytic capabilities can improve the timing of billing and payment cycles and the accuracy of energy use and demand patterns. Last, cloud applications can create centralized data repositories providing a single version of the truth that enhances productivity, improves regulatory compliance, and enables smarter decisions.

Benefits of Cloud-Enabled Utility Offerings

By investing in cloud-enabled customer engagement solutions, utilities and competitive energy suppliers stand to gain a number of benefits. These include greater customer satisfaction or improved Net Promoter Scores in competitive markets, lowered customer effort scores, enhanced customer lifetime value, and reduced costs to serve customers.

Cloud providers are responding to the increased needs and preferences of utilities by offering a growing technology stack of functionalities that support end-to-end, omni-channel customer engagement across the categories of descriptive, diagnostic, predictive, prescriptive, and ecosystem engagement. These key areas can leverage capabilities such as energy usage analytics, abnormal usage detection, high-bill alerts, personalized saving advice, and utility program recommendations (i.e., demand response, electric vehicle, and rooftop solar programs), which can assist utilities with behind-the-meter optimization of energy.

In addition to lowering serving costs, cloud-based customer engagement offerings can help utilities foster innovation and increase employee and customer satisfaction by implementing tools that create seamless digital experiences. As opposed to purely being point solutions, utility digital customer engagement is increasingly being integrated into and procured as part of the customer experience management (CXM) technology stack. Core customer-centric systems such as CIS, meter data management, distributed energy resource management systems (DERMSs), CX, and field service management can be integrated to leverage data, which can provide a plethora of customer insights, enabling utilities to better serve their constituents.

The five main categories of cloud-enabled customer engagement applications include descriptive engagement (e.g., consumption tracking, load disaggregation, home/site energy reports, peer comparison), diagnostic engagement (e.g., leak detection, alerts for abnormal activity), predictive engagement (e.g., service alerts, high-bill alerts), prescriptive engagement (e.g., personalized savings advice, tariff/rate recommendations, behavioral demand response), and ecosystem engagement (e.g., smart home/distributed energy resources management, smart EV charging, energy appliance commerce).

Considering Oracle CX Cloud, Energy and Water Industry Solutions, and Fusion Cloud for Utilities

The Oracle Cloud CX for Utilities suite includes sales, marketing, service, CIS, and Opower solutions, which support electricity, gas, and water utilities and retailers. The company's utilities customer engagement offering addresses the following business priorities: energy efficiency, water conservation, demand flexibility, electrification, digital engagement, technology and services (e.g., data analytics and data hubs), equity, and affordability.

Through Oracle Cloud CX, the utility industry can launch key customer-facing initiatives such as public awareness programs on water conservation, promotion of water and energy efficient appliances, and other behavioral changes.

Oracle Energy and Water solutions enable utilities to modernize their operations in all areas including insight-fueled customer engagement programs, CIS, asset and operational technologies, and the management of utility construction projects.

Oracle Field Service and Mobility Cloud Services will help schedule, route, and equip utility field service staff to complete service activities, including planned appointments and emergency responses, whether they are at a customer's home, office, or any installed asset location.

Oracle's Fusion cloud solutions provide comprehensive AI/ML-enabled capabilities for analytics and the management of financial, human capital, supply chain, and enterprise performance.

Oracle's solutions also provide strong B2B capabilities in the areas of supply chain, CIS/billing, contract management, energy efficiency and sustainability, and integration and data exchange with third-party systems.

Oracle has a well-established ecosystem of partners, such as Wipro, which can complement the development and implementation of existing and/or newly created solutions. Oracle and Wipro are active in joint innovation and go-to-market collaboration in the utilities sector.

Oracle comprehensively supports several customer engagement functionalities, including descriptive, diagnostic, predictive, and prescriptive engagement.

As a global partner of Oracle, Wipro provides comprehensive, integrated solutions under its Utility of the Future offering, which is designed to improve customer experience, core modernization, and responsive enterprise capabilities. The principles of the solution are implemented at various customer sites to deliver measurable results. Wipro's investments in digital customer experience, AI/ML models, and cloud migration frameworks are an integral part of the Oracle solution.

Using traditional AI, GenAI, and ML, Oracle's Cloud CX helps utilities to complete service requests faster, improve customer engagement, promote and sell new products and services, and create new streams of revenue.

Challenges

When providing a cloud-based offering in the utility sector, there is always some risk when going to market. Regulatory hurdles regarding how cloud investments can be capitalized can present a challenge for utilities that want to embrace this technology, especially large investor-owned utilities in the United States. Oracle and Wipro will have to work closely with utilities and regulators to reach a consensus on how utilities can capitalize on their cloud investments and roll cloud investment costs into their rate base for large, regulated utilities in the United States. That said, there is less regulation and concern about capitalizing on cloud outside of the United States.

The utility sector has lagged behind other industrial verticals when adopting cloud and other technologies. Utility technology vendors will need a flexible deployment model that can accommodate cloud, hybrid cloud, and on-premises offerings. There is some expectation that the current challenging business environment will encourage regulators to embrace cloud technologies as the benefits to utilities and ratepayers become more apparent.

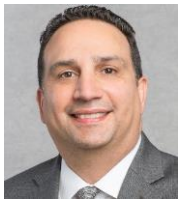
Conclusion

The energy transition is giving utility customers more green energy products and services from which to choose. Cloud-based CX tools can help utilities focus on the most valuable customers with a foundation centered on clean, complete customer data that can leverage AI-driven recommendations to guide the marketing and sales of new products and services. AI-driven CX tools that leverage data from MDM solutions can help utility customers save on their utility bills and improve energy consumption habits. Leveraging AI and behavioral science, utilities can send personalized messages to educate customers about green energy and energy conservation programs, boosting customer satisfaction.

Investment in CX cloud applications can improve customer care, billing, and advanced metering to deliver efficient service that satisfies utilities' customers and builds trust in the accuracy of the data shared with them. CX tools can additionally provide a single view of meter and device data, which can be used to implement complex rating plans and offer intuitive customer self-service through multiple digital channels.

The utility industry is moving toward adopting enterprise cloud technologies to enhance customer experience and operations. The days of utilities just focusing on the commodity itself are over. Customer- and employee-centric investments such as CX, ERP, and field services cloud applications can bring a host of benefits to utilities and their customers. To the extent that Oracle and Wipro can address the challenges described in this paper, they have significant potential for success in their efforts to leverage cloud technologies throughout utility organizations to increase customer satisfaction and improve overall operational efficiencies.

About the Analyst



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John Villali is a senior research director for IDC Energy Insights, primarily responsible for thought leadership in the areas of digital strategies and smart operations in the power and utilities sector. Mr. Villali's expansive experience within the energy industry allows him to provide superior market insight, having first-hand experience, understanding, and meeting the needs of professionals in the energy industry. Mr. Villali's core research coverage includes but is not limited to distributed energy management, asset management, energy policy, demand response, mobile workforce management, energy trading, and the energy transition.

MESSAGE FROM THE SPONSOR

The Wipro Utility of Future is a holistic solution designed to meet the evolving needs of Energy & Water Utilities. Powered by Oracle Cloud Applications, this solution focuses on key areas such as enhancing customer experience, modernizing the Meter to Cash Process, implementing Asset and Operation Technologies and AI/ML capabilities for resilient grids, providing integrated back-office solutions, and ensuring comprehensive ESG and regulatory reporting. By addressing these critical aspects, the Wipro Utility of Future offering aims to equip utilities with the tools and capabilities needed to effectively manage the ever-changing consumer and market demands. Please visit Wipro.com for more details.

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