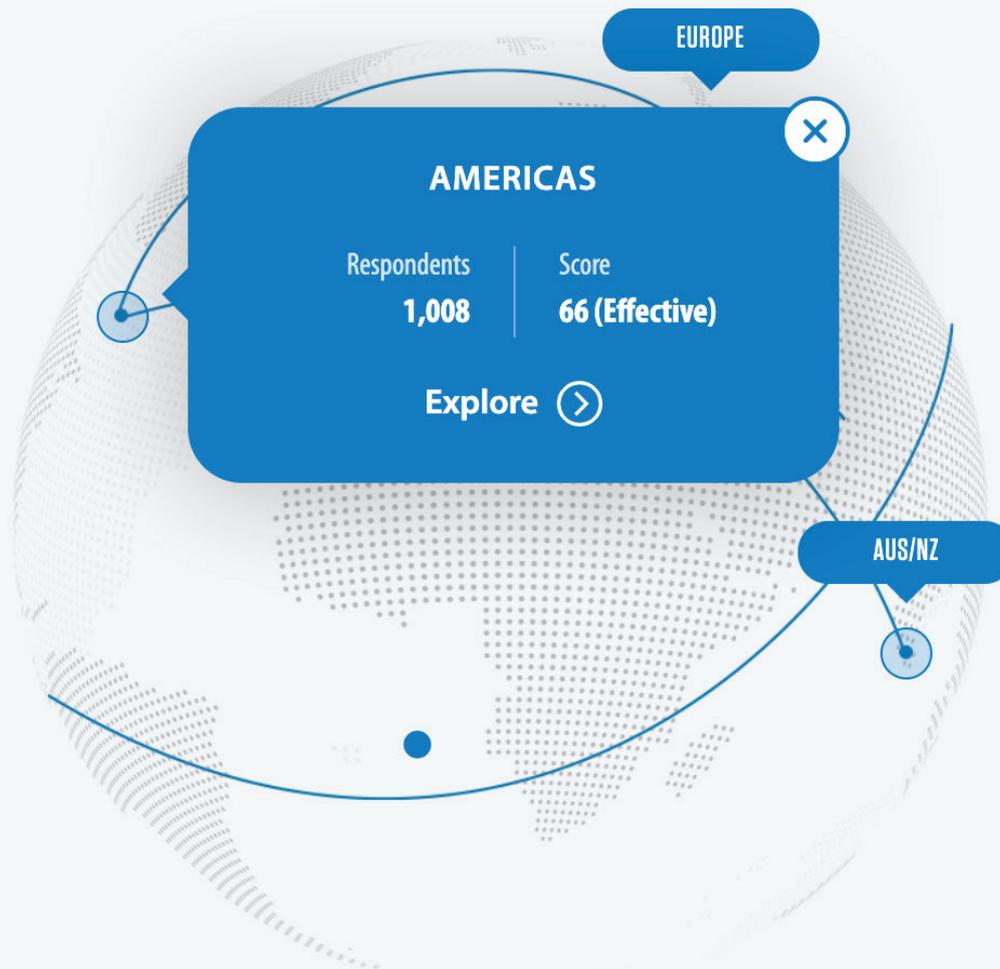




UTILITIES

UTILITIES SHIFT
CAUTIOUSLY
TOWARD CLOUD



\$414 Billion in Profits can be Gained Using Cloud for Business Growth: Infosys Research

[EXPERIENCE CLOUD RADAR](#)

Introduction

Utilities provide essential services and must persist in doing so, regardless of the disruptions that confront them and the communities they serve. In 2021, utilities must manage the acute transitory changes associated with the COVID-19 pandemic while preparing for more structural changes that were already coming, and now will accelerate in the post-pandemic recovery.

The coming changes have utilities obligated to a growing and diverse set of mandates. They must: integrate distributed energy resources into the grid, achieve decarbonization targets, comply with changing regulations, and share real-time data with stakeholders for collaborative energy management. To achieve this, utilities are increasingly using cloud to implement value-added services, deliver seamless information access, actively manage load variation, support 360-degree energy efficiency, and upgrade customer engagement.

Utilities businesses have embarked on modest, measured steps toward broader usage of cloud systems, Infosys Cloud Radar 2021 finds. The Cloud Radar survey includes regulated and unregulated utility respondents from the US, UK, France, Germany, Australia and New Zealand.

The survey found utilities are most interested in using cloud technology to deploy predictive maintenance capabilities, artificial intelligence (AI), advanced analytics and automation. The transition to a more efficient, sustainable and distributed electricity system demands utility enterprises integrate diverse data sources for deriving actionable business intelligence from complex variables and making informed decisions. Utilities need robust, reliable and scalable infrastructure that powers data and analytics while rationalizing operational costs and capital investment.

“Utilities are in the midst of an unprecedented disruption. Rapid shift to renewables, growth in distributed energy resources, electrification of transportation, and change in consumer expectations are driving utilities to innovate at a faster pace. Utilities are increasingly turning to cloud technologies to enable business innovation for the future of energy.”

Trinankur Biswas

*Associate Vice President and
Regional Head Utilities – Americas, Infosys*

Utilities have begun to turn toward advanced analytics and AI to better manage their data and enhance customer experience.



Growth in cloud adoption

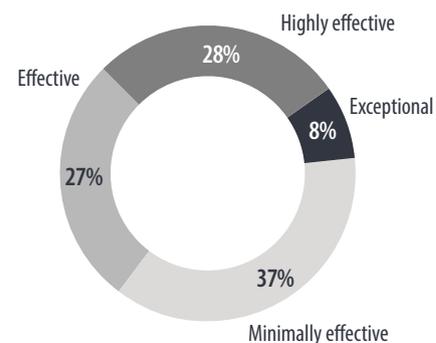
As more and more enterprises realize that cloud technologies can act as a much-needed catalyst to transform themselves into a more agile, flexible and scalable entity, the pace of adoption is rising swiftly. Our study revealed that cloud adoption across industries has doubled every two years since 2018.

Utilities respondents in our survey say they have shifted 49% of business functions and 46% of IT systems on the cloud in 2020. Further, they expect to move 60% of all applicable systems and functions in the cloud by 2022.

Utilities generally are guided by reliability and efficiency. Shifting non-core business functions, such as HR and ERP systems to established cloud services naturally fits with the emphasis on efficiency.

There are other local and market-based considerations as well. For the regulated utilities in the US, moving capabilities to the cloud typically involves considering regulatory and financial implications on if and how they can treat the cloud investments as a regulatory asset.

Performance cohorts



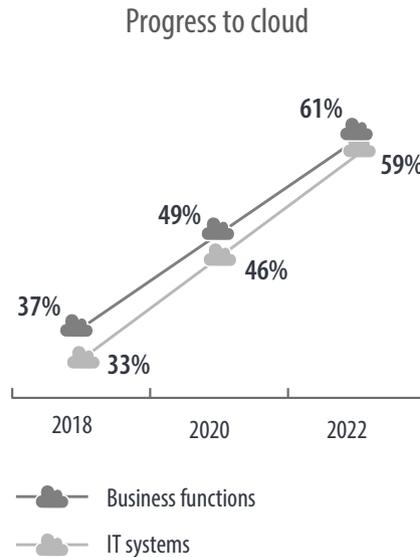
The utilities respondents in the Cloud Radar survey described strong confidence in their ability to unlock value from AI and data analytics. As a customer service-focused sector, utilities firms look to exploit AI's capabilities through the cloud to work through huge volumes of data to garner meaningful customer insights, monitor consumption patterns and provide better customer experiences.

Historically, utilities were thought to deliver an essential but undifferentiated product. The digital era has changed that.

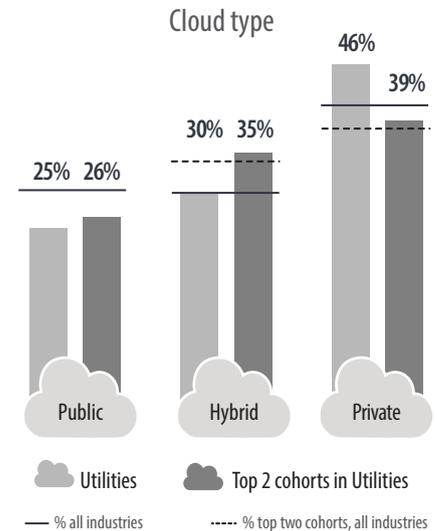
While our utilities respondents stood out for their comfort using cloud for analytics and adoption of cloud for non-core business functions, they lagged behind in terms of top-tier cloud performance. Infosys created a Cloud Radar Index using four performance metrics: speed, capability, security and scale to connect cloud competencies to business performance.

The utilities respondents averaged 64 on a scale of zero to 100, the same figure as the survey average, but utilities were under-represented in the top scoring exceptional cohort. The exceptional cohort included the top 16% of survey respondents. Only 8% of utilities reached that achievement. Utilities were over-represented in the second-tier highly effective cohort (which included 17% of all respondents, but 28% of utilities respondents.)

Enterprises experience speed and capability gains with at least 60% hybrid cloud adoption. In the utilities sector, 18% of respondents have 60% or more of their IT systems in the cloud. But in two years, some 45% of utilities respondents aim to achieve that level.



Cloud experts recommend the increased adoption of hybrid cloud solutions to achieve stronger performance. However, 46% of utilities respondents solely used the private cloud for their IT systems and business function applications. Private cloud is generally the most popular choice, because it gives companies the sense of more control over their data and workloads. Utilities firms ranked the highest in the proportion using private cloud in our study. Not only that, but they also were the lowest (25%) in public cloud adoption.



“For enterprises seeking ways to be efficient, cloud is the perfect catalyst. Hosting core functions in the cloud and unlocking value from data & AI with cloud tools allows enterprises to accelerate their net zero journey and be resilient. Bringing AI to scale while developing their energy transition frameworks is a challenge and an opportunity for the utilities sector.”

Balakrishna D.R.
 Senior Vice President –
 Energy, Communications and
 Services, Infosys

Shift from defensive to offensive priorities

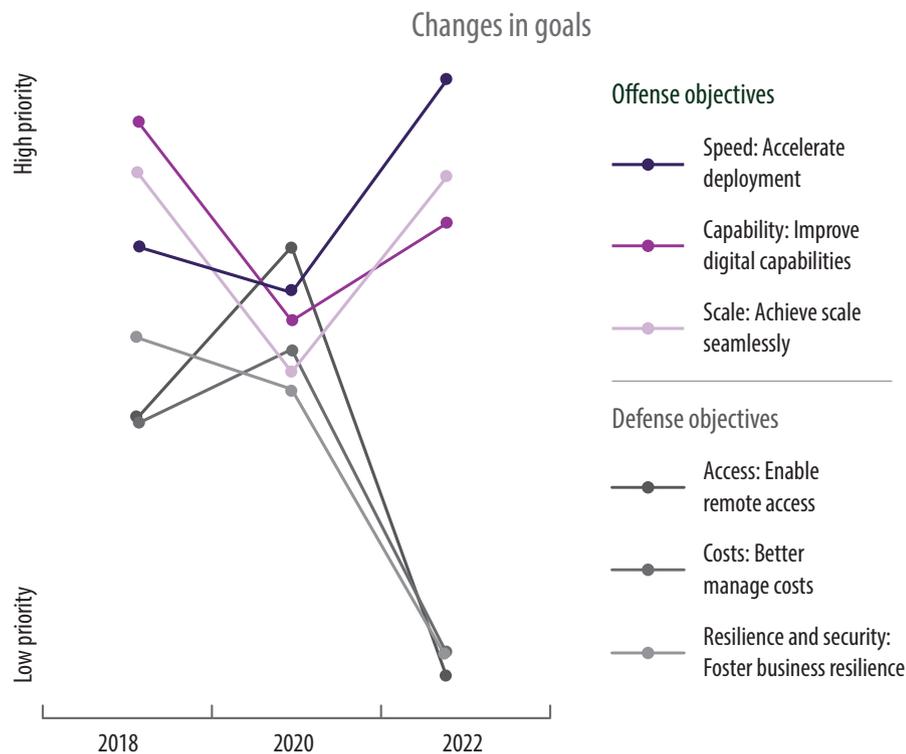
The utilities sector is typically well equipped to handle emergencies such as natural disasters, cyber incidents and power outages. Despite these elaborate contingency plans, like other industries, utility firms were unprepared for the pandemic outbreak. As a response to the crisis, they shifted their efforts to ensure customer service needs were met, and their network infrastructure could handle changes in load patterns.

Over time, the change in cloud adoption goals results in a bow tie model that plots a decline in defensive strategies and a rise in offensive priorities.

Our study revealed that for every month of development time saved by cloud adoption, year-over-year profits would increase. Similarly, increasing automation in the cloud by 10% generated increased profits. And, as confidence in the cloud increases, enterprises also will find new revenue sources.

The utilities cluster’s priorities follow the same path as the overall industry model for the most part. With its current trajectory, it appears that this industry cluster is on course to faster cloud deployments to enable future growth opportunities.

Now that utilities have their defensive priorities under control, they will work toward more offensive cloud strategies that advance their digital transformation and enhance overall agility.



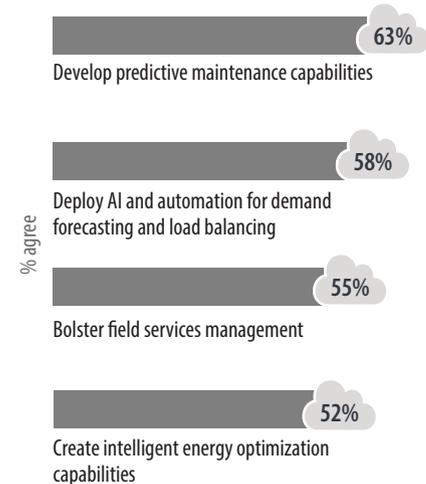


Emerging use cases for cloud

The utilities cluster has compelling reasons for cloud use. They rely on cloud technology to develop predictive maintenance capabilities and improve field services management. Some utilities employ drones to increase efficiency and provide a safer alternative to risky manual inspections. And in some novel cases, drones and geographic information systems can guide decisions around vegetation management and disaster recovery. Through deep learning algorithms, systems can be trained to identify and predict failures without interrupting operations automatically.

Another important use case is the deployment of AI and automation to facilitate demand forecasting and load balancing. Using machine learning, utility companies are able to forecast supply and demand and optimize the dispatch of energy in real time. In the U.K., Google's DeepMind has teamed up with National Grid to predict supply and demand peaks in an attempt to reduce national energy usage by 10%.¹

Top ranked use cases



“Global enterprises have a need to move at speed to achieve their defined and evolving sustainability objectives as they move toward a circular economy. Historically, enterprises have driven economic growth through cloud, but sustainability is becoming an imperative. Evidence shows that moving to the public cloud can reduce CO2 emissions and enable companies to deliver new possibilities in a sustainable way.”

Lax Gopisetty

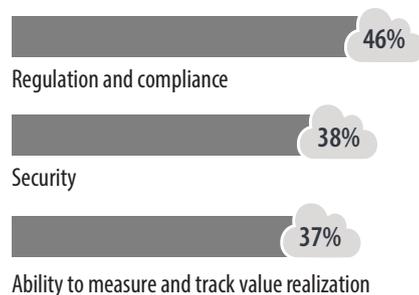
Vice President, Global Practice Head –
Microsoft Business Applications &
Digital Workplace Services, Infosys



Industry concerns about cloud

Not surprisingly, utility respondents tabbed regulatory compliance as their top concern with regard to using cloud computing. The intersection of highly regulated business and rapidly evolving technologies is a place where compliance rules frequently change.

Top 3 concerns



Utilities firms are most concerned about security next. The threat landscape for these companies has also expanded as cybercriminals now target them for profit. In May 2019, Baltimore, Maryland, refused to pay demands for a ransomware attack that disabled their city's computers for weeks. The city suffered an estimated \$18.2 million in damages as a result, which was more than the ransom demand.²

Their third top concern is measuring and tracking value realization from cloud migration. As an industry that depends considerably on legacy systems, there is substantial effort

involved in selecting the right cloud approach and aligning their internal systems and processes to ensure the business's smooth functioning. Measuring and tracking value realization can be challenging on top of this.

Conclusion

Utilities move cautiously toward the cloud. But have steadily embraced cloud for non-core business functions and have a good start on using cloud for analytics. That said, utility respondents in the Cloud Radar survey have been slow to embrace leading edge cloud capabilities. How they will address the newly emerging value of cloud for business growth and new business opportunities remains to be seen.

That said, specifically tailored cloud solutions addressing power distribution, load balancing and data management clearly have appeal to utilities. As they continue to focus on offensive cloud priorities, this industry will use cloud solutions to bolster predictive maintenance, field service management, AI and automation efforts to create a more dynamic and effective enterprise.

As their business ecosystems grow more complex, utilities are turning to cloud to find new solutions.

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2. The energy sector threat: How to address cybersecurity vulnerabilities, Tucker Bailey, Adam Maruyama, and Daniel Wallace, mckinsey.com, November 2020.

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