TATA CONSULTANCY SERVICES

Cloud Adoption and UK Utilities

Abstract

The utility sector is genuinely embracing the cloud, placing mission-critical applications and core business processes in data centers run by third parties. However, they are not adopting cloud technology in the same way, or even for the same reasons, or to the same extent. There is little doubt among utility companies about the potential value that cloud technology could deliver to their businesses. The challenge lies in overcoming some of the barriers that stand in the way of achieving that value. TCS partnered with Utility Week to find out by probing utilities' take-up of cloud technology, and their perceptions of the challenges and opportunities that it provides.

Introduction

In our study, key decision-makers in the utility sector were targeted, first in an online survey, and then with a follow-up telephone contact. In all, some 31 individuals from across the sector shared their insights. 16% were directors or board-level directors, 50% were functional chiefs or heads of department, 65% worked in their organization's IT division, and 85% were manager grade or more senior. They represent 19 of the largest and most significant players in the sector, drawn from across the gas, water and electricity industries. In the roll call of leading brands and businesses surveyed were names such as British Gas, Severn Trent, SSE, National Grid, Welsh Water, Centrica, EDF, First Utility and Western Power Distribution. Together, respondents contributed a unique insight into the state of cloud technology adoption in their organizations.

Cloud Adoption

The water industry is leading the way into the cloud, with no water industry respondents reporting 0% use of cloud technology, and ~25% reporting that their adoption of cloud technology is complete. Energy networks—both gas and electricity—take almost exactly the opposite standpoint, with ~23% reporting 'no' adoption of cloud technology, while ~77% reported 'partial' adoption. In between lay energy companies (generators, retailers, and vertically integrated companies), where 15% reported 'no' use of cloud technology, while ~8% reported a 'complete' migration to the cloud.

Key findings

- 83% of utilities report at least some use of cloud technology but 17% report no use at all.

- 38% of utilities report that their cloud migration is either already complete, or will be complete over the next two years. But 26% see a complete cloud migration being at least five years away, while 28% report that cloud migration 'will never be complete' in their organizations.

- According to respondents, this slow pace of adoption is often the result of the sheer complexity of the move, because of the sector's legacy systems and the need for appropriate due diligence, especially in the context of the systems' impact on critical national infrastructure.

100% of fully migrated organizations completed the transition within the past two years, while 44% expect to fully migrate within the next four years.

While utilities have historically approached the cloud and other digital technologies in moderation, TCS believes this is going to change. A fundamental shift in focus from capex-based spending to opex-based will help shift the industry towards adoption of cloud-based technologies in particular. These will help spur the rapid innovation cycles that are mandatory for the utility industry to tackle the multitude of challenges facing them.

Drivers and Benefits

In two of the three industry groupings—water companies and energy companies—cost pressure comes second to the drive to improve quality of service, reflecting the drive for customer satisfaction under way in both sectors. Only among energy network companies is cost pressure the top driver, with quality of service featuring not at all.

Whatever else cloud technology offers, the opportunity to take disparate systems running on disparate servers and mainframes, and condense them onto one scalable, low-cost and efficient cloud platform is undeniable.

Key findings

- The key drivers for cloud adoption are: cost pressure, the drive to improve a company's quality of service, and to reduce the company's infrastructure footprint through platform consolidation.

- The key benefits of cloud technology are customer relationship management, billing, supplier relationship management and people management.

- Respondents were generally clear about how cloud technology could benefit IT-specific and operational aspects of their businesses. There was less consensus on strategic and organizational issues.

Implementation and Challenges

On this issue of whether the adoption of cloud technology necessitates organizational changes, water companies were broadly unequivocal about it, with 75% expecting to make such changes, 25% unsure, and 0% responding in the negative. Among energy companies ~62% responded in the negative, and the figure was 50% among energy networks.

In the overall sector the third-placed driver is an operations-led objective rather than an overall strategic priority of the businesses—namely, the drive to reduce IT infrastructure footprint through platform consolidation. To those who would argue that the UK's traditionally conservative utility sector has simply failed to appreciate the opportunity offered by the cloud, this is a compelling rebuttal.

It is noticeable that in every instance, energy networks rated risks higher than their peers in other utility industries. There are signs that indicate an inverse correlation may be at work—energy networks use cloud computing the least.

Key findings

- The biggest risks associated with cloud technology were those related to the migration of safety-critical and mission-critical applications, and data security.

- With more than three-quarters of respondents who use cloud technology already managing two or more cloud providers, the difficulty of managing multiple suppliers was rated as 'moderate to high'.

- Respondents were concerned about the risks associated with cloud technology, especially in areas such as data security and business continuity. But these concerns were highest in utilities with the least exposure to cloud technology.

- Respondents rated the ease of building a clear ROI and business case for cloud technology at just 5.5 out of 10.

- Four out of five respondents felt that the regulatory regime had an impact on the adoption of cloud technology. By a small margin, the majority felt that the regulatory regime was an inhibitor to the adoption of cloud technology.

For utilities, the ROI of the cloud needs to be looked at from an overall totex perspective, as opposed to an opex-versus-capex perspective. Utilities need to be prepared to move to a world of not just one cloud, but multiple clouds—and a world where these multiple clouds need to interact among themselves and with on-premise applications to deliver seamless end-to-end business processes.

Debate Backs Research Findings

Utility Week and TCS hosted a roundtable debate with operational and information technology professional and strategists. Attendees represented a wide range of utility sectors, including water companies, DNOs, and energy suppliers.

Of all attendees present, the only individuals who confidently stated that their businesses had moved completely to the cloud were new entrant energy retailers, which saw themselves as "technology companies first"—not energy companies.

The views they expressed during the debate largely corroborated the findings of this research report. In particular, they emphasized that energy networks are far more reluctant to place key systems and data in the cloud. As network participants at the debate clarified, where cloud offerings can deliver cost-effectiveness in commodity IT services, they are viewed as useful. But all core operational information is considered far too sensitive to be placed in the cloud.

Conclusion

For utilities, the reality is that they will continue to operate in a hybrid world made up of on-premise and cloud-based applications. Hence the evaluation and finalization of cloud adoption strategies has to be carefully designed in conjunction with business and technology innovations occurring in the entire ecosystem. It is equally important to understand the transformation deployment and selection of cloud environment models such as IaaS, PaaS, and SaaS in conjunction with existing on-premise technology. Hence it is good practice to build the components to orchestrate the cloud today, to better adopt more compelling services as the market develops.
One way of doing this is to consider a cloud-based integration platform-as-a-service application to complement traditional EAI.

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