NAVIGATE YOUR DIGITAL TRANSFORMATION WITH CLOUD

ENERGY AND UTILITIES INDUSTRY VIEW

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INTRODUCTION

Traditionally, the E&U industry has been slow to embrace new technology trends. However, the current market environment is compelling E&U firms to digitize quickly.

The Energy and Utilities (E&U) industry contends with challenges including intense competition from nontraditional providers, rising expectations from savvy customers, a strict regulatory environment, a need to innovate and pressure to increase efficiencies. The need for digitization is felt strongest in the E&U industry.

Traditionally, the E&U industry has been slow to embrace new technology trends. However, the current market environment is compelling E&U firms to digitize quickly. Cloud computing can add significant value to collaboration, agility and speed, thereby transforming operations, customer relations and business performance.

Infosys' experience with E&U firms shows that they are conservative about cloud adoption. A host of operational and knowledge-related issues further hamper the progress on cloud programs.

Figure 1: Respondent geographies
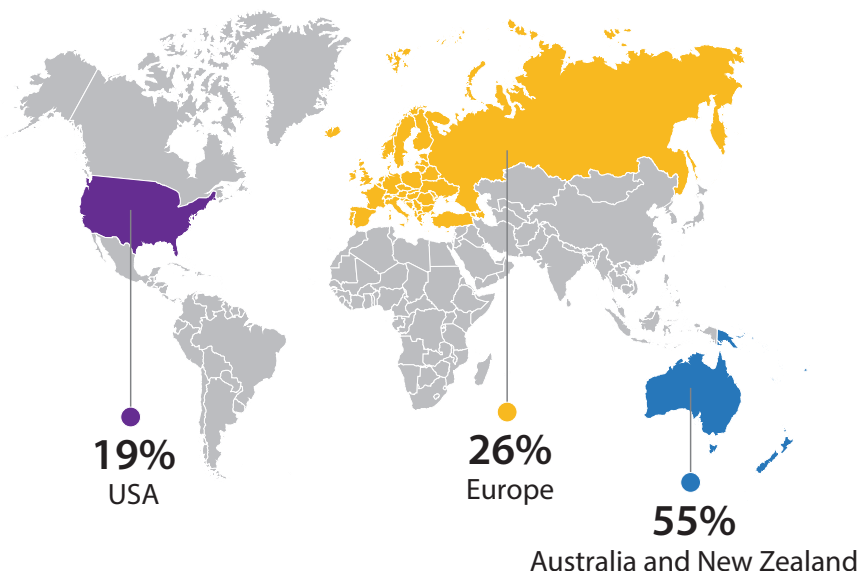
We surveyed 73 E&U executives representing firms with over US$1 billion in revenues across the United States, Europe, Australia and New Zealand (ANZ). The respondents from technology and business functions were senior executives and leaders involved in cloud initiatives.

The study aims to get an understanding of ongoing as well as future cloud initiatives, both from strategic and implementation perspectives. This report discusses the findings of the study.

19%
USA

26%
Europe

55%
Australia and New Zealand

THE CLOUD CAST

Types of enterprise players

The survey received views of respondents on the extent of cloud adoption as well as their plans for cloud programs over the next three years. We identified four types of enterprises based on the analysis of the responses.

	Torchbearers 42%	Pathfinders 22%	Defenders 25%	Aspirants 11%
What are the characteristics of this cluster?	Enterprises with high adoption of cloud across functions, and seek to be fully integrated and a cloud-first organization	Enterprises with moderate cloud adoption, and actively seek to derive more business value from the cloud	Enterprises that understand the importance of cloud, but have a siloed approach and unsure about how to derive business value from the cloud	Enterprises with low adoption of cloud across functions, and mostly have a tactical approach towards the cloud
Do they have an enterprise-wide strategy?	Yes, and it serves as a guideline	Yes, and it serves as a guideline	Yes, and it serves as a guideline	Yes, and it serves as a guideline
What drives them to adopt cloud programs?	1. Evolving customer needs 2. Reduced IT costs 3. Need for higher availability, resilience, data security	1. Need for higher availability, resilience 2. Emerging technologies 3. Data security, competitive activity	1. Reduced IT costs 2. Need for higher availability, resilience, scalability 3. Data security	1. Reduced IT costs, changing partner ecosystem 2. Emerging technologies, scalability 3. Competitive activity, data security, evolving customer needs

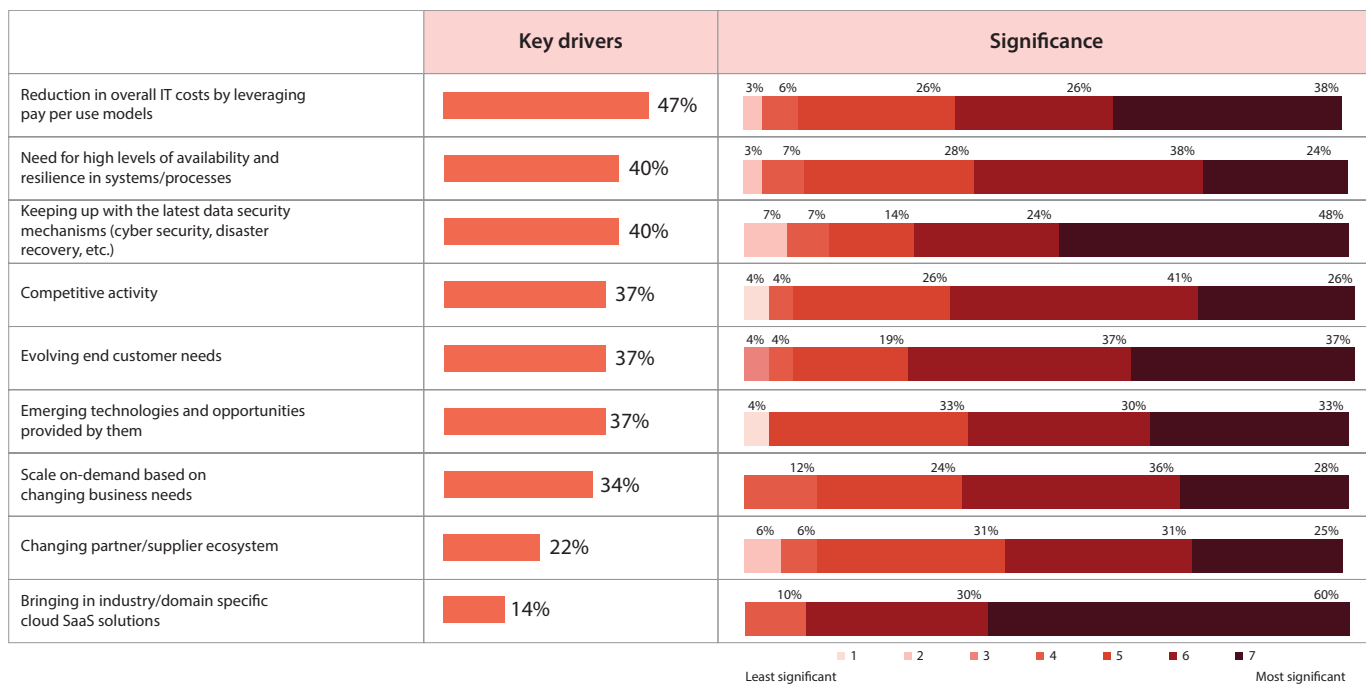|	Torchbearers 42%	Pathfinders 22%	Defenders 25%	Aspirants 11%
What are the expected outcomes from cloud programs?	1. Enhance customer experience 2. Reduce time to market 3. Enhance enterprise-wide mobility and collaboration, increase business reach	1. Standardize and integrate the technology landscape, reduce time to market 2. Enhance enterprise-wide mobility and collaboration, build cloud as a foundation, innovate to get a competitive advantage 3. Enhance customer experience, increase business reach, maximize the cloud's capabilities	1. Enhance mobility and collaboration enterprise-wide 2. Increase reach of business 3. Reduce time to market	1. Standardize and integrate the technology landscape 2. Enhance mobility and collaboration enterprise-wide 3. Innovate to get a competitive advantage, adopt new cloud-based applications to standardize business processes

Understanding the drivers and expectations from cloud initiatives

The three critical drivers leading to cloud adoption include reduced IT costs (47 percent), the need for higher-level systems of availability and resilience (40 percent), and data security (40 percent). All U.S. respondents agreed that reduced IT costs were a key driver. Lower IT costs were one of the early drivers for cloud transformation, as it could significantly reduce the cost of owning and maintaining IT infrastructure.

The drivers that affected the pace of decision-making include the need for industry-specific, cloud-based solutions, evolving end-customer demands and data security.

Figure 2: Cloud adoption drivers and their significance on decision-making

	Key drivers	Significance			
Reduction in overall IT costs by leveraging pay per use models	47%	3% 6%	26%	26%	38%
Need for high levels of availability and resilience in systems/processes	40%	3% 7%	28%	38%	24%
Keeping up with the latest data security mechanisms (cyber security, disaster recovery, etc.)	40%	7% 7% 14%	24%	48%	
Competitive activity	37%	4% 4%	26%	41%	26%
Evolving end customer needs	37%	4% 4% 19%	37%	37%	
Emerging technologies and opportunities provided by them	37%	4%	33%	30%	33%
Scale on-demand based on changing business needs	34%	12%	24%	36%	28%
Changing partner/supplier ecosystem	22%	6% 6%	31%	31%	25%
Bringing in industry/domain specific cloud SaaS solutions	14%	10%	30%	60%	

■ 1   ■ 2   ■ 3   ■ 4   ■ 5   ■ 6   ■ 7

Least significant   Most significant

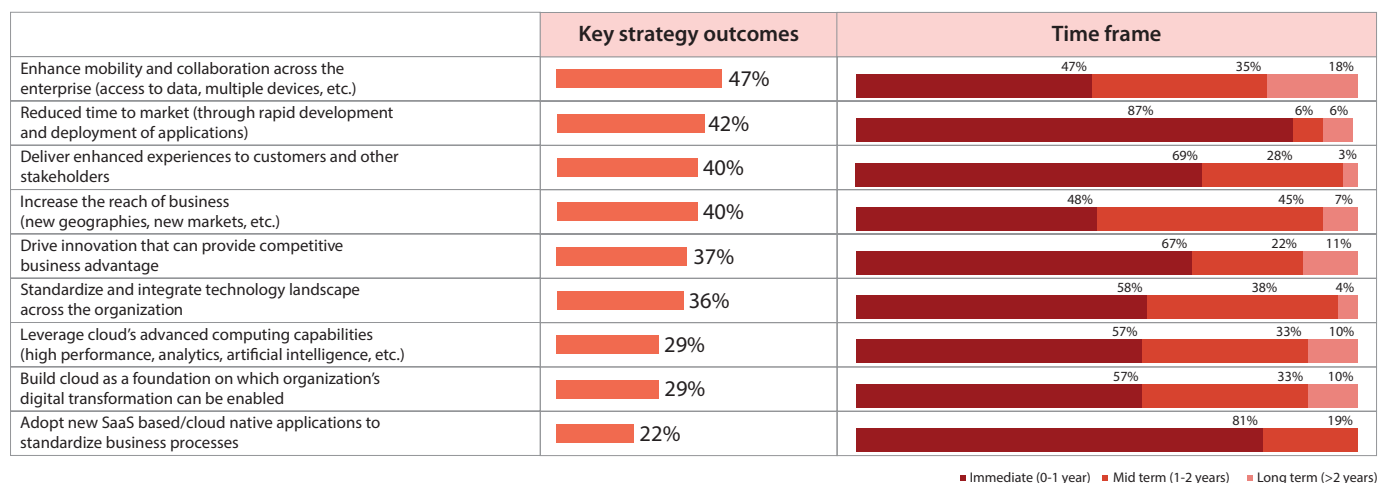The E&U industry expects these outcomes from cloud programs:

- Enhanced mobility and collaboration across the enterprise (47 percent).
- Reduced time to market (42 percent).
- Enhanced customer experience (40 percent).

- Increased business reach (40 percent).

Respondents were also consistent in prioritizing reducing time to market — they identified it both as a driver and a key expected outcome. E&U firms aim to reduce time to market within a year, and all European respondents support this

view. By having a tangible impact on speed, scalability and flexibility, cloud programs can substantially reduce time to market. Australia and New Zealand and U.S. participants intend to adopt new cloud-based applications to standardize business processes in a year.

Figure 3: Key expected outcomes and time frames for achieving them

	Key strategy outcomes	Time frame		
Enhance mobility and collaboration across the enterprise (access to data, multiple devices, etc.)	47%	47%	35%	18%
Reduced time to market (through rapid development and deployment of applications)	42%	87%	6%	6%
Deliver enhanced experiences to customers and other stakeholders	40%	69%	28%	3%
Increase the reach of business (new geographies, new markets, etc.)	40%	48%	45%	7%
Drive innovation that can provide competitive business advantage	37%	67%	22%	11%
Standardize and integrate technology landscape across the organization	36%	58%	38%	4%
Leverage cloud's advanced computing capabilities (high performance, analytics, artificial intelligence, etc.)	29%	57%	33%	10%
Build cloud as a foundation on which organization's digital transformation can be enabled	29%	57%	33%	10%
Adopt new SaaS based/cloud native applications to standardize business processes	22%	81%	19%	

■ Immediate (0-1 year) ■ Mid term (1-2 years) ■ Long term (>2 years)

The cloud journey involves keeping multiple stakeholders satisfied and engaged while learning how to steer the cloud journey through a complex IT landscape. E&U firms expressed concerns about choosing the right cloud approach, stakeholder confidence around return on investment, significant dependence

The Torchbearers cluster (62 percent) was most apprehensive about stakeholder confidence around ROI.

on external services providers and IT readiness before launching cloud initiatives. The Torchbearers cluster (62 percent) was most apprehensive

about stakeholder confidence around ROI. The primary concern of U.S. respondents was relying on external services providers (54 percent), while European respondents worried about selecting the right cloud approach (56 percent).

Figure 4: Concerns before launching cloud programs

	Total	Geography		
		ANZ	EU	USA
Stakeholder confidence around ROI	**34%**	**38%**	**28%**	**31%**
Deciding on the cloud approach to adopt	**44%**	**44%**	**56%**	**31%**
Significant reliance on external solutions providers	33%	33%	17%	54%
Availability of internal talent/skill sets to manage the transition	24%	18%	44%	15%
Alignment between IT and business on the road map	30%	41%	11%	23%
Accountability and need for a dedicated team to drive the transition	31%	31%	39%	23%
Organizational readiness and maturity of existing IT landscape	**33%**	**38%**	**28%**	**23%**
Building the strategic and operational road maps	24%	26%	22%	23%
Overcoming postmigration challenges	23%	18%	33%	23%
Concerns with respect to enterprise information security	30%	26%	39%	31%
Need to continuously upgrade to new technologies	23%	31%	6%	23%

UNDERSTANDING CLOUD IMPLEMENTATION EXPERIENCES

Maintaining service levels during the transition, aligning existing legacy systems, and accurately estimating time and costs during implementation challenge E&U firms. Transitioning legacy systems to the cloud is a complex task, and the threat of business disruption is real, making it a severe challenge for enterprises. Australia and New Zealand respondents gave equal importance to all challenges, whereas U.S. and European respondents thought maintaining current service levels was the key challenge.

Figure 5: Challenges faced during implementation

	Overall
Application refactoring/tweaking to suit cloud architectures	5.28
Tracking and monitoring systems/processes on cloud	5.37
Aligning existing legacy systems/architectures and technology environments	5.52
Resource skillsets with cloud orientation	5.15
Accurate estimation of time and financial costs involved	5.45
Pace of execution/implementation of the initiative	5.43
Deciding on the choice of tools/technologies to pick from	5.36
Maintaining current service levels during transition	5.72
Lack of high levels of clarity in execution roadmap	4.96
Absence of an internal dedicated cloud team to drive the initiative	5.15
Promoting a culture change within the organization	5.32
Collaboration/integration with external service providers/stakeholders	5.14
Navigating existing agreements	5.28

On the scale of 7

The survey responses confirm that E&U firms have been cautious in adopting cloud programs across end user productivity (60 percent), business support (57 percent) and core (56 percent) functions. Australia and New Zealand firms (70 percent) have the highest adoption rate, whereas U.S. and European firms have lower adoption rates across all functions. The proliferation of legacy systems, inadequate knowledge and expertise, and lack of readiness for large-scale transformations explain the lower adoption rates.

Figure 6: Cloud adoption across functions

	Rating	Mean
Core functions	10% 7% 20% 31% 25%	**5.27**
Business support functions	4% 17% 22% 38% 19%	**5.51**
End user productivity areas	6% 10% 21% 38% 22%	**5.46**

■ 1 ■ 2 ■ 3 ■ 4 ■ 5 ■ 6 ■ 7
Very low adoption   Very high adoption
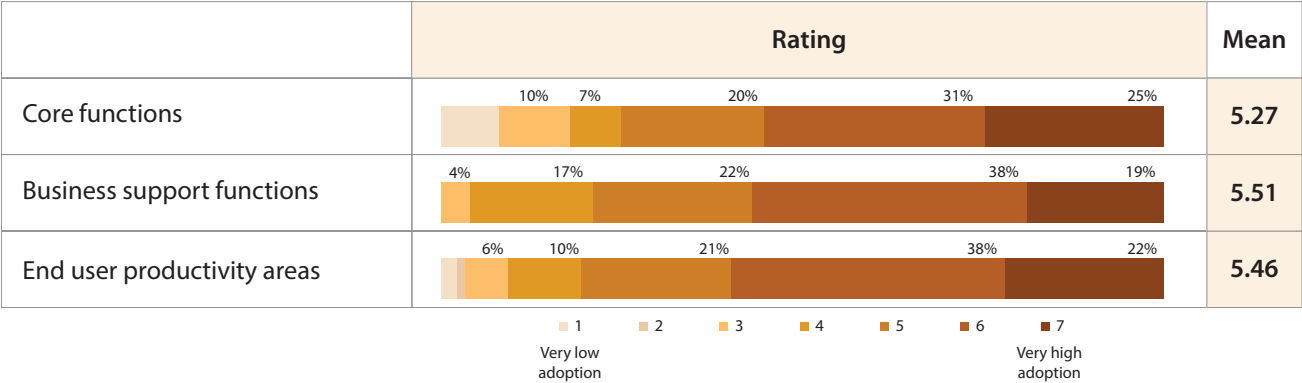
> " *Our industry needs a highly flexible cloud approach; this is mostly addressed by the private cloud model. In addition, it also provides better security to the information. One of the key reasons we decided to go for a cloud model is the interest shown in it by our customer and partner organizations. It was evident that it would be easier and more comfortable for us to be aligned to how they function.*
>
> *– SVP at an energy firm in the US* "

E&U firms use public and hybrid cloud models for workloads less than 50 percent and private cloud for workloads over 50 percent. European respondents advocate this approach. The Torchbearers cluster has a well-balanced approach, with 25 to 50 percent of their workload spread across all three cloud models.

Figure 7: Workload spread across the cloud models

Private: 14%, 14%, 12%, 60%
Public: 47%, 7%, 3%, 43%
Hybrid: 35%, 6%, 59%

■ 0-25%   ■ 25 - 50%   ■ 50 - 75%   ■ 75 - 100%
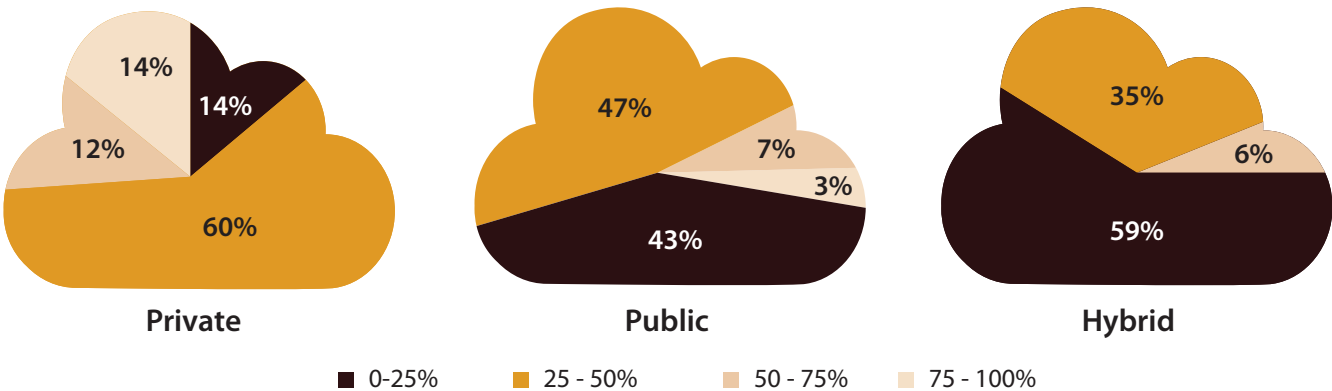
Respondents choose the public cloud model to enjoy system resilience outcomes such as higher availability and quicker upgrades to the IT landscape. Enterprises opt for the private cloud model when they seek cost, regulatory, and standardization related gains.

Only 33 percent of E&U firms have set themselves the aggressive goal of becoming a fully integrated, cloud-first organization. 46 percent of U.S. respondents and 71 percent of the Torchbearers cluster are pursuing this goal.

The cloud may begin with the boardroom, but it ends with IT leaders

The executive leaders from the business side are involved in defining the cloud requirements and deciding on the external vendors. IT executive leadership is engaged throughout the cloud life cycle. The study revealed that IT program leaders play a significant role across all stages, except during the requirements definition phase.

E&U firms use standard criteria like the effectiveness of the solution proposed (48 percent), pricing (48 percent) and brand name (42 percent) to evaluate a vendor.

New technologies will have a tangible impact on the cloud

Our survey respondents considered the "internet of things" (52 percent), big data analytics (51 percent) and artificial intelligence (49 percent) technologies to add the most value to cloud programs.

Figure 8: Technologies impacting adoption of the cloud

	Overall	Geography		
		ANZ	EU	USA
Internet of Things (IoT)	52%	53%	53%	50%
Big data analytics	51%	53%	47%	50%
Artificial Intelligence/Machine Learning	49%	50%	63%	29%
Edge computing	40%	38%	32%	57%
DevOps	33%	38%	26%	29%
Hyperconvergence	32%	35%	21%	36%
Containers and Orchestration	22%	15%	42%	14%
Open-source (microservices, APIs)	22%	20%	16%	36%

NEXT STEPS IN THE CLOUD JOURNEY FOR E&U FIRMS

The Torchbearers cluster, which makes up 42 percent of our study respondents, acts as a role model for the rest of the industry.

Infosys' study confirmed that E&U enterprises need to consider a cloud-driven future to ensure they are not left behind in the digital race.

The Torchbearers cluster, which makes up 42 percent of our study respondents, acts as a role model for the rest of the industry. Operational factors still drive cloud adoption, reflecting the maturity of the IT organization. The existing legacy systems and inadequately equipped resources further burden cloud transformation initiatives.

E&U firms must cover significant ground to catch up digitally. Given the complexities of launching cloud transformation initiatives, E&U firms are best recommended to work with capable external partners. The partners must contribute at advisory and execution levels to help devise a robust cloud strategy and deliver a seamless transformation, respectively.

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