

Intelligent Energy And Utility:

The Movement
Of Enterprise
Applications To The
Cloud



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Introduction

Disruptive technologies; environmentally conscious customers clamoring for lowered carbon emissions and clean energy programs; increased competition from nontraditional providers such as digitally native electricity retailers; stringent regulations ... the energy and utilities (E&U) industry is going through an era of unprecedented change.

New business and operating models, revamped value chains, the modernization of existing infrastructure, the dovetailing of online and offline customer journeys and the ability to harness intelligent data are just some of the priorities for enterprises in this industry.

A robust cloud strategy can act as an accelerator in digital transformation for E&U firms. Cloud computing enables simplified operations, service automation and high availability of systems, among many other benefits that make the organization more efficient. It also allows incumbents to open up in new markets quickly, provide intelligent and differentiated services, and engage meaningfully with stakeholders. More succinctly, by reducing hardware and software assets, cloud technology enables quicker scaling of resources and lower costs, and allows an enterprise to keep pace with a rapidly changing technology landscape.

According to the vice president of marketing at a European energy management corporation, the objective behind a cloud journey is to streamline front-office business processes, while transforming the firm's approach to customer service.

"With customer-centricity taking center stage, the need to build a cohesive system across geographies becomes very important. The cloud enables us to deliver enhanced experiences faster and consistently across

markets. The next step is to build on this transformation, boosting cross-selling across customer journeys."

As part of the transition to the cloud, enterprise applications come under the spotlight as firms move away from monolithic software packages and massive implementation cycles toward shorter agile implementations. In turn, this shift is expected to propel digital transformation.

Given the critical role played by enterprise applications in a business, it seemed essential to get a comprehensive idea of their movement to the cloud in this age-old industry. Enterprise applications include those that run the business, such as enterprise resource planning, customer relationship management, supply chain management and human resources management.

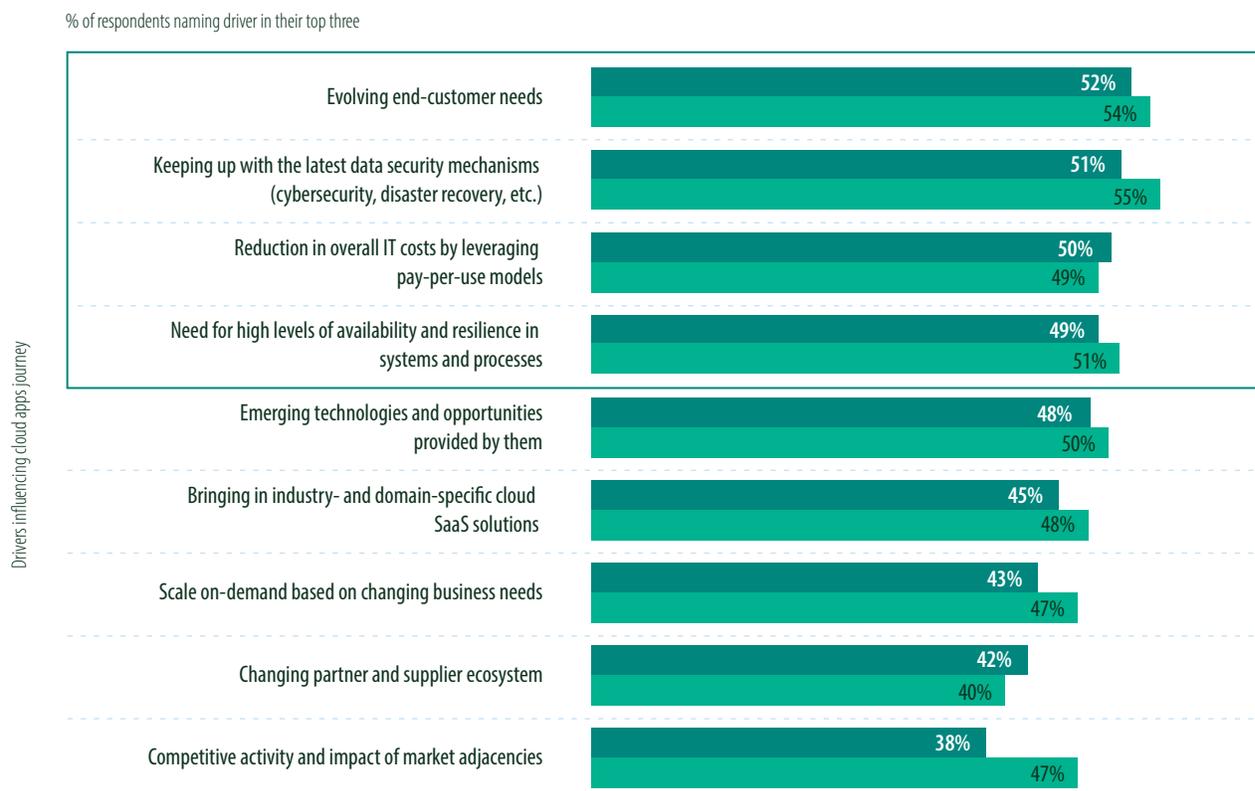
Infosys launched a study in the first quarter of this calendar year to understand the experience of application cloud transformation across 116 E&U firms from the United States, Europe, Australia and New Zealand. To understand the pulse of the market moving forward, the survey was further validated by qualitative interviews with senior executives in September and October. Respondents were senior executives involved in digital and cloud initiatives at firms with revenues exceeding \$1 billion.

The key findings are presented in this report.

The cloud: a strategic move for enterprise applications

The primary drivers that influence the cloud apps journey are both internal and external. They include a desire to meet evolving customer needs (52%), keeping pace with data security trends (51%) and reducing overall IT costs (50%) (Figure 1).

Figure 1. Evolving customer needs, data security and reduction in IT costs drive E&U firms to embark on a cloud apps journey



Source: Infosys Knowledge Institute, 2019

Buoyed by their experiences with other industries that offer transparent, real-time, on-demand, intelligent and personalized services, customers expect the same kind of treatment from E&U firms. As customer expectations continue to evolve, enterprises must seek out new ways to address them. The cloud enables new self-service business models, more automation and more effective disaster recovery, ensuring that the customer experience is as seamless as possible.

Advances in artificial intelligence and automation, digital initiatives such as digital product engineering, and the convergence of operational technology and IT have exposed the E&U enterprise network to a higher number of cyberattacks. As custodians of mission-

critical infrastructure in many countries, E&U firms must prioritize cybersecurity to ensure no disruption in services. Though it is still the subject of debate, many recent studies show that applications on the cloud are a more secure option than having them on premises. Add the fact that on-premises attacks are double the number of those experienced in the cloud,¹ and cloud technology is a more secure option for many E&U companies.

Costs are another reason that cloud apps journeys are undertaken by E&U enterprises. For instance, instead of managing 100 virtual machines, cloud automation enables an E&U incumbent to manage 250 VMs, with the cost carried by the cloud service provider. Also,

pay per use and more effective asset utilization (where downtime is kept to a minimum) allow for further efficiency savings.

“With cloud, costs are a lot easier to see,” says Joshua Biggins, partner at Infosys Consulting. “You’re paying for most of the stack with a single provider, and they can tell you what you’re paying for that service, and you can understand the allocation for each application.”

The need for high levels of availability also factored highly (49%). The cloud allows a firm to become agile and mobile, with always-on provisioning of cloud instances anywhere in the world.

“We wanted to build an agile workforce,” said one executive at a European energy conglomerate. “The sales team wanted to access everything, everywhere, and executives wanted to connect and draw analysis across various systems. Salesforce was a good option for this.”

The chief objectives — or pull factors — of cloud apps transformation include using the cloud as a foundation for digital transformation (53%), increasing business reach (49%) and exploiting the cloud’s advanced computing capabilities (49%) (Figure 2).

Figure 2. A foundation for digital transformation, increasing business reach and the advanced computing capabilities are chief objectives of a cloud apps journey



Source: Infosys Knowledge Institute, 2019

Cloud computing is relatively cheap, powerful, scalable, agile and more resilient than legacy IT. Vendors such as Salesforce, Oracle and SAP offer cloud solutions as a service, acting as scaffolding on which to build other digital technologies. By exposing APIs to a wider ecosystem, and by utilizing open source code, the cloud enables agile teams to produce high-quality software faster and less expensively.

A recent poll by IDG found that 73% of corporations are going to move almost all of their apps to software as a service (SaaS) by 2020, and 86% after 2022.² E&U companies can leverage this model to increase communication and productivity between employees, partners and field workers, thus heightening satisfaction, increasing innovation and reducing attrition. These solutions also help firms expand into new territories quickly and cheaply. On-the-go cloud solutions mean that workers aren't bound to a particular location, and effective governance is provided by the vendor, de-risking digital transformation.



Cloud computing is the way forward because it is comparatively powerful, agile, resilient, scalable and cheaper than legacy IT



The four types of enterprises

The study evaluated the maturity and direction of the application cloud program across the E&U companies surveyed. Maturity was determined by asking the following questions:

- Are the business objectives of E&U firms strategic or operational in nature?
- Do business or IT-led reasons drive E&U enterprises to the cloud?
- Are enterprises occupied with quick wins today, or are they thinking and planning ahead?
- Have E&U enterprises expanded to include the external ecosystem, or are they internally focused?

This examination led to four distinct clusters in the E&U industry (Figure 3):



Business-focused (45%):

Visionary enterprises looking at long-term business impact. Better handling of competition, enhanced stakeholder experiences, increased innovation and market reach, and keeping up with the changing ecosystem drive these firms.



IT-focused (23%):

Enterprises absorbed in technology-led operational outcomes that are not fundamentally changing their business model in response. These firms look for short-term outcomes, including reduced costs, high availability, data security, and advanced computing capabilities such as analytics and AI.



Agility-focused (10%):

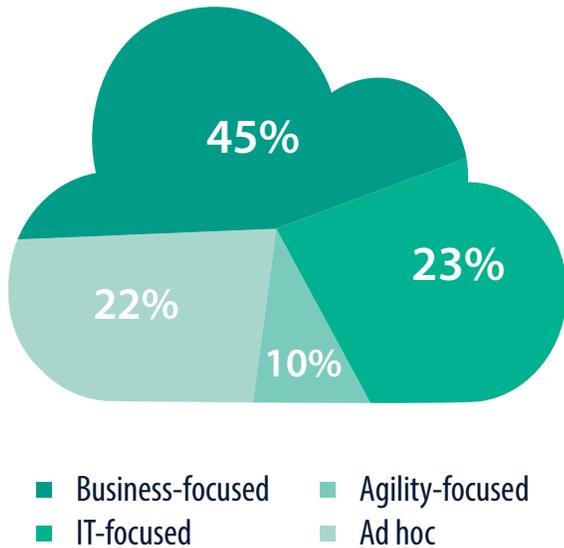
Progressive enterprises focused on improving organizational agility. These firms rely heavily on operational transformation to deliver business outcomes.



Ad hoc (22%):

Enterprises lacking a clear vision and plan for IT or business transformation. They respond to triggers in an ad hoc fashion.

Figure 3. Almost half of the respondent firms were business-focused, with more IT-focused enterprises (23%) than agility-focused enterprises (10%)



The share of agility-focused firms in the E&U industry trailed the cross-industry average by five percentage points, though the numbers of business-focused and IT-focused firms mirrored the cross-industry average. In the report — [Infosys Digital Radar 2019: Barriers and Accelerators for Digital Transformation in the Utilities Industry](#) — we found that the utilities sector was in fact just in the top half of industries in terms of digital maturity. This data indicates that the E&U industry is a mixture of firms training their sights on long-term, external-facing business impact (business-focused) and those with short-term, internal-facing horizons (IT-focused) where advanced computing capabilities determine business outcomes.

Please read our master report, [Behind the Scenes of an Intelligent Enterprise: Moving Enterprise Applications to the Cloud](#), for more insight into each cluster.

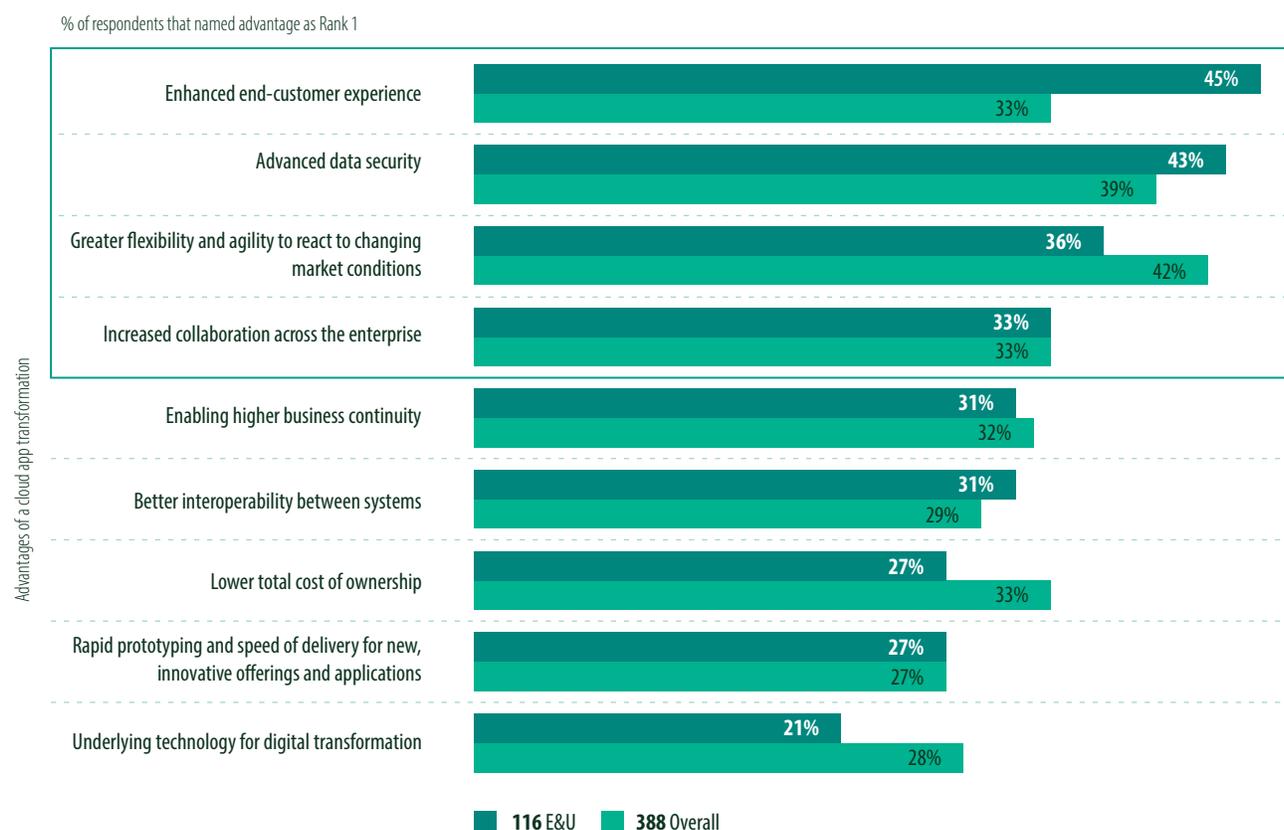
Source: Infosys Knowledge Institute, 2019



Enterprise clusters expect both strategic and operational benefits

Enhanced customer experience (45%), advanced data security (43%) and greater flexibility to respond to market conditions (36%) are the primary benefits that E&U firms expect from the cloud apps program (Figure 4). These advantages are aligned with the drivers triggering the cloud apps movement.

Figure 4. Enhanced customer experience, advanced data security and greater market flexibility are top cited advantages for cloud apps transformation



(%)	Overall	Energy and Utilities	U.S.	EU	Australia and New Zealand
Enhanced end customer experience (CX)	33	45	37	55	50
Advanced data security	39	43	41	41	50
Greater flexibility/agility to react to changing market conditions	42	36	50	27	14
Increased collaboration across the enterprise	33	33	40	50	13
Enabling higher business	32	31	29	17	67
Lower total cost of ownership (TCO)	33	27	11	47	25

Source: Infosys Knowledge Institute, 2019

One of the executives we interviewed said that the biggest advantage of a cloud apps journey was the ability to simplify and consolidate disparate systems, leading to higher business continuity, collaboration and interoperability. Here, a single solution such as that offered by SAP or Microsoft connects various business units across markets and geographies.

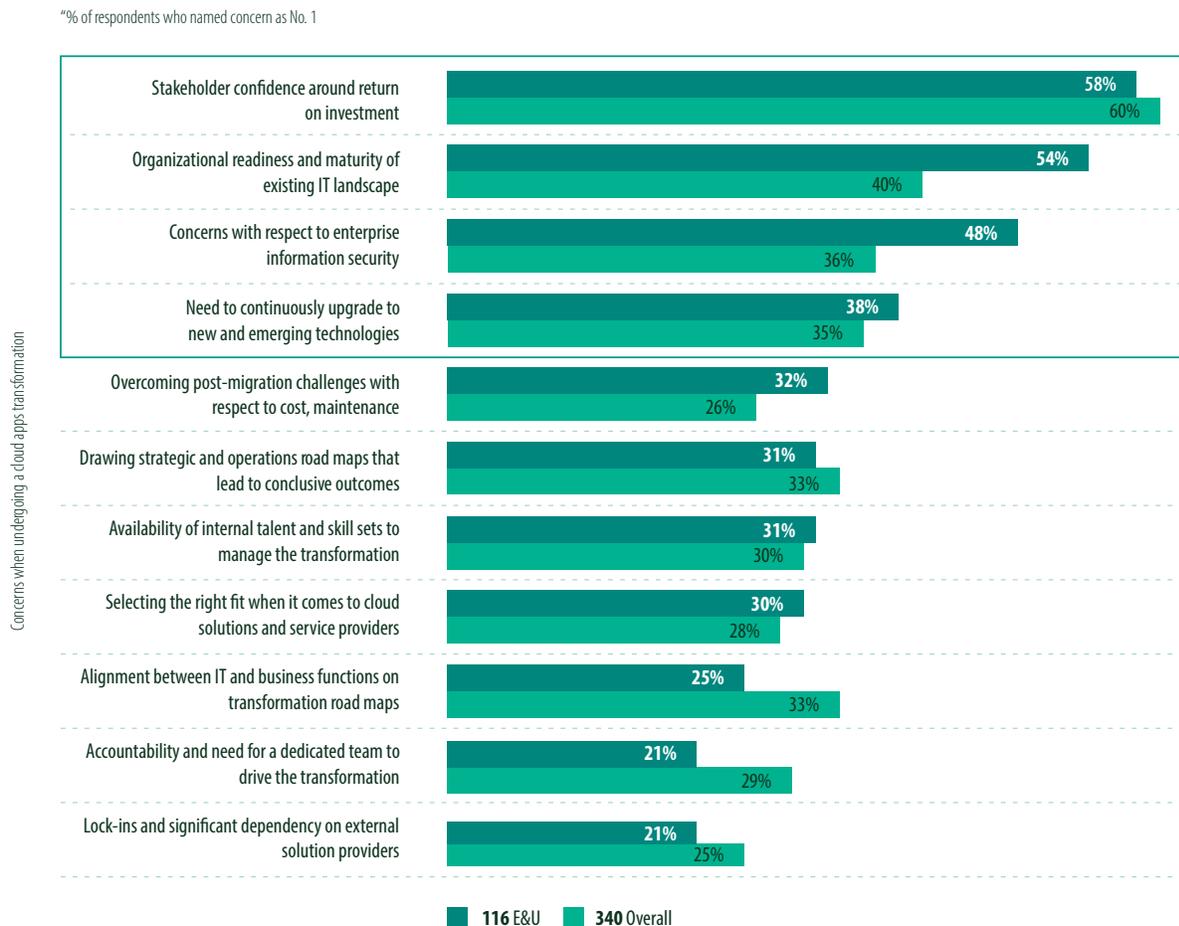
All three regions agreed that advanced data security was an important expected outcome but varied significantly

on the others. European firms (55%) and Australian and New Zealand firms (50%) looked for enhanced customer experience more than U.S. firms, perhaps indicating that these territories are actually more advanced than the U.S. in their strategic objectives. That said, U.S. firms expected greater gains in market flexibility (50%), a sign that this region is made up of more business-focused firms with an eye on long-term success.

Cloud concerns persist, characterizing large-scale programs

E&U firms worry about building stakeholder confidence by delivering a return on investment (58%). They are also unsure whether their legacy environments are ready for cloud technology (54%) and are concerned about enterprise information security (48%) (Figure 5).

Figure 5. E&U firms are apprehensive about building stakeholder confidence, organizational readiness and information security



Source: Infosys Knowledge Institute, 2019

(%)	Overall	E&U	U.S.	EU	ANZ
Stakeholder confidence around Return on Investment	60	58 ¹	58 ²	67 ¹	50 ²
Organizational readiness and maturity of existing IT landscape	40	54 ²	52 ³	57 ²	55 ¹
Concerns with respect to Enterprise information security	36	48 ³	38	56 ³	50 ²
Need to continuously upgrade to new and emerging technologies	35	38	60 ¹	33	-
Overcoming post migration challenges with respect to cost, maintenance	26	32	22	38	50 ²

Source: Infosys Knowledge Institute, 2019

Cloud transformation programs mandate high investments and consequently garner significant visibility, especially among senior leaders. Large-scale programs of this nature require ownership and direction from top management to succeed, and so delivering significant ROI deservedly becomes a key concern across business and IT groups, and across industries and regions.

Organizational readiness is a concern that crops up again and again in our research. It is understandable that firms don't want to overhaul their entire legacy footprint; working methods of the typical E&U enterprise are built around minimizing operational risks and safeguarding massive, long-lived assets.³ This reduces the appetite for experimentation, a vital component of the movement to the cloud. To ensure digital transformation progresses easily, firms must take decisive action now, setting up innovation centers and reskilling employees as a matter of urgency. DevOps approaches should also be implemented, along with automation and AI to increase the profitability of cloud solutions.

Enterprise information security was cited by the marketing lead of a European energy management multi-national as a top concern.

"As we expand the number of cloud solutions running throughout the enterprise, more vulnerabilities will open up. One small leak could sink the whole ship. However, while this is a continuous concern, we are much more confident now than before, due to increased maturity in running our cloud instances."

European firms worry the most about building stakeholder confidence (67%), while U.S. firms are most concerned about the need to continuously upgrade to newer technologies (60%).

A closer look at the cluster data shows that the IT-focused group (80%) almost unanimously sees building stakeholder confidence as a major concern. IT-focused enterprises have their sights set on internal-facing pain points. Basing business strategy on technological accomplishments, they may fear that their success is not seen clearly by business CXOs, and that their projects will face greater headwinds than those of firms that are steered by both business and IT leads as a matter of course.

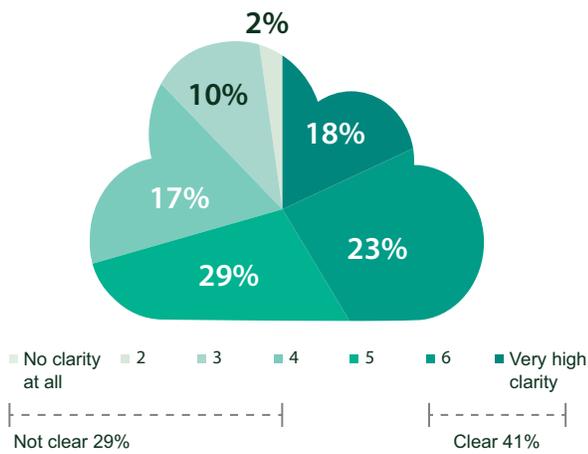
The importance of a clear strategy and road map

Game-changing initiatives such as cloud transformation cannot succeed without the support of multiple stakeholders across the organization. To buy in, stakeholders must have clarity on the initiatives and what to expect from them. In the E&U industry, only 41% of the respondents said they had clarity on the digital path, and a significant 29% said they were unclear (Figure 6) — a full five percentage points higher than the median number across industries.

align with capacity and security requirements), and have leadership involved in early stages of cloud adoption.

This research found high levels of clarity in firms where CXOs were involved in the final decision regarding cloud solutions

Figure 6. Less than half the E&U firms had clarity on digital initiatives, while almost three-tenths were unclear



Source: Infosys Knowledge Institute, 2019

Source: Infosys Knowledge Institute, 2019

Those with clarity on the digital path sought to use the cloud as a base for digital transformation (53%), increase business reach (49%), and standardize and integrate the technology landscape (47%).

Those with a keen eye on how the cloud enables cost reduction, improved efficiency and business agility also understand the long-term potential of cloud solutions. They are more willing to move into new markets and fundamentally change the cloud operating model, while upskilling employees to work in a more automated environment. They also think clearly about partnering with public cloud providers to build and manage the cloud stack, understand the challenges of legacy-application remediation (applications need to be refactored at the infrastructure and application layers to

In fact, in this research, high levels of clarity were found in firms where CXOs were more involved in defining business outcomes, in conceiving design and strategy for adoption, and in the final decision regarding cloud solutions.

Looking through the cluster lens, the business-focused group (58%) exhibited higher levels of clarity. Experience breeds clarity; the more mature a firm is in its digital transformation, the more challenges it faces. However, as firms garner more exposure in one digital technology, the more confident they are of succeeding with other initiatives. They can think about standardizing software as processes become more transparent and create new efficiencies with automation.

U.S. respondents (57%) claimed the most clarity, while Australia and New Zealand (17%) trailed significantly.

Enterprise cloud applications adoption is well underway

The study showed that E&U firms are just below the cross-industry average in actually adopting cloud applications (46% have moved all or some of their critical applications to the cloud) (Figure 7). There were also more firms in the E&U industry that still had all applications on premises (29%, compared with 24% across industries).

Figure 7. Only 46% of respondent firms have moved all or some of their enterprise applications to the cloud, with 29% still entirely on premises



	Current state of cloud transformation (%)	Overall	E&U	U.S.	EU	ANZ
	Base	853	116	54	40	22
1	Some pilots and proofs of concepts for cloud adoption are underway, but currently, all enterprise applications are still on-premises	24	29	28	33	27
2	Cloud adoption is underway for some applications and functions, but none have been completed	26	25	17	30	36
3	Cloud adoption is already complete for some enterprise applications and functions	34	28	24	28	36
4	All major enterprise applications have moved to cloud	16	18	31	10	-

Source: Infosys Knowledge Institute, 2019

This parallels the finding⁴ that the sector is only just in the top half of industries in terms of digital maturity. The three-tenths of firms that have not yet launched their cloud apps program are obviously in a wait-and-see mode, gauging whether the full promise of cloud computing will accrue to aggressive adopters. This is worrying. Innovative and technologically advanced startups with nontraditional business models are disrupting the entire E&U ecosystem, using the cloud to simplify operations and accelerate the adoption of game-changing technologies such as the “internet of

things.” New revenue streams and greater efficiencies await the 46% that have followed digitally native cloud adopters.

To survive, the laggards must evaluate their current IT portfolios to determine which applications are suited for public cloud platforms or SaaS alternatives, articulate business goals, secure buy-in from senior management, and then aggressively move toward an agile automated operating model.

Three choices for migration to the cloud: LOB, enterprise or both

E&U enterprises must also decide among cloud application approaches, which come in three forms.

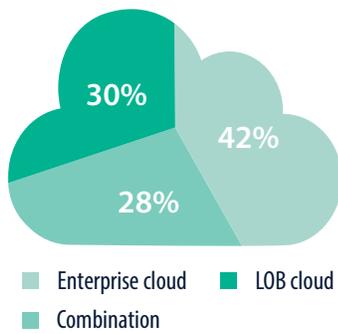
The line-of-business approach allows a business unit to independently activate a new cloud service with less involvement from the enterprise IT team. Such an approach is best suited for situations that require quick deployment and minimal disruption. Moreover, E&U enterprises can select best-in-class software such as SAP SuccessFactors or NetSuite by adopting an LOB approach.

In contrast, enterprise-level cloud approaches are complex, requiring immense efforts and ideal for long-term projects that integrate applications on a single homogeneous platform. Such efforts cause significant disruption and take a long time to complete.

A “combination” option presents a best-of-both-worlds approach.

The E&U industry shadowed overall trends in using the enterprise approach (42%) the most. Respondent firms were almost equally split between the LOB approach (30%) and the combination approach (28%) (Figure 8).

Figure 8. Enterprise cloud is the way forward for 42% of E&U firms, and even more popular in Europe (50%)



Approach adopted	Overall	E&U	U.S.	EU	Australia and New Zealand
Base	814	108	48	38	22
LOB cloud	31	31	33	26	32
Enterprise cloud	39	42	42	50	27
Combination	30	28	25	24	41

Source: Infosys Knowledge Institute, 2019

Compared with other industries, there was a great disparity (11 percentage points) in the number opting for the enterprise versus LOB approach. E&U firms are looking for robust business continuity and the flexibility to manage adverse market conditions. Though we have seen that the E&U industry is slightly more mature than others, its cloud adoption is lower, so the enterprise cloud approach is a safer bet, given it ensures all infrastructure stacks run seamlessly and perform optimally. Organizational readiness and maturity of the IT landscape were also big issues for E&U firms, and the LOB approach can lead to a host of coordination and other compatibility problems.

According to this research, the enterprise cloud model increases data security (63%), enables improved business continuity (60%) and lowers total cost of ownership (57%). Those plagued by issues caused by siloed systems that have difficulty communicating with each other often

opt for this model, as it offers standardization across the enterprise, while overcoming post-migration challenges with respect to cost and maintenance.

Enterprise cloud is powerful in situations where siloed systems have difficulty communicating with each other, offering standardization and improved business continuity

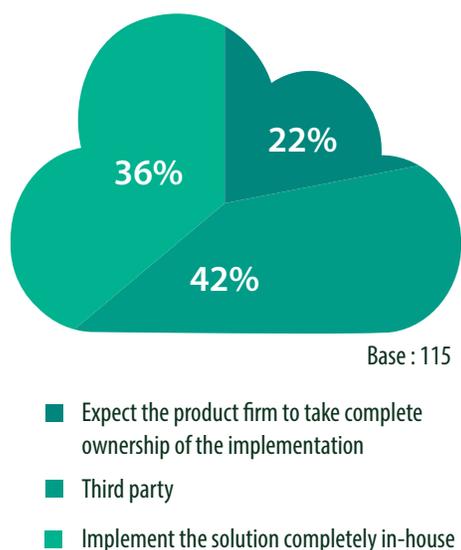
The cluster analysis revealed that business-focused firms used all three approaches almost equally. It takes a high level of maturity and experience to be able to adopt any of the methods in differing use case scenarios, which is why this cluster is best placed to execute such decisions confidently.

The implementation processes

Once the right cloud transformation approach has been identified, and the cloud solution identified (SAP, Oracle, Salesforce and so on), how do E&U firms go about actually implementing these solutions?

Whereas in the consumer, retail and logistics industries, firms were more likely to opt for in-house solutions, E&U firms were more comfortable with partners taking the helm (Figure 9).

Figure 9. E&U firms are comfortable letting a partner take the helm (42%), with 36% of firms implementing the solution in-house



Product implementation (%)	Overall	E&U	U.S.	EU	ANZ
Base	844	115	53	40	22
Third party	39	42	40	43	45
Implement the solution completely in-house	36	37	32	40	41
Expect the product firm to take complete ownership of the implementation	25	22	28	18	14

Source: Infosys Knowledge Institute, 2019

Third-party firms enable a high degree of customization, giving E&U firms the ability to meet evolving customer needs and keep pace with emerging technologies. In-house implementation also has significant benefits, such as more control over implementation costs and progress on the strategic road map.

From a cluster perspective, the business-focused group actually expects the product firm to take complete ownership of the solution, whereas the IT-focused group prefers the speed, skills transfer and higher chances of success that come with effective partnerships.⁵

Australia and New Zealand firms said they used third-party providers (45%) more than the other regions.

Preparing for the cloud challenge

E&U firms faced multiple challenges during the implementation of cloud apps programs. Whereas the more mature telecom industry found that pace of execution and promoting cultural change were the most significant challenges, E&U firms had trouble tracking and monitoring systems on the cloud (50%) and aligning legacy systems and new technology environments (50%) (Figure 10). Collaborating with external stakeholders (49%) and absence of an internal dedicated team to drive the cloud program (49%) also figured highly.

Figure 10. Diverse issues such as monitoring systems, aligning legacy systems and absence of a dedicated cloud team were the top cited pain points

Challenges (% Top 2 box)	Overall	E&U	U.S.	EU	ANZ
Base	840	115	54	40	22
Tracking and monitoring systems and processes on the cloud	51	50	70	43	18
Aligning existing legacy systems and architectures and technology environments	49	50	66	35	41
Collaboration and integration with external service providers and stakeholders	47	49	65	37	32
Absence of an internal dedicated cloud team to drive the initiative	45	49	59	38	41
Pace of execution and implementation of the initiative	48	44	57	43	18
Promoting a culture change within the organization	48	44	66	25	27
Accurate estimation of time and financial costs involved	51	44	60	35	24
Lack of high levels of clarity in the execution road map	45	44	60	33	27
Deciding on choice of tools and technologies to pick from	48	43	55	38	23
Application refactoring and tweaking to suit cloud architectures	46	37	54	28	14

Source: Infosys Knowledge Institute, 2019

Legacy systems are rampant in E&U firms, given that the industry is built on billion-dollar infrastructure projects. As the industry shakes itself out of outdated methods of working in an attempt to modernize the technology landscape, it is bound to run into issues aligning legacy systems with the new environment. Working on APIs and business process management is a good place to tackle this apprehension. Once basic technologies are in place, and the enterprise is made cloud-capable, partners can be brought in to consult on the best tools and technologies to amplify the business. During the transition, E&U firms will also contend with huge resistance to change as employees are reluctant to give up familiar ways of working.

For U.S. (66%) and Australia and New Zealand (41%) respondents, legacy system alignment was a top issue.

Some executives that we interviewed brought up the necessity of promoting a culture change within the organization, while bringing everyone up to speed in the new technology as quickly as possible. They said that it actually took a lot longer than expected, with hundreds of teams having to come together to improve resource allocation.

“Change management was a significant challenge,” said the vice president of an industrial energy management conglomerate. “Some people had to be left out of the solution as they were not equipped with the new skills we were looking for.”

Conclusion

Change is a necessity in the energy and utilities sector. An evolving energy mix, increasing storage options, and demand for clean energy and data-driven customer journeys are lighting the way for digital transformation. Cloud technology is naturally an accelerator of this shift; once firms have evaluated their IT portfolios and determined whether they will be an aggressive or opportunistic transformer, increasing adoption of cloud applications can pave the way for increased revenues, greater efficiencies and the move to a more agile way of working.

In this research, we have found that E&U firms are driven to cloud adoption by both internal and external triggers, including the desire to meet evolving customer expectations, a darkening threat landscape and the need to improve efficiencies. As we have noted, the cloud reduces costs due to its pay-as-you-go, elastic nature, with self-service on-demand provisioning ensuring that energy projects don't fall short of expectations due to long hardware procurement cycles.

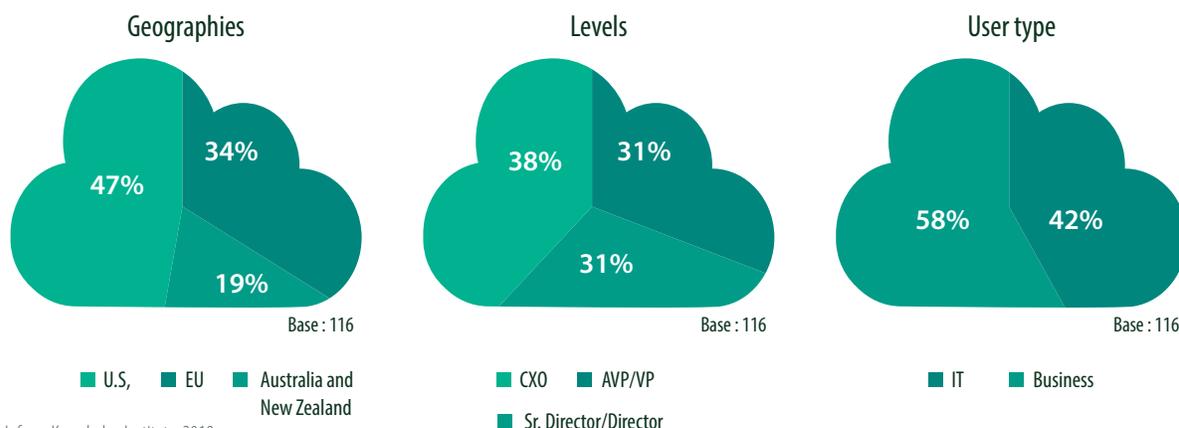
We've also posited that SaaS solutions are in fact more secure than on-premises environments; one only has to look at the success of Slack and GitHub to make the argument that these solutions are ready to run enterprise-critical workloads.

A key outtake from this research is that the E&U industry is made up of a slight majority of external-facing enterprises looking at increasing market innovation, extending business reach and solving customer pain points. These firms have a clear road map in place, and have successfully lifted and shifted almost half of their critical applications to the cloud. They are more likely to partner, have a solid understanding of cloud implementation challenges such as legacy-application remediation and have involved leadership in early stages of cloud adoption. This higher level of maturity also means that they have better risk management processes in place — important when choosing the best cloud approach to take: line-of-business cloud, enterprise cloud or hybrid.

However, at the other end, there are firms (29%) that still have all their applications hosted on in-house IT infrastructure. This is worrying. These laggards must accelerate their move to digital transformation 2.0 by prioritizing workloads for cloud transformation. If done correctly, these E&U companies can leap-frog the competition on their way to visionary status. A trusted partner such as Infosys can help in this transformation, inspiring a firm to innovate quickly, cut costs and reskill the enterprise to take advantage of the benefits of cloud technology.

Survey methodology

A total of 116 E&U senior executives and leaders involved in digital and cloud initiatives responded to this research, which took place in the first quarter of this calendar year. To understand the pulse of the market moving forward, the survey was further validated by qualitative interviews with senior executives in September and October. Only companies with revenues exceeding \$1 billion were invited to participate. Respondents hailed from the United States, Europe, Australia and New Zealand.



Source: Infosys Knowledge Institute, 2019

References

1. *Clouds are more secure than traditional IT systems –and here’s why*, SearchCloudComputing
2. *The 2017 State of the SaaS-Powered Workplace Report*, BetterCloud
3. *The Digital Utility: New challenges, capabilities, and opportunities*, McKinsey
4. *Infosys Digital Radar 2019: Barriers and Accelerators for Digital Transformation in the Utilities Industry*, IKI
5. *Ibid.*

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