

FROST & SULLIVAN



APAC HYBRID IT READINESS REPORT

A Report by Frost & Sullivan

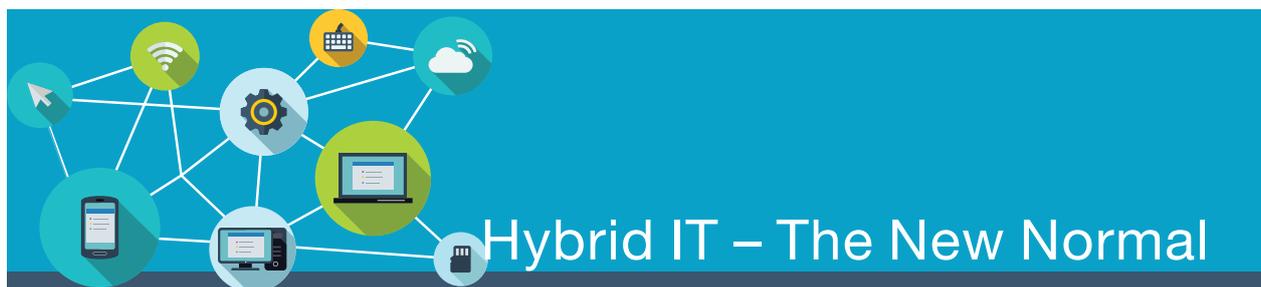
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INTRODUCTION

The advantages and benefits of adopting a cloud-based infrastructure are compelling. Moreover, in the backdrop of extensive marketing efforts by cloud vendors, enterprises globally are increasingly becoming aware of the same. Whilst enterprises are working towards developing a sound information technology (IT) transformation strategy, the benefits of both private and public cloud deployment models necessitate implementation and management of a Hybrid environment that offers an optimal way of managing workloads.

To corroborate and gain deeper end-user insights from IT decision-makers on the drivers, challenges, and key expectations in the Hybrid IT adoption journey, Frost & Sullivan conducted a Cloud User Survey across 600 medium-to-large enterprises (with an employee size greater than 250) in Asia-Pacific with regional and global organizations. Respondents from Australia, China, Hong Kong, Japan, India, and Singapore participated in detailed interactions to share insights on the IT priorities and infrastructure needs and planned the way forward. This report puts forth some key findings emerging from the end-user survey and an analysis on the way forward.



The report also highlights the paradigm shift in the IT architecture approach and the increasing awareness as well as adoption of third-party outsourcing and cloud architecture.

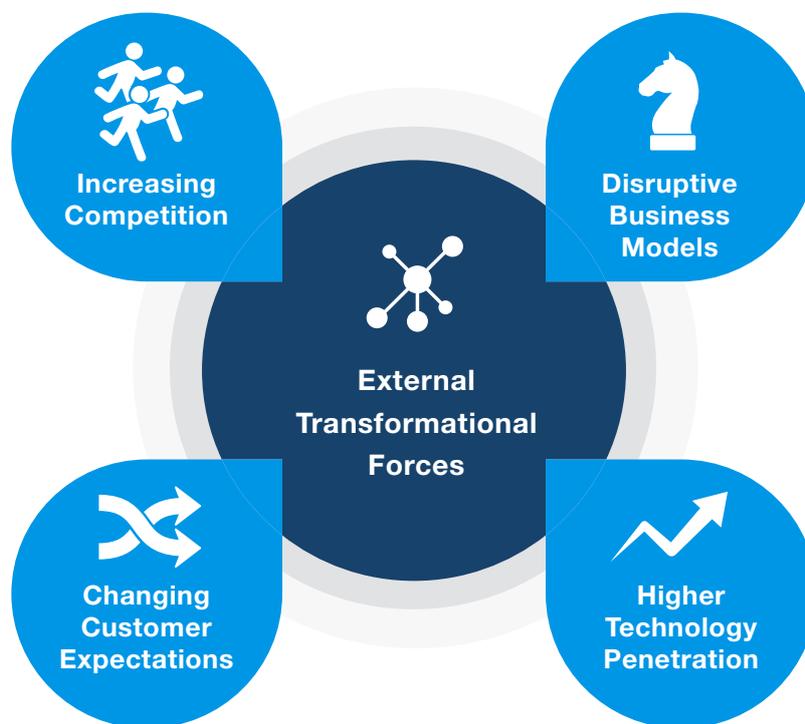
Given the enormous scale of the impact of cloud adoption on enterprise IT strategy, skill requirements, role of chief information officers (CIOs), and the information and communications technology (ICT) provider ecosystem, Frost & Sullivan shares the compelling need to build a robust Hybrid IT strategy and ensure an alignment of people, processes, and technologies that can enable effective management.

It also highlight send user testimonials, illustrating how some organizations have successfully deployed various aspects of Hybrid IT to enable/create business value and maintain technology leadership as well as the role of service provider in enabling the transition.

TRANSFORMING THE BUSINESS ENVIRONMENT

Unlike the traditional world of business (characterised by greater stability and incremental growth), the emerging world of digital business operates in an extremely volatile, complex environment with high levels of uncertainty. A number of external forces are pushing enterprises to realign and change rapidly—either to monetise emerging opportunities or derisk against business disruptions.

Figure 1: External Transformational Forces



Customers and consumers today have greater expectations than before. They expect personalised services and more instantaneous responses to their requirements augmented with a seamless brand experience. This in turn drives the need for shorter product life cycles, a shorter time to market, an integrated marketing channel approach, and a focus on customised services backed by quicker turnarounds.

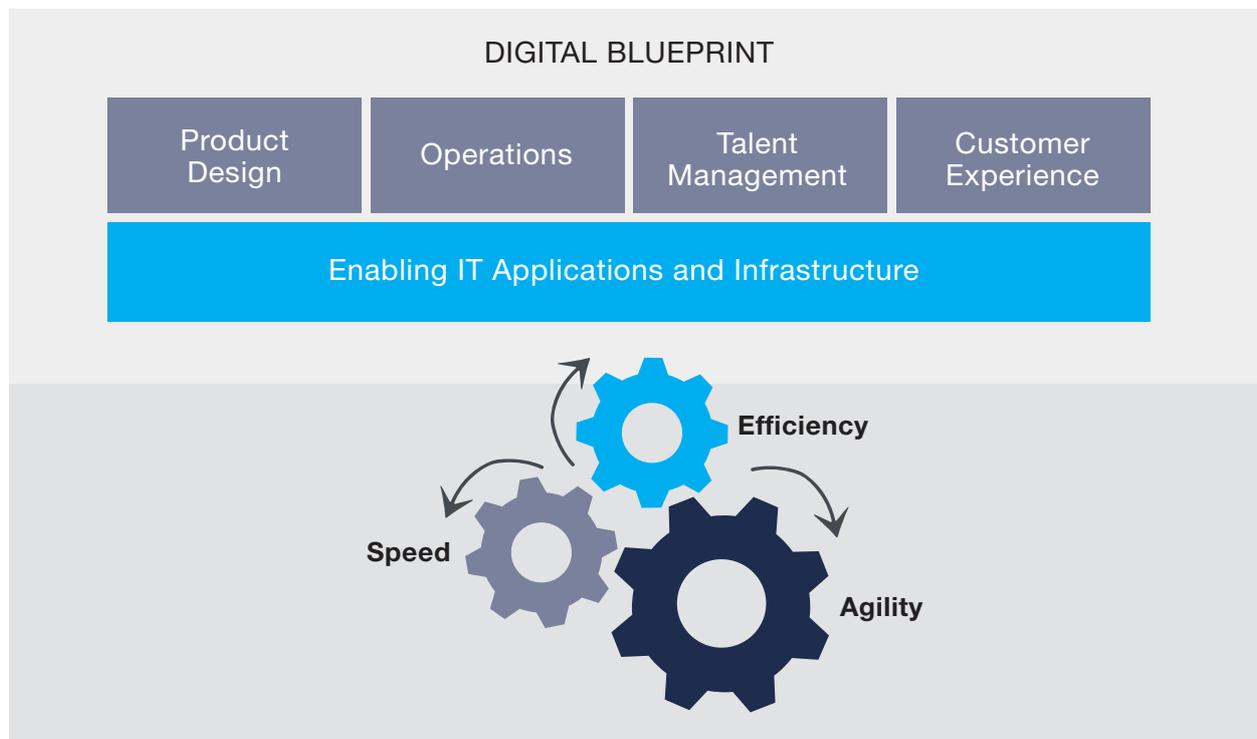
Competition is no more local or regional but global. Besides the ease of operations in new markets/geographies, access through e-commerce channels and ability to market through the social media has intensified the competitive landscape for most businesses.

The emergence of technology-enabled **business models** is disrupting traditional business ecosystems and altering them at a pace like never before. Organisations now need to keep a constant watch on potential disruptions and Mega Trends and be agile enough to quickly realign or respond to change.

Technology is a fundamental part of every business and person's daily life and underpins virtually all enterprise functions. Mobile devices, Internet of Things (IoT), analytics, and cloud applications are putting tremendous pressure on organisations to revise customer strategies, business models, and operational processes. Gathering and analysing large volumes of data are critical to the success of any enterprise.

Enterprises thus need to move and adapt at a faster pace today to survive and succeed. Business-to-business (B2B) and business-to-consumer (B2C) companies need to create a culture, adopt systems, and implement processes that enable them to work towards creating a digital blueprint across business functions, thereby facilitating speed, efficiency, agility, and innovation.

Figure 2: Digital Transformation



However, digital transformation is not a one-time initiative but a constant evolution process. As most businesses work towards developing their digital capabilities, IT teams are rapidly gearing up to play the role of business partners and provide technology through leadership.

PARADIGM SHIFT IN THE ROLE OF IT

A sense of urgency is being felt as organisations face the consequences of digital transformation. From an IT perspective, it is creating an era of unprecedented changes. The IT function is now partnering with the business to enable the achievement of business objectives, provide a technology framework to ensure compliance and governance, and maximise the opportunities offered by digital technologies. The APAC end-user survey reinforces this, as the strategic priorities for IT shared by end users clearly mark the shift from “keeping the lights on” towards business outcomes.

Figure 3: Strategic Priorities for IT



Source: Frost & Sullivan - CenturyLink APAC End User Survey

The role is thus evolving from an operational to a more strategic one with an expected ability to offer guidance across business units, helping them define, develop, and deploy innovative digital business applications. To provide the competitive advantage, IT organisations will need to be early adopters of new technologies and invest in infrastructure enabling their implementation, governance, and support.

Successful IT teams will thereby create a data-centric philosophy and build a culture that enables continuous evaluation and aligning of strategic parameters and resources to respond to exceptionally a dynamic and unpredictable environment.

RISE OF HYBRID IT

Cloud is no longer a discussion of the future. It has proved to be the most compelling solution, addressing the need for adopting new applications and scaling up infrastructure whilst operating within capital expenditure constraints and capacity limitation. Most enterprises today seek to augment internal IT architecture with some form of cloud-based deployments.

Whilst the benefits offered by public cloud architectures are attractive for most organisations and there are companies willing to host their workloads in third-party data centres, there are also companies that intend to retain full ownership and control of the IT infrastructure.

Figure 4: Parameters for consideration



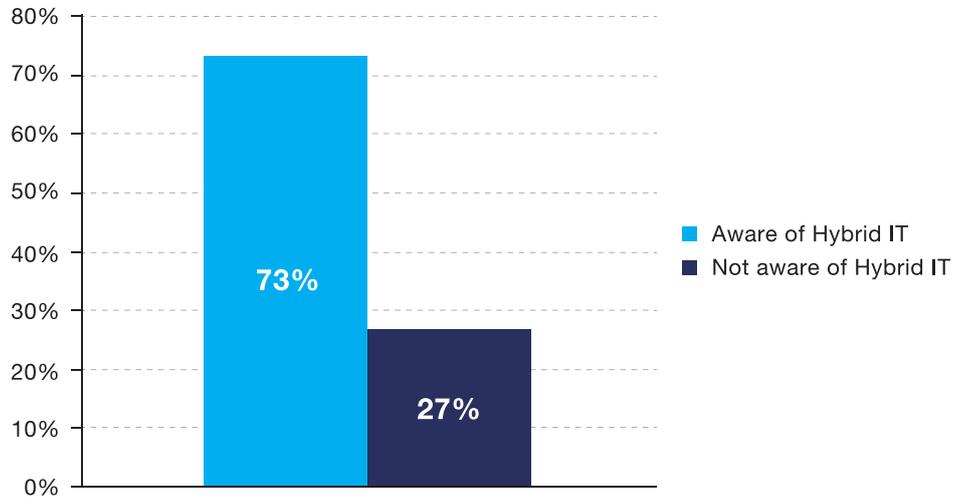
Thus, to create an IT environment that offers the optimal infrastructure environment, optimises IT investments, and accommodates a variety of workloads, enterprises are deploying a hybrid IT infrastructure and services architecture.

Hybrid IT is expected to be the optimal IT deployment model, ensuring the right mix of private cloud, public cloud, and traditional IT infrastructure, which is unique to each organisation. Hence, a large number of enterprises are expected to integrate different infrastructures from multiple providers under a single, common management platform.

As the Hybrid IT environment is based on the distinctive needs of an organisation, the best fit architecture could vary extensively. The mix of on-premise, off-premise, managed, and outsourced workloads is contextual, making the Hybrid IT architecture unique.

However, the APAC end-user survey validated the high levels of awareness on the Hybrid IT model across countries. 73% of the respondents were aware of the Hybrid IT deployment model.

Figure 5: APAC - Hybrid IT awareness level



Source: Frost & Sullivan - CenturyLink APAC End User Survey

CenturyLink includes 4 key elements to define the Hybrid IT landscape:

1. Is a **strategic approach**.
2. Improves the **alignment** between IT services and business objectives.
3. It is a **mix of physical and virtual infrastructure** services.
4. Hosted in both **on- and off-premise** environments.



Increasing awareness regarding the model across enterprises; outsourcing of data centre, security, network, and application services to third-party service providers; and deployments in on-premise and off-premise models establish the dominance of the Hybrid IT architecture and its prevalence in times to come.

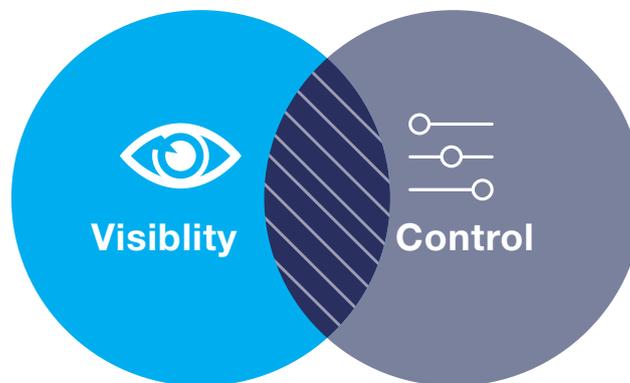
MANAGING THE HYBRID IT ENVIRONMENT



As hybrid clouds become an enterprise standard, IT requires broad visibility across the complete hybrid environment, as well as the ability to perform a wide variety of management tasks to better control and optimise the environment.

To accommodate a variety of workloads and applications, enterprises are deploying heterogeneous IT infrastructures and services, also resulting in complex IT environments to be managed. IT teams need the ability to integrate cloud architectures with a traditional environment in a way that enables seamless migration and data sharing, whilst maintaining complete visibility and control across cloud and on-premise environments. There will be an increasing need to manage a plethora of activities, including resource deployments, billing and chargeback, monitoring of metrics such as usage, outage, and threshold limits.

Figure 6: Elements of Effective Hybrid IT Management

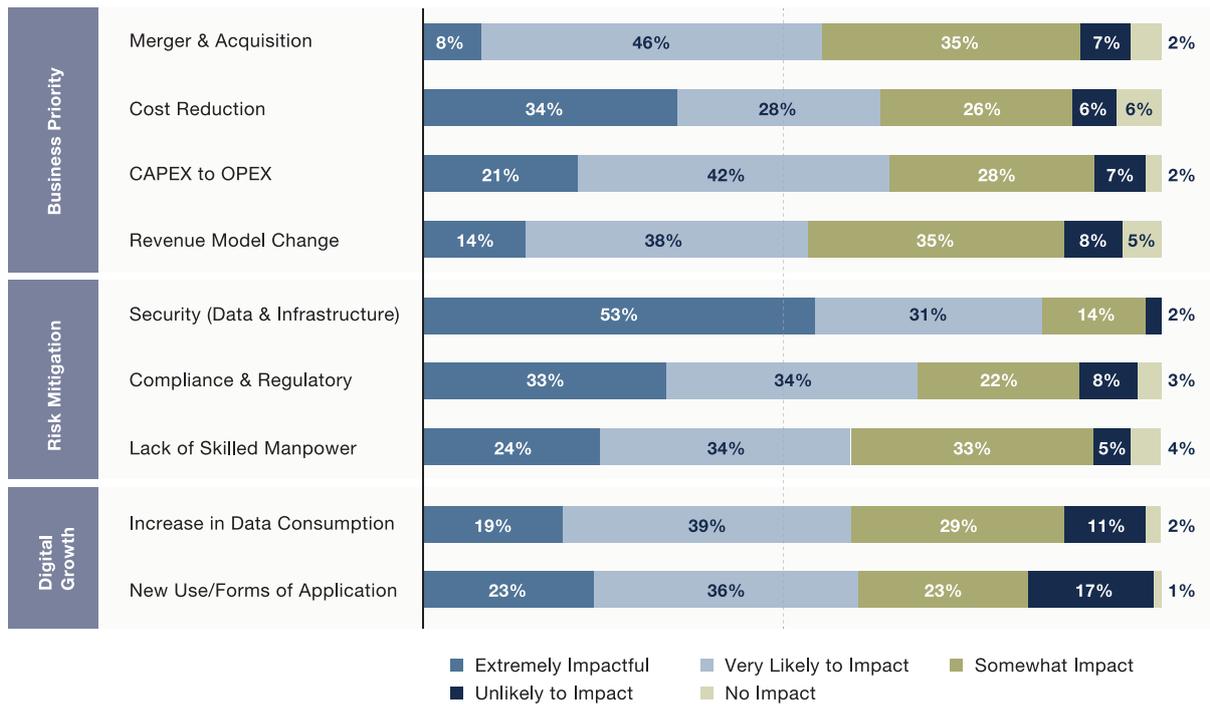


In addition to providing visibility across the complete hybrid environment, infrastructure-neutral management platforms offer the ability to control elements such as:

- Deployment of new infrastructure
- Creation of standard deployment templates
- Changes to resource sizes or network bandwidth allocations
- Definition of identity and access management or other security features
- Creation of chargeback reports by business unit or department
- Destruction of infrastructure that is no longer needed

Irrespective of the scale of the IT team, enterprises will not have all the skills, knowledge, and resources to implement and manage this complex IT environment management strategy. Third-party managed services thus continue to gain popularity amongst enterprises as a means to reduce complexity and gain expert support as they manage their IT environments.

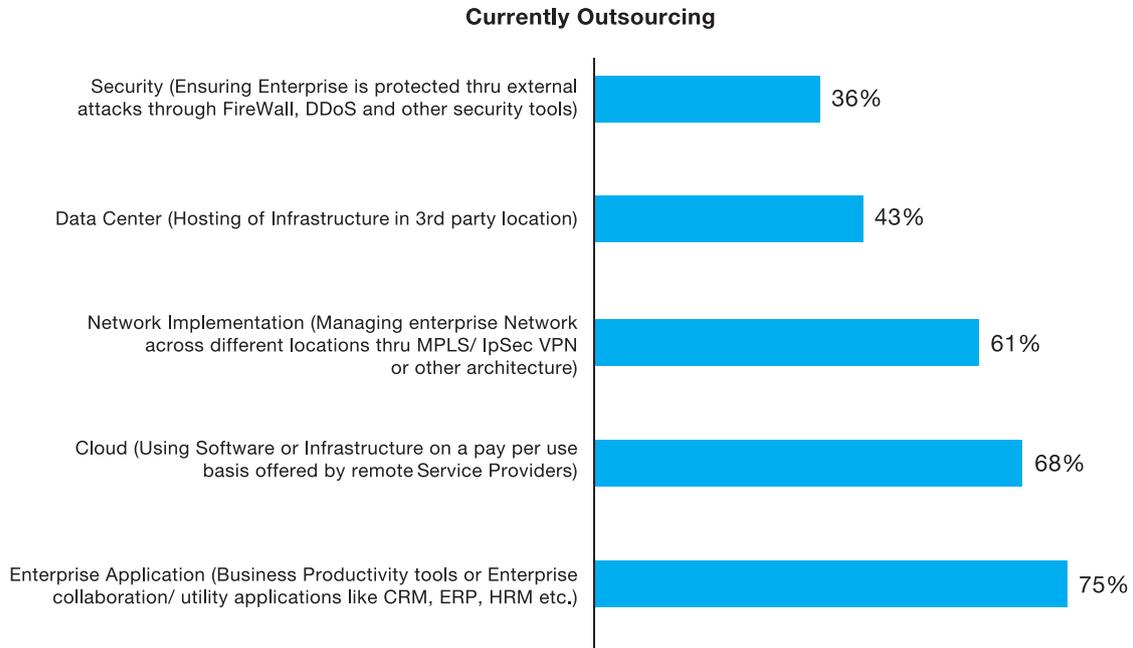
Drivers: Outsourcing to Service Providers 1



Source: Frost & Sullivan - CenturyLink APAC End User Survey

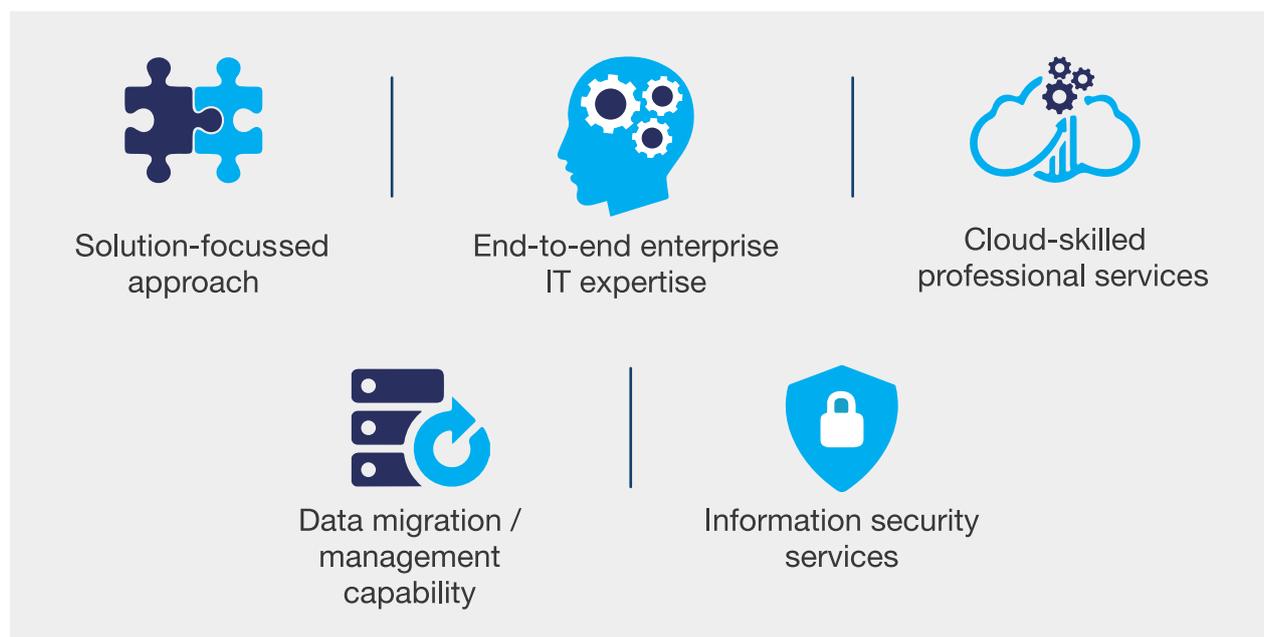
Frost & Sullivan’s APAC End-User Survey shows significant outsourcing of IT services to third-party managed services. Managed services across data centres, network, security, and applications are being witnessed across countries and industry verticals in the region.

Infrastructure Management Outsourcing



Source: Frost & Sullivan - CenturyLink APAC End User Survey

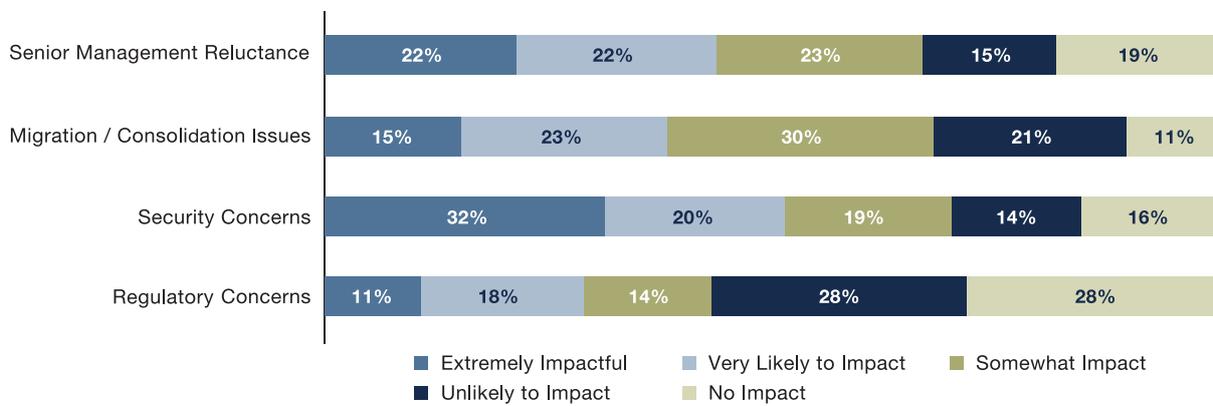
Whilst it is essential to deploy best-in-class and best fit solutions, it is equally crucial to identify the right partner as a service provider. The service provider must be able to manage a unified view of the hybrid IT infrastructure, leveraging:



SECURITY-PERCEIVED RISK AND THE WAY FORWARD

Organisations are rapidly gaining cloud experience and awareness on the security solutions available to them. In parallel, to accelerate business growth, attentiveness to security practices of cloud products and service providers has deepened. However, the APAC survey highlights the perceived risk attributed to an assortment of threat vectors, vulnerabilities, and security operations, still being viewed as one of the biggest challenges to Hybrid IT adoption.

Perceived Challenges: Hybrid IT adoption 1



Source: Frost & Sullivan - CenturyLink APAC End User Survey

Enterprise IT infrastructure is rapidly growing across on-premise and off-premise cloud data centre environments. With this movement to Hybrid IT environments, a principal IT responsibility now revolves around optimising workload placement along the dimensions of performance (e.g., transaction speed, reliability, and agility) and cost.

Cloud environments are different by nature, demanding different authorisation approaches than traditional on-premise environments and ensuring monitoring of legacy and on-cloud application architecture. This networked world relying on Internet connectivity, multi-tenancy, open source plug-ins, along with a “Bring your own device” (BYOD) and “bring your own application” environment (loud apps for business purposes) in turn creates a gamut of vulnerabilities, risking enterprise data.

Thus, IT now has the added responsibility to integrate the sprawling security technologies and practices into the dynamic environments and deployment models. This integration is not easy, as the same dimensions—performance (in security terms: do not impede business operations) and cost (do not spend more than what is essential)—remain omnipresent whilst security efficacy is expected simultaneously.



Source: Frost & Sullivan - CenturyLink APAC End User Survey

Data are critical to enterprises; monitoring access permissions and protecting the data will continue to be of prime importance. Whilst enterprises will need to make continual investments in security, moving the data into the cloud, enterprises will lose some capabilities to govern their own data sets. Managing security thus demands an all-inclusive approach of technology, people, and policy. Enterprises cannot train personnel to optimise the use all security capabilities at their disposal or manage the security policies from a holistic perspective. There is thus a need to remodel the security landscape; and there will always be room for improvement in security efficacy through design. Enterprises are thus increasingly relying on service providers to guarantee the safety of their data.

CENTURYLINK: ENABLING THE HYBRID IT ENVIRONMENT

CenturyLink is a leading global Hybrid IT provider that powers 98 percent of Fortune 500 companies. Businesses can turn to a single, trusted provider for public and private cloud infrastructure, managed services, and colocation, connected by a global network across 85 countries. CenturyLink Cloud delivers enterprise-class control, agility, scalability, and security.

CenturyLink covers a vast spectrum of cloud solutions, including infrastructure services, cloud management, Platform as a Service (PaaS), and managed services. With the availability of public cloud, private cloud, managed services, and network connectivity from a single provider, CenturyLink can provide enterprises with an end-to-end managed Hybrid IT solution.

The company's public cloud solutions feature advanced self-service automation and rapid feature innovation. Its private cloud solution delivers a range of services from dedicated hardware and physical isolation to enterprise-level security and service-level agreements. Leveraging these advantages, CenturyLink can offer greater agility for enterprises across a broad range of workloads, from mission-critical business applications to application development and testing. It also offers security solutions to ensure compliance; and as a global service provider with a highly distributed infrastructure footprint, it does not have a single point of failure.

To back up its cloud service delivery, CenturyLink has also invested in its hosting capabilities with more than 60 data centres around the globe. CenturyLink has rapidly expanded its cloud capacity and kept pricing competitive. Especially over the past decade, CenturyLink has acquired companies to enhance their cloud capabilities. More recent acquisitions include that of ElasticBox to expand their multi-cloud deployment and management capabilities by ensuring that its Hybrid IT vision is not just on-premise and off-premise but includes other third parties as well.

END USER PERSPECTIVE: PARTNERING IN THE HYBRID IT TRANSFORMATION JOURNEY

Customer Testimonials

MINDTREE

Raghavendra Gopalakrishna,
Head of Global Programs,
Mindtree

CenturyLink worked with Mindtree to architect an optimal performing Hybrid IT solution configuration for their primary production environment in Singapore, and Disaster Recovery (DR) site in Hong Kong.

“CenturyLink has proven to be an outstanding strategic provider partner. They worked closely with us to ensure we offer our customers a consistent and world-class level of service. With their help, Mindtree continues to expand our business to other global customers.”

SAVE THE CHILDREN INTERNATIONAL

Graham Kent,
Head of Global IT,
Save the Children International

CenturyLink offered Save the Children unmatched security and data sovereignty compliance for fundraising needs as well as provide a team that addresses any concerns in real-time.

“When it comes to data protection, I am completely risk averse and I needed to be absolutely happy that whatever system we chose would offer the best security and safety because much of our data is, of course, highly sensitive. Partnering with CenturyLink means that our staff have high levels of reliability wherever they are in the world,”

NIGHTINGALE

Ijaaz Ullah,
VP, Information Technology and Privacy Officer,
Nightingale

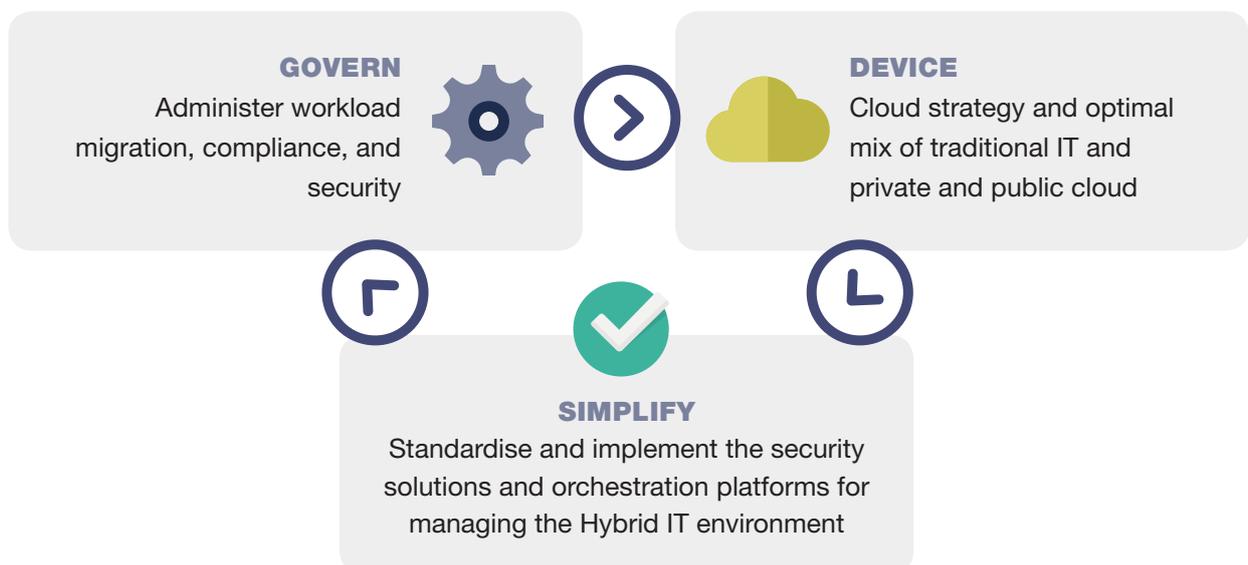
Working with CenturyLink allowed Nightingale to take advantage of automation through rapid scale in multiple locations. The CenturyLink relationship enabled a reduction in time to market from months to weeks.

“We needed a platform that we could readily add capability to, and that would have an API that other devices could connect with. We build something once and reuse it multiple times. For Nightingale, the priority was on-demand scale, and the ability to make decisions about service delivery in different regions without massive capital investments.”

THE LAST WORD

<p>The Hybrid IT environment is here to stay</p>	<p>Hybrid IT leverages both on-premise and cloud environments to provide enterprises with optimum benefits. The advantages are clear and provide the best solution for managing workloads that have specific security or compliance requirements with workloads that have large variances in demand.</p>
<p>Managed service providers will need to provide tailored solutions</p>	<p>A one size fits all IT strategy will not work. Digital transformation is a journey, and enterprises will be at varying stages of the maturity curve. The uniqueness of business needs will demand varying IT architectures and a solution-driven approach from service providers and technology partners.</p>
<p>A new model for security is necessary</p>	<p>As the IT infrastructure is expanding and diversifying rapidly, security will continue to be an area of focus for enterprise IT decision-makers. Besides investing in new security solutions, a Hybrid IT security model will be required for enabling enterprises to leverage their expertise, stay updated, and manage data with greater visibility and control.</p>
<p>Enterprises are looking for “How to move forward” rather than “What’s the best model”</p>	<p>For most enterprises, it is time for action. The next steps will be challenging with respect to creating a seamless unified and integrated environment with traditional and on-cloud workloads.</p>

Figure 7: Migrating to a Hybrid IT environment



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