

# AN INTELLIGENT COMPANY NEEDS AN INTELLIGENT INFRASTRUCTURE: AGILITY, CONSISTENCY, AND QUALITY DRIVE RESULTS

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## An Intelligent Company Needs an Intelligent Infrastructure: Agility, Consistency, and Quality Drive Results

### Introduction

Next-generation technologies such as IoT, edge computing, containers, software-defined networking, and AI are rapidly entering enterprise IT. IDC estimates that by 2022, 90% of all new apps will feature containers and microservices architectures and 35% of all production apps will be cloud native.

But IT infrastructure hasn't kept pace to meet the demands of modern workloads. Traditional on-premises infrastructure is fragmented, inflexible, and slow to accommodate new technologies, and is becoming a repository for technical debt that drives IT costs higher, with no benefits. For 58% of European enterprises, legacy infrastructure is the main challenge, according to IDC's 2019 *European Multicloud Survey*. This challenge is more severe for enterprises in financial services, construction, the public sector, healthcare, and professional services verticals.

CIOs need to align IT provisioning and cost structure with the business needs in a flexible and agile model. For many the obvious response is cloud. Cloud is the launchpad for innovation, aimed at propelling next-gen technologies such as containers, modern networks, and IoT. But after the initial euphoric adoption of public cloud in the past decade, adoption is becoming much more nuanced in this second wave. Cloud is becoming a two-way street and enterprises realize that reliability, cost-efficiency, and security are as important as speed, agility, and scale, especially as enterprises modernize their core workloads. Cloud is no longer seen as a panacea for legacy IT. It has evolved into a delivery mechanism that requires transformed business processes, workstreams, and culture. There is a realization that life in cloud is dynamic and not static, and it doesn't eliminate core IT principles such as robust security configurations, workflow management, and business logic.

Enterprises realize there is no one-size-fits-all cloud infrastructure. To build a sustainable, scalable, and secure IT infrastructure, CIOs need to leverage innovations across public cloud and on-premises solutions. This is making hybrid cloud and multicloud the default IT model to:

- **Support rapid innovation**, with speed and agility required for cloud-native applications
- **Maintain business continuity** (IT resilience, security, and governance and stability for existing business-critical applications); this can be achieved by developing business processes, rearchitecting applications for the cloud, and outlining monitoring and management strategies

- **Host certain key applications** that cannot be refactored due to compatibility or supportability reasons
- **Gain the agility** to sustain and support business requirements

The urgency to modernize the datacenter and to develop a competitive hybrid cloud infrastructure has never been higher.

The challenge for CIOs is not just architecting a hybrid cloud, but doing this at speed, securely, and cost efficiently. Amid growing use of multiple cloud services and platforms, enterprises find their data fragmented, with growing management complexities and limited cost transparency. For successful cloud migration, enterprise IT needs to address all these challenges and focus on workload assessment, change management, and adapting business processes,

Beyond that, they need continuous monitoring, adaptability, security, and management because life in the cloud is dynamic rather than static, and enterprises must have the technology architecture to move and even shift cloud gears as their journey progresses. More than half of organizations IDC surveyed admitted fragmentation of monitoring and management tools is their biggest pain point. Organizations that successfully navigate to a hybrid cloud as well as successfully monitoring, managing, securing, and optimizing the use of the right cloud for the right workloads will be able to speed up their time to market and build a foundation for business expansion.

### Triggers of Hybrid Cloud Infrastructure and Services

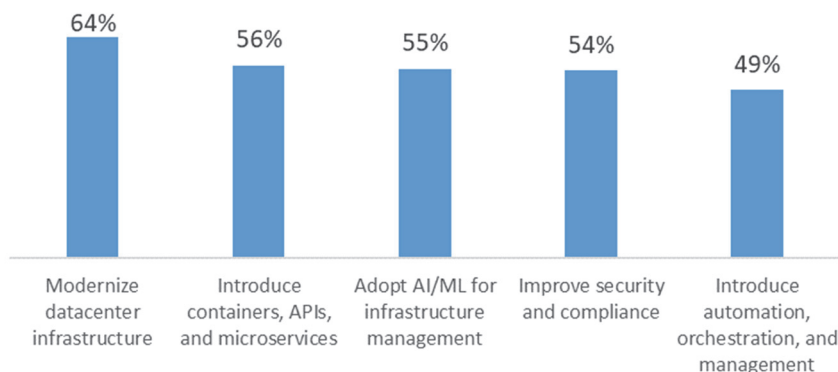
Eighty percent of IT organizations either already have implemented or plan to implement hybrid cloud. A true hybrid cloud requires integration across the control workflows or control panels across both infrastructure destinations, data source integration, and network integration.

With hybrid cloud, IT can redefine the architectural approach (cloud native, containerized), IT investment strategy (opex based), and staffing model (IT generalists), enabling the use of a broad range of cloud resources without compromising on IT control or data compliance.

A challenge associated with dated infrastructures is a heightened security risk. Just under half of organizations surveyed by IDC (49%) have suffered an unrecoverable data event in the past three years. Nearly 7 out of 10 enterprises have suffered a malware attack in the past 12 months, with over a third of the cases involving ransomware. Amid exploding data volumes, fragmented infrastructures, and the dynamic threat landscape, continuous monitoring of the environment becomes challenging. IDC's research shows that 34% of Western European CISOs are worried about insufficient management and monitoring of security and data protection technologies due to haphazard adoption of public cloud and ad hoc modernization of on-premises infrastructures. Having a standardized, continuously monitored, and integrated hybrid cloud can help organizations unify security management and even leverage automation and ML-driven anomaly detection. A unified infrastructure can eliminate the complexity of monitoring, managing, and remediating security issues.

By 2020, 60% of all enterprises will be in the process of implementing a new IT foundation as part of an organizationwide DX platform strategy.

Figure 1  
Top 5 Priorities for IT Organizations for Next 12 Months

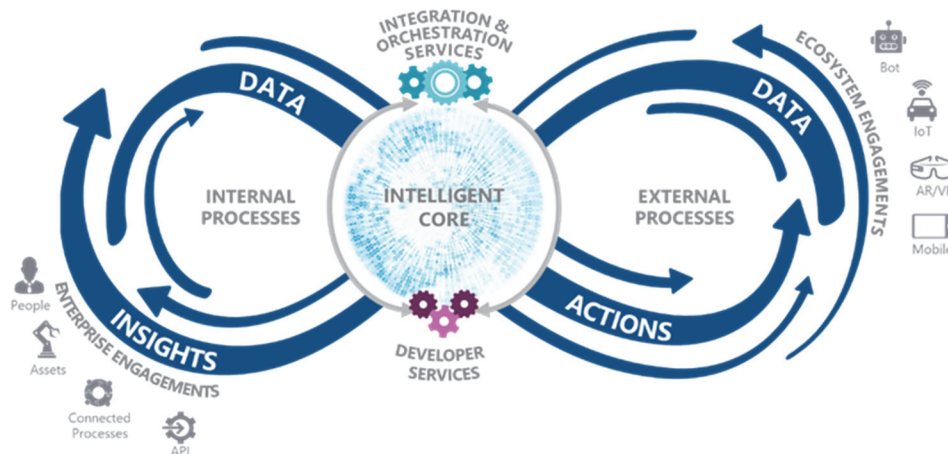


Source: IDC European Multicloud Survey, August 2019, n = 661

Strategic adoption of public cloud alongside modernization of traditional infrastructure using converged and hyperconverged systems can help reduce operational and staff expenses. These systems provide a modern, automated, software-defined platform for workloads that cannot move to the public cloud, bringing cloud-like experiences to critical workloads. Relying on cloud professional services can mitigate the risks along the cloud journey as the tools can help make cloud assessments, optimize cloud costs, and simplify the ecosystem of providers and IT-related expenses. This means decision makers do not need to be experts in infrastructures, product features, or basic IT services, and can be "IT generalists" responsible for management, procurement, and strategies. Cloud services simplify the IT complexity and enable companies to be focused on the business requirements and market trends.

Hybrid cloud services support the architectural rethinking of the datacenter to modernize it using software-defined, API-driven, cloud connected, and container- and microservices-based architectures. The hybrid cloud services also bring automation and integration to facilitate interoperability and security-first thinking.

Figure 2  
IDC's Digital Platform Architecture



Source: IDC DX Platform: A Framework for the Intelligent Core, 2018

Forward-looking companies are already leveraging hybrid cloud infrastructures.

#### *U.K. Rail Transportation Provider*

The organization had a large and complicated IT estate with over 1,000 applications, some of which were 25 years old and inefficient. It decided to embark on a transformation journey starting with a cloud adoption assessment and subsequently adopting hybrid cloud so that it can:

- Continue to use traditional on-premises infrastructure for most of its legacy technologies
- Develop new systems to make best use of the public cloud's efficiencies
- Identify obstacles when moving to hybrid cloud in its technology, skills, processes, and governance. It overcame these by:
  - Upgrading and enhancing existing technologies and skills where it represented best value for the organization
  - Identifying and selecting IaaS, PaaS, and SaaS options where they better suited the organization's strategic needs

It is also making significant changes to its operating model to address obstacles with processes and governance, as well as onboarding new suppliers to help with guidance and execution of these changes.

When evaluating the technology foundation for hybrid cloud, it had multiple criteria such as functional capabilities, architectural fit, integration, supplier ecosystem, security, vendor support and ease of doing business, economics, and skills and knowledge fit.

Following a successful implementation, the organization is measuring the success of the new IT infrastructure based on its ability to react to new innovation opportunities, cost efficiency, and ability to support short- and long-term goals.

#### Benefits of a Modern On-Premises Infrastructure for Hybrid Cloud Foundation

As demonstrated, companies reinventing IT with a hybrid-cloud-based digital platform can deliver on the key IT imperatives such as adopting emerging products and services, including containers, IoT, and cloud-native apps. They can also meet dynamic workloads' IT requirements on-demand by having a pool of infrastructure resources to choose from for the workload needs. This cloud-like flexibility and scale help organizations shift from capex-heavy IT models especially when the business grows dynamically.

Next-gen datacenter infrastructure services can even positively impact on data protection activities such as reducing data backup windows, faster data recovery, minimized outages, and timely delivery of compute resources.

#### *Business Benefits*

- Empower employees with self-provision and accelerated access to infrastructure resources of choice

- Leverage convergence and hyperconvergence to bring cloud-like scale and agility to workloads that cannot move to public cloud
- Build a foundation to use next-gen technologies such as IoT to increase revenues
- Boost confidence when it comes to mitigating outages, security vulnerabilities, and compliance with software-defined approaches to network, storage, and compute infrastructure

### *IT Benefits*

- A seamless cloud-like experience of IT across the spectrum for both cloud-native and traditional workloads
- Enable widespread standardization and automation of IT platforms and processes
- Usher in next-gen architectures of modern, software-defined, integrated infrastructures to help IT better align its offerings with LOB needs
- Ensure control of IT and better management of cloud costs, security, and compliance management
- Make cost savings from traditional infrastructure hardware sprawl and inefficient licensing costs
- Deliver a standard portfolio of cloud services (instances, containers, serverless) and automation tools
- Standardization improves cross-cloud manageability and improves attractiveness as platform for new service development
- Focus on delivering new cloud-based services to local communities of users/things
- Flexible consumption and shifting away from capex as well as better aligning tech investment with business objectives
- Leverage best-of-breed infrastructure for any workload, any time
- Easier way to calculate current IT budgets and forecast needs

### *Conclusion*

Front-end digitization is not enough on its own for end-to-end digital transformation. Most organizations get stuck in their transformation journeys because of legacy infrastructure bottlenecks. IT transformation is necessary to provide the computing agility and scalability needed to better support employees and customers and to speed time to market for new products and services. The implementation of hybrid cloud computing is often a first step in this process.

But transforming the datacenter into a world-class hybrid cloud is no mean feat. Organizations should evaluate internal skills, culture, finances, and existing IT complexity when embarking on this and partner with a hybrid cloud service provider that can plug the gaps in the enterprise. The hybrid cloud journey is a

continuous journey requiring constant evolution, monitoring, and management. It should also be future-ready to support modern initiatives such as cloud-native apps, containers, and edge initiatives.

To this end, companies should select IT services providers that can bring next-generation datacenter technologies and services, with global coverage, to provide a unified, end-to-end hybrid cloud environment. At the same time, it is important that these services are integrated and closely monitored, and that the service provider has a vision and appetite for an ecosystem-driven approach to digital transformation. Beyond that, ease of doing business with and high-quality support and services can truly help build the hybrid foundation needed to propel the next wave of transformation.

## About the Analyst



**Archana Venkatraman, Research Manager,  
European Datacenter Research**

Archana Venkatraman covers datacenter technologies including software-defined infrastructures, storage and data management, virtualization, containers, hyperconverged infrastructure, infrastructure performance monitoring, systems management, application development, and cloud services. She also leads IDC's European thought leadership program on open source technologies, and contributes to European Digital Transformation, DevOps, Blockchain, and IoT research practices.



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