Next-generation hybrid cloud powers next-generation business

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Talking points

Core workloads

Despite the growth of cloud over the past decade, for most organizations, only 20 percent of workloads have made their way to the public cloud—and these are not yet companies' core mission-critical workloads. The 80 percent that remains is where real enterprise value lies. We are now at an inflection point.

Hybrid cloud

Hybrid cloud permits public clouds, private clouds, and on-premises IT to interoperate seamlessly. Standardized technology interfaces across these three enable businesses to innovate with scale and agility, improving responsiveness and constraining cost, despite growing complexity.

Multi public cloud

Enterprises have on average at least five clouds—each with different management processes and interfaces. What was supposed to simplify has, in many cases, increased complexity. What is needed is a single management approach to cloud—regardless of what cloud is used.

Secure and assure

Security is central to a successful cloud deployment. Hybrid cloud allows apps to run—and data to be stored—in the IT environment best aligned with specific security, regulatory, and governance requirements.

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Clouds everywhere

In the story of cloud computing, chapter one is playing out.

Low-hanging opportunities for public cloud have already been exploited by most organizations. "Front-office" applications, such as client inquiries (checking account balances, for example), social media, and digital shopping carts, make up a large portion of what has gone to public cloud.

These initial opportunities have validated the benefits of the cloud architectures, including speed of deployment, dynamic resource acquisition, application elasticity, and service reuse across workloads. Because of cloud, organizations are thinking about innovation, speed, deployment, new markets, and disruption in a new light.

Executives report a range of successes with public cloud initiatives, especially around their abilities to scale and grow. (See Figure 1.)
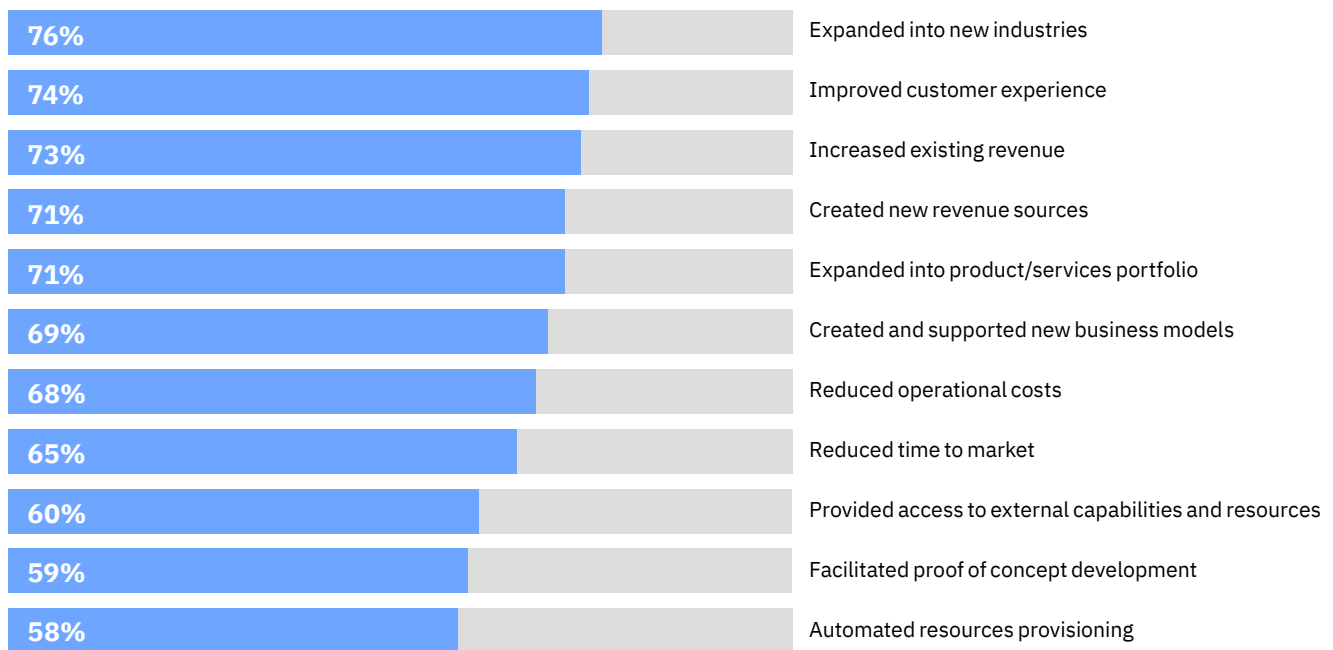
At the same time, mission-critical, security-dependent applications, such as customer data bases, transaction processing, finance and accounting, supply chain, and manufacturing—have moved slowly—or not at all—to public cloud. This is especially true for highly regulated industries, such as banking and healthcare, where the highest proportion of processes are yet to move to the cloud.[1] In many cases, these workloads are better suited to private cloud—or a mixture of public, private, and traditional IT.

If the next phase of cloud benefits is to be realized, a new approach is needed to address these workloads that have been left behind.

Hybrid cloud permits public and private clouds to operate seamlessly with on-premises IT across standard technology interfaces.

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Figure 1

Importance of strategic reasons for establishing multi-cloud environment

76%	Expanded into new industries
74%	Improved customer experience
73%	Increased existing revenue
71%	Created new revenue sources
71%	Expanded into product/services portfolio
69%	Created and supported new business models
68%	Reduced operational costs
65%	Reduced time to market
60%	Provided access to external capabilities and resources
59%	Facilitated proof of concept development
58%	Automated resources provisioning

Source: IBM Institute for Business Value hybrid cloud survey (2016).

A new era of cloud computing

Hybrid cloud permits public clouds, private clouds, and on-premises IT to interoperate seamlessly across all three standardized technology interfaces: Linux, Open Container Initiative, and Kubernetes. These enable businesses to innovate with scale and agility, improving responsiveness and constraining cost, despite growing complexity.

Hybrid cloud allows workloads to be deployed to the best environment for that workload.

– Public clouds are well suited for many front-office workloads

– Private clouds are well suited for many of the mission-critical workloads where the benefits of cloud are desirable—but the security and assurance of a private environment is key

– And traditional IT environments are suited for workloads that don't inherently take advantage of cloud benefits—and demand the dedication of computing resources.

Furthermore, as hybrid cloud becomes widespread, we are seeing variations of adoption across companies and industries. In the more regulated industries—such as banking, healthcare, telecom and government itself (half of the global economy)—the cloud mix will tilt more toward private cloud than public cloud. In the less regulated industries, the mix will tilt the other way (see Figure 2). In all cases, however, there remains a universal need to interoperate between public, private and traditional IT.

Hybrid cloud's intrinsic interoperability and portability means organizations are not locked in to either one environment or to one individual public cloud vendor. They can place their workloads in the best spot—and have the interoperability between environments and between different public cloud providers.
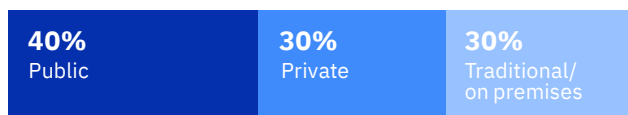
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Figure 2
Regulation is one factor driving infrastructure choices

Regulated industries

30% Public	**40%** Private	**30%** Traditional/ on premises

Unregulated industries

40% Public	**30%** Private	**30%** Traditional/ on premises

Source: IBM Institute for Business Value hybrid cloud survey (2016).

80%+
of enterprise workloads have not yet moved to or leveraged the cloud

On
average, enterprises use five clouds.[2]

>80%
of new applications will be developed using containers

Case study on hybrid cloud adoption[3]

A US-based healthcare insurer had adopted cloud in an eager but fragmented way. The company created three distinct application portfolios—for its public cloud, private cloud, and traditional IT environments. Because it addressed them individually, the company was unable to run applications or share data across environments. The result: a costly, time-consuming IT system wherein each application needed to be written—or rewritten—for the environment on which it ran.

It didn't take too long for the insurer to recognize the need for a common architecture to facilitate portability, across environments and independent of vendor. And it needed to simplify application development to speed its ability to move workloads to the cloud.

The solution: the insurer adopted hybrid cloud, creating a single platform for application and data portability. With hybrid cloud eliminating the need for data migration, the company has benefited from faster time to insights. Along with hybrid cloud, the use of containers has reduced the need for costly application rewrites and lengthy upgrades, cutting the time for application transformation from months to weeks.

Secure to the core

Hybrid cloud can help address security and other barriers that determine the difference between successful and unsuccessful cloud deployments. Our research indicates that security and governance are the two top reasons cited as justification not to put core applications onto public clouds.[4] With hybrid cloud, companies can run applications and store data in the specific environments best aligned with security, regulatory, and governance requirements.

Hybrid cloud also allows enterprises to manage their cloud transition dynamically, selecting acceptable levels of downtime and overcoming the constraints of legacy systems and silos.

Time for action

Chapter two in cloud's story is about businesses unlocking the door to a new layer of benefits, especially those relating to "cloudification" of mission-critical applications. New levels of data portability and interoperability offered by hybrid cloud help companies realize the virtue of "write once, run anywhere." Four key steps to get started include:

1. *Architect the destination.* Think open, multi-cloud, hybrid cloud. Your organization will live with the decisions you make today for years. Think through which of your workloads fit best in the public cloud, private cloud, and traditional IT environments. Avoid both environment lock-in (to only one of the three) and vendor lock-in, and reassess approaches that might not survive as standards and technologies evolve.

Hybrid cloud's data portability
and interoperability can help
companies realize the value of
"write once, run anywhere."

2. *Sequence the journey.* Avoid "ready, fire, aim" approaches. Lay out a careful, clear roadmap of what you want to do and in what order. You may experience pressure to skip ahead without building a solid, open foundation. Resist it.

3. *Mobilize the right skills and assets.* Draw upon talent within and outside your enterprise. It's important to develop and maintain in-house skills, but working with trusted third-party services providers, enabled by greater interoperability, can help bridge short-term gaps while reducing fixed costs.

4. *Manage to clear outcomes.* Establish meaningful qualitative and quantitative measurements and be tenacious in holding to them. Remain flexible and incorporate new technologies as they emerge. Always stay true to your business, architectural, and technical principles.

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Key questions to consider

– To what extent do your people understand the implications and opportunities of next-generation cloud on your business and your competitive environment?

– How is your organization, and your competition, taking advantage of hybrid cloud, particularly data and processes that, until recently, have been difficult to move?

– What adjustments have you made in hiring and training to have the right people at the right time working on the right things in dynamic ecosystems powered by hybrid cloud?

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Notes and sources

1   IBM hybrid cloud survey data.

2   "2019 State of the cloud report." RightScale. 2019. https://media.flexera.com/documents/rightscale-2019-state-of-the-cloud-report-from-flexera.pdf?elqTrackId=590185f8b8bb489d8c712f699233d3ec&elqaid=4588&elqat=2&_ga=2.235510017.1039453905.1562804440-1982055491.1562804440

3   IBM Institute for Business Value analysis based on internal data and secondary research.

4   IBM Institute for Business Value 2018 multi cloud survey.

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