

Integration: The foundation of a successful hybrid IT strategy



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Hybrid IT? The conversation is no longer around *if* your organization embraces it, but *how*. According to TBR, “The use of hybrid cloud (a combination of cloud services) and hybrid IT (a combination of cloud services and on-premises assets) is now a reality for most enterprises, with 51 percent reporting at least one workload is leveraging a hybrid cloud or IT deployment method.”¹

The benefits of hybrid IT are considerable. It allows access to data, applications and services where they’re most optimally placed—whether on public cloud, private cloud or in-house on an existing infrastructure. In a recent IBM survey, 69 percent of respondents said a hybrid IT management strategy helped them launch new/upgraded applications more quickly. And, 58 percent said it helped them gain greater visibility into application support, with 56 percent citing faster problem resolution.² Hybrid IT also increases existing legacy IT asset value by enhancing those assets with cloud solutions—in other words, creating composite applications.

Hybrid IT is the means, not the end. Its true value lies in its ability to integrate your IT operations, orchestrate your technology capabilities and achieve digital transformation. (See Figure 1.) But there are also challenges to hybrid IT—challenges stemming from controlling,

consuming and integrating disparate services that aren’t delivered from one provider. In fact, 52 percent of respondents from the same survey cited the high cost and complexity of using numerous management tools as a top challenge.³ Without integration, and a holistic view of your entire service portfolio in all its fluidity, you have disjointed environments that are unable to communicate consistently and effectively with each other. That’s inefficient and expensive, far from the goals of a hybrid IT initiative.

Integration is a critical milestone in a hybrid IT evolution, and increasing numbers of companies are getting there. One TBR study showed that the percentage of respondents who have achieved complete application integration doubled from 2016 to 2017—a finding that’s true for both cloud-to-cloud and cloud-to-legacy integration.⁴

TBR also reports that hybrid cloud and even hybrid IT management tools and platforms will take on greater importance during 2018, enabling additional hybrid adoption growth. This is driven by the increasing complexity of cloud environments and integration.⁵

Critical integration points for a successful hybrid service delivery platform

Technically, combining legacy infrastructure with cloud platforms qualifies as hybrid IT. But checking that simple box by no means guarantees success. Often, organizations create an unplanned hybrid service delivery platform by default, one that uses an assortment of service providers for uncoordinated purposes. This lack of integration results in disjointed technical solutions, disparate interfaces and disconnected management processes.

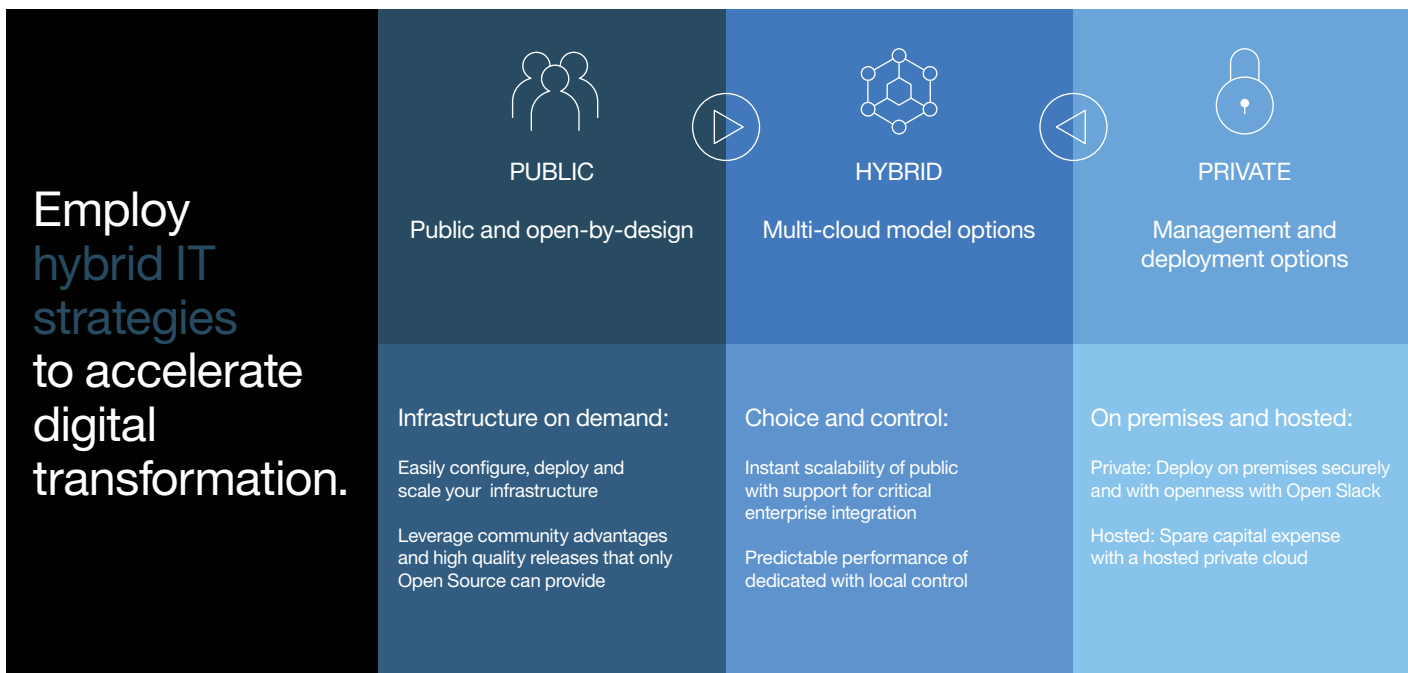


Figure 1: A hybrid IT strategy provides the advantages of both public and private environments.

Your goal should be a truly integrated enterprise IT service delivery environment, one that also encompasses a DevOps approach. Ultimately, this can facilitate service integration—and the composite business services so essential to digital transformation. To achieve this, invest time up front in three areas:

- Automated, integrated hybrid IT architecture
- Strategic governance oversight
- Comprehensive, automated service management

Architecture: Automation leads to integration

A hybrid IT architecture needs to be viewed foremost through the lens of automation. Customized architecture components will always be in the mix, and certain service management tooling can handle nonstandard environments. You'll want your service management tools *both automated and integrated* into your hybrid IT architecture.

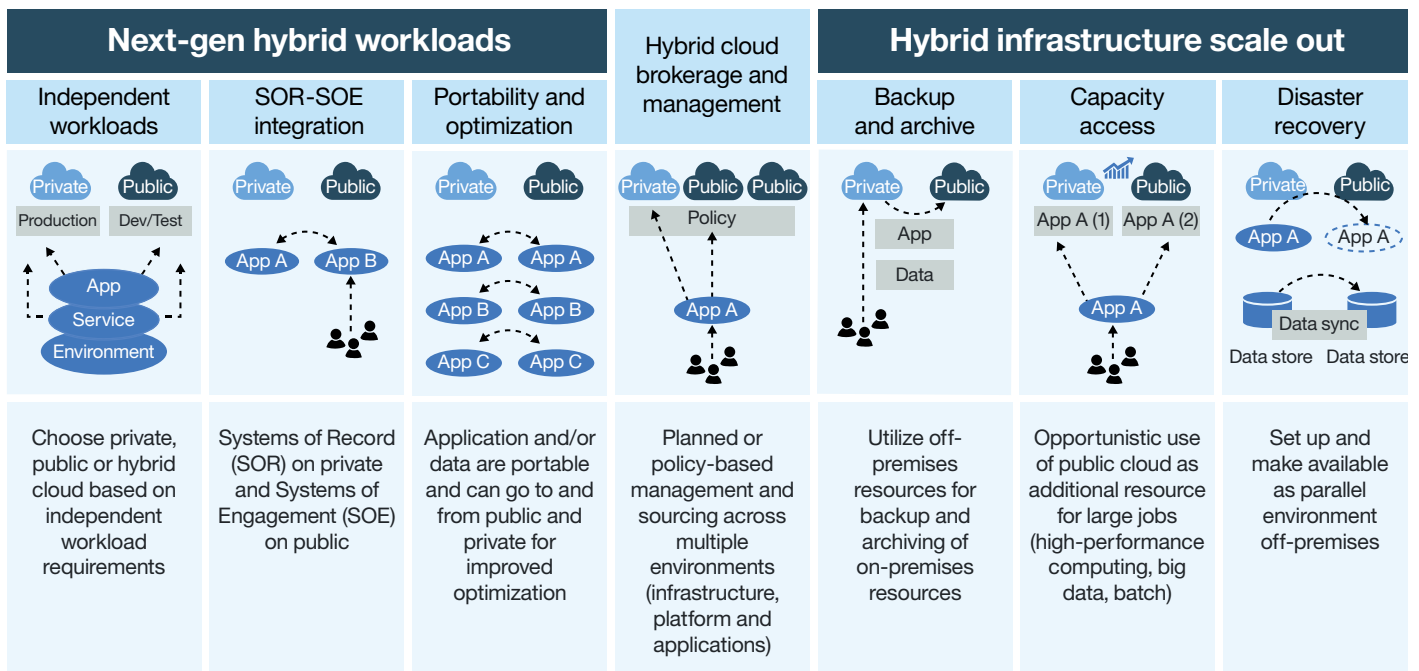


Figure 2: These seven core use cases are applicable to hybrid IT adoption, but you don't need to limit yourself to these specific patterns.

An architecture that incorporates automated, repeatable service management ultimately becomes more flexible. You'll want an architecture that can facilitate:

- Building a core cloud platform that allows workload (service) integration
- Integrating public services and applications with on-premises service management processes
- Deploying workloads in the hybrid service delivery platform
- Identifying approaches and tools that provide clients with a consumption-based chargeback model

Implementing solutions with services that meet requirements is critical. From a business perspective, you'll want to evaluate quality, cost, agility and service resiliency as detailed in service level agreements (SLAs). Of course, understanding regulation and compliance factors is critical. Business units will need to

normalize expectations for nonfunctional requirements, architecture and SLAs.

For your infrastructure, you'll want to consider:

- What are your storage, network and other computing resources?
- What are your locations—both physical data center locations and also location of data?
- How about usage, availability and performance?
- How will you manage a catalog of available services, respective service providers and SLAs?

To get a handle on these various perspectives, IBM recommends establishing use cases or patterns. Figure 2 illustrates seven core use cases that are applicable to hybrid IT adoption and were modeled by IBM. Evaluating these core use

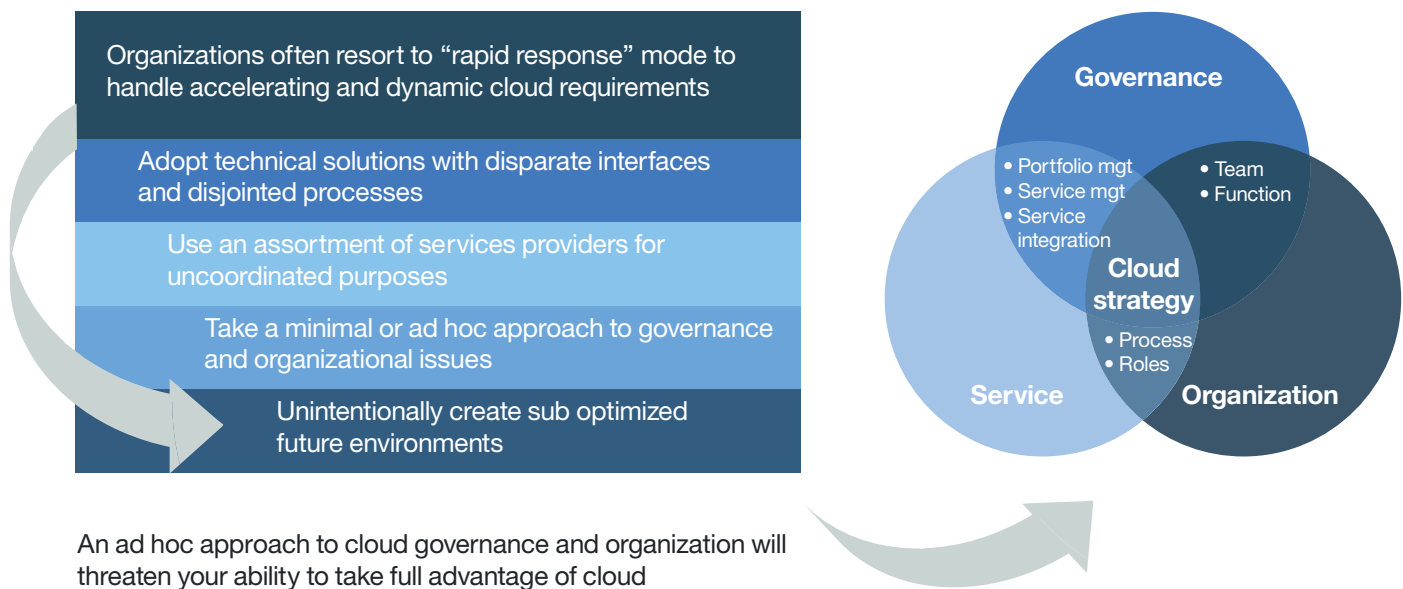


Figure 3: Ideally, organizations should employ a structured approach to evaluating governance, service and organization considerations before a hybrid IT implementation.

cases frames strategic discussions about hybrid IT directions and purpose. However, don’t limit yourself to these specific patterns. Your organization should recognize the repeating patterns that most align to your objectives. Then, target your efforts to the consistent application of the patterns or use cases that matter to you. Identify where cloud brings you value, and what will help you meet your current goals. Determine how you’ll measure that value and govern adoption, then implement and integrate in a repeatable, standardized manner.

Governance considerations: Time invested now helps facilitate integration later.

When dealing with evolving IT requirements, it’s easy to opt for the quickest, easiest solution. As we depict in Figure 3, all too often organizations resort to such “triage” or “rapid response” alternatives. In an environment in which integration is the key to success, this type of rapid response often means

adopting technical solutions and service providers that may not assimilate with the rest of your hybrid service delivery platform.

Putting out immediate fires in a way that makes sense within your broader, longer-term objectives requires careful evaluation of governance and organizational considerations. Yet that requires taking a broader, strategic view—difficult to achieve when dealing with day-to-day crises. As a result, organizations sometimes procrastinate on developing an effective governance strategy. It’s a nice to have, an objective to get to “someday.” But this lack of foresight can result in sub-optimized environments and threaten your ability to take full advantage of cloud.

Consider the challenges in managing a process like this: a legacy system of record (in the data center) updated from a system of engagement (in the cloud) and a reporting function delivered as Software as a Service (SaaS). Under these circumstances, how can IT manage availability, performance and capacity, among other requirements? Coping with the challenges of an integrated environment requires a governance and organizational approach like the one shown in Figure 4.

Assessment and preparation are key.

Ideally, organizations should employ a structured approach to evaluating governance, service and organizational considerations *before a hybrid IT implementation*. Still, it's never too late to start. Evaluating potential issues and developing a plan to address and mitigate them achieves a more successful implementation, integration—and ultimately, digital transformation. For more information on hybrid IT governance, read “Preparing for the hidden impact of cloud solutions: How cloud affects IT governance, organization and services” at <https://ibm.co/2ircQ9Y>.

Service management integration: Creating order out of chaos

In a hybrid IT world, how do you monitor services that are being run from various sources and providers? You'll inevitably have services housed in a traditional IT environment—often systems of record—with more dynamic systems of engagement housed on the cloud. How do you achieve the required control, management and orchestration—integrated across multiple environments? Fortunately, much of the service management process can and should be automated.

You'll want to consider a management system with automated tooling that monitors the breadth of your services and helps you meet SLAs. Note that in addition to services, the tools themselves require integration into the hybrid service delivery platform, again in an automated fashion.

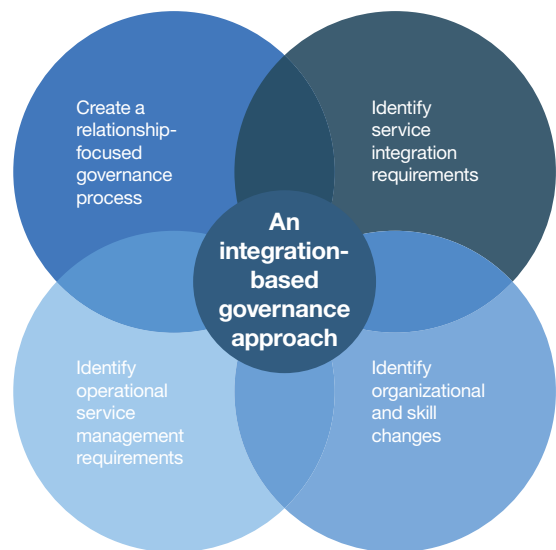


Figure 4: An integration-based governance approach spans relationship considerations, service integration requirements, organizational and skill challenges, and operational service management requirements.

Ideally, your service management process should be visible to you through a “single pane of glass.” In other words, one view, one system, can enable you to monitor performance issues, assess change management scenarios, and process service desk tickets across multiple platforms—and at the microservices level. One example is IBM® API Connect™—a complete API lifecycle management offering that integrates creating, running, managing and securing APIs into one solution that can run on-premises and in the hybrid cloud.

Respondents to a recent IBM survey validate this approach: 75 percent perceive high value in integrating management tools across their infrastructure, cloud and application environments. And 67 percent perceive high value in automating IT management across those same environments.⁶

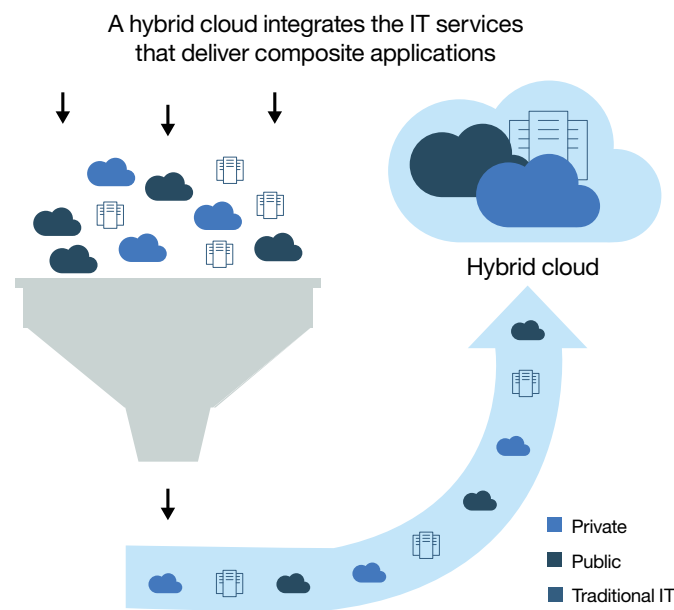


Figure 5: A key benefit of hybrid IT lies in integrating IT services that deliver composite services.

Integrating and automating at the service management layer gives hybrid IT its power. Even the most elementary benefits of hybrid IT depend upon integration—combining cloud services and traditional applications to deliver the composite business services needed to transform your organization. Without integration, and a holistic view of your entire service portfolio throughout increasingly shorter lifecycles, you have disjointed environments that are unable to communicate consistently and effectively with each other.

When hybrid IT comes together: Composite business services and a DevOps approach

Not so long ago, IT systems were like an exclusive club. It wasn't easy to gain access. Each major service would employ closed point-to-point linkages with other services. New services couldn't be incorporated without re-engineering integration points. To compound challenges, the governance processes behind the scenes were often in silos. These were hardly flexible, agile plug-and-play scenarios. As shown in Figure 5, the true value of hybrid IT lies not just in rapid solutioning of divergent IT services, but also in the integration of IT services to create the composite applications of the future.

Hybrid IT offers numerous techniques for integration, such as service-oriented architecture (SOA), Representational State Transfer (REST) and new types of APIs. Such techniques create a common language and/or interface that masks the complexities within various services. In effect, it creates a common, shared approach that can cycle and integrate services from diverse environments in and out with ease. **A hybrid service delivery platform combines both cloud and traditional services to deliver agile, composite business services through systems and service integration.**

*A composite service combines functionality drawn from several different sources into one new application. The components of a composite service may be individual functions that are contained within other applications, or entire systems that are used as modules, business functions or web services.*⁷

Creating composite services isn't a "one-time" event. Instead, consider it a new operating model with its own lifecycle. Pressure is mounting for exemplary user experiences, with customer input (including raves and vents on social media) and market drivers demanding rapid application iterations (see Figure 6) for all but the most foundational services. A key benefit of integrated hybrid IT is its ability to keep pace with these ever-shifting requirements. The fast-moving, agile nature of digital transformation calls for ongoing assessment and disciplined, thoughtful management of your service portfolio.

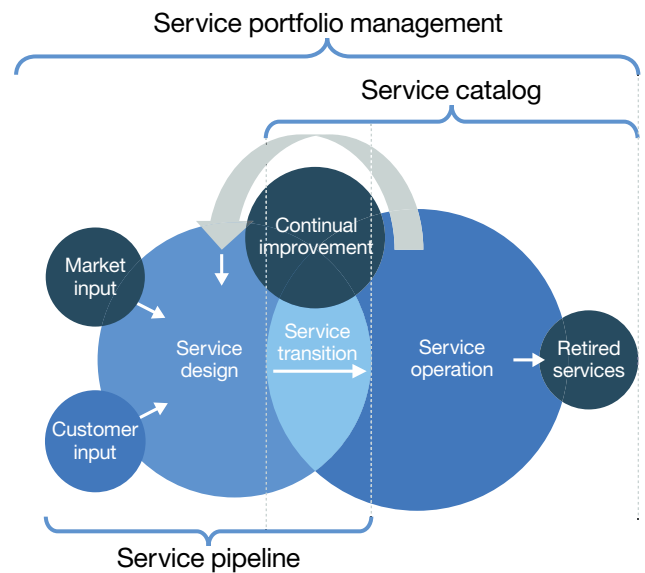


Figure 6: Hybrid IT helps facilitate more rapid iterations and launches—making your organization more responsive to market and consumer demands.

This need for rapid iteration, along with innovation and digital transformation, fuels a DevOps approach to application development. In fact, a study by Evans Data illustrates the importance of DevOps, with a combined 76 percent of the developers polled considering DevOps to be very or somewhat important for their future.⁸

Whether applications are “born on the cloud” or originate from legacy IT, an agile DevOps process and the scalability and multi-tenant capabilities of an integrated hybrid service delivery platform can increase service quality and responsiveness to customer feedback.

And, in a time of composite services, it's rare for an application to totally stand alone. DevOps, practiced in an integrated hybrid IT environment, helps new applications incorporate existing web services such as data management, analytics, cognitive processing, social data, and the Internet of Things. (Think of how Uber software uses Google Maps.)

DevOps is also useful for “cloud enabling” legacy IT applications. This means using API management and cloud integration technologies to synchronize existing systems of record from legacy IT and new systems of engagement (cloud) applications. More often than not, your cloud-based app will need information from your legacy IT services—and vice versa.

An integrated hybrid IT environment helps DevOps do what it does best: reduce risk and cost, and unify processes, cultures and tools across the end-to-end lifecycle.⁹

From a process and tools perspective, DevOps breaks down the barrier between development and operations to help deliver three key value propositions, including:

- Accelerating the delivery of innovation with frequent application updates (daily, weekly and monthly)
 - Facilitating reduced operational costs of delivering releases—costs that have traditionally hindered agile delivery
 - Engaging directly with the user base to align limited development resources with high value efforts¹⁰
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Hybrid IT: The standard approach for integrated IT service delivery

In a recent IBM survey, 89 percent of respondents reported that they've started their hybrid IT management journey. This means they have either fully implemented their strategy, plan to implement in the next 12 months, are in the process of implementation, or are planning to explore the benefits of such a strategy over the next year.¹¹ Clearly, hybrid IT is becoming the environment for digital transformation.

Yet, a hybrid IT environment only reaches its potential through integration. How to get there? Adopt a systematic, automated approach to architecting your hybrid IT framework. Develop an integrated governance strategy that encompasses relationship considerations, organizational and skill requirements, operational service management, and service integration. And use service portfolio management to optimize service quality and customer relationships.

An integrated hybrid IT offers many benefits, including the ability to compose, orchestrate and manage workloads, and exploit the portability of data and applications. And by creating an environment that is conducive to DevOps, applications can be updated more frequently and at reduced cost. Integration creates a more agile, accelerated IT environment, one that helps your company do more than simply react to customer demands and market shifts. With digital transformation, you can anticipate shifting trends and respond with true digital innovation.

Why IBM?

The Cloud Adoption and Transformation Consultancy from IBM offers a pragmatic approach that meets you where you are (see Figure 7). IBM’s vendor-agnostic best practices accelerate your IT strategy, and our holistic approach encompasses your people, processes, data, technology and culture. IBM’s experience and execution excellence help you to transcend IT transformation. Our goal is to help you *thrive*.

IBM’s market leadership, depth and breadth in hybrid IT management are often cited by industry analysts. For example:

- Forrester ranked IBM as a leader in hybrid cloud management solutions and hybrid integration for enterprises.¹²
- Frost & Sullivan named IBM the Cloud Company of the Year, highlighting IBM’s extensive capabilities in supporting hybrid cloud environments.¹³

The Cloud Adoption and Transformation Consultancy from IBM



Figure 7: The IBM Cloud Adoption and Transformation Consultancy helps you think, transform, and ultimately thrive.

- TBR rated IBM #1 for hybrid environments and overall hybrid vendor adoption by customers surveyed, noting: “IBM leads overall vendor adoption due to its integrated portfolio that spans traditional software, hardware and cloud to help customers build and manage hybrid environments.”¹⁴
- And finally, almost three-quarters (72 percent) of IT operations executives surveyed consider IBM an industry leader in hybrid IT management solutions, with specific emphasis on IT operations analytics, application server and application performance management.¹⁵

For more information

To learn more about IBM Cloud, please contact your IBM representative or visit the following website(s): ibm.com/cloudcomputing

About the author

Bob Freese is a certified consultant with IBM Cloud. He has over 40 years of experience in business and IT strategy consulting and has spent the last nine years performing cloud strategy engagements for clients and training IBM technology consultants worldwide.

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