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Are you ready for cloud's **“third wave”?**

Unraveling cloud complexity with a hybrid by design strategy can usher in the next era of business acceleration, innovation, and value



Businesses are on the threshold of a new technology transformation era, one in which their current digital investments will continue to power enterprise applications as they have in the past and where technology investments can enable innovation of business infrastructure and applications.

As it has for the last two decades, cloud technology is expected to remain a critical accelerator for this next phase of business transformation. But first, existing cloud methodologies may need to evolve to overcome existing challenges.

Consider this:



ONLY

17%

of organizations have a well-articulated cloud future state defined



JUST

25%

of companies have fully captured their intended business ROI from cloud transformation



Organizations that report the fewest benefits from cloud have immature multi-cloud strategies that only use one or two cloud vendors, immature data architectures, or too many vendors—increasing complexity, technical debt, and limiting ROI.

Reviewing the history of cloud adoption can shed light on why some organizations are drowning in complexity and how to address that in the cloud's emerging third wave—where a “hybrid by design” approach can help organizations realize the full benefits of the cloud, Generative AI (GenAI), and other advanced technology to help drive business value.

How did leaders get here?

The cloud waves

In the early days of cloud adoption, or the cloud's first wave, many enterprises moved into the technology quickly to gain first-mover advantages from the cloud's many positive capabilities and benefits. But the notion of cloud as the ultimate destination for IT and the prevalence of "cloud first" strategies often led organizations to make tactical moves absent a long-term strategic foundation. Without a balancing notion of "right-sizing" IT among various deployment options, new environments were added without regard for standardized platforms and future growth. As a result, many enterprises had complex technology infrastructures and operating models across heterogeneous operating environments.

The second wave—accelerated by the pandemic—continued this rush with many organizations distributing their work across multiple cloud environments. The urgency of new modes of operating to address new business and social realities, such as remote work, put more pressure on already unstable architectures and operating environments. In the second wave, many organizations embraced software-as-a-service (SaaS), launched digital applications, and adopted new platform business strategies that allowed them to create profitable data marketplaces and ecosystems. Workloads were spread across a mix of on- and off-premise technologies—moving toward distributed and heterogeneous technology architectures—as the de-facto standard for enterprises. Intentionally or not, some organizations went to hybrid cloud.

Today, many organizations continue to design cloud environments in a "hybrid by default" manner—where many elements are built, managed, and operated in siloed tech stacks—and may not be able to optimize their cloud investments as originally intended. Hybrid by default can potentially lead to unanticipated costs, innovation impediments, and operational complexity.

This technological complexity is expected to increase as GenAI and the next generation of technologies further reveal limitations of the hybrid by default approach. This represents an inflection point for leaders and that the emerging third wave of cloud could present an opportunity to overcome complexity by thinking and acting differently to achieve better results.

Key terms

Hybrid cloud:

The use of any combination of public clouds, private clouds, on-premise SaaS, platform-as-a-service (PaaS), infrastructure-as-a-service (IaaS), and edge computing. Sometimes called multi-cloud.

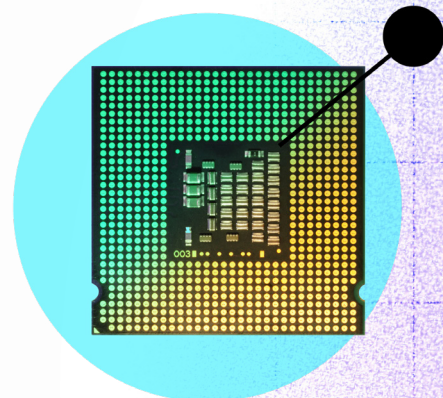
Hybrid by default:

A technology environment with many elements built, managed, and operated in siloed tech stacks. Most organizations today have these complex cloud architectures that lack a strategic IT foundation and struggle to evolve to meet future needs.

Source: <https://www.deloitte.com/global/en/our-thinking/insights/topics/digital-transformation/awakening-architecture-with-cloud-innovation-core.html>

Hybrid by design:

The intentional vertical and horizontal integration of technology components (application, infrastructure, platform, and security), coupled tightly with FinOps and service orchestration/automation. Interoperability is at its core, and business outcomes are its focus.



The cloud's third wave

As enterprises embrace the third wave of cloud they have an opportunity to help define what it could look like—developing comprehensive hybrid operating models designed to lower infrastructure costs, empower developers with agility, enhance compliance and security, enable strategic initiatives, and accelerate innovation. They have broken the decades-long cycle of complexity with an intentional cloud strategy and architecture design (Figure 1).

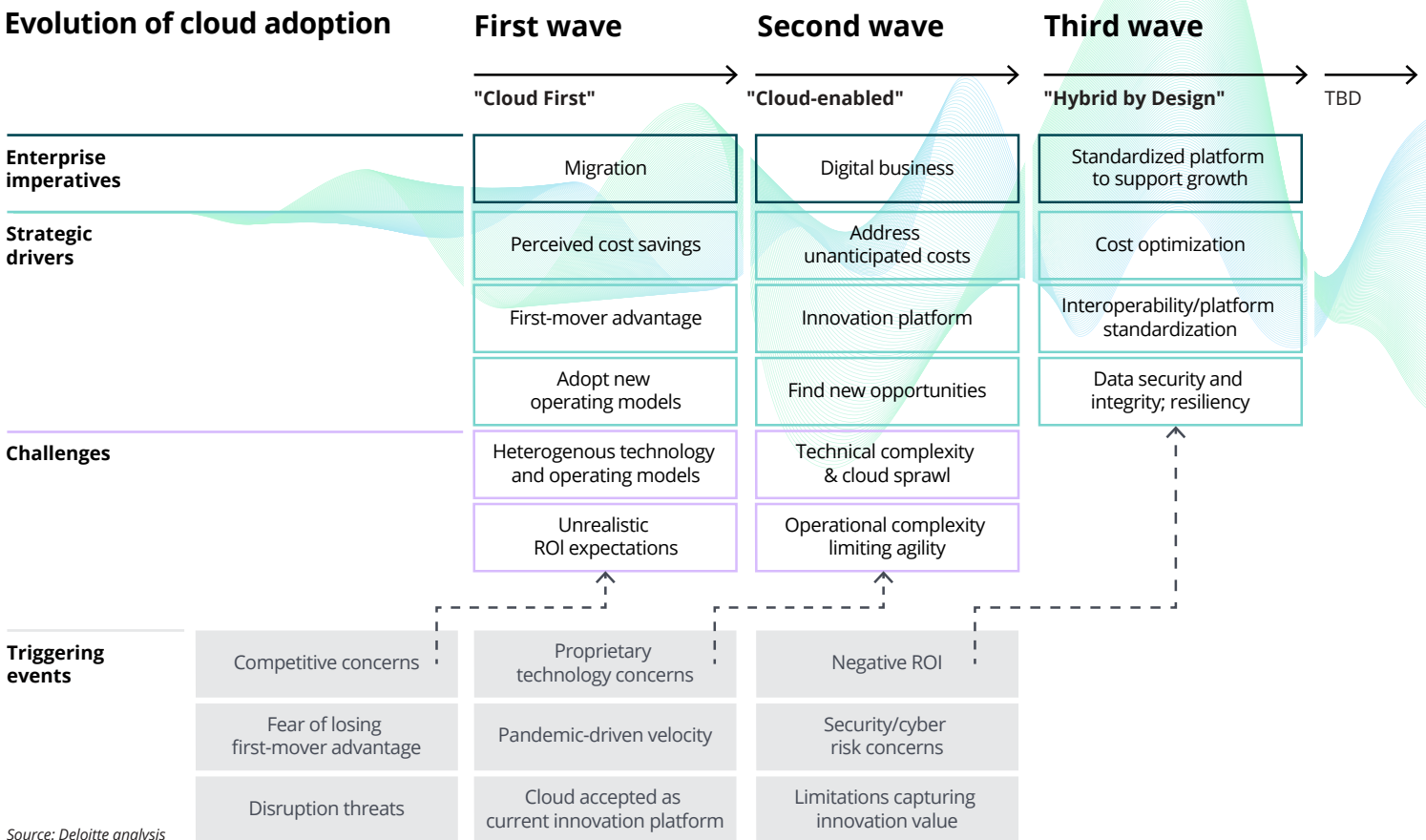
To better understand the power of this emerging wave, compare the third wave concept to an urban planner designing a new public transit system in a major city. People need to get from point A to point B as quickly, efficiently, and cost-effectively as possible with connected infrastructure, low carbon emissions, community benefits like free Wi-Fi, and the flexibility to grow as the city's population does. By designing and building a thoughtful urban environment with an integrated system, the standard of living may be increased for residents and provide a central service for the community well into the future. This approach would be more ideal than taking a car to a train and then a second train with wait times in between, wouldn't it?

That same concept of planning, adapting, and designing today's technology to meet future needs is the essence of the third cloud wave. But how can organizations achieve this and what should the next evolution of cloud architectures look like?

Unlike the first and second waves, the cloud's third wave does not necessarily require implementation of a new breakthrough technology. Third wave success requires breakthrough thinking—reorienting leadership to a purpose-built approach to business-driven transformation. Deloitte's "hybrid by design" concept applies breakthrough thinking to cloud complexity and resulting challenges. It relies on an intentional strategy to integrate existing and new technology components to maximize optimization and operability.

Hybrid by design rests on the evolution of standards and open community technologies, with common tooling, uniform orchestration, and automated workloads across clouds. The goal is a standardized, interoperable, adaptable IT infrastructure that supports a wide range of strategies. This can build resilience to adapt to potential complications and is designed to create a platform for continuous, accessible, and user-friendly innovation across different environments.

Figure 1
The Cloud "Waves"



Source: Deloitte analysis

Ride the third wave with hybrid by design architecture

A hybrid by design approach can empower business leaders to seize the near-term opportunity to re-strategize and restructure to facilitate business acceleration, agility, and innovation. While the window for this next phase is wide, advantages will likely accrue to those who move quickly.

Because enterprises likely can't afford to "wipe out" or "take on water" as they ride the third cloud wave, the hybrid by design approach seeks guidance from business leaders on the critical issues technology architectures should address and uses that feedback to inform design.

Modern enterprise architecture requires a balance of public cloud adoption while retaining strategic data and applications in a private cloud. This can help close the gap between the business expectations and technology outcomes that have come with cloud implementations for the past two decades.

Architecture often plays a critical role in linking a company's business strategy and its technology. A "horizon architecture" exhibits a thoughtful, intentional, and value-oriented configuration across all layers—infrastructure, data, applications, business, customer, and security and risk—and can accelerate advantages. Because horizon architectures are future-focused, they can help address the full tech stack and may bring together public, private, on-premise, and even mainframe components for a more efficient and secure flow of information. For many organizations, this architecture can help lay the foundation for hybrid by design success (Figure 2).

Leaders should also consider how best to implement third wave changes. An effective hybrid by design implementation should have common technology design architecture and platform principles: innovation platforms, data sharing and integration, application development and deployment, security, compliance, and more.



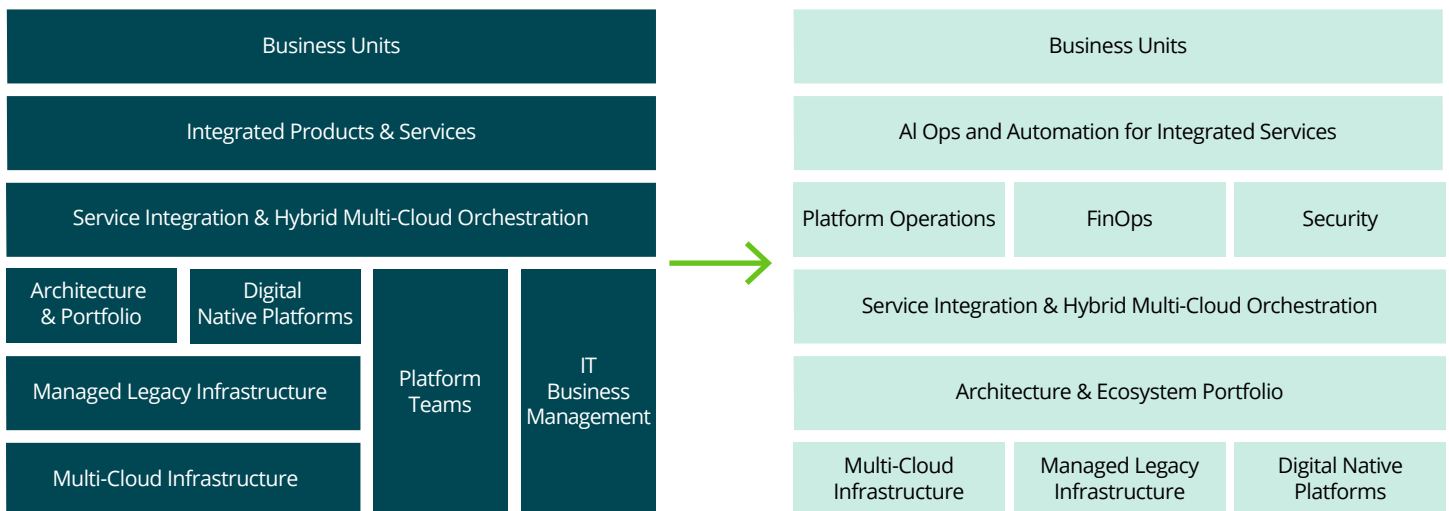
Why hybrid by design?

"While hybrid multi-cloud is the enduring norm for enterprises, a hybrid by design methodology helps organizations leverage consistent platforms and deliver value across heterogeneous environments to turn innovation into business outcomes."

Roger Premo,
General Manager,
Corporate Strategy and Ventures, IBM

Source: Roger Premo, Interview with Deloitte US, April 20224.

Figure 2:
Hybrid by design horizon architecture



Source: Deloitte analysis

The IT benefits and business impact of hybrid by design

Organizations often measure the value of technology in tangible terms such as cost, control, simplification, reliability, and compliance. Though these remain vital, hybrid by design can have a direct and indirect impact on infrastructure cost savings, application development productivity, risk and regulation, and business acceleration (Figure 3).

The scale of benefits achieved can vary based on industry, organizational size, technology composition, maturity, region, and strategic objectives, but Figure 3 provides a list of some IT-specific benefits organizations can broadly expect.



Figure 3:
Common IT benefits of hybrid by design

Infra cost savings	Developer productivity	Risk & regulatory	Business acceleration
<p>Agility & cost arbitrage</p> <ul style="list-style-type: none"> Optimize costs across environments Simplified management <p>Infra support spend</p> <ul style="list-style-type: none"> Reduce infra & support costs Provisioning - 'infrastructure as code' Simplified management Resiliency through containers Reduce downtime, latency and bandwidth <p>Utilization optimization</p> <ul style="list-style-type: none"> Consumption-based billing Resource allocation & right-sizing 	<p>Optimize development</p> <ul style="list-style-type: none"> Accelerate application release Simplify portfolio Automation, migration 'factory' approaches Expand DevOps and site reliability engineering functions <p>Maintenance Productivity</p> <ul style="list-style-type: none"> Accelerate support & maintenance lifecycle Reduce app incidents Problem resolution scaled across environments Maintenance automation <p>Maintenance cost avoidance</p> <ul style="list-style-type: none"> Reduce tech debt Migrate legacy workloads for agility, cost control 	<p>Security risk</p> <ul style="list-style-type: none"> Accelerate detection & remediation Automate & embed DevSecOps Single pane of glass for security controls, monitoring Consistent security & audit controls Ubiquitous secure by design <p>Compliance / audit risk</p> <ul style="list-style-type: none"> Automate, embed security/compliance checks Help manage compliance costs with consistent, modernized tech stack Improve security/audit posture consistently across clouds 	<p>Revenue growth</p> <ul style="list-style-type: none"> Digitization Ecosystem development Leverage customer insights across environments Rapid deployment of new services <p>Operational expense</p> <ul style="list-style-type: none"> Business process automation Integration across environments Edge use cases Automate manual, back-office tasks <p>Competitiveness</p> <ul style="list-style-type: none"> Reduce cycle time Accelerate time-to-market Innovation Adopt cloud-enabled business models Enable innovation across hybrid environments

Source: Deloitte analysis

Hybrid by design uses common technology layers to create bridges between less-efficient, siloed technology environments to enhance workstreams, minimize sequential process delays, and reduce dependencies on customized technology integrations. This integrated system may lead to benefits well beyond IT.

For example, advanced IT financial management and FinOps tools, which continue to evolve and improve, can help make it easier for business and finance leaders to examine, measure, and plan for dynamic innovation-driven initiatives. This can improve an organization's long-term ability to manage financial costs and spending across a broader, transparent landscape.

Additionally, when developers can work across environments in DevSecOps process, they can reduce deployment time and security risk, streamline operations, and help improve performance consistency—all important contributors to the success of any new digital initiative. This integrated, standardized data environment also helps enable businesses to aggregate and process the right data for regulatory, customer, or operational needs—no matter how it is distributed.

Hybrid by design helps measure cloud ROI

Cloud consumption cost management tools deliver deeper cost insights across platforms and vendors, provide clear visibility into spending and ROI, and allow for apples-to-apples comparisons—which can be difficult when using standard cloud-provider reporting. These capabilities can help leaders consider ROI when making choices and embed and right-size innovation initiatives from the outset.

In an age of ever-increasing cyber threats, data security is often paramount to every organizational function and is one of the biggest factors in retaining customer trust. Hybrid by design aims to provide company-wide security, risk, and regulatory benefits through increased detection speed, which can enable better threat remediation at all points across the IT estate.

Here's how:



A frictionless security architecture provides standardized security tools and processes across environments, so organizations can deploy higher-security measures and consistent security audits.



A federated identity and single-access policy enables consistent, cross-environment data security, unified threat detection, and response to help drive down unforeseen spend.



Data controls and data sovereignty and compliance are needed to address data vulnerabilities introduced with each new cloud environment. Each cloud's security architecture and processes for hybrid cloud/multi-cloud data environments should align with the organization's security governance structure and security policy.



A hybrid cloud architecture helps mitigate data residency and sovereignty concerns, allowing sensitive information to remain on-premises while less critical workloads leverage the cloud.



Enhanced disaster recovery and business continuity strategies reduce the risk of data loss during disasters

The final example of hybrid by design's business value is perhaps the most important: business acceleration. With intentional connections across cloud and on-premise systems, organizations can better use and report on data from hundreds of sources and systems, and identify and address points of complexity or technical debt across the cloud architecture. This can enhance the volume and accuracy of actionable insights to automate operational inefficiencies, break operating silos, and reduce manual effort across the front- and back-office. Further, hybrid by design can help enhance market and customer insights to inform business strategies, enable revenue growth, and empower new product and innovation opportunities.

Your unique hybrid by design journey

Every organization will have a unique hybrid by design journey and should have a clear roadmap with defined elements to address gaps and transition incrementally.

When evolving an enterprise's approach to cloud a strategic re-architecture requires thoughtful planning, careful execution, consistent measurement of progress, and course-correction. Often, many leaders don't know where to start.

A journey map can help organizations approach their third wave of cloud strategy and architecture in an effort to avoid massive re-engineering, understand dependencies, and stay ahead of risks. After creating the organization's unique journey map, organizational leaders should create a plan to mitigate risk, measure progress, and commit to overcoming challenges and staying the course.

Getting started and executing the plan

Create your journey map

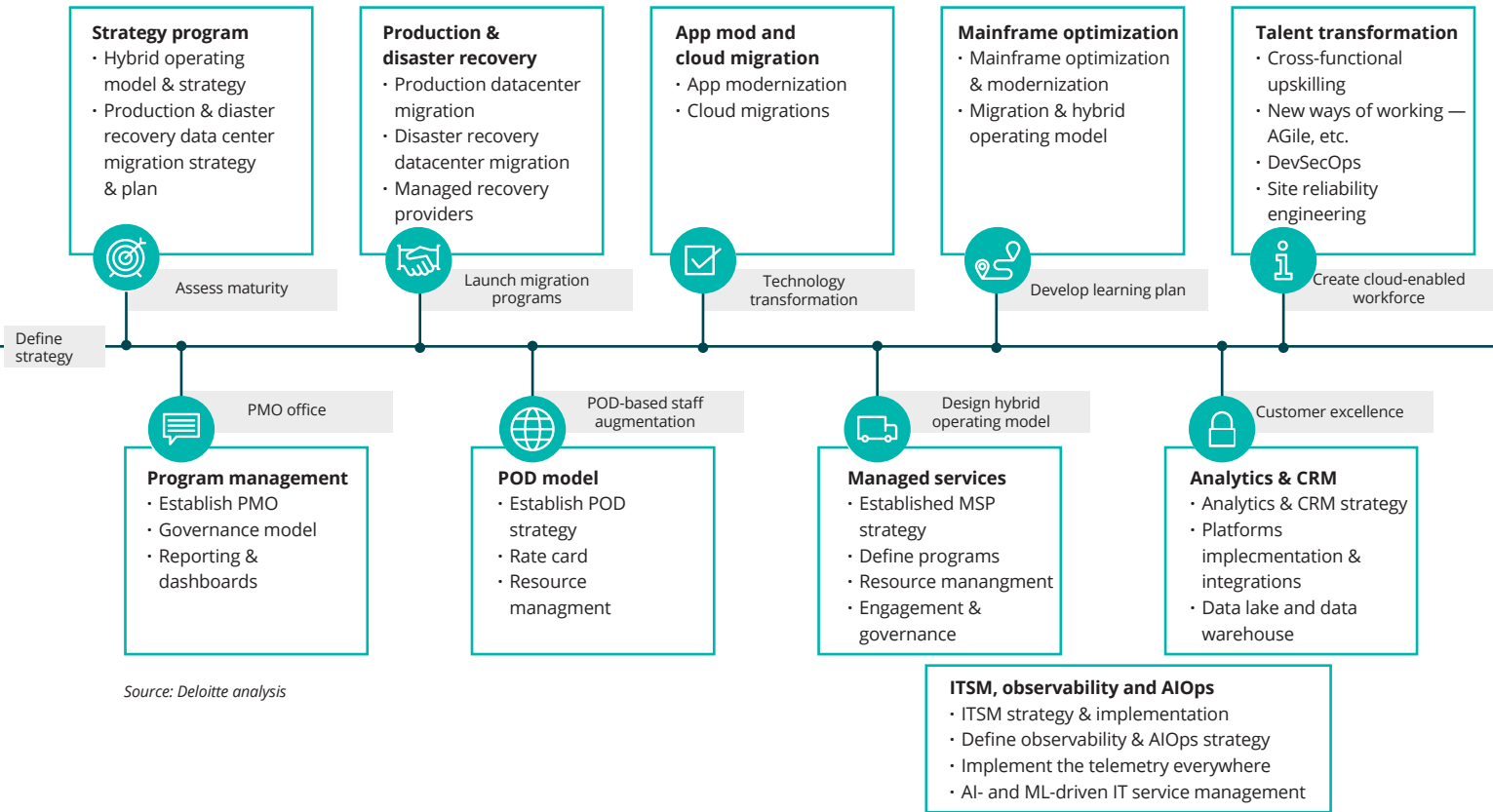
The hybrid by design transition doesn't happen overnight. Following the nine-step journey in Figure 4 can help you answer the many key questions to get you started on the move from hybrid by default to hybrid by design, including:

- 1 Strategy and maturity:** What is your detailed hybrid by design plan and strategy? What systems and processes lack the maturity needed to achieve your goal? Note: You may need to unwind and re-architect at the infrastructure and pipeline layers, tooling choices, and more—avoiding these difficult conversations early in the process can hinder success.
- 2 Program management:** How will you operate your hybrid by design environment—will internal teams manage it or others?
- 3 Migration:** How will you migrate data and systems elements? Avoid breaking things that currently work—instead, work to ensure they align with the journey.
- 4 Staff augmentation:** Do team members have the technical and operational skills needed? If not, how will you engage your ecosystem or third parties to fill gaps?
- 5 Technology transformation:** Specifically thinking about technology transformation, what is your modernization and cloud migration plan? Note: Don't map to a single destination; the goal is a flexible environment that positions the organization for agility to address unknowns.
- 6 Design operating model:** How do you plan to operate and maintain your hybrid by design system? Who is in charge?
- 7 Learning plan:** For any capabilities your organization lacks, will you provide learning and development options or outsource to a third party?
- 8 Customer excellence:** How will you measure success and impact on customers?
- 9 Cloud-enabled workforce:** How will you engage talent early—agile practices? DevSecOps?

Finally, have you achieved the value you set out to achieve? If not, identify shortcomings and return to the strategy phase to refine and improve your hybrid by design approach.

At each step of the journey, it is important to develop a comprehensive financial management framework to set and measure the right ROI objectives and provide appropriate cost management guardrails along the way.

Figure 4:
Deloitte's hybrid by design journey map



Plan ahead to mitigate risk

Any change introduces risk, anticipated or not. Use technical guardrails to help mitigate risk, including implementing change in incremental steps and conducting pilots to test new configurations and introduce new features at smaller scale. Set up robust backup and rollback procedures so it's easy to revert systems to previous states if issues arise, and use appropriate security, risk, and compliance frameworks that can adjust as needed to support the journey.

Of course, communication with stakeholders at each step along the way is critical. Consider providing regular updates and status readouts to garner support and improve alignment. Comprehensive training and support plans can be offered for all participating teams to help promote smooth transitions as operational modes and processes change.

Measure progress

Establishing key performance indicators (KPIs) for success and an approach to monitoring metrics—ranging from cost management to narrow technical metrics, such as response time and up/downtime—can help initiatives proceed deliberately and keep the overall effort on course to meet long-term objectives.

Think through the right metrics and the right processes to manage against—a broad framework for value measurement can help. Consider developing feedback loops and business and technical stakeholder feedback so the metrics have sufficient latitude to adapt to changes.

Stay the course

A successful journey toward an optimized hybrid by design technology platform, operating environment, and operating model never ends. Organizations should play the long game and establish an agile and dynamic end state. The ongoing process of monitoring and refining developments may lack the excitement and internal business momentum of the journey itself, but this step is one of the keys to lasting success and maximizing value.

Designing for the future

The cloud's third wave brings opportunities for business innovation, acceleration, and value today and in the future. Conversely, organizations in the second wave's hybrid by default cloud architecture may find that in addition to ongoing struggles with cloud complexity, they may struggle to effectively use GenAI and other machine learning (ML) and artificial intelligence (AI) tools.

Why? GenAI, ML, and AI tools are only as good as the data they can access, and hybrid by default limits data connectivity, availability, and accuracy. For organizations that wish to overcome cloud complexity and lay the foundation to maximize the value of advanced technology, the time to step into the waters of the third wave is now.

But bold change requires many small and intentional steps over time. Rather than rushing to change, leaders should consider a hybrid by design approach, which is intentional and incremental, working to reduce disruption, accelerate progress, and maximize value.

Deloitte professionals recognize that different organizations face different cloud challenges and addressing them requires thinking and acting differently at this critical third wave. Please reach out if you'd like our experienced team to help your organization redesign your hybrid cloud to propel your strategy, architecture, and innovation goals.

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¹ Study by HFS and IBM Institute for Business Value of over 500 leaders. Tangible business value from cloud transformation remains elusive - HFS Research

² *ibid*

³ Future of Cloud Strategy Survey Report | Deloitte Future of Cloud Strategy Survey Report | Deloitte

⁴ Davenport, Thomas H. "How legacy companies can pivot to a platform model" *Harvard Business Review*. March 9, 2022.

⁵ <https://www2.deloitte.com/us/en/pages/strategy-operations/articles/enterprise-business-strategy-architecture.html>

⁶ <https://www2.deloitte.com/us/en/insights/topics/strategy/successful-change-management.html>

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