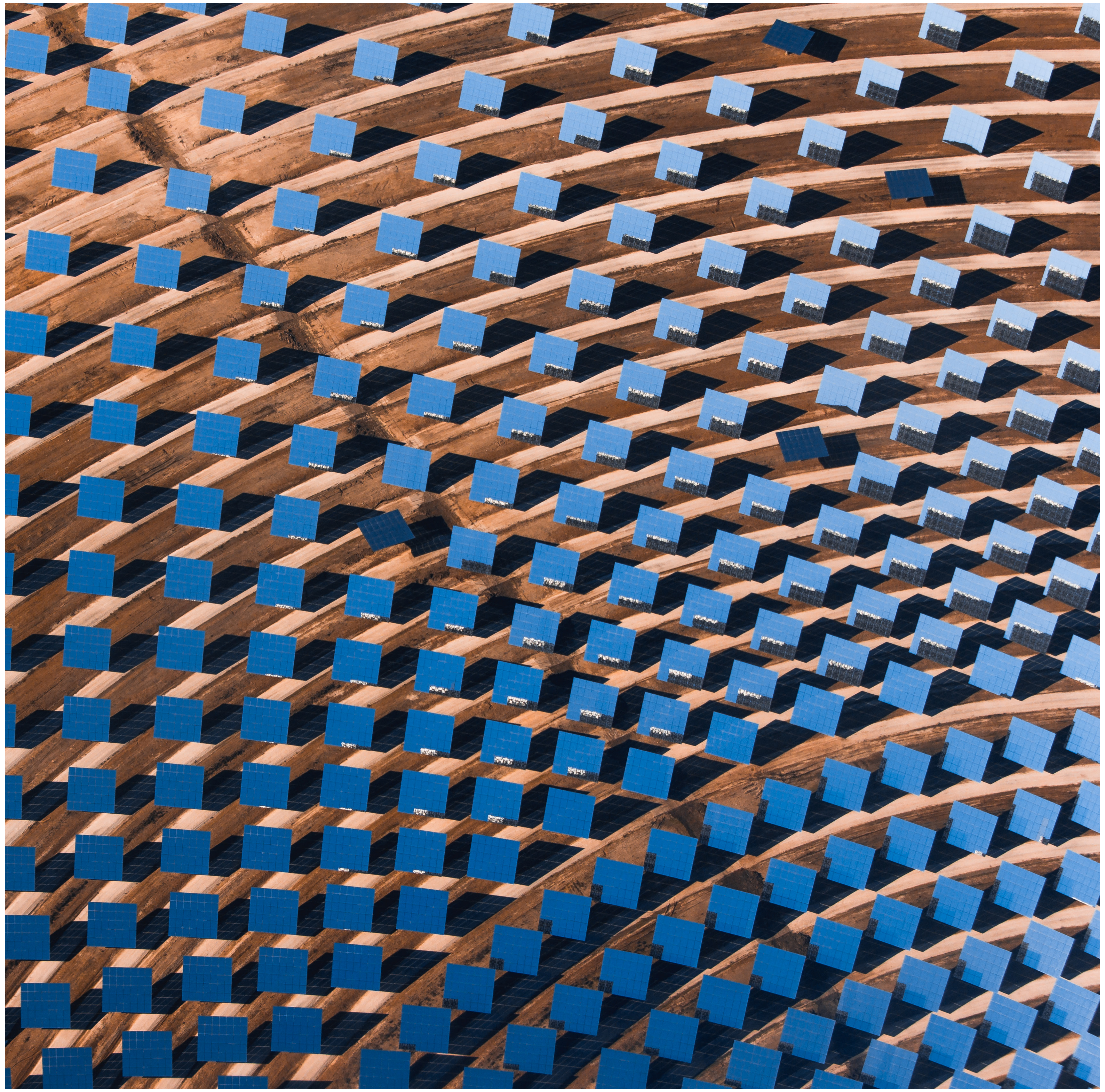
Maximize the value of hybrid cloud in the generative AI era



Contents

01

Hybrid cloud: It’s about business

Established businesses have overwhelmingly adopted a hybrid cloud approach with workloads distributed across multiple clouds, on-prem environments and at the edge. A recent report shows that over 72% of the 750 IT professionals and executive leaders surveyed are on both private and public clouds.[1] However, according to a November 2023 study conducted by HFS Research in partnership with IBM Consulting®, the unfortunate reality is that only 25% of enterprises surveyed can boast a solid ROI on business outcomes from their cloud transformation efforts.[2]

The lack of ROI progress can be attributed to several factors, chief among them are slow adoption, unrealized use cases and unaddressed cloud sprawl.[3] Moreover, this lack of progress will only be exacerbated by the increasing challenges of platform scaling, skilling, cybersecurity and the explosion of data volumes.
As enterprises have evolved their hybrid cloud estate, many experts believe that the IT environment has become so complex that management of the estate exceeds the human capacity to control it. Therefore, a strategy is needed to overcome this challenge.

For cloud transformation investment to yield the largest dividends, cloud must be a business discussion, not just a technology discussion.

Intentional cloud adoption leads to successful digital transformation
Digital transformation remains at the forefront with 95% of CEOs surveyed still pursuing a digital-first strategy to achieve their top business priorities.[4] Among the key business imperatives we see rise to the top of the C-level executive's agenda today are labor productivity, new revenue streams, cybersecurity and sustainability.[1] Digital transformation is seen as the engine to tackle these business imperatives and hybrid cloud and generative AI (gen AI) as the vehicles for success and the means to achieve it.

Of 3,000 business and technology decision-makers surveyed by an independent research firm, "71% think it's difficult to realize the full potential of a digital transformation without having a solid hybrid cloud strategy in place."[5] The IBM Institute for Business Value reported that "68% of hybrid cloud users [surveyed] have a formal, organization-wide policy or approach for the use of generative AI."[6] To avoid past pitfalls, more intentional hybrid cloud design and gen AI adoption is required.

For digital transformations to succeed, organizations must shift the discussion from one that's primarily technological; it must be a business discussion.[2] Only then can tangible outcomes be achieved. Having worked with client organizations across industries around the globe, IBM has identified those that embrace this shift as "business cloud masters."

These organizations extract greatest value from their cloud investments by adopting an intentional *by design* approach to their hybrid cloud architecture across technology, platforms, processes and people in service of achieving business priorities and outcomes. This intentional approach will ultimately lead to better business outcomes and a higher ROI.

02

The need for a hybrid by design approach for AI

Hybrid by default
Many organizations have adopted cloud in pockets as they pursued “quick wins,” applying technology inconsistently across the business. These inconsistencies within different domains create heterogeneous and siloed environments that drive up complexity and costs, in addition to inhibiting the ability to transform the more-critical workloads and meet ongoing business demands. This hybrid *by default* approach has left IT dictating business limitations rather than creating the flexibility and scalability needed to address current and future business demands—including gen AI—resulting in a low ROI.

A lack of intentionality in hybrid architecture can lead to difficulty aligning technology decisions across and for the business, siloed and slow-to-adopt innovation, suboptimal use of resources and constrained gen AI.

It’s necessary to recalibrate transformation programs to better align to business imperatives and outcomes, in addition to understanding how gen AI can amplify the value of cloud and accelerate digital transformation. Hybrid by design seeks to accomplish this goal.

“It’s an easy decision to adopt hybrid cloud. Realizing value from it requires a more business-focused and intentional design.”

John Granger
Senior Vice President
IBM Consulting

Hybrid by default results from the inconsistent adoption of cloud technologies in pockets throughout the business that hinders ROI and innovation and creates complexity.

Hybrid by design
Hybrid by design means adopting an intentional approach to structuring your hybrid, multicloud IT estate to achieve key business priorities and maximize ROI. Organizations can pivot from technology dictating business limitations to purposefully building an architecture that's ready for new business and customer demands, a changing technology landscape, and new processes and skilling requirements. Driven by an organization's key business objectives, intentional and consistent architectural decisions are then made to exploit the full advantage of hybrid cloud and gen AI to create a digital enterprise better equipped to drive business outcomes.

Top priorities underpinning success for hybrid by design include:

- Tighten the alignment of business and IT.
- Drive a business-centric product mindset to enable business priorities.
- Build an intentional architecture to accelerate and scale business competencies.
- Create a consistent development and operational experience across platforms.
- Empower product teams to fully exploit hybrid cloud capabilities.
- Harness the power of all data and scale gen AI deployment.

When the resultant integrated and automated model is implemented, it yields business and IT alignment for accelerated value of investments, continuous and speedy innovation, increased productivity and gen AI at scale.

Hybrid by design systematically builds intentionality into the IT estate, accelerating digital transformation and driving business outcomes.

03

Amplifying business value with hybrid by design

Hybrid by design is much more than just a cloud framework. It's a method for businesses to operate better, faster and more efficiently through technology investment. A hybrid by design approach breaks down significant barriers and overcomes challenges resulting from a complex and often disconnected IT estate. Hybrid by design unlocks value by providing consistency and being intentional across platforms, processes and people—and can deliver upwards of 3.3 times ROI.[7]

When IBM's clients apply hybrid by design principles, they see not only IT savings but extensive business value—all amplified by using gen AI. Enterprises can respond faster to market and customer needs by leveraging a shared talent pool, operationalizing workloads anywhere, automating mission-critical use cases and scaling new technologies like gen AI across heterogeneous enterprise environments.

There are five key levers in which we can articulate and measure the value that a *by design* approach provides.

Business acceleration
A hybrid architecture enables enterprises to rapidly deploy new business models, launch new products and enter new markets by operationalizing workloads everywhere in the enterprise. Aims of the hybrid architecture are to enhance the customer experience, drive customer growth and increase retention with improved insights and rapid market responses. In addition to growing the top line, hybrid by design helps reduce non-IT operating expense by automating back-office functions and reducing manual work in front-office processes that helps overcome talent and skills-shortage challenges. In this way, hybrid by design creates better business and IT alignment to shorten business cycles and improve productivity.

Strategic optionality
Hybrid by design provides architectural flexibility and improves agility by creating new ways of working. It enables workloads and associated data to move across clouds to optimize costs and services, helping enterprises reduce future outages through higher resiliency and managing the talent pipeline to attract new talent.

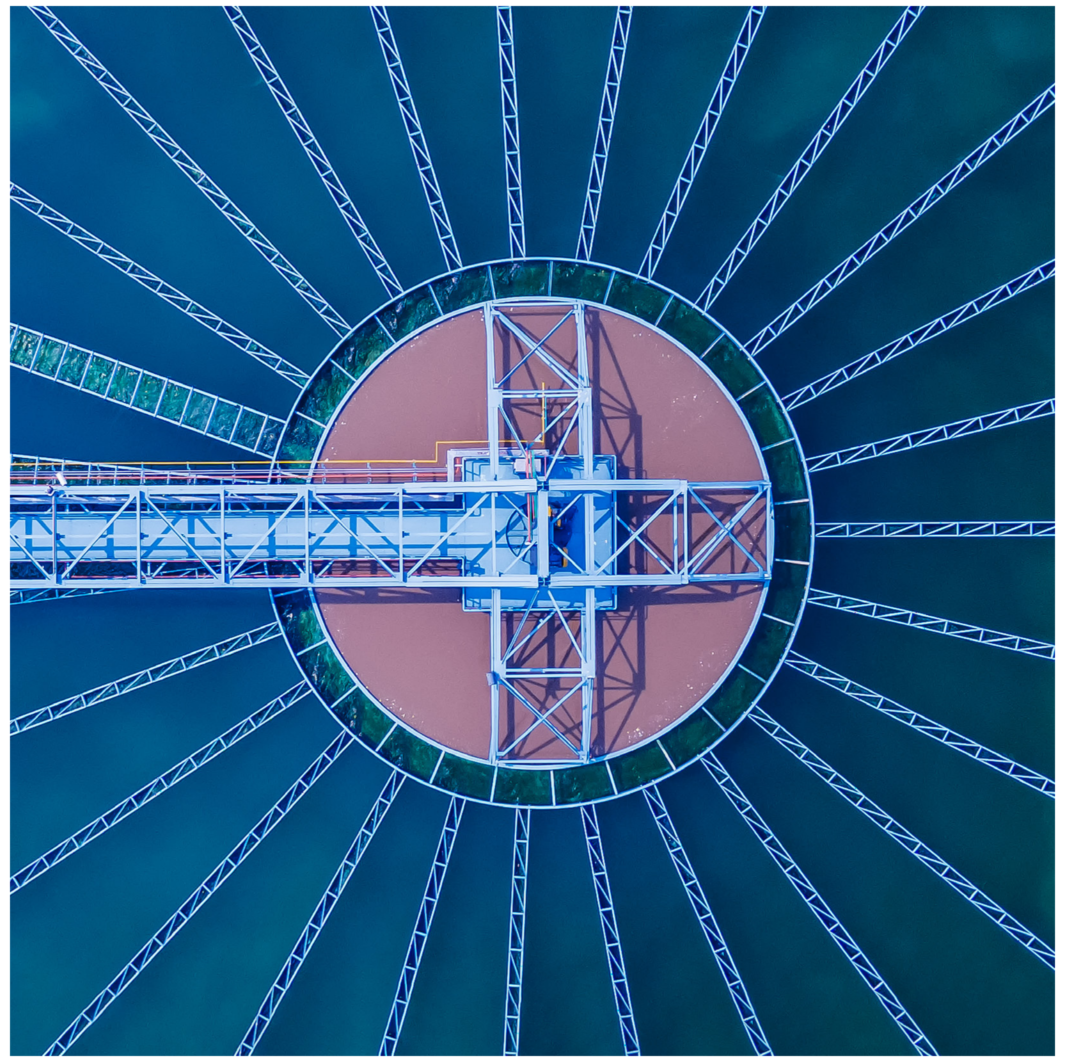
Compliance and security
Hybrid by design provides simplification and standardization around IT security tools and processes, bringing higher-standard cloud security measures and consistent tooling for cost reduction. Hybrid by design can increase the speed of detecting and addressing cyberattacks and is secured by design—no matter where the workload runs. Greater consistency of data and processes results in organizations that are more equipped for business regulations with a better compliance and audit posture.

Application development productivity
Hybrid by design provides a single view and standardizes tools across the platforms, aligns skill sets and processes to drive efficiencies across IT environments and achieves outcomes faster by using AI for automated optimization—without sacrificing quality. Hybrid by design provides a common development experience to increase productivity and, through adopting automation, can reduce human error. Leading with a product mindset, an organization can empower the workforce to exploit hybrid capabilities that maximize business objectives within the development lifecycle. In addition, a simplified set of tooling and platform automation reduces the complexity and cost of managing hybrid environments.

Infrastructure cost efficiency
Compute. Storage. Networking. Hosting. Hybrid by design reduces all those costs by providing a centralized management plane across the hybrid, multicloud estate—with automation and optimization for all environments. Hybrid by design simplifies management of the estate and helps optimize environments and architecture with flexibility and visibility while enabling one-click provisioning and consumption-based billing.

A hybrid by design approach overcomes common enterprise challenges by developing capabilities as platforms across the enterprise instead of as siloed capabilities. The platform approach enables the IT organization to properly support the business with scale, agility and innovation to achieve a higher ROI. Some of the most critical capabilities include realizing value with gen AI, leveraging data as the most valued asset and building applications on innovation platforms while optimizing and managing costs.

Each capability uniquely provides value but is dependent on the others to properly scale and maximize total value. For example, as an organization looks to adopt gen AI, questions that need to be answered include: How is the data being managed? Are the application platforms integrated? Are proper financial controls embedded to manage costs effectively? Understanding how to properly support these capabilities and balance the interdependencies can be a challenge, so a framework is needed to assess the architectural decisions that are best able to unlock the most value.

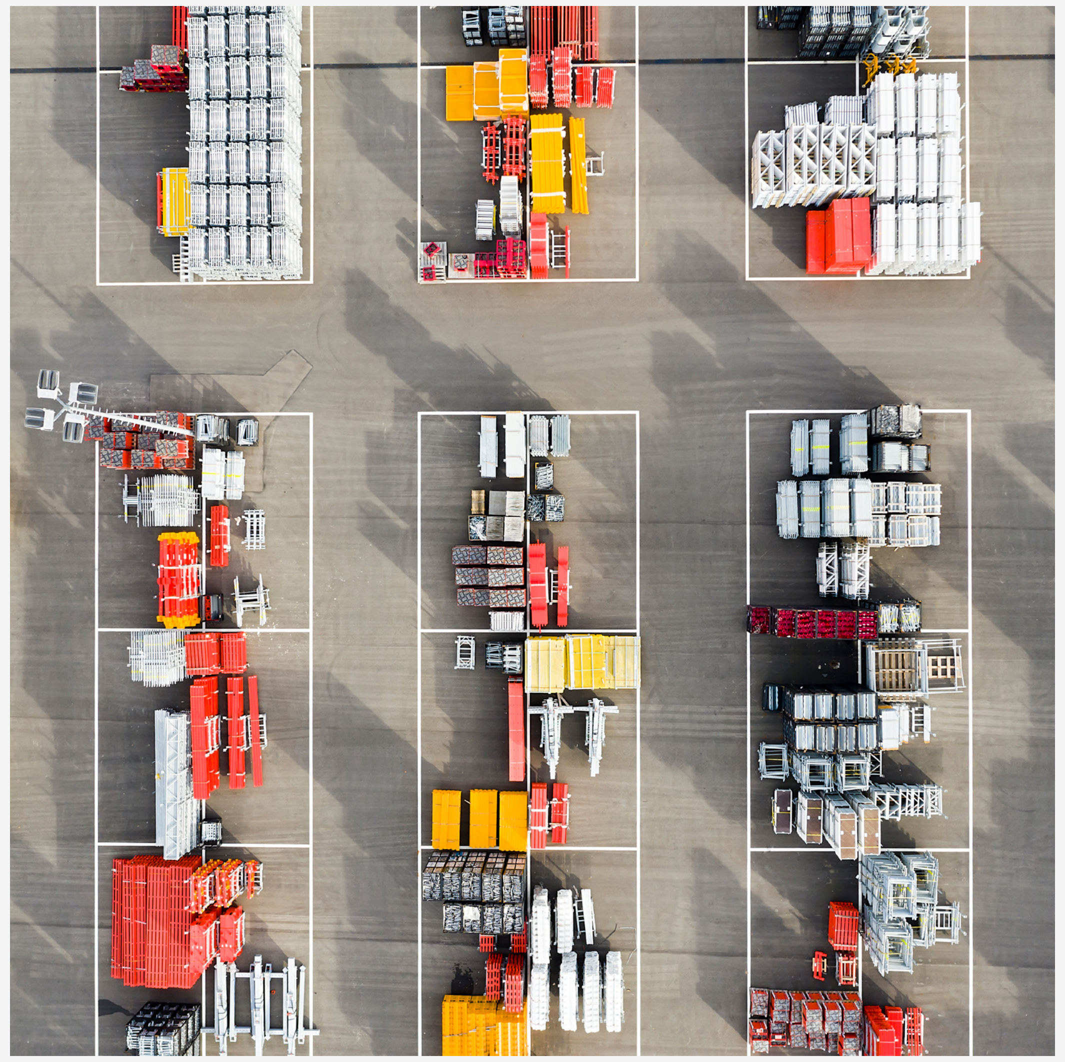


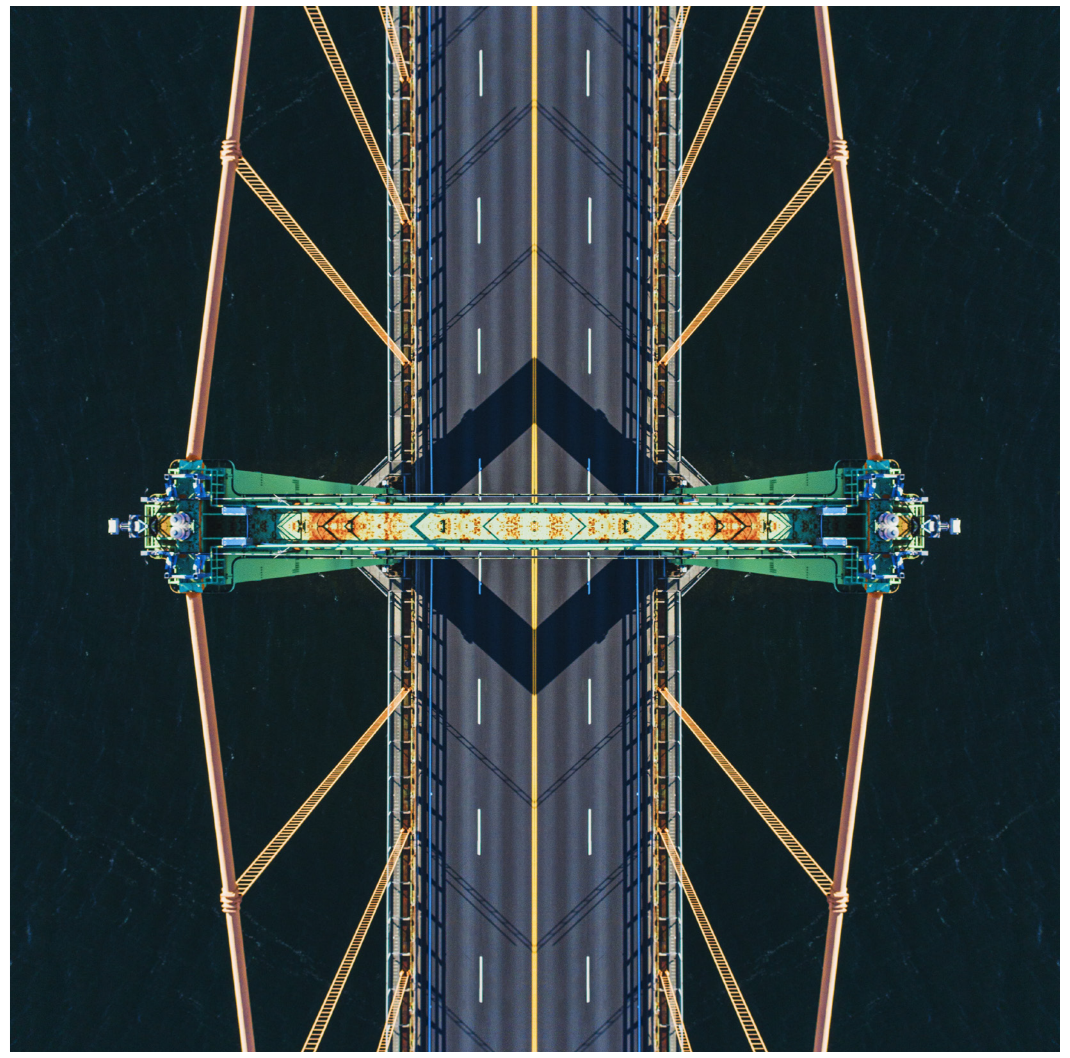
Organizations that adopt hybrid by design break the ROI bottleneck, driving business outcomes to realize the full value of their digital transformation.

04

Codifying the hybrid by design value framework

IBM has built a codified framework that helps an organization establish a set of design points to drive the necessary business acceleration and outcomes. We apply the framework by mapping business objectives to a set of decision points across the three domains: *product-native by design*, *technology by design* and *integration by design*. Furthermore, these domains also are expanded into design points. The key idea to take away is that every enterprise situation demands different levels of capabilities to address and achieve the business objectives sought—so that your primary business remains doing business. This value framework helps you capture those decision points.





Core domains and key design points
The core domains of hybrid by design are that it's intentionally product-led, which in turn drives the technology decisions while also ensuring integration across the different capabilities.

Three key domains underpin the hybrid by design value framework:

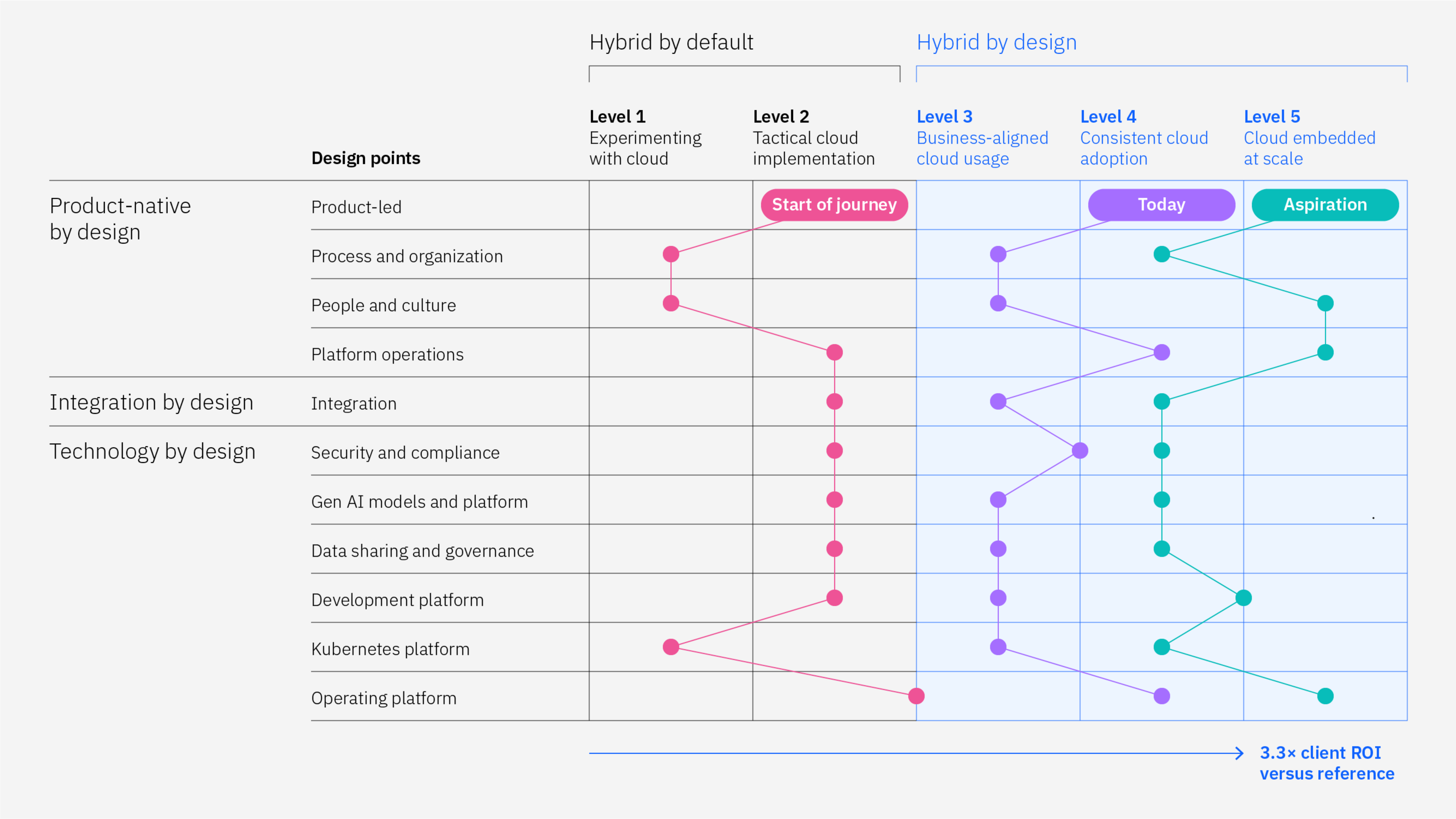
- *Product-native by design* amplifies the priority, speed and scale of value creation across the organization, with a user-centric approach at its core.
- *Integration by design* helps ensure seamless data flow and collaboration by harmonizing systems across the architecture.
- *Technology by design* enhances agility and innovation through unification across multiple hybrid cloud environments.

These domains are further broken into 11 discrete design points to help precisely pinpoint the areas of importance for your enterprise.

The value framework assists clients in identifying investment areas to enhance their capabilities and help ensure a comprehensive and integrated approach across all areas of their organization to achieve their stated priorities. The framework helps translate the business priorities into key architectural decisions to minimize risk on transformation, reimagine business processes and, most importantly, maximize ROI. The desired minimum levels needed across the design points will vary according to the organization's business objectives. For example, if customer experience is the driving priority for one organization, the architectural decisions needing to be prioritized would differ from those of a firm that's looking to enter new markets.

The chart on page 15 shows a client organization's progression through its *by design* transformation, capturing where the organization started its journey, where it is currently and where it aspires to be.

Current versus desired domains across the design points are explicitly highlighted to identify the most-needed investment to drive the maximum ROI. It's important to note that it's not necessary to reach Level 5 across *every* design point. Each organization must determine the minimum level needed to balance funding realities with the complexity of ongoing operations to drive them closer to their ultimate business goals. This understanding, in turn, helps programs estimate and rightsize various workstream efforts to establish a holistic transformation approach with all relevant workstreams and stakeholders better aligned. The result is a successful transformation and achievement of business objectives.



An example of the codified hybrid by design value framework assessing the needed consistency across the three domains and 11 design points necessary to achieve business imperatives[8]

05

Adopting hybrid with and for generative AI

The emergence of AI or, more specifically, gen AI, has revolutionized how business can operate and how IT can support business outcomes, including:

– Improving disruptive client experiences through personalized marketing and accelerated customer research for retention and growth
– Developing new business ways and insights through augmented business processes, increased workforce productivity and proliferated edge cases
– Improving process and technology automation with optimized infrastructure management, accelerated application modernization and automated IT help desk support

Moreover, gen AI has become a critical puzzle piece in the creation of the digital enterprise, helping to maximize business return on IT investment. However, as enterprises pivot from piloting gen AI solutions to putting them into production for mission-critical workloads across the globe, they're experiencing certain challenges:

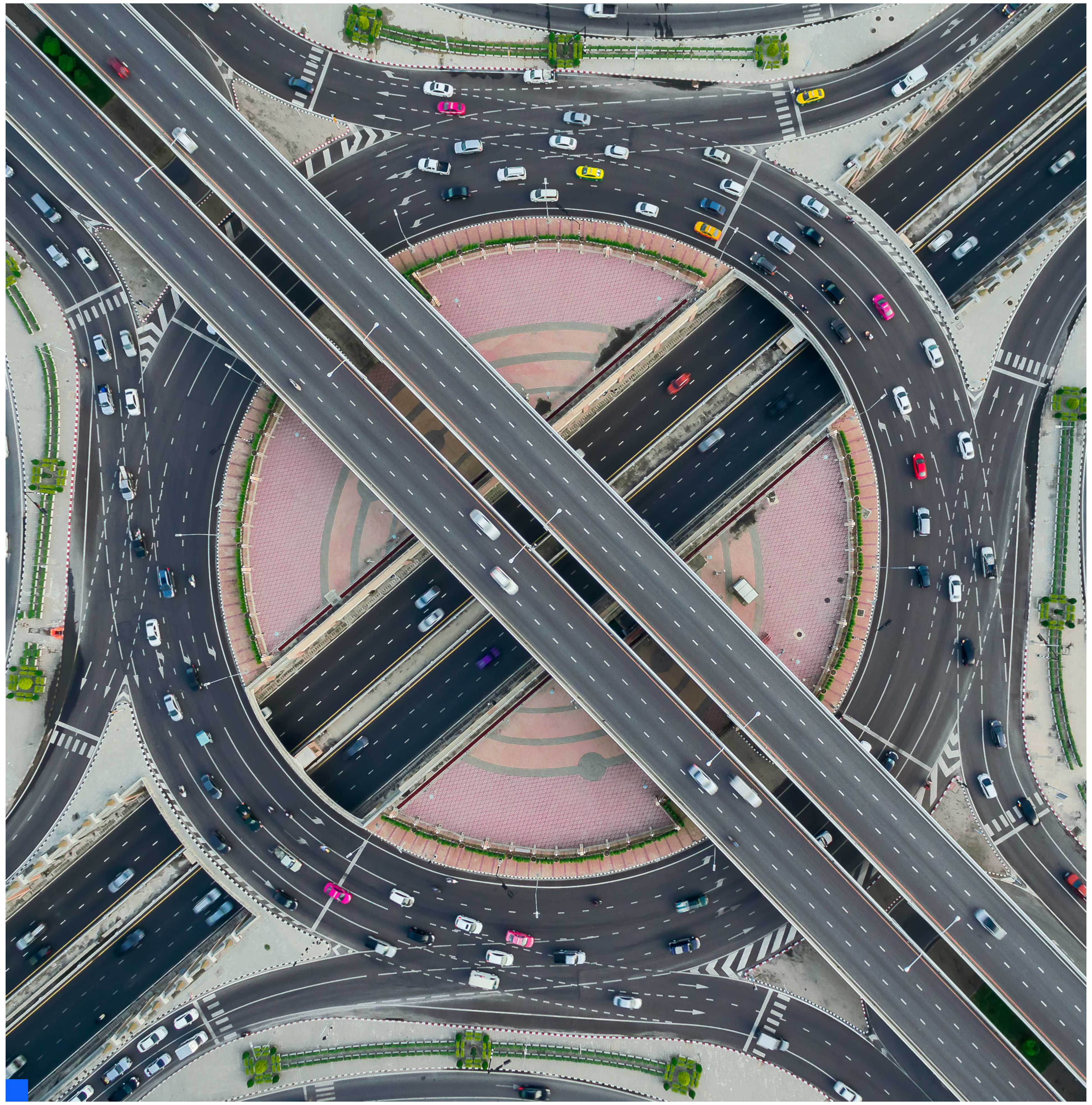
– Multimodel workflows running on different IT stacks[9]
– Expensive resources used on hybrid, multicloud environments[10]
– Model and data governance complicated by workflows across the enterprise[10]
– Scalability and replicability limited by heterogeneous environments[11]
– Data quality and access restricted by distributed data[12]

An intentional and consistent hybrid architecture design helps overcome these challenges to successfully adopt and scale IT capabilities to meet the needs of the business. For example, AI and gen AI builders need an effective development platform with models replicated across different environments, in addition to security-rich and compliant AI with trustworthiness against vulnerabilities. Hybrid cloud can deliver model independence from specific environments and enhanced cross-stack security with coordinated response.

Hybrid cloud + gen AI = Accelerated transformation

Just as a hybrid by design approach helps the adoption of gen AI meet the needs of the business, gen AI accelerates the execution of hybrid cloud. Gen AI brings better automation with observability, better cost optimization with automated insights, and augmented security and compliance across the hybrid platform.

The application of AI technologies, including gen AI, will be required to make the most of the hybrid cloud model. At the same time, an intentional hybrid cloud design provides capabilities and benefits that enhance the value of deploying AI solutions. In short, today's business is empowered by a new type of innovation—hybrid cloud with gen AI.



Gen AI amplifies the value of hybrid and hybrid is necessary to optimally scale and leverage gen AI.

06

Hybrid by design successes in the real world

What do a large global airline based in the US and an iconic sports spectacle in the UK have in common?

The answer might surprise you. Hint: It's *by design*.

Powering fan engagement with AI at The Championships, Wimbledon
The All England Lawn Tennis & Croquet Club Limited, which hosts the Wimbledon tennis championships, wanted to increase its digital presence among its audience and increase fan engagement before, during and after the event. IBM built a scalable AI platform across private and public cloud environments, integrating its hybrid cloud platform with Wimbledon's portal and apps and pulling data from multiple sources. As a result, fan affinity and traffic rates soared 55,000% with 49 million visits and 11 million on-demand videos, while 40 million threats were blocked.

Read the blog post →

Boosting the customer experience at a large global airline

Delta Air Lines, Inc., based in the US, needed help getting a new customer experience off the ground. The airline engaged IBM to deploy an open, hybrid architecture that would provide consistent development, security and operations across its IT estate. As a result, the airline was able to outfit over 600 planes with free in-flight wifi and access to its online marketplace—all powered by hybrid cloud.

Read the press release →

07

Leveraging the hybrid by design value framework

A well-defined strategy is critical for a successful transformation and is a cornerstone of hybrid by design. With clear business objectives as the “North Star” in an organization’s transformation journey, the value framework then helps translate the priorities into key architectural decisions. Once these objectives and design decisions are established, the question becomes, “How does an organization execute and leverage the many technologies and partners to make it successful?”

Bringing all players to the table

Hybrid by design is an ecosystem play that demands client value-centricity. The diverse cast of ecosystem players involved in your hybrid by design and gen AI journey can create a complex dynamic. In such complex projects, implementation partners, hyperscalers, SaaS providers and ISVs might also bring their own biases, divergent perspectives and vested interests. It becomes easy to lose sight of working together to achieve the client organization’s business outcomes. Likewise, various line-of-business and IT leaders within the client organization might not share the same perspective on mutual business objectives.

Business leaders need a clear strategy and a robust ecosystem to unlock the full value of hybrid cloud and harness the power of generative AI.

Managing these diverse interests might be partially addressed by existing business and IT governance structures but really requires a more direct solution—a game changer.

The shared vision among ecosystem players that emerges from the value framework facilitates the coordination of relevant parties, each of whom designates a senior representative to join the client organization at the table. Chaired by an enterprise executive overseeing the journey, the internal and external partners at the table keep the program on track by making decisions collaboratively, consistently and with enough transparency to maintain the trust of all parties.

Coming together under a unified framework

One of the table's objectives is to turn what could otherwise be a zero-sum game for each designated senior representative into a bigger pool of value for everyone at the table and across the ecosystem. Hybrid by design gets naturally competing interests—line of business, IT, lead integrator and technology vendor constituencies—to embrace open innovation and co-creation to deliver a successful program. The value framework helps align business outcomes with technology decisions to bring all partners under a unified strategy focused on the client organization's success.

It all starts with a shared vision and is accelerated by leveraging the right partners and technologies, guided by the hybrid by design value framework, brought under one banner to achieve the stated objectives.

08

Accelerating your hybrid cloud and gen AI journey

The application of intentional architecture decisions based on the needs of the business is the key ingredient that amplifies the value of hybrid cloud and AI to drive business outcomes. Don't leave such critical choices to chance; shape your solution by design. Be a business cloud master.

We're committed to helping you learn how to design a hybrid cloud platform that takes advantage of gen AI and cloud services to drive business innovation. Our dedicated hybrid cloud and AI team is offering a personalized discovery session aimed at identifying the most promising opportunities for piloting your cloud and AI solutions.

Schedule your discovery session →

Learn more about hybrid cloud for AI →

09

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Varun leads IBM's global hybrid cloud services business, helping clients define and execute their technology and cloud strategies to support their business objectives. His team specializes in cloud strategy and architecture, application transformation and product engineering, cloud platform services, and IT and application operations. In his role, he is also responsible for offering development, ecosystem partnerships, go-to-market initiatives, sales and delivery excellence, skills strategy and talent management. Varun is part of IBM's global senior leadership team and also fulfills the role of partnership executive for several key clients, supporting them on their digital transformation and ensuring they receive relevant differentiated services and solutions from IBM.

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Edward is a senior managing consultant in IBM's global cloud advisory practice, where he provides strategic guidance to clients seeking large-scale digital and cloud modernization. A seasoned technology strategist in creating cloud transformation roadmaps, he excels at harmonizing business objectives with IT strategies to drive enhanced business outcomes. He has expertise in developing business cases for IT technology adoption solutions, which is vital for strategic planning and value realization. Additionally, he spearheads offering development and go-to-market programs within IBM. Edward demonstrates a passion for solving intricate business challenges through cutting-edge technology solutions and leads diverse teams to usher companies into the forefront of the digital age.

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