

IBM Institute for
Business Value

The Great Tech Reset

How hybrid by design
creates business value

IBM

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creates business value

An aerial photograph of a lush, green landscape shrouded in mist. A dirt road winds through the forest. In the background, there are small buildings and a large, flat, open area, possibly a field or a clearing. The overall atmosphere is serene and somewhat ethereal.

“You may deliver the technology
but if the business is not ready
or the business is not along
for the journey,
nothing moves.”

Jimmy Yeoh
Chief Information Officer
DHL Express APEC

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Foreword

Cloud transformation is no longer about technology. It's about business strategy. And competitive advantage. That means cloud conversations require leaders across the C-suite to work together in ways they haven't before. The emergence of generative AI, and the essential role hybrid cloud plays in this latest enterprise transformation, has finally signaled the end of operations that separate IT from "the business." IT *is* the business.

And that's the major reason for the Great Tech Reset. Powered by an approach we call hybrid by design, leaders can rethink their technology estate to make the most of not only the gen AI opportunity, but the emerging technologies that will follow it.

As this book was written, some leaders were still questioning their cloud costs, wondering why something meant to make them more agile and cost efficient was costing them more than planned. Others already had the answer and were doubling down on hybrid cloud, using it as the foundation for their generative AI initiatives.

The first set of companies is hybrid by default. Different business units decided on separate approaches to cloud. Capacity was added ad hoc and things got expensive. IT is considered a service provider rather than a business partner.


The second group is hybrid by design. They created a more deliberate strategy, fusing IT into core business operations and ensuring there were no cloud fiefdoms. This approach is saving them money, making innovation and partnering easier, and helping their organization run more rapidly and efficiently—all the things cloud was supposed to do.

Hybrid-by-design enterprises are truly strategic about how cloud fits into the entire IT estate. Hybrid cloud was meant to be a transformative tool but it's not a magic wand. As with any technology, it's only as good as its application within a larger business strategy.

While hybrid by design began as an architectural approach to cloud, it is so much more now. As gen AI has made a dramatic entrance to the technology scene, hybrid by design has become a disciplined strategy for integrating cloud solutions with IT infrastructure, operating models, and ecosystems, ensuring alignment with your overall business goals.

Hybrid-by-design organizations perform better. In an age where 84% of digital transformations fail,¹ hybrid-by-design enterprises can generate over 3x higher ROI over five years.² Not only do hybrid-by-design users see higher returns, they also are positioned for extensive business value amplification through generative AI.

This book serves as a roadmap to help business leaders move from hybrid by default to hybrid by design. The future belongs to those who are intentional about designing their success. Join us as we embark on the Great Tech Reset.



“Technology today as a stand-alone
function does not make sense;
*technology is there to reimagine
and power the business.*

And this requires a much closer integration
and collaboration with business leaders.”

Rafee Tarafdar
Chief Technology Officer
Infosys

Introduction.

Hybrid by design

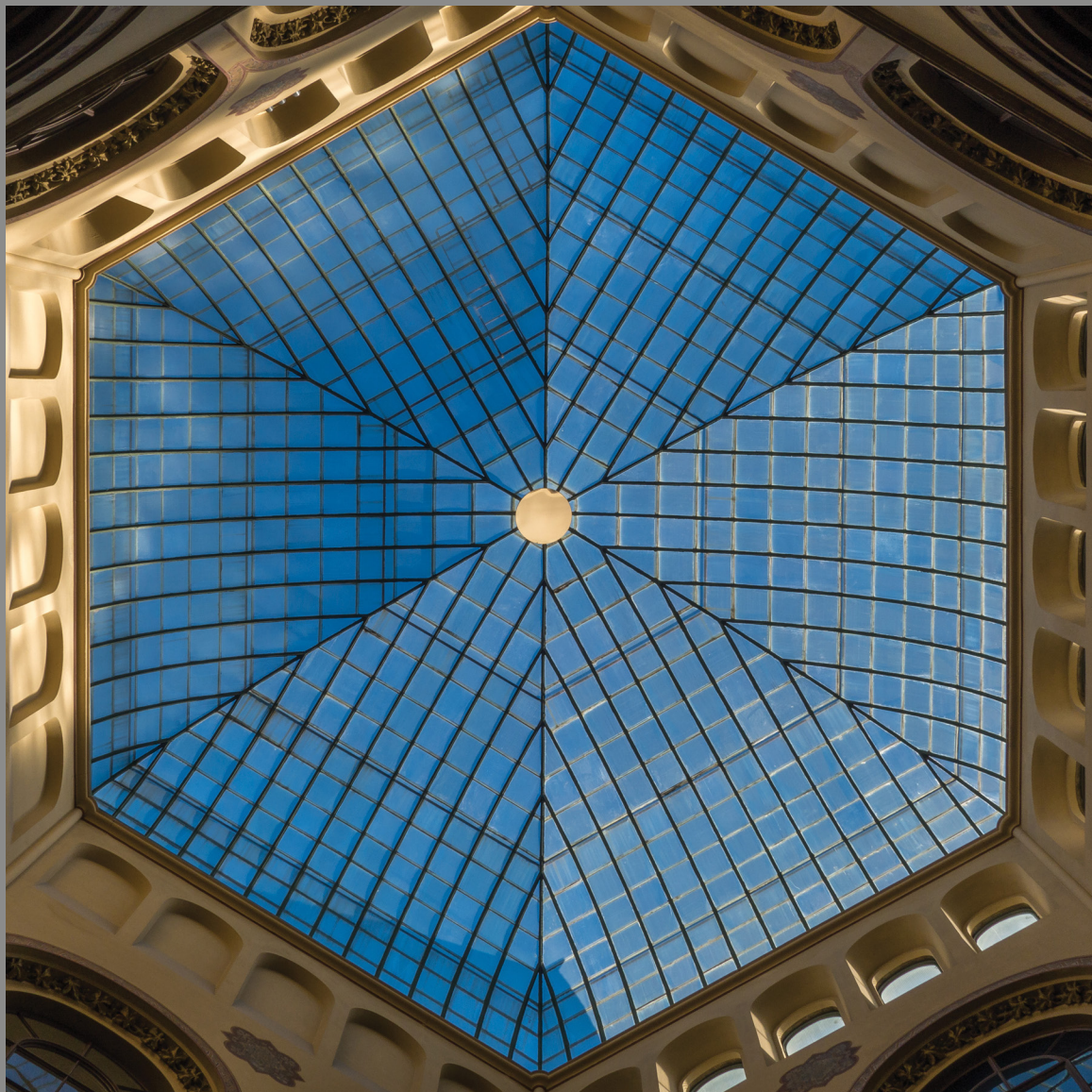
Using an approach we call hybrid by design, organizations can rethink their technology estate, so it not only best supports gen AI, but also their businesses moving forward.

Our research shows most organizations have low expectations for ROI on IT projects. They're being funded even if the business case promises only a 10% ROI.³ The bar should be higher, especially for projects involving transformational technologies such as gen AI.

For decades, enterprises have tried to convert new technology into better business performance. Most only deliver value in pockets. Chasing the “Next Big Thing” in technology has left a trail of sluggish implementations and mountains of technical debt. (Tech debt occurs when today's technologies become a liability rather than an asset down the road. This usually happens when, despite sunk costs, organizations find their technology is too rigid and too unintegrated to accommodate new business objectives.)

Now, though, generative AI looms large and it's driving a technology reset—the Great Tech Reset. It's a chance to rethink technology estates, modernizing, to get the most from a symphony of technologies—from gen AI, to cloud, to platforms and software.

C-suite leaders not only have an opportunity to better deploy AI at scale, they also can use its transformative potential as a catalyst to completely overhaul their IT estates and the business outcomes their teams are capable of creating.




Chapter one.

From chaos to cash

How hybrid by design
creates business value

01



“Large organizations are inherently complex and bureaucratic, often due to their evolutionary path rather than intention. Our job is to unravel that before all else. Then: how do we breathe creativity and imagination into what could be? This would be the beginning of the *vanguard moment.*”

Shayan Hazir
Chief Digital Officer
HSBC Singapore

Key takeaways

Gen AI forces organizations to assess their technical foundations. Hybrid cloud is an essential part of that tech foundation and critical to successful gen AI scaling.

Gen AI can unlock transformative value only when it is integrated in a well-designed hybrid cloud environment. Most organizations are in hybrid-by-default mode, which means their hybrid estate has developed organically versus by intentional design. As a result, they have accumulated years of technical debt and too many cloud silos.

Hybrid by design delivers impressive results. IBM is on its way to \$3 billion in productivity improvements using hybrid by design. Argentina's Ministry of Health responded to a 1500% increase in transaction volume during the pandemic using hybrid by design.⁴ And Delta's cloud transformation initiatives are helping the airline make its way better employee engagement, productivity, speed to market, and cost efficiencies.⁵

Every technology revolution prompts organizational introspection, but AI's success hinges on it.

Hybrid by default
vs.
Hybrid by design

The hybrid-by-default problem	The hybrid-by-design solution	
Tangled architecture and operations stifle transformational technologies.	Intentional transformation	A framework for architecture and operations powers enterprise-scale results.
Tech sprawl reigns. Investments are equally scattered, delivering weak returns.	Intentional investment	Product roadmaps drive wise, targeted investments, creating consistent business value.
Passive, back-office tech architecture impedes enterprise-scale solutions.	Intentional architecture	Tech architecture integrates data, applications, and cloud estates.
A revolving door of vendors means no accountability for business outcomes.	Intentional partnerships	Strategic partners combine resources for shared success.
Silos, handoffs, and weak governance undermine operations.	Intentional operations	Teams design end-to-end value streams to deliver better products, faster.

What is hybrid by design and how can it help the business?

Hybrid by design is a tested, codified architectural framework, running on hybrid cloud, to help organizations optimize business value through technology. It's a structure that will support their business moving forward, giving them the agility, speed, and integration they need to achieve their future business outcomes.

Hybrid by design began in cloud architecture. It described how some organizations designed their hybrid cloud estates—deliberately, through the lens of business priorities. These enterprises used a mix of public and private clouds, as well as on-premises data centers, to help them gain agility and speed, and scale business initiatives.

Today, as generative AI invades businesses, the principles behind hybrid by design apply beyond cloud computing to the enterprise as a whole: platforms, security, AI, cloud, data—the entire technology estate. Hybrid by design can turn a cacophony of disparate technologies into a symphony—amplifying business outcomes through wise design and integration.

The norm: Hybrid by default

Instead of a tech symphony, however, the alternative and more common state for many organizations is “hybrid by default,” best illustrated by an organic mix of clouds and on-premises data centers. Hybrid-by-default estates are unintentionally heterogeneous, complex, siloed environments that create higher costs, lower returns, failed implementations, and buyer's remorse. They lack an overarching plan aimed at the best integrated business outcomes and are littered with technical debt.

Readiness to deliver and scale gen AI and other evolving technologies rests on an intentional, well-designed reset, with hybrid-by-design principles lighting the path forward.



Three things to know and three things to do

The IBM Institute for Business Value has identified three things leaders need to know and three things they need to do to get started on hybrid by design.

	What to know	What to do
01	A tech reset today equals durable competitive advantage tomorrow.	Raise the bar with a reset. For example, if you’re currently delivering 20% ROI on 20% of the IT budget, reset it a step-change higher.
02	Generative AI reveals whose tech estate is built on sand and whose is built on solid ground.	Rebuild the foundation. Apply hybrid-by-design architectural principles to help deliver applications at enterprise scale and convert constraints into assets.
03	Slowing down to take stock actually speeds up your reset.	Clear a path for enterprise-scale solutions. Tackle legacy technology to remove obstacles to a new way of working and operating.

01

A tech reset today equals durable advantage tomorrow.

Cutting-edge technology should not dull the bottom line. 72% of executives agree that improving ROI from the IT investment portfolio by 25% or more is a top C-suite priority for 2024.⁶

But to do that, leaders need to design their hybrid model in a way that frontloads value, an antidote to the “dabbling-level” adoption that is so common and leads to weak ROI.

For instance, almost one-third of organizations say their cloud journey stalled midway.⁷ And a further 37% report being “done” after only minimal workload migration.⁸ Too often, cloud loses momentum before investments start to pay off. Dabbling-level adoption—a project here and there—stops short of a tipping point where the ROI from improvements in business performance balances, and then outpaces, implementation costs. Consequently, cloud programs can be seen as necessary but unwelcome drains on resources, rather than opportunities for reinvention.

Only 29%

of cloud IT assets and services are performing as required.

Dabbling is not just limited to cloud, though. 55% of executives report that designing IT solutions to solve critical business challenges is a significant obstacle or a real roadblock.⁹ To help ensure the approach to generative AI doesn’t follow in the footsteps of previous unsuccessful approaches, a tech reset is necessary. Currently, only 29% of cloud IT assets and services are performing as required.¹⁰ The remaining 71% is essentially tech debt.

Scaled gen AI: Raising the bar for ROI

Executives have low expectations even for IT projects explicitly designed to improve business outcomes, according to our latest research. Other data shows that some organizations are getting better overall at converting digital initiatives into business value; 24% of respondents claimed two times the returns on at least some investments in 2022 and 35% expect to do so in 2024.¹¹ The bar can be higher.



72%

of executives agree that improving ROI from the IT investment portfolio by 25% or more is a top C-suite priority for 2024.

**It’s not about spending more.
It’s about spending better.**

Leaders across business units
and IT need to agree on three numbers:

The first:

The percentage of
the IT budget available for
investments to improve
business performance

The second:

The current ROI
from the entire
IT portfolio

The third:

The length of time
required to turn ideas
into cash (design and
delivery velocity)

These three numbers show the outcome of the way IT fuels the business today. They are strong predictors of the outcomes your organization will get with gen AI. As economist and statistician W. Edwards Deming said, “Every system is perfectly designed to get the result that it does.” Different results require changes in design. Pushing new technology into the same operating model won’t deliver transformational results.

How does it work in the real world? See IBM’s own story of business transformation (on page 26) with a hybrid-by-design approach. The organization is en route to \$3 billion in productivity improvements by the end of 2024.

What you need *to do*.

01

Raise the bar
with a reset.

Rethink ROI.



Durable competitive advantages aren’t built on tweaks. Hybrid by design fuels continuous improvement, but aim for a moonshot. This deliberate approach seeks deep shifts, not baby steps, exposing the behavioral changes needed to unlock AI’s true power.

“Quite often there’s a brittle ecosystem of processes, different working practices, data silos, poor data quality, poor data governance, poor transparency or reporting, etcetera. Some CEOs might say, ‘Well, AI will fix all of that.’ That is a fallacy, because AI will fix probably a small percentage of those things—making a CEO think that AI has failed. But AI hasn’t because the reality is that deploying a generative AI capability has to be done in conjunction with complete wholesale business transformation.”

Mark Breslin
Chief AI Officer
Informa Plc

Double down on ROI by setting a higher target for new tech efforts.

Some enterprises are already expecting to deliver over 20% ROI on some investments in 2025, so the target should be north of 30% or even higher.¹² Improving the early stages of program design, upgrading digital product engineering capabilities, and modernizing IT investments can close the gap.

Shift IT budget focus from keeping the lights on to powering breakthrough solutions.

Make more of the IT budget available for investments that can solve critical business problems such as productivity lag and revenue slumps. The shape of a typical IT investment portfolio leaves only the tip of the pyramid available to improve business performance. Absent significant increases in the IT budget, making more than 20% or so of the budget available means building new platforms, working with partners to reduce maintenance costs, modernizing legacy assets, and eliminating tech debt.¹³

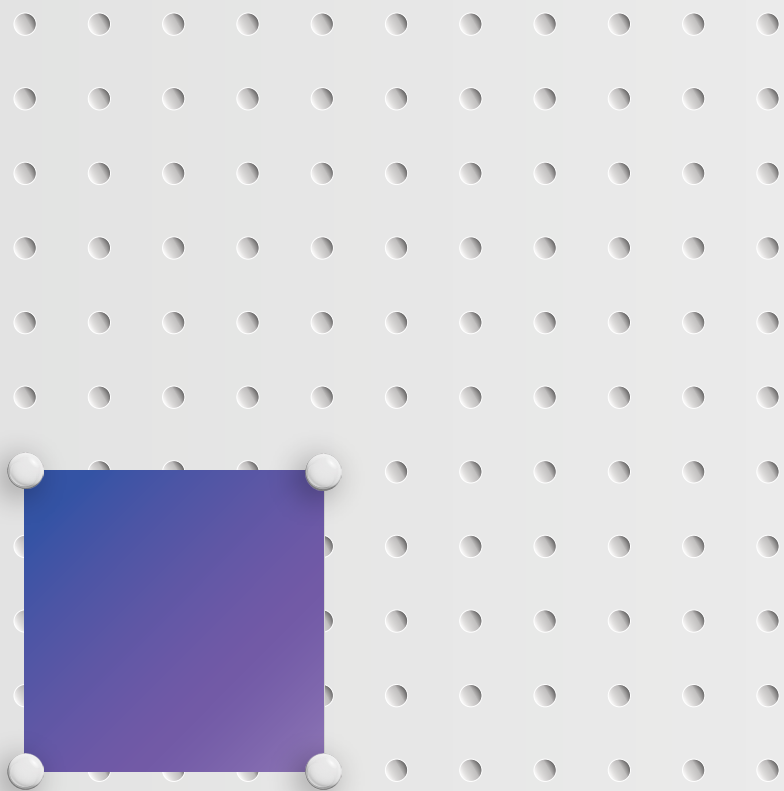
Codify to simplify . . .

. . . and simplify to gain speed, reducing the lead time required to convert IT ideas into business outcomes. Hybrid by design improves velocity by shortening the time it takes to deliver digital products. It codifies architectural technology decisions that help developers build faster and more consistently, safely, and more productively, as generative AI code-writing assistants speed up many legacy processes. Improving velocity delivers direct financial benefits, builds support from sponsors by delivering earlier returns, and makes time and funding available for even more high-ROI investments.

02

Generative AI reveals whose tech estate is built on sand and whose is built on solid ground.

Intentional investments in your new hybrid-by-design technology estate form the foundation for success of your generative AI initiatives. Yet only 16% of executives say they're very confident that their cloud and data capabilities are fully ready to support generative AI investments in 2024 while 27% of executives say they're unsure of readiness.¹⁴



“Technology should be integrated with the company’s strategic planning. If the technology is only combined with infrastructure and security at the operational level, it can create value only in the short term.”

WeiWei Zhang
Chief Data Officer
Tianshan Material Co., Ltd.

Hurdles to scaled gen AI

The path from gen AI pilots to real-world deployments is often littered with roadblocks, including:

Barriers to free data flow.

Disparate systems create friction, meaning that workflows struggle to function across inconsistent IT stacks. A CRM system here and a marketing automation platform there often don’t play well with each other. When data can’t flow freely, collaboration and innovation suffer.

A fragmented governance structure.

Scattered and disconnected workflows can lead to shadow IT, duplicated efforts, and potential compliance issues.

Security concerns.

Managing security and compliance across the entire IT estate is crucial in a world where cybersecurity is increasingly essential.

Creating a gen-AI-ready tech foundation

Generative AI thrives on data. It needs vast amounts of clean, accurate information to learn and generate effective outputs—which is what enterprises need to fuel fast innovation. A robust data infrastructure—including data lakes, warehouses, and high-speed pipelines—is essential to feed the AI engine. By investing in a modern tech stack, you’re not just laying the groundwork for gen AI success—you’re building a foundation for consistent innovation through the free exchange of information between cross-functional teams.

Gen AI models are computationally intensive. Training and running these models requires significant processing power. Legacy systems simply won’t have the muscle to handle the demands of generative AI.

Becoming hybrid by design demands a comprehensive assessment of current compute capacity, data distribution (cloud, on premises, edge), data access protocols, security controls, and the potential to leverage existing technology investments.

This approach doesn’t just make technology more reliable (less downtime, smoother operations), it also makes an organization more adaptable (easier to react to changes, faster decision-making). Imagine seamlessly connecting everything, onsite and online, to create a perfect environment for generative AI. This translates to real results—a smarter way to work that drives profits.

What you need *to do*.

02

Rebuild the foundation.

Use hybrid-by-design architectural principles to pay off tech debt and convert constraints into assets.



Every trip through the Next-Big-Thing-in-IT hype cycle has added to the enterprise’s store of technical debt. For instance, remember custom-built enterprise software solutions? Tailored, yes, but also incredibly expensive and time-consuming to develop and maintain. As technology evolved, these custom systems became outdated and difficult to integrate with newer tools, yet many organizations continued to maintain them. These tools and more have contributed to a convoluted technology legacy within large enterprises, so the current condition of the IT estate is not the AI-ready, enterprise-scale foundation the generative AI era needs.

Gen AI is not just the Next Big Thing in IT. This time, it is a technology that demands a shift in the fundamental way large enterprises work. Building a hybrid-by-design approach paves the way for a roadmap of improvements.

**Run, don’t walk,
toward critical
business problems.**

Build the highest-impact AI products to start to create a strong foundation. Don’t begin with tech use cases, though. Instead, start with critical business problems where gen AI can yield the highest return on investment. Run pilots and proofs of concept, but in areas of the business where even incremental improvements can be scaled to generate outsized returns. AI is a transformational technology; demand transformational solutions and investment cases.

**“Wake up” assets
to support high-ROI
AI plays.**

Put your dormant IT assets to good use. Consider hybrid-by-default clouds with excess capacity, data that can be freed from silos, on-prem infrastructure, mainframes that can run AI applications, and legacy applications that can be modernized as cloud-ready, AI-ready assets. Activating these dormant assets may cost money, but gen AI can support the business case for some of those investments and turn them into hybrid-by-design resources. In the short term, if a prospective AI play requires architectural changes that the business case won’t support, look for adjacent plays where the same costs can be distributed across multiple investments. Anything that doesn’t support your big plays is a form of tech debt.

**Modernize smarter,
not harder.**

Reduce the cost of application modernization by using generative AI to build your hybrid-by-design models. Activating legacy applications puts more of the IT budget to work, but the cost of doing so has often been prohibitive. Every year the same candidates for modernization come up, and every year the cost is too high. Gen AI can change the game by helping developers do the code translation and development that account for a big chunk of app modernization costs, helping reduce time-to-value.

03

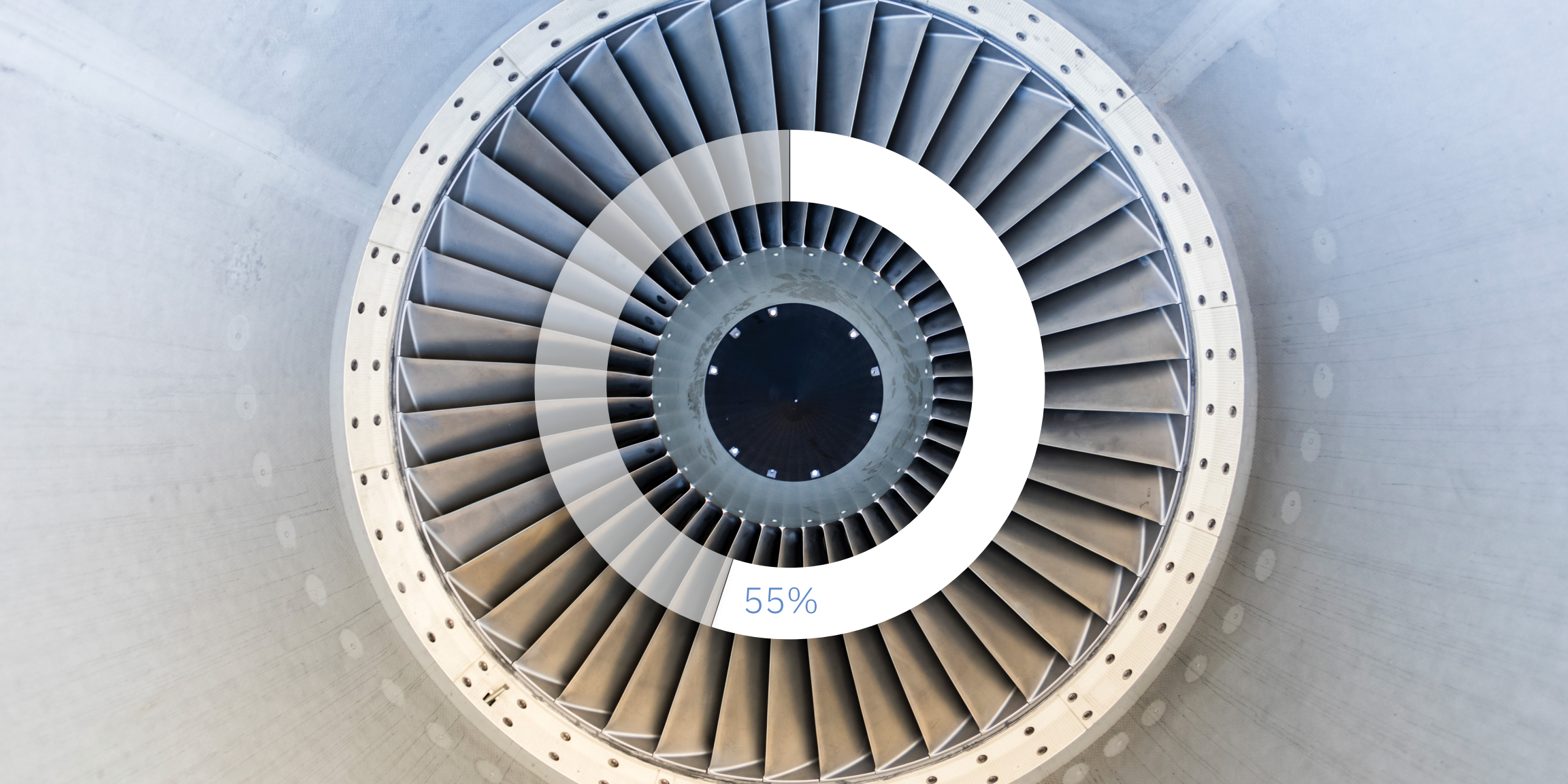
Slowing down to take stock actually speeds up your reset.

Enterprises can't be successful when they are rapidly dividing their resources among too many disparate initiatives. They need to take the time to identify a few key critical areas—the ones that can create the highest business value—so they can focus and scale them as quickly as possible. In other words, slowing down now actually helps you move faster in the long run.

Instead, what happens far too often is that enterprises move fast but resources are diluted. Three decades of adopting the Next Big Thing in business technology have delivered expensive, uncertain business outcomes. AI adoption is poised to repeat the same pattern. Taking a moment to be intentional now can help you avoid the following:

Historically, an astounding 84% of digital transformation programs fail.¹⁵

And 55% of companies report technical debt as an obstacle to achieving business goals.¹⁶



55%

of companies report technical debt either as a major obstacle or a real roadblock to achieving business goals.

Take a moment to conduct an unflinching assessment through the rearview mirror—and then go full-steam ahead

Winning the AI game requires an unflinching business and IT assessment of the organization’s readiness for the AI revolution that’s underway. It’s not about finger-pointing regarding the journey to the current tech estate. It’s about clearly assessing the hybrid-by-default state of the organization and just as clearly mapping the benefits of hybrid by design.

When business leaders cite benefits of a hybrid-by-design approach, they include modernization, agility, security, business acceleration, cost optimization—and the ability to unlock the power of generative AI. In other words, gen AI can unlock transformative value only when it is integrated in a well-designed hybrid environment.

Exploring the path you have taken to the current tech estate can pave the way for a more deliberate, value-driven approach. Shedding the baggage of unintentional tech debt and embracing an intentional hybrid-by-design architecture designed to optimize the potential of AI is the way forward.

The good news is that the road ahead is not a secret path of the tech illuminati. It is the set of fundamental changes you know the organization needs—sort of like getting your annual health physical—but have been putting off for another day. Today is the day. Take a brief pause so you can clear a path ahead.

What you need *to do*.

03

Clear a path for
enterprise-scale solutions.

Tackle legacy technology to
remove obstacles to a new way
of working and operating.

Every technology revolution
prompts organizational
introspection, but AI's
success hinges on it.



Across business units, business functions, and IT, leaders must agree on a baseline for three critical performance metrics. Those numbers are a good indicator of the outcomes you can expect from your gen AI initiatives, if you don't implement a hybrid-by-design tech reset.

Are they good enough?

Grow the portion of the IT budget that's available to improve business performance.

This isn't just about the IT budget and "shadow" spending; it's about making existing resources available to invest in AI-driven business performance improvement. The average enterprise allocates about 20% of the IT budget to invest in initiatives that improve business performance.¹⁷ That spend is a "good cost" because it's working to directly improve better business outcomes. It's an even better cost when it funds initiatives designed to be the very best investments the organization can imagine. Hybrid by design puts more IT assets to work delivering things customers will pay for. It converts bad costs—costs that may be necessary to the business, but that a customer would not pay for—into good costs.

Amplify the returns you're getting from all IT spending across the entire IT portfolio.

Because enterprise IT is usually managed as a cost center, arriving at this number may be difficult and the calculation may be hard to accept. The number will likely show that the bulk of the IT budget isn't performing as an investment. Simply cutting IT spending is one way to improve your returns, but it's not the best way. Activating existing assets amplifies returns by putting more of the IT portfolio to work. Legacy systems, applications, and infrastructure can be modernized and reactivated. Outsourced services can provide a gen AI dividend. IT tasks can be automated. Developers can get an assist from gen AI. Platforms can consolidate application spending. The important thing is to agree—across IT and lines of business—on a baseline for tracking the ROI impact of implementing a hybrid-by-design framework.

Slash the lead time required to convert IT ideas into business outcomes.

Product-led development and digital development get the business and IT collaborating to deliver better customer and employee experiences that lead to growth and productivity. That's good progress, but it's not enough. Improving velocity turns investments into outcomes earlier and getting outcomes earlier boosts ROI, which creates space for more investments. Hybrid-by-design principles guide an end-to-end redesign of the concept-to-cash value stream.

Hybrid by design in action

Hybrid by design has multiple benefits and can ultimately deliver all of them—speed, agility, a better customer experience, productivity—the list goes on.

Most organizations will realize hybrid by design benefits over time, rather than all at once, as they reset their tech estate. Here are two organizations that are using hybrid by design to better serve their customers and clients, bringing real-world benefits through a series of step-changes.

Delta transforms with hybrid by design¹⁸

The challenge

When the COVID-19 pandemic began, Delta needed to respond to the economic realities of the time. Once the pandemic came to an end, it would need to quickly get new, premium customer experiences off the ground. Both directions meant that a transformation was required to enable technology solutions to be delivered faster, and in a more secure, reliable, and scalable way.

The solution

Delta mapped the migration that would move all of the airline's distributed workloads to the hybrid cloud. By modernizing operations with an open hybrid-cloud architecture, Delta can now deploy anywhere and take a consistent, standards-based approach to development, security, and operations across clouds.

The outcome

Hundreds of applications have been migrated to the cloud. Delta and its customers are already reaping some of the rewards such as free in-flight Wi-Fi on more than 680 planes. The airline's cloud transformation initiatives aims to increase employee engagement, productivity, speed to market, and cost efficiencies by between 25%–30%.

Argentina's Ministry of Health (AMoH) uses hybrid by design to create a more stable IT infrastructure¹⁹

The challenge

Patients in Argentina often have a primary hospital for the majority of medical needs but also use other health facilities. Or they shuffle between private practices and public hospitals for tests. Because of this, Argentina's Ministry of Health wanted to automate the flow of public health statistics and the management of underlying systems.

The solution

Moving beyond its slow legacy solutions and monolithic applications, AMoH built a national digital health network. The ministry established a flexible yet stable IT infrastructure with a Red Hat® technology foundation, allowing centers to securely access patient data through standardized integration between providers.

The outcome

The new digital health network allowed AMoH to respond to a 1500% increase in transaction volume during the COVID-19 pandemic.

It also allowed the institution to manage universal electronic records, enabling a quick response to any increase in transaction volume, while also allowing the addition of new services and features.

A decorative graphic on the left side of the page features three concentric circles. A white sphere is positioned on the outermost circle, a blue sphere is on the middle circle, and another white sphere is on the innermost circle. The circles and spheres have a subtle 3D effect with shadows.

\$3 billion in productivity improvements

Successful implementation of AI requires more than a technology transformation. It takes an intentional hybrid-by-design approach, allowing business needs to dictate IT strategy and implementation.

It's a \$3 billion productivity opportunity.

As IBM CFO, James Kavanaugh, said regarding the company's FY2023 earnings: "Against a target of \$2 billion in annual run rate savings by the end of 2024, which I mentioned back in April of last year, we have already achieved over \$1.5 billion. Our productivity initiatives have allowed us to increase our investments in innovation, technical and industry skills, and go-to-market capabilities, including our ecosystem. And we have accomplished this while simultaneously growing our profit margin and free cash flow, which in turn has increased our financial flexibility. This remains our playbook going forward. And given our success to date, we now believe we can achieve at least \$3 billion in annual run rate savings by the end of 2024."²⁰

In the quest for greater productivity, IBM is leveraging its technology, consulting business process expertise, and strategic partnership technologies to reimagine new ways of working in a simpler IBM.

Unleashing productivity is a top priority for IBM CEO, Arvind Krishna. IBM is embedding AI into every enterprise-wide process, scaling to enable hundreds of thousands of IBMers across more than 170 countries to be more productive.

The mantra is: eliminate complexity, simplify how work is done, automate manual tasks, and embed watsonx™ everywhere. Ask first: what can we stop doing? Second: how can we simplify workflows? Then and only then, automate manual tasks with embedded AI (otherwise there’s risk for automating bad processes).

Key to the strategy for workflow transformation is a greater integration of data across the enterprise—which requires a hybrid cloud strategy deliberately designed for business value. Within IBM, we are using watsonx on our hybrid cloud to infuse generative AI into business processes—putting the savings back into IBM to drive growth and investment.



Delivering a CRM platform for 25,000 sellers and 44,000 partners, driving ...	50%	15%
	reduction in cycle time, allowing...	more time with clients

Results include:



Reducing the average cost of running an application by 90%



Reducing the overall application environment by 50%



Percentage of company-wide requests handled by digital assistant, AskHR 94%

Mobilizing innovative IBMers as “productivity catalysts” who in

1,000 workshops have identified more than

5,000 grassroots opportunities

An aerial photograph of a dense green forest. A paved road with yellow and white lane markings curves through the lower-left portion of the image. In the upper-left area, there are three decorative, rounded grey shapes of varying sizes. A large white rectangular box is positioned in the center-right, containing text.

Moving from chaos to cash with hybrid by design

As gen AI forces organizations to assess their technical foundations, they can gain durable competitive advantage by resetting it with hybrid by design. Not only does that allow them to optimize their AI advantage, it also sets them up well for the technologies to come, which will also require agility, speed, endless capacity, and more.

In upcoming chapters, we'll explore in more detail how to begin a hybrid-by-design approach, from funding, to architecture, to ecosystems, to operating model.

Chapter two.

ROI remedy

How hybrid by design
can improve business returns
on your tech investments

02

Key takeaways

Almost three quarters (72%) of executives say that improving ROI on tech investments by at least 25% is a critical business objective.²¹

The average organization spends just 23% of its tech budget on efforts that actually produce business income.²² That is a very small slice of the budget pie from which to produce impressive ROI.

Organizations that apply hybrid-by-design principles to IT programs can generate over three times higher ROI over five years.²³ IBM experienced a 90% average reduction in its application total cost of ownership with hybrid by design. Insurance and financial company The Standard increased its say:do ratio—what its IT organization can actually deliver—by 20%, using the transparent tech spending management so critical to hybrid by design.²⁴

“Technology in most organizations can be leveraged even further than most people realize. Where you need to play as a technology leader today is connecting those dots. Be an enabler of the business.”

Julia Knox
Chief Technology and Analytics Officer
Sobeys

How hybrid by design can improve business returns on your tech investment

72%

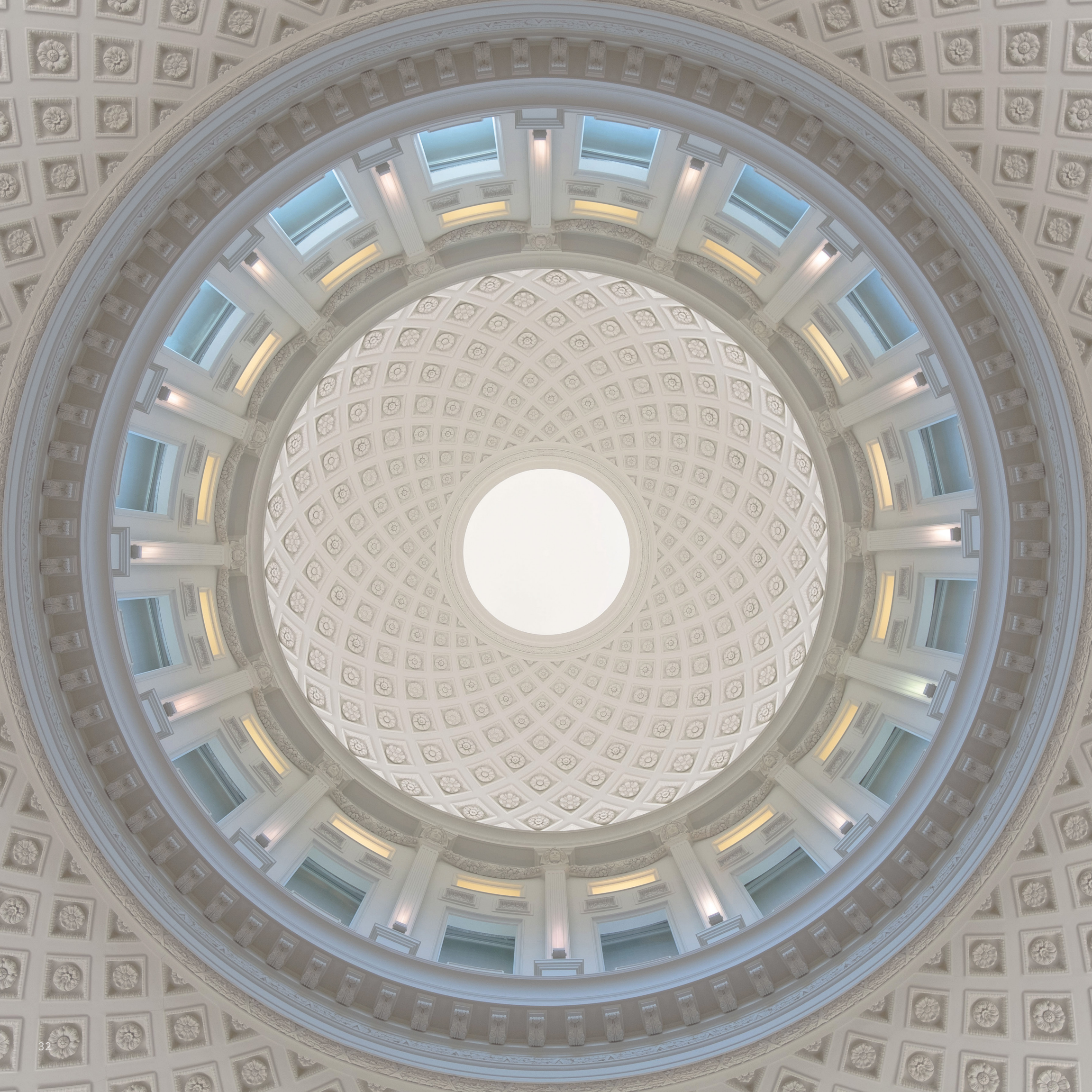
*of executives say that
improving ROI on
tech investments by at
least 25% is a critical
business objective.*

C-suite leaders continue to navigate a period of intense digital transformation and pressure is high to prove the value of the IT investments. Demonstrating ROI that goes beyond cost savings—the kind of results discussed in boardrooms—matters more than ever.

It's a tall order in any circumstance, but especially because the average organization spends just 23% of its tech budget on efforts that actually produce business income.²⁵ That is a very small slice of the budget pie from which to produce impressive ROI. And 72% of executives say that improving ROI on tech investments by at least 25% is a critical business objective.²⁶

Hybrid by design offers a solution. Organizations that apply hybrid-by-design principles to IT programs can generate over three times higher ROI over five years.²⁷ Not only do hybrid-by-design users see higher returns, they also are positioned for extensive business value amplification through generative AI.²⁸

Now is the time to take an honest look at your tech investments, program design, and portfolio. Involve both the technical side of the house and the business side. Better yet, bring them together, because lackluster ROI is often the result of disconnects between the two. Building a hybrid-by-design foundation for generative AI creates a tech reset to bridge that unproductive divide once and for all.



Three things to know and three things to do

The IBM Institute for Business Value has identified three things leaders need to know and three things they need to do to get started on hybrid by design for better ROI .

	What to know	What to do
01	Anemic tech portfolios drive anemic ROI.	For IT spend, replace a ledger view with an investment portfolio view. If you look at a typical IT budget report, you'll just see a long list of expenses. But when you look at an investment portfolio, you'll see a set of strategic business objectives and the portion of all tech costs that directly support each one.
02	Your default setting for tech program design is silently killing your ROI.	Stop converging to the mean. Design and fund new programs that deliver the highest ROI for the most business-critical outcomes. There's a sweet spot—the center of the bullseye—aim for it. Is it business critical? Can it be executed at enterprise scale? These are your bullseye investments. Base decisions on solid data analysis versus executives' pet projects.
03	Tech sprawl creates an agility gap.	Use a flywheel to get airborne. As you design new programs created to hit bullseye ROI, focus your portfolio on a few programs. Then manage your portfolio as a flywheel that sustains itself with “early and often” ROI that activates and modernizes existing IT assets to directly support execution.

01

Anemic tech portfolios drive anemic ROI.

Technology portfolios can be anemic for many reasons. But one major driver is tech spend that is anything less than intentional. It's very easy to get into autopilot mode and that's when ROI suffers.

Organizations could significantly improve their IT program ROI by committing to a hybrid-by-design journey. As mentioned earlier, IBM analysis of more than 50 client organizations shows three times higher ROI from IT programs over five years when organizations adopt hybrid-by-design principles. But they can't do that with the anemic tech portfolios that still exist in most companies today.

A closer examination of tech spend highlights the key obstacle, which is that a significant portion of an organization's IT budget is being consumed by maintenance and operational costs. About half of overall tech spend—47%—is dedicated just to keeping the lights on.²⁹ Almost 19% goes into Selling, General, and Administrative (SG&A) functions like human resources and finance, with another 11% funding initiatives to optimize the IT function.³⁰ What's left for initiatives that move the business forward?

Just 23% of the tech budget remains to invest in performance improvement for areas that actually produce business income.³¹

It's time for a tech reset—time to make the IT portfolio work harder for the business.

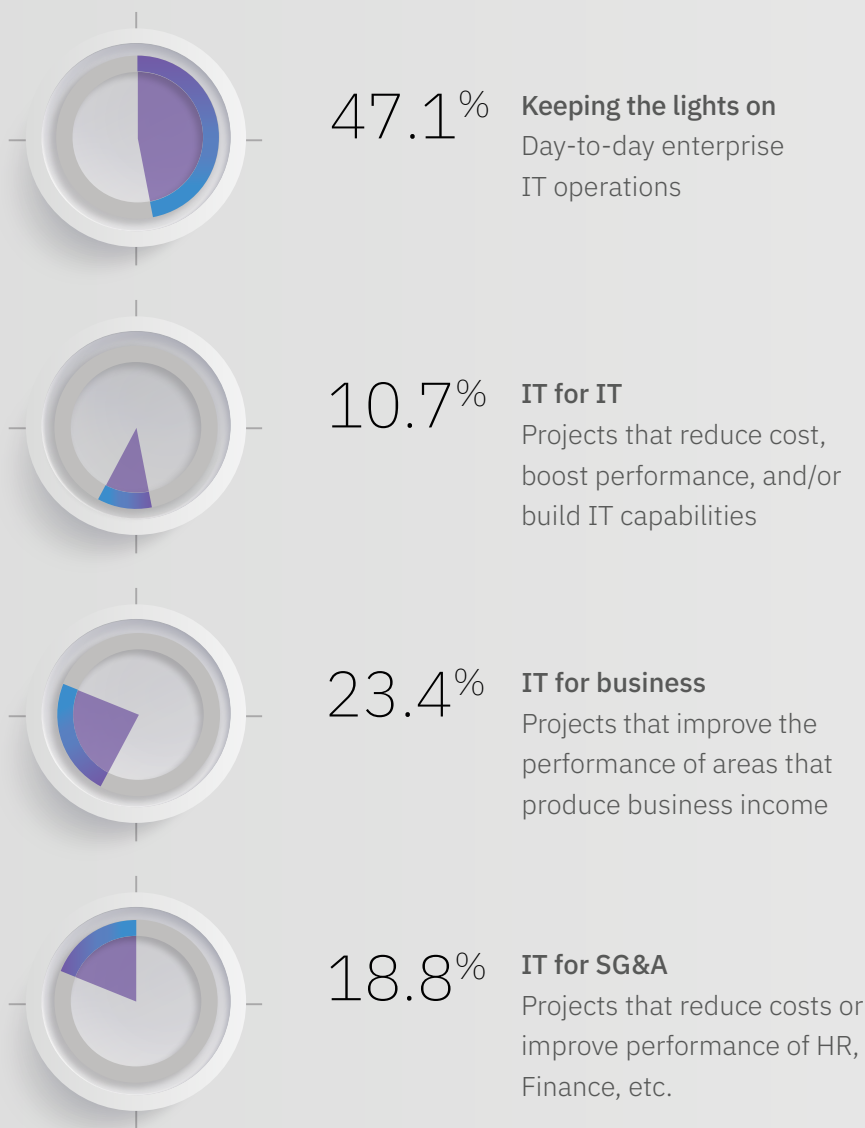
*About half of overall
tech spend—*

47%

*—is dedicated just to
keeping the lights on.*

“Each time you scale, you should test ROI again. If you’re making improvements on that, then continue. If you’re not, then it’s a question of finding the reasons why that’s happening.”

Chief Technology Officer
UK consumer and industrial electronics provider



A cost center approach is costing IT

Managing IT as a cost center leads enterprises away from higher ROI on IT investments. The issue isn’t just the size of the budget; it’s how much of the budget is available for projects and technologies that directly drive better business performance—growth, productivity, customer satisfaction, and more—and right now, it’s not enough.

But when leaders consider the IT portfolio as a group of investments tied to specific business outcomes, funding for critical and innovative projects can be prioritized alongside other business strategies.

Lift in ROI comes from deliberately allocating tech spending.

This is where the “by design” part of hybrid by design works. The intentionality inherent in hybrid by design forces hard decisions, moving IT investment from scattered to streamlined. For example, when large new tech programs get launched, they typically compete with nine similar programs and have six different program sponsors.³² Paring that down to essentials will free money that can be invested in the highest value initiatives.

A startup mentality helps incumbents overcome complacency

Large enterprises with fixed budgets often struggle to adapt to changing circumstances. Unsuccessful plans might be kept on life support due to preallocated resources or lengthy decision cycles, getting in the way of activities that might be more lucrative.

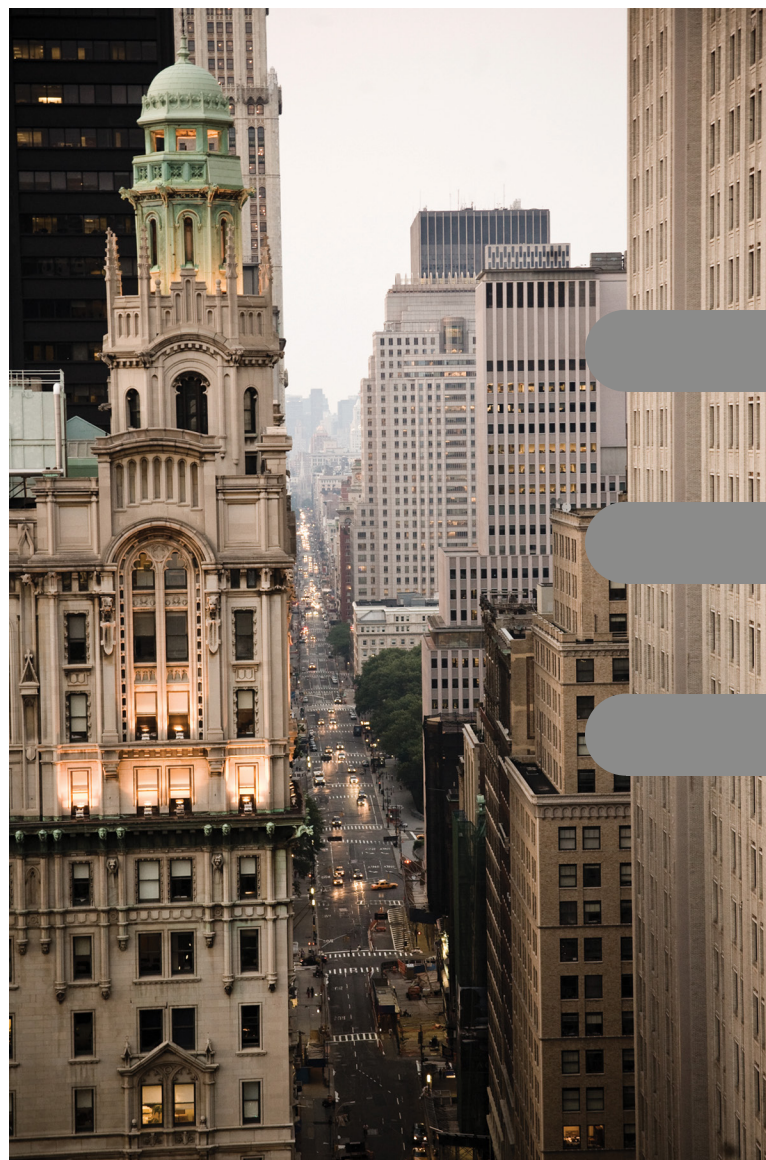
Combining the agility of startups with the resource stability of large organizations can create IT investment processes that foster adaptability and continuous improvement.

Put another way: in smaller, fast-paced, entrepreneurial environments, plans need constant evaluation. The market provides immediate feedback, forcing swift adaptation and termination of nonperforming initiatives. The agility inherent in this dynamic is a strategic advantage.

What you need *to do*.

01

Manage your IT spend
as an investment portfolio
instead of a ledger of expenses.



If you look at a typical IT budget report, you'll just see a long list of expenses. But when you look at an investment portfolio, you'll see a set of strategic business objectives and the portion of investments that directly support each one. In order to better tie your tech portfolio to business returns, three actions rise to the fore:

Educating board members enables them to view technology not as a cost center but as a contributor to the business outcomes, strategies, and aspirations discussed in their annual reports and shareholder meetings.

Develop a data-driven view of your portfolio.

Understand the key data that drives your business and track it over time. For example, if total cost of ownership (TCO) is a metric you'd like to improve, a data-driven view will allow you to make tradeoffs that are necessary to move the needle. That's because not every application will have a lower TCO on its own, given current-state architectural deficiencies, but the data that helps you decide where to invest and where to cut will help lower TCO in the aggregate, and that is the overall goal.

Educate board members.

Tech-savvy (or at least tech-competent) board oversight is crucial. Increasingly, US companies are establishing a standalone science and technology committee; 15% did so in 2023 compared with 9% five years prior.³³ Educating board members enables them to view technology not as a cost center but as a contributor to the business outcomes, strategies, and aspirations discussed in their annual reports and shareholder meetings. They'll require this understanding to confidently approve strategic tech investments, particularly now as gen AI moves so quickly to become part of the fabric of the enterprise. And over time, you can turn them into ambassadors for your tech portfolio.

Be opportunistic on DIY modernization.

Don't feel obligated to adopt a one-size-fits-all approach to modernization—you don't have to have a complex center of excellence for everything. Instead, be opportunistic and pursue quick wins as long as they align with your overall IT strategy.

02

Your default setting for tech program design is killing your ROI.

Better program design leads to better ROI—execution matters; good early-stage design drives successful execution.

Lingering disconnects between business objectives and IT investments add time and expense to already cumbersome tech program design processes. For instance, prioritizing the newest technology over strategic business needs—focusing solely on “bells and whistles”—leads to projects with limited impact and wasted resources. These types of initiatives often languish in development without clear business plans, creating opportunity cost and hindering overall progress.

Prioritizing the newest technology over strategic business needs—focusing solely on “bells and whistles”—leads to projects with limited impact and wasted resources.

What would help unlock business improvement and drive growth? A unified understanding of IT’s role in business improvement. For example, 72% of execs say that improving ROI on the tech budget by at least 25% is a critical business objective.³⁴ Yet, 71% of executives say the lack of a clear, shared vision for how IT can drive significant business performance improvements is a strong impediment to higher tech ROI.³⁵ The desire for improvement is there but no one is creating the shared vision that enables that improvement. It’s not just the IT department’s job to initiate. Leaders from IT and business need to make shared vision a priority.

Adding to this, two-thirds of executives say inadequate line-of-business leader demand for higher ROI proposals also strongly impedes higher tech ROI.³⁶ While reasons for lack of demand vary, only 12% of new tech program ideas come from lines of business.³⁷ It’s no surprise, then, that only 18% of large new tech programs tested more than one critical business assumption before launch.³⁸ Given that a typical enterprise requires more than nine months to design, plan, and launch a new program, there is significant investment going into resource- and time-intensive projects that have very little connection to business value.³⁹

“When investing in technology, ROI is the first thing we should consider. When a new technology emerges and we decide whether to use it or not, we must first weigh the input-output ratio.”

WeiWei Zhang
Chief Data Officer
Tianshan Material Co., Ltd.

72%

of executives say that improving ROI on the tech budget is a critical business objective.

Yet...

71%

say lack of a clear, shared vision for how IT can drive business performance is a strong barrier to higher tech ROI.



What you need *to do*.

02

Aim for the bullseye—
a streamlined program,
in lockstep with the business,
for higher impact.

It's tempting to be everything to
every key stakeholder, but that's
a Sisyphean task. You sacrifice
success when you attempt it.



Aim for the bullseye—the set of business IT investments that deliver the highest ROI. To get there, gather data and base your decisions on solid analysis.

“When IT is not represented on the board, it has a consequence. And the consequence is that the company does not have the IT that it needs.”

Hauke Stars
Member of the Board, IT & Data
Volkswagen AG

**Don’t let your data get cold;
measure consistently.**

Regularly measure performance of your tech program, using metrics tied directly to business outcomes. Continuously refine and optimize, reallocating resources to initiatives that demonstrate the greatest ROI and strategic impact.

**Focus on a few
business-critical plays.**

Design a tech portfolio that favors business-critical plays—those in the bullseye—because it conserves resources and strengthens impact in the most important areas.

**Enlist executive
champions.**

Without executive sponsorship, it can be difficult to move business teams from the status quo. Identifying and reaching out to executive champions and sponsors who will help lead discussions on what needs to change, future requirements, and more will speed your journey. Champions help you create and maintain that ever-important linkage between the business value chain and your IT blueprint. Use data-driven storytelling to speak their language, showing them how programs will help them meet their business objectives.

03

Tech sprawl creates an agility gap.

“We have too many projects.”

“We’re using too many tools.”

“Why do we have so many disparate environments with their own tools?”

“We don’t apply enough rigor in selecting the best bets.”

After investment decisions are made,

80%

of executives see value in identifying better ways to fund agile roadmaps for program execution.


Any of these sound familiar? If so, you’re likely experiencing tech sprawl. And you’re not alone. Most organizations that have moved to hybrid approaches have done it by default.

As IT teams try to enable capabilities, over the years organizations end up with multiple tools and disparate experiences. When this happens, IT velocity slows—and so does business agility. In a hybrid-by-design approach, enterprises work toward consistency of both the developer experience and the ops experience. This is essential because as business leaders look for rapid time to market, consistency of experience helps—disparate experiences slow down time to market.

Optimizing ROI on tech investments comes from focusing on a few critical plays, as well as delivering fast cycles of performance improvement. But sustained execution is key. Quick wins that fade over time don’t move the needle.

After investment decisions are made, 80% of executives see value in identifying better ways to fund agile roadmaps for program execution.⁴⁰

It’s not easy for today’s CIO and CTO teams, particularly as they try to design a hybrid environment for generative AI workflows. Execs, on average, have been offered 32 gen AI use cases from their vendors. Of these, 64% have the potential to drive competitive advantage.⁴¹ But to get to that competitive advantage, you need to tame your tech sprawl and set teams up for agility.



“Many companies see the CIO as an enabler of digitalization. But we all know that digitalization is changing. Its essence is the optimization and evolution of the business.”

FuShan Hu

Chief Information Officer
CHINT Group Co., Ltd.

Execs, on average, have been offered 32 gen AI use cases from their vendors. Of these,

64%

have potential to drive competitive advantage.

What you need *to do*.

03

Turn small wins into big ones, using a flywheel to gain momentum.

“It’s really important to show a pattern of value, not just returns in the short term. When you invest in enterprise projects like large-scale software deployments, it’s very difficult to say, ‘We saved in year one but then didn’t offer any value to the business past that point.’”

Director

Information Technology
US industrial company



As you design new programs to hit bullseye ROI, restrict your portfolio to a few programs. Then manage your portfolio as a flywheel that sustains itself with “early and often” ROI that activates and modernizes IT assets to directly support execution.

“If you ask me, what’s going to make the next CIO very successful, it is a deep understanding of the business.”

Hong Giep Toh
Chief Information Officer
Singapore Land Authority

Focus on the finish line, not the fantasy.

Spreading scarce funding across dozens of “strategic” objectives and expecting high ROI is fantasy. But using a deliberate hybrid-by-design flywheel, you must make hard decisions about the objectives you want to support. Design a flywheel to cover your major objectives, so they feed each other and create sustained value over time.

Measure velocity.

The target for multiyear ROI needs to be balanced with continuing to build the positive momentum required to get there. Measure and manage flywheel velocity. Even if every spin of the flywheel delivers value, simplifies the tech environment, and generates funding for the next spin, everything depends on how fast the flywheel spins. To add speed, you need shorter decision cycles. Define the decisions required to keep the flywheel moving and how those decisions will get made. Get all flywheel sponsors to agree on who has decision authority and how quickly decisions need to happen.

Put behavioral economics to use.

Nearly two-thirds of CEOs say success with generative AI will depend more on people’s adoption than the technology itself.⁴² Flywheels, similarly, are fueled by voluntary behavior. They spin at the speed permitted by the people doing the work. If people executing one step of the flywheel don’t think it’s in their best interests to make the flywheel spin, expect the flywheel to spin very slowly. Or to stop spinning at all. Or worse still, reverse. At every step, ask, “How can we identify and remove disincentives? How can we make it in everyone’s best interests to keep the flywheel moving?” For instance, the current owner of a business application may resist the modernization required to integrate that app with a digital product from the flywheel. Putting app modernization on app owners’ scorecards, however, helps ensure executives support the effort.

The ins and outs of business flywheels


A flywheel is a good way to deliver better business outcomes at enterprise scale, without incurring the downside of big digital transformation programs.

The term comes from mechanics, where a flywheel is a heavy wheel that generates and transfers energy to other parts of a machine. It takes a lot of force to start a flywheel spinning, but once it's up to speed, it builds momentum and can continue turning on its own.

Flywheels start with the kind of primary business objectives discussed in the boardroom. But then—instead of the usual linear phases of program design and execution—a flywheel features a cycle of actions where each action builds on the previous and makes the next action easier to accomplish.

For example, the first part of your flywheel might be designing and delivering digital products that improve business performance, even if that improvement is incremental. The second part might be modernizing existing applications to support those digital products. A third part of the flywheel could be taking cost out of IT operations (cutting expenses that aren't required to support the flywheel) and reinvesting the savings into more product development.

A flywheel forces intentionality in the same way deliberate portfolio and program design do. Using a hybrid-by-design ROI lens, design a flywheel that will not only deliver high value sustainably over time, but helps your teams create a foundation for generative AI.

An aerial photograph of a misty landscape. In the foreground, there are green fields and a line of trees. The middle ground is filled with a thick layer of white mist or fog, obscuring the details of the landscape. In the background, more fields and trees are visible under a hazy sky. Three dark, rounded rectangular shapes are positioned in the upper right area of the image.

“There’s always pressure
to showcase ROI.
Show me a CEO who’s said
*‘Increase my cost
and my complexity.’*”

Chief Information Officer
Digital Banking
UK consumer credit industry organization

Hybrid by design in action

In today's dynamic market, clear visibility into tech investments is no longer a luxury, it's a strategic imperative.

The Standard, a leading provider of financial protection products and services for employers and individuals, has embarked on a journey to data-driven IT investments that are in lockstep with its business objectives.

From spreadsheets to strategic partner: The Standard's journey⁴³

The challenge: Blind spots in tech investment

For the company, keeping pace with industry demands meant embracing digital transformation and strategic acquisitions. However, a crucial roadblock emerged: limited visibility into tech spending.

Relying on legacy systems and spreadsheets for budgeting and analysis, The Standard struggled to differentiate between “run the business” and strategic transformation costs. This data opacity hampered efficient resource allocation and hindered informed decision-making.

“My mandate was to build cost transparency that delivers actionable insights and enables faster decision-making while fostering a deeper partnership between IT and business areas,” said Dickson Kasamale, second vice president of IT Finance and Analytics.

The solution: Transparency through technology

In 2020, The Standard embarked on a strategic shift. They replaced their spreadsheet-driven approach with robust business management software. This solution combined financial and operational data, enabling them to analyze, optimize, and plan tech investments with greater precision.

Furthermore, the implementation of cloud cost management and resource and portfolio management software provided deeper insights into their burgeoning digital investments.

The results: Unleashing efficiency and agility

The impact was immediate. Increased transparency fostered a stronger partnership between IT and business units. The IT finance team, previously bogged down with data consolidation, could now dedicate 80% of their efforts to strategic analysis and forecasting.

Standardized cost models and investment planning tools empowered leadership to confidently shift funding toward high-impact initiatives, leading to consistent budget achievement.

Cloud cost management provided valuable insights, enabling product and application leaders to optimize cloud purchases and maximize value.

Managing geographically dispersed delivery teams across diverse projects became significantly easier. New software streamlined workflows, improved visibility into resource allocation, and facilitated collaboration despite the organizational complexity.

The bottom line: A strategic advantage

The Standard's success story underscores the importance of transparent tech spending management. By leveraging the right tools, they achieved:

Faster decision-making. Streamlined data analysis freed up IT for strategic planning.

Enhanced cloud control. Optimized cloud purchases delivered cost savings.

Improved resource management. “Our say:do ratio—what we as an IT organization actually deliver—increased by 20%, an improvement that goes beyond delivering more; it revolves around shared visibility into commitments, enabling the team to efficiently manage distractions and achieve tasks faster,” explained Kaarina Bourquin, director of Strategy and Portfolio Operations and Technology at The Standard.

Stronger IT-business alignment. Transparency fostered collaboration and faster goal achievement.

From sprawl to strategic ROI: IBM's IT portfolio journey

IT sprawl is endemic to so many large companies. Thousands of applications, many from a bygone era, can choke innovation and gobble up resources. It's all too easy for cloud adoption—once hailed as the cure-all—to morph into a tangled web of hybrid-by-default solutions.

Like many companies, IBM over the years amassed an extensive IT portfolio. About 18 months ago, as leaders looked at the portfolio with fresh eyes, improving ROI was the goal—freeing funds that could be invested in more strategic IT—IT that would help business teams work faster, smarter, and more innovatively. Moving from hybrid by default to hybrid by design was essential.

Matt Lyteson, IBM's CIO for technology platform transformation, realized without a solid plan it could be so large a project that there was risk of spinning wheels without true forward momentum. "My first question was: How do I clean up what I've got? And how do I map from a ledger view up to an investment view?" Lyteson knew looking at the portfolio from an investment versus return perspective was essential for real change.

“We needed speed, scale, security, and simplicity all at once.”

Matt Lyteson
CIO for technology platform transformation
IBM

The centerpiece: Application rationalization on steroids

Like a majority of enterprises, IBM had gone through its own agile transformation, which gave our business application teams a high degree of autonomy for how they run their full-stack applications (full stack is the set of software solutions and technologies used to build a platform, website, or application). The result was 4,000 apps, many that were heritage yet critical to running IBM’s business. The company needed fewer dollars going toward cloud, hosting environments, and networking—and more money going toward transforming business processes.

“We needed speed, scale, security, and simplicity all at once,” explains Lyteson. “We took the opportunity hybrid by design provides to modernize, rationalize, standardize, and consolidate our business application portfolio. We started with over 4,000 apps. Over 18 months, we’ve rationalized more than one-third of those applications. We’re still on our journey. We want to reduce to a range of 250 to 400 apps total over the next 18 months, by 2026.”

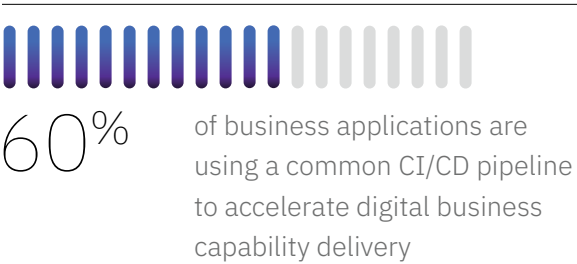
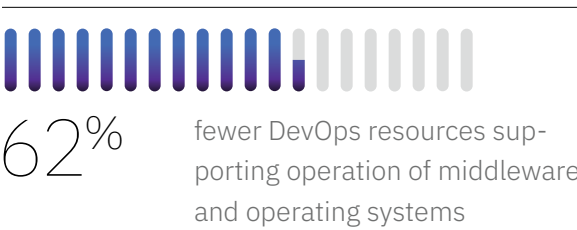
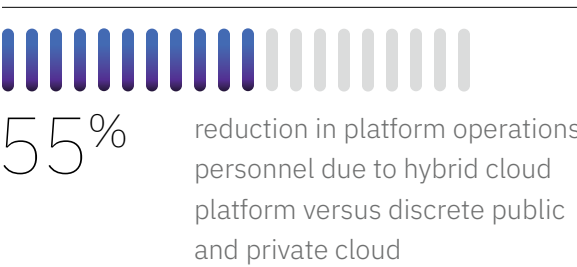
Transformation, though, has not been limited to the software layer. Just four data centers remain after consolidating from 43.

Shoulder-to-shoulder: Collaboration with the business

IT teams worked closely with IBM business teams to help ensure they prioritized appropriately based on business criticality—and that the train kept moving. Fostering close ties with business units, ensuring alignment and understanding, was critical, all the while emphasizing that short-term adjustments would pave the way for long-term benefits.

High-velocity outcomes

Results have been favorable, freeing up funds to invest in continued ROI and value generation with a flywheel effect.



(A CI/CD pipeline is an automated process utilized by software development teams to streamline the creation, testing, and deployment of applications.)

An aerial photograph of a dense green forest with a winding road visible in the lower left. Three decorative grey rounded rectangular shapes are positioned in the upper left corner of the page.

Make your tech investment work smarter

By adopting an intentional hybrid-by-design approach, organizations unlock significant business value not just now, but over the next five years, as they build foundations, platforms, and portfolios that will enable generative AI.

It means business and IT leaders must work together, though, to align tech investments with strategic objectives.

Among our interviewees for this report, one European lead technology executive summed it up particularly well: “My biggest takeaway based on my learnings in senior leadership roles over the last couple of years is that you shouldn’t get stuck. Try to create teams that are cross-functional. Don’t look at the ROI for one department; look at the overall business effect. Don’t use technology or IT just for the sake of it, because it is cool, or because everybody’s talking about AI.

Do your design-thinking workshops, try and understand the real business challenge you’re trying to solve, work with the business leaders, try to have an influence in the C-suite, and then take the leap of faith and go ahead. Try to prioritize the right initiatives, the bigger ones that will be game-changing, which can transform the industry and have a huge impact. And then just go for it. Put the right team together. Be collaborative. Have the mindset of servant leadership, and go for it.”

Companies can drive digital transformation with hybrid by design, amplify their ROI, and stay ahead of the competition. And digital transformation goes hand in hand with business transformation. The time to reassess, revitalize, and reset your tech portfolio is now, as generative AI makes its mark not only on your IT landscape, but your entire enterprise.

Chapter three.

Architecting for AI agility

How hybrid by design
can help tech architectures
accelerate business outcomes

03



Key takeaways

As enterprises move to broader and deeper applications of gen AI—and begin to scale—they often overlook a key obstacle to ROI: their current technology architecture. Sixty-five percent of executives say tech architecture is critical to improve business performance, but 70% say their current tech architecture creates confusion, conflict, and disagreement.⁴⁴

Thirty-eight percent of organizations think they have already designed the tech architecture needed to implement AI business solutions at enterprise scale.⁴⁵ Based on IBM consulting experience, however, 38% appears high; these organizations may be underestimating what they'll need from their architecture to scale gen AI. Of enterprises that financially outperform their peers 54% more have designed a tech architecture that enables top AI business solutions at enterprise scale.⁴⁶

Most technical architectures were not designed to serve today's—let alone tomorrow's—very digital, very interconnected business needs. They're not as modular and composable as current architectures, so they lock users into certain ways of working, slowing down product development. Hybrid-by-design tech architectures deliberately ensure systems work together seamlessly and can scale for growth. Audi, for example, created a stable, scalable environment for development across cloud platforms, reducing time to market by up to six months.⁴⁷

How hybrid by design can help tech architectures accelerate business outcomes

Tech architecture: Moving from back-office to boardroom

Flashy acquisitions and headline-grabbing initiatives dominate corporate narratives, but a quieter revolution is brewing behind the scenes.

Traditionally relegated to IT specialists, technology architecture is emerging as a strategic cornerstone for CEOs seeking a sustained competitive edge. We're not talking about the latest trendy programming language. It's about harnessing the power of technology to meet core objectives that define success: efficiency, scalability, and agility.

As gen AI proliferates, C-suites are embracing its promise. Sixty-two percent of business leaders say generative AI is more reality than hype—up from only 33% a year ago.⁴⁸ And generative AI has boosted overall AI ROI from 13% in 2022 to 31% today.⁴⁹ While 31% may seem high at this stage in the AI game, organizations that have the highest maturity in gen AI capabilities are focusing on only a few high-value projects (those most likely to be successful) so it makes sense that early ROI is substantial.

But for many organizations, it's not always smooth sailing. As they move to broader and deeper applications of gen AI—and begin to scale—they run into challenges. Specifically, they often overlook a key obstacle to ROI: their current technology architecture.

Thirty-eight percent of organizations think they have already designed the tech architecture needed to implement AI business solutions at enterprise scale.⁵⁰ Based on IBM consulting experience, however, 38% appears high; these organizations may be underestimating what they'll need from their architecture to scale gen AI.

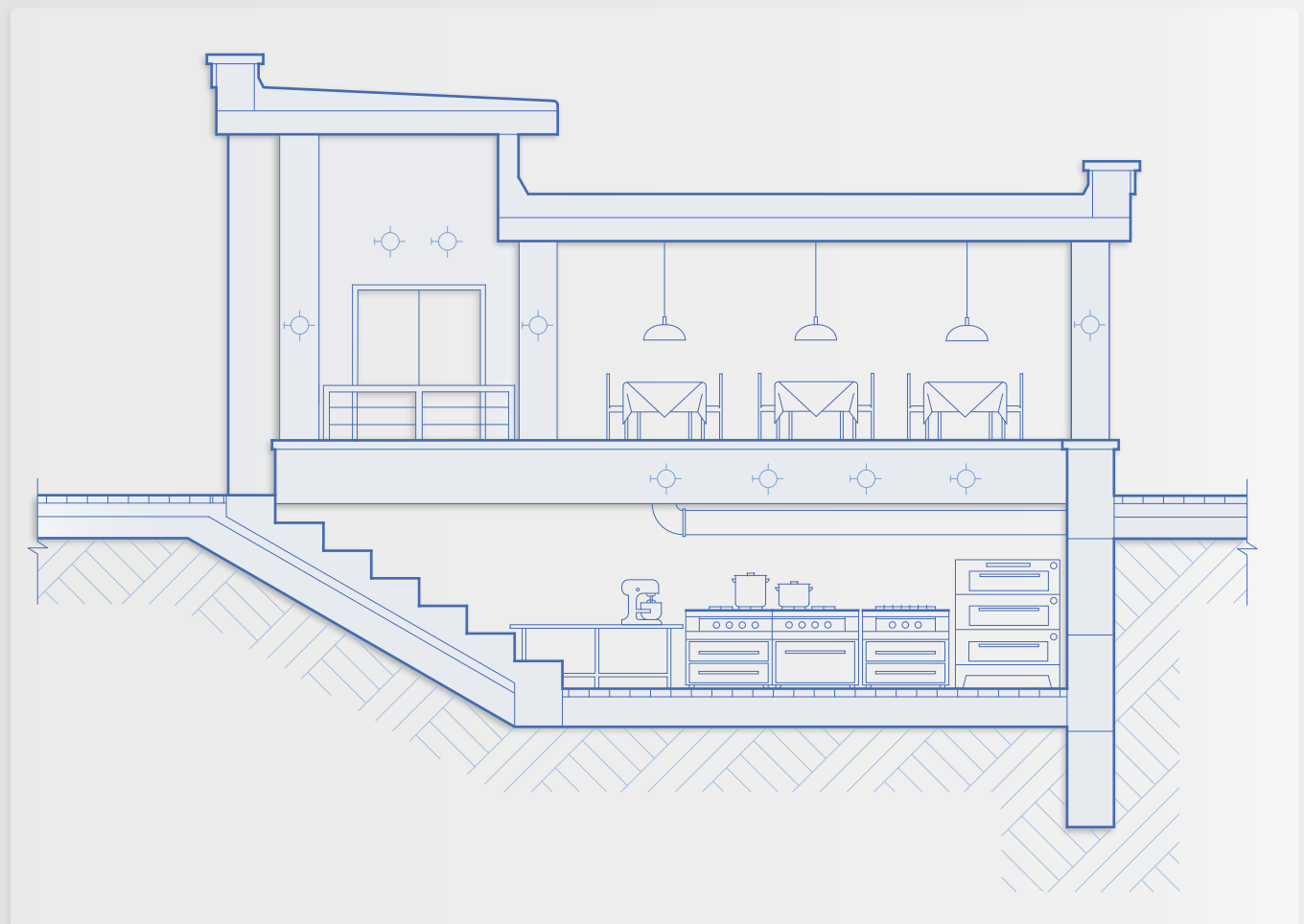
62%

of business leaders say generative AI is more reality than hype—up from only 33% a year ago.

Beyond jargon: A tech primer

Tech execs speak the language of technology, often discussing how hybrid cloud accelerates AI. They talk about the nuances of architecture, infrastructure, applications, and other technical terms with ease. But sometimes their business counterparts are confused by—or uninterested in—the technical jargon.

Fifty-five percent of business leaders say tech architecture is poorly understood by business stakeholders—not an ideal situation when you want to use IT architecture as a business advantage.⁵¹ So, to use an analogy, imagine a restaurant.



From the blueprint of the building to the mixers in the kitchen, a restaurant's layout can be an apt analogy for an organization's tech estate.

Technical architecture is the blueprint of the restaurant: it defines how the kitchen is laid out, where the tables go, how the electricity gets routed to power the ovens. It ensures everything is arranged efficiently and works together smoothly.

Technical infrastructure is the foundation of the restaurant: the building itself, the electrical wiring, the plumbing. It's the basic equipment needed for anything to function. Without a solid foundation, the restaurant couldn't operate.

Enterprise platforms are the prebuilt prep areas within the kitchen. Some are designed for pastries and desserts, others for main courses. And each area can be customized with additional features (specialty mixers, pizza ovens, etc.).

Applications are the tools the chefs use: the ovens, refrigerators, plates, menus. They allow you to accomplish tasks, such as taking orders or building products.

The difference hybrid-by-design architecture makes

The biggest issue today is that most technical architectures are fit for a bygone era; they were not designed with intention to serve today's—let alone tomorrow's—very digital, very interconnected business needs. For example, they're not as modular and composable as current architectures, so they lock users into certain ways of working, slowing down product development.

Generative AI is a good example of a technology today's architectures weren't designed to support. Traditional architecture inhibits, rather than optimizes, what gen AI can do. Information is locked away in isolated databases, starving generative AI models of the rich fuel they need to learn and create. Fragmented workflows slow down the training and deployment of generative AI models. And outdated processors bottleneck the power needed to unleash gen AI's full potential. It's akin to a blueprint for a building before modern air conditioning systems, shared workspaces, and today's power consumption needs. The HVAC, wiring, and overall design aren't a good fit for the current business environment and ways of working.

But hybrid-by-design tech architecture lays the groundwork for the kind of long-term growth C-suites and boards expect. It deliberately ensures systems work together seamlessly, can scale for growth, and are built to last.

Most technical architectures are fit for a bygone era; they were not designed with intention to serve today's—let alone tomorrow's—very digital, very interconnected business needs.



Three things to know and three things to do

The IBM Institute for Business Value has identified three things leaders need to know and three things they need to do to get started on hybrid by design.

	What to know	What to do
01	Tech architecture isn't just about tech. It's about the business.	Rearchitect your architecture.
02	Gen AI needs a launchpad, not a cage.	Build the launchpad for gen AI.
03	Enterprise platforms are the next frontier. Again.	Rebrand IT as a platform services provider.

01

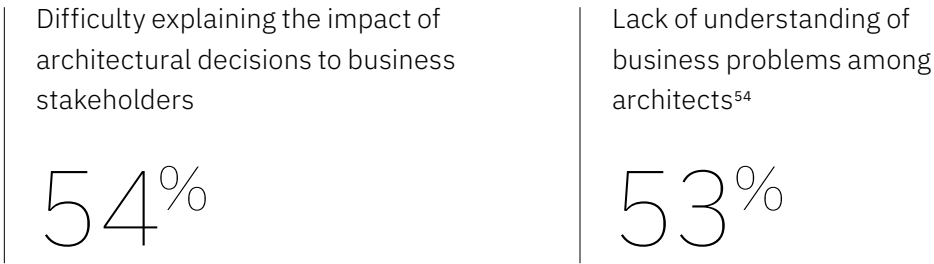
Tech architecture
isn't just about tech.
It's about the business.

Well-defined architecture helps ensure that an organization's technology aligns with its core business goals. Whether it's driving productivity, improving experience, or enabling innovation, the right architecture provides flexibility and scalability.

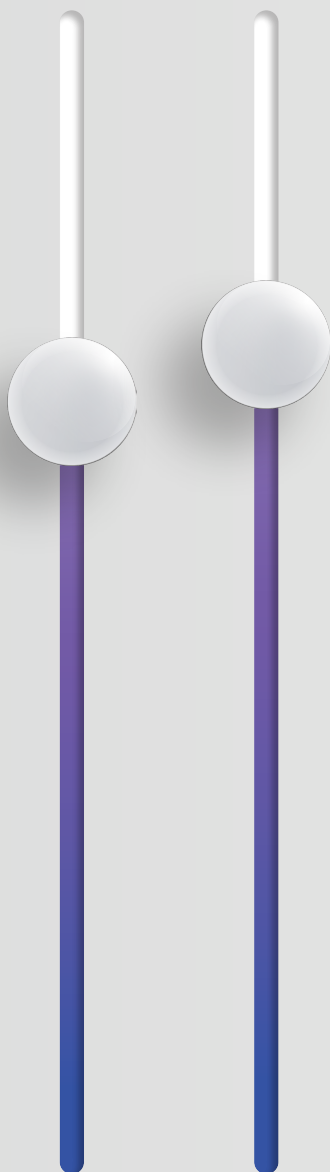
Think of a retail company aiming to provide seamless omnichannel experiences. Robust architecture allows it to build apps that integrate its online store, physical locations, inventory management systems, promotions, customer service experiences, and other touchpoints, enabling a unified customer journey.

For many enterprises, architecture only hits C-suite conversations as gen AI takes hold. Why? Because it's the thing that's going to stop your progress. 70% of business leaders say their tech architecture creates confusion, conflict, and disagreement.⁵² Yet 65% also say their tech architecture is critical to how they use IT to improve business performance.⁵³ It's a paradox.

Business leaders say the top two obstacles to successful tech architecture are:



Strong tech architecture bridges this gap by creating a shared language between business and IT. By defining the technology roadmap and aligning it with business goals, architecture fosters collaboration where both sides work together to achieve objectives. As business needs change, architecture flexes so that it drives to the right outcomes at the right time.



65%

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But

70%

*say their current tech
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For many enterprises, architecture only hits C-suite conversations as gen AI takes hold. Why? Because it's the thing that's going to stop your progress.

Benign neglect isn't benign

Imagine you're building a cutting-edge restaurant. You've got ambitious architects and the most innovative materials, but you're using a foundation from a rickety shed. That's what neglecting technical architecture is like for generative AI. It's building a future-changing tech marvel on a base that's going to crumble at the first gust of innovation. Generative AI needs a firehose of information to work its magic. But legacy architectures are the equivalent to siloed data locked in virtual filing cabinets; they prohibit gen AI from reaching its full potential. In addition, many legacy systems are riddled with security holes—the equivalent of rolling out a welcome mat for hackers.

*“We are working toward a collaborative mindset
with the business, going on a journey together
versus a client-and-service-provider relationship.”*

Tawatchai Cheevanon

Head of Global Transaction Banking Group and acting CIO
Krung Thai Bank

What you need *to do*.

01

Rearchitect your architecture.

The question isn't: "Should we tweak the architecture?"
It's: "Are we bold enough to rebuild it for the future?"



Architectures built without a clear business vision are often brittle and prone to failure. They struggle to adapt to changing needs and demands. The question isn't: "Should we tweak the architecture?" It's: "Are we bold enough to rebuild it for the future?"

Architecture by design means designing around business needs, not the hottest new technology. The new tech is just a tool to help get you to the business outcomes. But many organizations don't use that script. Here's how to begin to flip it:

Develop a library of business-driven architecture patterns.

Not every business problem requires its own unique architecture solution. Imagine a world where your team isn't reinventing the architecture wheel (or the API) every time they face a business challenge. Developing a library of patterns can help teams work faster as they create architectures that address various aspects of the business. Predefined patterns accelerate development by providing reusable building blocks. It will also help eliminate the temptation to build with a tech focus versus a business-outcome focus. The library itself becomes a breeding ground for innovation. New patterns emerge by combining existing ones, leading to creative solutions for complex business challenges.

Go data agnostic.

As you create new architectures, your data strategy needs to keep pace to gain full benefits from it. Data agnosticism allows you to leverage the strengths of different architectural patterns for specific data types, increasing the speed of your data-driven decision-making. Modern businesses rely on a variety of data sources: structured, unstructured, real time, and historical. Evolving your data strategy to mesh with your architecture allows you to leverage different patterns for different data types, maximizing the value you extract from all your data assets. For each architecture pattern, identify the data patterns that are best suited for that pattern. For example, monolithic architecture might work best for structured data for efficient storage and retrieval. Microservices could handle real-time data for event-driven communication. Event-driven architecture works for unstructured data for event processing and analysis. And serverless architecture could be used for historical data for batch processing and analytics.

Automate your architecture.

The future belongs to architects who can leverage AI to build so they can imagine. We're seeing the effect that gen AI can have on software development. Developers are freed from repeatable coding tasks and can pursue higher-order product design work. The same kind of "assistant" use case works for architects.

Engage tech architects in training small-model gen AI on the massive amount of architectural documentation your enterprise creates. When the AI assistant can generate routine architectural documentation, architects can spend more time improving customer experiences. Embracing AI doesn't diminish your role as an architect; it amplifies it. Focus on the strategic aspects of architecture—designing systems that not only function flawlessly but also propel your business toward future success.

02

Gen AI needs a launchpad, not a cage.

60%

*of executives say the way
they design, deliver, and manage
cloud architecture will require
significant-to-radical changes
in the next two years.*

Sixty percent of executives say the way they design, deliver, and manage cloud architecture will require significant-to-radical changes within two years. And two-thirds say the same about infrastructure.⁵⁵

Navigating hybrid architecture requires careful orchestration. Streamlining data movement between on-premises and cloud environments, along with robust security protocols, is crucial. However, potential rewards—faster innovation cycles, cost optimization, and a future-proofed AI strategy—far outweigh challenges.

By intentionally designing a hybrid architecture, businesses can unlock the true potential of gen AI, accelerating innovation and securing a winning position in the AI-powered future. In fact, 88% of executives say that generative AI already accelerates innovation in their industry.⁵⁶ With generative AI set to permeate every function and activity of the enterprise, it will soon materially impact business model innovation.

Over the next three years, executives report that AI and generative AI will support business model innovation in myriad ways: by providing access to additional data (88%), generating new insights from existing data (86%), expanding access to new markets (85%), and accelerating product and service development (84%).⁵⁷ Given this, it's easy to understand why CEOs cite business model innovation as their organization's top challenge over the same timeframe.⁵⁸

“The businesses, they have one clear priority which is to deliver to the client. If you don’t give to them a good and fast answer, they will find a way.”

Iosu Ibarbia
Technology Director
CAF (Construcciones y Auxiliar de Ferrocarriles)

Generative AI needs a powerful engine for raw processing power, such as on-prem processing capability, and the agility of cloud for rapid scaling and data access. Hybrid-by-design architecture delivers both, unlocking several key advantages for businesses:

Rocket-fueled product-led development. Hybrid by design allows you to train core AI models on premises, helping ensure data privacy, while leveraging the cloud for rapid deployment of new features and A/B testing based on user feedback. This rapid iteration cycle fuels product-led development, with real-time user data, a key driver of growth. Imagine a retailer revamps its mobile app with a focus on product-led development powered by AI. The app utilizes a core AI model trained on premises with anonymized customer data. As customers browse the app or physical stores, the AI analyzes their behavior in real time, offering personalized product recommendations. The AI generates dynamic shopping lists based on a customer’s needs and past purchases. Additionally, the AI can present targeted promotions and coupons for relevant products, driving impulse purchases and increasing average order value.

The power of choice. The biggest benefit of intentional hybrid architecture is flexibility. Businesses can choose the optimal environment for each stage of the AI lifecycle. Need to train a massive language model? Tap into your on-premises powerhouse. Experimenting with a new computer vision application? The cloud’s your better bet. It’s like having a private supercomputer for core tasks, and a limitless playground in the cloud to test and refine your AI ideas at warp speed. This agility gets your AI innovations to market faster, giving you a first-mover advantage.

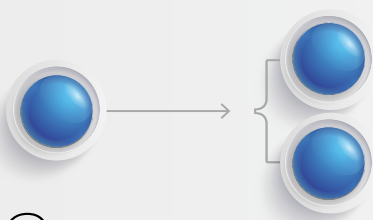
Security first. Hybrid architectures help businesses keep sensitive data and core applications safely guarded within their own walls, while at the same time leveraging the cloud’s robust security features for additional protection. This layered approach minimizes risk and fosters trust with customers and regulators. Think of it as a double layer of defense, keeping your core AI models under lock and key, while the cloud scrutinizes every update before it goes live.

Of enterprises that financially outperform their peers



54%

more have designed a tech architecture that enables top AI business solutions at enterprise scale⁵⁹ and



2x

as many of them distribute technical architects to business units and the edge.⁶⁰

What you need *to do*.

02

Build the launchpad
for gen AI.



Architecture becomes
real through hundreds
of day-to-day decisions.

As you continue the countdown to launching generative AI at scale—you’ll need to ensure your launchpad is fit for the task. That means building or rebuilding your architecture so it is up to the challenge.

Tech leaders need to work with the business to ensure the most business-critical priorities for your architecture are well-defined and clear. Then define the architecture using a deliberate hybrid-by-design approach that will deliver on those priorities. More specific actions that will help your teams hit the mark:

Codify and enforce consistent architectural principles.

Architecture becomes real through hundreds of day-to-day decisions, so define a complete framework of architectural principles as well as the governance required to make and enforce implementation decisions. Without clear architectural principles, teams risk creating a patchwork of technologies leading to inefficiencies, security vulnerabilities, and maintenance nightmares. Gen AI architecture requirements should be meshed with decisions about security, data sharing, and development platforms. Zooming out a bit, those technology decisions also need to be in sync with decisions about integration and product-led design, which need to be aligned with overall business objectives.

Don’t let vendors hijack your architecture.

Some vendors will offer short-term cost cuts in return for a bigger share of digital workloads. Make your best deal with strategic providers, but don’t surrender the architectural control needed to deliver critical business outcomes. A robust architectural framework ensures every technology decision aligns with your core business objectives, not just a cloud provider’s sales goals. This focus on value helps ensure your AI investments drive tangible business results.

Whittle down objectives to a critical few.

When the business can’t articulate a few critical priorities, architects can’t design the best architectural blueprints. Don’t dilute the power of your architecture by trying to address every wish list item. Ensure business and IT teams work together to define the architecture required so they can deliver on the enterprise’s few highest-priority objectives.

03

Enterprise platforms are the next frontier. Again.

Successful platforms unite the right data, model architectures, governance, and computing infrastructure to create value.

As businesses become increasingly platform-based, they need a modern IT architecture. Generative AI could be the missing ingredient. It instills platform superpowers by transforming functions across the organization.

There's a reason enterprise platforms are back in the spotlight. This time around, we're witnessing a new generation of platforms specifically designed to address the challenges of today's digital landscape and the demands of artificial intelligence (gen AI). Going back to our restaurant analogy, if enterprise platforms are prebuilt prep areas, they need to be built for the right purpose. A pastry corner wouldn't help someone trying to make an Asian fusion dish.

Put another way: traditional platforms tended to be somewhat generic solutions. Today's hybrid-by-design enterprise platforms are tailored for the specific requirements of AI integration, digital transformation initiatives, and contemporary business needs.

Future-proofing with hybrid by design now brings multiple payoffs later. Platforms can bring a variety of benefits but the difference in hybrid by design is that it designs with this endgame in mind, building the platform around specific business needs.

Hybrid-by-design platforms allow internal teams and external partners to collaborate and experiment with ease in a way hybrid-by-default platforms can't. This fosters a culture of innovation and accelerates development cycles. Gone are the days of clunky integrations. Modern enterprise platforms prioritize smooth collaboration with business partners, streamlining workflows and communication. And, by fostering innovation and streamlining processes, these platforms empower businesses to deliver a superior customer experience.

“Cybersecurity is a permanent race.”

Hauke Stars

Member of the Board, IT & Data
Volkswagen AG

User experience soars—and so can gen AI user adoption

Slick-yet-simple interfaces hide complex choices—that’s the magic of a well-designed enterprise platform.

Gen AI models are powerful, but their inner workings can be opaque. Enterprise platforms provide user-friendly interfaces that translate complex AI functionalities into actionable insights and workflows. Business users don’t need to be data scientists to leverage the power of AI. A good technical architecture is designed to support business users in what they’re trying to do without making it a cumbersome, time-consuming process.

Platforms come preloaded with industry-specific tools and templates, ready to snap together and unleash your next big AI win. They’re a modular masterpiece, allowing IT to focus on innovation, not integration headaches.

Enterprise platforms also connect seamlessly with your existing data sources; it’s like having all the ingredients prepped and measured before you cook a meal. This cuts out data drudgery—no more manual collection. They also help ensure clean, consistent data—the secret sauce for training powerful AI models.

Security, scalability, and governance for guardrails that flex

Beyond data magic and the ease modularity brings, platforms bring more peace of mind around cybersecurity issues. Gen AI is the new attack surface—and it’s vulnerable. Yet, gen AI adoption is outpacing trusted security approaches. Alarmingly, only 24% of gen AI projects are being secured.⁶¹ Many organizations are discovering this at the most inopportune time—after they’ve experienced a security breach.

Enterprise platforms build security in so your product teams don’t have to worry about it; they can focus on their business goals instead. They can eliminate the security risks siloed tools bring. They also force data integration and common governance.

Platforms also prioritize data security and compliance with industry regulations, mitigating the risks associated with handling sensitive data within gen AI workflows.

Another built-in advantage to platforms is the ability to scale quickly, especially in today’s environment. You don’t want your AI to outgrow its training ground. Enterprise platforms handle growing data demands and processing needs, so your AI can keep getting smarter. Plus, built-in governance tools keep everyone on the same page and ensure responsible AI development.

In essence, enterprise platforms bridge the gap between technical complexities and the business needs of everyday users. They empower business users to leverage the power of AI and other technologies without requiring extensive technical expertise, ultimately accelerating innovation and driving business value.

Incorporating an identity fabric into your platform: Simpler access control management

Platforms provide security but different platforms handle it in different ways. An identity fabric is one of the more secure ways to address potential threats throughout your architecture. In keeping with hybrid-by-design principles, it's an intentional and deliberate approach to baking security into your enterprise IT.

Identity fabrics act as a central nervous system for managing user identities and access controls across an organization. They integrate various identity management tools and resources such as directories, access control systems, and multifactor authentication (MFA) into a single, unified platform. Imagine weaving together different threads (identity management systems) into a cohesive fabric.

Benefits include:

Central control. Identity fabrics provide a central point to manage user identities, access rights, and permissions. They function as a control center where you can manage everything related to user access.

Seamless access. With a unified system, users can access all authorized applications and resources with a single sign-on (SSO), improving the user experience and reducing the need for multiple logins. Imagine using a single key (credential) to unlock (access) any door in your house (applications) while also restricting access (permissions) for the gardener who should only have access to the backyard (least privilege).

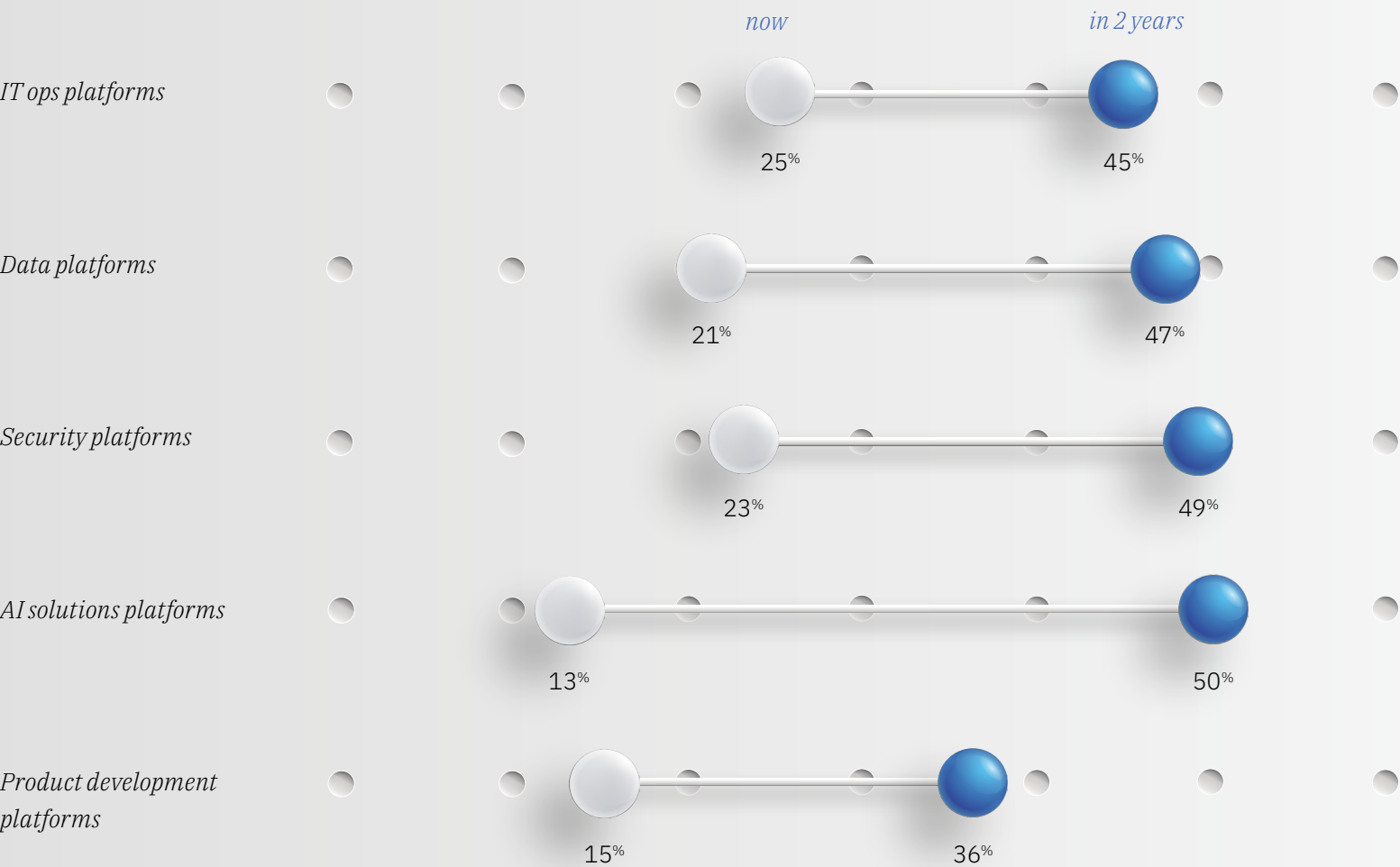
Enhanced security. Identity fabrics strengthen security by enforcing consistent access control policies across the organization. This reduces the risk of unauthorized access and simplifies security audits. Think of it as having a single, strong security system for your entire house instead of individual locks on each door.

Flexibility. An identity fabric can integrate with various cloud platforms, on-premises systems, and legacy applications, making it adaptable to diverse IT estates. Imagine your security system working seamlessly with all the different devices and appliances in your house.

Scalability. As your organization grows, the identity fabric can scale to accommodate new users, applications, and access needs. Imagine easily adding new locks and security features to your house as your family expands.

The majority of enterprises are designing or testing platforms but few have them at enterprise scale.⁶² Today's hybrid-by-design enterprise platforms are tailored for the specific requirements of AI integration, digital transformation initiatives, and contemporary business needs.

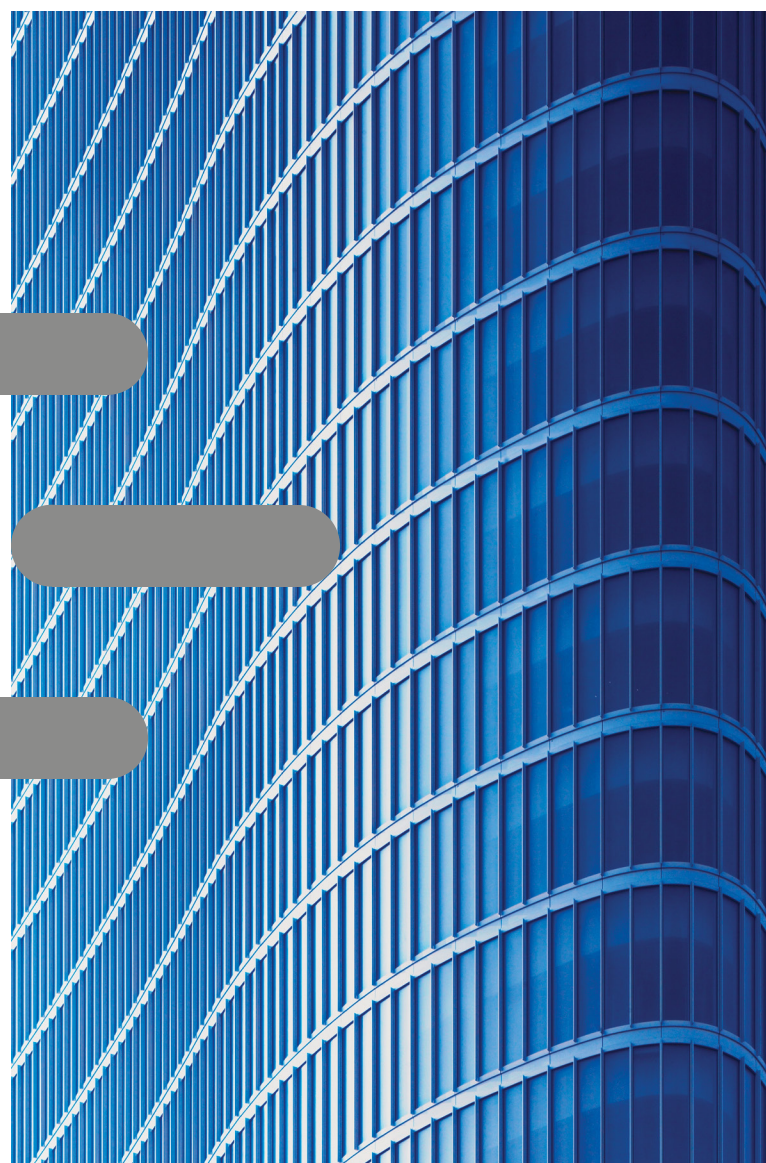
Operating at enterprise scale



What you need *to do*.

03

Rebrand IT as a platform services provider.



Design security directly into development and AI platforms. Imagine an identity fabric seamlessly woven into your platform, not a security blanket you throw on later.

High demand for new tech initiatives can result in by-default architectures. Use platform engineering to embed business-driven, intentional architectural principles and a common user experience into platform design.

“I need security in my engineers from the moment they imagine what they’re trying to build.”

Ed McLaughlin

President and Chief Technology Officer
MasterCard

Build platforms for tomorrow.

Platform engineering lets you jettison generic architectures and embed business-driven design right from the start. This means a common, intuitive experience for users, and a foundation built to handle cutting-edge AI, app modernization, and even edge computing. One platform can handle all your needs, from the cutting edge to core business functions, all while keeping things user-friendly.

Bake security in; don’t bolt it on.

Design security directly into development and AI platforms. Imagine an identity fabric seamlessly woven into your platform, not a security blanket you throw on later. This platform-centric security approach secures applications from the ground up, so you can focus on innovation without security headaches.

Unleash your developers by building an enterprise API catalog.

APIs run on platforms and allow two computer systems to securely exchange information over the internet, extending the functionality of a platform or service to a larger audience. A catalog makes it easier for developers to find the specific APIs they need within the organization. Think of it like a central nervous system for your platform. Developers can find the tools they need instantly—no more time wasted sifting through docs. This supercharges innovation and gets your AI features out the door faster. It’s like giving your developers a map to the treasure trove of functionality hidden within your platform. Gen AI could even assist in its creation.

Hybrid by design in action

Modern IT architectures are essential as enterprises become increasingly platform-based. Here are three examples of organizations using platforms in a hybrid-by-design model to supercharge their business.

Audi creates a stable, scalable environment for development across cloud platforms⁶³

The challenge

Audi needed to create a stable, scalable environment for innovative development. This required them to provision project environments faster to be able to build, deliver, and scale diagnostics, data management, and other projects across clouds. Audi also sought to reduce risks and remove dependencies with a flexible, modular architecture that could support iterative work.

The solution

Audi created a new as-a-service development environment based on Red Hat® OpenShift®, supplying Audi's platforms, applications, and projects with a secure, stable, central environment for innovative development at scale.

The outcome

Audi reduced time to market by up to six months. With a common foundation, developers were able to work more efficiently to create, deliver, and migrate solutions across on-premises and cloud environments. Application scalability improved to meet demand.

Audi reduced time to market by up to six months. With a common foundation, developers were able to work more efficiently to create, deliver, and migrate solutions across on-premises and cloud environments.

Edger Finance makes smart investing easier with a gen-AI-infused platform⁶⁴

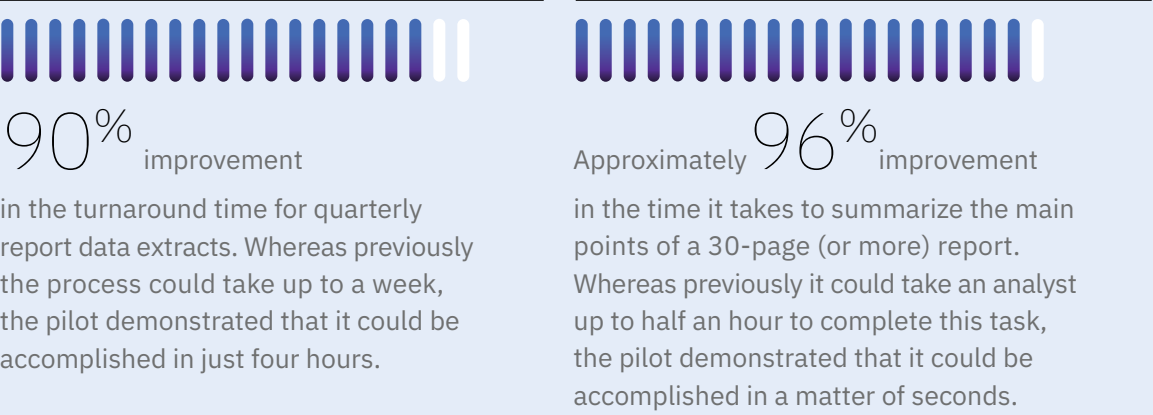
A fintech startup headquartered in Sweden, Edger Finance, aims to be the go-to solution that investors can use to navigate the stock market and make better investment decisions.

In 2023, Edger—an IBM Business Partner and a member of the IBM fintechx program—began collaborating with IBM’s client engineering and innovation studio teams to strengthen its processes and platform by piloting generative AI. The collaboration resulted in the creation of three AI-assisted processes that are offered in Swedish and English and were explored during a four-week minimum viable product (MVP) pilot:

- The first accelerates and simplifies the creation of a CEO summary from corporations’ quarterly reports.
- The second automates the extraction of data points that are within each report.
- The third allows investors to interact with the data in the report through a question-answer chat flow.

Each assistant relies on IBM watsonx.ai™, an integrated suite of AI tools designed for security-rich, collaborative data management, and process automation. The third assistant also utilizes IBM watsonx™ Assistant, a conversational AI platform that delivers automated self-service support.

The tests conducted during the pilot demonstrated clear results and great potential for generative AI at Edger:



The pilot also pointed toward several potential benefits for retail investors, such as greater efficiency in collecting and reviewing investment data as well as improved relevance and personalization of information provided to each investor utilizing the platform. By opening up possibilities for investors to interact with each report, Edger has made it easier for them to find, analyze, and take action on information that is the most relevant to them and their investment strategy.

IBM simplifies IT landscape for agility, innovation, and growth

This story isn't just about IBM;
it's a potential blueprint for any
C-suite leader battling IT sprawl.

The problem

Disparate IT environments—IBM z Systems®, cloud platforms, on-premises workloads, and an increasing number of edge devices—had over time become the norm.

Managing this complexity becomes increasingly unwieldy over time. Throwing people at the problem is what many companies do, but it isn't a strategic solution for this challenge. Automation is the key.

The solution

The solution started with a common automation strategy. By automating provisioning, installation, and operation across all platforms, IBM could finally tame the beast. This automation layer has become the bedrock for further innovation.

Next came containerization. By recognizing that most workloads shared similar patterns, IBM containerized them, creating a standardized approach that transcended individual platforms. This not only simplified management but also paved the way for a more agile future.



Data and applications

No IT architecture is complete without a data strategy. IBM addressed data at rest (databases), data in motion (application communication), and unstructured data—the lifeblood of AI. A robust data strategy ensures information is readily available and fuels the next chapter: applications.

Applications are the face of the enterprise. The containerized and automated environment provides the ideal platform for both custom and off-the-shelf applications. This focus on applications underscores the ultimate goal: delivering business value.

Benefits for IBMers

The benefits of simplification resonate across the organization:

Decision-makers. Standardization, easier management, and faster time-to-value paint a compelling picture for leaders justifying IT investments.

Engineers. Automation frees developers to focus on what machines can't—creativity, problem-solving, and strategic thinking.

Operators. A streamlined environment empowers operators to focus on higher-level tasks and leverage analytics for root-cause analysis.

Developers: The rockstars of the show

Empowering developers is crucial. IBM prioritizes developer tools, including a common continuous integration/continuous delivery (CI/CD) layer and AI-powered code assistants. This helps developers to code efficiently and deliver features that meet customer needs.

There's a strong partnership between AI and developers. AI is a powerful tool that thrives on structure. A standardized environment ensures data accessibility, critical for training and fine-tuning AI models. But it's not AI solo, of course.

In addition, security is woven into the technical foundation. From physical security to data protection, IBM integrates security best practices into every layer of the architecture.

A platform for the future

By simplifying its IT architecture, IBM has created a platform for agility, innovation, and growth. While it all began with IT simplification, the business benefits are the real outcome.



The C-suite that prioritizes building a future-proof tech architecture will be the one that is also building a future-proof business.

Your tech foundation is your business foundation

Technical architecture is the blueprint for your digital world. It defines how software components interact, ensuring smooth data flow and a system that scales gracefully. Without it, you risk data silos, clunky user experiences, and a system that crumbles under pressure. A well-designed technical architecture is the invisible backbone that keeps your digital world humming, allowing you to innovate, adapt, and thrive. Without wisely designed tech architecture, it's very hard to meet business goals at all, let alone as rapidly as today's competitive landscape demands.

Don't get grounded by a tech architecture stuck in the pre-hybrid-by-design era. Remember, in the race for AI dominance, the unsung hero isn't the flashy new AI solution, but the invisible foundation beneath it all. The C-suite that prioritizes building a future-proof tech architecture will be the one that is also building a future-proof business.

Chapter four.

Better together

How hybrid by design fuels
your ecosystem engine

04

Key takeaways

Forty percent of total revenue for the largest 2,000 organizations globally will be generated by digital products, services, and experiences.⁶⁵ As we progress toward digital, the skills and resources an ecosystem provides must change as well. Critical areas like software development, data science, AI, cloud, infrastructure, and cybersecurity are now vitally important when selecting the right partners.

A hybrid-by-design approach can help with these challenges. It requires intentionally designing and integrating different components and relationships to create a system that's greater than the sum of its parts. For instance, it could involve integrating different business models, such as subscription-based and pay-per-use, to create a more diverse and resilient revenue stream.

The bottom line: forget the comfort of your old partner circle. The gen AI era demands a dynamic, ever-evolving ecosystem brimming with the right expertise. For instance, CVS Health took an outside-in approach to streamlining business transformation with a hybrid cloud ecosystem—and can now build integration capabilities at about a third of the cost that they could four years ago.⁶⁶ Organizations that excel in ecosystem engagement experienced 24% higher revenue growth over the past three years compared to other enterprises.⁶⁷

“We have this concept that we call open innovation because we cannot do all the innovation alone. Part of the work is finding the right partners.”

Iosu Ibarbia

Technology Director
CAF (Construcciones y Auxiliar de Ferrocarriles)

How hybrid by design fuels your ecosystem engine

By 2026, 40% of total revenue for the largest 2,000 organizations globally will be generated by digital products, services, and experiences.⁶⁸ Are we seeing the last vestiges of analog? It's looking like it. Sure, we still need sleep, sustenance, and oxygen, but beyond corporeal necessities, much of our world is going digital.

This digital gold rush isn't just about going online—it's about a fundamental shift in how businesses interact and innovate. Forget lengthy product development and innovation cycles. Today, organizations must be agile, adaptable, and willing to take risks to stay ahead of the curve. Speed, experimentation, and iteration rule the day. Gone are the days of isolated competition. The coming era will also be defined by collaboration, with enterprises forging alliances and building robust ecosystems to deliver the most comprehensive digital experiences.

It has become a "my ecosystem is better than your ecosystem" competitive environment. Imagine car companies partnering with fitness trackers, or traditional retailers offering financial services—industry walls are dissolving as enterprises recognize the power of working together. This digital transformation will also empower new players, from cloud-based tech providers to cybersecurity experts.

No company can go it alone in the digital age. Strategic partnerships, joint ventures, and collaborations with startups, developers, and industry leaders have become essential for success. They are so essential that 55% of business leaders say changing strategic priorities will require reconfiguring core partnerships.⁶⁹ But this partnering imperative brings its own set of challenges, from intellectual property gray zones, to integration complexities, data sharing dynamics, cultural change and alignment, joint governance, and shared innovation and investment.

40%

*of total revenue for the
largest 2,000 organizations
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and experiences.*

A hybrid-by-design approach can help with these challenges. It requires intentionally designing and integrating different components and relationships to create a system that’s greater than the sum of its parts. For instance, it could involve integrating different business models, such as subscription-based and pay-per-use, to create a more diverse and resilient revenue stream. In a hybrid-by-design model, organizations bring together different technologies, such as artificial intelligence and cloud computing, to create new and innovative solutions. The model fosters relationships between different types of organizations, such as startups and established companies, to promote collaboration and knowledge sharing.

Overall, a hybrid-by-design approach to ecosystems can help create a more resilient, innovative, and adaptable system that’s better equipped to respond to the complexities and challenges of the modern world.

New rules of engagement

In this new world, organizations must possess a unique set of skills and competencies compared to what they needed even in the recent past. Today, they need a deep understanding of digital technologies and their applications, along with strong partnership-building skills. They need to be able to navigate the intricacies of collaborative work. And they need the capability to leverage data and analytics for everything from product development to reimagined customer engagement.

It’s a Darwinian conundrum; as enterprises figure out the ins and outs of being digitally led, they also urgently need to partner successfully with other enterprises who are on a similar journey. Those that adapt, innovate, and partner effectively will thrive, learning “how to ecosystem” effectively. Deciding what strategic needs their ecosystem serves will guide how they choose partners, from skills, to industry expertise, and more.

Hybrid by design means bringing new discernment to your ecosystem, designing for the best mix of partners in a digital-first environment.

Hybrid by design and ecosystems

Hybrid by design integrates multiple clouds, gen AI, and business environments from the outset, creating a unified, cohesive ecosystem. This approach helps organizations leapfrog the usual ecosystem hurdles in multiple ways:

Smash data silos. Hybrid by design shatters the data silos that plague traditional ecosystems. Imagine seamless data exchange—no more wrestling with incompatible formats or clunky integrations. This unlocks powerful automation and application portability, letting your teams focus on innovation, not data wrangling.

Develop a single pane of glass. Managing a multicloud, AI-powered landscape can feel like juggling flaming chainsaws. Hybrid by design brings order to the madness. It offers a single pane of glass for managing all your cloud ecosystem environments. Complexity melts away, freeing up IT resources for strategic initiatives.

Bend, don't break. Enterprise needs are like the weather—ever-changing. Hybrid by design builds in elasticity and resilience. Your systems across the ecosystem can dynamically scale up or down based on demand, ensuring high availability and minimizing downtime. It's like having a built-in shock absorber for the unexpected.

Future-proof. The only constant is change, and hybrid by design embraces it. This approach keeps your infrastructure future-proof. As new cloud services, AI advancements, and disruptive innovations emerge, you'll be ready to seamlessly integrate them into your thriving ecosystem. Imagine having a constantly evolving, best-in-class tech stack at your fingertips.

Hybrid by design is about being intentional, mixing elements together in a system better than the sum of its parts. Organizations typically have maintained traditional ecosystems that worked in a very physical world. But as we progress toward digital, the skills and resources an ecosystem provides must change as well. Critical areas such as software development, data science, AI, cloud, infrastructure, and cybersecurity are now vitally important when selecting the right partners.



Three things to know and three things to do

The IBM Institute for Business Value has identified three things leaders need to know and three things they need to do to get started on hybrid-by-design ecosystems.

	What to know	What to do
01	Gen AI has blown up your ecosystem.	Square your tech triangle.
02	Moonshot collaboration bets will decide industry titans.	Don't be a spectator. Make your move.
03	The innovation carpool lane needs guardrails.	Protect the innovation lane.

01

Gen AI has blown up your ecosystem.

38%

of executives admit their enterprises lack the in-house expertise to adopt generative AI for innovation.

Remember the cozy days of picking a handful of partners and riding that stable to digital nirvana? Despite high hopes, nirvana didn't materialize.

Generative AI just blew up that strategy. The enterprise cloud landgrab lit the ecosystem fire. And generative AI is pouring gasoline on it. The resulting inferno demands a complete rethink of how you build strategic partnerships.

Why? Because gen AI is an innovation explosion. It's the tech equivalent of reinventing the wheel—a fundamental shift that is redefining entire industries. More than two-thirds (69%) of organizations say they will get to open innovation with gen AI by 2025.⁷⁰ But that's not an easy road to travel. Thirty-eight percent of executives admit their organizations lack the in-house expertise needed to adopt generative AI for innovation.⁷¹

This disconnect is driving the Great Tech Reset, in which organizations are completely rethinking their IT estate. As part of that rethink, they're scrambling to build new partner ecosystems specifically designed for the gen AI era. And the stakes could not be higher. The right partnerships can give enterprises a huge head start on capitalizing on the power of AI.

Consider this: for CEOs in 2024, product and service innovation is the number one priority.⁷² They'll have to partner differently to achieve this goal because no one organization has everything it needs in-house to accomplish digital innovation. More than half (56%) of executives say strategic partners were highly important or critical to the success of their more recent large-scale tech programs.⁷³ And 74% say they select teams of strategic partners to execute most or even all of their tech programs.⁷⁴ Seventy-one percent are planning to or are already building a gen AI large language model (LLM) with a strategic partner to sell as a service.⁷⁵

Hybrid by design makes it mark

Hybrid by design encourages experimentation and proto-
typing to test new ideas and solutions, which is especially
helpful in a gen AI environment because ecosystems need to
move fast. It allows organizations to iterate and refine their
approaches to ecosystem engagement in a rapid, agile way.

By involving stakeholders in the design process—a key
element in a hybrid-by-design approach—organizations
can build trust and foster collaboration. A sense of shared
ownership and responsibility for the ecosystem makes a
competitive difference.

Because of the level of collaboration hybrid by design
requires, it can help enterprises identify opportunities for
innovation and entrepreneurship within their ecosystem.

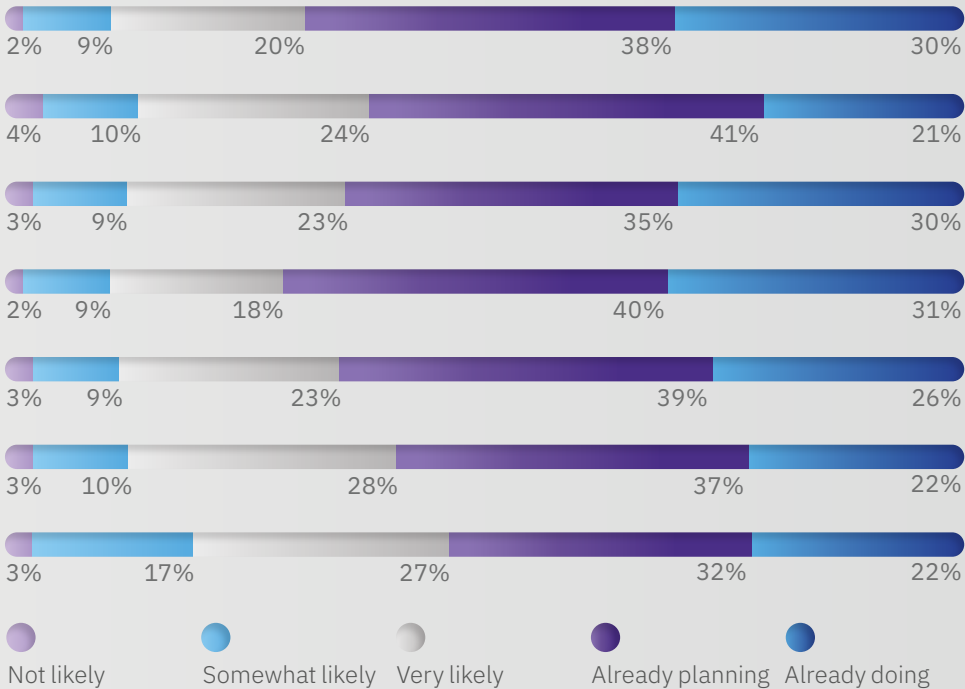
Moving outside of your comfort zone

The bottom line: forget the comfort of your old partner circle.
The gen AI era demands a dynamic, ever-evolving ecosystem
brimming with the right expertise. Organizations that excel in
ecosystem engagement—the ones significantly outperforming
—are already reaping the rewards in revenue growth. They
experienced 24% higher revenue growth over the past three
years compared to other enterprises.⁷⁶

Don’t get left behind. The gen AI revolution is here, and the
right tech partner ecosystem is your passport to success.

Tech initiatives organizations plan to explore
with strategic partners over the next two years⁷⁷

- Outsourcing tech work/business process
work to a gen-AI-enabled provider*
- Buying gen-AI-ready data from a
strategic partner*
- Building a gen AI large language model with business
partners/supply chain partners*
- Building a gen AI large language model that your organization
can sell to customers/business partners “as a service”*
- Building a gen AI large language model for your
organization’s exclusive use*
- Subscribing to a strategic provider’s industry-specific
gen AI LLM*
- Upgrading to new versions of partner AI tech that have
embedded gen AI capabilities*



How gen AI is changing the way we partner

Gen AI is changing the nature of ecosystems by disrupting value chains, enabling new entrants, fragmenting industries, fostering co-opetition, increasing interdependence, and raising regulatory and ethical challenges. As ecosystems evolve with gen AI, here's what you can expect.

Value chain disruption. Gen AI is reconfiguring value chains by enabling new business models, such as AI-as-a-service, and disrupting traditional relationships between suppliers, manufacturers, customers, and constituents. This forces ecosystem players to adapt and reposition themselves to remain relevant. For example, a coffee retailer buys beans from a roaster, who sources from a farm. Enter a company offering an AI-as-a-service platform for customized coffee blends and roasts. The retailer bypasses the traditional roaster and manufacturer, ordering directly from the farm. The farm gains direct access to customers and optimizes production and pricing. The roaster, no longer needed, must adapt by offering additional services. The traditional value chain is disrupted, with relationships reconfigured. The retailer gains control over blends and roasts, allowing for customization and quality. The farm benefits from direct access and increased revenue, while the roaster must adapt to remain relevant.

Fragmentation. Niche ecosystems emerge within larger industries, as organizations focus on specific applications or use cases. This fragmentation leads to new opportunities for specialization and collaboration, but also increases complexity and the need for interoperability. For instance, in healthcare, AI diagnostic platforms optimize services for specific patient populations, such as cancer or pediatric patients, improving accuracy and efficiency. Niche ecosystems emerge, each focused on a specific application or use case.

“We don’t want to build everything. We want to leverage our technology partners’ AI capabilities. Informa only builds where we can truly differentiate ourselves and we’re clear about what that means up front. We will be strategic on our choices—really clear and deliberate up front about what we want to buy versus build, who we want to buy from, and how we go about wholesale skills development.”

Mark Breslin

Chief AI Officer
Informa PLC

Co-opetition and partnerships. Gen AI is fostering co-opetition, where enterprises collaborate on AI development while competing in other areas. This leads to new partnerships, joint ventures, and strategic alliances, which can drive innovation and growth. For example, an autonomous driving platform could bring together leading automakers, Tier 1 suppliers, and startups to co-create a comprehensive autonomous driving ecosystem.

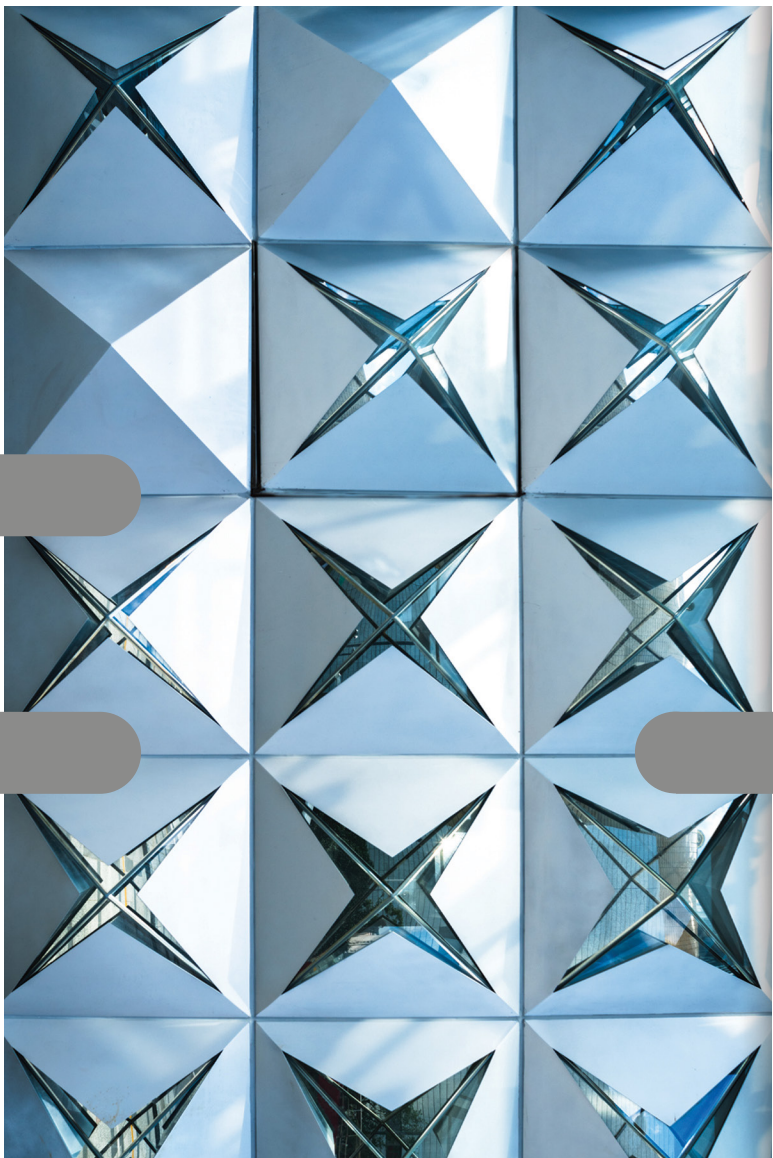
Interdependence. Ecosystem players are more dependent on each other than ever, relying on partners in newer areas like data and AI-fueled analytics. This interdependence can lead to new opportunities for collaboration, but also increases risk. In the digital healthcare ecosystem, a medical device manufacturer relies on a data analytics company to provide insights on patient data. Meanwhile, the analytics company relies on the device manufacturer to provide accurate and high-quality data. This interdependence creates a mutually beneficial

relationship, allowing both companies to improve their products and services. For instance, the device manufacturer can use the analytics company’s insights to develop more effective treatments, while the analytics company can use the device manufacturer’s data to refine their algorithms. But, if the medical device manufacturer fails to provide accurate and high-quality data, the analytics company’s insights may be compromised, leading to inaccurate diagnoses or ineffective treatments. And if the analytics company’s algorithms are not robust enough to handle the complexity of the data, the device manufacturer’s products may not be optimized for effective treatment.

Regulatory and ethical challenges. Gen AI raises new regulatory and ethical concerns, such as data privacy, bias, and accountability. Ecosystem players must work together to establish standards, guidelines, and best practices to help ensure responsible AI development and deployment.

What you need *to do*.

01
Square your
tech triangle.



It's time to stop managing vendors and start building partnerships for a future-proof, results-oriented enterprise.

Hybrid by design focuses on a crucial trio: programs driving business results, the architecture to build and integrate them, and the operating model to keep it all humming. This may sound complete, but it’s missing a crucial piece: a strategic partner ecosystem. Organizations need partners who are invested in their success, not just selling the latest shiny object. It’s time to stop managing vendors and start building partnerships for a future-proof, results-oriented enterprise. Here’s how to square your triangle and build a winning ecosystem:

Move from procurement to partnership.

Ditch the RFPs built on lowest-bidder logic. When you add partners for their digital capabilities, you tend to get what you pay for. Identify partners who understand your goals and can co-create solutions with a shared vision. Look for partners with a proven track record of integration and a willingness to share accountability for program delivery and business outcomes. And don’t discount existing partnerships that support current ways of operating that prove valuable.

Make collaborative design the rule.

Don’t treat your partners like afterthoughts; remember, in a hybrid-by-design model, they are deliberately woven together in a system greater than the sum of its parts. Integrate them into the design process from the very beginning. This fosters a shared understanding of the program objectives, the architecture needed to achieve them, and the operating model for ongoing success. A collaborative design process ensures everyone is rowing in the same direction.

Replace service level agreements (SLAs) with SLAs + shared objectives and key results (OKRs).

Forget outdated SLAs that solely focus on uptime. Establish a framework that combines SLAs with OKRs—it can revolutionize the way teams work together. This aligns everyone’s incentives toward achieving the desired business outcomes, not just maintaining the technology stack. Put another way, this approach shifts the focus from merely ensuring uptime. SLAs outline the service quality and performance expectations, while OKRs define the desired outcomes and measurable results. This collaborative framework fosters a culture of shared goals, increased accountability, and improved overall performance.

02

Moonshot collaboration bets will decide industry titans.

The next wave of industry titans will be built on hyper-collaboration and will center on the big tech plays that have the boardroom abuzz.

From gen AI to platforms, the biggest tech trends are no longer the sole domain of individual enterprises. They require a level of collaboration and cooperation that was previously unimaginable. The winners will be those who can bring together unlikely allies, former competitors, and industry outsiders to drive innovation and growth.

Two patterns help drive this push within industries. First, organizations are no longer trying to be everything to everyone. Instead, they're focusing on specific customer journey segments and teaming up with organizations that share their customer base. This laser-like focus is enabling them to deliver hyper-targeted experiences that were previously impossible.

Second, the most forward-thinking organizations are using tech to bring industry partners together, leveraging collective expertise to redefine products, services, or entire categories of both. This level of collaboration is redefining the very fabric of industries and creating new opportunities for growth and innovation.

For instance, a hybrid-by-design approach to education can integrate different educational platforms, such as online courses, degree programs, and apprenticeships, to create a more personalized and effective learning experience. This can improve student outcomes, increase accessibility, and reduce costs. Here are a few more examples of industry enterprises banding together for greater impact.

“Establishing a modern hybrid cloud architecture that enables easy access to data across the enterprise, the ability to leverage the potential of emerging technologies such as generative AI, and participation in a robust ecosystem of partners is paramount to a successful banking strategy in today’s industry.”

Shanker Ramamurthy

Global Managing Partner Banking & Financial Markets
IBM Consulting

Case in point:

Banking’s big ecosystem bet: Embedded finance

Banking customers are used to being able to do most of their banking on a smartphone. Embedded finance extends banking services to much broader parts of the customer’s journey through life: shopping, big expenses such as buying a car or buying a home, going to school, getting healthcare services, and so on. Instead of deciding to make a purchase and then thinking about how to pay for it later, embedded finance provides the customer with financing options directly at the point of purchase. Done well, this is good for the customer, the seller, and the bank.

Seventy percent of banking executives say that embedded finance is either core or complementary to their strategy.⁷⁸ Consider the partnerships required to deliver this play. The bank and the seller, obviously, but also the key tech providers for both parties. Each seller (the online retailer, the healthcare clinic, the online university) must link their mobile app to the bank’s services, requiring tech partners from both the seller and the bank. The bank needs to build a platform that can handle transactions with the seller and customer. That platform is going to be built on cloud infrastructure, so a variety of cloud service providers will be involved.

There’s a great deal of value to be had, but there are a lot of moving parts and many parties that need to build, operate, and integrate digital products while collaborating across multiple organizational boundaries.

“In the past, IT leaders were more concerned about just taking care of corporate IT. But today, we must concern ourselves about the products we can deliver. And, we must make sure we don’t have a big chunk of tech debt. IT leaders must always modernize. It requires a lot of effort to balance between the day-to-day, keeping-the-lights-on work and exploring to see what is new that requires attention.”

Hong Giep Toh

Chief Information Officer
Singapore Land Authority

Case in point:

Connected cars and the software-fueled ecosystem stampede

If you’ve been in a new car recently, especially in a fully electric vehicle, you’ve seen that cars have become computer screens on wheels. We’re far beyond synchronizing your mobile phone to the car’s navigation system. Today’s cars are running millions of lines of computer code. Software is making the car run better and scanning for maintenance problems, and it’s delivering an online experience to the driver and passengers. It’s alerting the driver to hazards. Most importantly, the car is consuming and generating streams of data, and the connected car play is about turning that data into business value.

The ecosystem of partners for connected cars is big and complex: the car manufacturer, tech partners that build and maintain the various software packages onboard the vehicle, companies that supply parts that connect to the car’s software-driven “central nervous system,” consumer electronics firms that build the big-screen dashboard, etc. Since today’s cars are fully online with mobile and Wi-Fi communications, telecom providers have also become key partners.

Today the connected car ecosystem adds two additional industries: energy and insurance. Energy companies have an interest in providing the charging stations for electric vehicles and providing (through their own partners) the applications for billing the car owner for each charge. And of course they have an interest in the EV charging data, as does the car manufacturer.

Insurance companies have been building smartphone applications that can sense how the car is being driven. Cautious drivers will get better insurance rates than speedy, aggressive drivers. And insurance companies are anticipating the day when fewer people buy cars and more consume “mobility services.” What does car insurance look like in a world where drivers pay by the minute for the use of a car, or when the car drives itself?

Connected cars are linked through software and data. Every player in the connected car ecosystem is in the digital products business and must find ways to connect data and applications with the other players. Cars have been so thoroughly reimagined by software and data that car execs predict that soon they will outsource the work of building vehicles (to more partners) and focus on the digital elements of the mobility industry.⁷⁹

Case in point:
Industrial manufacturing ecosystems
transition from smokestacks to smart factories

Industrial manufacturing has been a hotbed of digital innovation in recent years. The Internet of Things (IoT) embeds manufactured products with tags and sensors that turn every product into a source of data. Factory floors have been reinvented with robotics and with predictive analytics, making manufacturing the leading edge of machine learning in a broad trend toward “Industry 4.0” and a growing ecosystem to support it.

Digital twin technology is a big digital bet that creates a virtual replica of a physical thing or a physical system. Digital twins can simulate something you’re trying to make (an airplane engine) or something you’re making to make something else (the robots on a factory floor). Using digital twins to design and manufacture products permits rapid design experimentation and permits the simulation and analysis required to optimize performance and predict product failures. This trend is crucial for reducing downtime and improving operational efficiency.

The partner ecosystem for digital twins features product manufacturers, companies big and small that build the digital twin software, companies that build the high-powered hardware the software requires, and specialty tech vendors that build systems for managing and processing the huge volumes of graphics data that create the digital twin.

Partnership ecosystems based on generative
AI with hybrid cloud

The common thread across industries is hybrid cloud. Every ecosystem partner in every example is building digital products or consuming data from a partner’s digital products. And those digital products are being built and operated on hybrid cloud architectures.

Platforms are another common thread. Each of these industry examples requires a shared space to access each partner’s digital services and to exchange and manage the data flowing across the ecosystem. Those platforms make these partnerships possible, and they’re built on hybrid cloud.

Gen AI’s advanced machine learning capabilities can optimize and automate the management of hybrid cloud environments, ensuring seamless data exchange and integration across different systems and partners. This enables the efficient building and operation of digital products, as well as the secure and reliable exchange of data, ultimately facilitating successful partnerships and driving business growth.

What you need *to do*.

02

Don't be a spectator.
Make your move.

Organizations that excel in ecosystem engagement—the ones significantly outperforming—experienced

24%

higher revenue growth over the past three years compared to other enterprises.



Forget the solo act—the future of innovation is a synchronized group effort. Here’s how senior executives can lead the charge in forging powerful partnerships that could redefine entire categories, using hybrid by design to power up partnering:

Empower your corporate venturers.

Don’t leave this critical task to chance. Charter your corporate ventures team to actively identify and engage potential partners who share your vision for disruption. Develop a robust partner identification framework, leveraging data analytics and market research to pinpoint potential partners that align with your vision. Regularly review and refine your partner engagement strategy to ensure it remains effective and efficient.

Put out the welcome mat.

Forget RFPs if you want true innovation. Traditional bidding processes stifle creativity. Host joint “Customer Journey Deep Dive” workshops with potential partners. Explore shared customer segments and unearth hidden opportunities for co-creation. By departing from traditional RFPs, you’ll unlock a more agile and iterative approach to innovation. Joint workshops allow you to use design thinking principles to immerse yourself in the daily struggles and triumphs of your target audience. This experience will enable you to identify unmet needs, uncover hidden pain points, and develop solutions that resonate deeply with your customers and constituents.

Build a shared data swim lane.

Establish a secure data-sharing environment (anonymized if needed) with potential partners. Leverage AI to analyze combined customer data, uncovering hidden affinities and purchase patterns across segments. This not only identifies lucrative co-marketing opportunities, but also paves the way for high-impact joint ventures. Think niche product bundles, targeted loyalty programs, or even entirely new service offerings catering to these previously unseen customer sweet spots.

03

The innovation carpool lane needs guardrails.

Today's tech landscape demands a fast lane for innovation—a high-speed ecosystem where your organization, partners, and regulators cruise toward groundbreaking advancements. But ecosystems need clear standards and governance to truly accelerate.

Although

75%

of CEOs surveyed say trusted AI is impossible without effective AI governance in their organization, only

39%

say they have good generative AI governance in place.

With the transformative potential and inherent risks of generative AI, the days of “figure it out as we go” simply won't cut it. Although 75% of CEOs surveyed say trusted AI is impossible without effective AI governance in their organization, only 39% say they have good generative AI governance in place.⁸⁰

Here's why standards and governance are the unsung heroes that will speed your ecosystem journey:

Going further, faster, together

Imagine a highway where everyone makes their own rules. Chaos, right? Ecosystems are no different. When partners, vendors, and regulators all operate under a shared set of principles, collaboration takes flight. Streamlined processes, clear expectations, and a common understanding of risks allow everyone to move faster and achieve more impactful results.

Taming the gen AI frontier

Almost eight out of 10 executives (78%) say they collaborate extensively with their ecosystem partners on gen AI.⁸¹ But gen AI innovation can't happen safely—and frankly, well—without gen-AI-specific governance. And even though 76% of organizations are already establishing policies and processes for gen AI governance, it doesn't necessarily translate to their ecosystem.⁸²

For instance, even if your organization's enterprise governance structure is in place, it won't help you with ecosystem partners who may not follow the same rules. Gen AI is a powerful frontier. But with great power comes great responsibility. Unfettered gen AI development could unleash biases,

“With the emergence of gen AI, tech leaders are in the driver’s seat. But, the accelerator is stuck to the floor, so we have to steer as much as we can, while trying not to step on the brakes too much.”

Hong Giep Toh
Chief Information Officer
Singapore Land Authority

privacy breaches, and even existential threats. Here’s where gen AI-specific governance steps in. It’s not enough to rely on your existing enterprise governance structure. Your ecosystem partners might have vastly different policies, creating a regulatory patchwork that could stall innovation. Robust gen AI governance sets clear boundaries and ethical frameworks, ensuring a safe and responsible path forward.

Effective governance fosters transparency and accountability, laying the groundwork for strong, trusted partnerships essential for long-term success.

Governance by design, not governance by disaster

More than two-thirds of CEOs (68%) agree that governance for generative AI must be established as solutions are designed, rather than after they are deployed.⁸³ This proactive approach is critical to ensuring that AI solutions are developed with safety, security, and ethics in mind. Embedding ethical considerations, risk mitigation strategies, and clear ownership structures into the development process ensures your gen AI solutions are not just innovative, but responsible from the get-go.

Hybrid by design brings multiple perspectives for a more comprehensive safety net

Creating guardrails and standards for ecosystems takes time and multiple perspectives. A hybrid-by-design approach allows partners to co-create in areas such as standards certification, enhancing potential adoption. Partners can also jointly develop training and capacity-building programs that help stakeholders to comply with ecosystem standards and guidelines. This helps ensure that certification and accreditation programs are effective in promoting compliance and best practices.

Implementing guardrails around a hybrid-by-design ecosystem is crucial for the ecosystem to operate effectively, efficiently, and responsibly. Let’s look at some types of guardrails that can be put in place.

68%

of CEOs agree that governance for generative AI must be established as solutions are designed, rather than after they are deployed.

Even though
76%

of organizations are already establishing policies and processes for gen AI governance, it doesn’t necessarily translate to their ecosystem.

Areas to consider first to keep your ecosystem on the right track

Transparency and accountability mechanisms.
Implement mechanisms that ensure transparency and accountability within the ecosystem. This includes regular reporting, auditing, and monitoring of ecosystem activities.

Data protection and privacy safeguards.
Implement robust data protection and privacy safeguards to ensure that ecosystem participants' data is protected and used in accordance with their consent.

Security protocols.
Establish robust security protocols to protect the ecosystem from cyber threats and ensure the integrity of ecosystem data and transactions.

Intellectual property (IP) protection.
Implement mechanisms to protect intellectual property and ensure that ecosystem participant IP rights are respected.


Compliance with regulatory requirements.
Ensure that the ecosystem complies with relevant regulatory requirements, such as anti-trust laws, competition laws, and industry-specific regulations.

Dispute resolution mechanisms.
Establish dispute resolution mechanisms to resolve conflicts and disputes that may arise within the ecosystem.

Standards and interoperability guidelines.
Develop and implement standards and interoperability guidelines to ensure that ecosystem participants can seamlessly interact and exchange data.

Code of conduct and ethics.
Develop a code of conduct and ethics that outlines the expected behavior and values of ecosystem participants.

By implementing these guardrails, a hybrid-by-design ecosystem can operate in a responsible, efficient, and effective manner, while ensuring the trust and confidence of its participants.

An aerial photograph of a misty landscape. A straight road with a dashed white line runs from the bottom right towards the horizon. The road is flanked by rows of green trees. To the left of the road is a large, calm body of water. The background is filled with rolling hills and fields, all shrouded in a thick mist or fog. The lighting is soft and golden, suggesting early morning or late afternoon. The overall mood is serene and contemplative.

In the age of generative AI,
with its transformative potential
and inherent risks, the days of
“figure it out as we go”
simply won’t cut it.

What you need *to do*.

03

Protect the
innovation lane.



Building a collaborative ecosystem with strong governance, open data practices, and a commitment to open standards can help you ensure a smooth and safe ride. As you do so, you’re collectively shaping the future of responsible generative AI innovation.

Institute open data practices.

By embracing open data practices in a hybrid-by-design model, enterprises can unlock new possibilities for growth, efficiency, and innovation. Combining diverse data sources not only creates a more comprehensive view, it allows developers to build upon existing data and accelerate innovation. Develop and implement data-sharing agreements and protocols that ensure transparency, accountability, and trust. Implement secure, state-of-the-art data repositories to house this shared intelligence. But remember, security is a two-way street. Equip all data contributors with the knowledge and tools to share responsibly and ethically.

Invite players from outside the walled garden.

Convene a diverse group of stakeholders. Include not just your internal AI and data teams, but also key ecosystem partners, regulatory bodies, and even potential customers. This collaboration fosters a shared understanding of risks and opportunities, leading to robust and relevant governance frameworks. Take advantage of the diversity of thought by creating a “Red Team” within the ecosystem, composed of individuals from different enterprises, departments, and backgrounds to simulate potential AI-related risks and challenges, and develop strategies to mitigate them.

Replace “set it and forget it” with timely tune-ups.

Regularly review and update your standards and governance frameworks to reflect evolving regulations, technological advancements, and industry best practices. Schedule regular reviews, not just annually, but also in response to major developments. These could be the emergence of ground-breaking new research, the implementation of new regulations (such as the EU AI Act), or even significant data breaches that expose vulnerabilities in existing frameworks. To ensure the group doesn’t fall into group-think, host a “reverse brainstorming” session. Gather a diverse group of stakeholders and ask them to identify the most creative ways to circumvent or manipulate your existing frameworks. This can help identify potential vulnerabilities and provide opportunities to strengthen your frameworks.

Hybrid by design in action

Ecosystems are hybrid by their very nature—multiple partners, multiple ways of doing things. It all must come together in a seamless symphony.


From idea to impact:
Streamlining business
transformation with a
hybrid cloud ecosystem⁸⁴

Business challenge

CVS Health executives wanted to transform their business but realized that in order to achieve this, they needed to understand and integrate their entire ecosystem. They took an “outside-in” perspective to understand the needs of the people they serve and what data would be required to drive the transformation. They would need to focus on application programming interfaces (APIs) as part of the plan, developing an API-centric strategy and API ecosystem with flexibility to accommodate different environments: on premises, private cloud, and various public clouds.

Transformation

CVS Health CTO Claus Jensen helped to guide the company on a business transformation and hybrid cloud journey—one that started with reconsidering their entire approach to integration. The team took a holistic approach to hybrid cloud integration that included specialized skills, practices, patterns, and technology to reduce integration costs by two-thirds. They were able to integrate their entire ecosystem and be positioned to transform the way that CVS provides service to their clients and partners.

An aerial photograph of a dense forest. A thick layer of white mist or low clouds hangs over the trees, particularly on the right side. A faint rainbow is visible in the upper right portion of the image, arching over the mist. The overall color palette is dominated by deep blues and greens, with the white of the mist providing contrast. Three horizontal, rounded rectangular shapes are positioned at the top of the page: one on the left, one in the center, and one on the right, all in a dark grey color.

“We believe there are
two dimensions in
digital transformation:
one is *internal*,
and the other is *external*.”

XiaoLong He

Chief Information Officer, Vice President of Digitalization
Tianshan Material Co., Ltd.



Let the power of hybrid by design power your ecosystem

Gen AI has irrevocably changed the landscape of innovative ecosystems. To thrive, organizations must cultivate ecosystems that seamlessly blend the digital and physical worlds. This isn't about mere coexistence; it's about co-creation.

Identify the right partners, build robust governance frameworks, and harness the power of hybrid-by-design architectures and principles. The rewards can be immense—a competitive edge in the digital age, the ability to develop groundbreaking AI solutions, and the chance to be at the forefront of shaping the responsible future of AI.

Built for flexibility

Why hybrid-by-design
operating models are tomorrow's
enterprise foundation

05



Key takeaways

Many enterprises today are in operating-model-by-default mode. Our research reveals an average of 78 handoffs from proposal to finished product—an astronomical number of opportunities for misunderstandings, delays, cost overruns, and other nonsense.⁸⁵ But some are working on simplifying. Woodside Energy, for instance, currently has 10 inflight squads that are transforming, automating, and simplifying intelligent workflows across its value and supply chains. It aims to cut costs by 30 percent and could reduce operating expenses by approximately AUD 110 million per year.⁸⁶

Adding fuel to the fire, on large tech initiatives is the distance between the C-suite and the people actually doing the work—a chasm bridged by no less than six management layers in a typical business.⁸⁷ Communication gets muddled, ownership diffuses, and deadlines become a distant memory.

The outcomes an organization creates will never be better than the operating model they used to get there. The hybrid-by-design approach has been centered on operating models for developing and running digital products on hybrid cloud infrastructure. Hybrid by design, however, is a living, adaptive approach and is changing to support an explosion in gen AI applications. IBM's enterprise performance management (EPM) platform incorporates gen AI and the company has seen \$200 million in business value from EPM. Built on one unified data model, the platform brings together insights from marketing, sales, finance, operations, human resources, and supply chain.

Why hybrid-by-design operating models are tomorrow's enterprise foundation

A typical enterprise has an average of 78 handovers for each major product initiative. So it is an understatement to say there's room for improvement.⁸⁸ Why? Because traditional operating models are ill-equipped for today's business.

Many are rigid, inflexible, and create bottlenecks. They're also rife with silos and handoffs that lead to a lack of ownership and accountability, indecision, and teams who are less than fully engaged.

Operating models define how organizations do their most important work. When an organization presses the “start” button on delivering a product or service to a customer, they're employing an operating model that embodies the choices they've made about how to organize the work, how to employ people's skills, how to use technology, how to govern decisions, and more. Strong operating models deliver strong outcomes; weak operating models deliver weak outcomes. The outcomes an organization creates will never be better than the operating model they used to get there.

The hybrid-by-design approach has been centered on operating models for developing and running digital products on hybrid cloud infrastructure. Hybrid by design, however, is a living, adaptive approach and is changing to support an explosion in gen AI applications. Our focus in this chapter is on operating models for designing, developing, and running gen AI products in hybrid cloud environments.

Millennials and Gen Z now make up a significant portion of the workforce. Traditional models, with their hierarchical structures and top-down management styles, fail to engage this new generation of workers. Yet, it's human talent that makes an operating model work. Without engaged people, the best designed systems will fail. Redesigning an operating model requires more than just rethinking process flows. People and culture are central to the change. Culture change needs to be encouraged from the top down but embedded from the bottom up.

Hybrid by design began as an architectural approach to cloud—a cloud framework—but it’s become so much more. We’re taking hard-won lessons from the front lines of enterprise cloud adoption and extending those lessons into a way for businesses to operate better, faster, and more efficiently.

There’s a better scenario

Most organizations are not hybrid by design, especially when it comes to operating models. The majority of enterprises have a mix of operating models that have grown up in different corners of the organization. They aren’t working together. They’re also not reducing costs. And they’re not generating business value. Hybrid by design will help shift “by-default” operating models to “by-design” operating models.

The deliberate design of an operating model around a way of doing business—not despite it—makes the difference. It creates work environments that foster efficiency, speed, creativity, innovation, and a sense of ownership, leading to a more engaged and productive workforce—and elimination of the friction that drags most operations into the slow lane.

Consider a company struggling to launch a new e-commerce platform. The marketing team has a stellar campaign planned, but they’re reliant on IT for the website buildout. IT, often operating with a cost-centric mindset, focuses on minimizing expenses, potentially leading to delays and missed deadlines. Communication suffers, frustrations mount, and the launch date gets pushed back.

Now, introduce hybrid by design: deliberately designing the operating model for today’s business needs, cross-pollinating departments and work styles. With hybrid by design, a cross-functional team comprising marketing, IT, and operations personnel works together from the beginning. They share a common workspace—physical and digital—fostering collaboration and real-time problem-solving. Hierarchy and handoffs are kept to a minimum. Doers are empowered decision-makers—so decisions are made close to customers. And there are not a lot of layers between leaders and those on the front line. Decisions are made swiftly, and the team maintains a laser focus on a shared goal: a successful, speedy launch, even if it’s not always perfect.



*“It’s like going to the gym. It’s difficult and painful.
But we come out in better shape with a better
foundation for the future of the company.”*

Marcus Claesson
Group CIO
Daimler Truck AG



Three things to know and three things to do

Our research identified three things every leader needs to know about using hybrid by design to supercharge operating models:

	What to know	What to do
01	Handoffs and indecision are killing velocity.	Hack the handover.
02	Quantum entanglement is more than just a physics principle.	Take a quantum leap.
03	Without saying a word, employees reveal where your operating model is succeeding and failing.	Put bureaucracy and hierarchy to bed.

01

Handoffs and indecision are killing velocity.

95%

of business leaders report the top roadblocks to improving business outcomes for digital operations are handoffs across silos and the long lead times they create.

Speed-to-value has long been a challenge. Why does it take so long to get a tech program up and running? Why does it take so long to scale a program broadly enough to make a real dent in business performance? A big part of the answer sits in your operating model. You can choose to go faster by design or slower by default.

Many enterprises today are in operating-model-by-default mode. Organizations are drowning in a sea of handoffs. Our research reveals an average of 78 handoffs from proposal to finished product—an astronomical number of opportunities for misunderstandings, delays, cost overruns, and other nonsense.⁸⁹ The culprit? No surprise, it's silos. Departmental fiefdoms create long lead times, information black holes, and a culture of “not my problem.” In fact, 95% of business leaders report the top roadblocks to improving business outcomes for digital operations are handoffs across silos and the long lead times they create.⁹⁰

The result? Frustration and stagnation. But it doesn't stop there.

Sluggish decision-making—or more specifically, slow decision governance—is the second biggest roadblock (93%), with managing IT as a cost center coming in third (90%).⁹¹

Adding fuel to the fire on large tech initiatives is the distance between the C-suite and the people actually doing the work—a chasm bridged by no less than six management layers in a typical business.⁹² Communication gets muddled, ownership diffuses, and deadlines become a distant memory.

But no organization is sentenced to continue legacy ways of operating. In a hybrid-by-design operating model, focusing on a few key areas can vastly reduce the handoffs necessary, and put a lid on indecision.

Proposals morph into finished products after a scream-inducing number of handovers—78—creating friction that grinds your operating model to a halt.

Silos create long lead times, information black holes, and a culture of “not my problem.”

Empowering the front lines

Companies that push decision authority down to the front lines—to the employees closest to customers and operations—reduce reliance on approvals from higher management, speeding up decision cycles. Teams equipped with real-time data and analytics tools make more informed decisions without needing to consult a multitude of other functions, adding to the corporate wisdom trust. And don’t forget—the culture to empower employees must go along with the changes made. A culture of trust and autonomy is paramount for effective decentralization. When employees are equipped with data-driven insights and the authority to act, organizations foster a climate of ownership and accountability, driving bottom-line results.

Hybrid-by-design architecture combines different data processing and storage systems to enable real-time data analysis. It allows organizations to leverage the strengths of different technologies to process and analyze large amounts of data in real time. For instance, hybrid architecture enables real-time data ingestion from various sources, such as IoT devices and social media, allowing organizations to analyze and respond to events as they occur.

Hybrid architecture also integrates machine learning and AI models to enable real-time predictive analytics and automated decision-making, enabling organizations to respond quickly and make data-driven decisions.

In a hybrid-by-design operating model, you have a “single pane of glass.” This means a single enterprise dashboard or platform that provides centralized, enterprise-wide visibility into various sources of information and data to create a comprehensive, single source of truth in an organization. That’s essential in any high-functioning operating model.

Process and workflow automation

Enterprises that identify and automate repetitive, manual tasks reduce handoffs and free up employee time for more strategic work. Using intelligent workflows, they orchestrate automation, AI, analytics, and skills to fundamentally change how work gets done—giving teams insight for real-time action. Hybrid architecture integrates business process management (BPM) tools, such as workflow engines and business rules management systems, to automate and orchestrate complex business processes. And, hybrid architecture can incorporate robotics process automation (RPA) to automate repetitive, rule-based tasks.

The outcome? Decreasing operating costs by 40% to 70% within six months is not uncommon.⁹³

What you need *to do*.

01

Hack the handover.

Remember, every handover you eliminate is a win for velocity, innovation, and ultimately, your bottom line.



Operating models for gen AI products need to accommodate changes in a variety of areas, including data practices, development and engineering skills, governance, cost management, and benefits realization. Each change will create new handoffs and as an operating model matures, the handoffs will continue to change. For example, how should a gen AI platform team hand off work to a data ingestion team, and vice versa? Organizations using an ad hoc “by-default” approach will struggle to sort out which handoffs need to change, which should be retained, and which can be eliminated. Hybrid by design adds clarity and focus to the way forward by providing a well-tested operational foundation.

Remember that most handoffs come from organizing work around specialized, functional silos. Designing gen AI operating models “by default” can make the handoff problem worse if every new element of gen AI tech gets organized around new silos: platform teams, ingestion teams, inferencing teams, and so on. Here are more recommendations for attacking the silos that create 78-handoff operating models:

Map the money trail.

Imagine a clear illustration, a value stream map, that tracks every dollar spent and every handoff that occurs from the moment a product idea is conceived to the moment cash lands in your accounts. This map will expose the bottlenecks and redundancies that are currently acting like financial sinkholes, draining both time and money. In other words, before you can fix the problem, you need to understand it. Visually map the handoffs within your product development cycle, from concept to cash.

Edit ruthlessly.

Not all handoffs are created equal. Analyze your map and make the tough calls. What can be eliminated? What can be automated? Where can processes be streamlined? Focus on a single, high-impact handover (or decision point) that you can tackle immediately. Fix it *this* week for *this* program and use it as the start of a virtuous cycle that repeats itself.

Unleash the hackathon heroes.

Light a fire under your teams with a handover hackathon. Challenge them to slash the number of handoffs within a project. This gamified approach will not only generate creative solutions, but also foster a culture of ownership and efficiency. Remember, the goal is to go from a plethora of handoffs to a single, streamlined flow. Incentivize participation. Reward teams for their ingenuity and showcase the improvements across the organization. This positive reinforcement loop will turn your initial win into a virtuous cycle of continuous improvement.

02

Quantum entanglement is more than just a physics principle.

*Executives rate
design thinking*

81%

and fusion teams

74%

*as significantly or
extremely vital to
their organizations.*

The secret to unlocking explosive innovation lies in a phenomenon stranger than fiction: quantum entanglement (but not like you might understand it from physics). Translated to the business world, quantum entanglement occurs when your business and IT teams become like two inextricable particles—moving in perfect sync, no matter the distance (physical or metaphorical) between them.

Business leaders throw out an audacious idea, and IT teams seamlessly translate it into a groundbreaking solution. No friction, no delays, just an exponential leap forward. Sound like a pipe dream? It's definitely aspirational but not out of reach. It happens in pockets in enterprises around the globe now.

A couple of practices that are routine in a hybrid-by-design environment help bond business and IT teams in a way that your average operating model doesn't typically enable. Executives rate design thinking (81%) and fusion teams (74%) as especially vital to their organizations.⁹⁴ Hybrid by design enables both.

Design thinking...

bridges the chasm between the business aspirations and technical realities of IT. How? It starts with understanding user needs. Fostering a common understanding within both business and IT helps ensure the final product solves real problems, not just internal goals. In an operating model, design thinking helps create speed through structured innovation. It avoids the pitfalls of unstructured brainstorming and trial-and-error approaches, which can be inefficient. And its user-centric focus helps ensure solutions are actually relevant—saving costly rework.

“We can’t just be the IT people. We started literally knocking on the doors of the business areas, saying, ‘I want to be in your planning. I can contribute.’”

Marisa Reghini Ferreira Mattos

Chief Technology and Digital Business Development Officer
Banco do Brasil

Hybrid by design fosters collaboration between functions such as IT and finance—and between agile teams for areas such as product development and customer experience. This collaboration enables design thinking teams to access diverse expertise, resources, and perspectives, leading to more comprehensive and effective solutions. With hybrid by default, teams remain siloed.

Hybrid by design also includes a key element for real-world adoption; it demands teams consider the scalability and feasibility of their solutions, helping ensure that innovative ideas can be successfully implemented and sustained within the organization.

Fusion teams...

are multidisciplinary squads, blending technology, analytics, and business domain expertise. They bring together business and IT from the get-go. Fusion teams help speed innovation by eliminating silos, enabling a more holistic focus on the customer.

Hybrid by design’s adaptive governance model allows fusion teams to operate with the necessary autonomy while still facilitating their alignment with the organization’s overall strategy and goals. Iterative and adaptive, hybrid by design enables fusion teams to experiment, test, and refine their approaches, incorporating feedback from stakeholders and users.

The results are positive when teams are empowered, but a surprising disconnect has emerged: executives see the value of fusion teams, but often reserve them for the “holy grail” projects. Twenty-nine percent of executives report that fusion teams are only assigned to the highest priority product initiatives, with 55% reporting such teams are only assigned upon request or ad hoc.⁹⁵

That’s wasted potential. If fusion teams were used more liberally throughout the operating model, rapid progress could be more widespread. Almost three in four executives (72%) say collaboration between their business and IT teams is effective most of the time.⁹⁶ Here’s the harsh reality: that remaining 28% represents a significant drag on innovation.

Beyond theory to integration

It’s not that companies don’t use design thinking. Some do. And some use fusion teams. But layering extremely effective practices like these on top of one another—building them into your operating model so they are guaranteed to happen versus a nice-to-have—can produce a more concentrated result. Hybrid by design enables companies to move beyond mere adoption of best practices to a deeper level of integration, where design thinking and fusion teams become an integral part of their DNA.

What you need *to do*.

02

Take a
quantum leap.



Teams bond and thrive on real-world experimentation, not sterile meetings. Build this type of learning and collaboration into the operating model.

The idea that business leaders and tech leaders aren’t speaking the same language isn’t new and it hasn’t gone away. During the rush to cloud it was hard enough for tech leaders to engage their business unit counterparts in discussions about containers, landing zones, and cloud-native development. Now business leaders and tech leaders alike need to learn the language of gen AI: prompt engineering, data ingestion, model training, and more.

The work of designing gen AI operating models runs the risk of driving both parties into their separate corners, but hybrid by design can make it an opportunity to bring them together in deeper collaboration.

Silos stifle potential. Collaboration is the key to unlocking the next level of performance in any operating model—it greases the wheels. By harnessing collective intelligence and expertise across the organization, enterprises can streamline processes, accelerate innovation, and ultimately drive superior results. Here are some strategies to break down barriers and foster a truly collaborative environment, using hybrid by design to drive exponential innovation.

“What we really need to understand is that leapfrog technologies require failure.”

Shayan Hazir
Chief Digital Officer
HSBC Singapore

Use the real world as your learning laboratory.

Teams bond and thrive on real-world experimentation. Hybrid by design incorporates agile methodologies, such as sprints and scrums, to facilitate rapid iteration and experimentation in real-world situations. This approach enables teams to respond quickly to changing requirements, iterate on their designs, and deliver working solutions. Build this type of learning and collaboration into the operating model. As you do, collaboration becomes fun and produces better results, eventually becoming the by-product of shared success rather than an aspirational goal.

Celebrate failures.

Fear of failure can be palpable. Mistakes are inevitable. To mitigate potential inaction, foster an environment of open communication where blame games are replaced by problem-solving. Failures that are shared and used as learning opportunities are actually wins. Leaders cannot encourage experimentation and cocreation between the business and IT if they punish failures with poor reviews or worse. Ask teams to share learnings gleaned from failed attempts as well as successes. Both are learning opportunities for other teams. Gen AI can help. Learnings often get siloed within teams or individuals. Train a gen AI assistant to identify key takeaways from various sources such as team reports, project discussions, or internal communication platforms. Set up a regular schedule where the AI assistant can automatically generate summaries of these learnings. This keeps the information fresh and readily available for other teams.

Build a skills swap program.

Break down silos through strategic role rotations. Rotational redeployment involves strategically moving employees from one role or department to another within the organization for a set period. This cross-pollination fosters empathy for each other’s challenges and creates a shared understanding of the bigger picture. Start by assessing skill gaps across departments and long-term project needs. Where could a fresh perspective or a specific skillset be beneficial? Look for adaptable, high-performing employees with a willingness to learn new things. Offer training opportunities tailored to the new role, including soft skills such as communication and collaboration across departments.

03

Without saying a word, employees reveal where your operating model is succeeding and failing.

The truth about your operating model isn't hiding on a shelf in a dusty three-ring binder. It's screaming silently through the disengagement of employees.

Tired, frustrated workers aren't just a human resources challenge—they're a flashing red light on your organizational dashboard. In today's hyper-competitive landscape, business leaders can't afford to be tone-deaf to the muted screams emanating from their operating model.

Here's the harsh reality: many organizations obsess over outcomes but are inattentive to the people delivering them. Businesses chase KPIs with laser focus while neglecting the human engine driving those numbers.

In a hybrid-by-design operating model, leaders use technology to better the employee experience. And employees are already indicating where that can happen. Cloud-based collaboration, training, and development, platforms that promote employee engagement, and more can help enhance the employee experience.

Employees will show you, unfailingly, where your operating model needs work. And where it's working in stellar fashion. Can less-than-engaged employees produce stellar results? Occasionally, yes—but rarely in consistent fashion over time.

When your employees are disengaged, especially in specific areas, it's a potent signal that something is seriously wrong with your operating model. Let's take a look at a few common culprits.

“What is often lacking is imagination. We rush to apply technology, whatever’s new in the hype cycle—artificial intelligence, blockchain, quantum, etc.—without spending enough time in addressing the problems that the technology can actually solve; if we did this, we would realize that technology doesn’t actually work in silos but is a convergence of capabilities that can create something entirely new and meaningful.”

Shayan Hazir
Chief Digital Officer
HSBC Singapore



There is an average of six management layers between the executive sponsor of the team...

...and the lowest ranking member of that team.

Bureaucracy.

Imagine a large tech program where the path to the executive sponsor resembles a treacherous mountain hike, with countless layers of management separating the lowest-ranking team member from the decision-maker. Three out of four respondents report these excessive layers are a significant roadblock to success.⁹⁷ Information gets muddled, decisions get stalled, and innovation gets suffocated. And it’s no wonder, as our research reveals there is an average of six management layers between the lowest ranking member of a team and the executive sponsor of that team.⁹⁸ With that many layers of bureaucracy, it’s easy to see how enterprises get to 78 handoffs per initiative.

Empathy that’s missing in action.

Building a high-performing team requires empathy—understanding and acknowledging the challenges faced by people in different roles. Yet, a significant number of employees report a lack of empathy from their leadership. This emotional disconnect breeds resentment, disengagement, and ultimately, a workforce that goes through the motions without passion. In our research, seven out of 10 executives said low empathy for people and teams is a significant or extreme roadblock to improving business outcomes.⁹⁹

The eternal “yes”.

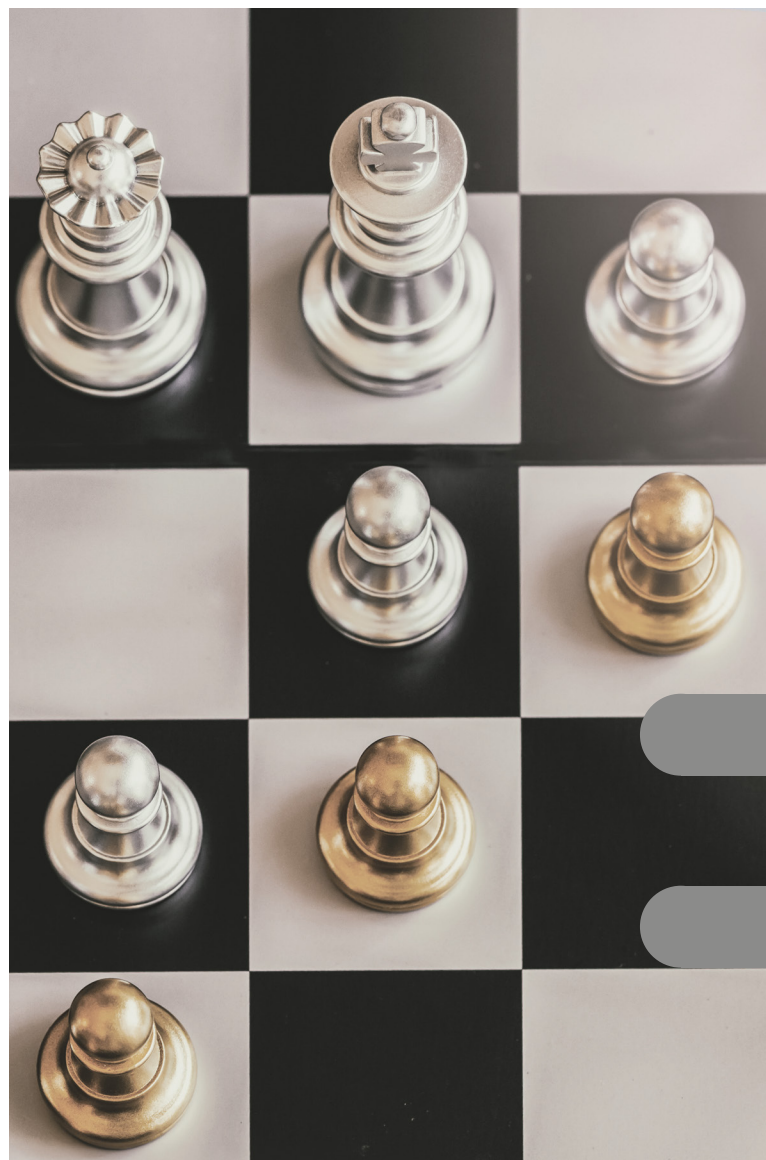
Managers who prioritize gaining favor with their superiors over the well-being of their teams create a toxic environment where problems fester and opportunities are missed. Our research highlights this as a major roadblock—with eight out of 10 respondents citing it as an impediment to business outcomes—further emphasizing the need for leadership with integrity.¹⁰⁰

What you need *to do*.

03

Put bureaucracy and hierarchy to bed.

Monitor the frequency with which new ideas are met with initial resistance or negativity. A high “Yes, but...” ratio could indicate a culture of risk aversion or a lack of psychological safety for employees to propose innovative ideas.



Hybrid by design focuses on two main shifts in operating model design. The first is the ongoing shift from “by default” hybrid cloud adoption to more intentional, business-focused hybrid-by-design investments.

The second is hybrid cloud’s role as it becomes the foundation for building gen AI products. Most organizations are going through both shifts at the same time, and leadership teams must get very focused on designing and documenting the changes required, as well as the game plan for executing those changes. But it’s easy to overlook what we’ve all experienced directly: the difference between plans that work on paper and plans that work in the real world lies in teams’ level of engagement. Getting engagement right can’t be limited to pro forma engagement surveys—it needs to be reflected in managers’ daily practices.

Here are a few key ways to put the focus on people so your operating model can hum like a well-oiled machine.

Equip employees for decentralized decision-making.

By giving employees more autonomy and access to cloud-based tools, hybrid-by-design models enable decentralized decision-making, reducing the need for hierarchical approvals and increasing speed and agility. Cloud-based project management, collaboration, communication, and data analysis tools empower employees with what they need to make faster, better-informed decisions.

Incorporate anonymous feedback into AI models.

By incorporating sentiment and engagement data from various sources (for example, employee surveys and feedback, workplace metrics, and so on) organizations can create more accurate and nuanced predictions of employee behavior, engagement, and performance. This allows them to address problem areas before they become severe, and in some cases, prevent the problem entirely. Hybrid by design allows the capacity and flexibility to do this in real time, enabling AI to deliver.

Track what no one else is tracking.

What’s your idea leakage rate? This is the percentage of employee-generated ideas that get lost or abandoned somewhere in the approval process. This could indicate a lack of clear pathways for ideas to travel, or a culture where employee suggestions aren’t valued. How about your fix-it-myself rate? Pay attention to how often employees bypass official channels and solve problems on their own, even if it takes more time or effort. A high fix-it-myself rate could signal frustration with the existing approval process or a lack of faith in getting timely solutions from above. And finally, how often do you hear the words, “Yes, but...”? Monitor the frequency with which new ideas are met with initial resistance or negativity (“Yes, but we tried that before...” or “Yes, but it won’t work because of...”). A high “Yes, but...” ratio could indicate a culture of risk aversion or a lack of psychological safety for employees to propose innovative ideas. Here again, hybrid by design allows the capacity to track an almost infinite number of factors, while AI provides speedy, integrated analysis.

Hybrid by design in action

Woodside Energy speeds transformation, aims to cut costs by 30%¹⁰¹

Gen-AI-infused operating models can unlock innovation. But it takes people to deliver that innovation. Enterprises are approaching hybrid-by-design operating models in ways that work for them, but no two paths are the same.

Woodside Energy, a leading Australian natural gas producer, has set a goal to decrease operating expenditures by 30%, and the company has a plan to deliver this in a measured, strategic way.

The energy company is seeking long-term, sustainable changes in the way it operates and creates value. To build the safest and most efficient energy pipeline, Woodside is exploring the notion of autonomous operations and looking at ways to optimize the human-machine relationship by augmenting roles with AI and automation. It is investigating concepts such as automated contract management, material optimization, inventory management, and predictive maintenance across its rigs, plants, and network.

AUD 110 million per year

Current initiatives could reduce operating expenses by an estimated AUD 110 million per year

30 initiatives

The Woodside Accelerator continues to scale, with more than 30 initiatives identified for progress

To deliver the magnitude and pace of transformation required, Woodside’s Chief Digital Officer, Shelley Kalms, needed to scale the digital capacity and capability of the business. The enterprise partnered with IBM, using IBM Garage™ as a transformation accelerator.

Transformation isn’t just about technology. It’s culture change.

Kalms recognized that transformation is not simply about modernizing technology and tapping into data insights. It’s about people embracing new ways of working. “Digital transformation must not be something done to a company, it must be something done with a company. Transformation must be embedded in the hearts and minds of people.”

Woodside wanted to scale its transformation and revamp business-critical operations. To ensure a deliberate and thoughtful approach, the teams developed an innovative operating model—the Woodside Accelerator.

The company’s embedded IBM Garage practice—the Woodside Accelerator—includes a collaborative team of Woodside, IBM employees, and the Woodside partner ecosystem who have embraced new ways of working and employ agile, DevOps and user-centered design. The Woodside Accelerator follows the IBM Garage methodology of co-create, co-execute, co-operate.

Making wise investment choices

Woodside operations’ executives participated in a three-day virtual IBM Garage workshop to look across business operations and see where the energy company could improve efficiencies and revenue. For each initiative, team members analyzed the problems from numerous angles, without trying to identify a solution early on. Based on the problem area, they determined which people, technology, and resources could help solve the issue.

To calculate a particular initiative’s speed to value and rate of organizational transformation, the team uses the IBM Garage V.O.T.E. (Velocity, Outcomes, Technology and administrative debt, Employee experience) framework. This is updated continuously for all initiatives in the pipeline and aggregated at the portfolio level to assess the investment potential of each initiative. The insights from V.O.T.E. are used by the Woodside Accelerator Investment Board to make informed decisions about which initiatives to fund and in what sequence.

The investment board needs to see that the business case for an initiative has a reasonable projected value and that it can return business value back to the organization fast enough to warrant funding.

“You don’t have to wait a year to see an outcome”

The Woodside Accelerator currently has 10 inflight squads that are transforming, automating, and simplifying intelligent workflows across Woodside’s value and supply chains. It continues to scale and has already identified more than 30 initiatives to review and further refine. The dynamic program is constantly evolving and growing as new initiatives are introduced and existing initiatives launch and scale new products and services back to the business and beyond.

The team projects that the current initiatives could reduce operating expenses by approximately AUD 110 million per year if implemented. The team will continue to scale until it reaches its 30% goal.

“Continuous improvement is now a mindset in the way that we work at Woodside,” says Kalms. Employees are being exposed to new ways of working, and those who have joined projects using accelerated agile delivery have wholeheartedly embraced it. Leon Burgin, Integrated Remote Operations Project Manager at Woodside, says: “You get to actually see change on a real-time basis. You don’t have to wait a year to see an outcome. You’re seeing outcomes every two, four, six, eight, and twelve weeks.”

As Woodside continues to focus on optimizing value, business processes are becoming more intelligent and data-driven.

“You get to actually see change on a real-time basis. You don’t have to wait a year to see an outcome. You’re seeing outcomes every two, four, six, eight, and twelve weeks.”

Leon Burgin

Integrated Remote Operations Project Manager, Woodside Energy

Powering innovation in insurance¹⁰²

Results

60+

core applications successfully
transitioned in 3 months

86%

improvement in
man-hours lost

18%

reduction in critical
incidents reported

For insurer AXA Hong Kong and Macau (AXA), the market landscape was changing fast. A strong international customer base was no longer enough. As the industry went digital, AXA had to become a customer-first innovator.

With over 1.5 million customers in Hong Kong and Macau, AXA began a company-wide business transformation journey. The strategy to become an innovative insurer centered on three pillars: designing a digital backbone, becoming a digital business, and creating a digital ecosystem. The digital backbone was the foundation and critical to providing the stability, availability, and security AXA would need on its transformation journey.

Simplifying IT complexity

From the onset, IBM centralized all IT support and service management using the cloud. It simplified vendor management complexity and drove better stability and availability. This allowed AXA to explore, experiment, and pivot as the market demanded without being bogged down by administrative tasks.

IBM consultants adopted a methodology called the “Next Generation Application Management Services” that relied on new cognitive and cloud technologies as well as automation to deliver services. The new methodology raised service levels and helped ensure low-touch management. It also helped AXA’s IT team shift left, allowing them to test and troubleshoot earlier in the software development process. It improved the quality of apps and reinforced customer trust. The team transited over 60 core applications within three months.

Unshackling insurance innovation

AXA saw immediate benefits—86% improvement in people-hours lost (caused by applications) and an 18% reduction in critical incidents reported. System stability and availability improved, while automated IT health checks kept local applications in shape. At the same time, proactive maintenance measures helped detect and address issues very early.

This transformation simplified support. It made AXA more agile in an increasingly digital market while creating a healthy working relationship that addressed challenges rapidly.



Decision advantage: Instant insights for complex business questions

To compete effectively in the high growth areas of hybrid cloud and AI, IBM had to accelerate decision velocity and drive enterprise productivity. Historically, IBM had fragmented and overlapping work, systems, and data models that made it difficult to consistently deliver business insights. Significant time was spent consolidating data for reporting, which required IBMers to work as “human glue” pulling data from different systems and manually putting data together in spreadsheets and slide presentations. In fact, 63% of an analyst’s time was spent producing reports instead of generating insights. IBM had 40,000 meetings a year across the company simply focused on reviewing data. It had IT reporting sprawl, with 70,000 report types and over 300 reporting apps.

IBM created an Enterprise Performance Management (EPM) platform as the trusted source of integrated enterprise data and a catalyst for faster decision-making. Based on one enterprise data model, EPM integrates data from all trusted enterprise sources across geographies and business units, breaking down historical data silos. EPM standardizes KPIs and aligns data to enterprise data standards to deliver interactive dashboards and a culture of working “on the glass.” This leads to more proactive analysis and action, driving IBM’s growth and enterprise productivity.

EPM delivers trusted business insights and analytics from across the enterprise. Built on one unified data model, the platform brings together insights from marketing, sales, finance, operations, human resources, and supply chain. This empowers users across the enterprise to take action with speed, based on reliable data at their fingertips, generating more than \$200 million in enterprise value.



The platform had 25,000 users in 2023 and adds thousands of new users each month. Users ask questions on topics ranging from access requests, data refresh updates, report trouble shooting or for complex business questions.

As the platform progressed, the EPM team needed a way to engage users quickly and enable fast self-service. IBM created AskEPM, a watsonx™ chatbot that provides answers to rapidly resolve complex business questions.

Embedded within a Slack® channel for all EPM users, AskEPM responds in seconds to all users’ questions and provides helpful insights and links. In the background it tags the question for the right support team so they can monitor the user’s interaction with AskEPM or engage the user directly, saving over 5,000 hours per year.

By connecting the user with the right subject matter experts, AskEPM greatly enhances the user experience while leveraging generative AI to provide comprehensive descriptions of answers, including helpful links to guide the user to a “touchless” resolution to their question.

Results include:

\$200 million

in business value from EPM

25,000

unique EPM users in 2023

70%

enterprise workflows
enabled on EPM across IBM

300+

reporting applications aggregated through
a single data model and platform

18 TB

of integrated enterprise data

Instant response

100% of questions answered either by
AI or connecting to an SME

SME matching

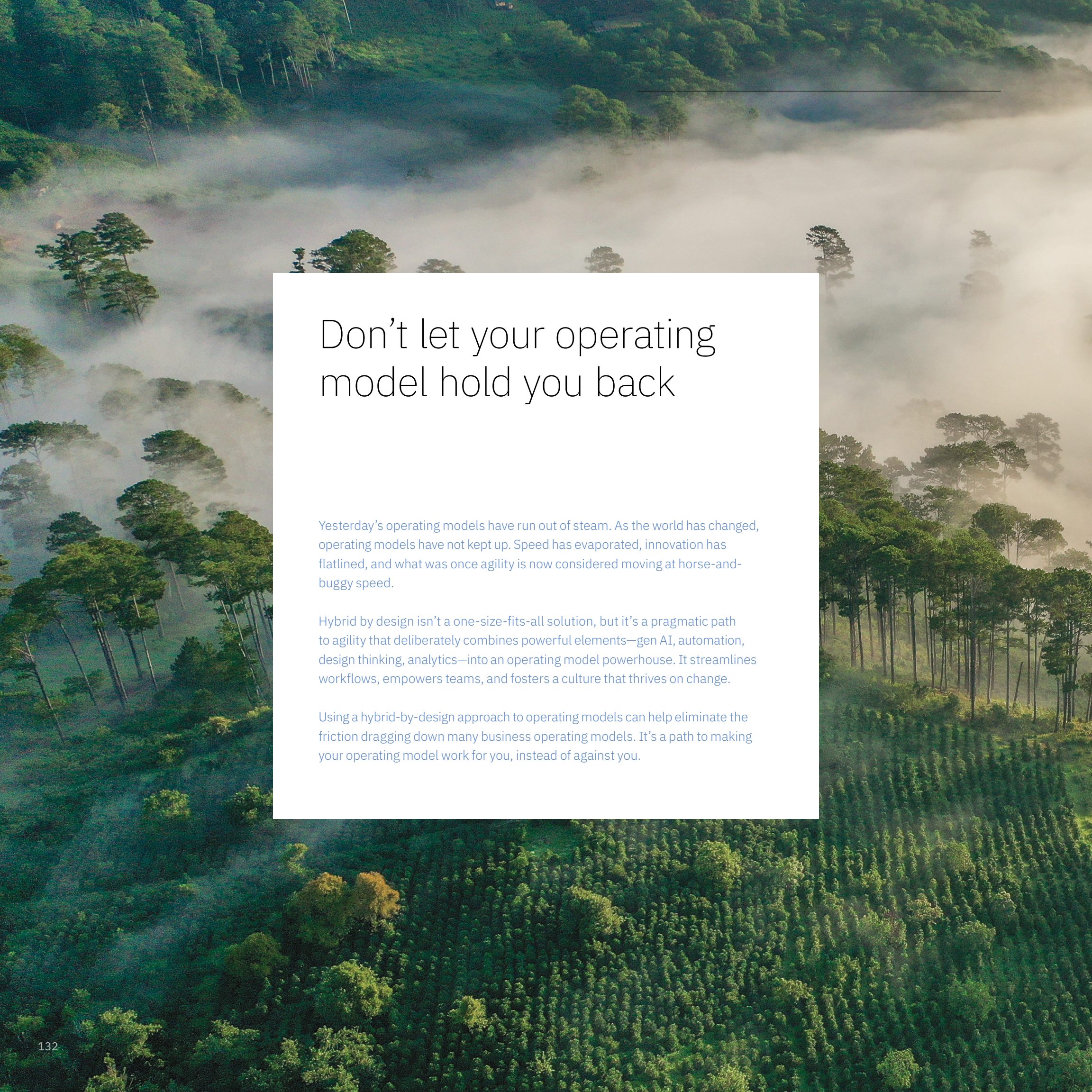
engages the right expert team,
eliminating the “ask around” process

5,000+

hours saved per year

25,000+

users engage AskEPM per year



Don't let your operating model hold you back

Yesterday's operating models have run out of steam. As the world has changed, operating models have not kept up. Speed has evaporated, innovation has flatlined, and what was once agility is now considered moving at horse-and-buggy speed.

Hybrid by design isn't a one-size-fits-all solution, but it's a pragmatic path to agility that deliberately combines powerful elements—gen AI, automation, design thinking, analytics—into an operating model powerhouse. It streamlines workflows, empowers teams, and fosters a culture that thrives on change.

Using a hybrid-by-design approach to operating models can help eliminate the friction dragging down many business operating models. It's a path to making your operating model work for you, instead of against you.



“Not everything can
be resolved by
technology.”

Nthabiseng Mosupye

Chief Technology Information Officer
Rand Water



Afterword

It's time for the Great Tech Reset. Rethinking technology estates at this moment—as gen AI changes the world—just makes sense.

Gone are the days when singular solutions worked well. The rise in the number of technologies and the interdependencies among them has changed the way we work and live. Transformation is now a river fed by multiple sources. Hybrid by design helps you address those sources, from technology, to operating model, to ecosystems, and more.

While we don't have a crystal ball here at IBM, we do have a wealth of experience with thousands of clients around the globe, strategizing and implementing hybrid-by-design systems. We see hybrid-by-default organizations. They're filled with islands of innovation, silos of progress, pockets of excellence.

But we help build hybrid-by-design organizations. Their technical architecture supports their business objectives. Their operating models deliver digital products better, faster, and more efficiently. And their ecosystems accelerate innovation. They tie their technology estates to business results and it shows.

Hybrid by design is not just a concept; it's a necessity. It's about recognizing the potential hidden in the intersection of different technologies, and having the foresight to harness that power. This isn't about simply combining elements; it's about creating something entirely new and transformative.

Let's do it together.

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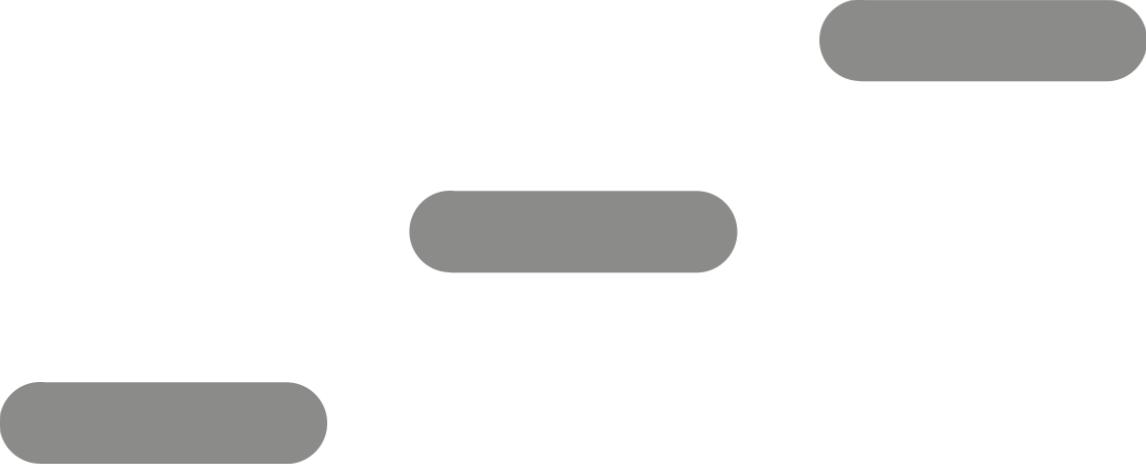
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