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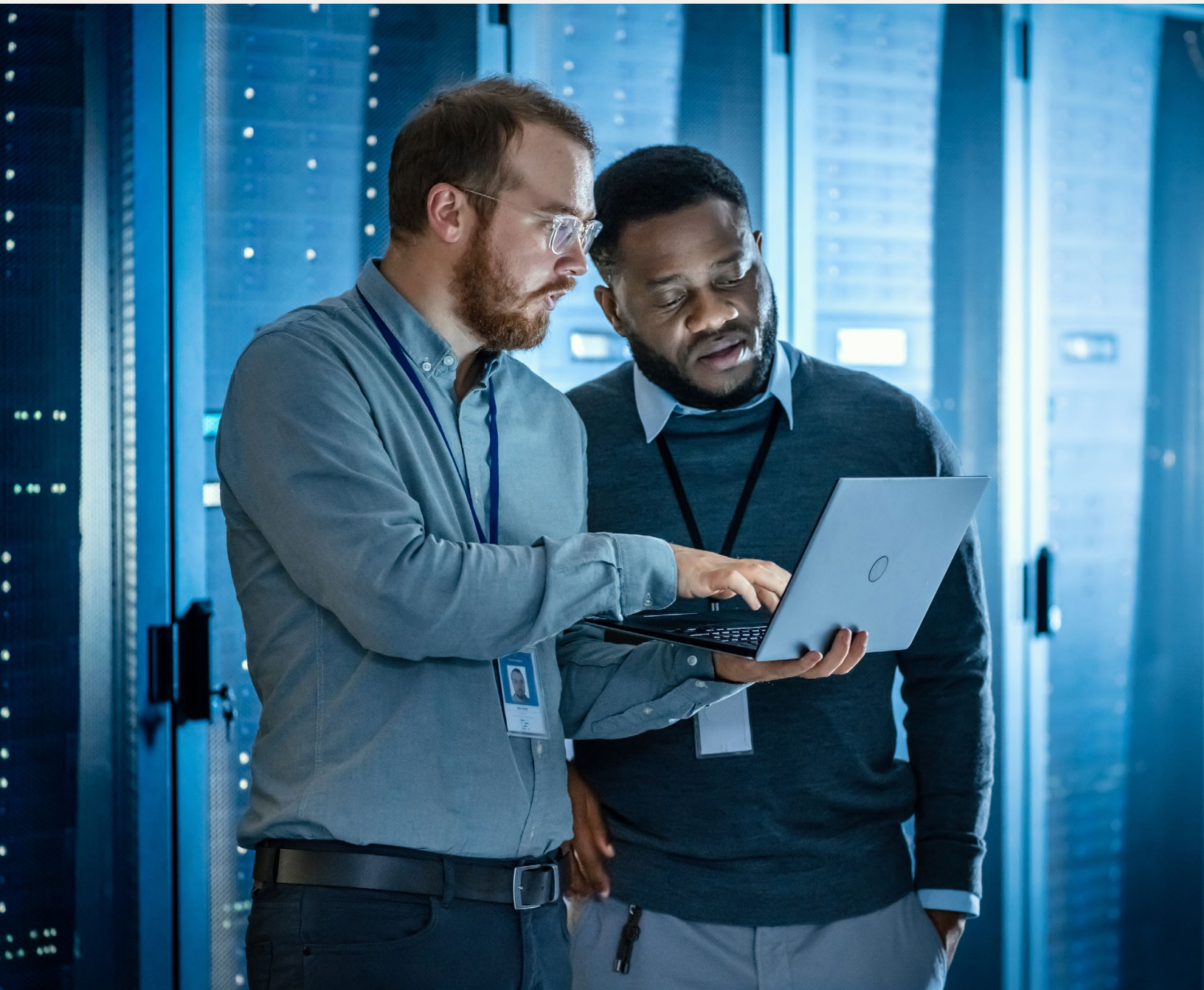
Four ways the federal government can achieve mainframe modernization success



With heightened focus on cybersecurity and citizen experiences with digital services, there's a familiar discussion playing out in the offices of federal officials and leaders.

Once again, the role of the mainframe is under debate. Leaders in federal government are now asking themselves the same questions: What does the future of this enduring technology look like for the government and how can it support the digital transformation that will allow for better-served citizens with heightened cyber resilience?

Improving citizen experiences and outcomes has been a major driver in modernization efforts, with legacy systems accounting for 80% of IT spending.[1]

In 2021, the Biden Administration issued an executive order titled "Executive Order on Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government."[2] It was the latest in a string of modernization mandates over the past several years built to change the way federal, state, and local government agencies manage and deliver digital citizen services.

To continue providing value from past mainframe investments and position themselves for future opportunities, federal government leaders must determine how, what, and when to modernize.

What does success look like?

The goals of most mainframe modernization journeys generally include the ability to increase agility alongside the freedom to experiment, quickly address new mission objectives, increase services to citizens, and rapidly convene ecosystems. In embarking on this path, we have seen a tendency to race full throttle towards a technology-defined finish line, which obscures the original purpose of increased agility.

As a result, a commonly held misbelief—that mainframe modernization equates to migrating all workloads to cloud—has long prevailed, creating its own challenges. In a 2021 report, Gartner® found that organizations that rush into cloud investments with little to no cost optimization plans are not only unable to derive the value they expect, but they also end up overspending on these services by up to 70%.[2]

To move forward with confidence, we believe it is crucial for federal government leaders to reevaluate mainframe modernization through a fresh lens. This transformation is as much about an individual organization's culture, pain points, and use cases as it is about the overarching IT landscape. The challenge is to find which combination of integrating with mainframe, modernizing on mainframe, or migrating off mainframe will work best for their specific workforce, operations, and workloads and cyber strategies.

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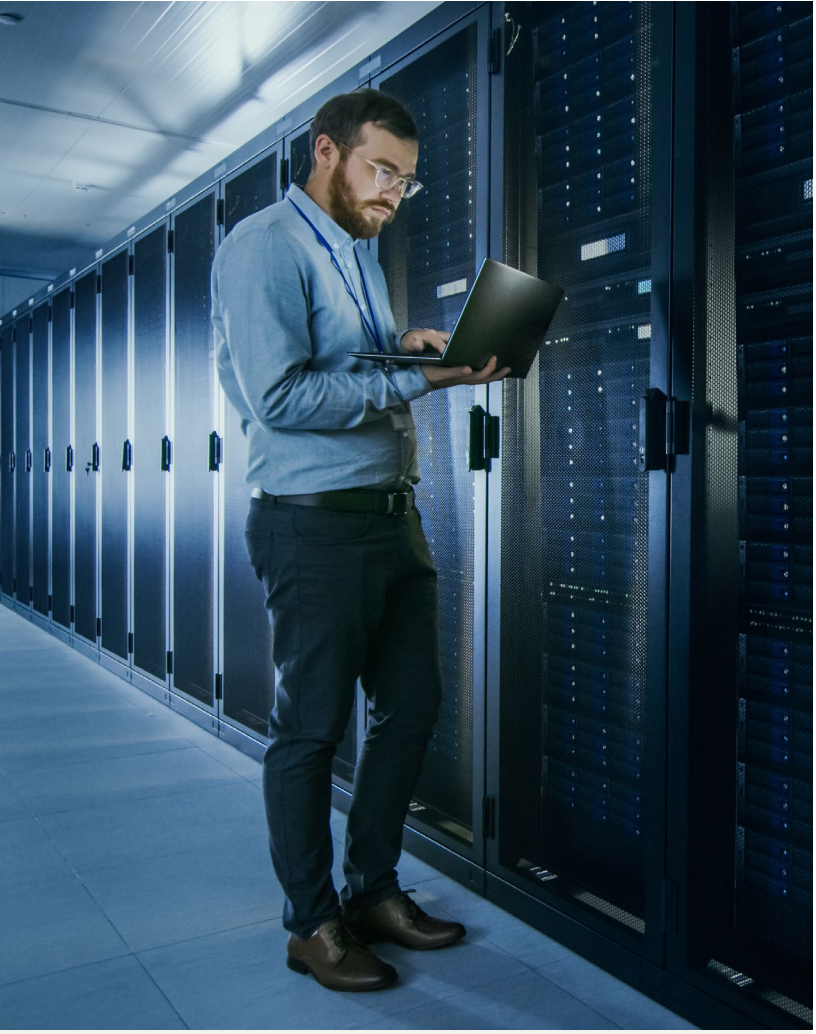


80% of IT spend

Legacy systems account for more than 80% of government IT spending.[1]

Up to USD 1 trillion in annual savings

Digital transformation could result in annual savings of up to USD 1 trillion for the public sector globally.[3]

Here are four key fundamentals we at Kyndryl often share with our customers to help them start their own mainframe modernization journeys.

1. Adopt a hybrid approach

The first step of any successful mainframe modernization journey is to find answers to these questions through the lens of your organization's current application and data estate:

- Where will investing in, divesting from, or maintaining your mainframe estate create the most impact on mission suppport?
- Which applications are best suited to stay on the mainframe and which will be better suited to move off the mainframe and into a cloud environment?
- How can you best combine the benefits of these approaches to address your operational and organizational mission needs?

This process is what we mean by a hybrid approach. The goal is to determine the right platform for the right workload.

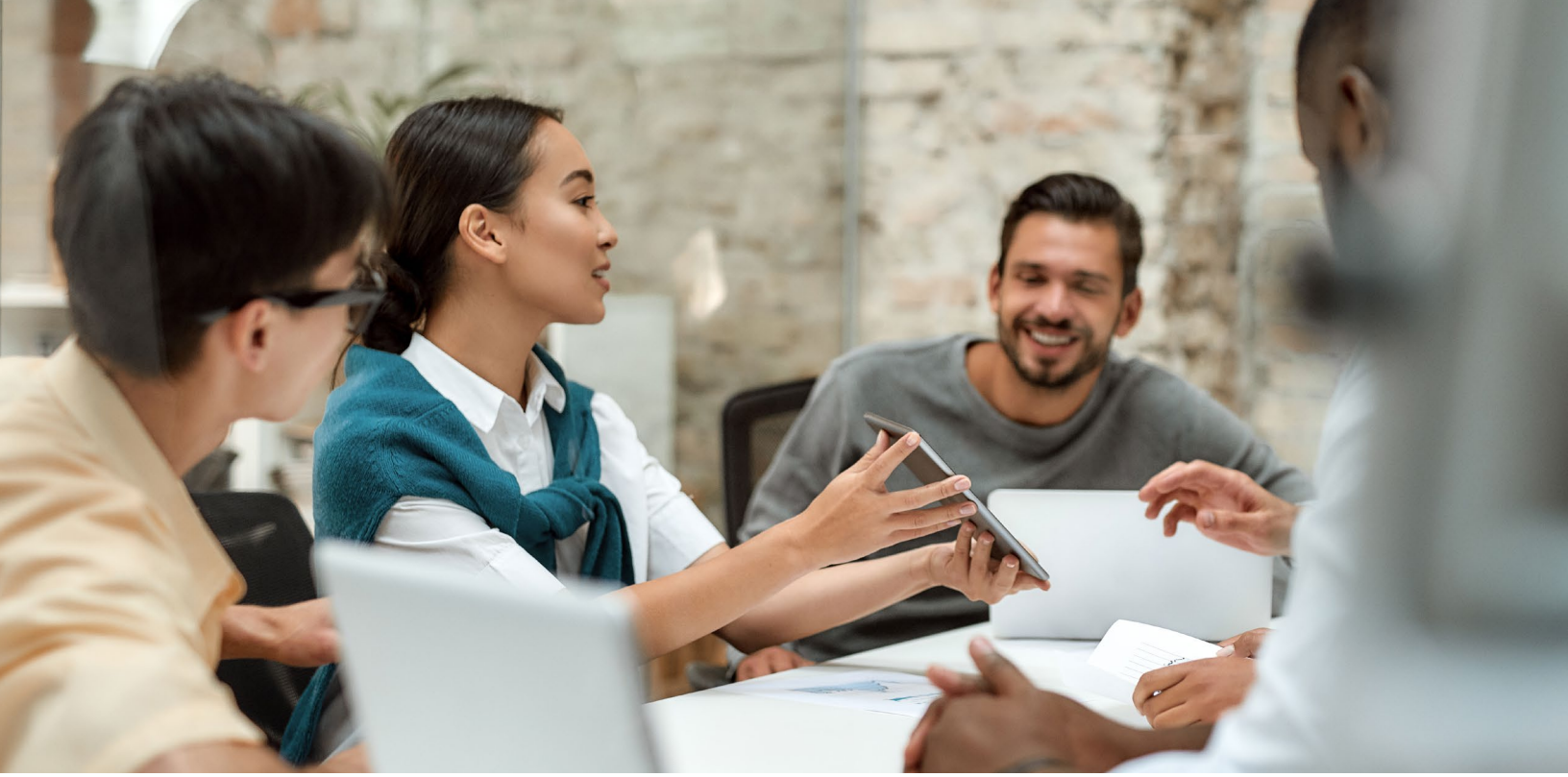
Particularly during the first stage of your journey, adopting a hybrid approach to mainframe modernization unlocks incremental benefits of cloud integration while continuing to capitalize on your mainframe's stability, reliability, and security. Unlike a full migration off the mainframe—an effort that can take years—a hybrid approach grants your organization the flexibility to generate immediate business-centric impacts while minimizing risk, service outages, and unnecessary spending.

2. Leverage your (existing) data

Another key factor we don't see discussed enough is the exposure of applications and data through APIs, using tools such as Amazon API Gateway, Google Apigee, Microsoft® Azure® Logic App Connectors, or IBM® z/OS® Connect.

The value of comprehensively and securely exposing your applications and data cannot be underestimated, especially given the number of disparate data sources and technologies on the mainframe that are typically deployed over the course of years. Unlocking the data for use in new and innovative ways—from in-depth analytics to fraud detection and AI—is a crucial step forward. Taking that step not only facilitates improved organizational outcomes and citizen insights, but also grants teams new capabilities to leverage machine learning functionalities, improved reporting, and even create low-code or no-code applications, as well as help maintain or improve your cyber posture.

Such exposure has the added benefit of making the mainframe accessible to create streamlined, consistent user experiences across government programs and services. This is a continued area of concern for federal government leaders, as shared by the Federal Chief Information Officer in the Biden-Harris Administration's Information Technology (IT) Operating Plan.[4] If, through API integration—which allows apps to run both on and off the mainframe—you enable more modern types of languages like Java or Python, new hires can be directly involved in your application, development, and maintenance (ADM) space.



3. Invest in the development workforce

Modern language enablement leads us to our next fundamental: when it comes to mainframe technology, there are fewer and fewer developers in the workforce who are familiar and comfortable with older languages and technologies, such as COBOL, PL/I, CICS, or IMS. Younger developers are instead entering the workforce with expertise in Java and Python and associated products like Spring.

Kyndryl believes that federal government agencies can look at this application development workforce challenge as an opportunity to invest in the skillsets required to monitor, manage, and build a new, hybrid environment. For instance, facilitating IMS skill-building for existing Java programmers enables them to write new IMS applications in Java, just as they would Spring applications. Whether that enablement means working with partners to help fill these skills gaps or establishing your own roadmap to bring in new faces, mainframe modernization will continue to be a workforce-related strategy as well as digital one.

This skills renovation can also lead to new and innovative uses of modern mainframe technologies. For example, with the latest mainframe technology, it is now feasible to build and run AI solutions on the mainframe instead of having to run the AI component offboard. This in turn makes it possible to run AI capabilities where necessary against all mainframe workloads, instead of against a smaller percentage.

4. Embrace progressive transformation

Finally, and perhaps most importantly, any mainframe modernization journey should be one based on progressive transformation. This process is one of constant evaluation and re-evaluation to determine how your organization is best served by evolving with, around, or without the mainframe, and how your team will decide to take the necessary steps to success: by adopting a hybrid approach, leveraging applications and data, investing in the application development and production workforce, and embracing progressive transformation.

This journey is not about overnight change; it's about finding a set of solutions driven by the needs of federal government agencies to deliver on mission objectives today, tomorrow, and in the years to come.

Regardless of where your agency is in its modernization journey, you'll ultimately need to do three things well to deliver transformative citizen experiences:

- Pinpoint citizen experience problems
- Focus on outcomes rather than output
- Build private-public partnerships that enable co-creation and innovation.

About the authors

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About Kyndryl

Kyndryl has deep expertise in designing, running, and managing the most modern, efficient, and reliable technology infrastructure that the world depends on every day. We are deeply committed to advancing the critical infrastructure that powers human progress. We're building on our foundation of excellence by creating systems in new ways: bringing in the right partners, investing in our business, and working side by side with our customers to unlock potential.

Next steps

Learn how Kyndryl helps customers across the federal government sector modernize their mainframe.

To engage with one of our experts, please contact us at governmentandeducation@kyndryl.com.

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1 *Gartner Says More Than Half of Enterprise IT Spending in Key Market Segments Will Shift to the Cloud by 2025* Gartner, 9 February 2022

2 *Executive Order on Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government*. The White House, 13 December 2021

3 *Digital public services: How to achieve fast transformation at scale* McKinsey, 15 July 2020

4 *U.S. Federal Information Technology Operating Plan*, Federal CIO, June 2022