

**Modernizing your
mainframe?
Here's how to do
cloud the right way**

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Mainframe platforms are going through a revolution as business owners and IT operations gain greater confidence in cloud and hybrid platforms. These new operating models now offer CIOs greater agility, sustainability and resilience to support enterprise systems.



Leading insurer improves customer experience in move to cloud

A leading North American insurance company is reaping significant business benefits after moving key applications from its mainframe to cloud and implementing DXC Assure for Life and Wealth software. DXC applied DevOps practices to accelerate a mainframe transformation, moving a block of over 1 million annuities to the AWS cloud in just 8 months. The insurer improved the customer experience by rolling out new self-service capabilities, cut operating costs by 40 percent and reduced time to market for new product enhancements and services by 15 percent.

However, successful mainframe modernization is not about hastily moving everything to the cloud. It's about doing it without business disruption and in a strategic way that focuses on business outcomes. Organizations today are exploring many options for modernization, from rearchitecting applications to alternative landing zones to rehosting for rapid replatforming, as well as optimizing systems in place.

As a leading global IT services provider, DXC Technology has helped some of the world's largest companies plan, execute and manage mainframe modernization initiatives. For example, Lloyd's, the world's leading marketplace for commercial, corporate and specialty risk solutions, and the International Underwriting Association, recently chose DXC to rearchitect the entire IT system for the London insurance market and develop a cloud-native digital platform running on AWS to replace the legacy mainframes, while automating manual processes.¹

This paper draws on that experience and examines key trends, business drivers and next steps for modernization.

Trends in mainframe modernization

Reports of the death of the mainframe have been greatly exaggerated. Mainframes have maintained a presence in many enterprises because they still provide the stability, security and computing power to run large mission-critical applications. But the tide is turning, and the COVID-19 crisis has hastened a move to the cloud as enterprises more fully embrace virtual IT solutions. Modernizing the mainframe is now a top board-level issue for many companies and public sector organizations.

Here are the primary benefits enterprises are getting from their mainframe modernization strategies:

- **Confidence and comfort.** IT organizations are more confident with running applications and workloads in different environments, particularly in the cloud. Part of this is because cloud security measures have improved with access and controls that are more rigorous, resilient and stringent, which is helping the cloud be perceived as more trustworthy.
- **Open environment.** Our customers are coming to the realization that their mainframe platform and application base can better exist in a cloud-friendly, open environment. This means they can protect the investments they have made in the mainframe while they modernize and transform. Because the cloud operates in an open environment, it provides elasticity for growth and retraction, better opportunities for integration, and easier maintenance.

¹ "Lloyd's and London Market Insurance Companies Tap DXC Technology to Transform the World's Largest Insurance Marketplace," DXC Technology news release, January 2022, <https://dxc.com/us/en/about-us/newsroom/press-releases/01122022>.



Cloud Right guides Copa Airlines' path to modernization

DXC is applying the Cloud Right approach to help Copa Airlines modernize its mainframe-based Passenger Service System and migrate it to the public cloud.² A leading provider of airline passenger and cargo services in Latin America, Copa Airlines is transforming all passenger service applications running on its existing mainframe to the Microsoft Azure cloud. By doing so, the airline will be able to integrate third-party applications into its IT ecosystem more easily, which will help bolster customer-facing services such as shopping and merchandising.

² "DXC Technology Enables Copa Airlines' Transformation by Modernizing and Migrating Passenger Service System with Cloud Right™ Approach," DXC Technology press release, December 2021, <https://dxc.com/us/en/about-us/newsroom/press-releases/12082021>.

- **Improved tooling.** New tools have emerged to support the expansion of sensitive mission-critical application systems to the cloud. For example, DXC now routinely uses automated tools to accelerate the migration of applications and application code from mainframe environments into open system environments.

Enterprises today also have more modernization options — in the cloud or on premises. Depending on the application and the business goals, enterprises may consider:

- **Rearchitecting and reengineering** application workloads to various landing zones, including on-premises platforms, cloud solutions or hybrid cloud solutions, taking advantage of cloud-native approaches to development
- **Rehosting** applications and systems by lifting and shifting them to a variety of cloud landing zones
- **Optimizing** mainframe applications in place to meet goals for efficiency, security, cost management and performance

The general consensus today is that there isn't one perfect way to move off the mainframe. There's much more acceptance that it depends on the company's desired business outcomes. What are your overall goals for moving away from the mainframe? And for those doing mainframe modernization the right way, the rewards are plenty.

Reasons to modernize

Change isn't easy, and some enterprises running large applications on mainframes may find it difficult to shift large parts of their legacy business to the cloud. However, the benefits of modernizing are hard to ignore:

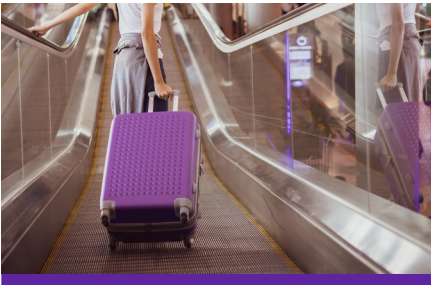
- **Lower total cost of ownership.** Operating costs vary across IT environments and platforms, but much of the capabilities being delivered on a mainframe platform can be better leveraged across a cloud or hybrid cloud environment. Having cloud as an option provides the flexibility to move systems, applications and data in a way that can lower operational costs. Enterprises can also save costs by taking advantage of cloud-enabled, as-a-service pricing and by having access to a host of third-party solutions.
- **Increased efficiency through integration.** Mainframe modernization enables systems to operate a cloud-enabled environment that integrates and interoperates with all enterprise systems. This holds true for off-the-shelf products, core ERP systems or custom applications integrated with data lakes. Having the flexibility to move applications, data and systems around as needed so they can function together cohesively delivers improved operational efficiency.
- **Integration with a broader ecosystem.** The potential for modularity is appealing to most organizations, not just integrating applications, but also integrating third-party software as a service and products into bigger ecosystems. With APIs, for example, organizations can take advantage of more modern software ecosystems. Modernizing a mainframe with a Linux operating system, for example, will simplify the process for creating and maintaining APIs, though the introduction of new functions will be slower and software bugs will be fixed at a slower pace than they would be with cloud. Plus, public cloud gives organizations better opportunities to add modern applications with AI and machine learning capabilities.

- **Better visibility.** In the cloud, enterprises have better visibility, also known as observability, of performance outcomes. If an application is running slower, or IT is having trouble meeting SLAs, the cloud provides greater visibility. This means teams can quickly diagnose what is going wrong and know where the anomaly is occurring. Having that level of responsiveness is essential.
- **Increased automation.** One of the benefits of cloud is the ability to spin up a new environment quickly and dynamically that can seamlessly provide automation capabilities. This comes into play in areas such as automating security by providing improved process control, instead of including manual steps that are prone to errors.

Taking the right path to modernization

For enterprises undergoing mainframe modernization, taking the right approach means optimizing existing investments to ensure the best use of on-premises and cloud environments, including both private and public clouds, to achieve your business objectives. Begin by carefully assessing the strategic, operational, financial and technical realities of the entire IT estate. The following steps are key:

- **Assess your applications and data.** It is important to take inventory of what applications and data you have and what their requirements are to determine the right platforms for modernization. Everything starts with understanding how data operates within the enterprise and the role it plays in the business. Know what data is business-critical. Know what data is being used and consumed by your systems and customers. This is essential for crafting data strategy, data governance and data integration points.
- **Know your integration points.** An ecosystem of applications runs around the mainframe, so when you are looking to modernize, you need to know how best to derive value from moving to the cloud. Typically it's a matter of bringing not just the mainframe itself to the cloud, but also the ecosystem around it. It is crucial to identify the key integration points and analyze software interdependencies.
- **Avoid business disruption.** A top priority for any modernization program is zero business disruption. This requires a deep understanding of the infrastructure and applications as well as a carefully planned, factory approach to migration. In migrating nearly 14,000 applications to the cloud each year, DXC applies best practices, automated tools and a stepwise approach to accelerate the migration process and avoid business disruption.
- **Embrace DevOps/DevSecOps.** Forming Agile DevOps teams — or DevSecOps teams, which include embedded security — is crucial to accelerating the software development process and adopting a continuous delivery mindset. In any modernization, these approaches help enable the use of microservices, automation and improved application performance monitoring. For example, the implementation of a DevOps toolchain and practices played a key role in modernizing the mainframe at American Airlines.³
- **Envision your end state.** Know what your organization wants to look like and how it wants to operate. Focus on business outcomes by clearly defining your end goals and which platforms will be the best fit for your business operations. Know what processes, governance and procedures will be needed to produce the desired business outcomes.



Sabre modernizes mission-critical platform

Sabre Corporation, a leading software and technology company that powers the global travel industry, is partnering with DXC on its transformational journey to redefine the future of travel, while also helping to ensure the continued security, stability and health of the company's existing global reservations platform. DXC is providing outsourcing and IT modernization capabilities to run and maintain its systems while migrating to Google Cloud, enabling the company to improve customer service, lower costs and support long-term growth.

³ "American Airlines and DXC: Mainstreaming the mainframe for modernization," Hari Sathya and Misty Shafer Sterne, DXC Technology, January 2021, <https://blogs.dxc.technology/2021/07/22/at-american-airlines-devops-is-fundamentally-changing-and-improving-how-development-and-operations-are-done-today/>.



DXC partners with AWS on mainframe modernization

DXC is partnering with AWS for the launch of the AWS Mainframe Modernization service, which provides a set of tools for planning, migrating, modernizing and running mainframe applications on AWS. DXC is offering an assessment that will help organizations accelerate migrations to AWS cloud using the AWS Mainframe Modernization toolchain.⁴

⁴“DXC partners with AWS on Mainframe Modernization services,” DXC Technology, <https://dxc.com/us/en/about-us/partner-ecosystem/aws/dxc-partners-with-aws-on-mainframe-modernization-services>.

There is a sense among enterprises today that running applications on a mainframe is becoming a liability, a constraint on business growth. Many fear mainframes cannot provide the needed outcomes that running in a public cloud on a microservices architecture can deliver. The burden to justify a mainframe migration used to be on those proposing the migration. Now, the opposite is true.

Cloud has become so pervasive that it is hard to find a single organization that doesn't have some kind of cloud migration roadmap. By taking the right approach to mainframe modernization, enterprises can maximize the value of existing investments while building an IT environment that is more agile, cost-effective and built for future innovation.

How DXC can help

DXC is at the forefront of providing new approaches to IT applications and infrastructure, centered on accelerating cloud migration and unlocking high performance. DXC's distinctive Cloud Right™ approach — working across all environments and thoughtfully modernizing, optimizing and integrating cloud and on-premises IT with applications, security and analytics — helps organizations rapidly maximize value from cloud and IT modernization.

DXC advises organizations on how to make the right investments, at the right time and on the right platform to ensure the best use of on-premises as well as private and public cloud environments to achieve your business objectives. Our Cloud Right approach includes proven transformation processes and has a 99.5% success rate, drawing on DXC's expertise in managing mission-critical infrastructure and applications, helping customers realized up to three times more value, while avoiding costly mistakes.

About the author

Rob Link, global mainframe capability and competency delivery leader at DXC Technology, is responsible for the delivery of mission-critical IT services and outsourcing as well as cloud managed services for the world's largest companies. He previously led Application Services delivery at HPE Enterprise Services.

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DXC Technology (NYSE: DXC) helps global companies run their mission critical systems and operations while modernizing IT, optimizing data architectures, and ensuring security and scalability across public, private and hybrid clouds. The world's largest companies and public sector organizations trust DXC to deploy services across the Enterprise Technology Stack to drive new levels of performance, competitiveness, and customer experience. Learn more about how we deliver excellence for our customers and colleagues at [DXC.com](https://dxc.com).