Enterprises have been harnessing the power and dependability of mainframe and midrange computing platforms to drive operations for decades. However, in today's rapidly evolving business landscape, the time has come for enterprises to embark on a transformative journey and modernize these systems to reduce operational costs, enhance performance and efficiency, seamlessly integrate with newer technologies and digital ecosystems, and ensure compliance with modern security standards to mitigate risks.

Cloud platforms have emerged as a flexible, scalable and cost-efficient alternative to traditional mainframe and midrange systems. Businesses migrating legacy applications and data to a cloud platform can take advantage of the cloud's scale, resilience and security while paving the way for adopting emerging technologies such as AI, machine learning and IoT. Given the interest in Generative AI, it is now becoming a strong driver for modernization efforts as the technology matures.

And there are also practical business benefits; cloud-based systems are more cost-effective to maintain and can scale in response to business needs. Modernized applications are more agile, supporting rapid changes and quicker responses to market trends. Finally, modernization reduces the reliance on aging technologies and the scarce skill sets needed to maintain them, mitigating the risk of business disruption.

In mid-2023, Techstrong Research polled our community of DevOps, cloud native, cybersecurity and digital transformation readers and viewers to take their pulse on mainframe and midrange modernization. The overwhelming number of respondents have either started (64%) or will start modernization efforts within six months (15%), with 82% planning to decommission mainframe/midrange platforms within the next three years. As we'll see from the poll data, reducing cost and risk are major catalysts for modernization efforts and the cloud is considered a platform that can reduce the risks of those efforts.

Do you have a mainframe or midrange modernization effort underway?

- Yes, we're planning to migrate an application in the next 6 months: 15%
- Yes, we've started our initial application or data migration: 21%
- Yes, we have migrated multiple applications or data: 43%
- No, we plan to, but we haven't started: 14%

With 64% of respondents already started and another 15% planning to start within six months, mainframe or midrange modernization efforts are well underway.
Do you have a timeframe for when you want to decommission the mainframe or midrange?

The vast majority of respondents (82%) plan to retire their mainframe/midrange platforms within the next three years.

- Within the next year: 26%
- 1-3 years: 56%
- 4-5 years: 9%
- More than five years: 9%

What is the catalyst for the mainframe/midrange modernization effort?

Cost is the top-rated catalyst, which makes sense in a global slowdown. Reducing risk (16%) and improving agility (15%) are ranked next.

- Risk reduction (reduce the likelihood of application failures): 16%
- Lack of skills (there aren’t enough skilled mainframe/midrange pros): 13%
- Improve agility (access mainframe/midrange data more easily): 15%
- Cost (mainframe/midrange costs too much to run): 20%

Do you agree with the following statement?: The ability to migrate mainframe/midrange data and business logic to cloud workloads reduces the risk of mainframe modernization.

Having the cloud as a platforming option reduces the risk of mainframe or midrange modernization, given almost 80% either strongly agree (29%) or agree (48%).

- Strongly agree: 28%
- Agree: 46%
- Neutral: 17%
- Disagree: 5%
How do you currently access mainframe/midrange data within your DevOps environment?

Data virtualization is the most popular (32%) means of accessing mainframe/midrange data from a DevOps environment. Direct access (28%) is also a popular choice.

How will you migrate business logic from the mainframe/midrange as part of a modernization effort?

When it comes to migrating business logic, 30% of respondents plan to refactor the application instead of lifting and shifting (20%) or rearchitecting (19%).

Techstrong Research Analyst View

At a time when reducing costs and increasing agility are important objectives, organizations view mainframe and midrange platforms as prime candidates for modernization efforts. Our poll shows that many respondents have a fixed timeframe for retiring their “big iron,” so adequate planning for the migration can mean the difference between success and failure.

We believe the cloud can reduce the risk of the mainframe/midrange modernization process by providing an agile platform to spin up necessary resources, myriad connectivity options to ensure other systems can access critical data and a number of global service providers with expertise in these midrange/mainframe modernization efforts. Although a non-trivial initiative, the maturation of cloud platforms over the past decade makes it a preferred platform for these workloads.

The devil is in the details, so part of the planning effort requires consideration of various modernization options. Refactoring the application is the most popular option to migrate business logic, with lift and shift also a realistic option, given tight timeframes and the inherent risk of rearchitecting or rewriting applications. Data virtualization and direct access are popular ways to access mainframe/midrange data from within DevOps applications during the modernization effort.

The bottom line is that mainframes and midrange computing platforms have had a good run anchoring enterprise applications for the past 40-plus years. But given the need for agility and the increasing cost of supporting these platforms, it’s not if, it’s when these applications will be modernized and likely migrated to a cloud platform. Given proper planning and astute use of tools and services, successful modernization efforts are not only possible but probable.