



Bringing new energy to old investments

Mainframe Revitalization
for Financial Services

About the authors



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Dhinakar has worked as a consultant in the area of strategic IT, optimization, transformation and decommission for more than 21 years and has published several papers on the subject. He has worked on legacy transformation projects spanning a number of industries, including banking institutions, insurers and investment banks.



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Bob has 30 years' experience working on IBM and compatible mainframes, and more than 19 years running enterprise migration projects for Microsoft. A systems engineer, Bob is a global authority on the topic, having published research, and been awarded patents in regard to mainframe-related projects.

When it comes to legacy modernization, do the rewards really outweigh the risks?

Dhinakar Selwyn, Global Head of Legacy Technologies and Revitalization Projects at Capgemini and Bob Ellsworth, Worldwide Director Mainframe Transformation at Microsoft explore the factors driving financial services organizations to modernize their legacy IT, and whether the rewards of transformation truly outweigh the risks.

There's much talk of legacy modernization circling in financial services. Investment manager Vanguard recently announced significant results due to a six-year modernization project – causing other organizations to think long and hard about whether they should do it too.

But messages around whether to modernize or not are mixed. On the one hand, we're being promised big gains from moving away from mainframe technology and onto 'modernized'

platforms. On the other, cautionary tales warn of getting rid of older systems for the sake of hype.

So, what exactly is the truth? Will modernizing your mainframe be the silver bullet of cloud innovation? Or will it wind up unleashing unnecessary complexity and inefficiency on your business?

Do the rewards of mainframe modernization truly outweigh the potential risks?

Mainframe modernization in financial services

In an industry facing ongoing disruption, organizations are thinking long and hard about how they step into the next decade. Although the fintechs haven't quite managed to unseat the established players, they have succeeded in changing the expectations on what is possible.

Things like real-time balances, mobile account tools and other product innovations are now firmly on the agenda, and financial institutions in the midst of largescale digital transformation strategies have gone beyond experimenting with new technology at the fringes of their businesses – they now want to modernize at the core.

Driven by the influence of hyperscalers (keen to drive adoption of their cloud platforms) organizations can start to see their mainframes as an easy target. Indeed, 71% of them believe the inflexibility of their mainframe limits their ability to innovate.

Mainframes are still popular in the financial sector; they are an ideal location for processing information reliably and securely. But despite this processing power, the lack of scalability and elasticity of these monolithic systems become a challenge as we move toward a digital-first world.

As other parts of the enterprise evolve to become faster and more agile, limited interoperability between other systems and the mainframe becomes an inhibitor for transformation.

Alongside this, there's the old problem of the ever-burgeoning OpEx and total cost of ownership for these legacy systems, especially in the banking and insurance sectors – not to mention the added complexity of a dynamic regulatory and compliance environment which demands a more agile enterprise architecture.

But despite these issues, mainframes remain prevalent. There are a number of reasons: modernization projects are complex. They need specialist expertise and normally years to complete. They also risk disruption to core apps and services, those for example which process lending and deposits, which can be especially damaging.

There's also the matter of target architecture: should they move everything to cloud? Is it secure enough? Will it satisfy data regulations?

With such high stakes, organizations need to have a clear view of what mainframe modernization will help them achieve before they set the wheels in motion.

71% of IT leaders believe the inflexibility of their mainframe limits their ability to innovate.

SOURCE: LzLabs Mainframe Modernization Survey, 2018

The rewards of modernization

With the largest financial services organizations spending vast sums each year just keeping their mainframes operational, many of them are looking to public cloud platforms to help reduce costs. But this shouldn't be the only incentive to migrate and just shifting stuff into cloud won't always result in a cost saving.

The true value of mainframe modernization lies in the future state: how it readies the business for ongoing innovation.

Although the mainframe does many things well – it's super reliable, incredibly secure, and capable of processing thousands of transactions simultaneously — the development of its applications is woefully difficult. By contrast, the cloud was built for speed: open source computing languages, containers and new suites of code-building development programs have been specifically designed to introduce agile 'development culture' into business IT.

Take US insurer GEICO as an example. It recently underwent a program of mainframe modernization as part of an overhaul of its

digital strategy, and with a view to improving digital customer channels. By moving core applications from the sales mainframe into the Azure cloud, GEICO managed to make application development more accessible, creating a new 'culture of innovation', adding more developers to its team and reducing the time for new feature releases from six weeks down to just one. It's ultimately this culture, alongside the development tools and systems to make it a reality, that will future-proof businesses in the years ahead

In another case, Capgemini worked with an insurer to migrate their claim checking application to cloud. Rationalization performed as part of the migration made it possible to remove duplicate checks in the claims process, at the time happening seven times in the claim lifecycle across three different channels. This rationalization process resulted a significant reduction in the mainframe capacity, creating considerable savings while allowing the benefits of elasticity from Cloud

For many organizations, even just transforming the applications on the mainframe into open source languages will help to curb skills shortages for COBOL-code developers – not to mention open these applications up to development and innovation from a full spectrum of IT talent. →





The risks

Let's be clear: nobody sees mainframe modernization as a walk in the park. It's widely understood to be a complex process, requiring careful planning and delicate expertise to result in success.

This is mostly down to the custom nature of the business logic: each mainframe is unique to its own business with processes described in a specific way. Alongside making development difficult this also makes migration difficult; in order to isolate and transform application code it must first be unravelled, understood and divested from interdependent systems.

Many financial services organizations lack the specific expertise required to get this done –and that's a terrifying prospect. There's a chance that transformed applications won't work successfully in their target architecture, causing potential delays and disruption that their business owners just can't support.

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But there are also risks to doing nothing. Skills shortages for COBOL developers (a 'legacy' coding language) are getting critical. So much so that experienced ex-programmers are being drafted to fix mainframe issues: retired programmer Bill Hinshaw set up the 'COBOL Cowboys' company in 2013 to help plug the gap with his own retiree network.

The reality is, that as cloud adoption grows amongst competitors, organizations who continue to rely solely on mainframes will fail to match the speed of innovation elsewhere. And when that innovation is focused on improving the customer experience, the customers will start to drift too.

Finding common ground

For those who are torn between the risks of migration and the rewards of introducing modernized technology, there is a middle ground.

For starters, there are still a lot of things the mainframe does very well. Certainly, if you're looking at reliability and uptime, the mainframe really does have a lot to offer – matching its 99.999% uptime in cloud is possible, but only if it's properly architected and configured.

However, there are other areas, such as ERP systems, that can benefit considerably from transformation. Many of these systems are housed on the mainframe simply because they were first conceived there. These can be easily replaced with an off-the-shelf cloud solution that effectively does the same thing at a far lower cost.

One thing that all sides do agree on is that the mainframe, like any other hardware, can't exist today as it did twenty years ago. Its performance must be optimized to manage compute costs. It must be effectively integrated with the newer technologies that businesses are using. Applications must be considered to understand whether they still belong on the mainframe, or if they would benefit more from transformation in the cloud.

Most of the financial organizations we work with are looking at a phased modernization. This considers the processes, such as customer onboarding, accounting and fraud management, that need to be agile, elastic and ever-changing. These select processes are then carved out from the mainframe and converted to cloud-native apps. Others, such as transaction settlement and transaction posting, can be rehosted to the cloud to reduce costs or left to run on the mainframe until the organization secures further funding and ratifies a business case for their modernization.

The important thing to remember is that you don't have to make a binary choice between mainframe and cloud: you can use both. The key is choosing the most appropriate platform for each application to achieve the best result for your business.

Taking stock

It's important to keep up with the speed of change without disregarding the heritage and past investments of a technology that is still fairly robust. So how do you get past the risks to modernize safely? How will you get buy-in from your internal stakeholders to gain their support? And how do you decide what needs to stay on your mainframe, and what should come off of it?

A thorough assessment of your mainframe environment is essential. Duplicated applications can be consolidated. Defunct ones can be retired. Ones with limited innovation potential can be left where they are – and the ones that have lots of it can be transformed for cloud. It's also helpful to have a set of tools and frameworks in place to help demystify and accelerate your modernization journey.

At Capgemini, we call this process '**mainframe revitalization**'. It's about identifying and tackling inefficiencies in the mainframe first: optimizing its cost and performance, before introducing cloud to transform the applications that will benefit most. In many cases, just optimizing the mainframe will free-up enough cost to transform some of its applications – so in terms of a business case, it's a win-win situation.

This also lets you undertake transformation in a controlled, risk-aware and cost-effective way, with well-reasoned actions and a clear vision of what you want to achieve.. At Capgemini we aid this process using a unique, industry-leading technology – **the CAP360 toolsuite** – to do the heavy lifting for you and unearth your mainframe's hidden modernization potential. →

The verdict

There's no doubt that mainframe modernization is complex. At Capgemini, we see businesses everyday who are worried about taking the wrong approach. But with careful thinking, precise planning and a positive attitude to the role the mainframe still has in your business, we can make sure that the rewards always outweigh the risks.





Bringing the energy back

**With Mainframe Revitalization
from Capgemini**

Capgemini can support you in discovering your mainframe modernization journey. Our 'mainframe revitalization' approach first tackles the inefficiencies in your mainframe to establish where you could save costs, then prepares select applications for transformation in the Azure cloud to kick-start your service innovation.

Our approach



Find out what you have

Our engagements will always start with our **CAP360 code analysis software**. This automated tool suite analyses what already exists within your mainframe to discover interdependencies and unused code. It also extracts business rules to aid the development of the apps you want to transform.



Tackle inefficiencies

Unburden the mainframe as a first step by retiring unused applications, consolidating code and rationalizing apps to free-up capacity and cost.



Introduce cloud

Move straight to cloud, or stop-off onto a cloud-ready platform as an intermediary step. We can also help you reimagine applications directly in cloud, helping you to back-integrate into the mainframe where required.

“Capgemini is a very strong partner in migration and modernization engagements with high technical confidence”

- GARTNER

Why work with us

Financial services expertise

Alongside our FS experience, Capgemini is an Azure Expert Managed Service Provider, assuring the quality of our services.

Guaranteed results

Our approach evolves based on learnings from previous projects and we tie our payments to your goals to guarantee results.

Workforce support

We provide Azure training and coaching to transform your workforce alongside your infrastructure.

40+ mainframe modernization projects delivered in financial services

Contact us today to kick-start your journey. Email us at revitalizemainframe.fssbu@capgemini.com



About Capgemini

Capgemini is a global leader in consulting, digital transformation, technology and engineering services. The Group is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year+ heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. Today, it is a multicultural company of 270,000 team members in almost 50 countries. With Altran, the Group reported 2019 combined revenues of €17billion.

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