Business Transformation Via Mainframe Modernization

Firms In Financial Services Must Modernize Their Mainframe Environments To Remain Competitive

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Traditional Financial Services Firms Are Evolving — So Must Their Mainframes

The financial services (FS) industry continues to face constant disruptions. These disruptions are compounded by the technical debt accrued by siloed systems built up over multiple decades around specific technology, instead of incremental modernization to keep up with changing customer needs. These legacy-entrenched systems hinder financial service firms from connecting and serving customers' financial needs.

New approaches to technology are required to compete with innovative business models while existing organizational structures, technology architecture, and processes must evolve. Mainframe modernization is a vital component for any FS firm looking to transform in such a manner.[1] However, these complex transformation journeys take time and often require the right partnerships — internally and externally — to successfully provide positive outcomes for the business.

Key Findings

The majority of IT leaders in the FS industry believe mainframe technology is vital for their organization and are transforming their mainframe footprint to keep pace with business.

The complexity of mainframe modernization yields several challenges. However, the absence of relevant skills and talent impacts FS firms the most.

Most IT leaders are working with mainframe modernization partners to overcome limitations. These leaders already see benefits of modernization efforts both on customer-facing products, and via internal collaboration and innovation.

Mainframes Still Have A Strong Presence

In June 2023, Kyndryl commissioned Forrester Consulting to conduct in-depth interviews with a select group of IT leaders from FS organizations globally, who are responsible for their organization's mainframe modernization and cloud migration strategies. The majority of the IT leaders we interviewed believe mainframe technology is vital for their organization. This is supported by Forrester data that shows 67% of enterprise infrastructure technology decision-makers in the US use mainframes across industries; and close to 90% of these respondents plan to keep their existing mainframe footprint or increase it over the next two years.[2]

Mainframes provide the ability to manipulate vast amounts of data in a short amount of time and are known for their processing power, scalability, security, reliability, and predictability. They are critical for hybrid environments as they are highly integrated with data warehouses, business processes, and external sources.

"[Our mainframe is] vital and is currently used to enable our customer serving CRM system and our enterprise management system. All our customers records, policy records, underwriting, decision-making process, everything is stored via our mainframe. It's hugely important."

- HEAD OF IT OPERATIONS, NATIONAL INSURANCE FIRM

These Trusted Machines Are Specifically Relied On For Core Banking

The mainframe provides a range of features and benefits that IT leaders in the FS industry depend on — most notably, its processing power and speed at dealing with high volumes of complex transactions and data sets. These IT leaders also value the platform's reliability, availability, and resiliency as mainframes are highly accurate and trusted machines that provide both security and scalability. Furthermore, they believe mainframe software, hardware, and services vendors have developed targeted industry expertise; given the financial sector's reliance on the technology throughout the years.

Due to the unique capabilities of the platform, IT leaders primarily see mainframe environments as a fit for core banking functionality, especially in global environments. Some of them also maintain non-banking core apps (e.g., CRM) on mainframe systems.

Core Banking Apps On The Mainframe

Quoting

Regulatory reporting

Loan servicing

Settlements

Balances

Trade processing

Core ledgers

Customer management

Payments

Policies

Banking and credit card code

Underwriting

Finance

Modernization Strategies Are Mixed

IT leaders see value in modernizing on and integrating with their mainframe. Most adopt a hybrid approach to their mainframe modernization strategy, with modernization on the platform and integration with or moving to the cloud; some plan to move off entirely, though that process is expected to take a long time.

Audit and regulatory requirements along with industry familiarity are primary drivers for IT leaders to maintain or modernize their mainframe. Strategic decisions are shaped by the sheer volume of data these organizations must process and manage, making the mainframe a critical asset. Mainframe modernization strategies are also influenced by the need to modernize legacy apps quickly, cost to host specific application workloads on a given platform, resource availability to support application growth, and the criticalness of workloads. The need for increased agility, better or easier integration, and greater innovation guide strategies as well.

Mainframe Importance

"There will always be data that you cannot move from [our mainframe] because its computational power is much more powerful than any of the modern technologies that technologies that we have."

- VICE PRESIDENT OF GLOBAL TECHNOLOGY, MULTINATIONAL BANK
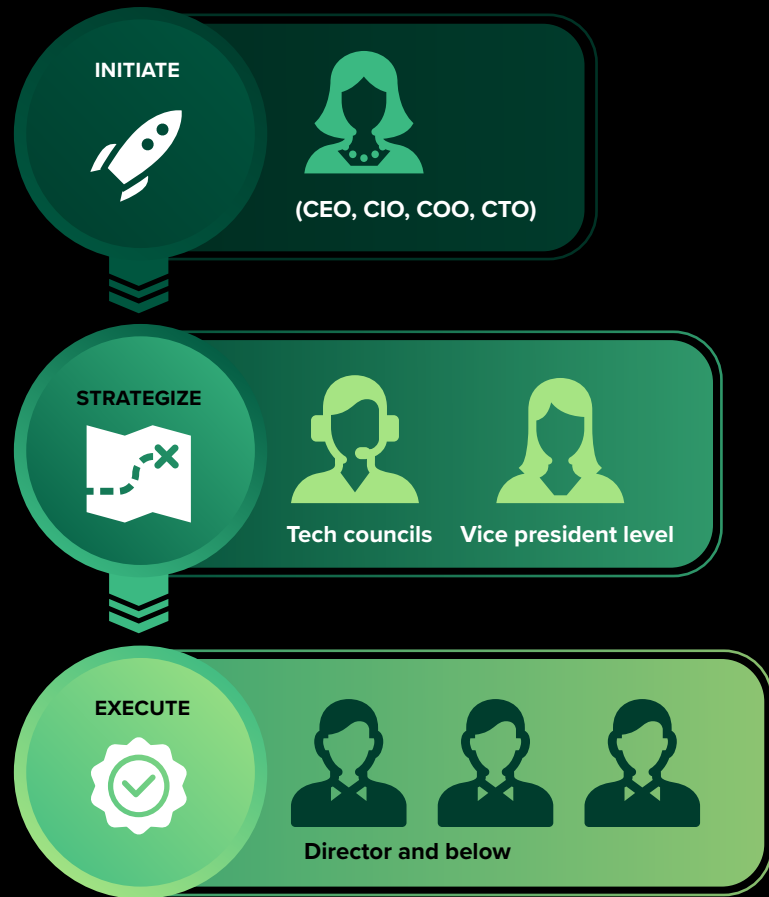
Integrating With The Mainframe

We have been in a five- to seven-year process of modernizing the mainframe. We are trying to bring transactional-level applications out of the mainframe to a mid-tier [application] or an API sitting on top of a mid-tier application to interface with front-line applications. We are now investing more in public cloud. It is a mixed model.

- DIGITAL PRODUCT DIRECTOR, PRIVATE BANKING

Top-Down Strategies Empower And Galvanize Modernization Efforts

Successful mainframe modernization strategies are led from the top. While the need to serve customers better is a major factor in all mainframe modernization efforts, engaging top executives, including the board, is necessary to get buy-in from the business. Without an executive sponsor, alignment between IT and the business can be poor, and the ability to allocate resources and drive success in such a long-term project can be difficult.

We found that some IT leaders did not anticipate struggles related to internal culture, the lack of skilled talent, or short-sided business decisions like putting off upgrades, that can lead to projects stalling or failing. Such issues are typical when mainframe modernization strategies are made in a vacuum without IT and business alignment. This demonstrates the importance of having a unified, top-down approach.

INITIATE

(CEO, CIO, COO, CTO)

STRATEGIZE

Tech councils   **Vice president level**

EXECUTE

Director and below

Business Drivers For Mainframe Modernization

IT leaders balance several challenges disrupting the FS industry. These challenges range from external issues such as the growing threat from fintech firms, regulatory obligations, or internal pressures like business units demanding new features and self-funded shadow IT. Regardless of their origin, these disruptions influence business strategies, which ultimately changes workloads and data on the mainframe.

IT leaders report difficulty in finding and recruiting mainframe talent because of its legacy stigma. Meanwhile, in legacy mainframe environments, low morale sets in for employees working on legacy systems and institutional knowledge is often lost as people retire without colleagues to transfer that information to. Organizations are resolving these issues by outsourcing mainframe talent needs, reskilling non-mainframe or even non-technical workers, staff augmentation, and increased automation.

"We have to educate ourselves on where the industry is going. … We would like to stay ahead of the curve rather than catch up."

- CTO, GLOBAL FINANCIAL SERVICES FIRM

Technical Complexity And Data Issues Slow Modernization Progress

Modernizing mainframe applications yields its own set of challenges, many of which are anticipated and baked into their strategy. For example, IT leaders understand and plan for issues around resourcing, costs, and complexity. Regarding complexity, one of the most notable challenges that directly impacts progress is the need to manage heavily customized legacy architecture and trying to modernize simultaneously.

Requirements and challenges with data also impede mainframe modernization. These include data retention requirements, the sheer volume of data being processed, problems sharing mainframe data with cloud applications, and data quality in legacy apps. Data challenges are critical to overcome and unlock the business value of new technology capabilities (e.g., AI).

Specific Data Challenges Faced By FS Organizations With Their Mainframe Modernization Strategy

Limited resources to manage legacy data

Bad data in legacy apps

Extracting data from the mainframe

The sheer volume of data that need to be processed

The need for data retention

Partnerships Are Vital When Modernizing

For successful modernization efforts, most IT leaders work with a mainframe modernization partner. Leading partners provide speed, agility, innovation, expertise, and resource support. Some respondents report that they utilize multiple partners for different platforms. These partners are leveraged throughout the mainframe modernization initiative. Support specifically includes strategy development, implementation planning, maintenance and upgrades, and migration management. Other partner criteria include vendors who are culturally aligned with the organization and size (i.e., not too big or small).

> "Successful programs in other banks is one of the main criteria [for selecting a partner], and someone with deep knowledge of backend core banking. … I would look for a partner who has done the work before [and] has a meaningful framework around getting these executed in depth."
>
> **- CHIEF DATA OFFICER, GLOBAL FS ORGANIZATION**

Partners Are Leveraged Throughout The Mainframe Modernization Initiative

Support specifically includes:

Strategy development

Implementation planning

Maintenance and upgrades

Migration management

BUSINESS TRANSFORMATION VIA MAINFRAME MODERNIZATION

Benefits And Success Metrics Of Mainframe Modernization

Mainframe modernization provides both tangible and intangible benefits for the organization. Tangible benefits IT leaders have experienced through their mainframe modernization efforts include: 1) faster processing speeds, 2) increased performance, 3) more frequent releases, 4) cost savings, 5) greater stability, 6) reduced risk, 7) supported regulatory compliance, and 8) increased accuracy and predictability.

While more difficult to measure, some respondents expressed that their mainframe modernization strategy helped bring the organization together and led to improved CX through platform consolidation.

"Velocity is definitely a huge component. When we started measuring releases, the time would go from two to four a year, up to 20 releases. We see exponential returns on velocity. We measure the revenue benefit of our new capabilities and not so much the bottomline because of the enormous cost associated with the transition. We measure the top-level revenue and unit numbers."

— DIGITAL PRODUCT DIRECTOR, PRIVATE BANKING

Key Mainframe Modernization Metrics Of Success

 Increased agility/ velocity

 Increased product profitability

 Improved topline revenue

 Reduced manual efforts

 Increased developer productivity

 Reduced risk

IT Leaders Share Advice For Mainframe Modernization

Reflecting on their own journeys, respondents offered several tips for other mainframe modernizers at the cusp of their journey. One of the most important tip is to truly understand the organization's business drivers and necessary changes needed in their technical environments.

IT leaders also emphasized the importance of securing buy-in from the top and anticipating a hefty price tag for the initiative.

Whithin the journey, IT leaders noted the significance of clearly defining milestones and success measures, while staying in-tune with industry trends to ensure efforts are headed in the right direction.

Lastly, IT leaders stressed the importance of understanding talent limitations and being knowledgeable about partners.

Top Advice For Mainframe Modernization From IT Leaders For Peers In FS

1 Understand what is driving modernization and that you are making necessary changes.

2 Commitment from leadership, especially the C-suite, is essential.

3 Be prepared for higher costs, and changes that will take longer than expected.

4 Clearly define milestones and metrics for success.

5 Learn about where the industry is heading, and drive modernization in that direction.

6 Be aware of talent constraints, both for you and potential partners.

7 Know your vendors and partners well, and ensure they have the right skills and expertise as they are critical to your success.

Conclusion

There are three approaches to mainframe modernization that FS organizations take together or separately — "modernizing on mainframe", "integrating with cloud", and "moving off".[3] We have found that most mainframe environments are business critical and require top-down commitment to succeed in modernization approaches.

- Mainframes provide critical capabilities, especially core banking apps. Cloud-based development can address customer needs quickly, but businesses benefit from avoiding an either/or approach; merging both into a hybrid cloud/mainframe strategy.

- Regardless of the approach an organization takes, mainframe modernization brings significant benefits.

- Successful projects use experienced partners to unlock benefits such as cost savings, greater agility, and the ability to innovate.

Endnotes

[1] For this study, mainframe modernization is the process of modernizing on, integrating with, or migrating off the mainframe to improve an enterprise's existing legacy mainframe footprint.
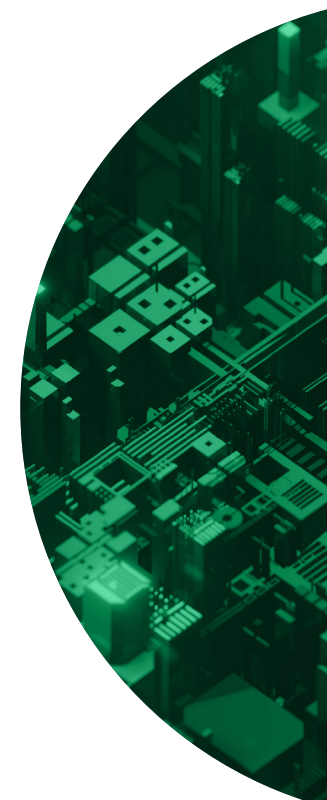
[2] Source: "Tackle The Overwhelming Challenge Of Mainframe Modernization," Forrester Research, Inc. November 18, 2021.

[3] For this study, we define the processes of:

1) "Modernizing on" as modernizing applications and data, performance tuning, MIPS optimization, application rationalization, introducing DevOps to increase agility and innovation while continuing to benefit from the reliability and performance of mainframes.

2) "Integrating with" as integrating mainframe applications with hyperscalers and/or distributed environments to derive value from hyperscaler platform features, accelerate innovation while optimizing costs, and access valuable data.

3) "Moving off" as migrating applications to hyperscalers to optimize costs and fully leverage their benefits.

Resources

Related Forrester Research:

The Essentials Of A Future Fit Technology Strategy, Forrester Research, Inc., May 11, 2023.

Tackle The Overwhelming Challenge Of Mainframe Modernization, Forrester Research, Inc. November 18, 2021.

Select The Best Mainframe Modernization Approach For Your Enterprise, Forrester Research, Inc. November 19 2021.

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Methodology

This Opportunity Snapshot was commissioned by Kyndryl. To create this profile, Forrester Consulting supplemented this research with 10 interviews with IT leaders from FS organizations globally, who are responsible for their mainframe modernization and cloud migration strategies. These qualitative interviews began and were completed in June 2023.

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Demographics

COUNTRY	
United States	7
United Kingdom	2
Canada	1

COMPANY SIZE	
More than 20,000 employees	8
5,000 to 19,999 employees	2

INDUSTRY	
Financial services or insurance	10

ROLE WITHIN IT	
Application development	2
CIO or office of the CIO/CTO	3
Enterprise architecture	1
IT infrastructure and operations	2
Product management	2

RESPONDENT LEVEL	
C-suite	1
Vice president	5
Director	4