



Mainframe In The Age Of Cloud, AI, And Blockchain

Old Workhorse Meets New Reality

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FORRESTER OPPORTUNITY SNAPSHOT: A CUSTOM STUDY COMMISSIONED JOINTLY BY ENSONO
AND WIPRO | JULY 2019



The Workhorse Of Infrastructure Deserves Respect

Organizations don't modernize in a vacuum. While greenfield applications are often written on cloud-native technologies, enterprises continue to rely on mainframes for systems of record and critical workflow processing. In many cases, pragmatism requires a shift in infrastructure management and embracing a hybrid approach for both new and existing applications.

Organizations that envision mainframe as a key component of their hybrid IT moving forward believe evolving mainframe processes is essential. Enterprises take seven key tactics: rewriting, refactoring, expanding, doubling down, outsourcing, migrating off, and delaying. This research will explore the role of mainframe modernization in various organizations' transformation strategies, the tactics they choose, and the benefits they expect to achieve by changing their tactics.

Key Findings



Mainframes can be a critical part of digital transformation, yet mainframe modernization can produce challenges with workload migration, security, and development.



Enterprises can address concerns with one of two strategies: 1) adopt DevOps best practices for mainframe development or 2) refactor only the relevant parts of their applications to take advantage of cloud tech.



The benefits in making these changes are evident: lower operational expenses, improved ROI, faster time-to-value, and greater competitive advantage.

Rethinking Infrastructure Modernization

Organizations that have mainframe investments are grappling with a whole host of technology initiatives in the next 12 months. More than three-quarters consider mainframe modernization a critical or high priority.

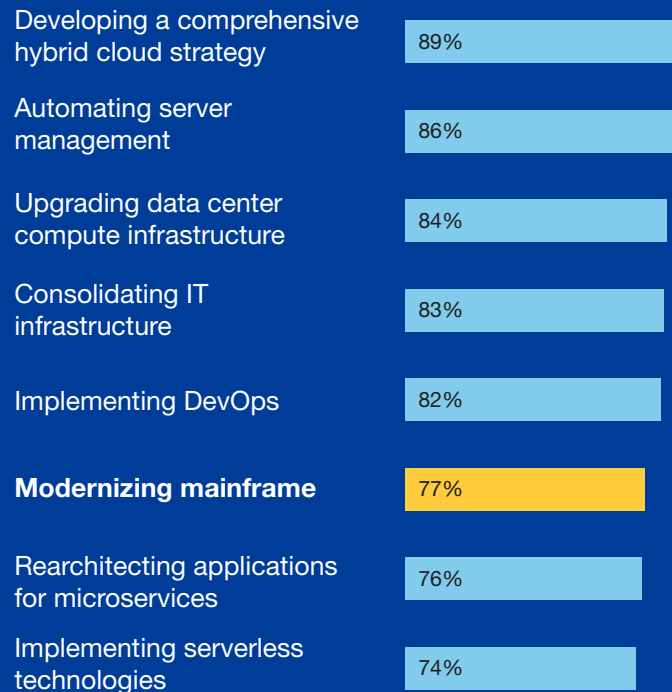
Those that are prioritizing modernizing mainframes are also prioritizing other initiatives like building out a comprehensive hybrid cloud strategy and upgrading data center compute infrastructure; 82% report that implementing DevOps is a critical or high priority.

This means you can't execute your mainframe modernization strategy in a vacuum. It must be part of a holistic hybrid strategy that takes advantage of cloud-native technologies that enable and enhance your mainframe investment.

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"How is your organization prioritizing each of the following technology initiatives over the next 12 months?"

(Showing percentage choosing "Critical" or "High priority")



Base: 153 IT decision makers in the US, the UK, Germany, and France
Source: A commissioned study conducted by Forrester Consulting on behalf of Ensono, April 2019

Surprisingly, Mainframes Run Emerging Workloads Like Blockchain And Containerized Apps

Mainframes have long hosted mission-critical business applications like finance and accounting applications and enterprise resource planning (ERP) applications. This remains a constant today with more than 40% of companies with mainframes still running these workloads from the mainframe.

However, more than a third of these companies are also running web-based applications, commerce software, sales force automation, and web content and experience management application workloads on the mainframe.

More than a quarter of firms see the mainframe as a place to run emerging workloads like blockchain and containerized applications. These benefit from integrated security and massive parallelization.

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“Which of the following applications/ workloads does your organization currently run on the mainframe?”



Base: 153 IT decision makers in the US, the UK, Germany, and France

Note: Selected variables shown

Source: A commissioned study conducted by Forrester Consulting on behalf of Ensono, April 2019

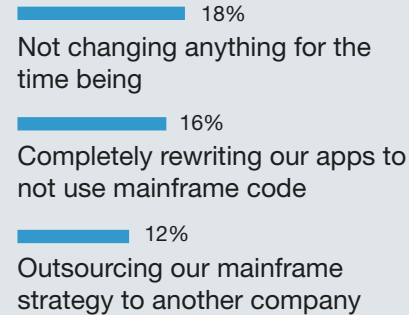
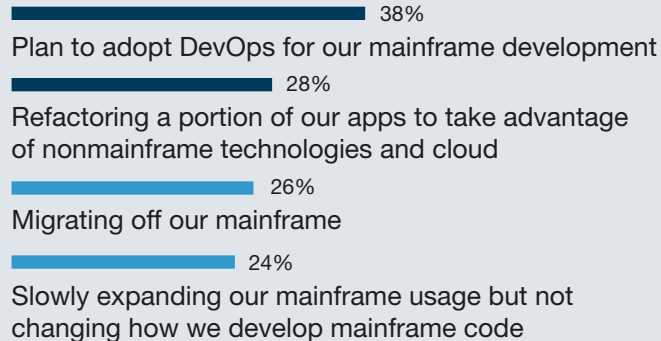
DevOps And Refactoring Popular Strategies For The Future

As companies look to modernize their future mainframe strategies, 38% of firms with mainframes describe their future strategies as planning to adopt DevOps for mainframe development. More than a quarter (28%) are refactoring a portion of their apps to take advantage of nonmainframe technologies and the cloud. Three out of 10 companies adopting DevOps are also refactoring.



Refactoring, in this context, is rewriting parts of an application to take advantage of new cloud technologies like containers or serverless, while keeping some application code on the original platform.

Future mainframe strategy



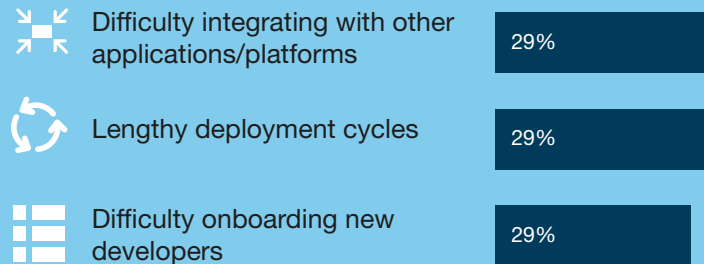
31% of those adopting DevOps are also refactoring.

Modernization Hampered By Development Issues

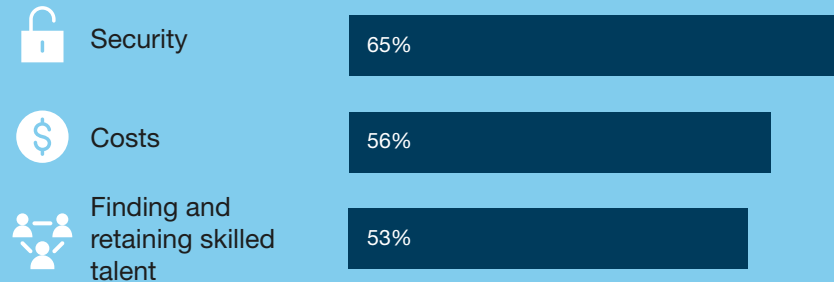
But as companies work to modernize, they face challenges largely focused around development issues. The transition and integration from legacy apps and other applications are hampered by lengthy deployment cycles and challenges finding and onboarding new developers. This leads to slower time-to-market and worse customer experience.

For those that are using or considering hybrid IT environment, the top three challenges are security, costs, and finding and retaining skilled talent.

Challenges with current mainframe strategy



Challenges with hybrid IT environments



Note To All: The Mainframe Workhorse Still Carries Major Workloads

Companies are embracing a hybrid IT infrastructure by moving partial or entire workloads to the cloud. But not all workloads will move to the cloud, indicating opportunities for refactoring.

Of those specifically shifting entire workloads, only about 20% are currently migrating ERP, containerized applications, and commerce software to the cloud with approximately 25% more planning to in the future. Companies are not as likely to migrate finance and accounting workloads, preferring to migrate only a portion of the workload.

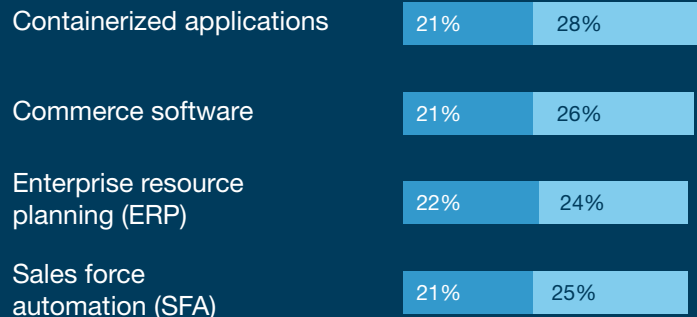
Those not considering migrating to the cloud cite substantial costs, potential business disruption during migration, and security and compliance concerns. Refactoring enables them to move parts of workloads to the cloud — the most appropriate ones.

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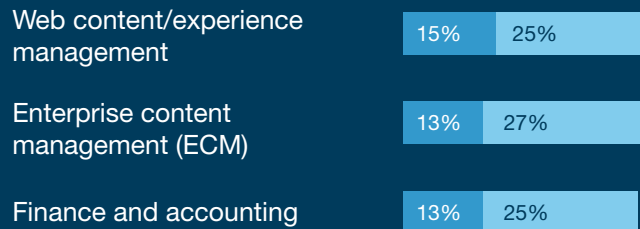
Cloud migration plans

- Currently migrating/using cloud for the entire workload
- Planning to migrate/use cloud for the entire workload

MOST LIKELY TO MIGRATE ENTIRE WORKLOAD



LEAST LIKELY TO MIGRATE ENTIRE WORKLOAD



Base: 117 IT decision makers migrating to cloud in the US, the UK, Germany, and France
Source: A commissioned study conducted by Forrester Consulting on behalf of Ensono, April 2019

Lower Opex And Increase ROI By Modernizing

As organizations plan and work toward mainframe modernization, 37% of respondents believe that refactoring a portion of their apps to take advantage of nonmainframe technologies and the cloud will deliver the highest ROI. Adopting DevOps is also expected to drive increased ROI in 35% of companies.

Specifically regarding technical and business benefits, firms expect their future mainframe strategies to improve reliability, speed processing, and lower dependency on legacy infrastructure. Nearly half of respondents expect to lower operating expenses and increase ROI.

Expected technical benefits

Improved reliability and redundancy

44%

Faster real-time processing

39%

Lowered dependency on legacy infrastructure

35%

Lowered software costs

35%

Business benefits

Greater ROI

48%

Reduced operational costs

48%

Faster time-to-value

39%

Gained competitive advantage

35%

Conclusion

There's a common misconception that mainframes are legacy technology. In fact, 47% of enterprises are planning to increase their mainframe usage in the next two years.¹ You must consider the following for your modernization journey.

- Refactoring yields the best results. Instead of completely rewriting mainframe applications, rework only the portions of workloads that will best take advantage of cloud-native technology.
- Don't ignore DevOps on your mainframe. There's a common misconception that DevOps only applies to newer infrastructure-as-code technologies, but DevOps can apply to mainframes, containers, and everything in between.
- This isn't just about technical benefits. An evolved, hybrid approach to mainframe yields significant business benefits. Use this as a selling point for your modernization initiatives.

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Methodology

This Opportunity Snapshot was jointly commissioned by Ensono and Wipro. To create this profile Forrester Consulting supplemented this research with custom survey questions asked of 153 IT directors in enterprises in the US and Europe. The custom survey began and was completed in April 2019.

ENDNOTES

¹ Source: Forrester Analytics Global Business Technographics® Infrastructure Survey, 2017.

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Demographics

GEOGRAPHY

49% US

18% United Kingdom

17% Germany

16% France

RESPONDENT LEVEL

45% Director

35% C-level executive

17% Vice president

3% Managing director

INDUSTRY

20% Technology

18% Manufacturing

16% Financial services/
insurance

COMPANY SIZE

23% Less than 1,000
employees

42% 1,000 to 4,999 employees

36% 5,000+ employees

Note: Percentages may not total 100 because of rounding.



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