ISG Provider Lens™

Mainframes – Services and Solutions

Mainframe Optimization Services

A guide for clients evaluating their mainframe commitment and modernization strategy

Customized report courtesy of:
Infosys®

QUADRANT REPORT | MARCH 2024 | AMERICAS

Table of Contents

Report Author: Pedro L Bicudo Maschio

Mainframe modernization shows momentum, with an increased vendor focus on mergers and acquisitions

With increased attention to cost savings and budget control observed in 2023, more enterprises are considering mainframe modernization to reduce their IT spending. Software maintenance license is a significant cost element that companies can drastically reduce by moving applications to the cloud.

IT organizations facing business pressure to reduce spending tend to prioritize replatforming their mainframes to the cloud, using partner tools such as OpenText (Micro Focus), TmaxSoft (OpenFrame), LzLabs and NTT DATA (UniKix) to rehost legacy applications to run in the cloud rapidly. However, replatforming does not eliminate programming language obsolescence, requiring companies to retain obsolete software engineering processes to develop and maintain outdated applications. More advanced methods include rewriting applications to Java, .NET or C# to introduce DevOps and Agile development methods. Automated rewriting tools generate maintainable application code integrated with modern application development workbenches. Reengineering automation takes longer than rewriting as it uses reverse engineering techniques to explain the legacy code, map data and application dependencies and expose business rules for human reviews. Reengineering allows companies to eliminate a dead code and update the business rules before automatically generating a new code. Rewriting and reengineering tools ensure like-for-like behavior and performance validated by intensive automated testing.

The high focus on GenAI in 2023 has positively impacted the global mainframe modernization market. Experimenting with GenAI tools allows clients to understand that automated code writing is possible. However, GenAI can only write pieces of code per a programmer's prompt and cannot replace rewriting and reengineering tools that consistently generate millions of lines of code (LOC) in minutes. Practical GenAI tools demonstrated by participants in this study

Business pressures to **reduce spending** drive the majority **of mainframe migrations** to cloud.

include business rules explanations and logic summarization to improve documentation and the creation of test cases. For example, the user can ask what the conditions are to calculate the insurance premium. Per the code, GenAI responds that for case XYZ, the conditions are A, B and C, and for case YYY, the conditions are B, D and E. Humans can find the same in the code, but GenAI does it much faster.

Despite continuous, nimble and new technological innovations, mainframes offer a stable technology and have some appropriate use cases. Several enterprises are not ready to exit mainframes due to their simplicity, reliable performance and security compliance. Some clients continue to see no value in investing to change something that works well. Mainframe to cloud migration is not a priority for many, and consider other investments that can produce better returns.

The market for **Mainframe Operations and MFaaS** continues to grow. Mainframe as a service (MFaaS) offers a cloud-like experience from the point of view that clients pay per use, similar to the cloud commercial model but running on a private cloud. Mainframe operations are more flexible, allowing clients to retain hardware and software ownership. In both cases, service providers operate the infrastructure and offer different levels of managed services. This year, ISG observes that more clients are moving from on-premises to outsourced data centers and MFaaS to decommission their facilities, accelerate sustainability programs and achieve carbon neutrality targets. Most service providers reported growth in 2023, with a few clients changing the incumbent system, and a majority of new deals refer to transferring on-premises installations to outsourcing data centers.

In Mainframe Optimization Services, service providers demonstrated more cases of clients implementing DevOps in their mainframe environment, transforming their software engineering processes to adopt continuous integration and quality assurance. Modernizations in this area include code repositories, such as GitHub, service automation, testing automation, cloud backup, API development and data integration with Model9, Precisely and other tools. More providers are talking about zLinux (Linux on mainframe hardware) and Java virtual machine (JVM) on the mainframe, but the number of cases continues to be small.

Companies that are late in modernizing their legacy applications with DevOps are waiting for the right time to exit the legacy platform. During this study, ISG observed that more companies understand waiting is not an option and that business demands agility and cloud integration. Mainframe optimization is an effective solution to address business demands without exiting the mainframe platform. ISG predicts that many large enterprises will need several years to exit mainframes, and optimizing the environment is an immediate necessity to address business agility and hybrid cloud integration.

In Applications Modernization Services in the U.S., companies are accelerating their modernization pace, emphasizing cost savings and focusing less on innovation. Clients want to reduce their technical debt, preferring to do so on a modern platform rather than investing in costly mainframes. Companies must also demonstrate their applications' compliance with the most recent regulations, including data privacy and employee access to databases and clients' information, confidential or not. Data access controls exist in mainframes, but demonstrating access controls and providing auditing traceability may require application code modernization, and showing compliance might be impossible without documentation. Clients should note that mainframe hardware and software are highly secure, but applications' compliance depends on programmers' discipline, methods and tools.

Modernizations with rewriting and reengineering technologies enable code quality checks and traceability. Clients should pre-assess their environments and clearly define requirements before engaging with service providers to modernize their applications. They must also consider whether the endeavor comprises a few applications or the entire portfolio. Some providers are exceptionally instrumental in handling large and complex application portfolios, which can be overwhelming and expensive to modernize a few applications. A few others are nimble and apply pragmatic approaches to modernize applications one by one at speed.

Application Modernization Services in Brazil are flourishing and expected to grow in 2024. The largest banks have started their application modernization and cloud migrations, inviting attention from hyperscalers such as AWS, Microsoft, Google and Oracle that want to run these banks' huge number of processing hours — Brazil is the second largest IBM mainframe market after the U.S. The system integrators and software vendors expect that the millions of mainframe applications will require many years to modernize and migrate to the cloud.

Banco Itaú's modernization program is at center stage, with several cases promoted at AWS re:Invent in 2021, 2022 and 2023. The bank has a tradition of technological innovation and was a pioneer in online banking before the year 2000 and later by offering its mobile app in the Apple Store. It has questioned application reengineering and rewriting methods, requiring technology vendors to include innovation while modernizing applications instead of the conventional converting code for a like-for-like experience. The bank's questioning is pushing vendors to improve their application modernization technology.

The Application Modernization Software market is expanding rapidly, driving large vendors to invest in acquiring successful niche vendors. In 2023, IBM launched the IBM watsonx Code Assistant for IBM Z, using GenAI to assess legacy applications and rewrite new code. This year, IBM acquired the application modernization technology from Advanced. In 2023, OpenText acquired Micro Focus, and Amdocs acquired Astadia. Later the same year, Rocket Software acquired the modernization IP from OpenText. Years before, AWS acquired Blu Age, Avanade acquired Asysco, and Ensono acquired ExperSolve. ISG expects this M&A trend to continue in 2024 and 2025.

ISG qualified 25 vendors in this quadrant, and other smaller vendors were assessed but not qualified. ISG expects new solutions to emerge with GenAI maturity, which can happen quickly. IBM's recent announcements are particularly important because they show the company understands that mainframe applications will be replaced and wants to be part of modernization. IBM's change in strategy may motivate more clients to consider exiting the mainframe.

At present, GenAI cannot replace rewriting and reengineering software tools. With repetition being the most important characteristic of these tools, clients can reprocess the legacy code, but the generated code will always have the same output. When changing the source code and submitting it again for rewriting, the tool generates a code to pass quality and performance checks — repetition and consistency are considered crucial aspects of code rewriting. GenAI uses large language models (LLM), a method based on interpretation and creation that changes at every interaction. This detail may cause GenAI to be an additional tool rather than a replacement for application reengineering and rewriting.

Intense activity and discussions around GenAI in 2023 have positively impacted the mainframe modernization market, driving clients' curiosity and ingenuity. IT experts ask themselves if GenAI can write new code, why not use it to rewrite the valuable IP in our legacy applications?

Provider Positioning

	Mainframe Optimization Services	Application Modernization Services, U.S.	Application Modernization Service, Brazil	Mainframes as a Service (MFaaS)	Mainframe Operations	Mainframe Application Modernization Software
Accenture	Not In	Leader	Leader	Not In	Not In	Not In
Adaptigent	Not In	Not In	Not In	Not In	Not In	Contender
Advanced	Not In	Product Challenger	Not In	Not In	Not In	Product Challenger
Astadia (Amdocs)	Not In	Not In	Not In	Not In	Not In	Leader
Atos	Product Challenger	Leader	Product Challenger	Product Challenger	Product Challenger	Not In
Avanade (Asysco)	Not In	Product Challenger	Not In	Not In	Not In	Leader
AveriSource	Not In	Not In	Not In	Not In	Not In	Product Challenger
AWS	Not In	Not In	Not In	Not In	Not In	Leader
BASE100	Not In	Not In	Not In	Not In	Not In	Product Challenger
BMC	Contender	Not In	Not In	Not In	Not In	Not In

Provider Positioning

	Mainframe Optimization Services	Application Modernization Services, U.S.	Application Modernization Service, Brazil	Mainframes as a Service (MFaaS)	Mainframe Operations	Mainframe Application Modernization Software
BRQ	Not In	Not In	Contender	Not In	Not In	Not In
Capgemini	Leader	Leader	Product Challenger	Product Challenger	Leader	Not In
CloudFrame	Not In	Not In	Not In	Not In	Not In	Contender
Cognizant	Leader	Product Challenger	Not In	Leader	Product Challenger	Not In
Compass UOL	Not In	Not In	Contender	Not In	Not In	Not In
CPT Global	Product Challenger	Contender	Not In	Not In	Not In	Not In
Deloitte	Product Challenger	Product Challenger	Product Challenger	Not In	Not In	Not In
DXC Technology	Leader	Leader	Leader	Leader	Leader	Not In
Ensono	Leader	Product Challenger	Not In	Leader	Leader	Not In
Eviden (an Atos Business)	Not In	Contender	Not In	Not In	Not In	Not In

Provider Positioning

Page 3 of 6

	Mainframe Optimization Services	Application Modernization Services, U.S.	Application Modernization Service, Brazil	Mainframes as a Service (MFaaS)	Mainframe Operations	Mainframe Application Modernization Software
Evolveware	Not In	Not In	Not In	Not In	Not In	Contender
FNTS	Not In	Not In	Not In	Rising Star ★	Rising Star ★	Not In
FreeSoft	Not In	Not In	Not In	Not In	Not In	Contender
Fujitsu	Not In	Contender	Not In	Not In	Not In	Not In
GFT	Contender	Contender	Leader	Not In	Not In	Not In
Google	Not In	Not In	Not In	Not In	Not In	Leader
HCLTech	Product Challenger	Leader	Not In	Product Challenger	Product Challenger	Contender
Heirloom Computing	Not In	Not In	Not In	Not In	Not In	Leader
Hexaware	Not In	Leader	Not In	Not In	Not In	Not In
HPE	Not In	Not In	Not In	Not In	Not In	Contender

Provider Positioning

	Mainframe Optimization Services	Application Modernization Services, U.S.	Application Modernization Service, Brazil	Mainframes as a Service (MFaaS)	Mainframe Operations	Mainframe Application Modernization Software
IBM	Not In	Not In	Not In	Not In	Not In	Contender
Infosys	Leader	Leader	Product Challenger	Product Challenger	Leader	Not In
INNOVA	Not In	Contender	Not In	Not In	Not In	Not In
Kyndryl	Leader	Rising Star ★	Product Challenger	Leader	Leader	Not In
LTIMindtree	Product Challenger	Leader	Not In	Product Challenger	Product Challenger	Not In
LzLabs	Not In	Not In	Not In	Not In	Not In	Product Challenger
Maintec	Not In	Not In	Not In	Contender	Contender	Not In
mLogica	Not In	Not In	Not In	Not In	Not In	Leader
MOST Technologies	Not In	Contender	Not In	Not In	Not In	Contender
Mphasis	Product Challenger	Leader	Not In	Not In	Contender	Not In

Provider Positioning

Page 5 of 6

	Mainframe Optimization Services	Application Modernization Services, U.S.	Application Modernization Service, Brazil	Mainframes as a Service (MFaaS)	Mainframe Operations	Mainframe Application Modernization Software
NTT DATA	Not In	Product Challenger	Contender	Not In	Not In	Rising Star ★
OpenText	Not In	Not In	Not In	Not In	Not In	Leader
PSR	Not In	Not In	Not In	Contender	Contender	Not In
Raincode	Not In	Not In	Not In	Not In	Not In	Contender
Recovery Point Systems	Not In	Not In	Not In	Contender	Contender	Not In
SLK Software	Not In	Product Challenger	Not In	Not In	Not In	Not In
TCS	Leader	Leader	Product Challenger	Not In	Leader	Product Challenger
Tech Mahindra	Contender	Product Challenger	Product Challenger	Not In	Not In	Not In
TmaxSoft	Not In	Not In	Not In	Not In	Not In	Leader
TIVIT	Not In	Not In	Contender	Not In	Not In	Not In

Provider Positioning

	Mainframe Optimization Services	Application Modernization Services, U.S.	Application Modernization Service, Brazil	Mainframes as a Service (MFaaS)	Mainframe Operations	Mainframe Application Modernization Software
TSRI	Not In	Not In	Not In	Not In	Not In	Leader
T-Systems	Not In	Not In	Contender	Not In	Not In	Not In
Unisys	Product Challenger	Not In	Not In	Not In	Product Challenger	Not In
Updraft	Not In	Not In	Not In	Not In	Not In	Product Challenger
UST	Contender	Product Challenger	Not In	Not In	Contender	Not In
Verang	Not In	Not In	Not In	Not In	Not In	Contender
Wipro	Leader	Leader	Leader	Leader	Leader	Not In

Key focus areas for Mainframes – Services and Solutions 2024.

- Mainframe Optimization Services
- Application Modernization Services, U.S.
- Application Modernization Services, Brazil
- Mainframe as a Service (MFaaS)
- Mainframe Operations
- Mainframe Application Modernization Software

Simplified Illustration; Source: ISG 2024

Definition

Clients consider mainframe modernization to reduce technical debt, enable AI technologies, allow data access for better business analytics and enhance compliance. New business resilience and carbon neutrality requirements push companies to rethink their data center strategies, favoring the public cloud for its resilience and carbon-neutral commitment.

Technology innovation continues to accelerate, impacting all industries and markets.

Enterprises must invest in technological adaptation to eliminate technical debt and enhance business agility. Mainframe software licensing, particularly third-party software and middleware, pushes mainframe budgets. Mainframe modernization aims to optimize resources and license costs while reducing or eliminating technical debt.

Generative AI (GenAI) is on top of the expectations. It can read and document legacy applications, and clients expect GenAI to create new code to replace them. GenAI has not reached this point, but it contributes to improving the automated tools that existed in the market years before.

Mainframe outsourcing and mainframe as a service (MFaaS) offer short-term cost savings and help clients integrate with cloud infrastructures. The market also offers automation tools to transform legacy applications for the cloud.

This study assesses service providers that modernize mainframe applications for the cloud and those that offer mainframe outsourcing and MFaaS. It also evaluates automation tool vendors for refactoring, rehosting, replatforming, rewriting and reengineering applications.

Scope of the Report

This ISG Provider Lens™ quadrant report covers the following six quadrants for services/solutions: Mainframe Optimization Services; Application Modernization Services, U.S.; Application Modernization Services, Brazil; Mainframe as a Service (MFaaS); Mainframe Operations; and Mainframe Application Modernization Software.

This ISG Provider Lens™ study offers IT decision-makers:

- Transparency on the strengths and weaknesses of relevant providers and software vendors
- A differentiated positioning of providers by segments (quadrants)
- Focus on the regional market

ISG studies serve as the basis for important decision-making by covering providers' positioning, key relationships and go-to-market considerations. ISG advisors and enterprise clients also use information from these reports to evaluate their existing vendor relationships and potential engagements.

Provider Classifications

The provider position reflects the suitability of IT providers for a defined market segment (quadrant). Without further additions, the position always applies to all company sizes classes and industries. In case the IT service requirements from enterprise customers differ and the spectrum of IT providers operating in the local market is sufficiently wide, a further differentiation of the IT providers by performance is made according to the target group for products and services. In doing so, ISG either considers the industry requirements or the number of employees, as well as the corporate structures of customers and positions IT providers according to their focus area. As a result, ISG differentiates them, if necessary, into two client target groups that are defined as follows:

- **Midmarket:** Companies with 100 to 4,999 employees or revenues between $20 million and $999 million with central headquarters in the respective country, usually privately owned.
- **Large Accounts:** Multinational companies with more than 5,000 employees or revenue above $1 billion, with activities worldwide and globally distributed decision-making structures.

The ISG Provider Lens™ quadrants are created using an evaluation matrix containing four segments (Leader, Product Challenger, Market Challenger and Contender), and the providers are positioned accordingly. Each ISG Provider Lens™ quadrant may include service providers that ISG believes have strong potential to move into the Leader quadrant. This type of provider can be classified as a Rising Star.

- **Number of providers in each quadrant:** ISG rates and positions the most relevant providers according to the scope of the report for each quadrant and limits the maximum of providers per quadrant to 25 (exceptions are possible).

Provider Classifications: Quadrant Key

Product Challengers offer a product and service portfolio that reflect excellent service and technology stacks. These providers and vendors deliver an unmatched broad and deep range of capabilities. They show evidence of investing to enhance their market presence and competitive strengths.

Leaders have a comprehensive product and service offering, a strong market presence and established competitive position. The product portfolios and competitive strategies of Leaders are strongly positioned to win business in the markets covered by the study. The Leaders also represent innovative strength and competitive stability.

Contenders offer services and products meeting the evaluation criteria that qualifies them to be included in the IPL quadrant. These promising service providers or vendors show evidence of rapidly investing in products/ services and a follow sensible market approach with a goal of becoming a Product or Market Challenger within 12 to 18 months.

Market Challengers have a strong presence in the market and offer a significant edge over other vendors and providers based on competitive strength. Often, Market Challengers are the established and well-known vendors in the regions or vertical markets covered in the study.

★ **Rising Stars** have promising portfolios or the market experience to become a Leader, including the required roadmap and adequate focus on key market trends and customer requirements. Rising Stars also have excellent management and understanding of the local market in the studied region. These vendors and service providers give evidence of significant progress toward their goals in the last 12 months. ISG expects Rising Stars to reach the Leader quadrant within the next 12 to 24 months if they continue their delivery of above-average market impact and strength of innovation.

Not in means the service provider or vendor was not included in this quadrant. Among the possible reasons for this designation: ISG could not obtain enough information to position the company; the company does not provide the relevant service or solution as defined for each quadrant of a study; or the company did not meet the eligibility criteria for the study quadrant. Omission from the quadrant does not imply that the service provider or vendor does not offer or plan to offer this service or solution.

Mainframe Optimization Services

Who Should Read This Section

This report is relevant to enterprises in the U.S. for evaluating providers of mainframe optimization services. In this quadrant, ISG assesses providers of legacy mainframe modernization. It also evaluates providers that offer code repositories such as GitHub or equivalents, DevOps integration, testing automation, security testing, API development and data integration.

Enterprises in the U.S. are facing consistent concerns regarding access to proficient in-house IT talent to maintain and manage their legacy systems. Service providers focus on optimizing clients' mainframes using tools from different vendors. They also provide expertise in consulting, planning and management to ensure the success of projects.

Enterprises should prioritize providers that grant access to skilled experts and emphasize the training of employees in the latest mainframe innovations. It is essential for U.S. enterprises to invest in mainframe optimization strategies and look for providers that have a thorough understanding of their exact business requirements. Providers should also be adept at determining the stage of modernization required for core processes within an enterprise.

ISG foresees that U.S. enterprises will require several years to migrate away from mainframes. Therefore, it is crucial for them to prioritize optimizing the current environment promptly to enhance business agility and facilitate seamless hybrid cloud integration. Moreover, enterprises focus on optimizing their core mainframes and other existing systems for competitive differentiation, which is leading to an increased emphasis on digital transformation.

CIOs should read this report to understand the strengths and weaknesses of providers, including the way they employ the latest technologies to deliver reliable offerings.

Technology leaders should read this report to understand the competing providers in the mainframe market in terms of their offerings, innovations and talent.

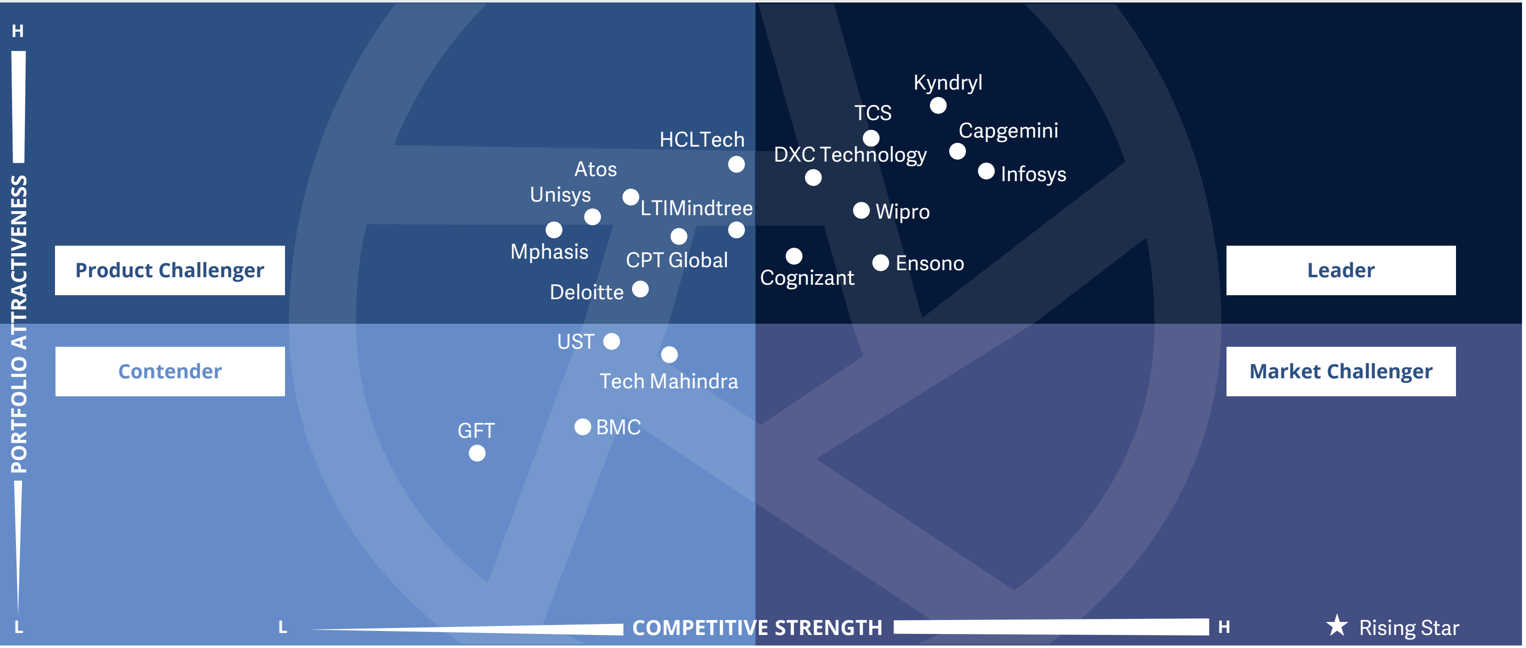
CTOs should read this report to understand the mainframe modernization capabilities of providers to ensure suitable technology integration into products, services and business administration.

ISG Provider Lens™

Source: ISG RESEARCH

Mainframes – Services and Solutions
Mainframe Optimization Services

U.S. 2024



This quadrant assesses providers of mainframe **optimization** services for clients that continue to run on mainframes, including software **upgrades, performance** improvements, **DevOps** implementation, **data integration** and **hybrid cloud** design.

Pedro L Bicudo Maschio

Definition

Service providers in this quadrant offer mainframe application modernization and can introduce code repositories such as GitHub or equivalents, DevOps integration and testing automation, and security testing. Modernization retains the original programming language, such as COBOL, adding architecture optimization and documentation to enable agility. After the modernization is complete, clients can embrace Agile methodologies for developing and maintaining applications running on mainframe systems, including code repositories, quality assurance and DevOps.

Clients expect to modernize and optimize their mainframe operations to control costs and avoid obsolescence. A solid modernization and optimization program ensures clients can continue to upgrade their mainframes in the future. With optimization, clients expect service providers to help replace middleware with new tools and improve configurations and application architecture to enhance mainframe performance and reduce MIPS consumption.

These providers can assess a client's application portfolio to deliver a modernization plan with guidance on what applications should be retained on the mainframe platform. They also help enterprises decide on the type of applications that can be transformed and migrated to other platforms, thus enabling cost and performance optimization.

Eligibility Criteria

1. The participant has modernization **case studies** around IBM Z, IBM AS/400, IBM iSeries, HP, Cray, Fujitsu or Unisys mainframe applications
2. Case studies must include **DevOps tools integration**
3. Modernization must enable legacy programming languages to build and deploy mainframe applications in line with modern **continuous integration** best practices (for example, COBOL CI/CD pipeline implementation)
4. Services must include **portfolio and application assessments**
5. **Ideally, the provider** can plan for phased modernization with robust testing and quality assurance
6. The provider **can decouple applications**, develop APIs and integrate with applications outside the mainframe environment
7. The offering includes guidance for future-state application **governance**
8. The provider's employees have adequate **COBOL expertise** and proficiency in other mainframe programming languages

Observations

Most of the service providers in this quadrant have been offering mainframe outsourcing for over 20 years, making this a mature market with minor differentiation among players. Enterprises should focus on providers' availability of experts and attention to training employees in mainframe innovations.

In 2023, ISG observed improvement in the adoption, maturity and toolset availability of mainframe DevOps, APIs and data integration. BMC acquired Model9, a tool for mainframe backup, archive, space management and disaster recovery using cloud-based or on-premises object storage. Precisely is a data integrity toolset for big data; high-speed sorting; extract, transform, load (ETL); data integration; data quality and data enrichment. Both tools have become popular options for integrating mainframes and public clouds, accelerating AI, ML and GenAI availability.

Mainframe optimization has two aspects: infrastructure optimization and application optimization. Service providers that offer both have received a better rating.

However, clients should carefully assess whether their priority is hardware or software optimization to choose the right provider.

From the 57 companies assessed for this study, 19 qualified for this quadrant, with eight being Leaders.

Capgemini has a robust mainframe service organization, with many experts to optimize clients' mainframes. It uses a robust service platform and CAP360 to assess clients' environments, providing a consistent process for diagnostics and improvement.

Cognizant has advanced consulting to help clients prioritize their portfolios. It has many accelerators for programming language upgrades and replacements, which helps eliminate obsolete languages.

DXC Technology has a broad mainframe portfolio and a long tenure in the mainframe outsourcing market. It accumulates deep expertise to address diversity in several industries and offers support for all legacy technologies.

Ensono

Ensono uses the most modern IBM technology, and its strong partnership with IBM enables first-hand access to IBM innovation. The company facilitates smooth transitions from on-premises environments to its data centers and public clouds, providing optimization at every phase.

Infosys' robust mainframe workforce offers clients access to experts in a wide array of technologies. It has deep expertise in application optimization and modernization, eliminating technical debt by adding DevOps, APIs and cloud integration.

Kyndryl has a large mainframe footprint and exposure to diverse client demands. It excels in professional services, covering all subsystems and middleware. The company's optimization strategies involve partnerships to extend its portfolio.

TCS works closely with IBM to jointly develop solutions in shared innovation labs. It offers innovation and application modernization with DevOps, APIs and AI solutions. A large partner network complements its offerings.

Wipro offers comprehensive application services and a mature automation platform to accelerate assessments and deliver optimization insights. It delivers cloud integration, DevOps, APIs and technical debt reduction.

Infosys

Leader

"Infosys has deep knowledge of mainframe systems to drive mainframe optimization, reducing risks and improving quality. Through continuous investment in people and technology, the company extends mainframes' life span and ensures business continuity."

Pedro L Bicudo Maschio

Overview

Infosys is headquartered in Bengaluru, India. It has more than 328,700 employees across 274 offices in 56 countries. In FY23, the company generated $18.2 billion in revenue, with Financial Services as its largest segment.

North America accounts for more than 61 percent of the company's revenue. Infosys' Accelerate-Renew-Transform (A.R.T.) framework includes code modernization, application replatforming and reengineering, thus providing clients with a robust digital platform.

The company's mainframe services include MIPS optimization, application decommissioning and rehosting, API enablement, DevOps, IBM z/OS analytics and batch modernization.

Strengths

Automation with GenAI capabilities: Infosys has enhanced its Live Enterprise Application Development Platform with GenAI to inspect code quality, interpret business rules and document legacy systems. These capabilities enable Infosys to identify optimization opportunities, develop APIs and automate testing and DevOps. Infosys Live Enterprise Application Development Platform is part of Infosys Topaz, a set of services and solutions comprising more than 12,000 AI assets, over 150 pre-trained AI models and more than 10 AI platforms.

End-to-end modernization solution: Infosys' A.R.T. framework supports COBOL upgrades, application decommissioning, cloud access, data integration and archival.

The company commits a percentage of its total revenue toward innovation research to assess and develop new modernization offerings.

Skilled resources: Infosys has approximately 27,400 mainframe experts to address all client concerns regarding the COBOL skills shortage. It supports all legacy languages and platforms and provides continuous education and training through Lex, a learning platform. Lex includes modernization courses, sandboxes for hands-on experience and GenAI labs. Infosys continuously attracts and retains new talents to support and enhance legacy applications.

Caution

Infosys' mainframe services are more concentrated in the banking, financial services and insurance (BFSI), telecommunications and retail industries. Clients should check if their needs match Infosys' industry expertise when seeking consulting services from the company.

Star of Excellence

A program, designed by ISG, to collect client feedback about providers' success in demonstrating the highest standards of client service excellence and customer centricity.

Source: ISG Star of Excellence™ research program, Insights till January 2024

In the ISG Star of Excellence™ research on enterprise customer experience (CX), clients have given feedback about their experience with service providers for their **Mainframes** services.

Based on the direct feedback of enterprise clients, below are the key highlights:

Client Business Role

▲ **Most satisfied**
Procurement

▼ **Least satisfied**
IT Vendor Management

Region

▲ **Most satisfied**
Central/South America

▼ **Least satisfied**
Middle East

Industry

▲ **Most satisfied**
Oil & Gas

▼ **Least satisfied**
Business Services

Industry Average CX Score

79

▲ Highest CX: 84.4
▼ Lowest CX: 58.5

CX Score: 100 most satisfied, 0 least satisfied
Total responses (N) = 197

Most Important CX Pillar

Execution and Delivery

Service Delivery Models	Avg % of Work Done
Onsite	52%
Nearshore	20%
Offshore	28%

Appendix

The ISG Provider Lens 2024 – Mainframes – Services and Solutions study analyzes the relevant software vendors/service providers in the U.S. and Brazil, based on a multiphased research and analysis process, and positions these providers based on the ISG Research methodology.

Study Sponsor:
Heiko Henkes

Lead Author:
Pedro L Bicudo Maschio

Editors:
Dona George and John Burnell

Research Analyst:
Manoj M

Data Analyst:
Tishya Selvaraj

Consultant Advisors:
John Schick, Thorsten Hoeltken and Sandie Breese

Project Manager:
Shona Merin Jacob

Information Services Group Inc. is solely responsible for the content of this report. Unless otherwise cited, all content, including illustrations, research, conclusions, assertions and positions contained in this report were developed by, and are the sole property of Information Services Group Inc.

The research and analysis presented in this report includes research from the ISG Provider Lens program, ongoing ISG Research programs, interviews with ISG advisors, briefings with services providers and analysis of publicly available market information from multiple sources. The data collected for this report represents information that ISG believes to be current as of March 2024, for providers who actively participated as well as for providers who did not. ISG recognizes that many mergers and acquisitions have taken place since that time, but those changes are not reflected in this report.

All revenue references are in U.S. dollars ($US) unless noted.

The study was divided into the following steps:

1. Definition of Mainframes – Services and Solutions market
2. Use of questionnaire-based surveys of service providers/ vendor across all trend topics
3. Interactive discussions with service providers/vendors on capabilities & use cases
4. Leverage ISG's internal databases & advisor knowledge & experience (wherever applicable)
5. Use of Star of Excellence CX-Data
6. Detailed analysis & evaluation of services & service documentation based on the facts & figures received from providers & other sources.
7. Use of the following key evaluation criteria:
   * Strategy & vision
   * Tech Innovation
   * Brand awareness and presence in the market
   * Sales and partner landscape
   * Breadth and depth of portfolio of services offered
   * CX and Recommendation

Author

Pedro L Bicudo Maschio
Distinguished Lead Author

Distinguished analyst and author, Pedro Maschio brings extensive experience in the research of the SEMEA (Southern Europe Middle East and Africa) and the Americas service markets. With more than 30 years of experience in sourcing, he has developed vendor assessments plus contract restructuring, services scope and IT benchmarking programs for diverse vertical markets in the Americas and APAC.

Before joining ISG, Pedro was a partner of TGT Consult and managing vice president at Gartner Inc., responsible for the consulting business in APAC and Latin America.

Enterprise Context and Overview Analyst

Manoj M
Research Analyst

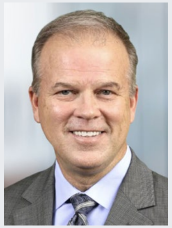
Manoj is a research analyst at ISG and supports ISG Provider Lens™ studies on Private/Hybrid Cloud – Data Center Services, Mainframes and Public Cloud Data Center Solution and Services. He also supports the lead analysts of multiple regions in the research process. Prior to this role, he supported the ROI process in sales intelligence platform and was an individual contributor in handling research requirements for advanced technologies in different sectors.

He has considerable expertise in predicting the automation impact by considering certain parameters such as productivity, efficiency and time reduction. During his tenure, he has supported research authors and authored Enterprise Context and Global Summary reports with market trends and insights.

Study Sponsor

Heiko Henkes
Director and Principal Analyst

Heiko Henkes is a Director and Principal Analyst at ISG; in his role as Global ISG Provider LensTM (IPL) Content Lead and Program Manager, he is responsible for strategic business management and acts as thought leader for IPL Lead Analysts. In his role as Star of Excellence (SOE) Product Owner, he leads the program design and IPL integration. His core competencies are in the areas of defining derivations for all types of companies within their IT-based business model transformation. Within this context, Mr. Henkes supports companies to undergo continuous transformation, combining IT competencies with sustainable business strategies and change management. He acts as Keynote speaker in the context of digital innovation.



IPL Product Owner

Jan Erik Aase
Partner and Global Head – ISG Provider Lens™

Mr. Aase brings extensive experience in the implementation and research of service integration and management of both IT and business processes. With over 35 years of experience, he is highly skilled at analyzing vendor governance trends and methodologies, identifying inefficiencies in current processes, and advising the industry. Jan Erik has experience on all four sides of the sourcing and vendor governance lifecycle - as a client, an industry analyst, a service provider and an advisor.

Now as a research director, principal analyst and global head of ISG Provider Lens™, he is very well positioned to assess and report on the state of the industry and make recommendations for both enterprises and service provider clients.

ISG Provider Lens™

The ISG Provider Lens™ Quadrant research series is the only service provider evaluation of its kind to combine empirical, data-driven research and market analysis with the real-world experience and observations of ISG's global advisory team. Enterprises will find a wealth of detailed data and market analysis to help guide their selection of appropriate sourcing partners, while ISG advisors use the reports to validate their own market knowledge and make recommendations to ISG's enterprise clients. The research currently covers providers offering their services across multiple geographies globally.

For more information about ISG Provider Lens™ research, please visit this webpage.

ISG Research™

ISG Research™ provides subscription research, advisory consulting and executive event services focused on market trends and disruptive technologies driving change in business computing. ISG Research™ delivers guidance that helps businesses accelerate growth and create more value.

ISG offers research specifically about providers to state and local governments (including counties, cities) as well as higher education institutions. Visit: Public Sector.

For more information about ISG Research™ subscriptions, please email contact@isg-one.com, call +1.203.454.3900, or visit research.isg-one.com.

ISG

ISG (Information Services Group) (Nasdaq: III) is a leading global technology research and advisory firm. A trusted business partner to more than 900 clients, including more than 75 of the world's top 100 enterprises, ISG is committed to helping corporations, public sector organizations, and service and technology providers achieve operational excellence and faster growth. The firm specializes in digital transformation services, including AI and automation, cloud and data analytics; sourcing advisory; managed governance and risk services; network carrier services; strategy and operations design; change management; market intelligence and technology research and analysis.

Founded in 2006, and based in Stamford, Conn., ISG employs 1,600 digital-ready professionals operating in more than 20 countries—a global team known for its innovative thinking, market influence, deep industry and technology expertise, and world-class research and analytical capabilities based on the industry's most comprehensive marketplace data.

For more information, visit isg-one.com.

MARCH, 2024

REPORT: MAINFRAMES – SERVICES AND SOLUTIONS