ISG Provider Lens™

Mainframes – Services and Solutions

Application Modernization Services, U.S.

A guide for clients evaluating their mainframe commitment and modernization strategy

Customized report courtesy of:
Infosys®

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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language obsolescence, requiring companies to retain obsolete software engineering processes to develop and maintain outdated applications.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.

Executive Summary

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

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	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

	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

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	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

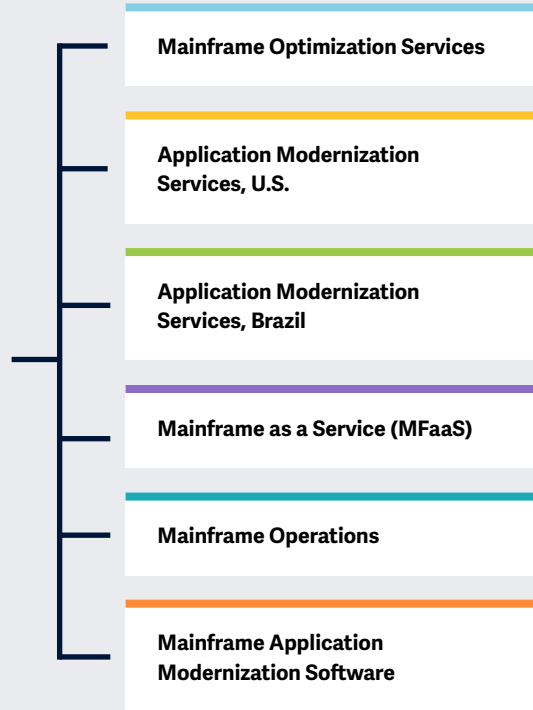|	Mainframe Optimization Services	Application Modernization Services, U.S.	Application Modernization Service, Brazil	Mainframes as a Service (MFaaS)	Mainframe Operations	Mainframe Application Modernization Software
NTT DATA	Not In	Product Challenger	Contender	Not In	Not In	Rising Star ★
OpenText	Not 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**.

Simplified Illustration; Source: ISG 2024

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

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).

Introduction

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.

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.

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.

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.

Application Modernization Services, U.S.

Who Should Read This Section

This report is relevant to enterprises in the U.S. for evaluating providers that offer services for transforming and modernizing mainframe applications to a modern environment. In this quadrant, ISG assesses the current market positioning of providers of mainframe application modernization services.

Major U.S. enterprises are facing the challenge of adopting a cautious approach in investment decisions regarding application modernization amid uncertainties in the global economy. It is essential for enterprises to consider application modernization that not only drives more attention to cost savings but also offers flexibility to adapt to dynamic demands, such as changes in capacity and MIPS consumption.

There is a growing emphasis on mainframe replatforming in the application modernization space, and it significantly reduced the interest in longer-term reengineering with innovation. Consequently, enterprises' attention to replatforming or rehosting with a cost-reduction approach continues to drive the demand for mainframe modernization in the U.S.

Enterprises are placing significant emphasis on providers to demonstrate their applications' compliance with the most recent regulations, including data privacy and employee access to databases and clients' information. Additionally, they are seeking out providers with proprietary integrated toolsets for supporting the transformation of core applications and integrating automation capabilities using analytics and ML for testing. Enterprises are keen to expedite the modernization process of current applications, processes and infrastructure and expect providers to accelerate delivery for core business systems.

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.

CTOs should read this report to understand the application modernization capabilities of providers to ensure suitable technology integration into products, services and business administration.
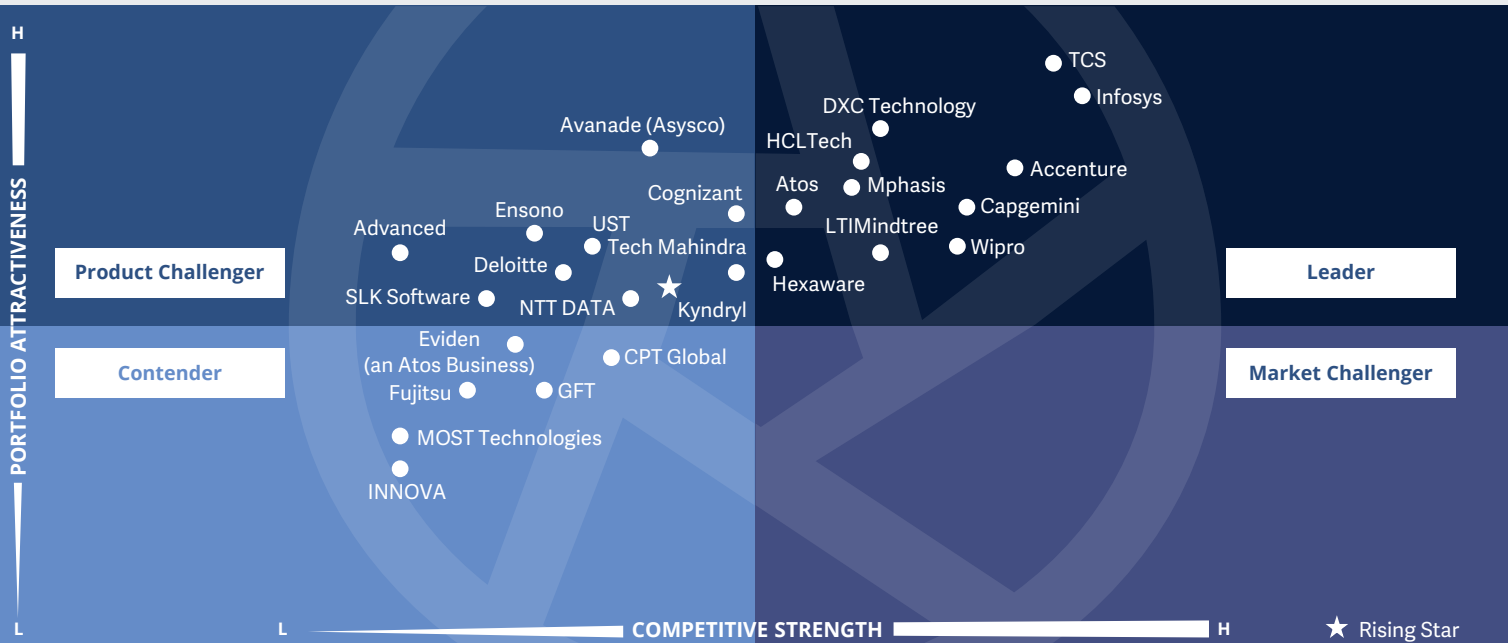
Technology leaders should read this report to understand the competing providers in the mainframe market in terms of their offerings, innovations and talent.

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ISG Provider Lens™

Mainframes – Services and Solutions
Application Modernization Services

U.S. 2024

H

PORTFOLIO ATTRACTIVENESS

Product Challenger

Contender

Avanade (Asysco)

Cognizant

Advanced
Ensono
UST
Tech Mahindra

Deloitte

SLK Software
NTT DATA
Kyndryl

Eviden
(an Atos Business)
CPT Global

Fujitsu
GFT

MOST Technologies

INNOVA

DXC Technology

HCLTech

Atos
Mphasis

LTIMindtree

Hexaware

TCS

Infosys

Accenture

Capgemini

Wipro

Leader

Market Challenger

L

L   **COMPETITIVE STRENGTH**   H   ★ Rising Star

This quadrant assesses the providers of **application modernization** services that transform applications and databases to migrate mainframes to cloud in the U.S., offering **replatforming, rehosting, reengineering** and **rewriting** applications.

Pedro L Bicudo Maschio

Application Modernization Services, U.S.

Definition

This quadrant evaluates application service providers that use advanced application modernization methodologies to assess and rewrite legacy programming language applications. These providers partner with tool vendors to automate code writing, data conversion, database migration and cloud migration.

Typical legacy applications use COBOL, RPG, Fortran, PL/1, Natural and other languages that classically run on mainframes. The capacity to cover many legacy languages contributes to the service provider rating. Thus, providers that use more vendor tools may have better appraisals.

The main target programming languages may include Java, .NET, C#, Python and others. The number of destination languages does not impact a provider's rating because past studies show a prevalence of Java and .NET, which most providers can address. Providers may also use emulators and compilers to replatform rather than rewrite (without converting the source code), which does not impact their rating.

The service provider can offer refactoring, rehosting, encapsulating, replatforming, rewriting or reengineering strategies. Service providers with more options have a better rating. However, a provider's consulting expertise to guide clients with a neutral approach to select the best tooling can improve its position. A complete transformation should include UI translation services that can eliminate green screens while introducing a modern user interface for a better UX.

Eligibility Criteria

1. The service provider can reverse engineer legacy applications to provide application logic **documentation**

2. It must use **automation for rewriting, reengineering, refactoring and rehosting** applications. Providers that manually write new code are excluded

3. Services must include application **assessment**, application **decoupling, system architecture, API development** and future-state application governance

4. The provider should offer phased transformation with **robust project management, testing** and quality assurance

5. The transformation should enable the enterprise client to operate **Agile development and maintenance** with CI/CD automation

6. **Legacy platforms** can include IBM Z, AS/400, HP, Cray, Fujitsu and Unisys mainframes

Observations

Uncertainties in the global economy had a significant impact on the application modernization market in 2023. Enterprises adopted a more cautious approach to investments, which drove more attention to projects that can reduce costs. In the application modernization space, this shift has manifested a heightened focus on mainframe replatforming and reduced the interest in longer-term reengineering with innovation. Replatforming or rehosting enables cost reductions within a shorter timeframe of a few months. Clients' attention to cost optimization continues to drive demand for mainframe modernization.

AWS accelerated its mainframe modernization program in 2023, driving system integrator partners' attention to the market opportunity. Meanwhile, Microsoft continued to promote mainframe modernization, with a notable emphasis on GenAI tools integrated with Microsoft Visual Studio. This strategic focus indirectly draws clients' attention to modernization, as GenAI has the capability to explain the functioning of legacy applications

in plain text, thus providing comprehensive documentation to assess modernization opportunities. It is important to note that while GenAI has not replaced any of the existing modernization software, it serves to enrich analysis and testing processes.

From the 57 companies assessed for this study, 27 qualified for this quadrant, with 11 being Leaders and one a Rising Star.

accenture

Accenture uses many vendor tools and differentiates itself with its capacity to manage complex transformations. It can integrate innovation with business value in mind, thereby modernizing applications and business processes effectively.

Atos

Atos uses proprietary tools to deliver paced and well-planned modernizations. It predicts results after a comprehensive portfolio assessment, offering clients a safe path and hurdle-free modernization.

Capgemini

Capgemini uses a mix of proprietary and partner tools to facilitate application modernization. For the company, application modernization is part of its larger application service engagements, promoting a continuous application improvement process through modernization.

DXC TECHNOLOGY

DXC Technology uses proprietary technology to assess and modernize applications, supplementing it with third-party tools as required. This enables vendor independence and cloud-neutral modernizations, which differentiates the company.

HCLTech

HCLTech has one of the most complete automation portfolios, which seamlessly integrates proprietary and partner tools. It is advanced in using GenAI for legacy application documentation and business rules extraction, enabling it to promote a business value transformation approach.

HEXAWARE

Hexaware has significant expertise in mainframe modernization methods and tools. It uses proprietary and partner tools, with a differentiated Agile development approach to modernization, prioritizing sprints according to business priorities and value outcomes.

Infosys

Infosys remains at the forefront of leadership by offering a comprehensive portfolio, AI-powered automation and modernization tools, a vast vendor network, and a large number of mainframe and modernization experts to support robust transformations.

LTIMindtree

LTIMindtree is nimble in providing modernization services, leveraging its mainframe expertise. It uses a robust framework with over 30 accelerators, providing pragmatic application modernization solutions. It has a track record of many successful modernization projects.

Mphasis

Mphasis offers a fabric delivery model, leveraging best-in-class vendor technologies, to achieve high levels of automation.
It proposes zero-cost transformation by taking responsibility for clients' application portfolios and delivering systematic and sequential gains.

TCS uses MasterCraft™ to run assessments, convert code and manage the modernization program. It integrates many partner tools to offer high-level automation and has a robust delivery team to ensure speed, innovation and business value.

Wipro uses ModerniZ, a proprietary low-code/no-code platform, to accelerate modernization with innovation. The company focuses on business value to prioritize application modernization and uses many vendor tools to perform assessments and code modernization.

kyndryl

Kyndryl (Rising Star) has enhanced its cloud partnerships, offering mainframe migration to all clouds. It has expanded its portfolio of tool vendor partnerships, improving its capacity to accelerate application modernization.
Its robust mainframe client base drives its modernization growth.

Infosys

Leader

"Infosys has specialized tools and expertise to cover all legacy and modern technologies, ensuring clients ample access to skilled professionals to handle large and complex modernization projects."

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' A.R.T. framework includes code modernization, application replatforming and reengineering, thus providing clients with a robust digital platform.

The company offers application decommissioning, rehosting with reengineering to next-generation technologies, database migration, and cloud-native application development and integration.

Strengths

Blend of the best people and technology: Infosys has modernized its toolset, including GenAI capabilities around legacy application assessments, business rule extraction, legacy code explanation, documentation and testing. The company has over 27,000 mainframe experts and more than 60,000 cloud-certified experts. Infosys offers manpower, GenAI-powered tools and a broad partner network to address mainframe modernization.

Strong partner ecosystem: Infosys is engaged with over 250 application modernization and migration partners, of which more than 50 participate in mainframe modernization engagements. Notable product partners include AWS (Blu Age), Google (G4), OpenText (Micro Focus), Rocket Software, Raincode and IBM.

Proven methods and tools:

Infosys' modernization portfolio includes legacy mainframe integration with cloud-native applications. Its Live Enterprise Application Development Platform provides frameworks and templates for all application development endeavors globally across ultra-modern cloud-native applications and legacy mainframe applications. The 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. Thorough automation and experienced experts ensure low-risk transformations.

Caution

Infosys has a strong position as a service provider in the banking, financial services and insurance industries. While the company may not be the most suitable option for small-scale deals, clients are encouraged to check its resource availability for specific requirements.

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.

Customer Experience (CX) Insights

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

Methodology & Team

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.

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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 & Editor Biographies

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.

Author & Editor Biographies

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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.

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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.

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ISG

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ISG Provider Lens™

MARCH, 2024

REPORT: MAINFRAMES – SERVICES AND SOLUTIONS