cognizant® | aws

July 2026

Rewiring the BFSI core: Unlocking AI-ready operations through mainframe modernization

Executive Perspective

The financial services industry stands at a pivotal inflection point. As AI reshapes how institutions operate, compete, and serve their customers, modernizing the core has evolved from a long-term technology initiative into a strategic business imperative. The challenge is no longer whether to modernize, but how to accelerate transformation while preserving the resilience, security, and trust that define mission-critical banking and insurance operations.

At Cognizant, we believe successful modernization requires more than technology migration. It demands a disciplined approach that combines deep industry expertise, cloud-native engineering, AI-driven automation, and ecosystem collaboration to unlock the full value of legacy investments while preparing organizations for the future. Institutions that modernize with purpose will be best positioned to harness AI, activate enterprise data in real time, and deliver the agility required in an increasingly connected financial ecosystem.

Our collaboration with AWS to present this Everest Group report reflects a shared commitment to helping financial institutions navigate this journey with confidence. This paper offers perspectives that can help business and technology leaders make informed decisions as they transform their core platforms into intelligent, resilient, and AI-ready operating foundations.

We hope the insights presented here inspire meaningful dialogue and provide a practical framework for organizations embarking on their modernization journey.

Nageswar Cherukupalli

Head of Banking, Capital Markets & Insurance (BCMI), Americas
Cognizant

Prologue:
The agentic leap in core modernization

As leaders in the financial services and insurance sectors, we stand at a critical juncture. The demands of the digital age are relentless: Customers expect instant, intelligent and real-time experiences, and our boards demand growth at the pace of cloud-native innovators. Yet, the very heart of our operations, the mainframe, often stands as a barrier, a bastion of reliability that now constrains our ability to build an AI-ready future.

The question is no longer whether to modernize, but how to navigate this complex transformation without compromising the resilience that underpins our institutions. A single, sweeping replatform is rarely the answer. The path forward is a strategic and sequenced journey to progressively unlock the value within our core systems. This is where a new paradigm emerges, which is to shift modernization from a manual, high-risk endeavor to an industrialized, intelligent process. Enter **agentic AI**.

Cognizant's approach is not merely AI-assisted coding; it represents a fundamental leap toward orchestrated execution. Our differentiated modernization stack combines three reinforcing accelerators. **Mainframe as a service (MFaaS)** which stabilizes legacy estates while creating the discovery, data and API foundation for phased transformation. **AI-powered engineering accelerators** on Amazon Bedrock that bring agentic reasoning to modernization decisions such as business-rule interpretation, dependency resolution and architecture decisioning under human-in-the-loop guardrails. **Flowsource™**, our proprietary platform enabling both forward and reverse engineering, preserves embedded business logic during legacy decomposition and feeds it into spec-driven, cloud-native forward engineering ensuring institutional knowledge is never lost in translation. Together, they industrialize mainframe modernization with the resilience, traceability and governance of enterprise estates' demand.

Specialized AI agents now manage the entire modernization lifecycle end-to-end. By leveraging agentic AI solutions like **AWS Transform (ATX)**, organizations can reimagine critical legacy systems into cloud-native architectures on AWS. AWS Transform for mainframe delivers a connected, traceable reimagined experience from assessment through code generation. It completely **reimagines the application architecture** using modern patterns, transforming monolithic mainframe applications into cloud-native microservices. These agents autonomously extract embedded business logic from decades-old COBOL applications, generate technology-agnostic requirements, discover hidden dependencies across complex application landscapes, and orchestrate the transformation, validation and cutover of mission-critical workloads. Operating within predefined guardrails, they combine the reasoning power of agentic AI with the deterministic precision of validation tools, ensuring every step is auditable, secure and resilient.

By embracing an agentic approach, we are not just accelerating code conversion; we are de-risking the entire transformation program. We are turning a process once fraught with uncertainty and reliance on scarce expertise into a predictable, scalable engine for change. This allows us to build an AI-ready data architecture, achieve genuine operational agility, and, most importantly, transform our legacy core from a constraint into the very foundation of our future digital capabilities.

A leading insurance provider in the life and retirement solutions sector partnered with Cognizant to modernize its mainframe environment. In response to a high total cost of ownership, we achieved 33% savings for the customer that aimed to transition to an as-a-service model.

This is the next frontier of modernization. It is how we will build the adaptable, intelligent and resilient core that the next decade of industry will demand.

Sriramkumar Kumaresan

SVP and Global Head of Cloud, Infrastructure and Security at Cognizant

Everest Group®

July 2026

Rewiring the BFSI Core: Unlocking AI-ready Operations through Mainframe Modernization

Contents

Introduction

BFSI institutions are entering a new operating era defined by real-time decisioning, AI-driven business processes, and increasingly interconnected ecosystem models. From instant payments and intelligent underwriting to embedded finance and AI-led servicing, competitive differentiation increasingly depends on the ability to activate data, embed intelligence into operations, and adapt in real time. Simultaneously, evolving regulations and rising customer expectations are placing unprecedented demands on core technology environments.

The modernization question for BFSI enterprises is no longer whether mainframes can continue to process mission-critical transactions but whether core environments can expose data, decisions, and embedded business logic with the speed, transparency, and interoperability required for AI-native operating models. As real-time decisioning moves from a competitive differentiation to an operating necessity, legacy core modernization is becoming a board-level technology, risk, and growth agenda.

Consequently, mainframe modernization is becoming a strategic priority for institutions that need to unlock real-time data, AI-enabled decisioning, and ecosystem interoperability without compromising the resilience of transaction-critical operations. This urgency is amplified by technical debt, operational complexity, and growing talent constraints, with 36% of banks actively rationalizing fragmented core estates to reduce architectural complexity and improve long-term scalability. This Viewpoint examines how BFSI enterprises can redefine modernization to enable AI-ready and cloud-native operating models.

Specifically, **this report examines:**

- The structural shifts reshaping BFSI core modernization priorities
- The evolution of pathway-led modernization and cloud-native operating models
- The growing role of hyperscalers as modernization execution and AI enablement layers
- The emergence of agentic engineering approaches for large-scale modernization orchestration, validation, and transformation execution
- Strategic considerations for selecting modernization partners and scaling transformation initiatives across complex hybrid environments

Mainframes as the backbone of BFSI operations

The BFSI industry continues to anchor global economic activity, with scale increasingly defined by transaction intensity and data velocity. Financial market infrastructure exemplifies this scale, with Depository Trust and Clearing Corporation (DTCC) subsidiaries alone processing securities transactions valued at over US$3 quadrillion annually.[1] This surge in transaction throughput is translating directly into exponential growth in data volumes, making IT systems central to real-time processing, analytics, and decisioning.

North America continues to drive a disproportionate share of global financial expansion, accounting for 53.6% of the growth in global financial assets in 2025, with total global financial assets reaching ~US$290 trillion.[2] Deep capital markets, strong digital adoption, and the concentration of systemically important institutions continue to position the region as a priority market for BFSI technology investments.

As transaction volumes, regulatory complexity, and real-time decisioning requirements continue to rise, financial institutions and insurers are becoming increasingly dependent on core technology platforms to sustain operational resilience and business performance. Core systems now underpin not only high-volume payments, claims processing, policy administration, and revenue-generating operations, but also compliance, fraud detection, underwriting, and enterprise-wide risk monitoring capabilities. As a result, these environments have become mission-critical assets.

Consequently, legacy architectures remain deeply embedded across the BFSI landscape. Nearly 56% of BFSI firms continue to retain and modernize core workloads in place on mainframes, while another 41% are distributing them across both mainframe and cloud environments. Even across non-core workloads, 33% of enterprises continue to retain workloads primarily on mainframes, while 65% are operating them across hybrid mainframe and cloud environments.[3] Their sustained relevance is driven by inherent strengths in reliability, scalability, high-availability processing, processing efficiency, and enterprise-grade security.

For BFSI executives, this dependency creates a direct link between core-platform resilience and enterprise value protection. In an industry where infrastructure processes quadrillions of dollars worth of transactions annually, even short periods of instability can create disproportionate business impact. This explains why nearly 70% of organizations cite evolving business requirements as a key driver for moving workloads off the mainframe in a recent Everest Group survey.[4]

Modernization is no longer only a technology refresh, but a response to operating models that demand greater agility, integration, scalability, and responsiveness than many traditional core environments were designed to support. A failed transformation

1 DTCC
2 Allianz Global Wealth Report 2025
3 Everest Group Voice of Customer Study (2026)
4 Everest Group survey on mainframe modernization 2025

can affect payment flows, customer access, regulatory reporting, and institutional trust. As a result, mainframe modernization economics cannot be evaluated only through run-cost reduction or infrastructure optimization; it must be sequenced around resilience, failover readiness, auditability, and transaction integrity.

Legacy architectures constraining digital ambitions

The pressure on core environments is increasing as BFSI enterprises compete in a market defined by intelligence, speed, and personalization. As customer expectations rise and digital-native competitors accelerate innovation, institutions are investing in AI-driven capabilities across customer engagement, risk management, and operations. Consequently, the ability to translate data into actionable intelligence at scale is emerging as a critical determinant of competitive advantage.

However, many BFSI enterprises continue to rely on long-standing mainframe application estates built on COBOL, batch-processing architectures, tightly coupled dependencies, and complex integration layers. For CXOs, this creates a compounding execution challenge: AI initiatives remain constrained by delayed access to core data and limited visibility into embedded business logic; API-led innovation is slowed by tightly coupled architectures; release cycles remain long due to accumulated technical debt and undocumented dependencies; and hybrid estates become harder to govern as legacy and cloud-native environments expand in parallel.

A further constraint is institutional knowledge loss. Many BFSI mainframe estates contain product rules, credit policies, claims logic, pricing conditions, exception-handling routines, and regulatory interpretations. Much of this knowledge is documented only in COBOL programs, copybooks, JCL flows, batch schedules, or the tacit knowledge of aging SME teams. Modernization programs that treat code conversion as the primary objective risk losing this embedded business knowledge.

The impact is alarming at the enterprise level. Everest Group research indicates that 48% of banks struggle with integrating modern customer experience platforms with core systems, while 55% cite limited personalization and real-time decisioning capabilities as major execution challenges.[5] As a result, modernization priorities are shifting to business imperatives enabling flexible, API-enabled, and continuously adaptable operating environments capable of supporting future-state BFSI operating models.

5 Everest Group Voice of Customer Study (2026)

"Most banks duct tape capabilities onto what they already have, and eventually they break. You've seen the number of outages we've had in the industry recently. That's all happening because they put duct tape upon duct tape."

– Ritesh Rihani, Vice President – Enterprise Banking, Galileo

Achieving the future-state for BFSI enterprises

Structural shifts reshaping the tech core

As BFSI enterprises confront the limitations of deeply entrenched mainframe core environments, they are starting to redefine how the core operates rather than replacing it outright.

The emerging target state combines cloud-native, composable, and data-centric architectures with the resiliency and stability required for transaction-critical workloads. BFSI enterprises need an orchestration layer that can coordinate transformation across applications, data, infrastructure, workflows, and governance. This transition is beginning to take shape through three structural modernization patterns across the application core, data layer, and connectivity stack:

Progressive decomposition of the core

Enterprises are isolating specific business functions from tightly coupled mainframe environments by decomposing monolithic applications, exposing reusable services, and selectively reengineering business logic embedded across legacy application logic, batch flows, data dependencies, and adjacent integration layers

Data layer decoupling and activation

Real-time data layers are being introduced alongside legacy batch-processing and DB2-based environments to support analytics, AI, and regulatory reporting. Data is increasingly emerging as an independent modernization lever, enabling AI, analytics, and decisioning capabilities without full core replacement

Connectivity enablement without core disruption

API-first architectures are becoming the preferred approach for connecting legacy core systems with digital channels, partner ecosystems, and cloud-native services, enabling faster innovation without destabilizing transaction-critical environments

However, the transition is not uniform. Modernization readiness varies across BFSI institutions and workload categories. Transaction-critical workloads such as core banking, payments, clearing, and policy administration remain constrained by availability, resiliency, auditability, and compliance requirements. Systemically important institutions, in particular, have limited tolerance for operational disruption, making large-scale replacement strategies operationally and regulatorily challenging.

Pathway-led modernization: the preferred route

Mainframe modernization must move beyond binary retain-versus-replace decisions to workload-specific pathways aligned with business value, operational risk, regulatory exposure, and modernization readiness. The importance of this approach is reflected in the market, with 59% of organizations identifying regulatory and compliance requirements as a primary driver for modernizing selected workloads while retaining others in place.[6] For BFSI enterprises, this makes pathway-led modernization a business-aligned transformation strategy: one that enables selective modernization while reducing risk, preserving resilience, improving AI readiness, and increasing operational agility.

For example, a payments switch or ledger application may require retention, optimization, or highly sequenced refactoring because of latency, auditability, and settlement-risk constraints. Customer-facing servicing and integration layers may be better suited for API enablement, service decomposition, or rearchitecting where faster change and ecosystem connectivity are required. Regulatory reporting, reconciliation, fraud, and analytics workloads may benefit from data decoupling before core refactoring.

In some cases, modernization may need to progress beyond application transformation to capability reimagination, particularly when future-state business requirements cannot be effectively achieved through incremental modernization of existing applications. Unlike refactoring or rearchitecting, reimagination does not use the legacy application as the blueprint for the target state. Instead, capabilities are rebuilt around business intent and desired outcomes, enabling entirely new architectures optimized for future-state operating requirements. This workload-level differentiation is critical because mainframe modernization rarely follows a single pathway across the estate.

Pathway-led modernization can increase execution complexity, requiring enterprises to coordinate dependencies, sequencing, data validation, interoperability, and parallel runs across hybrid mainframe and cloud environments. This complexity is pushing some enterprises to separate modernization ambitions from immediate operational risks.

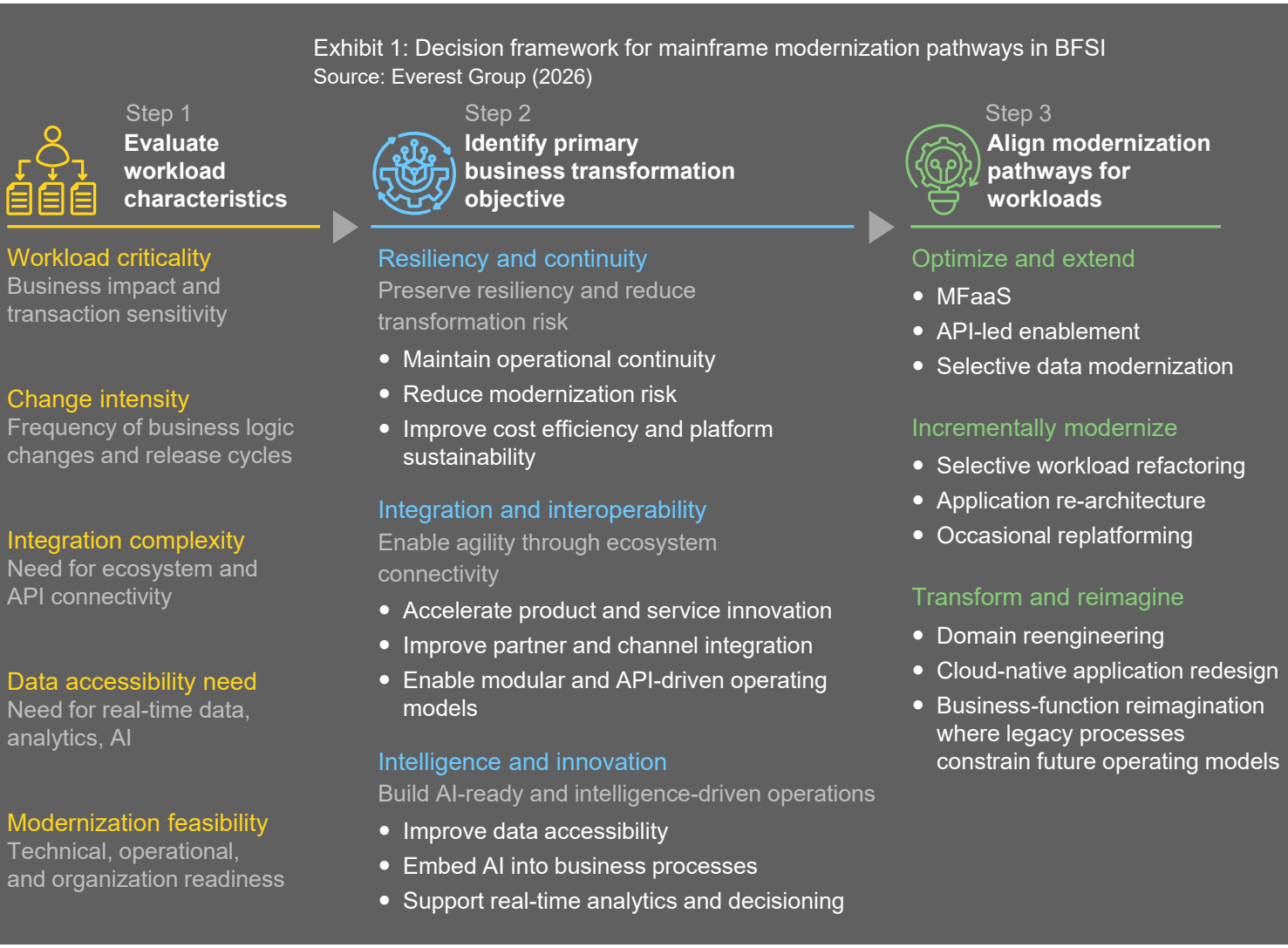
Within this broader journey, Mainframe-as-a-Service (MFaaS) is emerging as an interim model for enterprises unable to pursue large-scale transformation immediately. By transferring day-to-day platform management and operational responsibility to a specialized partner, organizations can improve cost efficiency, simplify estate management, and reduce the burden of sustaining aging mainframe environment.

6 Everest Group survey on mainframe modernization 2025

MFaaS should not be treated as modernization deferral. In many BFSI estates, it can serve as a risk-managed transition state that stabilizes platform operations, standardizes management practices, improves observability, and creates the access layer required for subsequent API enablement, data activation, business-rule extraction, and selective workload transformation.

Exhibit 1 outlines a simplified decision framework that maps mainframe modernization pathways to key enterprise considerations, enabling BFSI organizations to align transformation approaches with workload characteristics, operational constraints, and modernization objectives. Rather than applying a single modernization strategy across the entire mainframe estate, the framework adopts a workload-centric approach, in which different workload domains may align to different modernization requirements depending on their attributes.

Exhibit 1: Decision framework for mainframe modernization pathways in BFSI
Source: Everest Group (2026)



As enterprises operationalize pathway-led modernization, the focus should shift from what to modernize to how and where to execute it at scale. This is where hyperscalers play a critical role as modernization orchestration, data activation, AI enablement, and cloud-native execution layers.

Hyperscalers as transformation enablers

Pathway-led modernization introduces execution requirements that are difficult to address through traditional operating environments alone: workload orchestration, hybrid core integration, real-time data activation, security validation, observability, and governance across tightly interconnected estates. For BFSI enterprises, hyperscaler value increasingly lies not only in target infrastructure, but in the modernization control plane required to execute phased transformation while keeping mission-critical systems stable during parallel run, phased cutover, and regulatory validation cycles.

Hyperscalers are increasingly relevant in phased modernization programs where mainframe systems continue to operate alongside cloud-native applications, digital channels, and distributed data ecosystems. Emerging capabilities such as automated COBOL and PL/I analysis, copybook and data-structure mapping, business-rule extraction, dependency discovery, AI-led code transformation, platform migration, cloud-native application redesign, agentic engineering, data migration, and application containerization are reducing modernization complexity and enabling enterprises to execute transformation with greater speed, traceability, and control. However, hyperscaler selection should not be viewed only as a tooling decision. For BFSI enterprises, it should be evaluated based on the ability to support modernization outcomes: resilience preservation, AI-ready data activation, governed execution, integration with digital channels, and scalable transformation across complex hybrid estates.

We take a look at some major hyperscalers on the next page.

Amazon Web Services (AWS)

Best suited for large-scale phased modernization and transformation orchestration across complex hybrid core environments

Focus on phased modernization supporting legacy estate discovery, traceable business-rule extraction and requirements generation, workload decomposition, refactoring, and reimagination of selected capabilities into cloud-native architectures across COBOL, PL/I, JCL, BMS, VSAM, DB2, batch-processing workloads, data stores, and broader application portfolios

Relevant capabilities include AWS Transform for mainframe, AWS Transform MCP server, Kiro- AI-powered IDE, AWS Database Migration Service, and AWS Glue, spanning mainframe estate assessment, transformation planning, data lineage analysis, agentic modernization, application transformation, mainframe data migration, and data preparation

Broad ecosystem depth across modernization tooling, cloud-native services, data platforms, security controls, and partner delivery models

Case in point

A leading US insurance provider used AWS Transform's agentic AI capabilities to support modernization of a critical legacy application. The initiative reportedly modernized 30% of the application codebase, within hours; reduced transformation timelines from months to weeks; and supported TCO savings through infrastructure and licensing optimization.

Microsoft Azure

Best suited for incremental modernization and hybrid operational integration across enterprise ecosystems

Focus on surrounding enterprise ecosystems connected to legacy core systems, particularly where institutions have Microsoft-centric application, productivity, identity, data, and DevOps environments

Strong alignment with hybrid integration, governance continuity, workflow modernization, and enterprise interoperability where legacy environments need to connect with cloud-native services and broader Microsoft operating models

Relevant capabilities include Azure Migrate, Host Integration Server (HIS), Azure Logic Apps, Azure API Management, Azure Data Factory, Microsoft Fabric, and Azure DevOps-supporting hybrid integration, workload modernization, and enterprise workflow transformation

Case in point

A leading financial institution used Microsoft Azure to support hybrid modernization of its mainframe application environment. The bank developed Azure-based applications integrated with existing mainframe systems using Azure API Management and Azure DevOps pipelines. The initiative reportedly reduced application remediation effort by nearly 40%, accelerated release cycles by 30%, and lowered infrastructure costs.

Google Cloud

Best suited for
AI-, analytics-, and cloud-native modernization initiatives connected to legacy environments

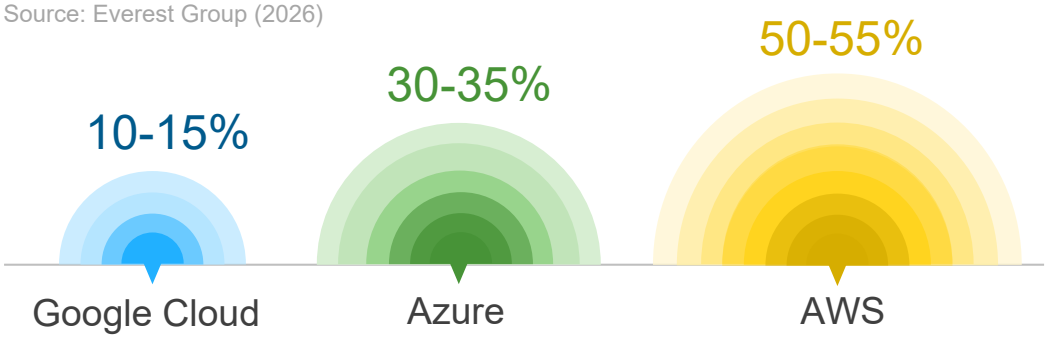
- Emphasis on cloud-native engineering, real-time data activation, and AI-led modernization workflows supporting analytics- and intelligence-driven modernization initiatives
- Strong positioning around analytics-led transformation and Kubernetes-based modernization architectures
- Relevant capabilities include Mainframe Assessment Tool, Mainframe Rewrite, Dual Run, Vertex AI, Gemini, BigQuery, Apigee, and Google Kubernetes Engine, supporting assessment, code transformation, testing, analytics modernization, API management, and cloud-native application modernization

Case in point
A leading European banking institution used Google Cloud's data, analytics, and AI capabilities to modernize its risk management and analytics environment. The initiative reportedly enabled 20-30% faster release of risk management solutions and improved model development productivity by up to 30%.

Exhibit 2 shows BFSI workload distribution across hyperscalers.

Exhibit 2: BFSI workload distribution across hyperscalers

Source: Everest Group (2026)



Everest Group research indicates that AWS represents a significant share of BFSI hyperscaler-aligned services spend. For enterprises already aligned to AWS, this can create modernization synergies where programs require AI-enabled engineering, data activation, orchestration, security, and partner-supported execution at scale. However, many large BFSI enterprises will continue to operate in hybrid and multi-cloud environments, with different hyperscalers supporting different layers of the enterprise architecture. The strategic priority is therefore not simply choosing a cloud platform but ensuring that the selected hyperscaler ecosystem can support the institution's modernization pathway, regulatory posture, data strategy, AI ambitions, and long-term operating model.

Scaling mainframe transformation in BFSI estates

Once modernization pathways are defined, BFSI enterprises must industrialize execution across dependency mapping, data movement, validation cycles, governance controls, and operational transition. As programs scale, decades of technical debt, tightly coupled application landscapes, embedded business rules, and workload interdependencies must be managed simultaneously. Modernization teams need to sequence workloads carefully, preserve business logic, validate data movement, coordinate testing, and maintain auditability across hybrid mainframe and cloud environments while balancing transformation velocity with resilience, risk controls, skills availability, and operational continuity.

Industrializing agentic modernization

Traditional modernization approaches centered on manual assessment, siloed tooling, and linear execution models are becoming increasingly difficult to scale across large BFSI estates, particularly across transaction-critical banking and insurance environments with tightly coupled dependencies and interconnected operating environments. In a recent Everest Group survey, 56% of BFSI organizations reported plans to invest in agentic AI capabilities as part of their mainframe modernization efforts over the next three to five years.[7] Modernization execution is evolving from task-level AI assistance to agentic orchestration and shared-context modernization ecosystems, as described below.

- **AI-assisted engineering:** This first wave of modernization acceleration focused on AI-assisted tooling that improved activities such as code analysis, business-rule extraction, dependency discovery, testing, and code transformation. These capabilities have significantly improved engineering productivity and modernization speed
- **Agentic execution:** The current wave uses specialized AI agents to support complex, multi-step modernization activities across discovery, dependency mapping, architecture decisioning, workload decomposition, code transformation, testing, data migration, validation, and cutover. In this model, agents reason over application context, invoke specialized tools, interpret intermediate outputs, and determine the next action within predefined guardrails. For example, an agent may analyze dependency conflicts, review extracted business rules, recommend modernization archetypes, trigger test generation, or support RCA during parallel run.

  Modernization execution is therefore evolving toward agentic orchestration models that coordinate specialized tools, engineering workflows, and governance controls across the modernization life cycle.

7 Everest Group survey on mainframe modernization 2025

However, advanced execution models do not apply generative AI indiscriminately. Agentic reasoning is valuable for ambiguous, multi-step activities, such as dependency conflict resolution, business-rule interpretation, architecture decisioning, workload decomposition, and parallel-run analysis. Deterministic tools remain better suited for graph calculations, checksum validation, row-count reconciliation, static code analysis, infrastructure provisioning, and CI/CD execution, where repeatability, speed, and auditability matter more than reasoning flexibility.

This distinction is especially important in BFSI. While agentic models can improve modernization productivity and decision quality, uncontrolled autonomy can introduce model-risk, cost, latency, and governance concerns. Leading approaches therefore combine agentic execution with human-in-the-loop escalation, deterministic validation tools, structured quality gates, and audit-grade evidence trails. The goal is industrialized modernization where AI accelerates complex decisions while controls enforce resilience, security, and compliance

- **Orchestrated modernization ecosystems:** An emerging wave now combine AI agents, deterministic tools, cloud-native services, and governance controls within unified execution frameworks. MCP-based orchestration and similar tool-context approaches are emerging as enablers for shared context, workflow coordination, and traceability across discovery, assessment, transformation, testing, deployment, and operations. In these architectures, specialized tools for application discovery, business-rule extraction, dependency analysis, code transformation, testing, validation, security assurance, and data modernization expose capabilities through standardized interfaces. Autonomous agents consume these capabilities as needed, while outputs are continuously written back into a shared-context layer that informs downstream planning, transformation, testing, and governance activities. This helps prevent common execution failures, such as wave plans that miss dependency constraints, code transformation that loses business-rule intent, testing that lacks source-to-target traceability, or cutover decisions unsupported by validation evidence. By combining contextual reasoning with specialized tooling, these architectures can also support modernization decisions that traditionally rely on scarce subject matter expertise and manual intervention.

  For BFSI enterprises, this shared-context architecture is particularly important because modernization must be explainable, auditable, and resilient across transaction-critical environments. Orchestrated modernization ecosystems can improve execution predictability, reduce dependence on scarce legacy expertise, preserve institutional knowledge, and strengthen governance by embedding validation gates and traceability controls into modernization workflows. They also introduce a new economics discipline: enterprises must manage model selection, inference-cost, latency, and context optimization so AI consumption remains proportionate to overall program value

From soft governance to technical enforcement

Governance cannot remain a set of policy checkpoints and steering committee approvals for BFSI firms. Modernization programs increasingly need technical enforcement mechanisms embedded directly into execution workflows. The controls should prevent progression when required conditions are not met, such as incomplete business-rule coverage, unresolved dependency conflicts, failed security scans, failed data reconciliation, insufficient test coverage, performance degradation, or incomplete rollback readiness.

This shifts governance from review and sign off to validate and enforce. A technically enforced gate provides stronger assurance than a process checkpoint because it creates evidence that a workload could not progress without meeting predefined criteria. For regulated BFSI institutions, this audit-grade evidence can support internal risk reviews, compliance reporting, model-risk governance, regulatory examination readiness, and post-migration assurance.

Modernization economics are expanding beyond infrastructure savings

The business case for mainframe modernization is also changing. Traditional cases were often anchored in infrastructure cost reduction, platform rationalization, and license optimization. Buyers are increasingly evaluating modernization through a broader value lens: faster release cycles, reduced dependence on scarce legacy skills, improved testing productivity, lower remediation effort, stronger audit readiness, improved operational resilience, and faster activation of data for AI-led use cases.

As agentic engineering becomes more embedded in modernization programs, enterprises should assess whether AI execution is financially and operationally governed at scale. This includes model-tier selection, inference-cost management, token consumption, context optimization, reuse of deterministic tools where appropriate, and evidence that AI-related costs remain controlled relative to program value. Partners that cannot explain how they govern AI execution cost, latency, and quality will struggle to support modernization at BFSI scale.

Selecting partners for transformation at scale

As modernization programs scale, financial institutions are moving beyond migration-centric evaluation toward broader partner assessment frameworks focused on transformation orchestration and operational alignment. A recent Everest Group survey found that 54% of BFSI organizations fully outsource mainframe modernization services, while another 37% adopt a hybrid delivery model, highlighting the critical role of service partners in modernization initiatives.[8]

8 Everest Group survey on mainframe modernization 2025

Foundational requirements now include BFSI domain credibility, modernization tooling, AI-enabled engineering capabilities, governance maturity, and operational resilience.

Consequently, partner evaluation must expand beyond migration capacity and tool ownership. BFSI enterprises need to assess whether providers can combine domain expertise, modernization tooling, agentic engineering, hyperscaler alignment, governance maturity, operational resilience, and audit-grade execution discipline across transaction-critical environments. The strongest partners will be those that can make modernization credible across the leadership agenda: accelerating transformation for CIOs, embedding security and remediation controls for CISOs, strengthening economic justification for CFOs, and creating the traceability, validation evidence, and rollback readiness required by risk and compliance stakeholders.

Exhibit 3 outlines the 7As structured framework to evaluate and select modernization execution partners.

Exhibit 3: 7As framework for evaluating BFSI mainframe modernization partners

Source: Everest Group (2026)

	Dimension	BFSI-specific focus	What strong execution looks like
Must have	**A**lignment	Modernization pathway alignment with workload criticality, business value, regulatory exposure, and operational risk	Workload-level strategy across retain, reimagine, encapsulate, refactor, data decouple, and MFaaS pathways; clear sequencing across core, surrounding, data, and digital workloads
Must have	**A**rchitecture	Target-state architecture design for resilience, interoperability, AI readiness, and hybrid operations	Composable core design, API-first integration, event-driven patterns, cloud-native data foundations, parallel-run architecture, rollback planning, and clear source-to-target traceability
Must have	**A**cceleration	Industrialized modernization with controlled delivery or operational risk	Agentic engineering for discovery, dependency analysis, business-rule extraction, workload decomposition, test generation, and root-cause analysis Deterministic tooling for validation, reconciliation, static analysis, and CI/CD execution
Must have	**A**ssurance	Operational resilience and quality control across transaction-critical BFSI environments	Hard validation gates, security controls, performance thresholds, data reconciliation, test coverage, rollback readiness, and cutover governance embedded into the execution workflow
Good to have	**A**uditability	Traceability of modernization decisions, validations, exceptions, and approvals	Timestamped execution history, business-rule lineage, source-to-target traceability, exception logs, validation evidence, approval records, and audit-ready reporting for risk and compliance teams
Good to have	**A**lliances	Orchestration of AWS, modernization tooling, security, data, and ecosystem capabilities	Strong AWS alignment, cloud-native service expertise, modernization tooling partnerships, security and data-tool integration, and coordinated ecosystem delivery without fragmented accountability
Good to have	**A**dvances	Long-term enablement of AI-ready operations and continuous modernization	Reusable modernization assets, AI-ready data foundations, cloud-native operating practices, FinOps/observability integration, ongoing technical-debt reduction, and support for future digital and AI use cases

We take a closer look at the seven dimensions below.

- **Alignment**
  BFSI enterprises should look for providers that align modernization pathways with workload criticality, business value, regulatory exposure, and operational risk rather than technology age alone. Strong providers define differentiated pathways across core, surrounding, data, and digital workloads while balancing transformation objectives with operational continuity and business resilience.

- **Architecture**
  Enterprises should prioritize providers that design target-state architectures for resilience, interoperability, AI readiness, and long-term adaptability. Strong providers avoid relocating technical debt into new environments and establish resilient hybrid operating models, decoupled data architectures, API-driven interoperability, observability frameworks, and scalable cloud-native foundations.

- **Acceleration**
  Enterprises should look for providers that can industrialize modernization execution rather than rely on manual, linear delivery models. Strong providers should bring specialized tooling, agentic engineering capabilities, and orchestration frameworks that accelerate discovery, dependency mapping, business-rule extraction, application decomposition, code transformation, test generation, data migration, validation, and cutover readiness.
  Acceleration cannot come at the expense of control. Providers should demonstrate the ability to maintain shared context across tools and stages, automate repeatable engineering tasks, apply agentic reasoning to ambiguous modernization decisions, and use deterministic tools for activities requiring repeatability and auditability, such as reconciliation, static analysis, security validation, and CI/CD execution. They should also be able to scale AI-led modernization with predictable economics through model-tier discipline, inference-cost management, context optimization, reusable assets, and clear human-escalation controls.

- **Assurance**
  BFSI enterprises should prioritize providers that can embed execution discipline across highly regulated and transaction-critical environments. Providers should demonstrate mature approaches for dependency management, modernization sequencing, validation, rollback readiness, and operational resilience. They should also move beyond policy-level governance by embedding technical enforcement mechanisms such as validation gates, quality controls, and auditable workflow checkpoints into modernization execution.

- **Auditability**
  Enterprises should look for providers that can create end-to-end traceability across modernization decisions, validations, exceptions, and approvals. Strong providers should provide business-rule lineage, source-to-target traceability, validation evidence, exception records, and auditable execution histories that support regulatory reviews, internal risk governance, and post-migration assurance.

- **Alliances**
  BFSI modernization requires coordinated execution across hyperscalers, modernization platforms, security ecosystems, data environments, and specialized technology providers. Enterprises should prioritize providers that can orchestrate these alliances into an integrated execution ecosystem rather than leaving clients to manage fragmented toolchains and delivery accountability.
- **Advances**
  Enterprises should look for providers that can help move modernization beyond migration completion. Strong providers should establish AI-ready data foundations, cloud-native operating practices, observability frameworks, continuous modernization capabilities, and mechanisms for ongoing technical-debt reduction. The objective should be to help clients build a continuously adaptable core, not simply complete a migration program.

  In BFSI, modernization partners cannot be evaluated only on migration velocity or tool ownership. The strongest partners will combine BFSI domain knowledge, hyperscaler modernization depth, agentic engineering maturity, enforceable governance, and audit-grade traceability. While each dimension is important individually, its value is ultimately realized through coordinated execution. Exhibit 4 illustrates how these capabilities come together in a modernization scenario, highlighting the relationship between business objectives, execution models, governance requirements, and modernization outcomes.

Exhibit 4: A best-practice execution scenario for transaction-critical BFSI modernization on AWS

Source: Everest Group (2026)

Context

A large financial institution looking to modernize selectively on AWS without disrupting transaction-critical operations, preserving core resilience and exposing trusted data for AI and analytics

Recommended roadmap and considerations

1 Start with business intent and workload segmentation

The enterprise should define the modernization driver and segment workloads by criticality, dependency intensity, data value, regulatory exposure, complexity, and change urgency

2 Select differentiated modernization

The enterprise should avoid applying a single modernization route across the estate. Transaction-critical payment, ledger, and settlement components may need to be retained, optimized, encapsulated, or modernized through highly sequenced refactoring. Customer inquiry, servicing, and integration functions may be better suited for API enablement. Reporting, reconciliation, fraud, and analytics workloads may require data decoupling to support near-real-time access and AI use cases. High-change components may be replatformed or refactored where cloud-native agility, release velocity, and modernization economics justify transformation. Capabilities such as customer servicing or fraud management may require reimagination when future requirements around embedded finance, continuous regulatory adaptation, straight-through processing, intelligent decision automation, or unified customer experiences can no longer be effectively supported through incremental modernization of existing applications. In these situations, application architecture may need to be reimagined around current business intent and future operating needs

Use of AWS as the modernization execution layer

For deployments on AWS, the cloud environment can serve as an execution layer for phased, AI-enabled, and governed modernization. AWS Transform for mainframe can anchor estate assessment, modernization planning, application analysis, business-rule extraction, workload decomposition, and transformation workflows across broader mainframe application portfolios. Its outputs can be used with Kiro and other spec-driven engineering environments to support forward engineering, while the AWS Transform MCP server can integrate transformation workspaces, jobs, human-in-the-loop tasks, artifacts, and related modernization context into agentic development workflows. Where data migration or data transformation is part of the modernization wave, teams can use AWS Database Migration Service and AWS Glue as part of the execution workflow rather than treating them as stand-alone modernization levers. In this model, AWS services can help connect modernization activities that are often fragmented: discovery, dependency mapping, business-rule extraction, code transformation, testing, security validation, observability, and cutover readiness

3 Select a provider that can industrialize execution

The enterprise should prioritize providers that can translate pathway and AWS choices into governed modernization waves. This requires BFSI domain expertise, mainframe engineering depth, AWS modernization capability, agentic execution maturity, and the ability to coordinate applications, data, infrastructure, workflows, and controls as one integrated transformation program.

A strategic provider will combine specialized modernization tooling, AI agents, deterministic validation tools, cloud-native services, MCP-based orchestration, and human-in-the-loop governance within a shared execution framework. MCPs allow modernization tools and agents to expose capabilities, exchange context, and coordinate workflows through standardized interfaces rather than fragmented point-to-point integrations, which helps maintain continuity across discovery, business-rule extraction, dependency mapping, code transformation, test generation, data validation, parallel-run analysis, and cutover readiness.

Providers must also demonstrate the ability to preserve shared context across discovery-to-deployment activities. Business rules, dependency maps, validation results, exception logs, test evidence, and modernization decisions should be written back into a common context layer that downstream agents and tools can use. This reduces the risk of wave plans missing dependency constraints, code transformation losing business-rule intent, or cutover decisions being made without adequate validation evidence

4 Govern modernization through technical controls

Modernization should progress through validation-led execution waves rather than manual checkpoints alone. Business-rule traceability, dependency resolution, data reconciliation, security validation, test coverage, performance thresholds, rollback readiness, exception handling, and approval evidence should be embedded into the modernization workflow. Workloads should not progress when business-rule coverage is incomplete, dependency conflicts remain unresolved, data reconciliation fails, security findings remain open, test thresholds are not met, performance objectives are missed, or rollback readiness is incomplete.

Expected outcome

The enterprise creates a repeatable modernization model that preserves transaction-critical operations while enabling real-time data access, AI-ready architecture, faster release cycles, stronger auditability, and reduced dependency on scarce legacy skills.

Conclusion

Mainframe modernization in BFSI is entering a new phase. The strategic imperative is to create core environments that can support real-time data activation, AI-enabled decisioning, regulatory transparency, and ecosystem-scale interoperability while preserving the resilience of transaction-critical operations.

As modernization programs scale across hybrid environments, organizations will need to take a more nuanced approach to transformation. This includes aligning modernization pathways with workload criticality and business value, using hyperscaler environments as execution layers for data activation and cloud-native operations, applying agentic engineering selectively where it improves modernization quality and velocity, and embedding technical controls that strengthen auditability, resilience, and governance.

The next generation of BFSI modernization programs will be shaped less by migration alone and more by disciplined workload decomposition, preservation of embedded business logic, AI-ready data activation, governed agentic engineering, and selective reimagination of legacy capabilities where existing business processes or operating models no longer fit future-state requirements. Institutions that build these capabilities will be better positioned to convert legacy cores from constraints on innovation into resilient foundations for AI-ready, real-time, and continuously adaptable operating models.

Everest Group®
With you on the journey

Everest Group is a leading research firm helping business leaders make confident decisions. We guide clients through today's market challenges and strengthen their strategies by applying contextualized problem-solving to their unique situations. This drives maximized operational and financial performance and transformative experiences. Our deep expertise and tenacious research focused on technology, business processes, and engineering through the lenses of talent, sustainability, and sourcing deliver precise and action-oriented guidance. Find further details and in-depth content at www.everestgrp.com.

This study was funded, in part, by Cognizant and AWS

For more information about Everest Group, please contact:

+1-214-451-3000

info@everestgrp.com

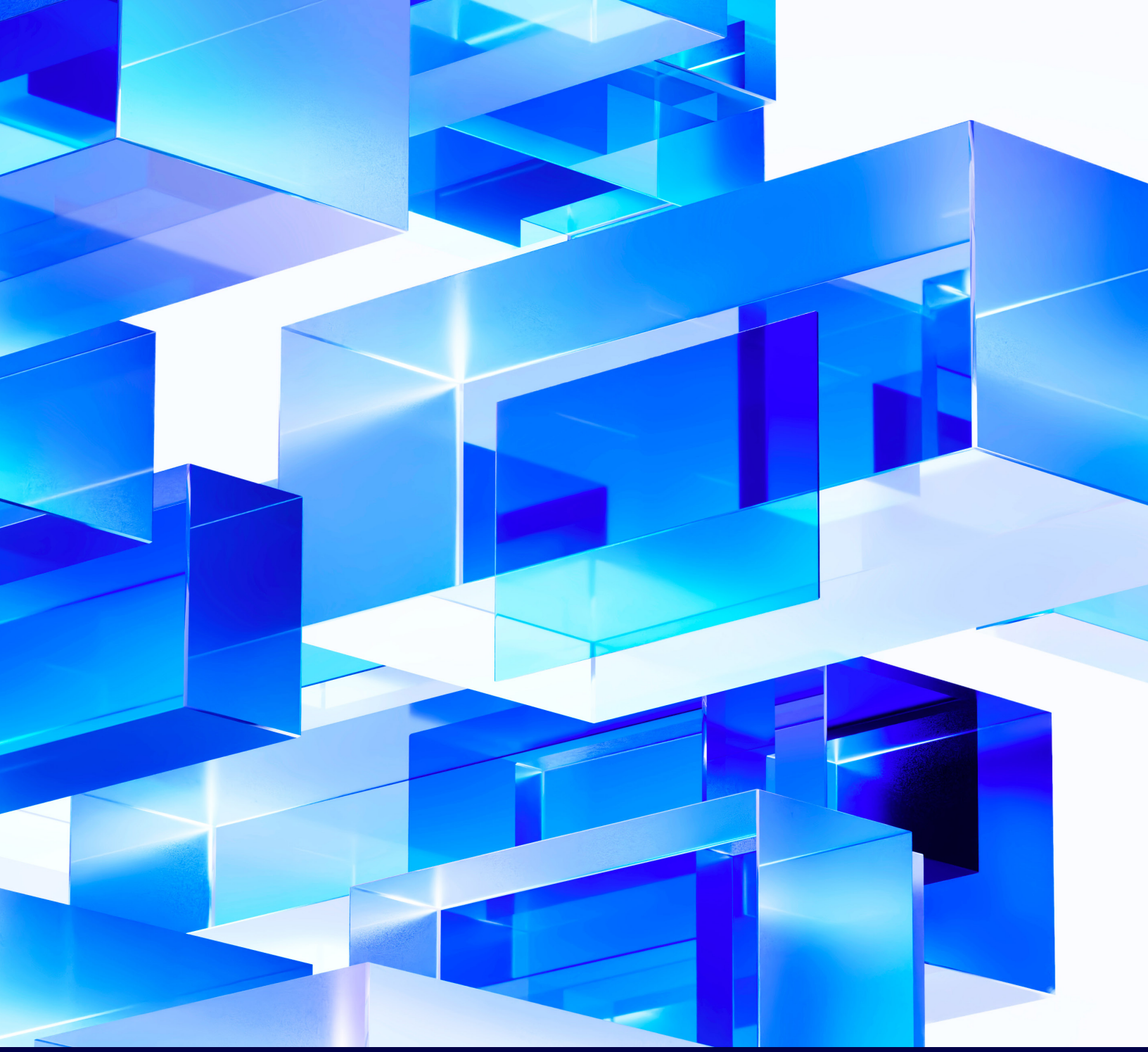
For more information about this topic please contact the author(s):

Mukesh Ranjan, Vice President
mukesh.ranjan@everestgrp.com

Kaustubh K, Practice Director
kaustubh.k@everestgrp.com

Rachita Rao, Senior Analyst
rachita.rao@everestgrp.com

Notice and Disclaimers



cognizant®

Cognizant (Nasdaq: CTSH) is an AI Builder and technology services provider, bridging the gap between AI investment and enterprise value by building full-stack AI solutions for our clients. Our deep industry, process and engineering expertise enables us to build an organization's unique context into technology systems that amplify human potential, drive tangible outcomes and keep global enterprises ahead in a fast-changing world. See how at cognizant.ai or @cognizant.

World Headquarters

300 Frank W. Burr Blvd.
Suite 36, 6th Floor
Teaneck, NJ 07666 USA
Tel: +1 201 801 0233

European Headquarters

280 Bishopsgate
London
EC2M 4AG
England
Tel: +44 (01) 020 7297 7600

India Corporate Office

Siruseri-Software Technology Park of India (STPI)
SDB Block—Ground Floor North Wing
Plot No H4, SIPCOT IT Park
Chengalpattu District
Chennai 603103, Tamil Nadu
Tel: 1800 208 6999

APAC Headquarters

1 Fusionopolis Link, Level 5
NEXUS@One-North, North Tower
Singapore 138542
Tel: +65 6812 4000

WF4952350