Next-Gen ADM Services

Application Managed Services

A research report comparing provider strengths, challenges and competitive differentiators

Customized report courtesy of: Cognizant
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DevOps and SRE lead the way for application development and maintenance with AI support

The application development and maintenance (ADM) domain has undergone multiple changes over the last few years. These changes have been fast paced compared to the previous generations of application development. With organizations undergoing digital transformation, speed, cost and agility play a vital role in ADM. Enterprises seek partners that can help them realize the potential of digital innovation. Service providers have embedded this aspect in their digital offerings that are aligned with the most advanced ADM methodologies. The graphic below showcases the periodic changes in the ADM space.

With the advent of new approaches and methodologies, there is a significant shift in the adoption of Agile and DevOps methodologies for application development. Increased emphasis is placed on developing applications aligned to enterprises’ digital journey using Agile and DevOps methods. This engagement enables faster time-to-market, enhanced collaboration and improved quality. It also enables an innovative approach to delivering applications aligned with specific business requirements. With businesses’ economic constraints, cost optimization has become a key focus area. Application maintenance has witnessed the use of technologies, such as automation, analytics and AI, to optimize the entire app maintenance process and reduce human intervention, delivering cost savings that can fuel new initiatives in app development for enterprises. Site reliability engineering (SRE) adoption has contributed to enhanced reliability, predictable operations, performance measurement and qualitative applications development. DevOps and SRE act as balancing factors to deliver a high-quality application. DevOps enables the disintegration of traditional silos into development and operations to improve the efficiency and reliability of software development and deployment processes. SRE focuses on creating highly scalable and reliable software systems while increasingly emphasizing automation and monitoring.

Generative AI assists developers by generating code and is increasingly in use.
Executive Summary

ADM Evolution over years

- **Application Development**: Developers worked directly with machine languages and assembly languages to create software - manual coding and programming.
- **Application Maintenance**: Application maintenance primarily involved manual debugging, fixing defects, and applying patches.
- **ADM Evolution over years**:
  - **1960s-90s**: Standalone solutions (Generation 1)
  - **1990s-2000s**: Client-server Waterfall model (Generation 2)
  - **2000s-2020s**: API, Microservices Agile methods (Generation 3)
  - **2020s-Present**: DevOps and SRE AI-based ADM (Generation 4)

- **Application Development**: Client service model with Integrated Development Environments (IDEs) providing tools to aid development.
- **Application Maintenance**: Outsourcing of maintenance services also became more prevalent. It included enhancements and updates as well as maintaining applications.
- **Application Development**: Application development focused on business requirements and flexible architecture for code reuse.
- **Application Maintenance**: Automation and analytics-based application maintenance to deliver tangible benefits to clients, such as ensuring availability, performance, and security of online services.
- **Application Development**: Application development integrates with testing and assessing if the application quality is as expected including DevOps, SRE and low-code, no code apps.
- **Application Maintenance**: Intuitive approach to assess and analyze improvements across business processes including use of AI, automation, low-code.
Executive Summary

Hence, DevOps and SRE are crucial in optimizing software development, deployment and operations processes. They contribute to the overall efficiency, reliability and success of digital products and services.

The increased adoption of AI and generative AI has a significant impact on the ADM lifecycle. Some of the use cases include the following:

- AI-driven predictive analytics that aids project planning by predicting resource requirements and potential bottlenecks;
- AI-driven design tools that generate user interfaces, layouts and prototypes based on user requirements and design principles;
- AI-powered testing tools that automate test case generation, increase test coverage and help quickly detect defects;
- AI-driven AIOps platforms that use AI to monitor and manage application performance, predict and prevent downtime and optimize resource usage;
- Predictive maintenance powered by AI that analyzes historical data to anticipate maintenance needs and proactively schedule updates;

In addition to these technical developments, there is an increased focus on establishing global capability centers (GCCs) that support businesses in the U.S. These GCCs are typically established in India, eastern Europe or Latin America. GCCs established in India had a tremendous increase in delivering innovative and cutting-edge applications and products developed in collaboration with service provider partners.

Top trends in ADM segments are listed below.

**Agile application development outsourcing:**

The use of AI across application development and business-led, cloud-based application development are two major trends observed in this segment. Enterprises seek application development with an AI component in their contracts. They focus on transforming monolithic applications by incorporating them into cloud architecture. This process requires significant investments in upskilling the existing talent pool. Most application development is driven by enterprises’ digital agendas, with an increased emphasis on delivering application development through Agile, DevOps and SRE aligned with digital product-oriented development (POD) models. Some of the unique contract models being used include experience-level agreements mapped to business imperatives.

**Agile application development projects:**

Enterprises focus on CX and plan to emphasize the delivery of exceptional UX. They increasingly embrace Agile methodologies and DevOps practices to accelerate software development and enhance collaboration between development and operations teams. Agile and DevOps enable faster time-to-market, improved quality and increased flexibility in responding to changing business needs.

Enterprises increasingly focus on cloud engagements and infrastructure modernization. They further concentrate on transitioning their applications to cloud-native architectures, leveraging containerization and microservices. This shift allows for greater scalability, resilience and agility in deploying and managing applications.

**Application managed services:**

Most enterprises attempt to optimize cost and efficiency in managing applications within their IT landscape. Service providers have devised methodologies and approaches to use technologies such as AI, automation and analytics to deliver tangible benefits to clients. Data-driven approaches deliver better experiences and adhere to the agreed-upon KPIs. As cloud adoption increases, the need to manage cloud applications and optimize infrastructure availability and application performance becomes essential. Service providers align with market expectations and leverage AI — to a certain extent, generative AI — to deliver application managed services to their clients.
Executive Summary

Application quality assurance: In today’s rapidly evolving development landscape, organizations face shorter software release cycles, necessitating customized testing solutions and adopting DevOps practices and tools. Service providers’ quality assurance (QA) practices focus on achieving exceptional UX. Providers also emphasize the development of cloud-based automation platforms that leverage AI and ML to address enterprise demands for faster cycles. These testing platforms use codeless, self-healing and predictive test automation to enable a faster and more efficient software delivery. The increased demand for shift-left testing approaches using AI and ML for test automation has helped improve application quality. Using SRE to improve application quality before deployment into the production environment, thus reducing application downtime, is also an emerging trend.

Continuous testing specialists: Enterprises focus on leveraging cloud-based testing and ADM services to enhance scalability, flexibility and cost-effectiveness as the adoption of cloud applications increases.

This engagement enables enterprises to simulate real-world scenarios and perform comprehensive testing across different platforms. With the intense pressure to deliver efficient applications, leveraging AI and automation has become a mandate for service providers. This setup enables providers to use AI-powered testing and automation to help clients identify patterns, predict potential defects and optimize test cases. Advanced generative AI techniques are used for AI-led software testing. Firms prioritize security testing and compliance owing to the increasing number of cyber threats and data breaches. They incorporate robust security testing practices, including vulnerability assessments, penetration testing and code analysis.

AI has a significant impact across the ADM lifecycle, reducing the delivery time and improving the quality of applications delivered. As the industry is moving toward reducing the time required for testing, there is increased traction on adopting DevOps and SRE for ADM.
## Agile Application Development Outsourcing
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### Provider Positioning

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Definition
Leveraging software capabilities to integrate all business layers, create new data sources and gain enterprise agility is an indispensable requirement for modern application outsourcing.

Next-gen ADM services include consulting, design, custom development, packaged software integration, application management and operations, quality assurance, security services and testing.

Cloud-based computing and the rising demand for automation and AI drive the market for cloud-native application development and give it a new focus. Service providers emphasize Agile methodologies and the continuous, secure delivery and automation of software development processes with DevSecOps. Tailor-made roadmaps combine digital, operational and technology goals to meet clients’ objectives.

Service providers enable organizations to automate routine tasks and gain deeper insights into their application development processes using AI. This has led to the development of new tools and platforms that incorporate automation and AI capabilities to accelerate development cycles; ensure security, threat detection and vulnerability management; and improve end-user experience; this, in turn, helps deliver intuitive, engaging and personalized applications.

This study focuses on the recent developments that have taken place across the application development, application management and quality assurance markets. Simultaneously, ISG is launching the 2023 ISG Provider Lens™ Next-Gen ADM Solutions - Low-Code/No-Code Development Platforms 2023 study to offer clients a broader understanding of the application solutions market.
Introduction

Scope of the Report

This ISG Provider Lens™ quadrant report covers the following five quadrants for services: Agile Application Development Outsourcing; Agile Application Development Projects; Application Managed Services; Application Quality Assurance; and Continuous Testing Specialists.

The ISG Provider Lens™ Next-Gen ADM Services 2023 study offers the following to businesses and IT decision-makers:

- Transparency on the strengths and weaknesses of relevant providers
- A differentiated positioning of providers by segments on their competitive strengths and portfolio attractiveness
- Focus on regional market

ISG studies serve as an important decision-making basis for positioning, key relationships and go-to-market considerations. ISG advisors and enterprise clients also use information from these reports to evaluate their current 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 size classes and industries. In case the IT service requirements from enterprise customers differ and the spectrum of IT providers operating in the local market is sufficiently wide, a further differentiation of the IT providers by performance is made according to the target group for products and services. In doing so, ISG either considers the industry requirements or the number of employees, as well as the corporate structures of customers and positions IT providers according to their focus area. As a result, ISG differentiates them, if necessary, into two client target groups that are defined as follows:

- **Midmarket**: Companies with 100 to 4,999 employees or revenues between $20 million and $999 million with central headquarters in the respective country, usually privately owned.

- **Large Accounts**: Multinational companies with more than 5,000 employees or revenue above $1 billion, with activities worldwide and globally distributed decision-making structures.

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

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

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

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

**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.

**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.

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Application Managed Services
Application Managed Services

Who Should Read This Section
This report is for U.S. enterprises that are evaluating application managed service providers. ISG’s quadrant report outlines current market positions and evaluates how providers overcome challenges clients face. The rising demand for app modernization, automation and value fuels the need for application managed services in the U.S. DevOps, DevSecOps and AIOps address cost and speed priorities. Hybrid systems and platform-independent application complexity drive the managed service demand. Clients seek L2/L3 support, security, incident management and maintenance. The local presence of providers is favored despite the remote work trend.

Service providers have harnessed AI, including generative AI, to proactively identify performance issues and vulnerabilities, thereby enabling preemptive measures and continuous operation. Outcome-based pricing models, aligned with KPIs and targets, benefit both providers and clients. Providers excel with a KPI-focused strategy, employing AI tools and assets to boost automation, agility and quality. They prioritize cutting costs, achieving business goals and enhancing CX through inventive intellectual property. The emphasis is on predictive operations, employing AI-driven analytics, ML algorithms, accelerators and chatbots. Their services include intelligent operations, user-centered experiences and a platform-based method for achieving value.

IT professionals should read this report to determine service providers’ strengths and weaknesses in ADM and learn how to integrate cutting-edge technologies for market advantage.

Procurement managers should read this report to understand the service provider ecosystem for application maintenance services in the U.S. and assess how various providers compare with each other.

Business professionals should review this report to understand partner positioning for efficient application service procurement and favorable ROI in their business or industry.
The quadrant evaluates providers responsible for managing enterprise applications in production. Services comprise application support, enhancements, platform upgrades, security, bug fixing, troubleshooting and merging enhancements, among others.

Akhila Harinarayan
**Definition**

This quadrant assesses service providers responsible for managing clients’ defined application portfolios (applications in production). It does not include niche application specialists. Application managed services (AMS) comprise application support, enhancements, platform upgrades, application security, bug fixing, troubleshooting, and merging enhancements and development backlogs under Kanban or similar methodologies. The leading service providers in this quadrant offer application monitoring, release management, version control, defect identification, and resolution and database query performance.

Typical service levels include the time taken to resolve an incident or service request, service availability, the defect rate, user satisfaction or Net Promoter Score (NPS) and user experience.

Service transition and client onboarding should include application documentation, service ticket records, knowledge transfer and expert transfer/hire optionally. Continuous service delivery starts after the transition period ends and often includes quality improvement programs and service knowledge refresh.

Large, long-term ADM contracts may include AMS in application outsourcing deals comprising Agile development, application modernization and quality assurance services.

This quadrant specifically focuses on the AMS services offered by providers.

**Eligibility Criteria**

1. Deployment and operation of service platforms for performance and defect management, including troubleshooting, application tickets and service requests.
2. Employment of vendor-certified experts in packaged e-commerce, ERP or CRM (at least one of these commercial applications).
3. Clearly supports Microsoft and Oracle technologies, Java programming and relational databases (such as MySQL, Oracle Database, PostgreSQL and SQL Server); mainframe and other technologies can add to a provider’s rating but are not required for inclusion.
4. Integration of more than two service platforms, such as Atlassian Jira, SAP Solution Manager, ServiceNow and application platforms, such as AWS, Google Anthos, IBM Rational and Microsoft Azure.
5. Contracts are based on fixed service fees or outcomes, providing clients with options; staff augmentation is an accepted exception.
Observations

Enterprises strategically aim to optimize cost and operational efficiency while managing their application portfolios within the IT landscape. Service providers have devised methodologies that harness cutting-edge technologies such as AI, automation and advanced analytics to deliver quantifiable advantages to their clientele. Leveraging data-driven approaches, they prioritize enhanced UX while meticulously adhering to predefined KPIs. The surging cloud infrastructure adoption underscores the criticality of proficiently managing applications in such environments. Timely optimization of infrastructure availability and sustained application performance emerge as non-negotiable imperatives. In response, service providers have effectively aligned with market expectations, harnessing the power of AI — to a certain extent, generative AI — to provide comprehensive application managed services contract models.

From the 86 companies assessed for this study, 29 qualified for this quadrant, with 11 being Leaders and one a Rising Star.

Accenture

Accenture is known for its KPIs and business value-driven approach in the ADM. Its myWizard® platform uses structured methodologies for automation. AI tools, along with more than 350 intellectual properties and other assets, bring speed, efficiency, agility and quality.

Capgemini

Capgemini drives cost reduction and business outcomes with vertical stack models and uses its eAPM and EAF for automation. Implementing business XLAs empowers clients to actualize business value and enhance CX.

Cognizant

Cognizant invests in innovative IPs such as Cognizant Neuro® IT Operations, Intelligent Virtual Agent and iGenie. These intellectual properties modernize apps with the help of automation, AI and analytics, focusing on continuous improvement and operational efficiency.

Deloitte

Deloitte’s robust service portfolio harnesses AI, ML and a rich partner ecosystem to help clients innovate, grow and manage risks in their core business.

DXC

DXC’s Platform X™ enables data-driven intelligent automation for resilient, self-healing IT. It offers intelligent automation solutions such as ASA and SPARK. Skilled resources and IPs ensure incident detection and resolution and can predict and prevent future problems.

HCLTech

HCLTech’s managed application services focus on CX and CloudOps for secure app management. NextGen ASM Framework 2.0 powered by iONA enables predictive operations via extreme automation and AI-driven decision-making.

Infosys

Infosys offers LEAP, an AI-driven analytics platform, which integrates existing APM and AIOps tools and uses ML algorithms for proactive monitoring, anomaly detection and predictive maintenance. It also offers accelerators, assets and chatbots to increase AI adoption.
LTIMindtree's managed services prioritize transformative capabilities and IT transformation through a consulting-led approach. JORITZ digitizes IT operations with AIOps, and BRAIO streamlines end-to-end processes with workflow automation, driving enterprise-wide agility.

TCS MasterCraft™ optimizes software development and service delivery. Supported by 24x7 services, it enables continuous deployment, aligning business strategy and execution. AI-based ignio™ automates alerts and incident resolution and enhances visibility.

Tech Mahindra offers amplifAI0->∞ is an AI and automation platform that supports digital transformation and offers anomaly detection, auto resolutions, virtual assistance and incident analytics.

Tech Mahindra

Wipro employs smart operations, automation and user-centric experiences to enhance efficiency and resilience. Its platform-led enablement leverages the HOLMES AI platform and partner ecosystem for rapid value realization.

Quinnox

Quinnox's (Rising Star) AMS enhances IT landscapes via business-centered methods, employing in-house tools and data-driven evaluations. As a Rising Star, it has developed IPs, including Qinfinite for asset discovery, BizOps for monitoring and Qyrus for predictive test automation.
Cognizant

Overview
Cognizant is headquartered in New Jersey, U.S. and operates in 42 countries. It has more than 351,500 employees across 162 global offices. In FY22 the company generated $19.4 billion in revenue, with Financial Services as its largest segment. In 2022, AMS services in the U.S. contributed $2.2 billion to the company’s revenue. The provider offers a wide range of services such as platform-led application management, application debt and automation management as-a-service, and SRE transformation after finding the proper fit for purpose and use. It leverages a global network of studios, CoEs and innovation labs to cater to clients across verticals.

Strengths
**Application modernization and automation:** Cognizant focuses on modernizing and managing applications to meet business needs effectively. The company uses automation, AI and analytics to deliver scalable and reliable solutions. Its AMS strategy emphasizes continuous improvement and operational efficiency.

**AI-driven operations:** Cognizant’s application maintenance practice, part of the SPE unit, engineers modern applications for agile businesses. It adopts an automation-first approach, utilizing the Cognizant Neuro® IT Operations platform to optimize performance and reduce costs.

Investments in IPs and solutions:
Cognizant invests in innovative IPs and other assets, including the Cognizant Neuro® IT Operations platform with AI-powered automation for improved resilience and visibility. Others include the Intelligent Virtual Agent, which offers precise, self-service support, Cognizant AppLens, which drives business relevance using a data-driven approach, Cognizant Business Outcomes and Experience Dashboard, which enable real-time monitoring, and iGenie, which is an intelligent data analysis tool with visualization capabilities.

Caution
The task automation level throughout Cognizant’s managed application services cycle is almost equal to the industry average. In contrast, incidence elimination at 25 percent is slightly lower than the industry average (30-35 percent). Cognizant should focus on increasing the incidence elimination levels in its engagements.

“Cognizant’s investments in Cognizant Neuro® and AppLens help the company focus on modernization and automation using AI and analytics. Its AI-driven operations emphasize automation, debt management and SRE transformation for agility and reliability.”
Akhila Harinarayan
Appendix
The study was divided into the following steps:

1. Definition of Next-Gen ADM Services 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

The ISG Provider Lens™ 2023 – Next-Gen ADM Services study analyzes the relevant software vendors/service providers in the Brazilian, European and U.S. market, based on a multi-phased 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 August 2023, 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.
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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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