ISG Provider Lens™

Next-Gen ADM Services

A research report comparing provider strengths, challenges and competitive differentiators

SWEET SPOT REPORT | OCTOBER 2024 | U.S.

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Cloud and AI play a major role in AI-enabled, infrastructure-coupled ADM cost-saving-driven transformations

The application development and maintenance (ADM) landscape has undergone continuous change to accommodate the changing needs of the enterprise's business. From the erstwhile waterfall model to Agile to moving toward DevOps model, ADM has solved multiple challenges/requirements from simply applications development to improving time to market to integrating operational nuances during application development. The major shift from last year to this year for ADM has been influenced by AI and cloud, among other factors. The use of AI across the ADM lifecycle has significantly increased, and operational benefits have been realized; hence, this year, a new quadrant, AI-enabled ADM, has been added that focuses on using AI across the ADM lifecycle.

Application development deals with an infrastructure component are becoming increasingly common as businesses seek integrated solutions. These deals encompass creating software applications and managing the underlying IT infrastructure, such as cloud services, servers and networks. By bundling app development with infrastructure management, companies ensure that their applications are optimized for performance, scalability and security from the ground up. This holistic approach also streamlines vendor management, reduces costs and enhances operational efficiency, enabling businesses to focus on innovation and growth while maintaining robust, resilient IT environments. According to ISG Index Q2 2024, contracts for ADM bundled with infrastructure have seen 57 percent growth.

Optimal fitment of infrastructure, data and applications on the enterprise IT landscape is essential for achieving operational efficiency, scalability and competitive advantage. It begins with a strategic alignment of IT infrastructure — whether on premises,

Optimal fitment of **infrastructure, data and applications** is critical for operational efficiency.

cloud based or hybrid — with the organization's business objectives. This infrastructure must be robust, flexible and scalable to support current and future needs, ensuring it can handle varying workloads while maintaining high availability and security. Data management plays a pivotal role in this landscape. Proper data governance frameworks are crucial for ensuring data quality, security and compliance. This involves integrating data sources across the organization, enabling seamless access and flow of information. Effective data management supports real-time decision-making and underpins analytics, AI and machine learning initiatives that drive innovation. Applications, on the other hand, must be optimally deployed to leverage this infrastructure and data foundation. Whether these are off-the-shelf solutions or custom built, they should be designed or selected to align with business processes and user needs. Integrating DevOps practices, continuous integration/continuous deployment (CI/CD) and microservices architecture ensures that applications are Agile, scalable and responsive to changing business requirements. The combination of

infrastructure, data and applications is pivotal in rightsizing the enterprise IT landscape for optimal performance.

The adoption of cloud-native development is accelerating as businesses seek agility and innovation. Organizations are increasingly migrating to cloud environments such as AWS, Azure and Google Cloud, enabling them to respond quickly to market changes and customer demands. The rise of Kubernetes and other orchestration tools has further facilitated this shift, simplifying the management of complex applications across distributed environments. Cloud-native application development utilizes microservices architecture, containerization and DevOps practices to create scalable, resilient and flexible applications.

AI and generative AI (GenAI) have significantly enhanced the ADM lifecycle by automating tasks, improving quality and accelerating delivery. The image below shows the use cases of AI and GenAI across the ADM lifecycle. Some benefits include reduced time to market/resolution, developer productivity improvement, improved application efficiency, minimized

downtime, proactive maintenance and improvement in overall operational efficiency.

The key trends across each quadrant include:

Agile Application Development Outsourcing

Service providers are embracing an automation-first strategy that integrates platforms, generative AI and low-code solutions to revolutionize their business operations and software development. This approach optimizes processes, reduces manual intervention and accelerates product delivery timelines. GenAI helps transform content creation, design and coding, while low-code platforms empower developers to develop applications rapidly, driving innovation and agility. Providers also use it to deploy next-generation platforms that integrate automation or AI. This enables significant economies of scale by centralizing the development of intellectual property (IP) that can be replicated in multiple projects. This allows providers to develop solutions once and deploy them across multiple clients, facilitating uniform quality and performance while eliminating redundant efforts. Service providers are focusing on improving capabilities across

specific industries. As industries increasingly focus on these transformative technologies, investments in advanced platforms and AI capabilities set new benchmarks for innovation, operational excellence and customer satisfaction.

Agile Application Development Projects

Service providers prioritize co-innovation with partners to develop cutting-edge solutions and accelerators that align with market demands. By leveraging various partners' combined expertise and resources, providers accelerate development timelines and ensure robust and scalable solutions. Providers also invest in talent and enhance employees' skills in a rapidly evolving technology landscape. Providers should focus on continuous learning and development programs to equip their workforce with the latest technologies and methodologies, improving service quality and employee retention. The firms should focus on accelerating the Agile transformation journey across cross-functional teams, fostering a culture of collaboration, agility and continuous improvement.

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AI and GenAI use cases across ADM

1 Requirements Gathering and Analysis	2 Design and Prototyping	3 Development and Implementation	4 Deployment and Monitoring	5 Maintenance and Support
• Stakeholder input transcription and synthesis • Requirements elicitation • Automated documentation • Business Analysis & User Stories Creation and Recommendations • Concept ideation for a product or a service	• Generative design of user interfaces • Simulation of customer journeys to optimize user experience • Prototype generation • Design system generation • Architecture documentation and review • Architecture model generation	• Code synthesis and code generation, code refactoring and optimization, code conversion and migration, code explainability and documentation • Code review, documentation, code conversion, code generation, unit testing, reverse engineering • Automation Test Script development, Test Data Identification and Development, • Generate Load and Performance Testing Scenarios, Application security testing, Vulnerability identification and remediation	• AIOps – incident detection, correlation • Debugging and proactive alerting • AI-based anomaly detection, predictive maintenance • IaC scripts generation, DevOps pipeline code generation, deployment scripts, release note preparation • Application monitoring, batch monitoring	• L2/L3, L1.5 tickets- Incident lifecycle including Incident resolution • Root Cause analysis / identifying similar types of solutions • Report generation, Release management • Assisted support, bug fixing, incident analysis, classification, event discovery • Actionable Management Insights

Executive Summary

	Requirement gathering and analysis	Design and prototyping	Development and implementation	Deployment and monitoring	Maintenance and support
Percentage of tasks completed using AI/GenAI	10 – 20%	15 – 20%	20 – 30%	10 – 15%	15 – 20%
Benefits of AI/Gen AI	• Improved accuracy and efficiency in understanding user needs and market demands, leading to better product design and customer satisfaction • Wider coverage of requirements and faster requirements gathering, leading to minimal business gaps • Improved estimates and realistic road map • Reduced ambiguity and improved accuracy	• Faster UI design iterations, innovative and engaging user interfaces and improved user experience • Identification of pain points and bottlenecks in customer journeys, leading to enhanced customer experience and increased engagement • Better quality of design, rapid prototyping and increased agility with faster POC	• Improved code documentation or maintainability and developer productivity improvement • Improved test coverage • Improved quality and reduced defect leakage • Reduced coding errors, increased test coverage and faster implementation • Improved turnaround time/ time to market	• Improved product quality and reduced defects • Reduced equipment downtime and maintenance costs • Faster, reliable deployments and faster application onboarding • Improved maintainability of DevSecOps platform • Consistent and error-free infrastructure provisioning • Enhanced operational efficiency and security	• Reduced time to resolution, improved application efficiency, and minimized downtime • Increased code coverage quality, reduced defects and reduced time to fix bugs • Proactive issue resolution and improved system performance • Improved infrastructure/ application reliability and efficiency • Faster and efficient customer support

Adopting Agile frameworks and promoting transparent communication enables providers to respond swiftly to market changes and deliver faster, enhancing customer satisfaction. Finally, leveraging AI for productivity improvements can significantly reduce operational costs and optimize processes. AI-driven tools enable providers to automate routine tasks and provide valuable insights, allowing them to focus on strategic initiatives and maintain a competitive edge.

Application managed services

Site reliability engineering (SRE)-led AIOps represent a pivotal shift in IT operations, integrating site reliability engineering practices with the advanced capabilities of AI for IT operations (AIOps). This strategic approach utilizes ML and advanced analytics to sift through vast amounts of operational data, enabling site reliability engineering teams to proactively detect and resolve potential issues, thus ensuring uninterrupted service delivery. The enhancement of observability through SRE-led AIOps provides comprehensive insights into system performance, revealing intricate correlations between events and identifying root causes of incidents with greater precision. This improved visibility allows for quicker response times and more effective problem-solving. Automation, a key feature of AIOps, streamlines routine tasks, freeing SRE teams to focus on strategic initiatives and continuous system improvement. For service providers, embracing SRE-led AIOps means delivering robust, reliable services that enhance customer satisfaction and secure a competitive edge.

Application Quality Assurance

Service providers focus on offering industry-specific solutions by leveraging the domain expertise of their quality engineers. Understanding various industries' unique challenges and compliance standards allows quality assurance (QA) teams to customize testing processes and tools, ensuring application reliability, security and performance. GenAI-driven QA transforms traditional methodologies by automating test case creation and scenario simulation. This accelerates the testing process and enhances coverage, identifying potential issues that manual testing might overlook. Integrating AI and ML for test case prioritization and anomaly detection is essential. AI can analyze historical data to predict which test cases reveal new defects, optimizing the testing focus. Furthermore, anomaly detection algorithms swiftly pinpoint unexpected behaviors during testing, facilitating quicker issue resolution. This AI and ML integration enhances testing efficiency and maintains high-quality standards, providing a competitive edge in a dynamic application landscape.

Continuous Testing Services

Continuous testing services increasingly include Agile and DevOps practices in their service offerings. This shift emphasizes integrating tools and frameworks that support continuous integration, delivery and testing. The focus on automation reduces time to market, enhancing the efficiency and speed of application delivery and enabling faster, high-quality software deployment.

Cloud-based testing is increasingly essential for clients seeking scalability, flexibility and cost-effectiveness. Given the growing threats of cyberattacks and data breaches, security testing and compliance have become critical. These practices ensure that applications are secure, compliant and trustworthy, enhancing client confidence in their software solutions.

AI-driven Application Development and Maintenance (AI-ADM)

The adoption of AI-driven application development and maintenance (AI-ADM) services by enterprise IT, particularly within sourcing and technology teams, is transforming operational dynamics. This evolution demands the implementation of robust compliance guardrails and stringent intellectual property protection measures to ensure regulatory alignment and safeguard proprietary assets. By doing so, enterprises can confidently embrace AI-ADM technologies while mitigating data security and IP risks. Rapidly enhancing the accuracy of AI-ADM methods is critical, achieved by leveraging customer-specific code,

Executive Summary

data and artifacts. This fine-tuning accelerates development cycles and customizes AI solutions to meet the unique requirements of each enterprise. Investing in workforce training on generative AI technologies is essential, enabling teams to deploy and manage AI-ADM solutions effectively and fostering a culture of continuous innovation.

Leveraging AI-ADM has delivered significant benefits across the ADM lifecycle. Leveraging AI/GenAI across the software development lifecycle (SDLC) for an average of about 15 – 20 percent of tasks has resulted in an average productivity benefit of roughly 25 – 30 percent. Some providers offer around 10 – 15 percent price reductions for clients opting for AI-ADM.

Six quadrants cover the **key capabilities** across application development, managed services, and quality assurance.

Simplified Illustration Source: ISG 2024

Agile Application Development Outsourcing

Agile Application Development Projects

Application Managed Services

Application Quality Assurance

Continuous Testing Specialists

AI-enabled Application Development and Maintenance (AI-ADM)

Definition

Leveraging the capabilities of software to integrate across all business layers, generating new data sources, and achieving enterprise agility is a critical necessity for contemporary application outsourcing. Next-Generation Application Development and Maintenance (ADM) services encompass a wide range of offerings, including consulting, design, custom development, integration of packaged software, application management and operations, quality assurance, security services, and testing.

The advent of cloud-based computing, alongside the increasing demand for automation and artificial intelligence (AI), is reshaping the landscape for cloud-native application development, bringing it into a new era of focus. The emergence of Generative AI (GenAI) and specialized applications (LLMs) marks a significant, albeit nascent, entry into the market. Service providers are now prioritizing Agile methodologies, ensuring the continuous, secure delivery and automation of software development processes through DevSecOps. Customized roadmaps are being developed to align digital, operational, and technology objectives with client needs.

Service providers are empowering organizations to automate routine tasks and derive deeper insights into their application development processes through AI. This shift has spurred the creation of new tools and platforms that embed automation and AI capabilities, thereby speeding up development cycles, enhancing security, facilitating threat detection and vulnerability management, and elevating the end-user experience. Consequently, this enables the delivery of intuitive, engaging, and personalized applications.

This study delves into the recent advancements within the application development, application management, and quality assurance sectors, with a particular emphasis on AI. In conjunction, ISG has introduced the ISG Provider Lens™ Next-Gen ADM Solutions - Low-Code Development Platforms and No-Code Development Platforms study in 2024. This initiative aims to provide clients with a comprehensive understanding of the application solutions market.

Sweet Spot

QA Consultants

Overview

QA Consultants, an ALTEN company headquartered in Toronto, Canada, offers software quality assurance solutions for enterprise customers, including consulting and advisory, performance testing, security and compliance testing, and mobile and cross-platform testing. For almost 30 years, the firm has delivered over 12,000 mission-critical projects for the manufacturing, retail, e-commerce and banking industries.

Key Provider Capabilities

QA Consultants is a specialized firm that provides expert guidance and services to firms to assess and improve software quality assurance. The company offers a wide range of services across testing and specializes in multiple industries. Its recent acquisition by ALTEN has enabled the firm to expand its capabilities across automotive, life sciences, aerospace and defense industries in the U.S. and globally. Its key capabilities include:

Advisory and consulting expertise:
A consultative approach is at the core of QA Consultants' strategy for quality engineering (QE) transformation. This begins with identifying key areas of deficiency in quality management and engineering, focusing on four critical aspects: culture, operations, engineering practices and risk management.

The firm tailors its solutions to meet each client's specific needs utilizing a QE maturity framework. QA Consultants provides comprehensive recommendations at both tactical and strategic levels, addressing business challenges with precision and driving meaningful results.

End-to-end engineering: QA Consultants has expanded its portfolio along with ALTEN's capabilities and is aiming to offer end-to-end QA and engineering services coupled with ALTEN's global capabilities. By leveraging global expertise, the firm can offer services to its clients at a better price, thereby expanding additional services to existing clientele and end-to-end services to new clientele.

Innovation and R&D: QA Consultants prioritizes innovation and R&D, operating a software testing lab at the automotive CoE in Oshawa, Canada. The firm has established a CoE in Dallas for IoT and embedded software test automation, serving key clients. The Toronto facility is an innovation hub for emerging technologies, fostering AI research, government-funded projects and test automation solutions.

Benefits Delivered

QA Consultants offers various benefits to its clients across industries, including:

- **Cost savings via automation**
- **Optimized UX**
- **40 percent reduction in regression testing efforts**
- **60 percent boost in testing process efficiency**
- **Enhanced security measures**
- **Faster time to market**
- **Better quality testing feedback mechanisms**
- **Increased confidence in each product release**

QA Consultants

Sweet Spot

Expertise in the aerospace and automotive industry: QA Consultants offers specialized quality assurance services for the automotive and aerospace industries, addressing distinct needs. In the automotive industry, the firm provides functional safety testing, cybersecurity assessments and validation of autonomous vehicle systems. In the aerospace industry, QA Consultants ensures compliance with industry standards, conducts rigorous environmental testing and tests avionics and human-machine interfaces. The company's expertise and specialized tools ensure that products meet stringent industry standards, enhancing safety, reliability and performance.

Robust solutions and accelerators: QA Consultants has strong tools and accelerators. QMTi is a comprehensive quality management platform that streamlines and optimizes quality assurance processes. It offers features and capabilities designed to enhance efficiency, improve collaboration and ensure high-quality products and services. ESIT and xCog are proprietary platforms designed to test automotive software and hardware integration and accelerate automated testing for cognitive and autonomous software. xCog is an automated testing solution tailored for cognitive, AI and non-deterministic systems. It facilitates the modeling of these complex systems and generates highly intricate automated test solutions that can be executed in high-speed, parallel environments.

Skilled expertise: QA Consultants' resources are continuously upskilled with certifications in emerging technologies to enhance application quality assurance processes. These advanced skills empower resources to integrate intelligent automation, predictive analytics and cloud-based testing frameworks, ensuring more efficient, accurate and scalable QA practices. Using these, the firm can effectively address complex testing challenges, improve software quality, accelerate delivery timelines and provide better value to clients.

Future roadmap

With ALTEN's integration, QA Consultants can expand its market reach and tap into ALTEN's extensive resources, including talent, technology and infrastructure. This enables the firm to scale operations and enhance service delivery. ALTEN's global presence allows QA Consultants to enter international markets while benefiting from ALTEN's network of clients, partners and suppliers. This indicates that QA Consultants can efficiently serve US-headquartered clients with global operations. The acquisition also boosts QA Consultants' brand recognition and credibility. The exchange of expertise between both companies will drive continuous innovation and improvement, positioning QA Consultants for long-term success.

Appendix

Methodology & Team

The ISG Provider Lens 2024 – Next-Gen ADM Services study analyzes the relevant software vendors/service providers in the U.S., 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 study will include data from the ISG Provider Lens™ program, ongoing ISG Research programs, interviews with ISG advisors, briefings with service providers and analysis of publicly available market information from multiple sources. ISG recognizes the time lapse and possible market developments between research and publishing, in terms of mergers and acquisitions, and acknowledges that those changes will not reflect in the reports for this study.

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

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

Author & Editor Biographies

Lead Author

Akhila Harinarayan
Senior Lead Analyst

Akhila Harinarayan is Senior Lead Analyst and the lead author for ISG Provider Lens studies with a focus on Digital Business Transformation and SAP Services. She has more than 12 years of experience across research and consulting including provider strategy, enterprise strategy, industry roadmaps, point-of-view papers, service provider assessment across regions. She has strong expertise on strategy and transformation, digital insights, thought leadership, benchmarking, market assessments and go-to-market strategies.

She has authored many thought leadership papers, digital insight studies, devised go-to-market strategies across products/industries/regions, built frameworks and maturity models across industries for both enterprises, vendors and service providers.

Research Analyst

Maharshi Pandya
Senior Lead Analyst

Maharshi Pandya is a Senior Lead Analyst at ISG and is responsible for supporting and co-authoring ISG Provider Lens™ studies on SAP HANA Ecosystem & Next-Gen ADM Solutions and Services. He supports the lead analysts in the research process and authors the global summary report. Maharshi also develops content from an enterprise perspective and collaborates with advisors and enterprise clients on ad-hoc research assignments. Before this role, he has been associated with several syndicated and custom market research firms, in which he has worked on both, secondary and primary interaction-centric research projects around market sizing & forecasting, competitive benchmarking, pricing analysis vendor profiles and market share analysis for several industry verticals such as information and communication technology, media & information services, and automotive. His area of expertise includes analytics, application development and maintenance, and enterprise resource planning.

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Study Sponsor

Heiko Henkes
Director and Principal Analyst

Heiko Henkes serves as Managing Director and Principal Analyst at ISG, where he oversees the Global ISG Provider Lens™ (IPL) Program for all IT Outsourcing (ITO) studies alongside his pivotal role in the global IPL division as strategic program manager and thought leader for IPL Lead Analysts. Additionally, Henkes heads the Star of Excellence, ISG's global customer experience initiative, steering program design and its integration with IPL and ISG's sourcing practice.

His expertise lies in guiding companies through IT-based business model transformations, leveraging his deep understanding of continuous transformation, IT competencies, sustainable business strategies, and change management in a Cloud-AI-driven business landscape. Henkes is renowned for his contributions as a keynote speaker on digital innovation, where he shares insights on leveraging technology for business growth and transformation.
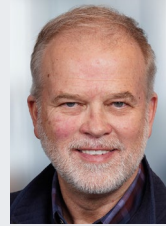
IPL Product Owner

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

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

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

ISG Provider Lens™

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

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

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