

***ISG** Provider Lens™

Next-Gen Application Development & Maintenance (ADM) Services

Next-Gen ADM for Healthcare and Life Sciences (HCLS)

Global 2019
Quadrant
Report



A research report
comparing provider
strengths, challenges
and competitive
differentiators

Customized report courtesy of:

Infosys®

August 2018

About this Report

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The research and analysis presented in this report includes findings from the ISG Provider Lens™ program and 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 was current as of March 2018. 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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EXECUTIVE SUMMARY

The global next-gen ADM market is following two different growth trajectories for the application development and application maintenance segments. Next-gen application development has branched out into areas such as analytics, IoT, cloud native architectures, SaaS-based offerings, security, customer experience (CX) and user experience (UX), mobile apps and others. Most next-gen development activities are focusing on solving business problems, improving profits or revenue, or enhancing brand value, rather than acting as a support mechanism for running IT operations. Concurrently, next-gen maintenance activities are focusing on finding different avenues to achieve cost savings by using technologies like intelligent automation. Such efforts can eventually reduce the cost of maintenance activities by 20 to 30 percent, thereby allowing enterprises to reinvest in development activities.

Next-Gen ADM

- **Digital labor is making the existing workforce more productive:** Digital labor goes far beyond the realms of bot-based automation to include diagnostic, predictive and remediating capabilities using intelligence acquired over time to solve non-linear problems. Digital labor is enabling the current ADM workforce to focus on higher-value work. For example: While working on a data analytics project, the analyst can now spend more time analyzing data, rather than checking the data authenticity, quality and applicability.

- **Demand for hybrid cloud environments is higher:** Enterprises are increasingly creating cloud-native applications that can be moved directly to the public cloud. However, owing to security and regulatory reasons, a pool of applications still resides in the dedicated private cloud. Hence, enterprises are seeking providers that can accomplish migration and maintenance across cloud environments.
- **Business-based metrics are used more often to measure results:** To divert budgets towards digital transformation, enterprises are looking for methods to quantify the next-gen services and their direct impact on business. Commercial contracting structures and preferences are shifting from traditional input-based transactional models to ones that are built on business-based metrics.

Agile Development

- **DevSecOps is becoming the new normal:** DevSecOps has replaced DevOps across the board. Enterprises and providers alike are realizing that security cannot be an afterthought. Thus, during early DevOps implementation phases, security principles are being incorporated as a default feature.
- **Rapid application development is on the rise:** As enterprises transform by becoming agile, there is a growing necessity for tight integration among their business, engineering and operations organizations. These organizations are required to

maintain rapid development cycles to quickly add features to existing offerings and release new ones in the market. Such enterprises are preferring to partner with service providers that can offer a globally distributed agile organization that balances the cost dynamics with the need for speed.

- **Full-stack developers are preferred for application development:** More and more, providers are preferring full-stack developers for application development to avoid unnecessary coordination cycles. Having a single resource provides a 360-degree view of the environment to speed the entire development cycle. A full-stack developer is a developer that has knowledge and expertise to work from back-end through front-end application components.

Continuous Testing

- **Companies want to test automation as-a-service:** Test automation-as-a-service is being advocated as a differentiator to win testing contracts with dominant digital scope. Enterprises are engaging with service providers to build test automation centers of excellence and initially manage them.
- **Domain and vertical integration is necessary:** A wide range of testing services are being mapped with industry-specific tools, reusable scripts and accelerators. The services being mapped include test consulting, application testing, application security testing, enterprise solution testing and IoT testing. Moreover, service providers are creating specialized vertical solutions for testing clients.

- **Testing is becoming a technology enabler:** Testing is being viewed as an enabler to implementing emerging technologies. For example, for many IoT projects, service providers and clients are resorting to SIL (software-in-a-loop) and HIL (hardware-in-a-loop) testing approaches to test the real-world performance of connected devices.
- **Demand for full-stack testing engineers is increasing:** The desire to achieve continuous testing capability has led to greater demand for full-stack testing engineers. Such resources are expected to have knowledge across test phases. For example, a full-stack engineer might be required to perform test execution automation on Selenium, integrate it with Jenkins for continuous integration and then provision the test environments in public cloud and virtual environments.

Next-Gen ADM – BFSI

- **Blockchain technology is finding more use cases in the financial industry:** Interbank use cases are still rare; however, banks are making use of the technology to simplify their existing systems and removing process bottlenecks. Blockchain is enabling faster and cheaper settlements and is shaving a significant portion of the transaction cost, while improving transparency.
- **Customer intelligence is becoming the predictor of growth:** Advances in data analytics are helping financial institutions to meet and anticipate customer needs. AI is becoming a reality for running various banking functions, including marketing and sales, wealth management and compliance.

- **Public cloud is becoming the default services model:** Non-core functions like CRM, HR and F&A already are being delivered through a cloud-based SaaS model. Gradually, as the CXO organization becomes more comfortable, core functions such as payments, billing and credit scoring are being moved to the public cloud.
- **A design-thinking approach is key to delivery:** A customer-first design is enabling application delivery. As banking consumers are becoming more tech-enabled, e-banking is becoming the primary channel to onboard, serve and retain them. Hence, each service, from account onboarding to loan disbursal, is being designed to decrease customer effort and enhance experience.

Next-Gen ADM – Healthcare & Life Sciences

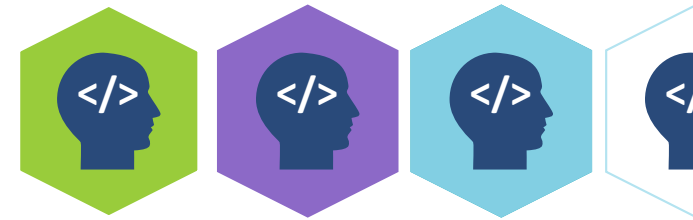
- **Data-driven initiatives are coming of age:** Healthcare and life sciences (HCLS) clients are adopting an analytics-driven approach to transformation projects to harness data and generate insights, thereby becoming more customer-centric and optimizing the entire value chain. The sector is also stepping into newer technology areas, like industrial machine learning (IML), which uses big data to improve healthcare standards. Such applications could lead to better clinical decisions, lower readmission rates and fewer adverse events.

- **Cloud adoption is accelerating:** Cloud resources are addressing process inefficiencies, enabling end-to-end visibility and streamlining commercial operations for various life sciences companies. In the payer and provider segments, cloud adoption is boosting connectedness and information accessibility among practitioners, payers and patients.
- **Maintenance savings are funding change initiatives:** HCLS organizational IT budgets have remained flat for several years. So, there has been more emphasis placed on reducing discretionary spend for maintenance services by using automation levers, then using the savings to fund business intelligence, cloud migration, data warehousing and platform development engagements.

Next-Gen ADM – Manufacturing

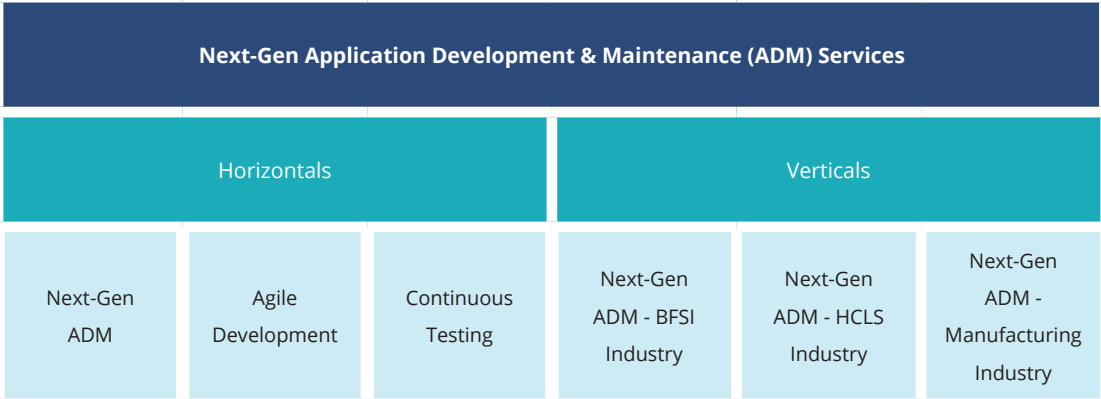
- **IoT is driving efficiencies:** The scaled adoption of IoT is enabling predictive maintenance, self-optimizing production and automated inventory management, resulting in lower maintenance, maximized equipment life and uninterrupted production cycles. Although the IoT has far-fetched applications benefits, most use cases still pivot around value chain optimization.

- **The concept of smart factories is transforming the production process:** IIoT and smart factories are not just making the shop floor more agile and efficient, they are also leading to higher process compliance and better-quality management.
- **Omni-chain is disrupting supply chains:** Although in its infancy, there are instances where manufacturers are using a blockchain-based “omni-chain” model to connect different processes in the ecosystem. Omni-chain is a cloud model that unifies both internal and external processes across extended networks.
- **There is a rapid increase in enterprise cloud and mobility engagements:** Manufacturers are looking to leverage cloud and mobility to form a connected ecosystem of suppliers, manufacturers, customers and partners.



Introduction

Simplified illustration



Source: ISG 2018

Definition

Service providers are augmenting their traditional ADM offerings with emerging technologies and collaborative frameworks to meet their enterprise clients’ objectives. ISG terms such contract types as next-gen ADM contracts. This study tries to understand the client objectives and assesses provider capabilities to deliver on next-gen ADM contracts.

Definition (cont.)

Scope of the Report

The following areas associated with next-gen ADM are included within this study:

Next-Gen ADM

Like traditional application services, next-gen ADM includes consulting, design, custom development, packaged software integration, operations and testing. However, the scope, delivery mechanism and outcome for such contracts pivot around a value-based approach where the focus is on achieving enterprise agility and solving business problems.

This quadrant assesses vendors based on their capability to augment traditional ADM services with emerging technologies and methodologies, like agile, DevOps, automation, digital and modernization techniques to deliver application outsourcing projects. It also assesses provider capabilities in incorporating new approaches to develop and deliver applications that focus on business outcomes.

Agile Development

Agile development focuses on an incremental and iterative approach to application development. Because agile encompasses frequent and early releases of the working software, it is being viewed by enterprise as a medium for attaining enterprise agility.

This quadrant assesses capabilities of a provider to deliver tangible results through use of various agile methodologies. It looks at the focus each provider has towards use of agile development with respect to its overall application development practice.

Continuous Testing

Continuous testing focuses on delivering quality assurance at speed. In terms of technology, it encompasses various aspects of automated testing such as shift-left, end-to-end automation across testing phases. However, in terms of people and processes, it goes a step beyond automation testing to accomplish higher collaboration among QA and development teams

Definition (cont.)

to sync with sprint cycles, feature-driven testing, responsiveness to change, creating a feedback loop and promoting greater client involvement. Continuous testing is gaining momentum, especially to help enterprises keep pace with their agile and DevOps initiatives.

Service providers for this quadrant are assessed on their progress made and capabilities developed for creating a continuous testing environment with measurable outcomes for their clients.

Next-Gen ADM – BFSI

This quadrant assesses the strength of providers that provide next-gen ADM services to BFSI industry vertical, which is comprised of banking, diversified financial and insurance companies.

Next-Gen ADM – HCLS

This quadrant assesses the strength of providers that provide next-gen ADM services to HCLS industry vertical, including healthcare institutions, payers, pharmaceutical, biotech and medical device companies.

Next-Gen ADM – Manufacturing

This quadrant assesses the strength of providers that provide next-gen ADM services to the manufacturing industry vertical, which includes conglomerates, capital goods, construction, consumer durables (like automotive, household appliances), aerospace and defense, materials, semiconductor, technology hardware and equipment companies.

Provider Classifications

The ISG Provider Lens™ quadrants were created using an evaluation matrix containing four segments, where the providers are positioned accordingly.

Leader

The “leaders” among the vendors/providers have a highly attractive product and service offering and a very strong market and competitive position; they fulfill all requirements for successful market cultivation. They can be regarded as opinion leaders, providing strategic impulses to the market. They also ensure innovative strength and stability.

Product Challenger

The “product challengers” offer a product and service portfolio that provides an above-average coverage of corporate requirements, but are not able to provide the same resources and strengths as the leaders regarding the individual market cultivation categories. Often, this is due to the respective vendor’s size or their weak footprint within the respective target segment.

Market Challenger

“Market challengers” are also very competitive, but there is still significant portfolio potential and they clearly lag behind the “leaders”. Often, the market challengers are established vendors that are somewhat slow to address new trends, due to their size and company structure, and have therefore still some potential to optimize their portfolio and increase their attractiveness.

Contender

“Contenders” are still lacking mature products and services or sufficient depth and breadth of their offering, while also showing some strengths and improvement potentials in their market cultivation efforts. These vendors are often generalists or niche players.

Provider Classifications (cont.)

Each ISG Provider Lens™ quadrant may include a service provider(s) who ISG believes has a strong potential to move into the leader's quadrant.

Rising Star

Rising Stars are mostly product challengers with high future potential. When receiving the “Rising Star” award, such companies have a promising portfolio, including the required roadmap and an adequate focus on key market trends and customer requirements. Also, the “Rising Star” has an excellent management and understanding of the local market. This award is only given to vendors or service providers that have made extreme progress towards their goals within the last 12 months and are on a good way to reach the leader quadrant within the next 12-24 months, due to their above-average impact and innovative strength.

Not In

This service provider or vendor was not included in this quadrant as ISG could not obtain enough information to position them. This omission does not imply that the service provider or vendor does not provide this service.

Next-Gen Application Development & Maintenance (ADM) Services Cross-Quadrant Provider Listing 1 of 3

	Next-Gen ADM	Agile Development	Continuous Testing	Next-Gen ADM - BFSI Industry	Next-Gen ADM - HCLS Industry	Next-Gen ADM - Manufacturing Industry
Accenture	● Leader	● Not in	● Not in	● Not in	● Not in	● Not in
Atos	● Leader	● Product Challenger	● Product Challenger	● Product Challenger	● Product Challenger	● Leader
Capgemini	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader
CGI	● Contender	● Not in	● Not in	● Not in	● Not in	● Not in
CI&T	● Not in	● Product Challenger	● Not in	● Not in	● Not in	● Not in
Cigniti	● Not in	● Not in	● Contender	● Not in	● Not in	● Not in
Cognizant	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader
DXC Technology	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader
EPAM	● Contender	● Product Challenger	● Product Challenger	● Contender	● Product Challenger	● Not in
Fujitsu	● Product Challenger	● Not in	● Not in	● Not in	● Not in	● Not in

Next-Gen Application Development & Maintenance (ADM) Services Cross-Quadrant Provider Listing 2 of 3

	Next-Gen ADM	Agile Development	Continuous Testing	Next-Gen ADM - BFSI Industry	Next-Gen ADM - HCLS Industry	Next-Gen ADM - Manufacturing Industry
HCL	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader
Hexaware	● Contender	● Rising Star	● Leader	● Product Challenger	● Contender	● Not in
IBM	● Leader	● Leader	● Leader	● Not in	● Leader	● Leader
Infosys	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader
ITC Infotech	● Product Challenger	● Product Challenger	● Contender	● Contender	● Not in	● Product Challenger
KPIT	● Contender	● Market Challenger	● Contender	● Not in	● Contender	● Contender
LTI	● Rising Star	● Product Challenger	● Rising Star	● Rising Star	● Not in	● Product Challenger
Luxoft	● Not in	● Product Challenger	● Not in	● Not in	● Not in	● Not in
Mindtree	● Leader	● Leader	● Leader	● Product Challenger	● Not in	● Product Challenger
Mphasis	● Not in	● Contender	● Not in	● Product Challenger	● Not in	● Not in

Next-Gen Application Development & Maintenance (ADM) Services Cross-Quadrant Provider Listing 3 of 3

	Next-Gen ADM	Agile Development	Continuous Testing	Next-Gen ADM - BFSI Industry	Next-Gen ADM - HCLS Industry	Next-Gen ADM - Manufacturing Industry
NTT DATA	● Product Challenger	● Not in	● Product Challenger	● Not in	● Product Challenger	● Not in
Sofftek	● Not in	● Leader	● Product Challenger	● Not in	● Not in	● Not in
Syntel	● Product Challenger	● Not in	● Not in	● Not in	● Not in	● Not in
TCS	● Leader	● Not in	● Not in	● Not in	● Not in	● Not in
Tech Mahindra	● Leader	● Product Challenger	● Contender	● Leader	● Rising Star	● Rising Star
UST Global	● Product Challenger	● Product Challenger	● Leader	● Product Challenger	● Contender	● Contender
Virtusa	● Product Challenger	● Not in	● Product Challenger	● Leader	● Not in	● Not in
Wipro	● Leader	● Leader	● Leader	● Not in	● Not in	● Not in
Zensar	● Not in	● Not in	● Product Challenger	● Contender	● Not in	● Not in



Next-Gen Application Development & Maintenance (ADM) Services Quadrants



NEXT-GEN ADM FOR HEALTHCARE AND LIFE SCIENCES (HCLS)

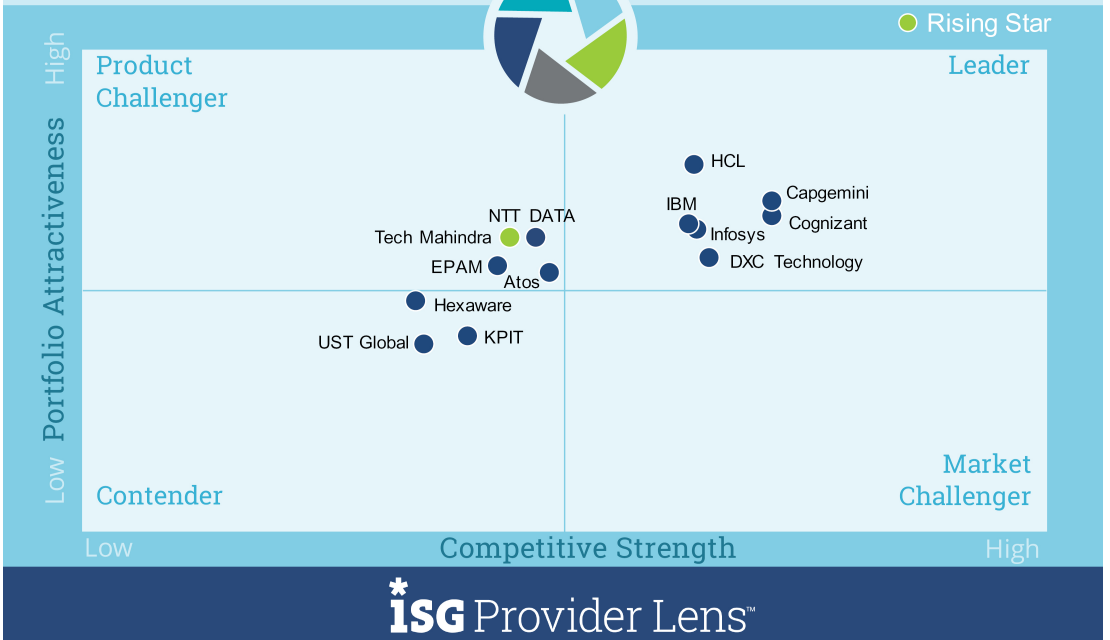
Definition

The Next-gen ADM HCLS industry quadrant includes ADM services provided to healthcare institutions, health payers and pharmaceutical, biotech and medical devices companies.

This quadrant assesses the strength of providers that provide next-gen ADM services to HCLS industry vertical.

Next-gen Application Development & Maintenance (ADM) Services
Next-gen ADM - HCLS Industry

2019
Global



Source: ISG Research 2018

NEXT-GEN ADM FOR HEALTHCARE AND LIFE SCIENCES (HCLS)

Observations

- Capgemini's proprietary solutioning and its ADMnext suite provide a range of services for the HCLS industry.
- Cognizant is among the biggest providers to the HCLS industry with offerings spanning the entire value chain.
- DXC is relying on its cloud-based digital services platform and a range of acquisitions to further grow its business in this segment.
- HCL's core strength is its analytics-based approach to transformation. It has also developed tools to accelerate clients' journeys to digital.
- IBM is banking on its cognitive services and inorganic growth to add to its client base.
- Infosys' AI-infused services, investment in R&D and domain expertise make it an ideal provider for next-gen services.
- TechM's technology partnerships, open-source capabilities and managed services toolkit are some of its key differentiators and helped it attain Rising Star status.

INFOSYS



Overview

Infosys' global ADM HCLS practice generated a revenue of \$750 million in 2017. It has 80 clients supported by nearly 8,200 FTEs.

Infosys follows a “people+software” strategy for this industry, where the “software” is led by automation and artificial intelligence technologies and attempts to infuse significant improvement in scale and scope, aided by domain experts.



Strengths

Domain expertise: Infosys has domain capabilities and has developed various industry-specific tools and platforms, like SKava, which can be used to create digital health platforms, and CarePlus, an integrated customer communications management platform that Infosys promotes as a key enabler for care-as-a-service.

AI-led maintenance services: Infosys can provide non-deterministic robotic process automation for back-end and front-end operations using data analysis and diagnostic models that result in self-service, self-healing and cost reduction.

Alliances: As part of its growth plan, Infosys is actively working on strengthening its alliance ecosystem. The current ecosystem includes Veeva for sales and marketing and R&D functions, Amazon and Microsoft for AWS- and Azure-based solutions as well as Informatica, Trifacta, Pega, Antidote, ValGenesis, Deep6.AI, AgilePV and Oracle.

Platform and solutions: About 6 percent of Infosys' total work includes IP creation efforts. Its key offerings in this space are NIA and AssistEdge. Nia is a next-generation integrated AI platform that transforms the landscapes that clients operate in and enables their systems to predict and automate business process management tasks that traditionally have been executed by people. AssistEdge is Infosys' robotic process automation tool to help rapidly digitize and automate workflows.



Caution

Although Infosys has more than 80 clients, it generates around half of its HCLS revenue from the top five, which makes it highly dependent on a few accounts.



2019 ISG Provider Lens™ Leader

Infosys has strong consulting and system integration capabilities in the HCLS industry. It has offerings spanning the supply chain that are strongly backed by its automation and AI capabilities.

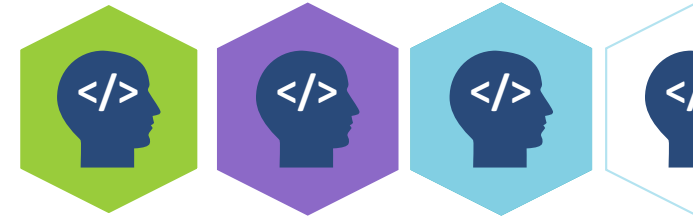
The slide features a dark blue background with a light blue header. On the left side, there are several circular icons resembling camera apertures, arranged in a diagonal line from the bottom left towards the center. These icons are in various shades of blue and white. The word "Methodology" is written in a white, serif font on the right side of the slide.

Methodology

METHODOLOGY

The research study “ISG Provider Lens™ 2018 – Next-Gen Application Development & Maintenance (ADM) Services” analyzes the relevant software vendors/service providers in the Global market, based on a multi-phased research and analysis process and positions these providers based on the ISG Research methodology. The study was divided into the following steps:

1. Define the “Next-Gen Application Development & Maintenance (ADM) Services” market
2. Conduct questionnaire-based surveys with service providers/vendor across all trend topics
3. Hold interactive discussions with service providers/vendors on capabilities and use cases
4. Leverage ISG’s internal databases and advisor knowledge and experience (wherever applicable)
5. Analyze and evaluate services and service documentation based on the facts and figures received from providers and other sources.
6. Evaluate based on the following key criteria:
 - Strategy and vision
 - Innovation
 - Brand awareness and presence in the market
 - Sales and partner landscape
 - Breadth and depth of portfolio of services offered
 - Technology advancements



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ISG Provider Lens™ | Quadrant Report

August 2018

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